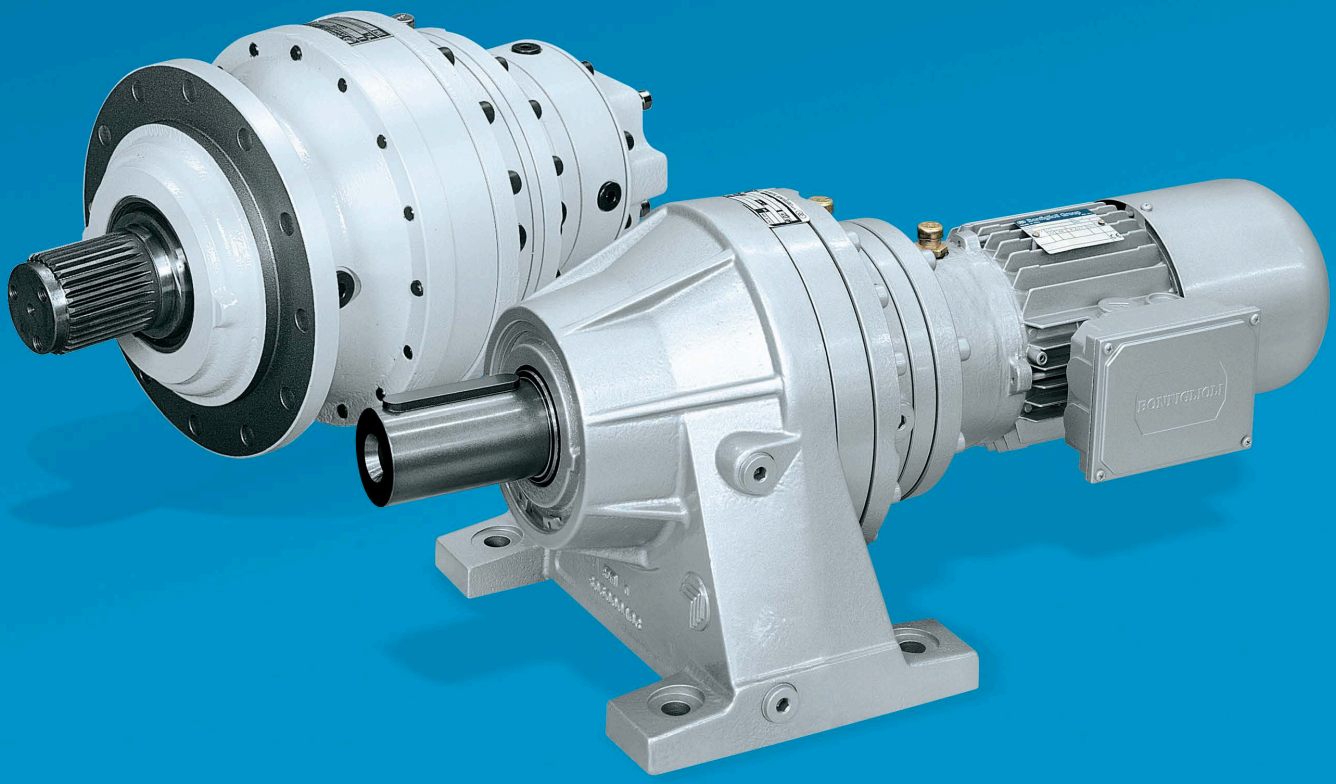
Bonfiglioli
Riduttori

# serie 300 Industrial

Reductores epicicloidales modulares

## Serie Power



Bonfiglioli
power, control and green solutions

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Revisiones

El índice de revisión del catálogo está indicado en la Pág. 552. En la dirección www.bonfiglioli.com se encuentran disponibles los catálogos con las revisiones actualizadas.

## 1 SIMBOLOGÍA Y UNIDADES DE MEDIDA

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| $A_{c\ 1,2}$ | [N] | Carga axial de cálculo |
| $A_{n\ 1,2}$ | [N] | Carga axial nominal |
| $A_{r2}$ | [N] | Carga axial a la salida del reductor |
| $F_h$ | – | Factor de duración para el cálculo reductores |
| $F_{h\ 1,2}$ | – | Factor de duración para el cálculo de los rodamientos de los ejes |
| $f_{n\ 1,2}$ | – | Factor de velocidad para cargas sobre los ejes |
| $f_L$ | – | Factor de duración para el cálculo reductores |
| $f_m$ | – | Factor corrector de la potencia |
| $f_{h\ 1,2}$ | – | Factor de corrección para cargas en los ejes |
| $f_S$ | – | Factor de servicio |
| $f_S$' | – | Factor de servicio requerido por la aplicación |
| $f_t$ | – | Factor térmico |
| $f_v$ | – | Factor de velocidad |
| h | [h] | Horas de vida |
| i | – | Relación de reducción |
| $K_a$ | – | Factor de solicitación de carga axial |
| $K_r$ | – | Factor de solicitación de la carga radial |
| l | – | Relación de intermitencia |
| $M_2$ | [Nm] | Par trasmitido en la salida del reductor |
| $M_{c2}$ | [Nm] | Par de cálculo en la salida del reductor |
| $M_{2REF}$ | [Nm] | Par de referencia |
| $M_{n2}$ | [Nm] | Par nominal en la salida del reductor |
| $M_{2max}$ | [Nm] | Par máximo en la salida del reductor |
| Mb | [Nm] | Par nominal del freno |
| $M_{r\ 1,2}$ | [Nm] | Par requerido en el reductor |

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| $n_{1,2}$ | [$min^{-1}$] | Velocidad angular |
| p | [bar] | Presión del aceite hidráulico |
| $P_1$ | [kW] | Potencia máx. transmisible en la entrada del reductor |
| $P_1$' | [kW] | Potencia máx. absorbida en la entrada del reductor |
| $P_2$ | [kW] | Potencia transmitida a la salida del reductor |
| $P_n$ | [kW] | Potencia nominal del motor |
| $P_{r1}$ | [kW] | Potencia solicitada en la entrada |
| $P_{r2}$ | [kW] | Potencia en la salida con $n_2$ máx |
| $P_{r2}$' | [kW] | Potencia en la salida con $n_2$ mín |
| $P_S$ | [kW] | Potencia a disipar |
| $P_t$ | [kW] | Potencia térmica del reductor |
| Q | [l/min] | Caudal del aceite hidráulico |
| $R_{c\ 1,2}$ | [N] | Carga radial nominal en el centro del eje |
| $R_{n1\ 1,2}$ | [N] | Carico radiale nominale in mezzeria alberi |
| $R_{x\ 1,2}$ | [N] | Carga radial nominal del reductor recalculada respecto a distintos puntos de aplicación de la carga |
| $t_a$ | [°C] | Temperatura de la habitación |
| V | [$cm^3$] | Cilindrada del motor hidráulico |
| $V_c$ | [$cm^3$] | Cilindrada del motor hidráulico (de cálculo) |
| X | [mm] | Distancia de aplicación de la carga desde el resalte del eje |
| $\eta_d$ | – | Rendimiento dinámico |
| Z | – | Frecuencia de arranque |

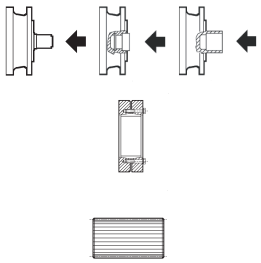
1 valor correspondiente al eje de entrada

2 valor correspondiente al eje de salida

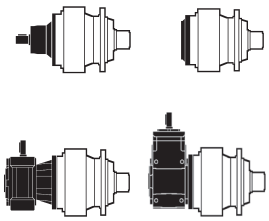
Símbolo referido a los pesos de los reductores.

Las columnas con este símbolo indican el número de la página donde figuran las dimensiones.

El número indicado en este símbolo corresponde al número de la página de referencia.



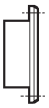
Estos símbolos muestran el punto de montaje de los accesorios.



Las partes en negro de estos símbolos muestran la colocación de las entradas de los reductores.

El símbolo de la llave asociado a un número indica el par de apriete de los tornillos del aro cónico de apriete.

Freno negativo de discos múltiples.



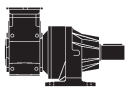
Predisposición para motor hidráulico.

Tapa brida para de entrada estándar.

Ejecución en línea.

Ejecución angular.

Ejecución combinada con reductor de tornillo sin fin.



Ejecución combinada con reductor de ejes ortogonales.

## 2 INTRODUCCIÓN

BONFIGLIOLI RIDUTTORI presenta en este catálogo su gama de reductores epicicloidales modulares de la serie 300.
Esta serie ha sido ampliada con nuevos tamaños, aportación de mejoras técnicas así como la extensión a los tamaños superiores de la modularidad total. Esta característica constructiva se traduce tanto en una mejor flexibilidad productiva interna como en la posibilidad de obtener en breve tiempo productos con los tamaños y funcionalidad requeridos, ya sea directamente desde fábrica o a través de las filiales pertenecientes a la organización de ventas BONFIGLIOLI ubicadas en numerosos países del mundo.

Los reductores están verificados siguiendo los siguientes estándares:

ISO 6336 : 2006 - Metodo B para los engranajes
ISO 281 para los cojinetes
DIN 743 : 2012 para los ejes

## 3 CARACTERÍSTICAS

La serie 300 es una gama de reductores epicicloidales multifunción accionables por motores hidráulicos y eléctricos. Sus características básicas son:

• 20 tamaños

• par de salida hasta 1.286.700 Nm

• potencias transmisibles hasta 1050 kW

• relaciones de 1:3,4 a 5234

• configuración:
- en linea, de 1 a 4 etapas de reducción
- angular (primer tren con grupo cónico Gleason) de 2 a 4 etapas

• ejecuciones:
- en línea
- angular (con primera etapa realizada con par cónico Gleason)

• ejecución para montaje con brida, con patas pendular

• ejes de salida: con chaveta, estriados, hembra estriados, huecos cilíndricos para montaje pendular con aro cónico de apriete

• predisposición ataque motor para:
- motores eléctricos, según IEC
- motore eléctricos compactos para ejecución en linea hasta el tamaño 307
- motores hidráulicos de los principales fabricantes y según SAE J744C

• ejes de entrada libres

• motorreductores con:
- motores eléctricos IEC
- motores hidráulicos orbitales BONFIGLIOLI TRASMITAL MG

• frenos hidráulicos negativos de estacionamiento para uso con motores hidráulicos

• accesorios para ejes de salida:
- bridas
- piñones
- barra estriada
- aros cónicos de apriete

**Otras características constructivas son:**

• elevada relación par transmisible / dimensiones de empacho

• gran capacidad para soportar cargas radiales y axiales sobre los ejes de salida gracias a la utilización, en las versiones H y P de rodamientos de rodillos cónicos

• rendimientos elevados

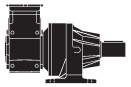
• conexiones entre las piezas internas mediante perfiles estriados, sin utilización de chavetas

• etapas de reducción con portaplanetarios flotantes para obtener la máxima distribución de las cargas entre los engranajes planetarios

• cajas de fundición esferoidal.

**Ejecuciones**

(A 1)

| Ejecución | Potencia | Par | Relación de reducción | Rendimiento | Rumorosidad |
|---|---|---|---|---|---|
| | $0.25 \le P_n$ [kW] $\le 55$ | $M_{2REF} \le 1286700$ Nm | $3.4 \le i \le 2916$ | Elevado | Media |
| | $0.25 \le P_n$ [kW] $\le 55$ | $M_{2REF} \le 656000$ Nm | $7 \le i \le 953$ | Elevado | Media |
| | $0.12 \le P_n$ [kW] $\le 22$ | $M_{2REF} \le 656000$ Nm | $370 \le i \le 5234$ | Medio | Baja |
|  | $0.12 \le P_n$ [kW] $\le 22$ | $M_{2REF} \le 15680$ Nm | $18.7 \le i \le 731$ | Elevado | Baja |

## 4 FORMAS CONSTRUCTIVAS

**A** ENTRADA

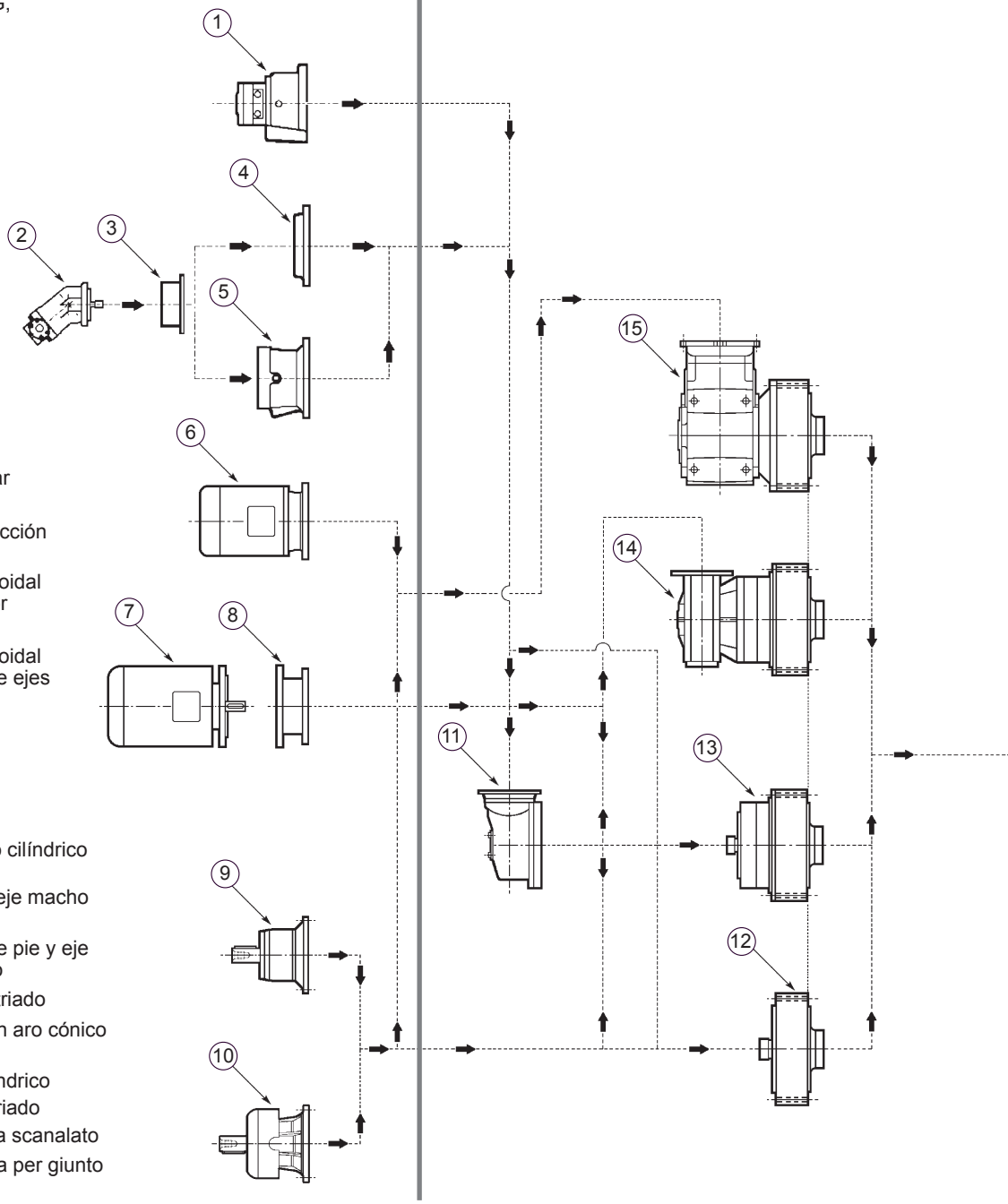
**B** REDUCCIONES

### A

1 Motor hidráulico orbital MG, con y sin freno
2 Motor hidráulico
3 Predisposición motor hidráulico
4 Tapa
5 Freno negativo
6 Motor eléctrico compacto
7 Motor eléctrico IEC
8 Predisposición motor eléctrico
9 Eje de entrada
10 Eje de entrada rápido con ventilación

### B

11 Etapa de reducción angular
12 Una etapa de reducción
13 Dos o más etapas de reducción epicicloidal
14 Etapa de reducción epicicloidal combinada con un reductor de tornillo sin fin
15 Etapa de reducción epicicloidal combinada con reductor de ejes ortogonales



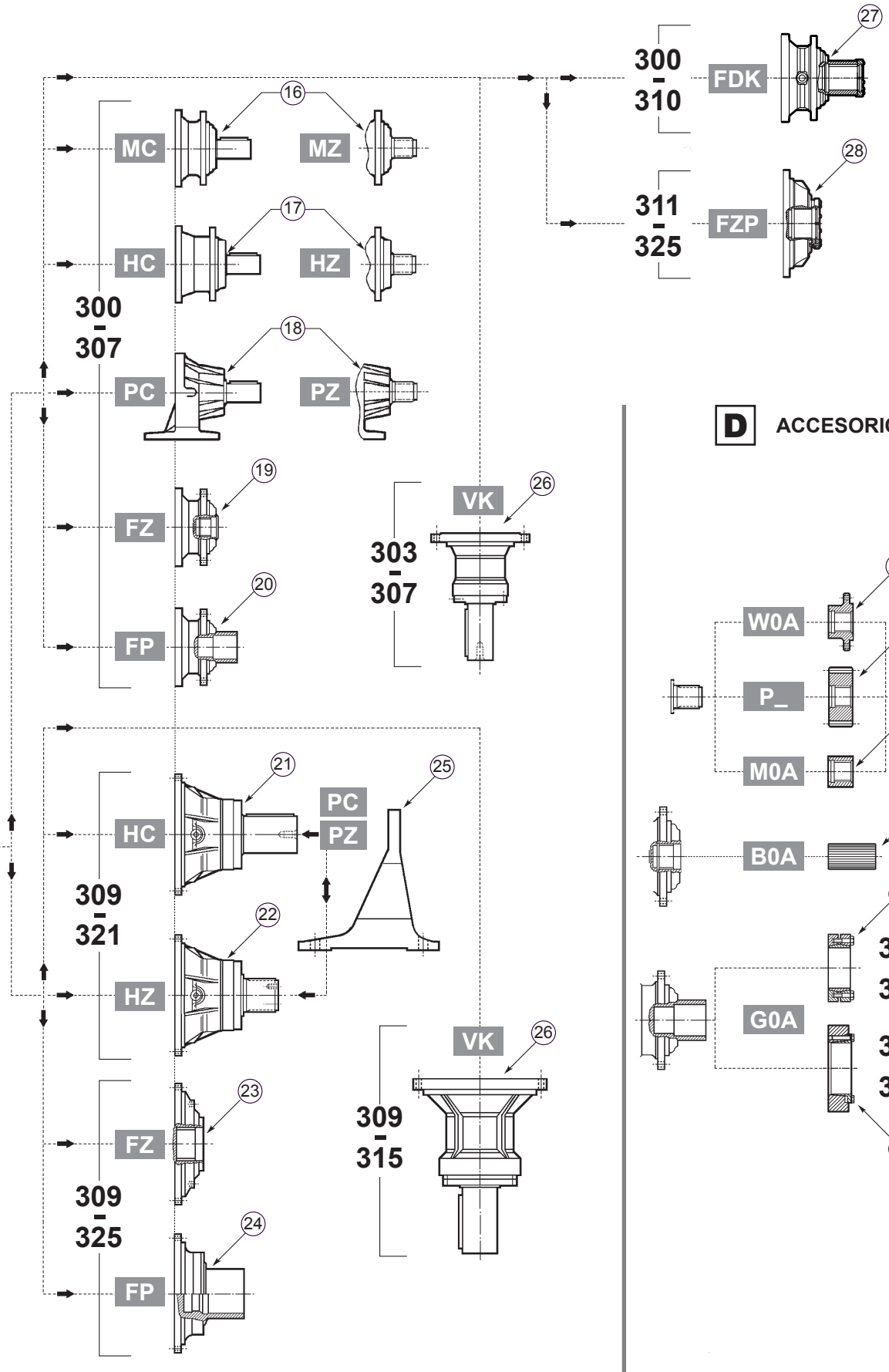

### C

16 **MC/MZ** - Salida eje macho cilíndrico o estriado
17 **HC/HZ** - Salida reforzada eje macho cilíndrico o estriado
18 **PC/PZ** - Salida con soporte pie y eje macho cilíndrico o estriado
19 **FZ** - Salida eje hembra estriado
20 **FP** - Salida eje hembra con aro cónico de apriete
21 **HC** - Salida eje macho cilíndrico
22 **HZ** - Salida eje macho estriado
23 **FZ** - Uscita albero femmina scanalato
24 **FP** - Uscita albero femmina per giunto ad attrito
25 **PC** - Patas
26 **VK** - Salida reforzada con eje cilíndrico para agitadores / mezcladores
27 **FDK** - Eje de salida hembra con doble hueco chavatero
28 **FZP** - Eje de salida hembra estriado con dispositivo de bloqueo axial

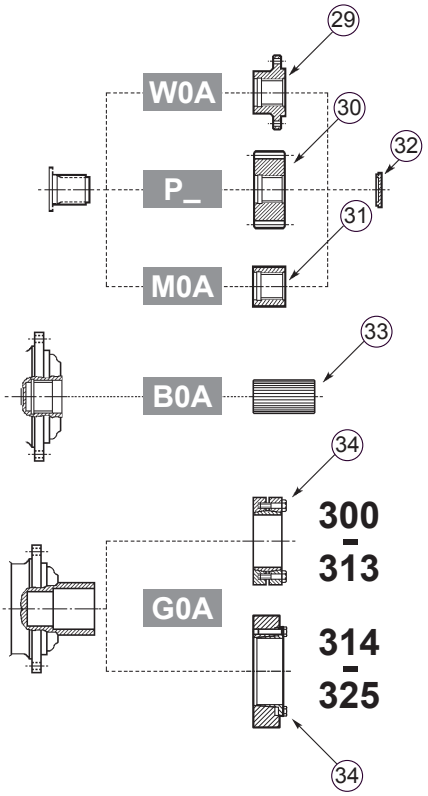
### D

29 **W0A** - Brida
30 **P_** - Piñón
31 **M0A** - Manguito liso
32 Arandela de fijación
33 **B0A** - Barra estriada
34 **G0A** - Aro cónico de apriete

## C SALIDAS



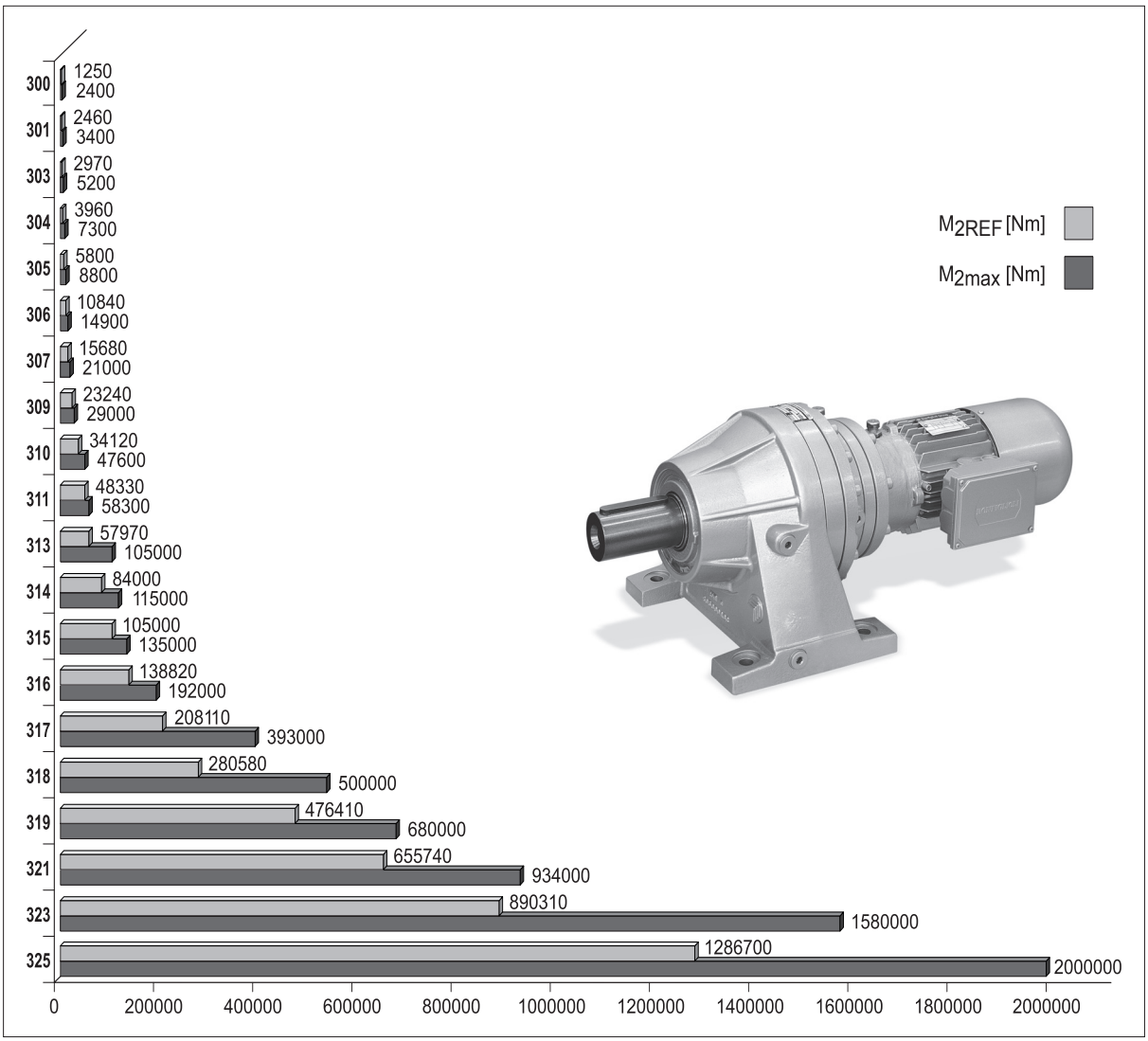

## D ACCESORIOS



Los párrafos siguientes presentan una serie de informaciones sobre los parámetros indispensables para la selección y la correcta utilización de los motorreductores.

## 5 PAR DE SALIDA

(A 2)




### 5.1 Par de referencia $M_{2REF}$ [Nm]

Es el dato identificativo del tamaño y coincide con el valor máximo del par nominal $M_{n2}$ por un factor de duración $n_2$ x h = 10000 en la configuración de una sola etapa de reducción (L1).

### 5.2 Par nominal $M_{n2}$ [Nm]

Es el par trasmisible del reductor con carga uniforme y en la condición indicada en el método de cálculo.

### 5.3 Par máximo $M_{2max}$ [Nm]

Es el valor de par máximo en la salida soportable por el reductor en condiciones estáticas o casi estáticas. Se considera este valor como un par punta instantáneo o como par de arranque.
Los valores reportados en la tabla son válidos solo en la versión de salida con eje estriado (accesorios excluidos).

### 5.4 Par resistente $M_{r2}$ [Nm]

Representa el par solicitado por la aplicación y deberá ser siempre igual o inferior al par de salida nominal $M_{n2}$ del reductor seleccionado.

## 6 POTENCIA

### 6.1 Potencia de entrada $P_{n1}$ [kW]

El tamaño $P_{n1}$ representa la potencia máxima aplicable al reductor en la condición de:
Velocidad de entrada $n_1$
Duración teórica 10000 h
Factor de servicio $f_s$=1

Es necesario que se verifique siempre la fórmula:

$$P_1' \times fs \leq P_1 \quad (1)$$

### 6.2 Potencia a la salida $P_2$ [kW]

Este valor representa la potencia transmitida a la salida del reductor.Se puede calcular mediante las siguientes fórmulas:

Para los valores de la eficiencia $\eta_d$ ver tabla (A3).

$$P2 = P1 \times \eta d \quad (2)$$

$$P_2 = \frac{M_{r2} \times n_2}{9550} \quad (3)$$

### 6.3 Potencia térmica $P_t$ [kW]

Este parámetro indica el límite térmico del reductor. Los valores de la potencia térmica se enumeran en las tablas de datos de reductores y motorreductores y representa la potencia mecánica que puede ser transmitida en servicio continuo con una velocidad de entrada n1 y a una temperatura ambiente de 20ºC, sin que la temperatura del aceite supere los 85-90 ºC y por tanto la temperatura en la superficie del reductor los 75-80 ºC, en ausencia de un sistema de enfriamiento auxiliar.

## 7 RENDIMIENTO

### 7.1 Rendimiento dinámico $\eta_d$

Es el resultado de dividir la potencia de salida $P_2$, por la potencia de entrada $P_1$, según la relación:

$$\eta_d = \frac{P_2}{P_1} \quad (4)$$

Los valores indicativos de rendimiento vienen reflejados en la tabla (A3) siguiente:

(A 3)

| N° etapas de reducción | Ejecución | | |
|---|---|---|---|
| | Epicicloidal | Combinado con reductor tornillo sin fin | Combinado con reducción angular |
| 1 | 0.97 | — | — |
| 2 | 0.94 | 0.73 | — |
| 3 | 0.91 | 0.70 | 0.91 |
| 4 | 0.88 | — | — |

## 8 RELACIÓN DE REDUCCIÓN I

Es la relación entre la velocidad de entrada y la velocidad de salida del reductor.

$$i = \frac{n_1}{n_2} \quad (5)$$

## 9 VELOCIDAD ANGULAR

### 9.1 Velocidad en entrada $n_1$ [min$^{-1}$]

Es la velocidad a la que se acciona el reductor.
Coincide con la velocidad del motor en el caso en que se conecta al motor directamente.
La velocidad de entrada no debe de sobrepasar los valores $n_{1max}$ indicados en las tablas de datos técnicos de los reductores.

### 9.2 Velocidad en salida $n_2$ [min$^{-1}$]

Está en función de la velocidad de entrada $n_1$ y de la relación de reducción i, según la ecuación:

$$n_2 = \frac{n_1}{i} \quad (6)$$

## 10 FACTOR DE SERVICIO $f_S$

Es la relación entre la potencia transmisible por el reductor en condiciones nominales y al potencia del motor eléctrico instalado.

$$f_S = \frac{P_{n1}}{P_1} \quad (7)$$

## 11 FACTOR DE SERVICIO REQUERIDO EN FUNCIÓN DE LA APLICACIÓN $f_S$'

Es un factor que define el tipo de aplicación. Tiene en cuenta con bastante aproximación la variabilidad de la carga a la que es sometido el reductor en un determinado tipo de servicio. Además, también tiene en cuenta el tipo de accionamiento del reductor, motor eléctrico, hidráulico, etc.
La tabla (A4) es un indicativo para la selección del factor de servicio más adecuado en función del tipo de aplicación y del tipo de motor de accionamiento.

(A 4)

| Factor de servicio $f_S$' requerido en función de la aplicación | | | | | | |
|---|---|---|---|---|---|---|
| Tipo de carga | N° arranques/ hora<br>**z** | Duración total de funcionamiento (h) | | | | |
| | | ≤ 5000 | 10000 | 15000 | 25000 | 50000 |
| | | Duración de funcionamiento diaria (h) | | | | |
| | | h < 4 | 4 < h < 8 | 8 < h < 12 | 12 < h < 16 | 16 < h < 24 |
| Uniforme | Z < 10 | 0.90 | 1.00 | 1.15 | 1.30 | 1.60 |
| | 10 < Z < 30 | 0.95 | 1.15 | 1.30 | 1.50 | 1.80 |
| | 30 < Z < 100 | 1.00 | 1.25 | 1.45 | 1.60 | 2.00 |
| Variable con choques moderados | Z < 10 | 1.00 | 1.25 | 1.45 | 1.60 | 2.00 |
| | 10 < Z < 30 | 1.10 | 1.40 | 1.60 | 1.80 | 2.20 |
| | 30 < Z < 100 | 1.20 | 1.50 | 1.70 | 2.00 | 2.40 |
| Variable con choques fuertes | Z < 10 | 1.20 | 1.50 | 1.70 | 2.00 | 2.40 |
| | 10 < Z < 30 | 1.30 | 1.60 | 1.80 | 2.10 | 2.60 |
| | 30 < Z < 100 | 1.40 | 1.75 | 2.00 | 2.30 | 2.80 |

## 12 FACTOR DE DURACIÓN $F_{h1}$, $F_{h2}$

Es un factor que resulta de multiplicar la velocidad angular en entrada $n_1$ o en salida $n_2$ por las horas funcionamiento efectivo h, excluyendo los tiempos de reposo.

$$F_{h1} = (n_1 \times h) \quad (8)$$

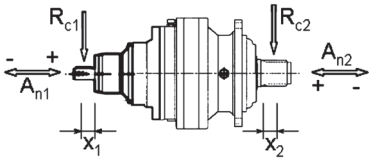
$$F_{h2} = (n_2 \times h) \quad (9)$$

El factor de duración es directamente proporcional al número de revoluciones que realizará el reductor durante todo el servicio.

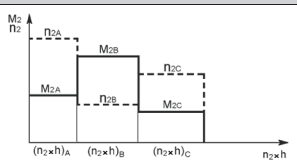
# 13 SELECCIÓN

| Bonfiglioli power, control and green solutions | **DATOS TÉCNICOS REQUERIDOS PARA LA SELECCIÓN DE LA SERIE 300** | Nr: |
|---|---|---|
| | | dato: |
| | | Rev_ dato: |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ***A )*** | ***DATOS GENERALES*** | | | | | | | |
| # | 1 | | Empresa / Cliente | | | | | | | |
| # | 2 | | Contacto | | | | | | | |
| # | 3 | | Filial / Distribuidor | | | | | | | |
| # | 4 | | Cantidad requerida | | | | | | | |
| | 5 | | Plazo de entrega | | | | | | | |
| | | ***$B_1$ )*** | ***MOTOR ELECTRICO*** | | | ***$B_2$ )*** | ***MOTOR HIDRÁULICO*** | | | |
| | 6 | | Tipo de motor | | | | | | | |
| # | 7 | $P_{n1}$ | Potencia nominal del motor | | [kW] | V | Cilindrada | | [cm³] | |
| # | 8 | $P_{r1}$ | Potencia requerida del motor | | [kW] | Δp | Max descenso de presión | | [bar] | |
| | 9 | $n_1$ | Velocidad de entrada | | [min-1] | Q | Max caudal de aceite | | [l/min] | |
| | 10 | | Número de polos | | | | | | | |
| | 11 | | Montaje del motor: B3 - B5 - B14 | | | | | | | |
| | | ***C )*** | ***REDUCTOR EPICICLOIDAL*** | | | | | | | |
| # | 12 | | Configuración del reductor | | | | | | | |
| # | 13 | i | Relación de reducción | | | | | | | |
| # | 14 | $n_2$ | Velocidad de salida | | [min-1] | | | | | |
| # | 15 | $M_{r2}$ | Par de salida solicitado | | [Nm] | | | | | |
| # | 16 | $M_{p2}$ | Par pico solicitado en la salida | | [Nm] | | | | | |
| # | 17 | $f_S$ | Factor de servicio requerido | | | | | | | |
| | 18 | | Sentido de rotación del eje de salida [vista frontal ]: | | **CW** | | **CCW** | | | |
| # | 19 | $L_{10H}$ | Vida de los cojinetes | | [h] | | | | | |
| | 20 | | Evida de los engranajes | | [h] | | | | | |
| | 21 | $SF_{min}$ | Seguridad a pide de diente | | Norma de referencia (ISO preferiblemente) | | | | | |
| | 22 | $SH_{min}$ | Seguridad al flanco del diente | | Norma de referencia (ISO preferiblemente) | | | | | |
| | | ***D )*** | ***CARGAS ADICIONALES*** | | | | | | | |
| | 23 | $R_{c2}$ | Carga radial en el eje de salida | | [N] | | | | | |
| | 24 | $x_2$ | Distancia de aplicaicón de la carga desde el resalte del eje | | [mm] | | | | | |
| | 25 | $R_{c1}$ | Carga Radial en el eje de entrada | | [N] | | | | | |
| | 26 | $x_1$ | Distancia de aplicaicón de la carga desde el resalte del eje | | [mm] | | | | | |
| | 27 | $A_{n2}$ | Carga axial en el eje de salida ( + / - ) | | [N] | | | | | |
| | 28 | $A_{n1}$ | Carga axial en el eje de entrada ( + / - ) | | [N] | | | | | |
| | | ***E )*** | ***APLICACIÓN*** | | | | | | | |
| # | 29 | | Tipo de aplicación | | | | | | | |
| | 30 | | Ciclo de trabajo | Tiempo de ciclo % | Tiempo de ciclo horas | Par a la salida del reductor [Nm] | Velocidad a la salida del reductor [min-1] | | | |
| | | | | ,,,, | ,,,, | | | | | |
| | | | | ,,,, | ,,,, | | | | | |
| | | | | ,,,, | ,,,, | | | | | |
| | | | | ,,,, | ,,,, | | | | | |
| | | | | ,,,, | ,,,, | | | | | |
| | 31 | | Notas sobre el Ciclo de trabajo : | | | | | | | |
| | 32 | | Tipo de servicio | **S1** | **S2** | **S3** | **S4-S8** | | | |
| # | 33 | $T_{AMB}$ | Rango de temperatura ambiente | | [°C] | | | | | |
| | | ***F )*** | ***OPCIONES O REQUISITOS ADICIONALES*** | | | | | | | |
| | 36 | | Lubricación | | | | | | | |
| | 37 | | Sistemas de refrigeración auxiliares | | | | | | | |
| | 38 | | Pintura de protección | | | | | | | |
| | 39 | | Solicitud específica de test | | | | | | | |
| | | ***G )*** | ***NOTAS*** | | | | | | | |
| | 40 | | Notas y requisitos añadidos solicitados por clientes : | | | | | | | |



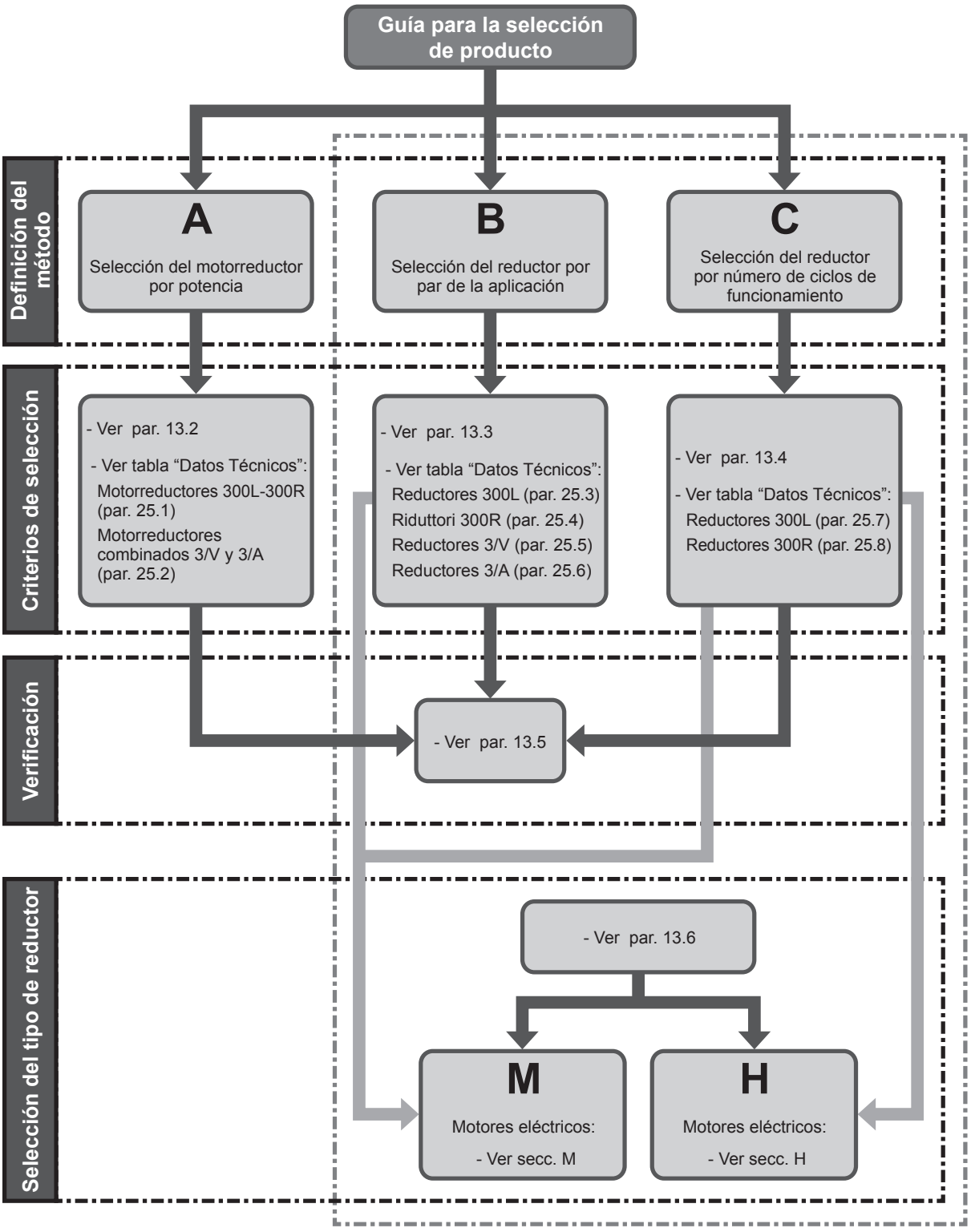

+ = empujar
- = tirar




# Obligatorio para la selección

Una copia de la misma, cumplimentada debidamente, puede ser enviada a nuestra Organización de ventas para la selección del reductor más idóneo según el tipo de aplicación.

## 13.1 GUÍA DE SELECCIÓN DE PRODUCTO




**N.B.**
**Los criterios de selección y los datos técnicos indicados en este catálogo no son válidos para todas las aplicaciones, como por ejemplo sistemas de elevación, donde el reductor funciona como órgano de seguridad hacia las personas y/o objetos.**
**En este caso la selección del reductor debe ser hecha con un criterio específico, y eventualemente en acuerdo a la normativa vigente de seguridad , por lo que es necesario contactar con el Servicio Técnico de BONFIGLIOLI.**

## 13.2 METODO A (Selección de Motoreductor por la Potencia)

En base al tipo de aplicación definir:
a) El factor de servicio requerido $\mathbf{f_S'}$ (ver tabla A4);

b) La potencia necesaria en el accionamiento:

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta_d} \quad (10)$$

La tabla (A3) muestra los valores indicativos de referencia de rendimiento ηd para varrios tipos de reducción.

c) Disponiendo del valor de potencia $\mathbf{P_{r1}}$ previamente calculado y de la velocidad requerida en el eje de salida $\mathbf{n_2}$, consultar la tabla de selección motorreductor identificando la tabla relativa a la potencia $\mathbf{P_n}$ normalizada mayor o igual a $\mathbf{P_{r1}}$:

$$P_n \geq P_{r1} \quad (11)$$

Si no se indica lo contrario, la potencia $\mathbf{P_n}$ del motor especificado en catálogo hace referencia al servicio continuo S1.
Para los motores utilizados en servicios diferentes del S1, puede ser conveniente indentificar el tipo de servicio previsto con respecto a la Norma CEI 2-3/IEC 60034-1.
En particular, para los servicios de S2 a S8 y para el tamaño de motor igual o inferior a 132, es posible obtener un aumento de la potencia respecto a la prevista para servicio continuo.
En este caso las condiciones a satisfacer serán:

$$P_n = \frac{P_{r1}}{f_m} \quad (12)$$

El factor de aumento $\mathbf{f_m}$ es obtenido de la tabla (A5).

(A 5)

| | SERVICIO | | | | | | |
|---|---|---|---|---|---|---|---|
| | **S2** | | | **S3*** | | | **S4-S8** |
| | Duración del ciclo | | | Relación de intermitencia | | | Contactar |
| | **10** | **30** | **60** | **25%** | **40%** | **60%** | |
| $f_m$ | 1.35 | 1.15 | 1.05 | 1.25 | 1.15 | 1.1 | |

* De todos modos, la duración del ciclo tendrá que ser igual o inferior a 10 minutos; si fuera superior contactar con nuestra Organización de ventas.

La relación de intermitencia: ver fórmula (25).

Por último seleccione, en relación a la velocidad del eje de salida $\mathbf{n_2}$, el motoreductor que presenta un factor de servicio $\mathbf{f_S}$ que ganantice la siguiente condición:

$$f_S \geq f_S' \quad (13)$$

⚠ En caso de configurar la salida **FP**, ver apartado de verificación (Cap. 13.5 - punto g).

## 13.3 METODO B (Selección de reductor según par de la aplicación)

En base al tipo de aplicación definir:
a) el factor de servicio requerido $\mathbf{f_S'}$ (ver tabla A4);

b) con el valor de par requerido en salida $\mathbf{M_{r2}}$, determinar el par de cálculo;

$$M_{c2} = M_{r2} \times f_S' \quad (14)$$

c) en base a la velocidad del eje lento $\mathbf{n_2}$ y a la de entrada $\mathbf{n_1}$, calcular la relación de trasmisión;

$$i = \frac{n_1}{n_2} \quad (15)$$

d) disponiendo del valor de $\mathbf{M_{c2}}$ e **i**, consultar la tabla de datos técnicos relativos a la velocidad de entrada $\mathbf{n_1}$, seleccionar una relación de trasmisión más próxima a la calculada y que asegure a la misma vez la condición;

$$M_{n2} \geq M_{c2} \quad (16)$$

Si al reductor se le aplica un motor elétrico, verificar la aplicación consultando la tabla de las predisposiciones posibles.

En caso de configuración de salida **FP**, ver el apartado de verificaicón (Cap. 13.5 - punto g).

## 13.4 METODO C (Selección de reductor para número de ciclos de funcionamiento)

a) Según el tipo de aplicación definir:
- Factor de servicio requerido $\mathbf{f_S'}$ (tabla A4)
- La duración de funcionamiento requerida h
- El tipo de accionamiento hidráulico, eléctrico u otros.

b) Con el valor del par requerido en la salida $M_{r2}$, determinar el par de cálculo:

$$M_{c2} = M_{r2} \times f_S' \quad (17)$$

c) Con la duración de funcionamiento requerida h y la velocidad de salida $n_2$, calcular el factor de duración:

$$Fh_2 = (n_2 \times h) \quad (18)$$

d) Calcular la relación de reducción necesaria:

$$i = \frac{n_1}{n_2} \quad (19)$$

e) Seleccionar el tamaño del reductor que con la relación más cercana a la calculada satisfaga la siguiente condición:

$$M_{c2} \leq M_{n2} \quad (20)$$

$$Fh_2 \leq (n_2 \times h) \quad (21)$$

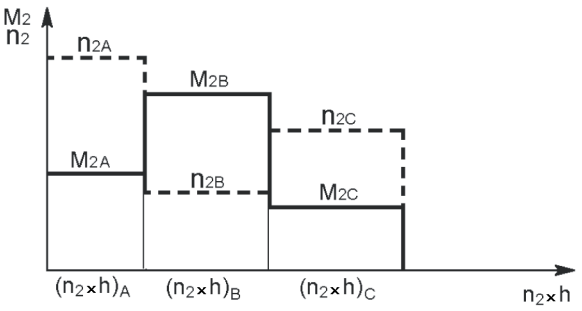
donde $M_{n2}$ y $F_{h2}$ son los valores indicados en las tablas de datos técnicos de cada tamaño de reductor.

En el caso de aplicaciones caracterizadas por la existencia de variaciones notables del par resistente $M_{r2}$ y de la velocidad $n_2$, puede realizarse una selección previa más aproximada teniendo en cuenta un par resistente equivalente, dado por:

$$M_{r2} = \sqrt[4]{\frac{(n_2 \times h)_A \times M_A^4 + (n_2 \times h)_B \times M_B^4 + (n_2 \times h)_C \times M_C^4 + .....}{(n_2 \times h)_A + (n_2 \times h)_B + (n_2 \times h)_C + .....}} \quad (22)$$

referido a:

(A 6)




y calculando el factor de duración Fh con:

$$Fh_{calc} = (n_2 \times h)_A + (n_2 \times h)_B + (n_2 \times h)_C + ... \quad (23)$$

Seguir después el mismo procedimiento indicado en los apartados d) y e).

En el caso de configuración salida **FP**, ver apartado de verificación (Cap. 13.5 - punto g).

## 13.5 VERIFICACIONES

Una vez efectuada la selección correcta, se recomienda proceder a las siguientes verificaciones:

**a) Potencia térmica**

Asegurarse de que la potencia térmica del reductor, indicada en las tablas de datos técnicos, tenga un valor igual o mayor a la potencia necesaria para la aplicación según la ecuación (24); en caso contrario escoger un reductor de tamaño superior o prever un sistema auxiliar de refrigeración.
Cuando el ciclo de trabajo se caracteriza por cortos períodos de funcionamiento y el resto de tiempo es suficiente para que el equipo se enfríe, la potencia térmica es muy poco significativa y puede ser omitida del cálculo.
Para temperatura ambiente diferente de 20 ºC, ciclo de trabajo intermitente y velocidad de accionamiento $n_1$ distinta a la indicada como referencia en las tablas, se debe corregir la potencia térmica $P_t$ en función del factor térmico $f_t$ y/o el factor de velocidad $f_v$ dados en la tabla (A7).
Por último, verificar siempre que se satisface la siguiente condición:

$$P_{r1} \leq P_t \times f_t \times f_v \quad (24)$$

(A 7)

| $f_t$ | | | | | |
|---|---|---|---|---|---|
| $t_a$ **max.** [°C] | Servicio continuo | Servicio intermitente | | | |
| | | Relación de intermitencia % (I) | | | |
| | | 80 | 60 | 40 | 20 |
| 10 | 1.2 | 1.3 | 1.6 | 1.8 | 2.0 |
| 20 | 1.0 | 1.1 | 1.3 | 1.5 | 1.7 |
| 30 | 0.9 | 1.0 | 1.2 | 1.3 | 1.5 |
| 40 | 0.7 | 0.8 | 0.9 | 1.0 | 1.2 |
| 50 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |

| $n_1$ | $f_v$ |
|---|---|
| 750 | 1.5 |
| 950 | 1.2 |
| 1500 | 1.0 |
| 2000 | 0.7 |

La relación de intermitencia (I)% se obtiene a partir del tiempo de funcionamiento con carga $t_f$ y el tiempo total ($t_f$ + $t_r$), con $t_r$ = tiempo de reposo, expresado en porcentaje:

$$I = \frac{t_f}{t_f + t_r} \times 100 \quad (25)$$

En caso de que el reductor en la configuración convencional no alcance la potencia térmica y no se verifique la condición anterior (24), se recomienda un ventilador para refrigerar la entrada del eje – especificar código FV__ -. La potencia térmica se muestra a continuación en la tabla.

(A 8)

| Potencia térmica $P_t$ [kW] @ $n_1$= 1450 rpm | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | FV05B | FV06B | FV07A | FV07B | FV010B | FV011B |
| 303 | L1 | | - | - | - | - | - |
| 304 | L1 | 30 | - | - | - | - | - |
| 305 | L1 | 31 | - | - | - | - | - |
| 306 | L1 | - | 45 | - | - | - | - |
| | L2 | 31 | - | - | - | - | - |
| 307 | L1 | - | - | 49 | 49 | - | - |
| | L2 | 36 | - | - | - | - | - |
| 309 | L1 | - | - | 52 | 52 | - | - |
| | L2 | 36 | - | - | - | - | - |
| 310 | L1 | - | - | - | - | 62 | - |
| | L2 | - | 49 | - | - | - | - |
| | L3 | 36 | - | - | - | - | - |
| 311 | L1 | - | - | - | - | - | 62 (*) |
| | L2 | - | - | 53 | 52 | - | - |
| | L3 | 36 | - | - | - | - | - |
| 313 | L1 | - | - | - | - | - | - |
| | L2 | - | - | 57 | 57 | - | - |
| | L3 | 36 | - | - | - | - | - |
| 314 | L2 | - | - | - | - | 67 | - |
| | L3 | - | 52 | - | - | - | - |
| | L4 | 33 | - | - | - | - | - |
| 315 | L2 | - | - | - | - | - | 72 (*) |
| | L3 | - | - | 57 | 57 | - | - |
| | L4 | 36 | - | - | - | - | - |
| 316 | L2 | - | - | - | - | - | 72 (*) |
| | L3 | - | - | 57 | 57 | - | - |
| | L4 | 36 | - | - | - | - | - |
| 317 | L2 | - | - | - | - | - | 77 (*) |
| | L3 | - | - | 62 | 62 | - | - |
| | L4 | 36 | - | - | - | - | - |
| 318 | L3 | - | - | - | - | - | 62 (*) |
| | L4 | - | - | 45 | 45 | - | - |
| 319 | L3 | - | - | - | - | - | 77 (*) |
| | L4 | - | - | 57 | 57 | - | - |
| 321 | L3 | - | - | - | - | - | 87 (*) |
| | L4 | - | - | 62 | 62 | - | - |
| 323 | L4 | - | - | - | - | - | 87 (*) |
| 325 | L4 | - | - | - | - | - | 87 (*) |

| Potencia térmica $P_t$ [kW] @ $n_1$= 1450 rpm | | | |
|---|---|---|---|
| | | | |
| | | FV05B | FV06B |
| 307 | R2 | 52 | - |
| 309 | R2 | 52 | - |
| 310 | R2 (B) | - | 82 |
| | R2 (C) | - | 82 |
| 311 | R2 (B) | - | 102 |
| | R2 (C) | - | 117 |
| | R3 | 58 | - |
| 313 | R2 (B) | - | 102 |
| | R2 (C) | - | 117 |
| | R3 | 58 | - |
| 314 | R3 (B) | - | 82 |
| | R3 (C) | - | 82 |
| | R4 | - | - |
| 315 | R3 (B) | - | 102 |
| | R3 (C) | - | 117 |
| | R4 | 58 | - |
| 316 | R3 (B) | - | 102 |
| | R3 (C) | - | 117 |
| | R4 | 63 | - |
| 317 | R3 (B) | - | 117 |
| | R3 (C) | - | 127 |
| | R4 | 68 | - |
| 318 | R4 (B) | - | 108 |
| | R4 (C) | - | 137 |
| 319 | R4 (B) | - | 122 |
| | R4 (C) | - | 142 |
| 321 | R4 (B) | - | 132 |
| | R4 (C) | - | 152 |

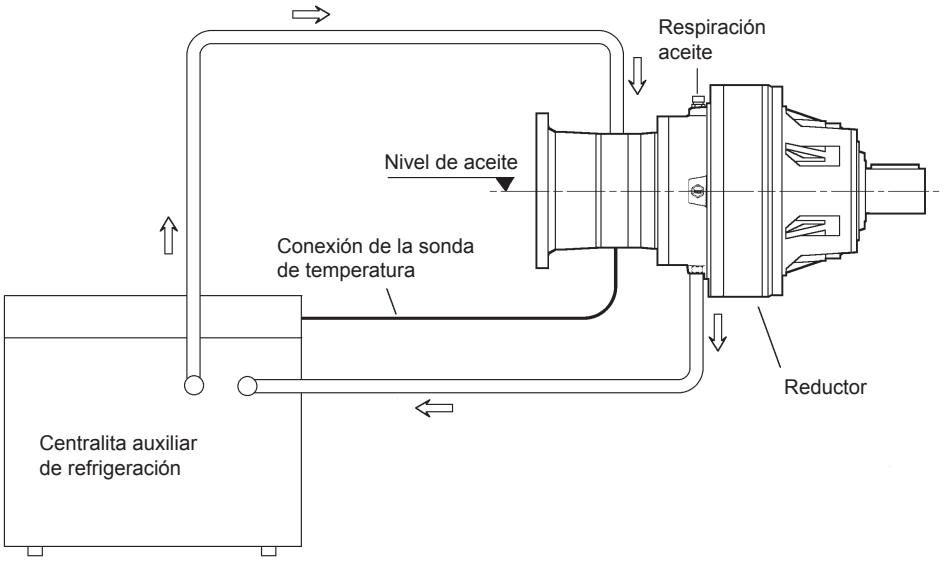
* @ $n_1$ = 1150 rpm

**NOTA: Los valores de potencia térmica indicados en las tablas técnicas correspondientes a cada tamaño, se refieren a las ejecuciones sin freno negativo de discos múltiples.**
**En caso de aplicaciones con freno, contactar con nuestra Organización de ventas.**

### b) Sistemas auxiliares de refrigeracion

Cuando la potencia mecánica transmitida sea superior a la térmica transmisible (ver tablas datos técnicos de los reductores) puede suministrarse el reductor equipado con una centralita de refrigeración.

La centralita autónoma de refrigeración es una unidad compuesta por un intercambiador de calor aire/aceite, una motobomba, un filtro del aceite de refrigeración, un electroventilador y la correspondiente instalación eléctrica, incluyendo la correspondiente protección térmica del motor.
Una característica destacable de la centralita, es su bajo nivel de rumorosidad.




### Datos técnicos

(A 9)

| | | CR1 | CR2 | CR3 |
|---|---|---|---|---|
| Potencia absorbida | [kW] | 0.55 | 0.75 | 1.1 |
| Caudal de la bomba | [l/min] | 13 | 22 | 34 |
| Caudal aire | [$m^3/h$] | 850 | 1500 | 2000 |
| Nivel de ruido a 1 metro | [dB(A)] | 68 | 70 | 75 |
| Peso | [kg] | 24 | 36 | 58 |

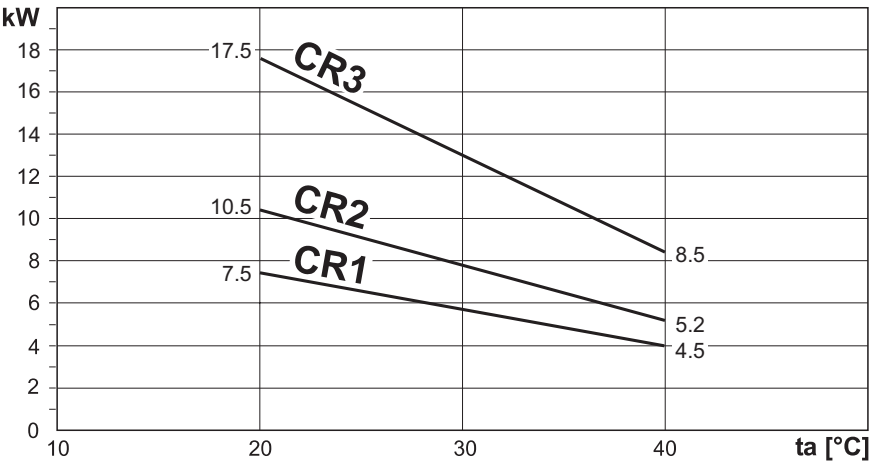
### Criterios de selección

Cuando se ha verificado que la potencia P a transmitir es superior a la potencia térmica $P_t$, calcular la potencia a disipar con la fórmula:

$$P_s = 0.1 \times (P - P_t) \quad (26)$$

Seleccionar el tamaño de la centralita según el diagrama (A10) en función de la temperatura ambiente $t_a$ (20º - 40ºC).
Verificar que la centralita pueda instalarse con el reductor seleccionado (ver tabla A11).
En caso contrario contactar con nuestra red de ventas.

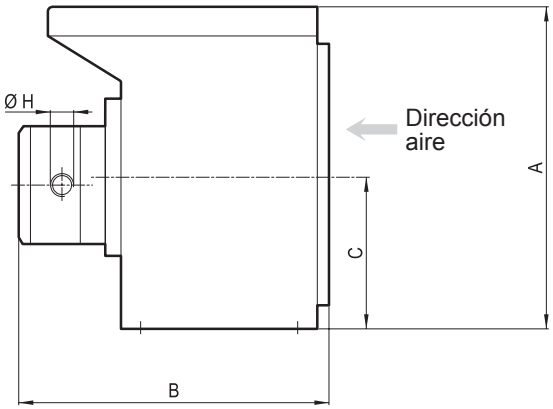
(A 10)

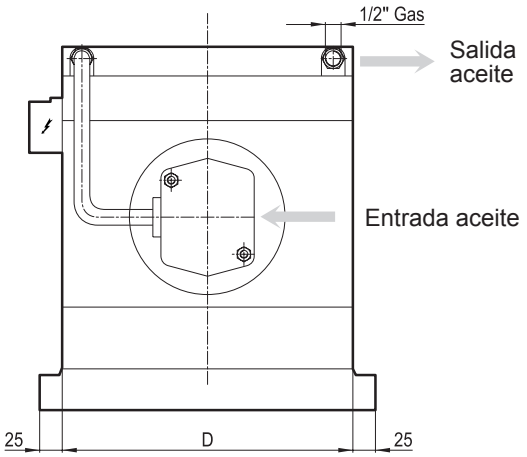


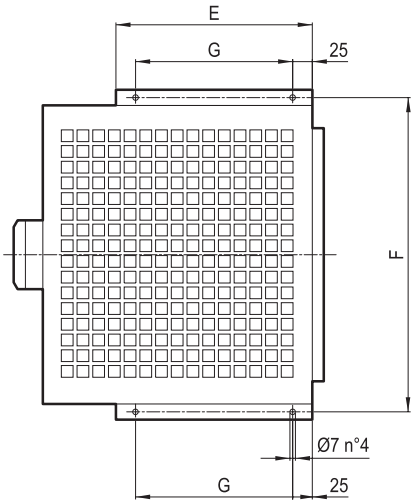
(A 11)

| Reductor | L1 | L2 | L3 | L4 | R2 | R3 | R4 |
|---|---|---|---|---|---|---|---|
| **306** | CR1 | CR1 | — | — | — | — | — |
| **307** | CR1 | CR1 | — | — | CR1 | — | — |
| **309** | CR1 | CR1 | CR1 | — | CR1 | — | — |
| **310** | CR2 | CR1 | CR1 | — | — | CR1 | — |
| **311** | CR2 | CR1 | CR1 | — | CR1 | CR1 | — |
| **313** | CR2 | CR1 | CR1 | — | CR1 | CR1 | — |
| **314** | CR3 | CR2 | CR1 | — | — | CR1 | — |
| **315** | CR3 | CR2 | CR1 | — | — | CR1 | — |
| **316** | CR3 | CR2 | CR1 | — | — | CR1 | — |
| **317** | CR3 | CR2 | CR2 | CR1 | — | — | — |
| **318** | CR3 | CR2 | CR2 | CR1 | — | — | — |
| **319** | CR3 | CR2 | CR2 | CR1 | — | — | — |
| **321** | CR3 | CR2 | CR2 | CR2 | — | — | — |

## Dimensiones




(A 12)

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| **CR1** | 410 | 395 | 193 | 370 | 250 | 400 | 200 | 1/2" Gas |
| **CR2** | 450 | 405 | 203 | 470 | 250 | 500 | 200 | 3/4" Gas |
| **CR3** | 495 | 455 | 225 | 520 | 290 | 550 | 240 | 3/4" Gas |

**c) Par máximo**
Verificar que el par máximo (entendido como punta de carga instantánea o como par de arranque con carga) no supere el valor del par $\mathbf{M_{2máx}}$ admitido por el reductor (A2).

**d) Cargas radiales**
Según el tipo de aplicación definir:
- las cargas radiales que actúan sobre los ejes de entrada y salida, segun la siguiente relación:

$$R_{c1-2} = \frac{2000 \times M_{r1-2} \times K_r}{d} \quad (27)$$

$R_{c1-2}$ = carga radial [N]
$_1$ = en el eje de entrada
$_2$ = en el eje de salida
$M_{r1-2}$ = Par en el eje [Nm]
d = Diametro primitivo [mm] del elemento montado sobre el eje (piñón, engranaje, polea, etc.)
$K_r$ =1 piñón para cadena
$K_r$ =1,25 engranaje
$K_r$ =1,5-2,5 polea para correa trapezoidal

Definir la posición axial X de la carga sobre el eje, entrar con este valor en el diagrama que indica la carga soportable por el reductor $R_{x1}$, $R_{x2}$ y comprobar que cumpla la siguiente relación:

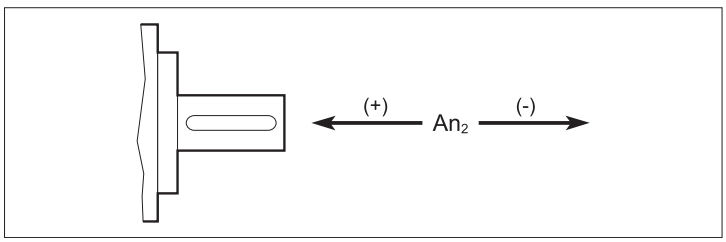
$$R_{c1-2} \leq Rx_{1-2} \times fh_{1-2} \quad (28)$$

donde $fh_{1-2}$ son factores de corrección de las cargas radiales y axiales obtenidas en función del factor de duración $Fh_1$, $Fh_2$ requerido (ver página dedicada a las cargas radiales y axiales admisibles en el capítulo "Dimensiones").

**e) Cargas axiales**
Proceder a verificar la carga axial, cuando esté presente en el eje de salida, de igual forma a como se ha hecho para la carga radial.
Tiene que satisfacerse la siguiente relación:

$$\pm A_{c2} \leq \pm A_{n2} \times fh_2 \quad (29)$$

(A 13)




donde $fh_2$ son factores de corrección de las cargas radiales y axiales obtenidas en función del factor de duración $Fh_2$ requerido (ver páginas dedicadas a las cargas radiales y axiales admisibles en el capítulo "Dimensiones").

Cuando exista una carga axial combinada con una radial, contactar con nuestra Organización de ventas para una oportuna comprobación.

**f) Ejecución VK**
Determinar:
- Carga radial $\mathbf{R_{c2}}$
- Carga axial $\mathbf{A_{c2}}$
- Distancia x de la carga $\mathbf{R_{c2}}$

Leer en el diagrama relativo al reductor, en correspondencia a la distancia C y de la relación $\mathbf{A_{n2}/R_{n2}}$ más próximo al valor $\mathbf{A_{c2}/R_{c2}}$, el valor de la carga radial admisible $\mathbf{R_{x2}}$.
Debe ser verificado:

$$R_{x2} \geq R_{c2} \quad (30)$$

Los valores del diagrama son válidos para:
- velocidad $n_2 = 10\ min^{-1}$
- vida teórica 10000 h

Para valores de velocidad en salida n2, o para vidas diversas, definir:
- factor de velocidad fn2 según la tabla (A14):

(A 14)

| $n_2$ | 1 | 2.5 | 5 | 10 | 15 | 25 | 50 | 100 |
|---|---|---|---|---|---|---|---|---|
| $f_{n2}$ | 2.0 | 1.51 | 1.23 | 1.00 | 0.88 | 0.76 | 0.62 | 0.50 |

- factor de vida fL según la tabla (A15).

(A 15)

| Duración | 2500 h | 5000 h | 10000 h | 15000 h | 25000 h | 50000 h | 100000 h | 100 |
|---|---|---|---|---|---|---|---|---|
| $f_L$ | 0.66 | 0.81 | 1.00 | 1.13 | 1.32 | 1.62 | 2.00 | 0.50 |

Debe ser verificado:

$$R_{x2} \times f_{n2} \geq R_{c2} \times f_L \quad (31)$$

**g) Ejecucción FP**
En la versión pendular el montaje y la motorización del reductor generan respectivamente una fuerza de reacción debida al anclado y una fuerza deribada del peso del motor y/o presencia de un tiro debido a otros elementos unidos.

Su combinación se añade a la condición normal de carga llegando a influir sobre:
• vida de los cojinetes
• resistencia del eje de salida
• condición de apriete de la brida

En el caso en cual haya presente una carga adicional (como en la utilización de un motor de gran tamaño) y/o la selección del reductor monoestadio (con particular atención a la talla del 300 al 307), se aconseja consultar al Servicio Técnico Bonfiglioli.
Por cuanto se refiere a la carga debida a la reacción de anclaje, en la sección dimensional de cada tamaño, vienen indicadas las longitudes mínimas de los brazos de reacción (simple y doble) que garantizas las prestaciones declaradas.

## 13.6 SELECCIÓN DEL MOTOR

### 13.6.1 Motor eléctrico (consultar la sección M del presente catálogo)

a) Conociendo el par $M_{r2}$, las revoluciones $n_2$ y el rendimiento dinámico ηd, deducimos la potencia de

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta_d} \quad [kW] \qquad (32)$$

La tabla (A3) muestra los valores del rendimiento hd correspondientes a las diferentes etapas de reducción de los reductores de la serie 300.

b) Seleccionar en las tablas de datos técnicos de los motores un tamaño con una potencia nominal tal que satisfaga:

$$P_{r1} \leq P_n \qquad (33)$$

Escoger preferiblemente motores de 4 o más polos.

Si no se indica lo contrario, la potencia $P_n$ de los motores indicada en el catálogo está referida al servicio continuo S1. Para motores utilizados en condiciones distintas de S1, será necesario identificar el tipo de servicio previsto con referencia a las Normas CEI 2-3/IEC 34-1. En particular, para los servicios del S2 al S8 y tamaños de motor iguales o inferiores a 132, es posible instalar motores con una mayor potencia respecto a la prevista para el servicio continuo; por lo tanto, la condición a satisfacer será:

$$\frac{P_{r1}}{f_m} \leq P_n \qquad (34)$$

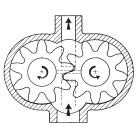
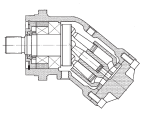
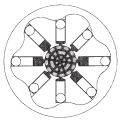
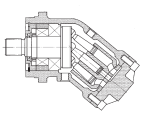
El factor de incremento de la potencia $f_m$ puede extraerse de la tabla (A5).

Para servicios distintos de S1, con un relevante número de arranques/hora, deberá tenerse en cuenta un factor Z (que se puede determinar a través de las indicaciones del capítulo de motores) el cual define el número máximo de arranques específico para la aplicación en estudio.

### 13.6.2 Motor hidráulico (consultar la sección H del presente catálogo)

En función de la aplicación, definir el tipo de motor hidráulico seleccionándolo a partir de la tabla (A16) como primera orientación.

(A 16)

| Tipo de trabajo | Ligero | | Medio | | Pesado | |
|---|---|---|---|---|---|---|
| Presión p [bar] | <175 | | 175 - 200 | | 200 - 450 | |
| Tipo de motor | orbital | engranajes  | de pistones radiales | de pistones axiales  | paletas  | de pistones axiales  |
| Velocidad | media ≤ 700 | alta ≤ 3000 | media ≤ 500 | alta ≤ 4000 | baja ≤ 200 | media ≤ 4000 |
| ηmh | 0.80 | 0.85 | 0.95 | 0.93 | 0.93 | 0.93 |
| ηv | 0.90 | 0.87 | 0.95 | 0.95 | 0.95 | 0.95 |

Con los datos característicos en la entrada del reductor:

- par en entrada $M_{r1}$ [Nm]
- velocidad en entrada $n_1$ [$min^{-1}$]

y con la presión p [bar] admitida por el circuito hidráulico, determinar la cilindrada del motor hidráulico con la siguiente fórmula:

$$V_c = \frac{20 \times p \times M_{r1}}{p \times \eta mh} [cm^3] \quad (35)$$

donde ηmh es el rendimiento mecánico hidráulico del motor (tabla A16)

Seleccionar un tamaño de motor que tenga una cilindrada V tal que:

$$V_c \leq V \quad (36)$$

Calcular el caudal necesario para alimentar el motor hidráulico:

$$Q_1 = \frac{V \times n_1}{\eta_v \times 1000} [l/min] \quad (37)$$

donde $\eta_v$ es el rendimiento volumétrico.
Para motores hidráulicos orbitales de producción BONFIGLIOLI TRASMITAL consultar la sección H del presente catálogo. Para otros tipos de motores hidráulicos, consultar sus respectivas documentaciones técnicas.

## 14 INSTALACIÓN

Es muy importante para la fiabilidad y el buen funcionamiento del reductor, respetar algunas normas para su correcta instalación.
Las normas aquí descritas, sirven como primera indicación para la instalación del reductor o motorreductor.
Para una correcta y efectiva instalación, atenerse al Manual de instalación, uso y mantenimiento de los reductores de la serie 300 que nuestra organización de ventas puede proporcionarle.

**a) Fijación:**
– Apoyar el reductor a una estructura suficientemente rígida, con las superficies planas de acoplamiento mecanizadas.

– Las superficies de acoplamiento, especialmente para reductores montados con brida y con ejes de salida hembra estriados, deben tener tolerancias geométricas precisas (consular el Manual de Uso y Mantenimiento disponible en www.bonfiglioli.com)

– Para algunos tamaños de reductor, en aplicaciones con elevadas cargas radiales en la salida, se recomienda el montaje con brida, para poder utilizar los dos diámetros de centraje que dichos reductores poseen (consultar el Manual de Uso y Mantenimiento disponible en www.bonfiglioli.com).

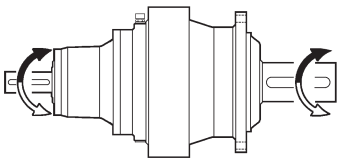
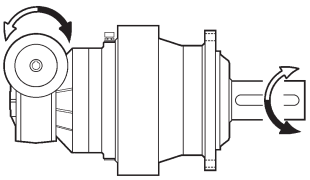
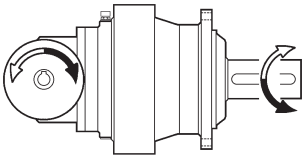
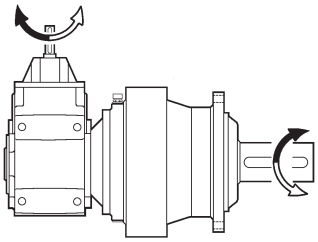
– Comprobar que el reductor esté previsto para la posición de montaje requerida.

– Fijar el reductor con tornillos de resistencia indicada en el manual de Uso y mantenimiento (disponible en www.bonfiglioli.com) y apretarlos a los valores de par de apriete indicados en las tablas correspondientes.

**b) Acoplamientos**
– Montar los acoplamientos de conexión en la entrada y la salida del reductor evitando golpear con martillo o similares.
Utilizar los tornillos de fijación y los taladros roscados previstos en los ejes. Antes de montarlos limpiar los ejes a fin de eliminar grasas o posibles protectores existentes.

– Sentido de rotación.
En el conexionado del motor, tener presente que los reductores tienen los sentidos de rotación entrada/salid, como está indicado en la tabla siguiente::

(A 17)

| | | | |
|---|---|---|---|
| En línea |  | Combinado con reductores tornillo sin fin |  |
| Angular |  | Combinado con reductores de ejes ortogonales |  |

**c) Pintura**
– Utilizar pinturas compatibles con la de fondo de los reductores, ver apartado: “condiciones de entrega”. Durante el pintado, deben protegerse los retenes presentes en los ejes. La pintura puede resecar y provocar pérdidas de aceite.

**d) Lubricación**
– Antes de la puesta en marcha, llenar el reductor con el lubricante recomendado (ver el Manual de Uso y Mantenimiento disponible en www.bonfiglioli.com) hasta el nivel correcto.
El nivel se comprueba a través del correspondiente tapón o visor suministrado en cada reductor dependiendo de la posición de montaje especificado en la fase de pedido.

NOTA: en los reductores combinados la lubricación de las etapas epicicloidales es independiente a la del reductor tornillo sin fin (serie 3/V), u ortogonal (serie 3/A).
Los reductores realizados con lubricación permanente de aceite sintético no necesitan de la operación arriba descrita.

## 15 MANTENIMIENTO

Controlar el apriete de los tornillos después de 50 horas de funcionamiento. Efectuar el primer cambio de aceite aproximadamente después de 100 - 150 horas de funcionamiento.
Posteriormente, efectuar el cambio cada 2000 - 3000 horas, dependiendo de su utilización o aplicaciones, o al menos una vez al año. De todas formas es una buena norma, controlar el nivel una vez al mes con funcionamiento intermitente o más frecuentemente en funcionamientos continuos, añadiendo aceite si fuera necesario.

## 16 ALMACENAJE

El correcto almacenaje de los productos recibidos requiere llevar a término las siguientes acciones:

a) Excluir áreas abiertas, zonas expuestas a la intemperie o con excesiva humedad.

b) Interponer siempre entre el suelo y los productos una superficie plana de madera o de otra naturaleza que impida el contacto directo con el suelo.

c) Para períodos de almacenaje superiores a 60 días, las superficies mecanizadas objeto de unión con otras, como bridas, ejes y acoplamientos, deben ser protegidas con un producto antioxidante adecuado.

d) Para períodos de almacenaje superiores a 6 meses, de los productos, se deben efectuar las siguientes operaciones:
- Recubrir con grasa las partes externas y las de unión mecanizadas para evitar la oxidación.
- Colocar los reductores con el tapón de respiración en la posición más alta y llenarlos de aceite en su totalidad.
Los reductores, antes de su utilización, deberán llenarse con la cantidad correcta del lubricante previsto.

## 17 CONDICIONES DE SUMINISTRO

Los reductores se suministran como sigue:

a) predispuestos para ser instalados en la posición de montaje especificada en el pedido;

b) sin lubricante y protegidos internamente con una película del aceite, usado para la prueba final;

c) si una clase específica de protección no es solicitada, los productos están previstos con protección superficial minima de clase C2 (UNI EN ISO 12944-2) obtenida con pintura de base antioxidante al agua de color gris Ral 7042. Las superficies de unión no se pintan;

d) probados según especificaciones internas;

e) apropiadamente embalados;

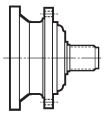
f) provistos de tuercas y tornillos para el montaje de los motores eléctricos versión IEC o motores hidráulicos.

g) dotados de carga de lubricante para aquellos con lubricación permanente.

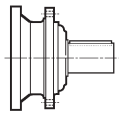
## 18 DESIGNACIÓN REDUCTOR

# 3 11 L 2 16.7 HZ

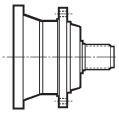
VERSIÓN DE SALIDA



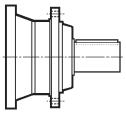
**MZ:** Eje macho estriado



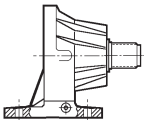
**MC:** Eje macho cilíndrico



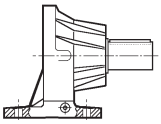
**HZ:** Eje macho reforzado estriado



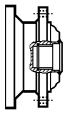
**HC:** Eje macho reforzado cilíndrico



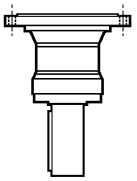
**PZ:** Con patas y con eje macho estriado



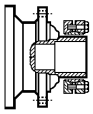
**PC:** Con patas y eje macho cilíndrico



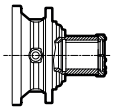
**FZ / FZB:** Eje hembra estriado



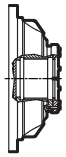
**VK:** Eje cilíndrico reforzado para agitadores y mezcladores



**FP:** Eje hembra cilíndrico, con aro cónico de apriete



**FDK:** Eje hembra con doble hueco chavetero



**FZP:** Eje hembra estriado con con dispositivo de bloqueo axial recomendado para montaje pendular)

RELACIÓN DE REDUCCIÓN

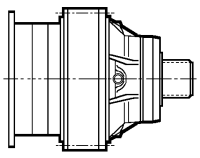
Indicar el valor de la relación (decimales incluidos) expresado en las páginas de datos técnicos
Esim. : 1/5.33 = 5.33  1/44.6 = 44.6  1/131 = 131

N. DE ETAPAS DE REDUCCIÓN

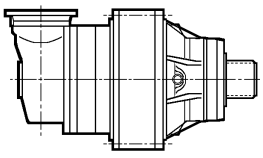
**1, 2, 3, 4**

EJECUCIÓN

**L =** En línea



**R =** Angular



TAMAÑO REDUCTOR

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **00** = 300 | 244 | **05** = 305 | 288 | **10** = 310 | 336 | **15** = 315 | 384 | **19** = 319 | 426 |
| **01** = 301 | 254 | **06** = 306 | 300 | **11** = 311 | 348 | **16** = 316 | 396 | **21** = 321 | 436 |
| **03** = 303 | 264 | **07** = 307 | 312 | **13** = 313 | 360 | **17** = 317 | 406 | **23** = 323 | 446 |
| **04** = 304 | 276 | **09** = 309 | 324 | **14** = 314 | 372 | **18** = 318 | 416 | **25** = 325 | 450 |

SERIE

# 6A S5EC A A W0A ... ...

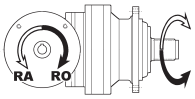
OPCIONES

JUNTAS
STANDARD = NBR
**PV =** fluoro-elastómero

PROTECCIÓN SUPERFICIE
**C2** (estandard)**, C3, C4** 35

DOCUMENTACIÓN
**AC, CC** 36

SÓLO PARA EJECUCIÓN ANGULAR
sentido de giro preferente en la entrada

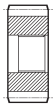



**RA** = Izquierdo
**RO** = Derecho

PINTURA
**RAL7042** (estandard)**, RAL5010, RAL9005, RAL9006, RAL9010** 35

CENTRALITA AUXILIAR DE ENFRIAMIENTO
**CR1, CR2, CR3** 19

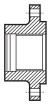
ACCESORIOS EN LA SALIDA


**P...** = Piñones

**B0A =** Barra estriada

**M0A =** Manguito

**G0A =** Aro cónico de apriete


**W0A =** Brida

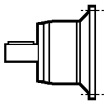
ORIENTACIÓN BRIDA MOTOR 457

POSICIÓN DE MONTAJE 36

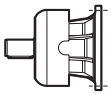
ENTRADA

Sin adaptador de motor

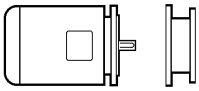
| V9AA | V9AC | V9AE | V9AG | V9AL |
|---|---|---|---|---|
| V9AB | V9AD | V9AF | V9AH | |

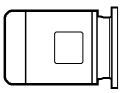

Eje de entrada

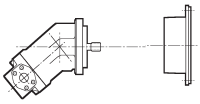
| | V01A | V01B | V05B | V06B | V07A | V07B | V10B | V11B | V15B |
|---|---|---|---|---|---|---|---|---|---|
| diam. | Ø24 | Ø38 | Ø48 | Ø60 | Ø60 | Ø80 | Ø80 | Ø80 | Ø120 |


Eje de entrada rápido con ventilación

| | FV05B | FV06B | FV07A | FV07B | FV10B | FV11B |
|---|---|---|---|---|---|---|
| diam. | Ø48 | Ø60 | Ø60 | Ø80 | Ø80 | Ø80 |

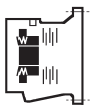

Predisposición para motor eléctrico IEC **P+IEC** (P71...P250)


Motorreductor integrado completo de motor eléctrico compacto (disponible hasta el tamaño 307) **S2, S3, S4**


Predisposición para motor hidráulico **S5AP, COAA, HOBA, ...** 457

Motorreductor con motor hidráulico integrado orbital MG 467

SÓLO PARA ENTRADA CON MOTOR HIDRÁULICO



Freno hidráulico negativo estándar, de discos múltiples

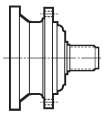
**6** = Tamaño : **4, 5, 6**
**A** = Par de frenado: **A, B, C, ...** 456

Freno hidráulico negativo de discos múltiples para motor orbital 473
**SF** = Sin freno

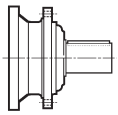
## 19 DESIGNACIÓN REDUCTOR

# 3/V 05 L 3 623 PC

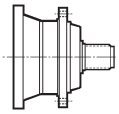
VERSIÓN DE SALIDA



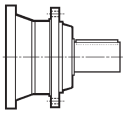
**MZ:** Eje macho estriado



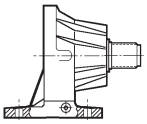
**MC:** Eje macho cilíndrico



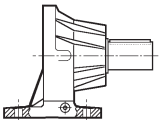
**HZ:** Eje macho reforzado estriado



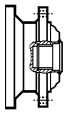
**HC:** Eje macho reforzado cilíndrico



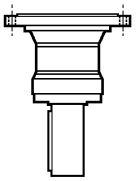
**PZ:** Con patas y con eje macho estriado



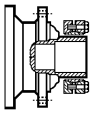
**PC:** Con patas y eje macho cilíndrico



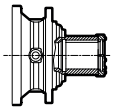
**FZ / FZB:** Eje hembra estriado



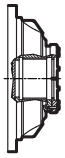
**VK:** Eje cilíndrico reforzado para agitadores y mezcladores



**FP:** Eje hembra cilíndrico, con aro cónico de apriete



**FDK:** Eje hembra con doble hueco chavetero



**FZP:** Eje hembra estriado con con dispositivo de bloqueo axial recomendado para montaje pendular)

RELACIÓN DE REDUCCIÓN

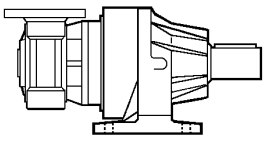
Indicar el valor de la relación (decimales incluidos) expresado en las páginas de datos técnicos
Es. : 1/773 = 773

N. DE ETAPAS DE REDUCCIÓN

**3, 4**

EJECUCIÓN

**L =** Combinado serie 300, 2 o 3 etapas epicicloidales + tornillo sin fin

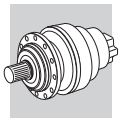


TAMAÑO REDUCTOR

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **00** = 3/V 00 | 248 | **05** = 3/V 05 | 292 | **10** = 3/V 10 | 340 | **15** = 3/V 15 | 388 | **19** = 3/V 19 | 430 |
| **01** = 3/V 01 | 258 | **06** = 3/V 06 | 304 | **11** = 3/V 11 | 352 | **16** = 3/V 16 | 400 | **21** = 3/V 21 | 440 |
| **03** = 3/V 03 | 268 | **07** = 3/V 07 | 316 | **13** = 3/V 13 | 364 | **17** = 3/V 17 | 410 | | |
| **04** = 3/V 04 | 280 | **09** = 3/V 09 | 328 | **14** = 3/V 14 | 376 | **18** = 3/V 18 | 420 | | |

SERIE

Reductores combinados 300 / reductores tornillo sin fin



# P80 B5 AF W0A ...

OPCIONES

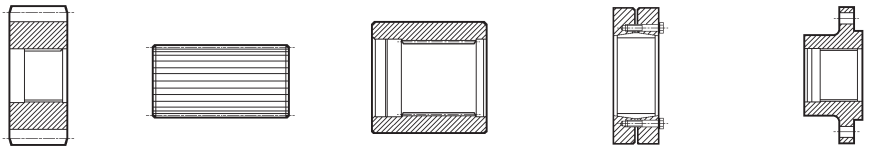
JUNTAS
STANDARD = NBR
**PV =** fluoro-elastómero

PROTECCIÓN SUPERFICIE
**C2** (estandard)**, C3, C4** 35

PINTURA
**RAL7042** (estandard)**, RAL5010, RAL9005, RAL9006, RAL9010** 35

DOCUMENTACIÓN
**AC, CC** 36

ACCESORIOS EN LA SALIDA

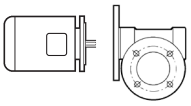


**P...** = Piñones **B0A =** Barra estriada **M0A =** Manguito **G0A =** Aro cónico de apriete **W0A =** Brida

POSICIÓN DE MONTAJE 36

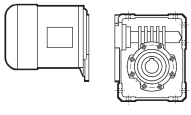
FORMA CONSTRUCTIVA
**B5, B14**

ENTRADA



Predisposición para motor léctrico IEC **P+IEC** (P63...P180)

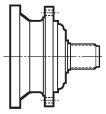
Sin adaptador de motor **HS**

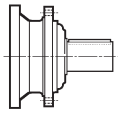


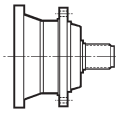
Motorreductor integrado completo de motor eléctrico compacto **S1, S2, S3**

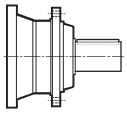
# 3/A 06 L 2 69.9 PC

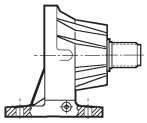
VERSIÓN DE SALIDA

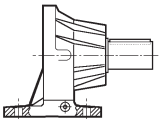

**MZ:** Eje macho estriado

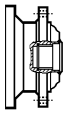

**MC:** Eje macho cilíndrico

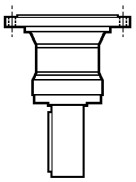

**HZ:** Eje macho reforzado estriado

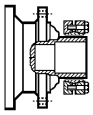

**HC:** Eje macho reforzado cilíndrico

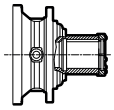

**PZ:** Con patas y con eje macho estriado


**PC:** Con patas y eje macho cilíndrico


**FZ / FZB:** Eje hembra estriado


**VK:** Eje cilíndrico reforzado para agitadores y mezcladores


**FP:** Eje hembra cilíndrico, con aro cónico de apriete


**FDK:** Eje hembra con doble hueco chavetero

RELACIÓN DE REDUCCIÓN

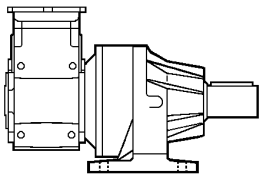
Indicar el valor de la relación (decimales incluidos) expresado en las páginas de datos técnicos
Es. : 1/19.4 = 19.4  1/175 = 175

N. DE ETAPAS DE REDUCCIÓN

**2**

EJECUCIÓN

**L =** Combinado serie 300, 1 etapa epicicloidal + reductor de ejes ortogonales serie A



TAMAÑO REDUCTOR

| | | | |
|---|---|---|---|
| **00** = 3/A 00 (300+A10) | 249 | **05 =** 3/A 05 (305+A41**)** | 293 |
| **01** = 3/A 01 (301+A20) | 259 | **06 =** 3/A 06 (306+A50) | 305 |
| **03** = 3/A 03 (303+A30) | 269 | **07 =** 3/A 07 (307+A60) | 317 |
| **04** = 3/A 04 (304+A41) | 281 | | |

SERIE

Reductores combinados 300 / reductores de ejes ortogonales serie A

## S4 EF W04 ...

OPCIONES

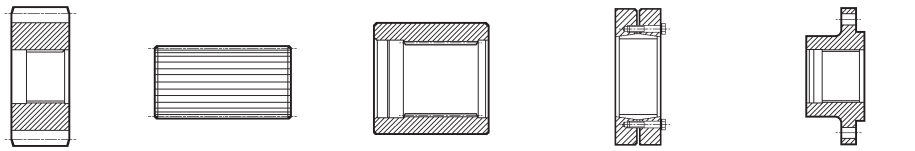
JUNTAS
STANDARD = NBR
**PV =** fluoro-elastómero

PROTECCIÓN SUPERFICIE
**C2** (estandard), **C3, C4**
35

PINTURA
**RAL7042** (estandard), **RAL5010, RAL9005, RAL9006, RAL9010**
35

DOCUMENTACIÓN
**AC, CC**
36

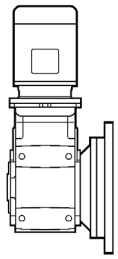
ACCESORIOS EN LA SALIDA



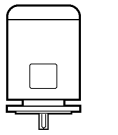
**P...** = Piñones | **B0A =** Barra estriada | **M0A =** Manguito | **G0A =** Aro cónico de apriete | **W0A =** Brida

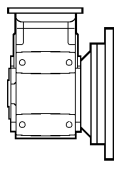
POSICIÓN DE MONTAJE 36

ENTRADA

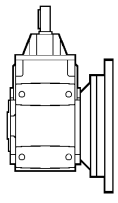


Motorreductor integrado completo de motor eléctrico compacto **S2, S3, S4**



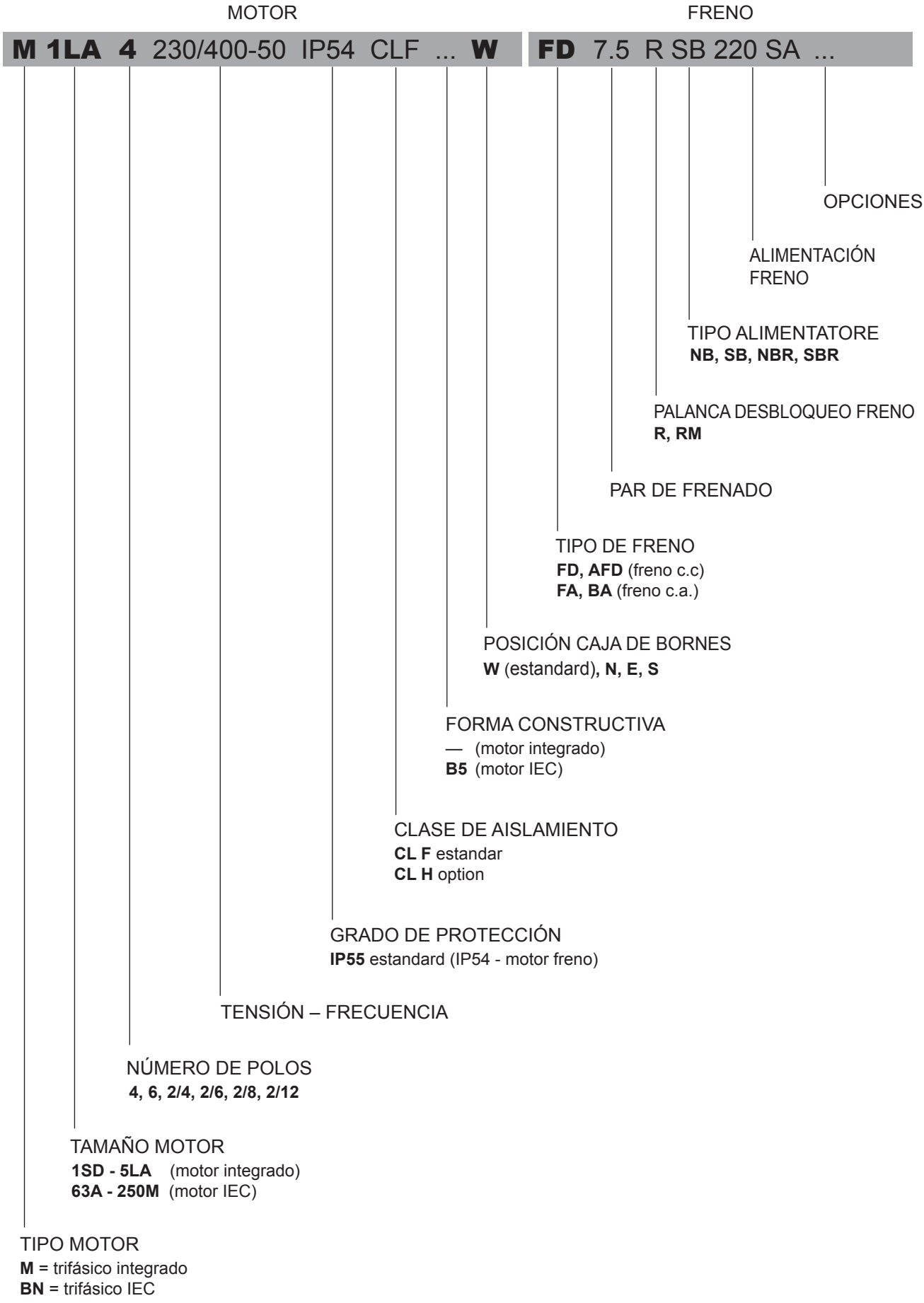


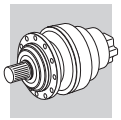
Predisposición para motor léctrico IEC **P+IEC** (P63...P180)



Sin adaptador de motor **HS**

## 21 DESIGNACIÓN MOTOR





## 22 OPCIONES ADICIONALES

### 22.1 PROTECCIÓN DE LA SUPERFICIE

Cuando no se requiere ninguna clase de protección específica, las superficies de los reductores están protegidas al menos con la clase de corrosividad C2 (UNI EN ISO 12944-2). Para mejorar la resistencia a la corrosión atmosférica, los reductores se pueden entregar con una protección de superficie C3 y C4, que se obtiene a partir del pintado completo del reductor.

| PROTECCIÓN SUPERFICIE | Ambientes típicos | Temperatura maxima superficie | Clase corrosividad conforme a UNI EN ISO 12944-2 |
|---|---|---|---|
| **C3** | Ambientes industriales y urbanos con una humedad relativa de hasta el 100% (contaminación atmosférica media) | 120°C | C3 |
| **C4** | Zonas industriales, zonas costeras, fábrica de productos químicos, con una humedad relativa de hasta el 100% (alta contaminación atmosférica) | 120°C | C4 |

Los reductores con la protección opcional de clase C3 o C4 están disponibles en una variedad de colores.
Si no se solicita color específico (ver la opción "PINTURA") el acabado de los reductores será en RAL 7042.
Los reductores también se pueden suministrar con protección de la superficie para la clase de corrosividad C5 según la norma UNI EN ISO 12944-2. Póngase en contacto con nuestro Servicio Técnico para más detalles.

### 22.2 PINTURA

Los reductores con la protección opcional de clase C3 o C4 están disponibles en los colores que figuran en la siguiente tabla.

| PINTURA | Color | Número RAL |
|---|---|---|
| **RAL7042*** | Gris Tráfico A | 7042 |
| **RAL5010** | Azul genciana | 5010 |
| **RAL9005** | Negro Jet | 9005 |
| **RAL9006** | Aluminio Blanco | 9006 |
| **RAL9010** | Blanco Puro | 9010 |

* Los reductores se suministran en este color estándar si no se especifica ningún otro color.

NOTA - Las opciones "PINTURA" sólo se pueden especificar en combinación con las opciones "PROTECCIÓN DE LA SUPERFICIE".

## 22.3 DOCUMENTACIÓN

**Certificado de conformidad (AC)**
Documento en el cual se certifica la conformidad del producto con lo indicado en el pedido y su fabricación según los procedimientos estándar de producción y control que establece el sistema de calidad de Bonfiglioli Riduttori.

**Certificado de prueba (CC)**
La obtención de este certificado conlleva verificar la conformidad del producto con el pedido, realizar inspecciones visuales de carácter general y comprobar las dimensiones de acoplamiento. Además, exige realizar controles generales de funcionamiento en vacío y comprobar la eficacia de las juntas de retén con el sistema estático y en funcionamiento. Para llevar a cabo la prueba se utiliza una muestra estadística del lote de expedición.

## 22.4 RETENES DE TIPO TACONITE

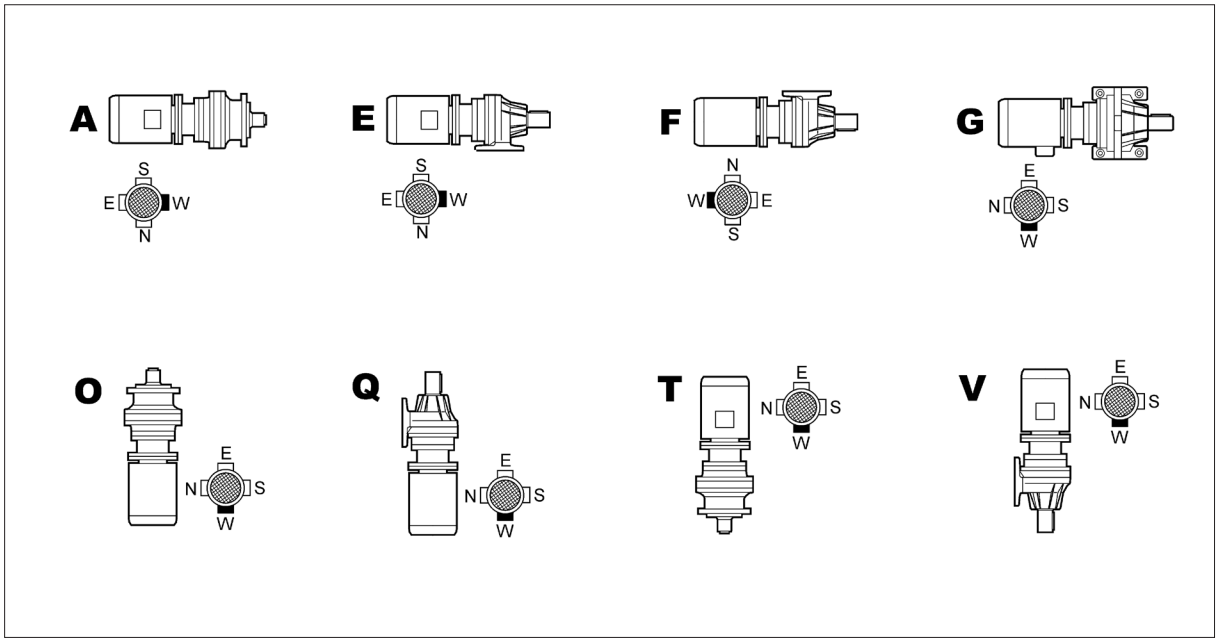
En entornos en los que existe polvo abrasivo se recomienda utilizar retenes de tipo Taconite, que están formados por una combinación de anillos de estanqueidad, juntas de laberinto y depósito de grasa. La opción está disponible para los reductores 314 ... 325 en version **FP** y **FZ**.
Póngase en contacto con nuestro Servicio Técnico para más detalles.

# 23 POSICIONES DE MONTAJE

Para una definición completa de la forma constructiva del motorreductor o reductor seleccionado, definir la posición de montaje respecto al suelo según la tabla (A18) y la orientación angular (A19).

## 23.1 Reductores en línea

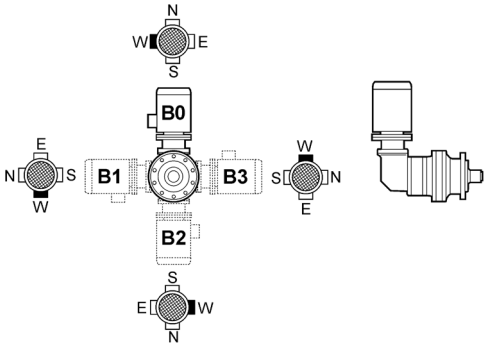
(A 18)



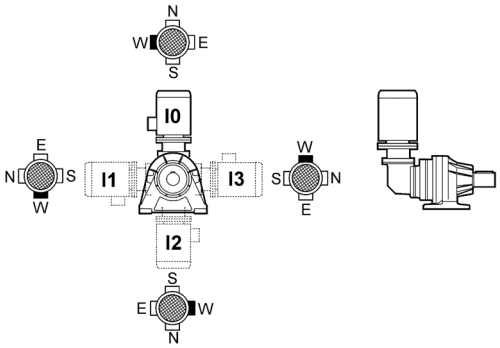
## 23.2 Reductores angulares

(A 19)

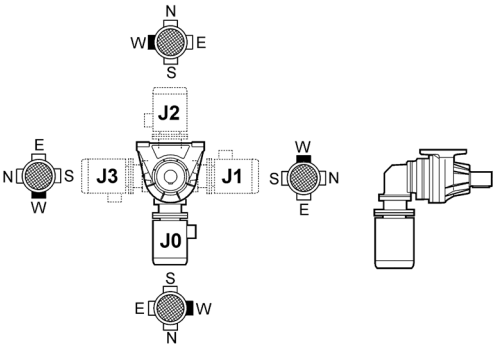
### B0 - B1 - B2 - B3



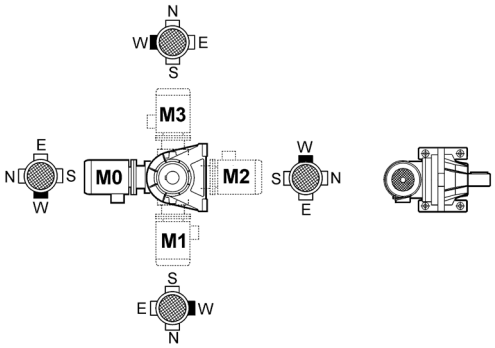

### I0 - I1 - I2 - I3



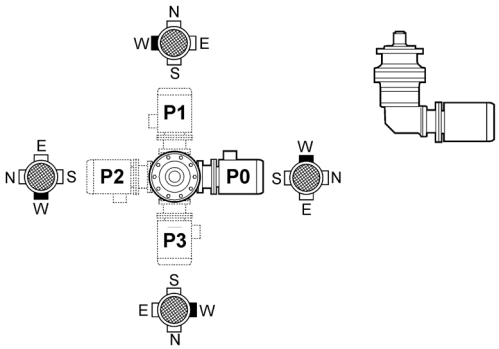

### J0 - J1 - J2 - J3



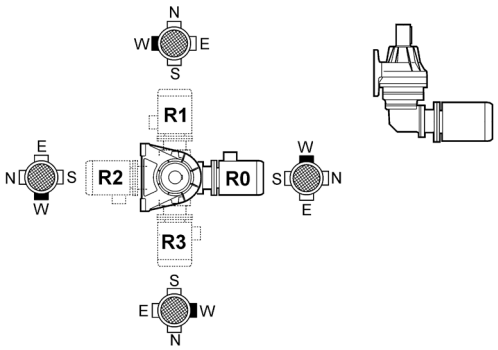

### M0 - M1 - M2 - M3



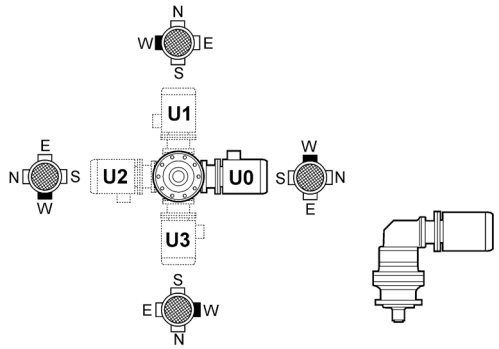

### P0 - P1 - P2 - P3



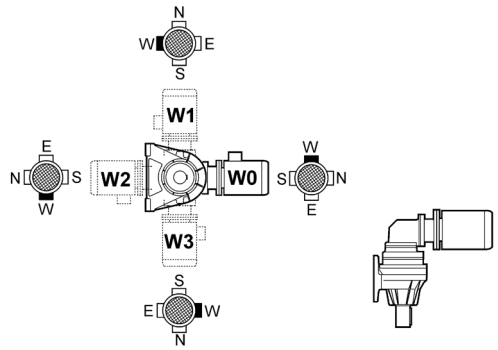

### R0 - R1 - R2 - R3




### U0 - U1 - U2 - U3



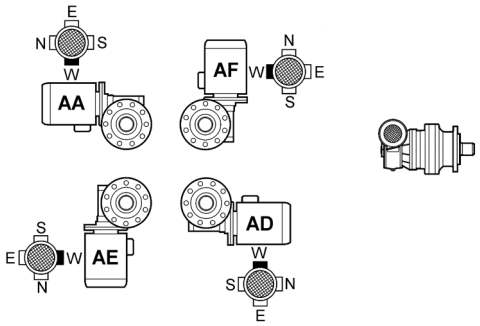

### W0 - W1 - W2 - W3



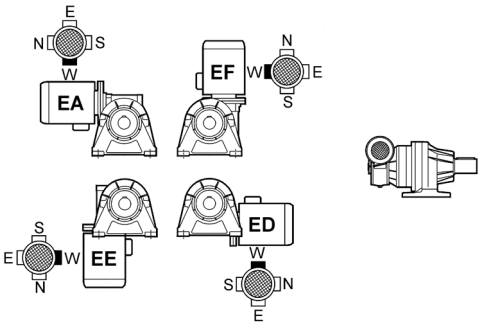
## 23.3 Serie 3/V

(A 20)

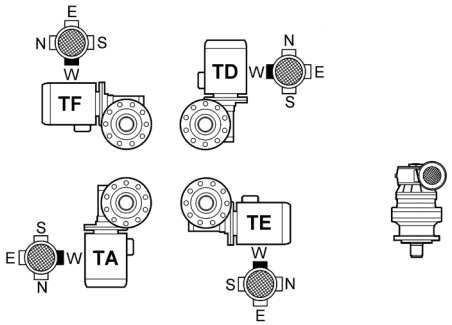
### AA - AE - AF - AD



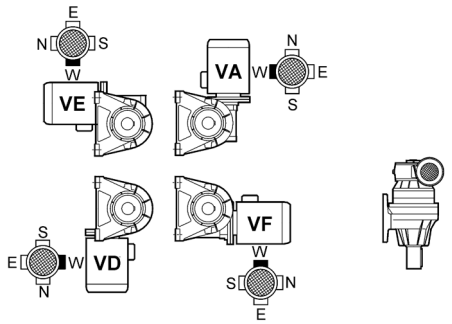

### EA - EE - EF - ED



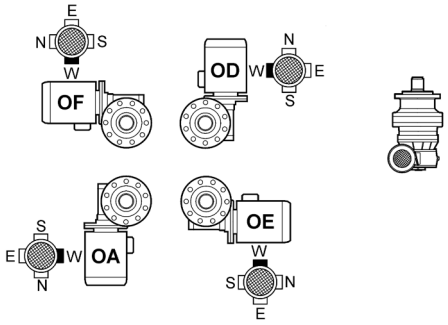

### TA - TE - TF - TD



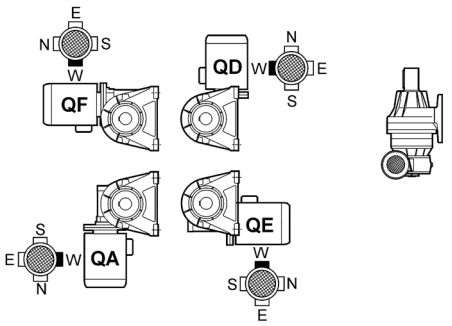

### VA - VE - VF - VD



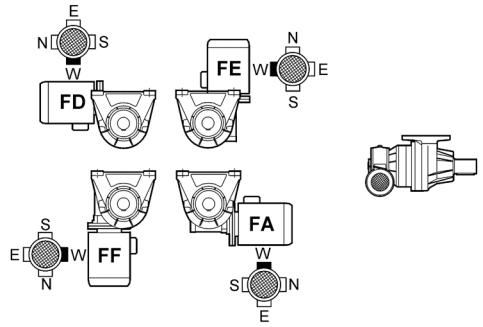

### OA - OE - OF - OD




### QA - QE - QF - QD



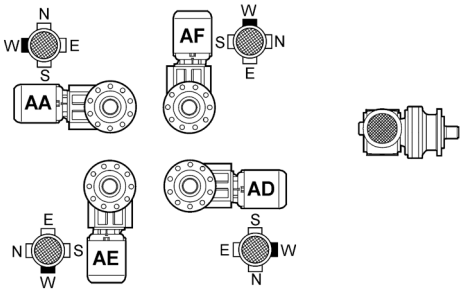

### FA - FE - FF - FD



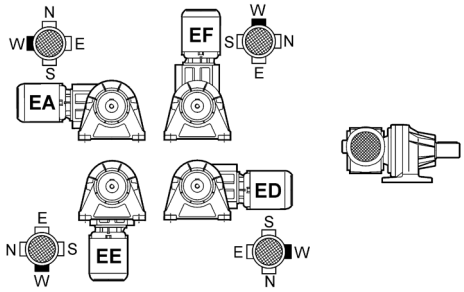
## 23.4 Serie 3/A

(A 21)

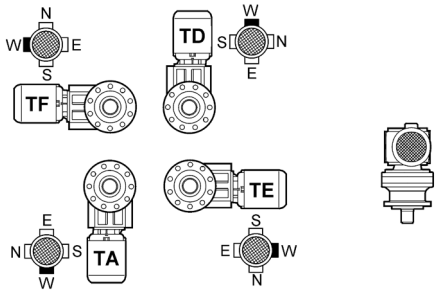
### AA - AE - AF - AD



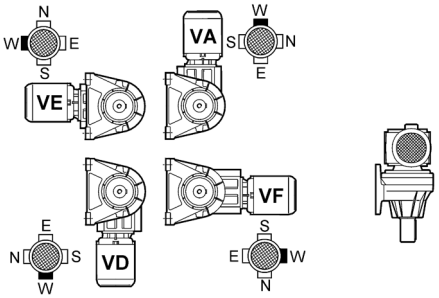

### EA - EE - EF - ED



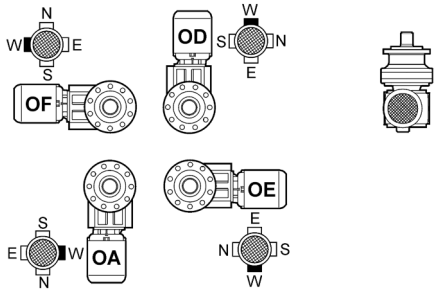

### TA - TE - TF - TD



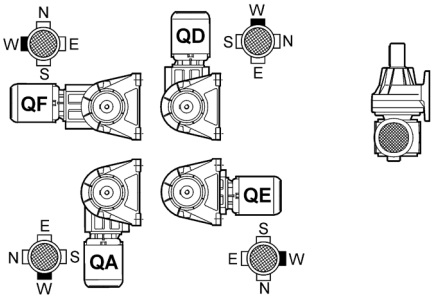

### VA - VE - VF - VD



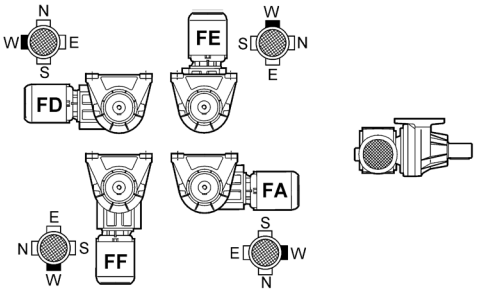

### OA - OE - OF - OD

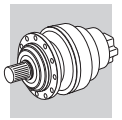



### QA - QE - QF - QD




### FA - FE - FF - FD





## 24 **LUBRICACIÓN** (antes de la puesta en marcha)

Todos los reductores prevén la lubricación por baño de aceite. En aquellas posiciones de montaje de reductores con un eje vertical, y donde el barboteo del aceite durante el funcionamiento no sería suficiente para garantizar la correcta lubricación de los rodamientos superiores, se adoptan sistemas apropiados de lubricación.

El funcionamiento del reductor es correcto para temperatura ambiente comprendida entre -20°C y +40°C. Para temperatura ambiente comprendida entre -20°C y -10°C la puesta en marcha del reductor solo podrá realizar si previamente se ha hecho un calentamiento progresivo del grupo, o sino con funcionamiento "en vacío" sin carga externa.

La carga podrá se aplicada después al eje del reductor cuando la temperatura del reductor haya alcanzado -10°C, o más.

Antes de la puesta en marcha, introducir la cantidad exacta de lubricante, seleccionando su viscosidad según la tabla (A10). A tal efecto, los reductores están provistos de tapones de carga, nivel y vaciado de aceite.
A fin de colocar correctamente los tapones, para una adecuada lubricación, aconsejamos que se indique siempre la posición de montaje deseada.
Para la tabla donde se indica la posición de los tapones de servicio y la cantidad de lubricante, consultar el Manual de Uso y Mantenimiento (disponible en www.bonfiglioli.com).

– Para funcionamiento especial donde habrán requisitos especiales, contactar nuestro Servicio Técnico.

– La temperatura max. del lubrificante en servicio continuo no debe superar los 85-90°C.

– A menos que se haya acordado, los reductores se entregarán sin lubricante. Excepcionalmente los reductores combinados (3/V y 3/A) reductor tornillo sin fin y de ejes ortogonales llevarán lubricante permanente a base de aceite sintético como está indicado en el Manual de Uso y Mantenimiento (disponible en www.bonfiglioli.com).

– La cantidad de aceite indicado para los varios tipos de reducción son solo indicativos, el llenado debe considerarse correcto cuando el aceite alcanza el tapón de nivel, montado en fábrica de función de la posición de montaje.

– en el caso en que la potencia trasmitida supera la potencia térmica especificada, será necesaria una circulación forzada de aceite (ver: Sistemas auxiliares de refrigeración).

NOTA: en los reductores de tipo combinado la lubricación de los estadios epicicloidales es independiente reductor tornillo sin fin (3/V), u ortogonal (3/A).

### 24.1 Lubricación frenos

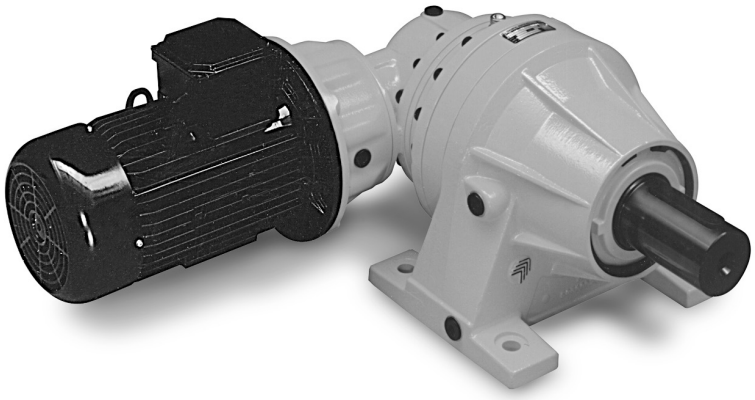
Los frenos hidráulicos de discos múltiples están lubricados con el propio aceite de los reductores.

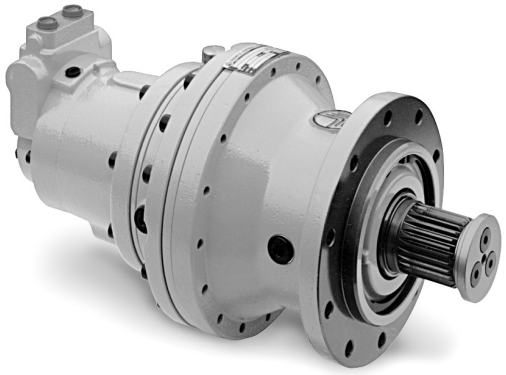
# 25 DATOS TÉCNICOS

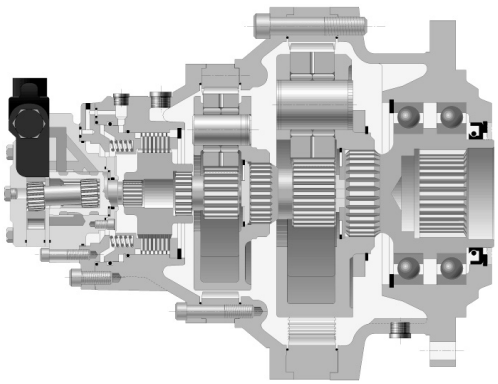
## A SELECCIÓN DEL MOTOREDUCTOR POR POTENCIA

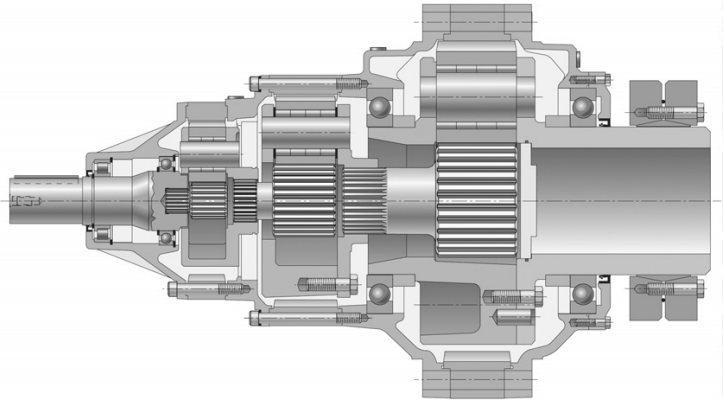
## B SELECCIÓN DEL REDUCTOR POR PAR DE LA APLICACIÓN

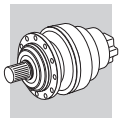
## C SELECCIÓN DEL REDUCTOR POR NÚMERO DE CICLOS DE FUNCIONAMIENTO





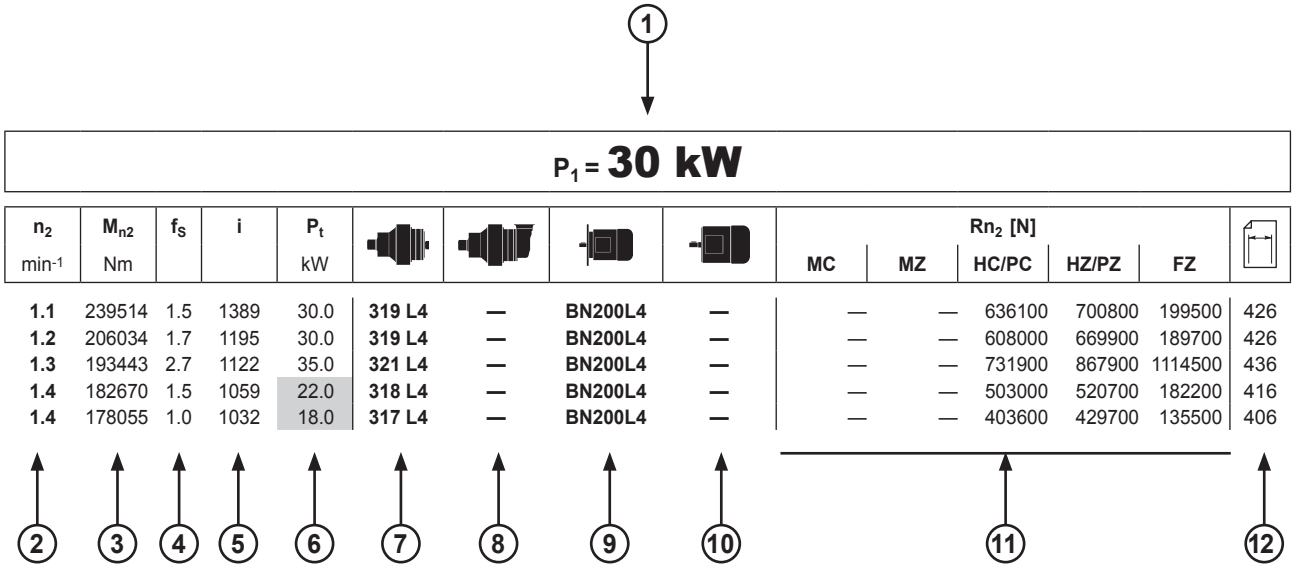






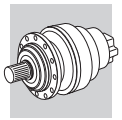
## 25.1 TABLAS DE DATOS TÉCNICOS DE LOS REDUCTORES Y DIMENSIONES

Guía para consultar las tablas.



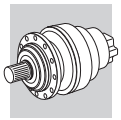

Valores de potencia térmica inferior a la potencia mecánica aplicada

| | |
|---|---|
| **1** | Potencia del motor eléctrico unido al reductor |
| **2** | Velocidad angular en el eje de salida |
| **3** | Par nominal en el eje de salida del reductor basado en:<br><br>- factor de servicio indicado<br>- vida teórica de 10000 h |
| **4** | Factor de servicio |
| **5** | Relación de reducción |
| **6** | Potencia térmica del reductor |
| **7** | Tamaño del reductor en ejecución lineal |
| **8** | Tamaño del reductor en ejecución angular<br>NOTA: Los sufijos (B) (C) sobre el mismo tamaño indican reducciones angulares de dimensiones diferentes: ver la página dimensional |
| **9** | Tamaño motor IEC y polaridad |
| **10** | Tamaño motor compacto y polaridad |
| **11** | Carga radial aplicada en el eje lento, calculado para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br><br>Para fuerzas no aplicadas en la mitad del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **12** | Página de lasdimensiones.<br>Las dimensiones de los motorreductores hacen referencia al montaje con motores de marca BONFIGLIOLI |



# $P_1$ = 0.25 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.47** | 4439 | 1.6 | 2916 | 6.0 | **306 L4** | — | **BN71A4** | — | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.57** | 3688 | 3.0 | 2423 | 7.5 | **307 L4** | — | **BN71A4** | — | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.59** | 3557 | 2.0 | 2337 | 6.0 | **306 L4** | — | **BN71A4** | — | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.62** | 3415 | 1.1 | 2243 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.67** | 3157 | 2.2 | 2074 | 6.0 | **306 L4** | — | **BN71A4** | — | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.69** | 3031 | 0.9 | 1991 | 6.0 | **303 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 264 |
| **0.69** | 3031 | 1.2 | 1991 | 6.0 | **304 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.69** | 3031 | 1.8 | 1991 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.74** | 2823 | 1.7 | 1854 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.76** | 2764 | 1.1 | 1815 | 6.0 | **304 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.87** | 2415 | 0.9 | 1586 | 6.0 | **303 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 264 |
| **0.87** | 2415 | 1.6 | 1586 | 6.0 | **304 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.87** | 2415 | 2.0 | 1586 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **1.0** | 2086 | 1.2 | 1370 | 6.0 | **303 L4** | — | **BN71A4** | — | 36000 | 42000 | 62200 | 74000 | 23800 | 264 |
| **1.0** | 2086 | 2.2 | 1370 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 42000 | 62200 | 74000 | 23800 | 288 |
| **1.0** | 2046 | 1.8 | 1344 | 6.0 | **304 L4** | — | **BN71A4** | — | 36000 | 42000 | 61900 | 74000 | 23700 | 288 |
| **1.1** | 1946 | 1.4 | 1278 | 6.0 | **303 L4** | — | **BN71A4** | — | 36000 | 41900 | 60900 | 73300 | 23300 | 264 |
| **1.1** | 1946 | 2.8 | 1278 | 6.0 | **305 L4** | — | **BN71A4** | — | 36000 | 41900 | 60900 | 73300 | 23300 | 288 |
| **1.1** | 1941 | 1.2 | 1275 | 6.0 | **301 L4** | — | **BN71A4** | — | 11800 | 11800 | 29800 | 34000 | 7750 | 254 |
| **1.1** | 1935 | 2.0 | 1271 | 6.0 | **304 L4** | — | **BN71A4** | — | 36000 | 41800 | 60800 | 73200 | 23200 | 288 |
| **1.2** | 1772 | 1.6 | 1164 | 6.0 | **304 L4** | — | **BN71A4** | — | 35200 | 40600 | 59200 | 71300 | 22600 | 288 |
| **1.2** | 1687 | 1.0 | 1108 | 6.0 | **301 L4** | — | **BN71A4** | — | 11300 | 11300 | 28600 | 32900 | 7400 | 254 |
| **1.3** | 1671 | 1.4 | 1098 | 6.0 | **303 L4** | — | **BN71A4** | — | 34500 | 39800 | 58200 | 70000 | 22100 | 264 |
| **1.3** | 1671 | 2.7 | 1098 | 6.0 | **305 L4** | — | **BN71A4** | — | 34500 | 39800 | 58200 | 70000 | 22100 | 288 |
| **1.4** | 1555 | 1.5 | 1022 | 6.0 | **301 L4** | — | **BN71A4** | — | 11000 | 11000 | 27900 | 32100 | 7200 | 254 |
| **1.4** | 1551 | 1.8 | 1018 | 6.0 | **303 L4** | — | **BN71A4** | — | 33600 | 38800 | 56900 | 68500 | 21600 | 264 |
| **1.4** | 1551 | 2.5 | 1018 | 6.0 | **304 L4** | — | **BN71A4** | — | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.5** | 1434 | 1.6 | 942 | 6.0 | **301 L4** | — | **BN71A4** | — | 10700 | 10700 | 27200 | 31300 | 7010 | 254 |
| **1.5** | 1364 | 1.6 | 896 | 6.0 | **303 L4** | — | **BN71A4** | — | 32200 | 37200 | 54800 | 65900 | 20700 | 264 |
| **1.7** | 1254 | 1.8 | 824 | 12.0 | — | **303 R4** | **BN71A4** | — | 31300 | 36200 | 53400 | 64300 | 20100 | 266 |
| **1.7** | 1246 | 0.9 | 819 | 6.0 | **300 L4** | — | **BN71A4** | — | 9940 | 9940 | 25600 | 29400 | 6540 | 244 |
| **1.7** | 1246 | 1.8 | 819 | 6.0 | **301 L4** | — | **BN71A4** | — | 10200 | 10200 | 26100 | 30000 | 6690 | 254 |
| **1.7** | 1242 | 2.2 | 816 | 6.0 | **303 L4** | — | **BN71A4** | — | 31300 | 36100 | 53300 | 64100 | 20000 | 264 |
| **1.7** | 1213 | 1.5 | 797 | 12.0 | — | **303 R4** | **BN71A4** | — | 31000 | 35800 | 52900 | 63600 | 19900 | 266 |
| **1.7** | 1213 | 2.8 | 797 | 12.0 | — | **305 R4** | **BN71A4** | — | 31000 | 35800 | 52900 | 63600 | 19900 | 278 |
| **1.8** | 1167 | 1.3 | 766 | 10.0 | — | **301 R4** | **BN71A4** | — | 9950 | 9950 | 25600 | 29400 | 6540 | 256 |
| **1.8** | 1149 | 1.0 | 755 | 6.0 | **300 L4** | — | **BN71A4** | — | 9680 | 9680 | 25000 | 28700 | 6360 | 244 |
| **1.8** | 1149 | 1.9 | 755 | 6.0 | **301 L4** | — | **BN71A4** | — | 9900 | 9900 | 25500 | 29300 | 6510 | 254 |
| **1.9** | 1093 | 2.0 | 718 | 6.0 | **303 L4** | — | **BN71A4** | — | 29900 | 34600 | 51300 | 61700 | 19200 | 264 |
| **2.0** | 1069 | 2.5 | 702 | 6.0 | **304 L4** | — | **BN71A4** | — | 29700 | 34300 | 50900 | 61300 | 19100 | 288 |
| **2.0** | 1065 | 2.5 | 699 | 12.0 | — | **304 R4** | **BN71A4** | — | 29700 | 34300 | 50900 | 61200 | 19000 | 278 |
| **2.1** | 1003 | 2.1 | 659 | 12.0 | — | **303 R4** | **BN71A4** | — | 29100 | 33600 | 50000 | 60100 | 18700 | 266 |
| **2.1** | 989 | 2.3 | 649 | 6.0 | **303 L4** | — | **BN71A4** | — | 29000 | 33400 | 49700 | 59800 | 18600 | 264 |
| **2.2** | 938 | 1.1 | 616 | 6.0 | **300 L4** | — | **BN71A4** | — | 9260 | 9260 | 24000 | 27600 | 6090 | 244 |
| **2.2** | 938 | 2.3 | 616 | 6.0 | **301 L4** | — | **BN71A4** | — | 9260 | 9260 | 24000 | 27600 | 6090 | 254 |
| **2.3** | 933 | 1.6 | 613 | 10.0 | — | **301 R4** | **BN71A4** | — | 9240 | 9240 | 23900 | 27500 | 6080 | 256 |
| **2.4** | 863 | 2.8 | 567 | 12.0 | — | **303 R4** | **BN71A4** | — | 27700 | 32000 | 47700 | 57400 | 17800 | 266 |
| **2.5** | 852 | 3.0 | 560 | 12.0 | — | **304 R4** | **BN71A4** | — | 27600 | 31800 | 47600 | 57200 | 17700 | 278 |
| **2.5** | 849 | 1.2 | 558 | 6.0 | **300 L4** | — | **BN71A4** | — | 8950 | 8950 | 23300 | 26700 | 5890 | 244 |
| **2.5** | 849 | 2.5 | 558 | 6.0 | **301 L4** | — | **BN71A4** | — | 8950 | 8950 | 23300 | 26700 | 5890 | 254 |
| **2.6** | 804 | 2.5 | 528 | 12.0 | — | **303 R4** | **BN71A4** | — | 27000 | 31200 | 46700 | 56200 | 17300 | 266 |
| **2.8** | 752 | 1.4 | 494 | 6.0 | **300 L4** | — | **BN71A4** | — | 8600 | 8600 | 22400 | 25800 | 5650 | 244 |
| **2.8** | 752 | 2.8 | 494 | 6.0 | **301 L4** | — | **BN71A4** | — | 8600 | 8600 | 22400 | 25800 | 5650 | 254 |
| **2.8** | 748 | 0.9 | 491 | 10.0 | — | **300 R4** | **BN71A4** | — | 8580 | 8580 | 22400 | 25700 | 5640 | 246 |
| **2.8** | 748 | 1.9 | 491 | 10.0 | — | **301 R4** | **BN71A4** | — | 8580 | 8580 | 22400 | 25700 | 5640 | 256 |
| **3.0** | 690 | 1.5 | 453 | 10.0 | — | **300 R4** | **BN71A4** | — | 8350 | 8350 | 21900 | 25100 | 5490 | 246 |
| **3.0** | 690 | 2.8 | 453 | 10.0 | — | **301 R4** | **BN71A4** | — | 8350 | 8350 | 21900 | 25100 | 5490 | 256 |
| **3.1** | 681 | 1.5 | 447 | 6.0 | **300 L4** | — | **BN71A4** | — | 8320 | 8320 | 21800 | 25000 | 5470 | 244 |
| **3.1** | 681 | 3.0 | 447 | 6.0 | **301 L4** | — | **BN71A4** | — | 8320 | 8320 | 21800 | 25000 | 5470 | 254 |
| **3.4** | 614 | 1.1 | 403 | 6.0 | **300 L4** | — | **BN71A4** | — | 8040 | 8040 | 21100 | 24300 | 5280 | 244 |
| **3.4** | 614 | 2.2 | 403 | 6.0 | **301 L4** | — | **BN71A4** | — | 8040 | 8040 | 21100 | 24300 | 5280 | 254 |
| **3.5** | 599 | 1.1 | 394 | 10.0 | — | **300 R4** | **BN71A4** | — | 7970 | 7970 | 21000 | 24100 | 5240 | 246 |
| **3.5** | 599 | 2.3 | 394 | 10.0 | — | **301 R4** | **BN71A4** | — | 7970 | 7970 | 21000 | 24100 | 5240 | 256 |
| **3.5** | 612 | 2.8 | 389 | 7.5 | **303 L3** | — | **BN71A4** | — | 24400 | 28200 | 42600 | 51300 | 15700 | 264 |
| **3.7** | 589 | 1.1 | 374 | 7.5 | **300 L3** | — | **BN71A4** | — | 7840 | 7840 | 20600 | 23700 | 5150 | 244 |

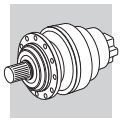


## $P_1$ = 0.25 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.7** | 589 | 2.3 | 374 | 7.5 | **301 L3** | — | **BN71A4** | — | 7840 | 7840 | 20600 | 23700 | 5150 | 254 |
| **3.8** | 553 | 1.8 | 363 | 10.0 | — | **300 R4** | **BN71A4** | — | 7760 | 7760 | 20500 | 23500 | 5100 | 246 |
| **4.2** | 503 | 1.9 | 330 | 6.0 | **300 L4** | — | **BN71A4** | — | 7520 | 7520 | 19900 | 22900 | 4940 | 244 |
| **4.6** | 471 | 1.4 | 299 | 7.5 | **300 L3** | — | **BN71A4** | — | 7270 | 7270 | 19300 | 22200 | 4780 | 244 |
| **4.6** | 471 | 2.8 | 299 | 7.5 | **301 L3** | — | **BN71A4** | — | 7270 | 7270 | 19300 | 22200 | 4780 | 254 |
| **4.7** | 443 | 2.1 | 291 | 10.0 | — | **300 R4** | **BN71A4** | — | 7210 | 7210 | 19100 | 22000 | 4740 | 246 |
| **5.1** | 408 | 2.3 | 268 | 10.0 | — | **300 R4** | **BN71A4** | — | 7020 | 7020 | 18700 | 21500 | 4610 | 246 |
| **5.8** | 377 | 1.7 | 240 | 7.5 | **300 L3** | — | **BN71A4** | — | 6760 | 6760 | 18100 | 20800 | 4440 | 244 |
| **5.8** | 361 | 1.8 | 237 | 10.0 | — | **300 R4** | **BN71A4** | — | 6740 | 6740 | 18000 | 20700 | 4430 | 246 |
| **6.2** | 348 | 2.6 | 221 | 7.5 | **300 L3** | — | **BN71A4** | — | 6580 | 6580 | 17600 | 20300 | 4320 | 244 |
| **6.4** | 327 | 2.8 | 215 | 10.0 | — | **300 R4** | **BN71A4** | — | 6520 | 6520 | 17500 | 20100 | 4280 | 246 |
| **7.2** | 302 | 2.2 | 192 | 7.5 | **300 L3** | — | **BN71A4** | — | 6280 | 6280 | 16900 | 19400 | 4130 | 244 |
| **9.6** | 218 | 3.0 | 143 | 10.0 | — | **300 R4** | **BN71A4** | — | 5690 | 5690 | 15500 | 17800 | 3740 | 246 |
| **10.4** | 209 | 2.6 | 133 | 12.0 | — | **300 R3** | **BN71A4** | — | 5550 | 5550 | 15100 | 17400 | 3650 | 246 |

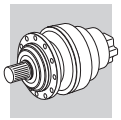
## $P_1$ = 0.37 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.47** | 6672 | 1.0 | 2916 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.57** | 5543 | 2.0 | 2423 | 7.5 | **307 L4** | — | **BN71B4** | **M1SD4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.59** | 5346 | 1.3 | 2337 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.66** | 4744 | 1.5 | 2074 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.69** | 4555 | 1.2 | 1991 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.74** | 4243 | 1.1 | 1854 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.74** | 4217 | 2.4 | 1843 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.86** | 3653 | 2.4 | 1597 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.86** | 3629 | 1.1 | 1586 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.86** | 3629 | 1.3 | 1586 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 64000 | 74000 | 24000 | 288 |
| **0.93** | 3374 | 3.0 | 1475 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **1.0** | 3135 | 1.5 | 1370 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 62200 | 74000 | 23800 | 288 |
| **1.0** | 3074 | 1.2 | 1344 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 36000 | 42000 | 61900 | 74000 | 23700 | 288 |
| **1.1** | 2927 | 2.9 | 1279 | 6.0 | **306 L4** | — | **BN71B4** | **M1SD4** | 45000 | 51000 | 99700 | 116100 | 34000 | 300 |
| **1.1** | 2924 | 1.0 | 1278 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 36000 | 41900 | 60900 | 73300 | 23300 | 264 |
| **1.1** | 2924 | 1.9 | 1278 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 36000 | 41900 | 60900 | 73300 | 23300 | 288 |
| **1.1** | 2908 | 1.3 | 1271 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 36000 | 41800 | 60800 | 73200 | 23200 | 288 |
| **1.2** | 2663 | 1.1 | 1164 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 35200 | 40600 | 59200 | 71300 | 22600 | 288 |
| **1.2** | 2512 | 0.9 | 1098 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 33700 | 38900 | 57000 | 68600 | 21600 | 264 |
| **1.2** | 2512 | 1.8 | 1098 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 34500 | 39800 | 58200 | 70000 | 22100 | 288 |
| **1.3** | 2338 | 1.0 | 1022 | 6.0 | **301 L4** | — | **BN71B4** | **M1SD4** | 10700 | 10700 | 27300 | 31400 | 7040 | 254 |
| **1.3** | 2330 | 1.2 | 1018 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 33600 | 38800 | 56900 | 68500 | 21600 | 264 |
| **1.3** | 2330 | 1.7 | 1018 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.3** | 2330 | 2.3 | 1018 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.5** | 2156 | 1.1 | 942 | 6.0 | **301 L4** | — | **BN71B4** | **M1SD4** | 10700 | 10700 | 27200 | 31300 | 7010 | 254 |
| **1.5** | 2051 | 1.1 | 896 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 32200 | 37200 | 54800 | 65900 | 20700 | 264 |
| **1.5** | 2051 | 2.1 | 896 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 32200 | 37200 | 54800 | 65900 | 20700 | 288 |
| **1.7** | 1884 | 1.2 | 824 | 12.0 | — | **303 R4** | **BN71B4** | **M1SD4** | 31300 | 36200 | 53400 | 64300 | 20100 | 266 |
| **1.7** | 1884 | 2.2 | 824 | 12.0 | — | **305 R4** | **BN71B4** | **M1SD4** | 31300 | 36200 | 53400 | 64300 | 20100 | 278 |
| **1.7** | 1873 | 1.2 | 819 | 6.0 | **301 L4** | — | **BN71B4** | **M1SD4** | 10200 | 10200 | 26100 | 30000 | 6690 | 254 |
| **1.7** | 1867 | 1.5 | 816 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 31300 | 36100 | 53300 | 64100 | 20000 | 264 |
| **1.7** | 1867 | 2.0 | 816 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 1867 | 2.9 | 816 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 1824 | 1.0 | 797 | 12.0 | — | **303 R4** | **BN71B4** | **M1SD4** | 31000 | 35800 | 52900 | 63600 | 19900 | 266 |
| **1.7** | 1824 | 1.9 | 797 | 12.0 | — | **305 R4** | **BN71B4** | **M1SD4** | 31000 | 35800 | 52900 | 63600 | 19900 | 278 |
| **1.8** | 1727 | 1.3 | 755 | 6.0 | **301 L4** | — | **BN71B4** | **M1SD4** | 9900 | 9900 | 25500 | 29300 | 6510 | 254 |
| **1.9** | 1643 | 1.3 | 718 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 29900 | 34600 | 51300 | 61700 | 19200 | 264 |
| **1.9** | 1643 | 2.5 | 718 | 6.0 | **305 L4** | — | **BN71B4** | **M1SD4** | 29900 | 34600 | 51300 | 61700 | 19200 | 288 |
| **2.0** | 1606 | 1.6 | 702 | 6.0 | **304 L4** | — | **BN71B4** | **M1SD4** | 29700 | 34300 | 50900 | 61300 | 19100 | 288 |
| **2.0** | 1600 | 1.6 | 699 | 12.0 | — | **304 R4** | **BN71B4** | **M1SD4** | 29700 | 34300 | 50900 | 61200 | 19000 | 278 |
| **2.1** | 1508 | 1.4 | 659 | 12.0 | — | **303 R4** | **BN71B4** | **M1SD4** | 29100 | 33600 | 50000 | 60100 | 18700 | 266 |
| **2.1** | 1508 | 2.7 | 659 | 12.0 | — | **305 R4** | **BN71B4** | **M1SD4** | 29100 | 33600 | 50000 | 60100 | 18700 | 278 |
| **2.1** | 1486 | 1.6 | 649 | 6.0 | **303 L4** | — | **BN71B4** | **M1SD4** | 29000 | 33400 | 49700 | 59800 | 18600 | 264 |



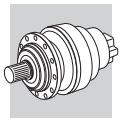
# $P_1$ = 0.37 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.1** | 1486 | 2.4 | 649 | 6.0 | **304 L4** | **—** | **BN71B4** | **M1SD4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.2** | 1410 | 1.5 | 616 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 9260 | 9260 | 24000 | 27600 | 6090 | 254 |
| **2.2** | 1403 | 1.0 | 613 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 9240 | 9240 | 23900 | 27500 | 6080 | 256 |
| **2.4** | 1297 | 1.9 | 567 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 27700 | 32000 | 47700 | 57400 | 17800 | 266 |
| **2.4** | 1280 | 2.0 | 560 | 12.0 | **—** | **304 R4** | **BN71B4** | **M1SD4** | 27600 | 31800 | 47600 | 57200 | 17700 | 278 |
| **2.5** | 1276 | 1.7 | 558 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 8950 | 8950 | 23300 | 26700 | 5890 | 254 |
| **2.5** | 1272 | 2.2 | 556 | 6.0 | **303 L4** | **—** | **BN71B4** | **M1SD4** | 27500 | 31700 | 47500 | 57100 | 17600 | 264 |
| **2.5** | 1272 | 2.9 | 556 | 6.0 | **304 L4** | **—** | **BN71B4** | **M1SD4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.6** | 1208 | 1.7 | 528 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 27000 | 31200 | 46700 | 56200 | 17300 | 266 |
| **2.8** | 1130 | 0.9 | 494 | 6.0 | **300 L4** | **—** | **BN71B4** | **M1SD4** | 8400 | 8400 | 22000 | 25300 | 5520 | 244 |
| **2.8** | 1130 | 1.8 | 494 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 8600 | 8600 | 22400 | 25800 | 5650 | 254 |
| **2.8** | 1126 | 2.4 | 492 | 6.0 | **303 L4** | **—** | **BN71B4** | **M1SD4** | 26400 | 30500 | 45800 | 55100 | 16900 | 264 |
| **2.8** | 1124 | 1.3 | 491 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 8580 | 8580 | 22400 | 25700 | 5640 | 256 |
| **3.0** | 1037 | 1.0 | 453 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 8350 | 8350 | 21900 | 25100 | 5490 | 246 |
| **3.0** | 1037 | 1.9 | 453 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 8350 | 8350 | 21900 | 25100 | 5490 | 256 |
| **3.0** | 1033 | 2.2 | 452 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 25700 | 29600 | 44600 | 53700 | 16500 | 266 |
| **3.1** | 1023 | 1.0 | 447 | 6.0 | **300 L4** | **—** | **BN71B4** | **M1SD4** | 8320 | 8320 | 21800 | 25000 | 5470 | 244 |
| **3.1** | 1023 | 2.0 | 447 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 8320 | 8320 | 21800 | 25000 | 5470 | 254 |
| **3.1** | 1020 | 2.8 | 446 | 6.0 | **303 L4** | **—** | **BN71B4** | **M1SD4** | 25500 | 29500 | 44400 | 53400 | 16400 | 264 |
| **3.2** | 1008 | 2.5 | 426 | 7.5 | **304 L3** | **—** | **BN71B4** | **M1SD4** | 25200 | 29000 | 43800 | 52700 | 16100 | 288 |
| **3.3** | 946 | 2.6 | 414 | 12.0 | **—** | **304 R4** | **BN71B4** | **M1SD4** | 24900 | 28800 | 43400 | 52300 | 16000 | 278 |
| **3.3** | 945 | 2.5 | 413 | 6.0 | **303 L4** | **—** | **BN71B4** | **M1SD4** | 24900 | 28800 | 43400 | 52200 | 16000 | 264 |
| **3.4** | 922 | 1.5 | 403 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 8040 | 8040 | 21100 | 24300 | 5280 | 254 |
| **3.4** | 951 | 2.0 | 402 | 7.5 | **303 L3** | **—** | **BN71B4** | **M1SD4** | 24700 | 28500 | 43100 | 51800 | 15800 | 264 |
| **3.5** | 901 | 1.5 | 394 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 7970 | 7970 | 21000 | 24100 | 5240 | 256 |
| **3.5** | 893 | 2.2 | 390 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 24400 | 28200 | 42700 | 51400 | 15700 | 266 |
| **3.5** | 920 | 1.8 | 389 | 7.5 | **303 L3** | **—** | **BN71B4** | **M1SD4** | 24400 | 28200 | 42600 | 51300 | 15700 | 264 |
| **3.7** | 885 | 1.5 | 374 | 7.5 | **301 L3** | **—** | **BN71B4** | **M1SD4** | 7840 | 7840 | 20600 | 23700 | 5150 | 254 |
| **3.8** | 833 | 2.8 | 364 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 23900 | 27600 | 41800 | 50300 | 15300 | 266 |
| **3.8** | 831 | 1.2 | 363 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 7760 | 7760 | 20500 | 23500 | 5100 | 246 |
| **3.8** | 831 | 2.4 | 363 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 7760 | 7760 | 20500 | 23500 | 5100 | 256 |
| **4.0** | 807 | 3.0 | 341 | 7.5 | **304 L3** | **—** | **BN71B4** | **M1SD4** | 23400 | 27000 | 41000 | 49300 | 15000 | 288 |
| **4.1** | 768 | 3.0 | 336 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 23200 | 26800 | 40800 | 49100 | 14900 | 266 |
| **4.1** | 756 | 1.3 | 330 | 6.0 | **300 L4** | **—** | **BN71B4** | **M1SD4** | 7520 | 7520 | 19900 | 22900 | 4940 | 244 |
| **4.1** | 756 | 2.5 | 330 | 6.0 | **301 L4** | **—** | **BN71B4** | **M1SD4** | 7520 | 7520 | 19900 | 22900 | 4940 | 254 |
| **4.3** | 760 | 2.4 | 321 | 7.5 | **303 L3** | **—** | **BN71B4** | **M1SD4** | 22900 | 26400 | 40300 | 48500 | 14700 | 264 |
| **4.4** | 715 | 2.6 | 313 | 12.0 | **—** | **303 R4** | **BN71B4** | **M1SD4** | 22700 | 26200 | 39900 | 48100 | 14600 | 266 |
| **4.6** | 708 | 0.9 | 299 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 7270 | 7270 | 19300 | 22200 | 4780 | 244 |
| **4.6** | 708 | 1.8 | 299 | 7.5 | **301 L3** | **—** | **BN71B4** | **M1SD4** | 7270 | 7270 | 19300 | 22200 | 4780 | 254 |
| **4.7** | 666 | 1.4 | 291 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 7210 | 7210 | 19100 | 22000 | 4740 | 246 |
| **4.7** | 666 | 2.8 | 291 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 7210 | 7210 | 19100 | 22000 | 4740 | 256 |
| **5.1** | 614 | 1.5 | 268 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 7020 | 7020 | 18700 | 21500 | 4610 | 246 |
| **5.7** | 567 | 1.1 | 240 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 6760 | 6760 | 18100 | 20800 | 4440 | 244 |
| **5.7** | 567 | 2.3 | 240 | 7.5 | **301 L3** | **—** | **BN71B4** | **M1SD4** | 6760 | 6760 | 18100 | 20800 | 4440 | 254 |
| **5.8** | 543 | 1.2 | 237 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 6740 | 6740 | 18000 | 20700 | 4430 | 246 |
| **5.8** | 543 | 2.4 | 237 | 10.0 | **—** | **301 R4** | **BN71B4** | **M1SD4** | 6740 | 6740 | 18000 | 20700 | 4430 | 256 |
| **6.2** | 523 | 1.7 | 221 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 6580 | 6580 | 17600 | 20300 | 4320 | 244 |
| **6.4** | 492 | 1.9 | 215 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 6520 | 6520 | 17500 | 20100 | 4280 | 246 |
| **7.1** | 454 | 1.4 | 192 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 6280 | 6280 | 16900 | 19400 | 4130 | 244 |
| **7.1** | 454 | 2.9 | 192 | 7.5 | **301 L3** | **—** | **BN71B4** | **M1SD4** | 6280 | 6280 | 16900 | 19400 | 4130 | 254 |
| **7.7** | 419 | 2.1 | 177 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 6110 | 6110 | 16500 | 19000 | 4020 | 244 |
| **7.8** | 401 | 2.2 | 175 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 6090 | 6090 | 16500 | 18900 | 4000 | 246 |
| **8.6** | 363 | 2.4 | 159 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 5890 | 5890 | 16000 | 18300 | 3870 | 246 |
| **9.6** | 328 | 2.0 | 143 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 5690 | 5690 | 15500 | 17800 | 3740 | 246 |
| **9.7** | 336 | 2.6 | 142 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 5670 | 5670 | 15400 | 17700 | 3730 | 244 |
| **10.3** | 314 | 1.7 | 133 | 12.0 | **—** | **300 R3** | **BN71B4** | **M1SD4** | 5550 | 5550 | 15100 | 17400 | 3650 | 246 |
| **10.5** | 310 | 2.8 | 131 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 5520 | 5520 | 15100 | 17300 | 3630 | 244 |
| **10.6** | 297 | 2.9 | 130 | 10.0 | **—** | **300 R4** | **BN71B4** | **M1SD4** | 5510 | 5510 | 15000 | 17300 | 3620 | 246 |
| **11.8** | 274 | 2.4 | 116 | 7.5 | **300 L3** | **—** | **BN71B4** | **M1SD4** | 5300 | 5300 | 14500 | 16700 | 3490 | 244 |
| **12.9** | 252 | 2.6 | 106 | 12.0 | **—** | **300 R3** | **BN71B4** | **M1SD4** | 5160 | 5160 | 14200 | 16300 | 3390 | 246 |



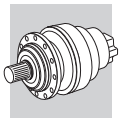
## $P_1$ = 0.55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.57** | 8101 | 1.4 | 2423 | 7.5 | **307 L4** | **—** | **BN80A4** | **M1LA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.57** | 8101 | 2.1 | 2423 | 7.5 | **309 L4** | **—** | **BN80A4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.67** | 6934 | 1.0 | 2074 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.68** | 6826 | 2.1 | 2041 | 7.5 | **307 L4** | **—** | **BN80A4** | **M1LA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.69** | 6697 | 2.5 | 2003 | 7.5 | **309 L4** | **—** | **BN80A4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.75** | 6164 | 1.6 | 1843 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.79** | 5910 | 2.7 | 1767 | 7.5 | **307 L4** | **—** | **BN80A4** | **M1LA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.81** | 5761 | 3.0 | 1723 | 7.5 | **309 L4** | **—** | **BN80A4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.87** | 5339 | 1.6 | 1597 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.87** | 5319 | 2.8 | 1591 | 7.5 | **307 L4** | **—** | **BN80A4** | **M1LA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.94** | 4931 | 2.0 | 1475 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **1.0** | 4582 | 1.0 | 1370 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 36000 | 42000 | 62200 | 74000 | 23800 | 288 |
| **1.1** | 4278 | 2.0 | 1279 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 45000 | 51000 | 99700 | 116100 | 34000 | 300 |
| **1.1** | 4274 | 1.3 | 1278 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 36000 | 41900 | 60900 | 73300 | 23300 | 288 |
| **1.1** | 4262 | 2.9 | 1274 | 7.5 | **307 L4** | **—** | **BN80A4** | **M1LA4** | 50200 | 63000 | 107100 | 140400 | 43600 | 312 |
| **1.1** | 4250 | 0.9 | 1271 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 36000 | 41800 | 60800 | 73200 | 23200 | 288 |
| **1.3** | 3671 | 1.2 | 1098 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 34500 | 39800 | 58200 | 70000 | 22100 | 288 |
| **1.3** | 3660 | 2.1 | 1095 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 42900 | 48600 | 95200 | 110800 | 32200 | 300 |
| **1.4** | 3406 | 1.1 | 1018 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.4** | 3406 | 1.6 | 1018 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.4** | 3394 | 2.8 | 1015 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 41900 | 47400 | 93000 | 108300 | 31400 | 300 |
| **1.6** | 2997 | 1.4 | 896 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 32200 | 37200 | 54800 | 65900 | 20700 | 288 |
| **1.6** | 2933 | 2.6 | 877 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 39900 | 45200 | 89000 | 103700 | 29900 | 300 |
| **1.7** | 2776 | 2.3 | 830 | 12.0 | **—** | **306 R4** | **BN80A4** | **M1LA4** | 39100 | 44300 | 87600 | 102000 | 29400 | 302 |
| **1.7** | 2754 | 1.5 | 824 | 12.0 | **—** | **305 R4** | **BN80A4** | **M1LA4** | 31300 | 36200 | 53400 | 64300 | 20100 | 278 |
| **1.7** | 2729 | 1.0 | 816 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 31300 | 36100 | 53300 | 64100 | 20000 | 264 |
| **1.7** | 2729 | 1.4 | 816 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 2729 | 2.0 | 816 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 2705 | 2.8 | 809 | 6.0 | **306 L4** | **—** | **BN80A4** | **M1LA4** | 38800 | 44000 | 86900 | 101200 | 29200 | 300 |
| **1.7** | 2665 | 1.3 | 797 | 12.0 | **—** | **305 R4** | **BN80A4** | **M1LA4** | 31000 | 35800 | 52900 | 63600 | 19900 | 278 |
| **1.9** | 2401 | 1.7 | 718 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 29900 | 34600 | 51300 | 61700 | 19200 | 288 |
| **2.0** | 2347 | 1.1 | 702 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 29700 | 34300 | 50900 | 61300 | 19100 | 288 |
| **2.0** | 2339 | 1.1 | 699 | 12.0 | **—** | **304 R4** | **BN80A4** | **M1LA4** | 29700 | 34300 | 50900 | 61200 | 19000 | 278 |
| **2.1** | 2225 | 2.7 | 665 | 12.0 | **—** | **306 R4** | **BN80A4** | **M1LA4** | 36400 | 41200 | 82000 | 95400 | 27300 | 302 |
| **2.1** | 2203 | 1.0 | 659 | 12.0 | **—** | **303 R4** | **BN80A4** | **M1LA4** | 29100 | 33600 | 50000 | 60100 | 18700 | 266 |
| **2.1** | 2203 | 1.8 | 659 | 12.0 | **—** | **305 R4** | **BN80A4** | **M1LA4** | 29100 | 33600 | 50000 | 60100 | 18700 | 278 |
| **2.1** | 2172 | 1.1 | 649 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 29000 | 33400 | 49700 | 59800 | 18600 | 264 |
| **2.1** | 2172 | 1.6 | 649 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.1** | 2172 | 2.1 | 649 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.3** | 2061 | 1.0 | 616 | 6.0 | **301 L4** | **—** | **BN80A4** | **M1LA4** | 9260 | 9260 | 24000 | 27600 | 6090 | 254 |
| **2.5** | 1895 | 1.3 | 567 | 12.0 | **—** | **303 R4** | **BN80A4** | **M1LA4** | 27700 | 32000 | 47700 | 57400 | 17800 | 266 |
| **2.5** | 1895 | 2.6 | 567 | 12.0 | **—** | **305 R4** | **BN80A4** | **M1LA4** | 27700 | 32000 | 47700 | 57400 | 17800 | 278 |
| **2.5** | 1871 | 1.4 | 560 | 12.0 | **—** | **304 R4** | **BN80A4** | **M1LA4** | 27600 | 31800 | 47600 | 57200 | 17700 | 278 |
| **2.5** | 1865 | 1.1 | 558 | 6.0 | **301 L4** | **—** | **BN80A4** | **M1LA4** | 8950 | 8950 | 23300 | 26700 | 5890 | 254 |
| **2.5** | 1860 | 1.5 | 556 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 264 |
| **2.5** | 1860 | 2.0 | 556 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.5** | 1860 | 3.0 | 556 | 6.0 | **305 L4** | **—** | **BN80A4** | **M1LA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.6** | 1765 | 1.1 | 528 | 12.0 | **—** | **303 R4** | **BN80A4** | **M1LA4** | 27000 | 31200 | 46700 | 56200 | 17300 | 266 |
| **2.6** | 1765 | 2.2 | 528 | 12.0 | **—** | **305 R4** | **BN80A4** | **M1LA4** | 27000 | 31200 | 46700 | 56200 | 17300 | 278 |
| **2.8** | 1651 | 1.3 | 494 | 6.0 | **301 L4** | **—** | **BN80A4** | **M1LA4** | 8600 | 8600 | 22400 | 25800 | 5650 | 254 |
| **2.8** | 1646 | 1.6 | 492 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 264 |
| **2.8** | 1646 | 2.3 | 492 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **3.1** | 1515 | 1.3 | 453 | 10.0 | **—** | **301 R4** | **BN80A4** | **M1LA4** | 8350 | 8350 | 21900 | 25100 | 5490 | 256 |
| **3.1** | 1510 | 1.5 | 452 | 12.0 | **—** | **303 R4** | **BN80A4** | **M1LA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 266 |
| **3.1** | 1510 | 2.4 | 452 | 12.0 | **—** | **304 R4** | **BN80A4** | **M1LA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 1495 | 1.4 | 447 | 6.0 | **301 L4** | **—** | **BN80A4** | **M1LA4** | 8320 | 8320 | 21800 | 25000 | 5470 | 254 |
| **3.1** | 1490 | 1.9 | 446 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 264 |
| **3.1** | 1490 | 2.5 | 446 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.3** | 1473 | 1.7 | 426 | 7.5 | **304 L3** | **—** | **BN80A4** | **M1LA4** | 25200 | 29000 | 43800 | 52700 | 16100 | 288 |
| **3.4** | 1383 | 1.8 | 414 | 12.0 | **—** | **304 R4** | **BN80A4** | **M1LA4** | 24900 | 28800 | 43400 | 52300 | 16000 | 278 |
| **3.4** | 1382 | 1.7 | 413 | 6.0 | **303 L4** | **—** | **BN80A4** | **M1LA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 264 |
| **3.4** | 1382 | 2.2 | 413 | 6.0 | **304 L4** | **—** | **BN80A4** | **M1LA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.4** | 1348 | 1.0 | 403 | 6.0 | **301 L4** | **—** | **BN80A4** | **M1LA4** | 8040 | 8040 | 21100 | 24300 | 5280 | 254 |
| **3.5** | 1389 | 1.4 | 402 | 7.5 | **303 L3** | **—** | **BN80A4** | **M1LA4** | 24700 | 28500 | 43100 | 51800 | 15800 | 264 |
| **3.5** | 1389 | 2.7 | 402 | 7.5 | **305 L3** | **—** | **BN80A4** | **M1LA4** | 24700 | 28500 | 43100 | 51800 | 15800 | 288 |



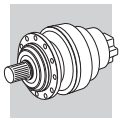
## $P_1$ = 0.55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.5** | 1316 | 1.0 | 394 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 7970 | 7970 | 21000 | 24100 | 5240 | 256 |
| **3.6** | 1305 | 1.5 | 390 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 24400 | 28200 | 42700 | 51400 | 15700 | 266 |
| **3.6** | 1305 | 2.9 | 390 | 12.0 | — | **305 R4** | **BN80A4** | **M1LA4** | 24400 | 28200 | 42700 | 51400 | 15700 | 278 |
| **3.6** | 1344 | 1.3 | 389 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 24400 | 28200 | 42600 | 51300 | 15700 | 264 |
| **3.6** | 1344 | 2.4 | 389 | 7.5 | **305 L3** | — | **BN80A4** | **M1LA4** | 24400 | 28200 | 42600 | 51300 | 15700 | 288 |
| **3.7** | 1293 | 1.0 | 374 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 7840 | 7840 | 20600 | 23700 | 5150 | 254 |
| **3.8** | 1217 | 1.9 | 364 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 266 |
| **3.8** | 1217 | 2.4 | 364 | 12.0 | — | **304 R4** | **BN80A4** | **M1LA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **3.8** | 1214 | 1.6 | 363 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 7760 | 7760 | 20500 | 23500 | 5100 | 256 |
| **4.1** | 1180 | 2.1 | 341 | 7.5 | **304 L3** | — | **BN80A4** | **M1LA4** | 23400 | 27000 | 41000 | 49300 | 15000 | 288 |
| **4.1** | 1129 | 2.1 | 338 | 12.0 | — | **304 R4** | **BN80A4** | **M1LA4** | 23300 | 26900 | 40900 | 49200 | 14900 | 278 |
| **4.1** | 1122 | 2.0 | 336 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 23200 | 26800 | 40800 | 49100 | 14900 | 266 |
| **4.2** | 1105 | 1.7 | 330 | 6.0 | **301 L4** | — | **BN80A4** | **M1LA4** | 7520 | 7520 | 19900 | 22900 | 4940 | 254 |
| **4.3** | 1111 | 1.7 | 321 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 22900 | 26400 | 40300 | 48500 | 14700 | 264 |
| **4.4** | 1045 | 1.8 | 313 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 22700 | 26200 | 39900 | 48100 | 14600 | 266 |
| **4.6** | 1034 | 1.3 | 299 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 7270 | 7270 | 19300 | 22200 | 4780 | 254 |
| **4.8** | 973 | 1.0 | 291 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 7210 | 7210 | 19100 | 22000 | 4740 | 246 |
| **4.8** | 973 | 1.9 | 291 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 7210 | 7210 | 19100 | 22000 | 4740 | 256 |
| **4.8** | 970 | 2.7 | 290 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 266 |
| **5.0** | 956 | 2.3 | 276 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 21800 | 25200 | 38500 | 46300 | 14000 | 264 |
| **5.1** | 944 | 2.5 | 273 | 7.5 | **304 L3** | — | **BN80A4** | **M1LA4** | 21700 | 25000 | 38300 | 46100 | 13900 | 288 |
| **5.2** | 897 | 1.0 | 268 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 7020 | 7020 | 18700 | 21500 | 4610 | 246 |
| **5.2** | 897 | 2.1 | 268 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 7020 | 7020 | 18700 | 21500 | 4610 | 256 |
| **5.4** | 891 | 2.1 | 258 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 21300 | 24600 | 37700 | 45300 | 13600 | 264 |
| **5.4** | 853 | 2.2 | 255 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 21200 | 24500 | 37600 | 45200 | 13600 | 266 |
| **5.8** | 829 | 1.6 | 240 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 6760 | 6760 | 18100 | 20800 | 4440 | 254 |
| **5.9** | 794 | 1.6 | 237 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 6740 | 6740 | 18000 | 20700 | 4430 | 256 |
| **6.0** | 772 | 2.4 | 231 | 12.0 | — | **303 R4** | **BN80A4** | **M1LA4** | 20500 | 23700 | 36500 | 43900 | 13200 | 266 |
| **6.3** | 764 | 1.2 | 221 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 6580 | 6580 | 17600 | 20300 | 4320 | 244 |
| **6.3** | 764 | 2.3 | 221 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 6580 | 6580 | 17600 | 20300 | 4320 | 254 |
| **6.3** | 762 | 3.0 | 220 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 264 |
| **6.5** | 719 | 1.3 | 215 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 6520 | 6520 | 17500 | 20100 | 4280 | 246 |
| **6.5** | 719 | 2.5 | 215 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 6520 | 6520 | 17500 | 20100 | 4280 | 256 |
| **7.2** | 664 | 1.0 | 192 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 6280 | 6280 | 16900 | 19400 | 4130 | 244 |
| **7.2** | 664 | 2.0 | 192 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 6280 | 6280 | 16900 | 19400 | 4130 | 254 |
| **7.3** | 658 | 2.8 | 190 | 7.5 | **303 L3** | — | **BN80A4** | **M1LA4** | 19200 | 22200 | 34400 | 41400 | 12300 | 264 |
| **7.8** | 612 | 1.4 | 177 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 6110 | 6110 | 16500 | 19000 | 4020 | 244 |
| **7.8** | 612 | 2.9 | 177 | 7.5 | **301 L3** | — | **BN80A4** | **M1LA4** | 6110 | 6110 | 16500 | 19000 | 4020 | 254 |
| **7.9** | 587 | 1.5 | 175 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 6090 | 6090 | 16500 | 18900 | 4000 | 246 |
| **8.8** | 531 | 1.6 | 159 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 5890 | 5890 | 16000 | 18300 | 3870 | 246 |
| **9.7** | 479 | 1.4 | 143 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 5690 | 5690 | 15500 | 17800 | 3740 | 246 |
| **9.7** | 479 | 2.7 | 143 | 10.0 | — | **301 R4** | **BN80A4** | **M1LA4** | 5690 | 5690 | 15500 | 17800 | 3740 | 256 |
| **9.8** | 491 | 1.8 | 142 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 5670 | 5670 | 15400 | 17700 | 3730 | 244 |
| **10.5** | 459 | 1.2 | 133 | 12.0 | — | **300 R3** | **BN80A4** | **M1LA4** | 5420 | 5420 | 14800 | 17000 | 3570 | 246 |
| **10.5** | 459 | 2.5 | 133 | 12.0 | — | **301 R3** | **BN80A4** | **M1LA4** | 5550 | 5550 | 15100 | 17400 | 3650 | 256 |
| **10.6** | 453 | 1.9 | 131 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 5520 | 5520 | 15100 | 17300 | 3630 | 244 |
| **10.7** | 434 | 2.0 | 130 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 5510 | 5510 | 15000 | 17300 | 3620 | 246 |
| **12.0** | 401 | 1.6 | 116 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 5300 | 5300 | 14500 | 16700 | 3490 | 244 |
| **13.1** | 368 | 1.8 | 106 | 12.0 | — | **300 R3** | **BN80A4** | **M1LA4** | 5160 | 5160 | 14200 | 16300 | 3390 | 246 |
| **13.1** | 354 | 2.4 | 106 | 10.0 | — | **300 R4** | **BN80A4** | **M1LA4** | 5150 | 5150 | 14100 | 16200 | 3380 | 246 |
| **13.3** | 363 | 2.4 | 105 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 5130 | 5130 | 14100 | 16200 | 3370 | 244 |
| **16.2** | 296 | 2.9 | 85.6 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 4790 | 4790 | 13300 | 15200 | 3150 | 244 |
| **16.3** | 294 | 2.2 | 85.2 | 12.0 | — | **300 R3** | **BN80A4** | **M1LA4** | 4790 | 4790 | 13200 | 15200 | 3150 | 246 |
| **19.9** | 242 | 2.7 | 69.9 | 7.5 | **300 L3** | — | **BN80A4** | **M1LA4** | 4480 | 4480 | 12500 | 14300 | 2950 | 244 |
| **20.4** | 236 | 2.8 | 68.2 | 12.0 | — | **300 R3** | **BN80A4** | **M1LA4** | 4440 | 4440 | 12400 | 14200 | 2920 | 246 |
| **21.5** | 231 | 2.4 | 64.8 | 7.5 | **300 L2** | — | **BN80A4** | **M1LA4** | 4370 | 4370 | 12200 | 14000 | 2870 | 244 |



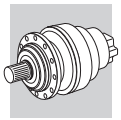
## $P_1$ = 0.75 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.55** | 11325 | 2.3 | 2523 | 11.0 | **310 L4** | **—** | **BN80B4** | **—** | — | — | 133000 | 166000 | 65000 | 336 |
| **0.58** | 10872 | 1.0 | 2423 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.58** | 10872 | 1.6 | 2423 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.69** | 9161 | 1.6 | 2041 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.69** | 9075 | 2.9 | 2022 | 11.0 | **310 L4** | **—** | **BN80B4** | **—** | — | — | 133000 | 166000 | 65000 | 336 |
| **0.70** | 8988 | 1.9 | 2003 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.76** | 8272 | 1.2 | 1843 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.79** | 7932 | 2.0 | 1767 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.81** | 7731 | 2.2 | 1723 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.87** | 7202 | 2.4 | 1605 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 110000 | 145000 | 36000 | 324 |
| **0.88** | 7166 | 1.2 | 1597 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.88** | 7138 | 2.1 | 1591 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.95** | 6618 | 1.5 | 1475 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.99** | 6320 | 2.5 | 1408 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 51900 | 65000 | 109000 | 144700 | 45000 | 312 |
| **1.0** | 6195 | 2.7 | 1380 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 110000 | 143800 | 35800 | 324 |
| **1.1** | 5771 | 2.9 | 1286 | 7.5 | **309 L4** | **—** | **BN80B4** | **—** | — | — | 109200 | 140800 | 35000 | 324 |
| **1.1** | 5742 | 1.5 | 1279 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 45000 | 51000 | 99700 | 116100 | 34000 | 300 |
| **1.1** | 5736 | 1.0 | 1278 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 36000 | 41900 | 60900 | 73300 | 23300 | 288 |
| **1.1** | 5720 | 2.2 | 1274 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 50200 | 63000 | 107100 | 140400 | 43600 | 312 |
| **1.2** | 5191 | 2.7 | 1157 | 7.5 | **307 L4** | **—** | **BN80B4** | **M2SA4** | 48600 | 60900 | 104100 | 136400 | 42200 | 312 |
| **1.3** | 4927 | 0.9 | 1098 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 33700 | 38900 | 57000 | 68600 | 21600 | 288 |
| **1.3** | 4912 | 1.6 | 1095 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 42900 | 48600 | 95200 | 110800 | 32200 | 300 |
| **1.4** | 4571 | 1.2 | 1018 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 33600 | 38800 | 56900 | 68500 | 21600 | 288 |
| **1.4** | 4555 | 2.1 | 1015 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 41900 | 47400 | 93000 | 108300 | 31400 | 300 |
| **1.6** | 4022 | 1.1 | 896 | 7.5 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 46300 | 58000 | 99600 | 130500 | 40200 | 288 |
| **1.6** | 3936 | 2.0 | 877 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 39900 | 45200 | 89000 | 103700 | 29900 | 300 |
| **1.7** | 3726 | 1.7 | 830 | 12.0 | **—** | **306 R4** | **BN80B4** | **M2SA4** | 39100 | 44300 | 87600 | 102000 | 29400 | 302 |
| **1.7** | 3696 | 1.1 | 824 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 31300 | 36200 | 53400 | 64300 | 20100 | 278 |
| **1.7** | 3663 | 1.0 | 816 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 3663 | 1.5 | 816 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 3630 | 2.1 | 809 | 6.0 | **306 L4** | **—** | **BN80B4** | **M2SA4** | 38800 | 44000 | 86900 | 101200 | 29200 | 300 |
| **1.8** | 3577 | 1.0 | 797 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 31000 | 35800 | 52900 | 63600 | 19900 | 278 |
| **1.9** | 3223 | 1.3 | 718 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 29900 | 34600 | 51300 | 61700 | 19200 | 288 |
| **2.1** | 2986 | 2.0 | 665 | 12.0 | **—** | **306 R4** | **BN80B4** | **M2SA4** | 36400 | 41200 | 82000 | 95400 | 27300 | 302 |
| **2.1** | 2957 | 1.4 | 659 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 29100 | 33600 | 50000 | 60100 | 18700 | 278 |
| **2.2** | 2915 | 1.2 | 649 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.2** | 2915 | 1.5 | 649 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.5** | 2544 | 1.0 | 567 | 12.0 | **—** | **303 R4** | **BN80B4** | **M2SA4** | 27700 | 32000 | 47700 | 57400 | 17800 | 266 |
| **2.5** | 2544 | 1.9 | 567 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 27700 | 32000 | 47700 | 57400 | 17800 | 278 |
| **2.5** | 2511 | 1.0 | 560 | 12.0 | **—** | **304 R4** | **BN80B4** | **M2SA4** | 27600 | 31800 | 47600 | 57200 | 17700 | 278 |
| **2.5** | 2496 | 1.1 | 556 | 6.0 | **303 L4** | **—** | **BN80B4** | **M2SA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 264 |
| **2.5** | 2496 | 1.5 | 556 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.5** | 2496 | 2.2 | 556 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.5** | 2468 | 2.9 | 550 | 12.0 | **—** | **306 R4** | **BN80B4** | **M2SA4** | 34100 | 38700 | 77400 | 90100 | 25600 | 302 |
| **2.7** | 2369 | 1.7 | 528 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 27000 | 31200 | 46700 | 56200 | 17300 | 278 |
| **2.8** | 2216 | 0.9 | 494 | 6.0 | **301 L4** | **—** | **BN80B4** | **M2SA4** | 8400 | 8400 | 22000 | 25300 | 5520 | 254 |
| **2.8** | 2209 | 1.2 | 492 | 6.0 | **303 L4** | **—** | **BN80B4** | **M2SA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 264 |
| **2.8** | 2209 | 1.7 | 492 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **2.8** | 2209 | 2.4 | 492 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **3.1** | 2033 | 0.9 | 453 | 10.0 | **—** | **301 R4** | **BN80B4** | **M2SA4** | 8350 | 8350 | 21900 | 25100 | 5490 | 256 |
| **3.1** | 2027 | 1.1 | 452 | 12.0 | **—** | **303 R4** | **BN80B4** | **M2SA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 266 |
| **3.1** | 2027 | 1.8 | 452 | 12.0 | **—** | **304 R4** | **BN80B4** | **M2SA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 2027 | 2.3 | 452 | 12.0 | **—** | **305 R4** | **BN80B4** | **M2SA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 2006 | 1.0 | 447 | 6.0 | **301 L4** | **—** | **BN80B4** | **M2SA4** | 8320 | 8320 | 21800 | 25000 | 5470 | 254 |
| **3.1** | 2000 | 1.4 | 446 | 6.0 | **303 L4** | **—** | **BN80B4** | **M2SA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 264 |
| **3.1** | 2000 | 1.9 | 446 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.1** | 2000 | 2.7 | 446 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.3** | 1976 | 1.2 | 426 | 7.5 | **304 L3** | **—** | **BN80B4** | **M2SA4** | 25200 | 29000 | 43800 | 52700 | 16100 | 288 |
| **3.4** | 1856 | 1.3 | 414 | 12.0 | **—** | **304 R4** | **BN80B4** | **M2SA4** | 24900 | 28800 | 43400 | 52300 | 16000 | 278 |
| **3.4** | 1855 | 1.3 | 413 | 6.0 | **303 L4** | **—** | **BN80B4** | **M2SA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 264 |
| **3.4** | 1855 | 1.6 | 413 | 6.0 | **304 L4** | **—** | **BN80B4** | **M2SA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.4** | 1855 | 2.5 | 413 | 6.0 | **305 L4** | **—** | **BN80B4** | **M2SA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.5** | 1865 | 1.0 | 402 | 7.5 | **303 L3** | **—** | **BN80B4** | **M2SA4** | 24700 | 28500 | 43100 | 51800 | 15800 | 264 |
| **3.5** | 1865 | 2.0 | 402 | 7.5 | **305 L3** | **—** | **BN80B4** | **M2SA4** | 24700 | 28500 | 43100 | 51800 | 15800 | 288 |
| **3.6** | 1751 | 1.1 | 390 | 12.0 | **—** | **303 R4** | **BN80B4** | **M2SA4** | 24400 | 28200 | 42700 | 51400 | 15700 | 266 |



## $P_1$ = 0.75 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.6** | 1751 | 2.1 | 390 | 12.0 | — | **305 R4** | **BN80B4** | **M2SA4** | 24400 | 28200 | 42700 | 51400 | 15700 | 278 |
| **3.6** | 1804 | 0.9 | 389 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 24400 | 28200 | 42600 | 51300 | 15700 | 264 |
| **3.6** | 1804 | 1.8 | 389 | 7.5 | **305 L3** | — | **BN80B4** | **M2SA4** | 24400 | 28200 | 42600 | 51300 | 15700 | 288 |
| **3.8** | 1633 | 1.4 | 364 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 266 |
| **3.8** | 1633 | 1.8 | 364 | 12.0 | — | **304 R4** | **BN80B4** | **M2SA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **3.8** | 1633 | 2.8 | 364 | 12.0 | — | **305 R4** | **BN80B4** | **M2SA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **3.9** | 1629 | 1.2 | 363 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 7760 | 7760 | 20500 | 23500 | 5100 | 256 |
| **4.1** | 1584 | 1.5 | 341 | 7.5 | **304 L3** | — | **BN80B4** | **M2SA4** | 23400 | 27000 | 41000 | 49300 | 15000 | 288 |
| **4.1** | 1515 | 1.6 | 338 | 12.0 | — | **304 R4** | **BN80B4** | **M2SA4** | 23300 | 26900 | 40900 | 49200 | 14900 | 278 |
| **4.2** | 1506 | 1.5 | 336 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 23200 | 26800 | 40800 | 49100 | 14900 | 266 |
| **4.2** | 1482 | 1.3 | 330 | 12.0 | **301 L4** | — | **BN80B4** | **M2SA4** | 23200 | 26800 | 40800 | 49100 | 14900 | 254 |
| **4.4** | 1492 | 1.2 | 321 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 22900 | 26400 | 40300 | 48500 | 14700 | 264 |
| **4.4** | 1492 | 2.4 | 321 | 7.5 | **305 L3** | — | **BN80B4** | **M2SA4** | 22900 | 26400 | 40300 | 48500 | 14700 | 288 |
| **4.5** | 1403 | 1.3 | 313 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 22700 | 26200 | 39900 | 48100 | 14600 | 266 |
| **4.5** | 1403 | 2.6 | 313 | 12.0 | — | **305 R4** | **BN80B4** | **M2SA4** | 22700 | 26200 | 39900 | 48100 | 14600 | 278 |
| **4.6** | 1376 | 2.5 | 307 | 12.0 | — | **304 R4** | **BN80B4** | **M2SA4** | 22500 | 26000 | 39700 | 47800 | 14500 | 278 |
| **4.7** | 1388 | 0.9 | 299 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 7270 | 7270 | 19300 | 22200 | 4780 | 254 |
| **4.8** | 1305 | 1.4 | 291 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 7210 | 7210 | 19100 | 22000 | 4740 | 256 |
| **4.8** | 1301 | 2.0 | 290 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 266 |
| **4.8** | 1301 | 2.8 | 290 | 12.0 | — | **304 R4** | **BN80B4** | **M2SA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **5.1** | 1283 | 1.7 | 276 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 21800 | 25200 | 38500 | 46300 | 14000 | 264 |
| **5.1** | 1267 | 1.9 | 273 | 7.5 | **304 L3** | — | **BN80B4** | **M2SA4** | 21700 | 25000 | 38300 | 46100 | 13900 | 288 |
| **5.2** | 1204 | 1.6 | 268 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 7020 | 7020 | 18700 | 21500 | 4610 | 256 |
| **5.4** | 1195 | 1.5 | 258 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 21300 | 24600 | 37700 | 45300 | 13600 | 264 |
| **5.5** | 1145 | 1.6 | 255 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 21200 | 24500 | 37600 | 45200 | 13600 | 266 |
| **5.8** | 1112 | 1.2 | 240 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 6760 | 6760 | 18100 | 20800 | 4440 | 254 |
| **5.9** | 1066 | 1.2 | 237 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 6740 | 6740 | 18000 | 20700 | 4430 | 256 |
| **6.1** | 1037 | 1.8 | 231 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 20500 | 23700 | 36500 | 43900 | 13200 | 266 |
| **6.3** | 1026 | 1.7 | 221 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 6580 | 6580 | 17600 | 20300 | 4320 | 254 |
| **6.4** | 1023 | 2.2 | 220 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 264 |
| **6.5** | 965 | 0.9 | 215 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 6370 | 6370 | 17100 | 19700 | 4190 | 246 |
| **6.5** | 965 | 1.9 | 215 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 6520 | 6520 | 17500 | 20100 | 4280 | 256 |
| **6.5** | 962 | 2.8 | 214 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 266 |
| **6.9** | 936 | 2.6 | 202 | 7.5 | **304 L3** | — | **BN80B4** | **M2SA4** | 19600 | 22600 | 35000 | 42100 | 12600 | 288 |
| **7.3** | 891 | 1.5 | 192 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 6280 | 6280 | 16900 | 19400 | 4130 | 254 |
| **7.4** | 883 | 2.1 | 190 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 19200 | 22200 | 34400 | 41400 | 12300 | 264 |
| **7.6** | 830 | 2.8 | 185 | 12.0 | — | **303 R4** | **BN80B4** | **M2SA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 266 |
| **7.9** | 824 | 2.7 | 178 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 264 |
| **7.9** | 822 | 1.1 | 177 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 6110 | 6110 | 16500 | 19000 | 4020 | 244 |
| **7.9** | 822 | 2.2 | 177 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 6110 | 6110 | 16500 | 19000 | 4020 | 254 |
| **8.0** | 787 | 1.1 | 175 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 6090 | 6090 | 16500 | 18900 | 4000 | 246 |
| **8.0** | 787 | 2.2 | 175 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 6090 | 6090 | 16500 | 18900 | 4000 | 256 |
| **8.6** | 760 | 2.9 | 164 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 18300 | 21100 | 32900 | 39600 | 11700 | 264 |
| **8.8** | 713 | 1.2 | 159 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 5890 | 5890 | 16000 | 18300 | 3870 | 246 |
| **8.8** | 713 | 2.4 | 159 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 5890 | 5890 | 16000 | 18300 | 3870 | 256 |
| **9.2** | 708 | 2.6 | 152 | 7.5 | **303 L3** | — | **BN80B4** | **M2SA4** | 17900 | 20600 | 32200 | 38700 | 11500 | 264 |
| **9.8** | 643 | 1.0 | 143 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 5690 | 5690 | 15500 | 17800 | 3740 | 246 |
| **9.8** | 643 | 2.0 | 143 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 5690 | 5690 | 15500 | 17800 | 3740 | 256 |
| **9.9** | 659 | 1.3 | 142 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 5670 | 5670 | 15400 | 17700 | 3730 | 244 |
| **9.9** | 659 | 2.6 | 142 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 5670 | 5670 | 15400 | 17700 | 3730 | 254 |
| **10.5** | 617 | 1.9 | 133 | 12.0 | — | **301 R3** | **BN80B4** | **M2SA4** | 5550 | 5550 | 15100 | 17400 | 3650 | 256 |
| **10.7** | 607 | 1.4 | 131 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 5520 | 5520 | 15100 | 17300 | 3630 | 244 |
| **10.7** | 607 | 2.8 | 131 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 5520 | 5520 | 15100 | 17300 | 3630 | 254 |
| **10.8** | 582 | 1.5 | 130 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 5510 | 5510 | 15000 | 17300 | 3620 | 246 |
| **10.8** | 582 | 3.0 | 130 | 10.0 | — | **301 R4** | **BN80B4** | **M2SA4** | 5510 | 5510 | 15000 | 17300 | 3620 | 256 |
| **12.1** | 538 | 1.2 | 116 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 5300 | 5300 | 14500 | 16700 | 3490 | 244 |
| **12.1** | 538 | 2.4 | 116 | 7.5 | **301 L3** | — | **BN80B4** | **M2SA4** | 5300 | 5300 | 14500 | 16700 | 3490 | 254 |
| **13.2** | 494 | 1.3 | 106 | 12.0 | — | **300 R3** | **BN80B4** | **M2SA4** | 5160 | 5160 | 14200 | 16300 | 3390 | 246 |
| **13.2** | 494 | 2.6 | 106 | 12.0 | — | **301 R3** | **BN80B4** | **M2SA4** | 5160 | 5160 | 14200 | 16300 | 3390 | 256 |
| **13.2** | 475 | 1.8 | 106 | 10.0 | — | **300 R4** | **BN80B4** | **M2SA4** | 5150 | 5150 | 14100 | 16200 | 3380 | 246 |
| **13.4** | 487 | 1.8 | 105 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 5130 | 5130 | 14100 | 16200 | 3370 | 244 |
| **16.4** | 397 | 2.1 | 85.6 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 4790 | 4790 | 13300 | 15200 | 3150 | 244 |
| **16.4** | 395 | 1.6 | 85.2 | 12.0 | — | **300 R3** | **BN80B4** | **M2SA4** | 4790 | 4790 | 13200 | 15200 | 3150 | 246 |
| **17.8** | 365 | 2.3 | 78.7 | 12.0 | — | **300 R3** | **BN80B4** | **M2SA4** | 4660 | 4660 | 12900 | 14900 | 3060 | 246 |
| **18.1** | 360 | 2.4 | 77.5 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 4640 | 4640 | 12900 | 14800 | 3050 | 244 |

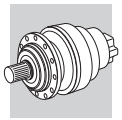


## $P_1$ = 0.75 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20.0** | 324 | 2.0 | 69.9 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 4480 | 4480 | 12500 | 14300 | 2950 | 244 |
| **20.5** | 317 | 2.1 | 68.2 | 12.0 | — | **300 R3** | **BN80B4** | **M2SA4** | 4440 | 4440 | 12400 | 14200 | 2920 | 246 |
| **21.6** | 311 | 1.8 | 64.8 | 7.5 | **300 L2** | — | **BN80B4** | **M2SA4** | 4370 | 4370 | 12200 | 14000 | 2870 | 244 |
| **22.1** | 294 | 2.9 | 63.2 | 7.5 | **300 L3** | — | **BN80B4** | **M2SA4** | 4330 | 4330 | 12100 | 13900 | 2850 | 244 |
| **22.2** | 292 | 2.9 | 62.9 | 12.0 | — | **300 R3** | **BN80B4** | **M2SA4** | 4330 | 4330 | 12100 | 13900 | 2840 | 246 |
| **27.0** | 249 | 2.6 | 51.9 | 7.5 | **300 L2** | — | **BN80B4** | **M2SA4** | 4060 | 4060 | 11400 | 13100 | 2670 | 244 |

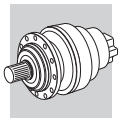
## $P_1$ = 1.1 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.55** | 16877 | 1.5 | 2523 | 11.0 | **310 L4** | — | **BN90S4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.57** | 16202 | 1.0 | 2423 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.66** | 14021 | 2.4 | 2096 | 11.0 | **311 L4** | — | **BN90S4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.68** | 13652 | 1.0 | 2041 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.69** | 13523 | 1.9 | 2022 | 11.0 | **310 L4** | — | **BN90S4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.69** | 13394 | 1.3 | 2003 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.77** | 12001 | 2.2 | 1794 | 11.0 | **310 L4** | — | **BN90S4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.79** | 11820 | 1.3 | 1767 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.81** | 11521 | 1.5 | 1723 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.83** | 11179 | 2.3 | 1672 | 11.0 | **310 L4** | — | **BN90S4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.87** | 10732 | 1.6 | 1605 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.87** | 10638 | 1.4 | 1591 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.94** | 9862 | 1.0 | 1475 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 45000 | 51000 | 101000 | 119000 | 35000 | 300 |
| **0.97** | 9616 | 2.7 | 1438 | 11.0 | **310 L4** | — | **BN90S4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.99** | 9419 | 1.7 | 1408 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 51900 | 65000 | 109000 | 144700 | 45000 | 312 |
| **1.0** | 9232 | 1.8 | 1380 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 110000 | 143800 | 35800 | 324 |
| **1.1** | 8599 | 1.9 | 1286 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 109200 | 140800 | 35000 | 324 |
| **1.1** | 8557 | 1.0 | 1279 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 45000 | 51000 | 99700 | 116100 | 34000 | 300 |
| **1.1** | 8524 | 1.4 | 1274 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 50200 | 63000 | 107100 | 140400 | 43600 | 312 |
| **1.2** | 7736 | 1.8 | 1157 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 48600 | 60900 | 104100 | 136400 | 42200 | 312 |
| **1.2** | 7687 | 2.1 | 1149 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 105500 | 136100 | 33700 | 324 |
| **1.3** | 7320 | 1.1 | 1095 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 42900 | 48600 | 95200 | 110800 | 32200 | 300 |
| **1.4** | 6788 | 1.4 | 1015 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 41900 | 47400 | 93000 | 108300 | 31400 | 300 |
| **1.4** | 6682 | 2.1 | 999 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 46300 | 58000 | 99600 | 130500 | 40200 | 312 |
| **1.4** | 6682 | 2.7 | 999 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 101200 | 130500 | 32200 | 324 |
| **1.5** | 6061 | 2.5 | 906 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 44800 | 56200 | 96700 | 126800 | 38900 | 312 |
| **1.5** | 6061 | 3.0 | 906 | 7.5 | **309 L4** | — | **BN90S4** | — | — | — | 98300 | 126800 | 31100 | 324 |
| **1.6** | 5866 | 1.3 | 877 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 39900 | 45200 | 89000 | 103700 | 29900 | 300 |
| **1.7** | 5553 | 1.1 | 830 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 39100 | 44300 | 87600 | 102000 | 29400 | 302 |
| **1.7** | 5458 | 1.0 | 816 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 31300 | 36100 | 53300 | 64100 | 20000 | 288 |
| **1.7** | 5409 | 1.4 | 809 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 38800 | 44000 | 86900 | 101200 | 29200 | 300 |
| **1.7** | 5354 | 2.5 | 801 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 43000 | 53900 | 93200 | 122100 | 37400 | 312 |
| **2.0** | 4679 | 2.0 | 700 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 37000 | 41900 | 83200 | 96900 | 27800 | 300 |
| **2.0** | 4613 | 2.1 | 690 | 15.0 | — | **307 R4** | **BN90S4** | **M2SB4** | 40900 | 51300 | 89100 | 116800 | 35500 | 314 |
| **2.1** | 4449 | 1.4 | 665 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 36400 | 41200 | 82000 | 95400 | 27300 | 302 |
| **2.1** | 4407 | 0.9 | 659 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 29100 | 33600 | 50000 | 60100 | 18700 | 278 |
| **2.1** | 4371 | 3.0 | 654 | 7.5 | **307 L4** | — | **BN90S4** | **M2SB4** | 40200 | 50400 | 87700 | 114900 | 34900 | 312 |
| **2.1** | 4344 | 1.0 | 649 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 29000 | 33400 | 49700 | 59800 | 18600 | 288 |
| **2.2** | 4250 | 2.2 | 636 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 35800 | 40600 | 80800 | 94100 | 26900 | 300 |
| **2.4** | 3949 | 2.1 | 590 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 34900 | 39600 | 79100 | 92100 | 26200 | 302 |
| **2.4** | 3941 | 2.4 | 589 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 34900 | 39600 | 79000 | 92000 | 26200 | 300 |
| **2.5** | 3791 | 1.3 | 567 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 27700 | 32000 | 47700 | 57400 | 17800 | 278 |
| **2.5** | 3719 | 1.0 | 556 | 6.0 | **304 L4** | — | **BN90S4** | **M2SB4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.5** | 3719 | 1.5 | 556 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.5** | 3678 | 2.0 | 550 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 34100 | 38700 | 77400 | 90100 | 25600 | 302 |
| **2.6** | 3531 | 1.1 | 528 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 27000 | 31200 | 46700 | 56200 | 17300 | 278 |
| **2.7** | 3406 | 2.8 | 509 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 33300 | 37700 | 75600 | 88100 | 25000 | 300 |
| **2.8** | 3292 | 1.1 | 492 | 6.0 | **304 L4** | — | **BN90S4** | **M2SB4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **2.8** | 3292 | 1.6 | 492 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **2.8** | 3280 | 2.8 | 490 | 15.0 | — | **307 R4** | **BN90S4** | **M2SB4** | 36500 | 45800 | 80500 | 105400 | 31700 | 314 |
| **2.8** | 3264 | 2.8 | 488 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 32800 | 37100 | 74700 | 87000 | 24600 | 302 |



## $P_1$ = 1.1 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **3.1** | 3041 | 2.3 | 455 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 32000 | 36300 | 73100 | 85100 | 24100 | 302 |
| **3.1** | 3021 | 1.2 | 452 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 3021 | 1.6 | 452 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 2980 | 0.9 | 446 | 6.0 | **303 L4** | — | **BN90S4** | **M2SB4** | 25500 | 29500 | 44400 | 53400 | 16400 | 264 |
| **3.1** | 2980 | 1.2 | 446 | 6.0 | **304 L4** | — | **BN90S4** | **M2SB4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.1** | 2980 | 1.8 | 446 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.4** | 2764 | 1.1 | 413 | 6.0 | **304 L4** | — | **BN90S4** | **M2SB4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.4** | 2764 | 1.7 | 413 | 6.0 | **305 L4** | — | **BN90S4** | **M2SB4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.4** | 2801 | 2.0 | 405 | 7.5 | **306 L3** | — | **BN90S4** | **M2SB4** | 30800 | 34900 | 70600 | 82200 | 23100 | 300 |
| **3.5** | 2779 | 1.4 | 402 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 24700 | 28500 | 43100 | 51800 | 15800 | 288 |
| **3.6** | 2614 | 2.6 | 391 | 6.0 | **306 L4** | — | **BN90S4** | **M2SB4** | 30400 | 34500 | 69900 | 81400 | 22900 | 300 |
| **3.6** | 2609 | 1.4 | 390 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 24400 | 28200 | 42700 | 51400 | 15700 | 278 |
| **3.6** | 2601 | 2.9 | 389 | 12.0 | — | **306 R4** | **BN90S4** | **M2SB4** | 30400 | 34400 | 69800 | 81200 | 22800 | 302 |
| **3.6** | 2689 | 1.2 | 389 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 24400 | 28200 | 42600 | 51300 | 15700 | 288 |
| **3.8** | 2434 | 0.9 | 364 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 23900 | 27600 | 41800 | 50300 | 15300 | 266 |
| **3.8** | 2434 | 1.2 | 364 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **3.8** | 2434 | 1.9 | 364 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **4.1** | 2360 | 1.0 | 341 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 23400 | 27000 | 41000 | 49300 | 15000 | 288 |
| **4.1** | 2257 | 1.1 | 338 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 23300 | 26900 | 40900 | 49200 | 14900 | 278 |
| **4.1** | 2244 | 1.0 | 336 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 23200 | 26800 | 40800 | 49100 | 14900 | 266 |
| **4.1** | 2244 | 2.0 | 336 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 23200 | 26800 | 40800 | 49100 | 14900 | 278 |
| **4.3** | 2244 | 2.5 | 325 | 7.5 | **306 L3** | — | **BN90S4** | **M2SB4** | 28600 | 32400 | 66100 | 76900 | 21500 | 300 |
| **4.3** | 2223 | 1.6 | 321 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 22900 | 26400 | 40300 | 48500 | 14700 | 288 |
| **4.4** | 2091 | 1.7 | 313 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 22700 | 26200 | 39900 | 48100 | 14600 | 278 |
| **4.5** | 2050 | 1.7 | 307 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 22500 | 26000 | 39700 | 47800 | 14500 | 278 |
| **4.8** | 1945 | 1.0 | 291 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 7210 | 7210 | 19100 | 22000 | 4740 | 256 |
| **4.8** | 1939 | 1.4 | 290 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 22100 | 25600 | 39100 | 47000 | 14200 | 266 |
| **4.8** | 1939 | 1.9 | 290 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.8** | 1939 | 2.7 | 290 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.8** | 1992 | 2.8 | 288 | 7.5 | **306 L3** | — | **BN90S4** | **M2SB4** | 27500 | 31200 | 63700 | 74200 | 20700 | 300 |
| **5.0** | 1912 | 1.2 | 276 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 21800 | 25200 | 38500 | 46300 | 14000 | 264 |
| **5.0** | 1912 | 2.3 | 276 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 21800 | 25200 | 38500 | 46300 | 14000 | 288 |
| **5.1** | 1888 | 1.3 | 273 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 21700 | 25000 | 38300 | 46100 | 13900 | 288 |
| **5.2** | 1855 | 3.0 | 268 | 7.5 | **306 L3** | — | **BN90S4** | **M2SB4** | 26900 | 30400 | 62400 | 72700 | 20200 | 300 |
| **5.2** | 1794 | 1.0 | 268 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 7020 | 7020 | 18700 | 21500 | 4610 | 256 |
| **5.2** | 1789 | 2.0 | 267 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 21500 | 24900 | 38100 | 45900 | 13800 | 278 |
| **5.4** | 1781 | 1.0 | 258 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 21300 | 24600 | 37700 | 45300 | 13600 | 264 |
| **5.4** | 1781 | 2.0 | 258 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 21300 | 24600 | 37700 | 45300 | 13600 | 288 |
| **5.4** | 1707 | 1.1 | 255 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 21200 | 24500 | 37600 | 45200 | 13600 | 266 |
| **5.4** | 1707 | 2.1 | 255 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 21200 | 24500 | 37600 | 45200 | 13600 | 278 |
| **6.0** | 1545 | 1.2 | 231 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 20500 | 23700 | 36500 | 43900 | 13200 | 266 |
| **6.0** | 1545 | 2.3 | 231 | 12.0 | — | **305 R4** | **BN90S4** | **M2SB4** | 20500 | 23700 | 36500 | 43900 | 13200 | 278 |
| **6.1** | 1515 | 2.3 | 227 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 20400 | 23500 | 36300 | 43600 | 13100 | 278 |
| **6.3** | 1528 | 1.2 | 221 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 6580 | 6580 | 17600 | 20300 | 4320 | 254 |
| **6.3** | 1524 | 1.5 | 220 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 20200 | 23300 | 36000 | 43300 | 13000 | 264 |
| **6.3** | 1524 | 2.4 | 220 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.5** | 1438 | 1.3 | 215 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 6520 | 6520 | 17500 | 20100 | 4280 | 256 |
| **6.5** | 1433 | 1.9 | 214 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 20000 | 23100 | 35700 | 42900 | 12800 | 266 |
| **6.5** | 1433 | 2.5 | 214 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.9** | 1395 | 1.7 | 202 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 19600 | 22600 | 35000 | 42100 | 12600 | 288 |
| **7.2** | 1328 | 1.0 | 192 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 6280 | 6280 | 16900 | 19400 | 4130 | 254 |
| **7.3** | 1316 | 1.4 | 190 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 19200 | 22200 | 34400 | 41400 | 12300 | 264 |
| **7.3** | 1316 | 2.7 | 190 | 7.5 | **305 L3** | — | **BN90S4** | **M2SB4** | 19200 | 22200 | 34400 | 41400 | 12300 | 288 |
| **7.5** | 1237 | 1.9 | 185 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 19100 | 22000 | 34100 | 41100 | 12200 | 266 |
| **7.5** | 1237 | 2.8 | 185 | 12.0 | — | **304 R4** | **BN90S4** | **M2SB4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.8** | 1228 | 1.8 | 178 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 18800 | 21700 | 33700 | 40600 | 12100 | 264 |
| **7.8** | 1228 | 2.3 | 178 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **7.8** | 1225 | 1.4 | 177 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 6110 | 6110 | 16500 | 19000 | 4020 | 254 |
| **7.9** | 1173 | 1.5 | 175 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 6090 | 6090 | 16500 | 18900 | 4000 | 256 |
| **8.4** | 1139 | 2.1 | 165 | 7.5 | **304 L3** | — | **BN90S4** | **M2SB4** | 18300 | 21200 | 33000 | 39600 | 11800 | 288 |
| **8.5** | 1132 | 1.9 | 164 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 18300 | 21100 | 32900 | 39600 | 11700 | 264 |
| **8.8** | 1062 | 1.6 | 159 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 5890 | 5890 | 16000 | 18300 | 3870 | 256 |
| **8.8** | 1059 | 2.5 | 158 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 18100 | 20900 | 32600 | 39200 | 11600 | 266 |
| **9.1** | 1055 | 1.7 | 152 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 17900 | 20600 | 32200 | 38700 | 11500 | 264 |
| **9.4** | 991 | 2.3 | 148 | 12.0 | — | **303 R4** | **BN90S4** | **M2SB4** | 17700 | 20400 | 31900 | 38400 | 11400 | 266 |



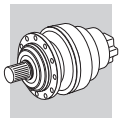


## $P_1$ = 1.1 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9.7** | 958 | 1.4 | 143 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 5690 | 5690 | 15500 | 17800 | 3740 | 256 |
| **9.8** | 981 | 1.8 | 142 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 5670 | 5670 | 15400 | 17700 | 3730 | 254 |
| **9.8** | 978 | 2.7 | 141 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 17400 | 20100 | 31500 | 37900 | 11200 | 264 |
| **10.5** | 919 | 1.3 | 133 | 12.0 | — | **301 R3** | **BN90S4** | **M2SB4** | 5550 | 5550 | 15100 | 17400 | 3650 | 256 |
| **10.6** | 905 | 1.0 | 131 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 5520 | 5520 | 15100 | 17300 | 3630 | 244 |
| **10.6** | 905 | 1.9 | 131 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 5520 | 5520 | 15100 | 17300 | 3630 | 254 |
| **10.7** | 867 | 1.0 | 130 | 10.0 | — | **300 R4** | **BN90S4** | **M2SB4** | 5510 | 5510 | 15000 | 17300 | 3620 | 246 |
| **10.7** | 867 | 2.0 | 130 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 5510 | 5510 | 15000 | 17300 | 3620 | 256 |
| **11.2** | 861 | 2.1 | 124 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 16700 | 19300 | 30300 | 36500 | 10700 | 264 |
| **11.5** | 839 | 2.9 | 121 | 14.0 | — | **304 R3** | **BN90S4** | **M2SB4** | 16600 | 19100 | 30100 | 36200 | 10600 | 278 |
| **12.0** | 801 | 1.6 | 116 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 5300 | 5300 | 14500 | 16700 | 3490 | 254 |
| **12.2** | 791 | 2.3 | 114 | 14.0 | — | **303 R3** | **BN90S4** | **M2SB4** | 16200 | 18700 | 29500 | 35500 | 10400 | 266 |
| **12.3** | 779 | 2.3 | 113 | 7.5 | **303 L3** | — | **BN90S4** | **M2SB4** | 16200 | 18600 | 29400 | 35400 | 10400 | 264 |
| **13.1** | 736 | 1.8 | 106 | 12.0 | — | **301 R3** | **BN90S4** | **M2SB4** | 5160 | 5160 | 14200 | 16300 | 3390 | 256 |
| **13.1** | 708 | 1.2 | 106 | 10.0 | — | **300 R4** | **BN90S4** | **M2SB4** | 5150 | 5150 | 14100 | 16200 | 3380 | 246 |
| **13.1** | 708 | 2.4 | 106 | 10.0 | — | **301 R4** | **BN90S4** | **M2SB4** | 5150 | 5150 | 14100 | 16200 | 3380 | 256 |
| **13.3** | 725 | 1.2 | 105 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 5130 | 5130 | 14100 | 16200 | 3370 | 244 |
| **13.3** | 725 | 2.3 | 105 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 5130 | 5130 | 14100 | 16200 | 3370 | 254 |
| **15.2** | 633 | 2.9 | 91.5 | 14.0 | — | **303 R3** | **BN90S4** | **M2SB4** | 15100 | 17400 | 27600 | 33200 | 9670 | 266 |
| **16.2** | 592 | 1.4 | 85.6 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 4790 | 4790 | 13300 | 15200 | 3150 | 244 |
| **16.2** | 592 | 2.8 | 85.6 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 4790 | 4790 | 13300 | 15200 | 3150 | 254 |
| **16.3** | 589 | 1.1 | 85.2 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 4790 | 4790 | 13200 | 15200 | 3150 | 246 |
| **16.3** | 589 | 2.2 | 85.2 | 12.0 | — | **301 R3** | **BN90S4** | **M2SB4** | 4790 | 4790 | 13200 | 15200 | 3150 | 256 |
| **17.7** | 544 | 1.6 | 78.7 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 4660 | 4660 | 12900 | 14900 | 3060 | 246 |
| **17.7** | 544 | 2.9 | 78.7 | 12.0 | — | **301 R3** | **BN90S4** | **M2SB4** | 4660 | 4660 | 12900 | 14900 | 3060 | 256 |
| **17.9** | 536 | 1.6 | 77.5 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 4640 | 4640 | 12900 | 14800 | 3050 | 244 |
| **19.9** | 483 | 1.3 | 69.9 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 4480 | 4480 | 12500 | 14300 | 2950 | 244 |
| **19.9** | 483 | 2.7 | 69.9 | 7.5 | **301 L3** | — | **BN90S4** | **M2SB4** | 4480 | 4480 | 12500 | 14300 | 2950 | 254 |
| **20.4** | 472 | 1.4 | 68.2 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 4440 | 4440 | 12400 | 14200 | 2920 | 246 |
| **20.4** | 472 | 2.8 | 68.2 | 12.0 | — | **301 R3** | **BN90S4** | **M2SB4** | 4440 | 4440 | 12400 | 14200 | 2920 | 256 |
| **21.5** | 463 | 1.2 | 64.8 | 7.5 | **300 L2** | — | **BN90S4** | **M2SB4** | 4370 | 4370 | 12200 | 14000 | 2870 | 244 |
| **21.5** | 463 | 2.5 | 64.8 | 7.5 | **301 L2** | — | **BN90S4** | **M2SB4** | 4370 | 4370 | 12200 | 14000 | 2870 | 254 |
| **22.0** | 437 | 1.9 | 63.2 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 4330 | 4330 | 12100 | 13900 | 2850 | 244 |
| **22.1** | 435 | 2.0 | 62.9 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 4330 | 4330 | 12100 | 13900 | 2840 | 246 |
| **26.8** | 371 | 1.8 | 51.9 | 7.5 | **300 L2** | — | **BN90S4** | **M2SB4** | 4060 | 4060 | 11400 | 13100 | 2670 | 244 |
| **26.9** | 357 | 2.4 | 51.6 | 7.5 | **300 L3** | — | **BN90S4** | **M2SB4** | 4050 | 4050 | 11400 | 13100 | 2660 | 244 |
| **27.6** | 349 | 2.4 | 50.4 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 4020 | 4020 | 11300 | 13000 | 2640 | 246 |
| **33** | 297 | 2.2 | 41.5 | 7.5 | **300 L2** | — | **BN90S4** | **M2SB4** | 3770 | 3770 | 10700 | 12300 | 2480 | 244 |
| **34** | 285 | 2.3 | 41.2 | 12.0 | — | **300 R3** | **BN90S4** | **M2SB4** | 3760 | 3760 | 10600 | 12200 | 2470 | 246 |
| **42** | 238 | 2.7 | 33.3 | 7.5 | **300 L2** | — | **BN90S4** | **M2SB4** | 3500 | 3500 | 9990 | 11500 | 2300 | 244 |
| **75** | 132 | 2.8 | 18.5 | 12.0 | — | **300 R2** | **BN90S4** | **M2SB4** | 2870 | 2870 | 8370 | 9620 | 1890 | 246 |

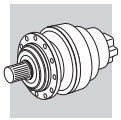
## $P_1$ = 1.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.56** | 22651 | 1.1 | 2523 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.64** | 19631 | 2.5 | 2187 | 11.0 | **313 L4** | — | **BN90LA4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.67** | 18817 | 1.8 | 2096 | 11.0 | **311 L4** | — | **BN90LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.70** | 18150 | 1.4 | 2022 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.70** | 17976 | 0.9 | 2003 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.79** | 16107 | 1.6 | 1794 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.80** | 15863 | 1.0 | 1767 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.80** | 15855 | 2.7 | 1766 | 11.0 | **311 L4** | — | **BN90LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.82** | 15463 | 1.1 | 1723 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.84** | 15078 | 2.3 | 1680 | 11.0 | **311 L4** | — | **BN90LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.84** | 15004 | 1.7 | 1672 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.88** | 14403 | 1.2 | 1605 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.89** | 14277 | 1.1 | 1591 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 52000 | 65000 | 109000 | 145000 | 45000 | 312 |
| **0.98** | 12906 | 2.0 | 1438 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **1.0** | 12641 | 1.2 | 1408 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 51900 | 65000 | 109000 | 144700 | 45000 | 312 |
| **1.0** | 12390 | 1.3 | 1380 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 110000 | 143800 | 35800 | 324 |



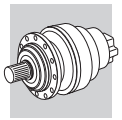
## $P_1$ = 1.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **1.1** | 11541 | 1.4 | 1286 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 109200 | 140800 | 35000 | 324 |
| **1.1** | 11440 | 1.1 | 1274 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 50200 | 63000 | 107100 | 140400 | 43600 | 312 |
| **1.1** | 11300 | 2.4 | 1259 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 128500 | 161600 | 62700 | 336 |
| **1.2** | 10451 | 2.8 | 1164 | 11.0 | **310 L4** | — | **BN90LA4** | — | — | — | 125500 | 157900 | 61100 | 336 |
| **1.2** | 10382 | 1.4 | 1157 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 48600 | 60900 | 104100 | 136400 | 42200 | 312 |
| **1.2** | 10317 | 1.6 | 1149 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 105500 | 136100 | 33700 | 324 |
| **1.4** | 9110 | 1.0 | 1015 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 41900 | 47400 | 93000 | 108300 | 31400 | 300 |
| **1.4** | 8968 | 1.5 | 999 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 46300 | 58000 | 99600 | 130500 | 40200 | 312 |
| **1.4** | 8968 | 2.0 | 999 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 101200 | 130500 | 32200 | 324 |
| **1.6** | 8135 | 1.9 | 906 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 44800 | 56200 | 96700 | 126800 | 38900 | 312 |
| **1.6** | 8135 | 2.2 | 906 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 98300 | 126800 | 31100 | 324 |
| **1.6** | 8061 | 2.9 | 898 | 15.0 | — | **310 R4** | **BN90LA4** | — | — | — | 116100 | 146000 | 56100 | 338 |
| **1.6** | 7872 | 1.0 | 877 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 39900 | 45200 | 89000 | 103700 | 29900 | 300 |
| **1.7** | 7260 | 1.1 | 809 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 38800 | 44000 | 86900 | 101200 | 29200 | 300 |
| **1.8** | 7186 | 1.9 | 801 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 43000 | 53900 | 93200 | 122100 | 37400 | 312 |
| **1.8** | 7186 | 2.5 | 801 | 7.5 | **309 L4** | — | **BN90LA4** | — | — | — | 94700 | 122100 | 29900 | 324 |
| **2.0** | 6482 | 2.3 | 722 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 41500 | 52100 | 90400 | 118400 | 36100 | 312 |
| **2.0** | 6280 | 1.5 | 700 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 37000 | 41900 | 83200 | 96900 | 27800 | 300 |
| **2.0** | 6191 | 1.6 | 690 | 15.0 | — | **307 R4** | **BN90LA4** | **M3SA4** | 40900 | 51300 | 89100 | 116800 | 35500 | 314 |
| **2.0** | 6191 | 2.4 | 690 | 15.0 | — | **309 R4** | **BN90LA4** | — | — | — | 90600 | 116800 | 28400 | 326 |
| **2.1** | 5971 | 1.0 | 665 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 36400 | 41200 | 82000 | 95400 | 27300 | 302 |
| **2.2** | 5866 | 2.2 | 654 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 40200 | 50400 | 87700 | 114900 | 34900 | 312 |
| **2.2** | 5705 | 1.7 | 636 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 35800 | 40600 | 80800 | 94100 | 26900 | 300 |
| **2.4** | 5299 | 1.6 | 590 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 34900 | 39600 | 79100 | 92100 | 26200 | 302 |
| **2.4** | 5290 | 1.8 | 589 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 34900 | 39600 | 79000 | 92000 | 26200 | 300 |
| **2.4** | 5217 | 2.4 | 581 | 15.0 | — | **307 R4** | **BN90LA4** | **M3SA4** | 38600 | 48500 | 84700 | 110900 | 33600 | 314 |
| **2.4** | 5194 | 2.9 | 579 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 38600 | 48400 | 84500 | 110800 | 33500 | 312 |
| **2.5** | 5087 | 1.0 | 567 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 27700 | 32000 | 47700 | 57400 | 17800 | 278 |
| **2.5** | 4992 | 1.1 | 556 | 6.0 | **305 L4** | — | **BN90LA4** | **M3SA4** | 27500 | 31700 | 47500 | 57100 | 17600 | 288 |
| **2.6** | 4936 | 1.5 | 550 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 34100 | 38700 | 77400 | 90100 | 25600 | 302 |
| **2.8** | 4571 | 2.1 | 509 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 33300 | 37700 | 75600 | 88100 | 25000 | 300 |
| **2.9** | 4419 | 1.2 | 492 | 6.0 | **305 L4** | — | **BN90LA4** | **M3SA4** | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **2.9** | 4403 | 2.1 | 490 | 15.0 | — | **307 R4** | **BN90LA4** | **M3SA4** | 36500 | 45800 | 80500 | 105400 | 31700 | 314 |
| **2.9** | 4381 | 2.1 | 488 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 32800 | 37100 | 74700 | 87000 | 24600 | 302 |
| **3.0** | 4172 | 2.9 | 465 | 7.5 | **307 L4** | — | **BN90LA4** | **M3SA4** | 35800 | 45000 | 79200 | 103700 | 31200 | 312 |
| **3.1** | 4081 | 1.7 | 455 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 32000 | 36300 | 73100 | 85100 | 24100 | 302 |
| **3.1** | 4054 | 0.9 | 452 | 12.0 | — | **304 R4** | **BN90LA4** | **M3SA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 4054 | 1.2 | 452 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.2** | 4000 | 0.9 | 446 | 6.0 | **304 L4** | — | **BN90LA4** | **M3SA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.2** | 4000 | 1.4 | 446 | 6.0 | **305 L4** | — | **BN90LA4** | **M3SA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.2** | 3988 | 2.5 | 444 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 31800 | 36000 | 72600 | 84500 | 23900 | 300 |
| **3.4** | 3768 | 2.3 | 420 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 31200 | 35300 | 71400 | 83100 | 23400 | 302 |
| **3.4** | 3709 | 1.3 | 413 | 6.0 | **305 L4** | — | **BN90LA4** | **M3SA4** | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.5** | 3759 | 1.5 | 405 | 7.5 | **306 L3** | — | **BN90LA4** | **M3SA4** | 30800 | 34900 | 70600 | 82200 | 23100 | 300 |
| **3.5** | 3729 | 1.0 | 402 | 7.5 | **305 L3** | — | **BN90LA4** | **M3SA4** | 24700 | 28500 | 43100 | 51800 | 15800 | 288 |
| **3.6** | 3509 | 1.9 | 391 | 6.0 | **306 L4** | — | **BN90LA4** | **M3SA4** | 30400 | 34500 | 69900 | 81400 | 22900 | 300 |
| **3.6** | 3502 | 1.1 | 390 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 24400 | 28200 | 42700 | 51400 | 15700 | 278 |
| **3.6** | 3491 | 2.2 | 389 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 30400 | 34400 | 69800 | 81200 | 22800 | 302 |
| **3.9** | 3266 | 0.9 | 364 | 12.0 | — | **304 R4** | **BN90LA4** | **M3SA4** | 23300 | 26900 | 40900 | 49300 | 15000 | 278 |
| **3.9** | 3266 | 1.4 | 364 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **4.2** | 3123 | 2.8 | 336 | 11.0 | **307 L3** | — | **BN90LA4** | **M3SA4** | 32200 | 40400 | 71900 | 94200 | 28000 | 312 |
| **4.2** | 3012 | 1.5 | 336 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 23200 | 26800 | 40800 | 49100 | 14900 | 278 |
| **4.3** | 3012 | 1.8 | 325 | 7.5 | **306 L3** | — | **BN90LA4** | **M3SA4** | 28600 | 32400 | 66100 | 76900 | 21500 | 300 |
| **4.4** | 2983 | 1.2 | 321 | 7.5 | **305 L3** | — | **BN90LA4** | **M3SA4** | 22900 | 26400 | 40300 | 48500 | 14700 | 288 |
| **4.5** | 2806 | 1.3 | 313 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 22700 | 26200 | 39900 | 48100 | 14600 | 278 |
| **4.5** | 2797 | 2.7 | 312 | 12.0 | — | **306 R4** | **BN90LA4** | **M3SA4** | 28200 | 32000 | 65300 | 76000 | 21200 | 302 |
| **4.6** | 2752 | 1.3 | 307 | 12.0 | — | **304 R4** | **BN90LA4** | **M3SA4** | 22500 | 26000 | 39700 | 47800 | 14500 | 278 |
| **4.9** | 2603 | 1.0 | 290 | 12.0 | — | **303 R4** | **BN90LA4** | **M3SA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 266 |
| **4.9** | 2603 | 1.4 | 290 | 12.0 | — | **304 R4** | **BN90LA4** | **M3SA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.9** | 2603 | 2.0 | 290 | 12.0 | — | **305 R4** | **BN90LA4** | **M3SA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.9** | 2673 | 2.1 | 288 | 7.5 | **306 L3** | — | **BN90LA4** | **M3SA4** | 27500 | 31200 | 63700 | 74200 | 20700 | 300 |
| **5.1** | 2566 | 1.7 | 276 | 7.5 | **305 L3** | — | **BN90LA4** | **M3SA4** | 21800 | 25200 | 38500 | 46300 | 14000 | 288 |
| **5.2** | 2534 | 0.9 | 273 | 7.5 | **304 L3** | — | **BN90LA4** | **M3SA4** | 21700 | 25000 | 38300 | 46100 | 13900 | 288 |
| **5.3** | 2490 | 2.2 | 268 | 7.5 | **306 L3** | — | **BN90LA4** | **M3SA4** | 26900 | 30400 | 62400 | 72700 | 20200 | 300 |
| **5.3** | 2400 | 1.5 | 267 | 12.0 | — | **304 R4** | **BN90LA4** | **M3SA4** | 21500 | 24900 | 38100 | 45900 | 13800 | 278 |



## $P_1$ = 1.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **5.5** | 2390 | 1.5 | 258 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 21300 | 24600 | 37700 | 45300 | 13600 | 288 |
| **5.5** | 2290 | 1.6 | 255 | 12.0 | **—** | **305 R4** | **BN90LA4** | **M3SA4** | 21200 | 24500 | 37600 | 45200 | 13600 | 278 |
| **6.1** | 2073 | 1.7 | 231 | 12.0 | **—** | **305 R4** | **BN90LA4** | **M3SA4** | 20500 | 23700 | 36500 | 43900 | 13200 | 278 |
| **6.2** | 2033 | 1.7 | 227 | 12.0 | **—** | **304 R4** | **BN90LA4** | **M3SA4** | 20400 | 23500 | 36300 | 43600 | 13100 | 278 |
| **6.4** | 2045 | 1.1 | 220 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 264 |
| **6.4** | 2045 | 1.8 | 220 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.4** | 2045 | 2.3 | 220 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.6** | 1929 | 0.9 | 215 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 6520 | 6520 | 17500 | 20100 | 4280 | 256 |
| **6.6** | 1923 | 1.4 | 214 | 12.0 | **—** | **303 R4** | **BN90LA4** | **M3SA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 266 |
| **6.6** | 1923 | 1.9 | 214 | 12.0 | **—** | **304 R4** | **BN90LA4** | **M3SA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.6** | 1923 | 2.8 | 214 | 12.0 | **—** | **305 R4** | **BN90LA4** | **M3SA4** | 19600 | 22600 | 34900 | 42000 | 12500 | 278 |
| **7.0** | 1872 | 1.3 | 202 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 19600 | 22600 | 35000 | 42100 | 12600 | 288 |
| **7.4** | 1766 | 1.0 | 190 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 19200 | 22200 | 34400 | 41400 | 12300 | 264 |
| **7.4** | 1766 | 2.0 | 190 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 19200 | 22200 | 34400 | 41400 | 12300 | 288 |
| **7.6** | 1660 | 1.4 | 185 | 12.0 | **—** | **303 R4** | **BN90LA4** | **M3SA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 266 |
| **7.6** | 1660 | 2.1 | 185 | 12.0 | **—** | **304 R4** | **BN90LA4** | **M3SA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.6** | 1660 | 2.7 | 185 | 12.0 | **—** | **305 R4** | **BN90LA4** | **M3SA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.9** | 1648 | 1.3 | 178 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 264 |
| **7.9** | 1648 | 1.7 | 178 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **7.9** | 1648 | 2.7 | 178 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **8.0** | 1644 | 1.1 | 177 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 6110 | 6110 | 16500 | 19000 | 4020 | 254 |
| **8.0** | 1575 | 1.1 | 175 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 6090 | 6090 | 16500 | 18900 | 4000 | 256 |
| **8.6** | 1528 | 1.6 | 165 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 18300 | 21200 | 33000 | 39600 | 11800 | 288 |
| **8.6** | 1520 | 1.4 | 164 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 18300 | 21100 | 32900 | 39600 | 11700 | 264 |
| **8.6** | 1520 | 2.9 | 164 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 18300 | 21100 | 32900 | 39600 | 11700 | 288 |
| **8.9** | 1426 | 1.2 | 159 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 5890 | 5890 | 16000 | 18300 | 3870 | 256 |
| **8.9** | 1421 | 1.9 | 158 | 12.0 | **—** | **303 R4** | **BN90LA4** | **M3SA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 266 |
| **8.9** | 1421 | 2.5 | 158 | 12.0 | **—** | **304 R4** | **BN90LA4** | **M3SA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.2** | 1415 | 1.3 | 152 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 17900 | 20600 | 32200 | 38700 | 11500 | 264 |
| **9.2** | 1415 | 2.5 | 152 | 7.5 | **305 L3** | **—** | **BN90LA4** | **M3SA4** | 17900 | 20600 | 32200 | 38700 | 11500 | 288 |
| **9.4** | 1388 | 2.5 | 150 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 17800 | 20500 | 32000 | 38500 | 11400 | 288 |
| **9.5** | 1330 | 2.6 | 148 | 12.0 | **—** | **304 R4** | **BN90LA4** | **M3SA4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.5** | 1330 | 1.7 | 148 | 12.0 | **—** | **303 R4** | **BN90LA4** | **M3SA4** | 17700 | 20400 | 31900 | 38400 | 11400 | 266 |
| **9.8** | 1286 | 1.0 | 143 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 5690 | 5690 | 15500 | 17800 | 3740 | 256 |
| **9.9** | 1317 | 1.3 | 142 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 5670 | 5670 | 15400 | 17700 | 3730 | 254 |
| **10.0** | 1313 | 2.0 | 141 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 264 |
| **10.0** | 1313 | 2.7 | 141 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.6** | 1233 | 0.9 | 133 | 12.0 | **—** | **301 R3** | **BN90LA4** | **M3SA4** | 5550 | 5550 | 15100 | 17400 | 3650 | 256 |
| **10.8** | 1215 | 1.4 | 131 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 5520 | 5520 | 15100 | 17300 | 3630 | 254 |
| **10.8** | 1211 | 2.9 | 130 | 7.5 | **304 L3** | **—** | **BN90LA4** | **M3SA4** | 17000 | 19600 | 30700 | 37000 | 10900 | 288 |
| **10.9** | 1164 | 1.5 | 130 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 5510 | 5510 | 15000 | 17300 | 3620 | 256 |
| **10.9** | 1160 | 2.3 | 129 | 12.0 | **—** | **303 R4** | **BN90LA4** | **M3SA4** | 16900 | 19500 | 30600 | 36900 | 10800 | 266 |
| **11.3** | 1155 | 1.6 | 124 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 16700 | 19300 | 30300 | 36500 | 10700 | 264 |
| **11.6** | 1125 | 2.1 | 121 | 14.0 | **—** | **304 R3** | **BN90LA4** | **M3SA4** | 16600 | 19100 | 30100 | 36200 | 10600 | 278 |
| **12.2** | 1075 | 1.2 | 116 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 5300 | 5300 | 14500 | 16700 | 3490 | 254 |
| **12.3** | 1062 | 1.7 | 114 | 14.0 | **—** | **303 R3** | **BN90LA4** | **M3SA4** | 16200 | 18700 | 29500 | 35500 | 10400 | 266 |
| **12.5** | 1046 | 1.7 | 113 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 16200 | 18600 | 29400 | 35400 | 10400 | 264 |
| **13.2** | 988 | 1.3 | 106 | 12.0 | **—** | **301 R3** | **BN90LA4** | **M3SA4** | 5160 | 5160 | 14200 | 16300 | 3390 | 256 |
| **13.3** | 950 | 0.9 | 106 | 10.0 | **—** | **300 R4** | **BN90LA4** | **M3SA4** | 5030 | 5030 | 13800 | 15900 | 3310 | 246 |
| **13.3** | 950 | 1.8 | 106 | 10.0 | **—** | **301 R4** | **BN90LA4** | **M3SA4** | 5150 | 5150 | 14100 | 16200 | 3380 | 256 |
| **13.4** | 973 | 1.7 | 105 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 5130 | 5130 | 14100 | 16200 | 3370 | 254 |
| **13.5** | 970 | 2.7 | 105 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 264 |
| **14.5** | 900 | 2.7 | 97.0 | 14.0 | **—** | **304 R3** | **BN90LA4** | **M3SA4** | 15400 | 17700 | 28100 | 33800 | 9860 | 278 |
| **15.4** | 849 | 2.1 | 91.5 | 14.0 | **—** | **303 R3** | **BN90LA4** | **M3SA4** | 15100 | 17400 | 27600 | 33200 | 9670 | 266 |
| **15.6** | 837 | 2.7 | 90.2 | 7.5 | **303 L3** | **—** | **BN90LA4** | **M3SA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 264 |
| **16.5** | 794 | 1.1 | 85.6 | 7.5 | **300 L3** | **—** | **BN90LA4** | **M3SA4** | 4790 | 4790 | 13300 | 15200 | 3150 | 244 |
| **16.5** | 794 | 2.1 | 85.6 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 4790 | 4790 | 13300 | 15200 | 3150 | 254 |
| **16.6** | 790 | 1.6 | 85.2 | 12.0 | **—** | **301 R3** | **BN90LA4** | **M3SA4** | 4790 | 4790 | 13200 | 15200 | 3150 | 256 |
| **17.9** | 731 | 3.0 | 78.7 | 14.0 | **—** | **303 R3** | **BN90LA4** | **M3SA4** | 14300 | 16500 | 26400 | 31800 | 9190 | 266 |
| **17.9** | 730 | 1.2 | 78.7 | 12.0 | **—** | **300 R3** | **BN90LA4** | **M3SA4** | 4660 | 4660 | 12900 | 14900 | 3060 | 246 |
| **17.9** | 730 | 2.2 | 78.7 | 12.0 | **—** | **301 R3** | **BN90LA4** | **M3SA4** | 4660 | 4660 | 12900 | 14900 | 3060 | 256 |
| **18.2** | 719 | 1.2 | 77.5 | 7.5 | **300 L3** | **—** | **BN90LA4** | **M3SA4** | 4640 | 4640 | 12900 | 14800 | 3050 | 244 |
| **18.2** | 719 | 2.3 | 77.5 | 7.5 | **301 L3** | **—** | **BN90LA4** | **M3SA4** | 4640 | 4640 | 12900 | 14800 | 3050 | 254 |
| **19.2** | 681 | 2.7 | 73.3 | 14.0 | **—** | **303 R3** | **BN90LA4** | **M3SA4** | 14000 | 16200 | 25900 | 31100 | 8980 | 266 |
| **20.2** | 649 | 1.0 | 69.9 | 7.5 | **300 L3** | **—** | **BN90LA4** | **M3SA4** | 4480 | 4480 | 12500 | 14300 | 2950 | 244 |



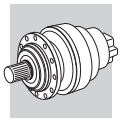
A

## $P_1$ = 1.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20.2** | 649 | 2.0 | 69.9 | 7.5 | **301 L3** | — | **BN90LA4** | **M3SA4** | 4480 | 4480 | 12500 | 14300 | 2950 | 254 |
| **20.7** | 633 | 1.0 | 68.2 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 4440 | 4440 | 12400 | 14200 | 2920 | 246 |
| **20.7** | 633 | 2.1 | 68.2 | 12.0 | — | **301 R3** | **BN90LA4** | **M3SA4** | 4440 | 4440 | 12400 | 14200 | 2920 | 256 |
| **21.8** | 621 | 1.9 | 64.8 | 7.5 | **301 L2** | — | **BN90LA4** | **M3SA4** | 4370 | 4370 | 12200 | 14000 | 2870 | 254 |
| **22.3** | 587 | 1.4 | 63.2 | 7.5 | **300 L3** | — | **BN90LA4** | **M3SA4** | 4330 | 4330 | 12100 | 13900 | 2850 | 244 |
| **22.3** | 587 | 2.8 | 63.2 | 7.5 | **301 L3** | — | **BN90LA4** | **M3SA4** | 4330 | 4330 | 12100 | 13900 | 2850 | 254 |
| **22.4** | 584 | 1.5 | 62.9 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 4330 | 4330 | 12100 | 13900 | 2840 | 246 |
| **22.4** | 584 | 2.8 | 62.9 | 12.0 | — | **301 R3** | **BN90LA4** | **M3SA4** | 4330 | 4330 | 12100 | 13900 | 2840 | 256 |
| **27.2** | 498 | 1.3 | 51.9 | 7.5 | **300 L2** | — | **BN90LA4** | **M3SA4** | 4060 | 4060 | 11400 | 13100 | 2670 | 244 |
| **27.2** | 498 | 2.6 | 51.9 | 7.5 | **301 L2** | — | **BN90LA4** | **M3SA4** | 4060 | 4060 | 11400 | 13100 | 2670 | 254 |
| **27.3** | 479 | 1.8 | 51.6 | 7.5 | **300 L3** | — | **BN90LA4** | **M3SA4** | 4050 | 4050 | 11400 | 13100 | 2660 | 244 |
| **28.0** | 468 | 1.8 | 50.4 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 4020 | 4020 | 11300 | 13000 | 2640 | 246 |
| **34** | 398 | 1.6 | 41.5 | 7.5 | **300 L2** | — | **BN90LA4** | **M3SA4** | 3770 | 3770 | 10700 | 12300 | 2480 | 244 |
| **34** | 382 | 1.7 | 41.2 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 3760 | 3760 | 10600 | 12200 | 2470 | 246 |
| **37** | 368 | 2.3 | 38.4 | 7.5 | **300 L2** | — | **BN90LA4** | **M3SA4** | 3670 | 3670 | 10400 | 12000 | 2410 | 244 |
| **38** | 346 | 2.4 | 37.3 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 3630 | 3630 | 10300 | 11900 | 2390 | 246 |
| **42** | 319 | 2.0 | 33.3 | 7.5 | **300 L2** | — | **BN90LA4** | **M3SA4** | 3500 | 3500 | 9990 | 11500 | 2300 | 244 |
| **46** | 294 | 2.9 | 30.7 | 7.5 | **300 L2** | — | **BN90LA4** | **M3SA4** | 3410 | 3410 | 9750 | 11200 | 2240 | 244 |
| **46** | 282 | 3.0 | 30.4 | 12.0 | — | **300 R3** | **BN90LA4** | **M3SA4** | 3400 | 3400 | 9730 | 11200 | 2230 | 246 |
| **76** | 177 | 2.1 | 18.5 | 12.0 | — | **300 R2** | **BN90LA4** | **M3SA4** | 2870 | 2870 | 8370 | 9620 | 1890 | 246 |

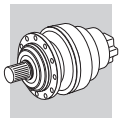
## $P_1$ = 1.85 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.55** | 28202 | 0.9 | 2523 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.64** | 24442 | 2.0 | 2187 | 11.0 | **313 L4** | — | **BN90LB4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.66** | 23430 | 1.5 | 2096 | 11.0 | **311 L4** | — | **BN90LB4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.69** | 22598 | 1.2 | 2022 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.77** | 20306 | 2.9 | 1817 | 11.0 | **313 L4** | — | **BN90LB4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.77** | 20055 | 1.3 | 1794 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.79** | 19742 | 2.2 | 1766 | 11.0 | **311 L4** | — | **BN90LB4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.83** | 18774 | 1.8 | 1680 | 11.0 | **311 L4** | — | **BN90LB4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.83** | 18681 | 1.4 | 1672 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.87** | 17934 | 0.9 | 1605 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 110000 | 145000 | 36000 | 324 |
| **0.97** | 16070 | 1.6 | 1438 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.98** | 15819 | 2.7 | 1415 | 11.0 | **311 L4** | — | **BN90LB4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.99** | 15739 | 1.0 | 1408 | 7.5 | **307 L4** | — | **BN90LB4** | — | 51900 | 65000 | 109000 | 144700 | 45000 | 312 |
| **1.0** | 15427 | 1.1 | 1380 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 110000 | 143800 | 35800 | 324 |
| **1.1** | 14370 | 1.1 | 1286 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 109200 | 140800 | 35000 | 324 |
| **1.1** | 14070 | 2.0 | 1259 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 128500 | 161600 | 62700 | 336 |
| **1.2** | 13012 | 2.3 | 1164 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 125500 | 157900 | 61100 | 336 |
| **1.2** | 12927 | 1.1 | 1157 | 7.5 | **307 L4** | — | **BN90LB4** | — | 48600 | 60900 | 104100 | 136400 | 42200 | 312 |
| **1.2** | 12845 | 1.3 | 1149 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 105500 | 136100 | 33700 | 324 |
| **1.4** | 11406 | 2.5 | 1021 | 11.0 | **310 L4** | — | **BN90LB4** | — | — | — | 120700 | 151800 | 58500 | 336 |
| **1.4** | 11166 | 1.2 | 999 | 7.5 | **307 L4** | — | **BN90LB4** | — | 46300 | 58000 | 99600 | 130500 | 40200 | 312 |
| **1.4** | 11166 | 1.6 | 999 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 101200 | 130500 | 32200 | 324 |
| **1.5** | 10129 | 1.5 | 906 | 7.5 | **307 L4** | — | **BN90LB4** | — | 44800 | 56200 | 96700 | 126800 | 38900 | 312 |
| **1.5** | 10129 | 1.8 | 906 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 98300 | 126800 | 31100 | 324 |
| **1.5** | 10037 | 2.3 | 898 | 15.0 | — | **310 R4** | **BN90LB4** | — | — | — | 116100 | 146000 | 56100 | 338 |
| **1.7** | 8947 | 1.5 | 801 | 7.5 | **307 L4** | — | **BN90LB4** | — | 43000 | 53900 | 93200 | 122100 | 37400 | 312 |
| **1.7** | 8947 | 2.0 | 801 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 94700 | 122100 | 29900 | 324 |
| **1.9** | 8071 | 1.9 | 722 | 7.5 | **307 L4** | — | **BN90LB4** | — | 41500 | 52100 | 90400 | 118400 | 36100 | 312 |
| **1.9** | 8071 | 2.6 | 722 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 91800 | 118400 | 28900 | 324 |
| **2.0** | 7819 | 1.2 | 700 | 6.0 | **306 L4** | — | **BN90LB4** | — | 37000 | 41900 | 83200 | 96900 | 27800 | 300 |
| **2.0** | 7709 | 1.3 | 690 | 15.0 | — | **307 R4** | **BN90LB4** | — | 40900 | 51300 | 89100 | 116800 | 35500 | 314 |
| **2.0** | 7709 | 1.9 | 690 | 15.0 | — | **309 R4** | **BN90LB4** | — | — | — | 90600 | 116800 | 28400 | 326 |
| **2.1** | 7304 | 1.8 | 654 | 7.5 | **307 L4** | — | **BN90LB4** | — | 40200 | 50400 | 87700 | 114900 | 34900 | 312 |
| **2.1** | 7304 | 2.5 | 654 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 89100 | 114900 | 27900 | 324 |
| **2.2** | 7103 | 1.3 | 636 | 6.0 | **306 L4** | — | **BN90LB4** | — | 35800 | 40600 | 80800 | 94100 | 26900 | 300 |
| **2.4** | 6598 | 1.3 | 590 | 12.0 | — | **306 R4** | **BN90LB4** | — | 34900 | 39600 | 79100 | 92100 | 26200 | 302 |
| **2.4** | 6586 | 1.4 | 589 | 6.0 | **306 L4** | — | **BN90LB4** | — | 34900 | 39600 | 79000 | 92000 | 26200 | 300 |



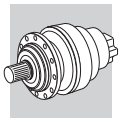
## $P_1$ = 1.85 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.4** | 6495 | 1.9 | 581 | 15.0 | — | **307 R4** | **BN90LB4** | — | 38600 | 48500 | 84700 | 110900 | 33600 | 314 |
| **2.4** | 6495 | 2.4 | 581 | 15.0 | — | **309 R4** | **BN90LB4** | — | — | — | 86000 | 110900 | 26900 | 326 |
| **2.4** | 6467 | 2.3 | 579 | 7.5 | **307 L4** | — | **BN90LB4** | — | 38600 | 48400 | 84500 | 110800 | 33500 | 312 |
| **2.5** | 6146 | 1.2 | 550 | 12.0 | — | **306 R4** | **BN90LB4** | — | 34100 | 38700 | 77400 | 90100 | 25600 | 302 |
| **2.7** | 5691 | 1.7 | 509 | 6.0 | **306 L4** | — | **BN90LB4** | — | 33300 | 37700 | 75600 | 88100 | 25000 | 300 |
| **2.7** | 5691 | 2.5 | 509 | 7.5 | **307 L4** | — | **BN90LB4** | — | 37000 | 46400 | 81400 | 106600 | 32100 | 312 |
| **2.7** | 5691 | 2.5 | 509 | 7.5 | **309 L4** | — | **BN90LB4** | — | — | — | 82700 | 106600 | 25700 | 324 |
| **2.8** | 5502 | 1.0 | 492 | 6.0 | **305 L4** | — | **BN90LB4** | — | 26400 | 30500 | 45800 | 55100 | 16900 | 288 |
| **2.8** | 5482 | 1.7 | 490 | 15.0 | — | **307 R4** | **BN90LB4** | — | 36500 | 45800 | 80500 | 105400 | 31700 | 314 |
| **2.8** | 5482 | 2.6 | 490 | 15.0 | — | **309 R4** | **BN90LB4** | — | — | — | 81700 | 105400 | 25400 | 326 |
| **2.8** | 5455 | 1.7 | 488 | 12.0 | — | **306 R4** | **BN90LB4** | — | 32800 | 37100 | 74700 | 87000 | 24600 | 302 |
| **3.0** | 5195 | 2.3 | 465 | 7.5 | **307 L4** | — | **BN90LB4** | — | 35800 | 45000 | 79200 | 103700 | 31200 | 312 |
| **3.0** | 5106 | 2.7 | 457 | 15.0 | — | **309 R4** | **BN90LB4** | — | — | — | 80000 | 103200 | 24800 | 326 |
| **3.1** | 5081 | 1.4 | 455 | 12.0 | — | **306 R4** | **BN90LB4** | — | 32000 | 36300 | 73100 | 85100 | 24100 | 302 |
| **3.1** | 5061 | 2.6 | 453 | 15.0 | — | **307 R4** | **BN90LB4** | — | 35500 | 44600 | 78600 | 102900 | 30900 | 314 |
| **3.1** | 5048 | 0.9 | 452 | 12.0 | — | **305 R4** | **BN90LB4** | — | 25700 | 29600 | 44600 | 53700 | 16500 | 278 |
| **3.1** | 4980 | 1.1 | 446 | 6.0 | **305 L4** | — | **BN90LB4** | — | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.1** | 4965 | 2.0 | 444 | 6.0 | **306 L4** | — | **BN90LB4** | — | 31800 | 36000 | 72600 | 84500 | 23900 | 300 |
| **3.3** | 4692 | 1.9 | 420 | 12.0 | — | **306 R4** | **BN90LB4** | — | 31200 | 35300 | 71400 | 83100 | 23400 | 302 |
| **3.4** | 4619 | 2.6 | 413 | 15.0 | — | **307 R4** | **BN90LB4** | — | 34500 | 43200 | 76400 | 100100 | 30000 | 314 |
| **3.4** | 4618 | 1.0 | 413 | 6.0 | **305 L4** | — | **BN90LB4** | — | 24900 | 28800 | 43400 | 52200 | 16000 | 288 |
| **3.4** | 4532 | 2.6 | 406 | 7.5 | **307 L4** | — | **BN90LB4** | — | 34300 | 43000 | 76000 | 99600 | 29800 | 312 |
| **3.4** | 4681 | 1.2 | 405 | 7.5 | **306 L3** | — | **BN90LB4** | — | 30800 | 34900 | 70600 | 82200 | 23100 | 300 |
| **3.6** | 4369 | 1.6 | 391 | 6.0 | **306 L4** | — | **BN90LB4** | — | 30400 | 34500 | 69900 | 81400 | 22900 | 300 |
| **3.6** | 4347 | 1.7 | 389 | 12.0 | — | **306 R4** | **BN90LB4** | — | 30400 | 34400 | 69800 | 81200 | 22800 | 302 |
| **3.8** | 4067 | 1.1 | 364 | 12.0 | — | **305 R4** | **BN90LB4** | — | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **4.1** | 3888 | 2.3 | 336 | 11.0 | **307 L3** | — | **BN90LB4** | — | 32200 | 40400 | 71900 | 94200 | 28000 | 312 |
| **4.1** | 3751 | 1.2 | 336 | 12.0 | — | **305 R4** | **BN90LB4** | — | 23200 | 26800 | 40800 | 49100 | 14900 | 278 |
| **4.3** | 3750 | 1.5 | 325 | 7.5 | **306 L3** | — | **BN90LB4** | — | 28600 | 32400 | 66100 | 76900 | 21500 | 300 |
| **4.3** | 3715 | 1.0 | 321 | 7.5 | **305 L3** | — | **BN90LB4** | — | 22900 | 26400 | 40300 | 48500 | 14700 | 288 |
| **4.4** | 3494 | 1.0 | 313 | 12.0 | — | **305 R4** | **BN90LB4** | — | 22700 | 26200 | 39900 | 48100 | 14600 | 278 |
| **4.5** | 3483 | 2.2 | 312 | 12.0 | — | **306 R4** | **BN90LB4** | — | 28200 | 32000 | 65300 | 76000 | 21200 | 302 |
| **4.5** | 3426 | 1.0 | 307 | 12.0 | — | **304 R4** | **BN90LB4** | — | 22500 | 26000 | 39700 | 47800 | 14500 | 278 |
| **4.8** | 3241 | 1.1 | 290 | 12.0 | — | **304 R4** | **BN90LB4** | — | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.8** | 3241 | 1.6 | 290 | 12.0 | — | **305 R4** | **BN90LB4** | — | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.8** | 3230 | 2.6 | 289 | 12.0 | — | **306 R4** | **BN90LB4** | — | 27500 | 31200 | 63800 | 74300 | 20700 | 302 |
| **4.8** | 3328 | 1.7 | 288 | 7.5 | **306 L3** | — | **BN90LB4** | — | 27500 | 31200 | 63700 | 74200 | 20700 | 300 |
| **5.0** | 3195 | 1.4 | 276 | 7.5 | **305 L3** | — | **BN90LB4** | — | 21800 | 25200 | 38500 | 46300 | 14000 | 288 |
| **5.2** | 3100 | 1.8 | 268 | 7.5 | **306 L3** | — | **BN90LB4** | — | 26900 | 30400 | 62400 | 72700 | 20200 | 300 |
| **5.2** | 2989 | 1.2 | 267 | 12.0 | — | **304 R4** | **BN90LB4** | — | 21500 | 24900 | 38100 | 45900 | 13800 | 278 |
| **5.4** | 2976 | 1.2 | 258 | 7.5 | **305 L3** | — | **BN90LB4** | — | 21300 | 24600 | 37700 | 45300 | 13600 | 288 |
| **5.4** | 2852 | 1.3 | 255 | 12.0 | — | **305 R4** | **BN90LB4** | — | 21200 | 24500 | 37600 | 45200 | 13600 | 278 |
| **5.6** | 2778 | 3.0 | 249 | 12.0 | — | **306 R4** | **BN90LB4** | — | 26200 | 29700 | 61000 | 71000 | 19700 | 302 |
| **5.8** | 2751 | 3.0 | 238 | 7.5 | **306 L3** | — | **BN90LB4** | — | 25800 | 29200 | 60200 | 70100 | 19400 | 300 |
| **6.0** | 2582 | 1.4 | 231 | 12.0 | — | **305 R4** | **BN90LB4** | — | 20500 | 23700 | 36500 | 43900 | 13200 | 278 |
| **6.0** | 2574 | 2.9 | 230 | 12.0 | — | **306 R4** | **BN90LB4** | — | 25500 | 28900 | 59600 | 69400 | 19200 | 302 |
| **6.1** | 2532 | 1.4 | 227 | 12.0 | — | **304 R4** | **BN90LB4** | — | 20400 | 23500 | 36300 | 43600 | 13100 | 278 |
| **6.3** | 2563 | 2.5 | 222 | 7.5 | **306 L3** | — | **BN90LB4** | — | 25200 | 28600 | 58900 | 68600 | 18900 | 300 |
| **6.3** | 2546 | 1.4 | 220 | 7.5 | **304 L3** | — | **BN90LB4** | — | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.3** | 2546 | 1.9 | 220 | 7.5 | **305 L3** | — | **BN90LB4** | — | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.5** | 2395 | 1.1 | 214 | 12.0 | — | **303 R4** | **BN90LB4** | — | 20000 | 23100 | 35700 | 42900 | 12800 | 266 |
| **6.5** | 2395 | 1.5 | 214 | 12.0 | — | **304 R4** | **BN90LB4** | — | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.5** | 2395 | 2.3 | 214 | 12.0 | — | **305 R4** | **BN90LB4** | — | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.9** | 2331 | 1.0 | 202 | 7.5 | **304 L3** | — | **BN90LB4** | — | 19600 | 22600 | 35000 | 42100 | 12600 | 288 |
| **7.3** | 2199 | 1.6 | 190 | 7.5 | **305 L3** | — | **BN90LB4** | — | 19200 | 22200 | 34400 | 41400 | 12300 | 288 |
| **7.3** | 2193 | 3.0 | 190 | 7.5 | **306 L3** | — | **BN90LB4** | — | 23900 | 27100 | 56200 | 65500 | 18000 | 300 |
| **7.5** | 2067 | 1.1 | 185 | 12.0 | — | **303 R4** | **BN90LB4** | — | 19100 | 22000 | 34100 | 41100 | 12200 | 266 |
| **7.5** | 2067 | 1.7 | 185 | 12.0 | — | **304 R4** | **BN90LB4** | — | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.5** | 2067 | 2.2 | 185 | 12.0 | — | **305 R4** | **BN90LB4** | — | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.8** | 2052 | 1.1 | 178 | 7.5 | **303 L3** | — | **BN90LB4** | — | 18800 | 21700 | 33700 | 40600 | 12100 | 264 |
| **7.8** | 2052 | 1.4 | 178 | 7.5 | **304 L3** | — | **BN90LB4** | — | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **7.8** | 2052 | 2.2 | 178 | 7.5 | **305 L3** | — | **BN90LB4** | — | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **7.9** | 1961 | 0.9 | 175 | 10.0 | — | **301 R4** | **BN90LB4** | — | 5950 | 5950 | 16100 | 18500 | 3910 | 256 |
| **8.4** | 1903 | 1.3 | 165 | 7.5 | **304 L3** | — | **BN90LB4** | — | 18300 | 21200 | 33000 | 39600 | 11800 | 288 |
| **8.5** | 1892 | 1.2 | 164 | 7.5 | **303 L3** | — | **BN90LB4** | — | 18300 | 21100 | 32900 | 39600 | 11700 | 264 |



## $P_1$ = 1.85 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **8.5** | 1892 | 2.3 | 164 | 7.5 | **305 L3** | — | **BN90LB4** | — | 18300 | 21100 | 32900 | 39600 | 11700 | 288 |
| **8.8** | 1775 | 1.0 | 159 | 10.0 | — | **301 R4** | **BN90LB4** | — | 5890 | 5890 | 16000 | 18300 | 3870 | 256 |
| **8.8** | 1770 | 1.5 | 158 | 12.0 | — | **303 R4** | **BN90LB4** | — | 18100 | 20900 | 32600 | 39200 | 11600 | 266 |
| **8.8** | 1770 | 2.0 | 158 | 12.0 | — | **304 R4** | **BN90LB4** | — | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.1** | 1762 | 1.0 | 152 | 7.5 | **303 L3** | — | **BN90LB4** | — | 17900 | 20600 | 32200 | 38700 | 11500 | 264 |
| **9.1** | 1762 | 2.0 | 152 | 7.5 | **305 L3** | — | **BN90LB4** | — | 17900 | 20600 | 32200 | 38700 | 11500 | 288 |
| **9.3** | 1728 | 2.0 | 150 | 7.5 | **304 L3** | — | **BN90LB4** | — | 17800 | 20500 | 32000 | 38500 | 11400 | 288 |
| **9.4** | 1656 | 2.1 | 148 | 12.0 | — | **304 R4** | **BN90LB4** | — | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.4** | 1656 | 1.4 | 148 | 12.0 | — | **303 R4** | **BN90LB4** | — | 17700 | 20400 | 31900 | 38400 | 11400 | 266 |
| **9.4** | 1656 | 2.7 | 148 | 12.0 | — | **305 R4** | **BN90LB4** | — | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.8** | 1640 | 1.0 | 142 | 7.5 | **301 L3** | — | **BN90LB4** | — | 5670 | 5670 | 15400 | 17700 | 3730 | 254 |
| **9.8** | 1635 | 1.6 | 141 | 7.5 | **303 L3** | — | **BN90LB4** | — | 17400 | 20100 | 31500 | 37900 | 11200 | 264 |
| **9.8** | 1635 | 2.2 | 141 | 7.5 | **304 L3** | — | **BN90LB4** | — | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.6** | 1512 | 1.1 | 131 | 7.5 | **301 L3** | — | **BN90LB4** | — | 5520 | 5520 | 15100 | 17300 | 3630 | 254 |
| **10.7** | 1508 | 2.3 | 130 | 7.5 | **304 L3** | — | **BN90LB4** | — | 17000 | 19600 | 30700 | 37000 | 10900 | 288 |
| **10.7** | 1449 | 1.2 | 130 | 10.0 | — | **301 R4** | **BN90LB4** | — | 5510 | 5510 | 15000 | 17300 | 3620 | 256 |
| **10.8** | 1445 | 1.8 | 129 | 12.0 | — | **303 R4** | **BN90LB4** | — | 16900 | 19500 | 30600 | 36900 | 10800 | 266 |
| **10.8** | 1445 | 2.4 | 129 | 12.0 | — | **304 R4** | **BN90LB4** | — | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.2** | 1439 | 1.3 | 124 | 7.5 | **303 L3** | — | **BN90LB4** | — | 16700 | 19300 | 30300 | 36500 | 10700 | 264 |
| **11.2** | 1439 | 2.5 | 124 | 7.5 | **305 L3** | — | **BN90LB4** | — | 16700 | 19300 | 30300 | 36500 | 10700 | 288 |
| **11.5** | 1401 | 1.7 | 121 | 14.0 | — | **304 R3** | **BN90LB4** | — | 16600 | 19100 | 30100 | 36200 | 10600 | 278 |
| **12.0** | 1339 | 1.0 | 116 | 7.5 | **301 L3** | — | **BN90LB4** | — | 5300 | 5300 | 14500 | 16700 | 3490 | 254 |
| **12.2** | 1322 | 1.4 | 114 | 14.0 | — | **303 R3** | **BN90LB4** | — | 16200 | 18700 | 29500 | 35500 | 10400 | 266 |
| **12.2** | 1322 | 2.7 | 114 | 14.0 | — | **305 R3** | **BN90LB4** | — | 16200 | 18700 | 29500 | 35500 | 10400 | 278 |
| **12.3** | 1302 | 1.4 | 113 | 7.5 | **303 L3** | — | **BN90LB4** | — | 16200 | 18600 | 29400 | 35400 | 10400 | 264 |
| **12.3** | 1302 | 2.8 | 113 | 7.5 | **305 L3** | — | **BN90LB4** | — | 16200 | 18600 | 29400 | 35400 | 10400 | 288 |
| **12.6** | 1277 | 2.6 | 111 | 7.5 | **304 L3** | — | **BN90LB4** | — | 16000 | 18500 | 29200 | 35200 | 10300 | 288 |
| **12.7** | 1224 | 2.8 | 109 | 12.0 | — | **304 R4** | **BN90LB4** | — | 16000 | 18500 | 29200 | 35100 | 10300 | 278 |
| **13.1** | 1230 | 1.1 | 106 | 12.0 | — | **301 R3** | **BN90LB4** | — | 5160 | 5160 | 14200 | 16300 | 3390 | 256 |
| **13.1** | 1183 | 1.4 | 106 | 10.0 | — | **301 R4** | **BN90LB4** | — | 5150 | 5150 | 14100 | 16200 | 3380 | 256 |
| **13.3** | 1212 | 1.4 | 105 | 7.5 | **301 L3** | — | **BN90LB4** | — | 5130 | 5130 | 14100 | 16200 | 3370 | 254 |
| **13.3** | 1208 | 2.1 | 105 | 7.5 | **303 L3** | — | **BN90LB4** | — | 15800 | 18200 | 28800 | 34600 | 10100 | 264 |
| **13.3** | 1208 | 2.9 | 105 | 7.5 | **304 L3** | — | **BN90LB4** | — | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **14.3** | 1121 | 2.1 | 97.0 | 14.0 | — | **304 R3** | **BN90LB4** | — | 15400 | 17700 | 28100 | 33800 | 9860 | 278 |
| **15.2** | 1058 | 1.7 | 91.5 | 14.0 | — | **303 R3** | **BN90LB4** | — | 15100 | 17400 | 27600 | 33200 | 9670 | 266 |
| **15.4** | 1042 | 2.2 | 90.2 | 7.5 | **303 L3** | — | **BN90LB4** | — | 15000 | 17300 | 27500 | 33100 | 9620 | 264 |
| **16.2** | 989 | 1.7 | 85.6 | 7.5 | **301 L3** | — | **BN90LB4** | — | 4790 | 4790 | 13300 | 15200 | 3150 | 254 |
| **16.3** | 984 | 1.3 | 85.2 | 12.0 | — | **301 R3** | **BN90LB4** | — | 4790 | 4790 | 13200 | 15200 | 3150 | 256 |
| **17.7** | 910 | 2.4 | 78.7 | 14.0 | — | **303 R3** | **BN90LB4** | — | 14300 | 16500 | 26400 | 31800 | 9190 | 266 |
| **17.7** | 909 | 0.9 | 78.7 | 12.0 | — | **300 R3** | **BN90LB4** | — | 4660 | 4660 | 12900 | 14900 | 3060 | 246 |
| **17.7** | 909 | 1.7 | 78.7 | 12.0 | — | **301 R3** | **BN90LB4** | — | 4660 | 4660 | 12900 | 14900 | 3060 | 256 |
| **17.9** | 895 | 0.9 | 77.5 | 7.5 | **300 L3** | — | **BN90LB4** | — | 4640 | 4640 | 12900 | 14800 | 3050 | 244 |
| **17.9** | 895 | 1.9 | 77.5 | 7.5 | **301 L3** | — | **BN90LB4** | — | 4640 | 4640 | 12900 | 14800 | 3050 | 254 |
| **18.0** | 893 | 2.8 | 77.2 | 7.5 | **303 L3** | — | **BN90LB4** | — | 14200 | 16400 | 26300 | 31600 | 9140 | 264 |
| **19.0** | 847 | 2.1 | 73.3 | 14.0 | — | **303 R3** | **BN90LB4** | — | 14000 | 16200 | 25900 | 31100 | 8980 | 266 |
| **19.2** | 835 | 2.7 | 72.3 | 7.5 | **303 L3** | — | **BN90LB4** | — | 13900 | 16100 | 25700 | 31000 | 8940 | 264 |
| **19.9** | 807 | 1.6 | 69.9 | 7.5 | **301 L3** | — | **BN90LB4** | — | 4480 | 4480 | 12500 | 14300 | 2950 | 254 |
| **20.4** | 789 | 1.6 | 68.2 | 12.0 | — | **301 R3** | **BN90LB4** | — | 4440 | 4440 | 12400 | 14200 | 2920 | 256 |
| **21.5** | 774 | 1.5 | 64.8 | 7.5 | **301 L2** | — | **BN90LB4** | — | 4370 | 4370 | 12200 | 14000 | 2870 | 254 |
| **22.0** | 731 | 1.2 | 63.2 | 7.5 | **300 L3** | — | **BN90LB4** | — | 4330 | 4330 | 12100 | 13900 | 2850 | 244 |
| **22.0** | 731 | 2.3 | 63.2 | 7.5 | **301 L3** | — | **BN90LB4** | — | 4330 | 4330 | 12100 | 13900 | 2850 | 254 |
| **22.0** | 729 | 3.0 | 63.1 | 14.0 | — | **303 R3** | **BN90LB4** | — | 13300 | 15400 | 24700 | 29700 | 8540 | 266 |
| **22.1** | 727 | 1.2 | 62.9 | 12.0 | — | **300 R3** | **BN90LB4** | — | 4330 | 4330 | 12100 | 13900 | 2840 | 246 |
| **22.1** | 727 | 2.3 | 62.9 | 12.0 | — | **301 R3** | **BN90LB4** | — | 4330 | 4330 | 12100 | 13900 | 2840 | 256 |
| **24.9** | 666 | 2.7 | 55.8 | 9.0 | **303 L2** | — | **BN90LB4** | — | 12800 | 14800 | 23800 | 28700 | 8200 | 264 |
| **25.7** | 626 | 2.9 | 54.2 | 14.0 | — | **303 R3** | **BN90LB4** | — | 12700 | 14600 | 23600 | 28400 | 8120 | 266 |
| **26.8** | 620 | 1.0 | 51.9 | 7.5 | **300 L2** | — | **BN90LB4** | — | 4060 | 4060 | 11400 | 13100 | 2670 | 244 |
| **26.8** | 620 | 2.1 | 51.9 | 7.5 | **301 L2** | — | **BN90LB4** | — | 4060 | 4060 | 11400 | 13100 | 2670 | 254 |
| **26.9** | 597 | 1.4 | 51.6 | 7.5 | **300 L3** | — | **BN90LB4** | — | 4050 | 4050 | 11400 | 13100 | 2660 | 244 |
| **26.9** | 597 | 2.7 | 51.6 | 7.5 | **301 L3** | — | **BN90LB4** | — | 4050 | 4050 | 11400 | 13100 | 2660 | 254 |
| **27.6** | 583 | 1.5 | 50.4 | 12.0 | — | **300 R3** | **BN90LB4** | — | 4020 | 4020 | 11300 | 13000 | 2640 | 246 |
| **27.6** | 583 | 2.8 | 50.4 | 12.0 | — | **301 R3** | **BN90LB4** | — | 4020 | 4020 | 11300 | 13000 | 2640 | 256 |
| **33** | 496 | 1.3 | 41.5 | 7.5 | **300 L2** | — | **BN90LB4** | — | 3770 | 3770 | 10700 | 12300 | 2480 | 244 |
| **33** | 496 | 2.6 | 41.5 | 7.5 | **301 L2** | — | **BN90LB4** | — | 3770 | 3770 | 10700 | 12300 | 2480 | 254 |
| **34** | 476 | 1.4 | 41.2 | 12.0 | — | **300 R3** | **BN90LB4** | — | 3760 | 3760 | 10600 | 12200 | 2470 | 246 |

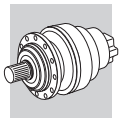


## $P_1$ = 1.85 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **34** | 476 | 2.7 | 41.2 | 12.0 | — | **301 R3** | **BN90LB4** | — | 3760 | 3760 | 10600 | 12200 | 2470 | 256 |
| **36** | 458 | 1.8 | 38.4 | 7.5 | **300 L2** | — | **BN90LB4** | — | 3670 | 3670 | 10400 | 12000 | 2410 | 244 |
| **37** | 431 | 2.0 | 37.3 | 12.0 | — | **300 R3** | **BN90LB4** | — | 3630 | 3630 | 10300 | 11900 | 2390 | 246 |
| **42** | 397 | 1.6 | 33.3 | 7.5 | **300 L2** | — | **BN90LB4** | — | 3500 | 3500 | 9990 | 11500 | 2300 | 244 |
| **45** | 366 | 2.3 | 30.7 | 7.5 | **300 L2** | — | **BN90LB4** | — | 3410 | 3410 | 9750 | 11200 | 2240 | 244 |
| **46** | 351 | 2.4 | 30.4 | 12.0 | — | **300 R3** | **BN90LB4** | — | 3400 | 3400 | 9730 | 11200 | 2230 | 246 |
| **56** | 287 | 2.5 | 24.8 | 12.0 | — | **300 R3** | **BN90LB4** | — | 3170 | 3170 | 9150 | 10500 | 2090 | 246 |
| **56** | 296 | 2.9 | 24.8 | 18.0 | — | **303 R2** | **BN90LB4** | — | 9750 | 11300 | 18700 | 22500 | 6250 | 266 |
| **57** | 294 | 2.7 | 24.6 | 7.5 | **300 L2** | — | **BN90LB4** | — | 3160 | 3160 | 9130 | 10500 | 2080 | 244 |
| **69** | 240 | 2.7 | 20.1 | 7.5 | **300 L2** | — | **BN90LB4** | — | 2960 | 2960 | 8590 | 9870 | 1940 | 244 |
| **75** | 220 | 1.7 | 18.5 | 12.0 | — | **300 R2** | **BN90LB4** | — | 2870 | 2870 | 8370 | 9620 | 1890 | 246 |
| **94** | 176 | 2.9 | 14.8 | 12.0 | — | **300 R2** | **BN90LB4** | — | 2670 | 2670 | 7830 | 9000 | 1750 | 246 |
| **154** | 111 | 2.9 | 9.0 | 7.5 | **300 L1** | — | **BN90LB4** | — | 2260 | 2260 | 6750 | 7750 | 1490 | 244 |

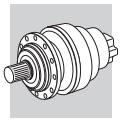
## $P_1$ = 2.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.64** | 28676 | 1.7 | 2187 | 11.0 | **313 L4** | — | **BN100LA4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.67** | 27488 | 1.2 | 2096 | 11.0 | **311 L4** | — | **BN100LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.70** | 26513 | 1.0 | 2022 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.78** | 23823 | 2.4 | 1817 | 11.0 | **313 L4** | — | **BN100LA4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.79** | 23529 | 1.1 | 1794 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.80** | 23161 | 1.9 | 1766 | 11.0 | **311 L4** | — | **BN100LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.84** | 22026 | 1.5 | 1680 | 11.0 | **311 L4** | — | **BN100LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.84** | 21917 | 1.2 | 1672 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **0.94** | 19694 | 2.9 | 1502 | 11.0 | **313 L4** | — | **BN100LA4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.98** | 18853 | 1.4 | 1438 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 133000 | 166000 | 65000 | 336 |
| **1.0** | 18559 | 2.3 | 1415 | 11.0 | **311 L4** | — | **BN100LA4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **1.0** | 18277 | 2.9 | 1394 | 11.0 | **313 L4** | — | **BN100LA4** | — | — | — | 192000 | 229000 | 79900 | 360 |
| **1.0** | 18099 | 0.9 | 1380 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 110000 | 143800 | 35800 | 324 |
| **1.1** | 16859 | 1.0 | 1286 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 109200 | 140800 | 35000 | 324 |
| **1.1** | 16508 | 1.7 | 1259 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 128500 | 161600 | 62700 | 336 |
| **1.1** | 16133 | 2.7 | 1230 | 11.0 | **311 L4** | — | **BN100LA4** | — | — | — | 150800 | 187900 | 62300 | 348 |
| **1.2** | 15266 | 1.9 | 1164 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 125500 | 157900 | 61100 | 336 |
| **1.2** | 15166 | 0.9 | 1157 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 47500 | 59600 | 101900 | 133600 | 41300 | 312 |
| **1.2** | 15070 | 1.1 | 1149 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 105500 | 136100 | 33700 | 324 |
| **1.4** | 13382 | 2.1 | 1021 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 120700 | 151800 | 58500 | 336 |
| **1.4** | 13100 | 1.1 | 999 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 46300 | 58000 | 99600 | 130500 | 40200 | 312 |
| **1.4** | 13100 | 1.4 | 999 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 101200 | 130500 | 32200 | 324 |
| **1.5** | 12310 | 2.7 | 939 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 117700 | 148000 | 56900 | 336 |
| **1.6** | 11883 | 1.3 | 906 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 44800 | 56200 | 96700 | 126800 | 38900 | 312 |
| **1.6** | 11883 | 1.5 | 906 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 98300 | 126800 | 31100 | 324 |
| **1.6** | 11776 | 2.0 | 898 | 15.0 | — | **310 R4** | **BN100LA4** | — | — | — | 116100 | 146000 | 56100 | 338 |
| **1.7** | 10723 | 2.6 | 818 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 112900 | 142000 | 54300 | 336 |
| **1.8** | 10497 | 1.3 | 801 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 43000 | 53900 | 93200 | 122100 | 37400 | 312 |
| **1.8** | 10497 | 1.7 | 801 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 94700 | 122100 | 29900 | 324 |
| **1.9** | 9922 | 2.7 | 757 | 15.0 | — | **310 R4** | **BN100LA4** | — | — | — | 110300 | 138700 | 52900 | 338 |
| **1.9** | 9516 | 2.8 | 726 | 11.0 | **310 L4** | — | **BN100LA4** | — | — | — | 108900 | 137000 | 52200 | 336 |
| **2.0** | 9470 | 1.6 | 722 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 41500 | 52100 | 90400 | 118400 | 36100 | 312 |
| **2.0** | 9470 | 2.2 | 722 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 91800 | 118400 | 28900 | 324 |
| **2.0** | 9173 | 1.0 | 700 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 37000 | 41900 | 83200 | 96900 | 27800 | 300 |
| **2.0** | 9044 | 1.1 | 690 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 40900 | 51300 | 89100 | 116800 | 35500 | 314 |
| **2.0** | 9044 | 1.6 | 690 | 15.0 | — | **309 R4** | **BN100LA4** | — | — | — | 90600 | 116800 | 28400 | 326 |
| **2.2** | 8569 | 1.5 | 654 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 40200 | 50400 | 87700 | 114900 | 34900 | 312 |
| **2.2** | 8569 | 2.1 | 654 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 89100 | 114900 | 27900 | 324 |
| **2.2** | 8374 | 2.6 | 639 | 15.0 | — | **310 R4** | **BN100LA4** | — | — | — | 104800 | 131800 | 50000 | 338 |
| **2.2** | 8333 | 1.1 | 636 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 35800 | 40600 | 80800 | 94100 | 26900 | 300 |
| **2.4** | 7741 | 1.1 | 590 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 34900 | 39600 | 79100 | 92100 | 26200 | 302 |
| **2.4** | 7732 | 2.8 | 590 | 15.0 | — | **310 R4** | **BN100LA4** | — | — | — | 102400 | 128700 | 48700 | 338 |
| **2.4** | 7727 | 1.2 | 589 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 34900 | 39600 | 79000 | 92000 | 26200 | 300 |
| **2.4** | 7620 | 1.7 | 581 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 38600 | 48500 | 84700 | 110900 | 33600 | 314 |



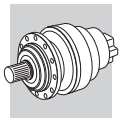
# $P_1$ = 2.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.4** | 7620 | 2.1 | 581 | 15.0 | — | **309 R4** | **BN100LA4** | — | — | — | 86000 | 110900 | 26900 | 326 |
| **2.4** | 7588 | 2.0 | 579 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 38600 | 48400 | 84500 | 110800 | 33500 | 312 |
| **2.4** | 7588 | 2.8 | 579 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 85900 | 110800 | 26800 | 324 |
| **2.6** | 7211 | 1.0 | 550 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 34100 | 38700 | 77400 | 90100 | 25600 | 302 |
| **2.8** | 6677 | 1.4 | 509 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 33300 | 37700 | 75600 | 88100 | 25000 | 300 |
| **2.8** | 6677 | 2.1 | 509 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 37000 | 46400 | 81400 | 106600 | 32100 | 312 |
| **2.8** | 6677 | 2.1 | 509 | 7.5 | **309 L4** | — | **BN100LA4** | — | — | — | 82700 | 106600 | 25700 | 324 |
| **2.9** | 6431 | 1.5 | 490 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 36500 | 45800 | 80500 | 105400 | 31700 | 314 |
| **2.9** | 6431 | 2.2 | 490 | 15.0 | — | **309 R4** | **BN100LA4** | — | — | — | 81700 | 105400 | 25400 | 326 |
| **2.9** | 6399 | 1.4 | 488 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 32800 | 37100 | 74700 | 87000 | 24600 | 302 |
| **3.0** | 6095 | 2.0 | 465 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 35800 | 45000 | 79200 | 103700 | 31200 | 312 |
| **3.1** | 5991 | 2.3 | 457 | 15.0 | — | **309 R4** | **BN100LA4** | — | — | — | 80000 | 103200 | 24800 | 326 |
| **3.1** | 5961 | 1.2 | 455 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 32000 | 36300 | 73100 | 85100 | 24100 | 302 |
| **3.1** | 5938 | 2.3 | 453 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 35500 | 44600 | 78600 | 102900 | 30900 | 314 |
| **3.2** | 5843 | 0.9 | 446 | 6.0 | **305 L4** | — | **BN100LA4** | **M3LA4** | 25500 | 29500 | 44400 | 53400 | 16400 | 288 |
| **3.2** | 5825 | 1.7 | 444 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 31800 | 36000 | 72600 | 84500 | 23900 | 300 |
| **3.4** | 5505 | 1.6 | 420 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 31200 | 35300 | 71400 | 83100 | 23400 | 302 |
| **3.4** | 5419 | 2.2 | 413 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 34500 | 43200 | 76400 | 100100 | 30000 | 314 |
| **3.5** | 5317 | 2.2 | 406 | 7.5 | **307 L4** | — | **BN100LA4** | **M3LA4** | 34300 | 43000 | 76000 | 99600 | 29800 | 312 |
| **3.5** | 5491 | 1.0 | 405 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 30800 | 34900 | 70600 | 82200 | 23100 | 300 |
| **3.6** | 5126 | 1.3 | 391 | 6.0 | **306 L4** | — | **BN100LA4** | **M3LA4** | 30400 | 34500 | 69900 | 81400 | 22900 | 300 |
| **3.6** | 5100 | 1.5 | 389 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 30400 | 34400 | 69800 | 81200 | 22800 | 302 |
| **3.8** | 4909 | 2.9 | 374 | 15.0 | — | **309 R4** | **BN100LA4** | — | — | — | 75400 | 97200 | 23200 | 326 |
| **3.9** | 4772 | 1.0 | 364 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 23900 | 27600 | 41800 | 50300 | 15300 | 278 |
| **3.9** | 4758 | 2.6 | 363 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 33000 | 41400 | 73500 | 96300 | 28700 | 314 |
| **4.2** | 4562 | 1.9 | 336 | 11.0 | **307 L3** | — | **BN100LA4** | **M3LA4** | 32200 | 40400 | 71900 | 94200 | 28000 | 312 |
| **4.2** | 4562 | 2.9 | 336 | 11.0 | **309 L3** | — | **BN100LA4** | — | — | — | 73000 | 94200 | 22400 | 324 |
| **4.2** | 4400 | 1.0 | 336 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 23200 | 26800 | 40800 | 49100 | 14900 | 278 |
| **4.3** | 4342 | 2.6 | 331 | 15.0 | — | **307 R4** | **BN100LA4** | **M3LA4** | 32000 | 40200 | 71500 | 93700 | 27800 | 314 |
| **4.3** | 4400 | 1.3 | 325 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 28600 | 32400 | 66100 | 76900 | 21500 | 300 |
| **4.5** | 4086 | 1.9 | 312 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 28200 | 32000 | 65300 | 76000 | 21200 | 302 |
| **4.9** | 3802 | 1.0 | 290 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.9** | 3802 | 1.4 | 290 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.9** | 3789 | 2.2 | 289 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 27500 | 31200 | 63800 | 74300 | 20700 | 302 |
| **4.9** | 3905 | 1.4 | 288 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 27500 | 31200 | 63700 | 74200 | 20700 | 300 |
| **5.0** | 3844 | 2.9 | 284 | 11.0 | **307 L3** | — | **BN100LA4** | **M3LA4** | 30400 | 38100 | 68300 | 89400 | 26400 | 312 |
| **5.1** | 3749 | 1.2 | 276 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 21800 | 25200 | 38500 | 46300 | 14000 | 288 |
| **5.3** | 3637 | 1.5 | 268 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 26900 | 30400 | 62400 | 72700 | 20200 | 300 |
| **5.3** | 3507 | 1.0 | 267 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 21500 | 24900 | 38100 | 45900 | 13800 | 278 |
| **5.5** | 3492 | 1.0 | 258 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 21300 | 24600 | 37700 | 45300 | 13600 | 288 |
| **5.5** | 3346 | 1.1 | 255 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 21200 | 24500 | 37600 | 45200 | 13600 | 278 |
| **5.7** | 3260 | 2.5 | 249 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 26200 | 29700 | 61000 | 71000 | 19700 | 302 |
| **5.9** | 3244 | 2.7 | 239 | 11.0 | **307 L3** | — | **BN100LA4** | **M3LA4** | 28700 | 36000 | 64900 | 85000 | 25000 | 312 |
| **5.9** | 3228 | 2.5 | 238 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 25800 | 29200 | 60200 | 70100 | 19400 | 300 |
| **6.1** | 3029 | 1.2 | 231 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 20500 | 23700 | 36500 | 43900 | 13200 | 278 |
| **6.1** | 3019 | 2.5 | 230 | 12.0 | — | **306 R4** | **BN100LA4** | **M3LA4** | 25500 | 28900 | 59600 | 69400 | 19200 | 302 |
| **6.2** | 2970 | 1.2 | 227 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 20400 | 23500 | 36300 | 43600 | 13100 | 278 |
| **6.4** | 3007 | 2.2 | 222 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 25200 | 28600 | 58900 | 68600 | 18900 | 300 |
| **6.4** | 2987 | 1.2 | 220 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.4** | 2987 | 1.6 | 220 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.6** | 2810 | 1.0 | 214 | 12.0 | — | **303 R4** | **BN100LA4** | **M3LA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 266 |
| **6.6** | 2810 | 1.3 | 214 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.6** | 2810 | 1.9 | 214 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.9** | 2777 | 2.9 | 205 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 24500 | 27800 | 57600 | 67000 | 18400 | 300 |
| **7.4** | 2580 | 1.4 | 190 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 19200 | 22200 | 34400 | 41400 | 12300 | 288 |
| **7.4** | 2572 | 2.5 | 190 | 7.5 | **306 L3** | — | **BN100LA4** | **M3LA4** | 23900 | 27100 | 56200 | 65500 | 18000 | 300 |
| **7.6** | 2425 | 1.0 | 185 | 12.0 | — | **303 R4** | **BN100LA4** | **M3LA4** | 18600 | 21500 | 33400 | 40200 | 11900 | 266 |
| **7.6** | 2425 | 1.4 | 185 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.6** | 2425 | 1.9 | 185 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.9** | 2407 | 0.9 | 178 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 264 |
| **7.9** | 2407 | 1.2 | 178 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **7.9** | 2407 | 1.8 | 178 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **8.6** | 2233 | 1.1 | 165 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 18300 | 21200 | 33000 | 39600 | 11800 | 288 |
| **8.6** | 2220 | 1.0 | 164 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 18300 | 21100 | 32900 | 39600 | 11700 | 264 |
| **8.6** | 2220 | 2.0 | 164 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 18300 | 21100 | 32900 | 39600 | 11700 | 288 |



# $P_1$ = 2.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8.9** | 2076 | 1.3 | 158 | 12.0 | — | **303 R4** | **BN100LA4** | **M3LA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 266 |
| **8.9** | 2076 | 1.7 | 158 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **8.9** | 2076 | 2.6 | 158 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.2** | 2068 | 1.7 | 152 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 17900 | 20600 | 32200 | 38700 | 11500 | 288 |
| **9.4** | 2028 | 1.7 | 150 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 17800 | 20500 | 32000 | 38500 | 11400 | 288 |
| **9.5** | 1943 | 1.8 | 148 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.5** | 1943 | 1.2 | 148 | 12.0 | — | **303 R4** | **BN100LA4** | **M3LA4** | 17700 | 20400 | 31900 | 38400 | 11400 | 266 |
| **9.5** | 1943 | 2.3 | 148 | 12.0 | — | **305 R4** | **BN100LA4** | **M3LA4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.8** | 1954 | 2.8 | 144 | 14.0 | — | **306 R3** | **BN100LA4** | **M3LA4** | 21800 | 24700 | 51800 | 60300 | 16400 | 302 |
| **10.0** | 1918 | 1.4 | 141 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 264 |
| **10.0** | 1918 | 1.8 | 141 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.0** | 1918 | 2.7 | 141 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.8** | 1774 | 1.0 | 131 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 5520 | 5520 | 15100 | 17300 | 3630 | 254 |
| **10.8** | 1769 | 2.0 | 130 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 17000 | 19600 | 30700 | 37000 | 10900 | 288 |
| **10.9** | 1700 | 1.0 | 130 | 10.0 | — | **301 R4** | **BN100LA4** | **M3LA4** | 5510 | 5510 | 15000 | 17300 | 3620 | 256 |
| **10.9** | 1695 | 1.5 | 129 | 12.0 | — | **303 R4** | **BN100LA4** | **M3LA4** | 16900 | 19500 | 30600 | 36900 | 10800 | 266 |
| **10.9** | 1695 | 2.1 | 129 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.3** | 1688 | 1.1 | 124 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 16700 | 19300 | 30300 | 36500 | 10700 | 264 |
| **11.3** | 1688 | 2.1 | 124 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 16700 | 19300 | 30300 | 36500 | 10700 | 288 |
| **11.6** | 1644 | 1.5 | 121 | 14.0 | — | **304 R3** | **BN100LA4** | **M3LA4** | 16600 | 19100 | 30100 | 36200 | 10600 | 278 |
| **12.3** | 1551 | 1.2 | 114 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 16200 | 18700 | 29500 | 35500 | 10400 | 266 |
| **12.3** | 1551 | 2.3 | 114 | 14.0 | — | **305 R3** | **BN100LA4** | **M3LA4** | 16200 | 18700 | 29500 | 35500 | 10400 | 278 |
| **12.5** | 1528 | 1.2 | 113 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 16200 | 18600 | 29400 | 35400 | 10400 | 264 |
| **12.5** | 1528 | 2.3 | 113 | 7.5 | **305 L3** | — | **BN100LA4** | **M3LA4** | 16200 | 18600 | 29400 | 35400 | 10400 | 288 |
| **12.8** | 1498 | 2.3 | 111 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 16000 | 18500 | 29200 | 35200 | 10300 | 288 |
| **12.9** | 1436 | 2.3 | 109 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 16000 | 18500 | 29200 | 35100 | 10300 | 278 |
| **13.2** | 1443 | 0.9 | 106 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 5160 | 5160 | 14200 | 16300 | 3390 | 256 |
| **13.3** | 1388 | 1.2 | 106 | 10.0 | — | **301 R4** | **BN100LA4** | **M3LA4** | 5150 | 5150 | 14100 | 16200 | 3380 | 256 |
| **13.4** | 1422 | 1.2 | 105 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 5130 | 5130 | 14100 | 16200 | 3370 | 254 |
| **13.5** | 1417 | 1.8 | 105 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 264 |
| **13.5** | 1417 | 2.5 | 105 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **14.5** | 1315 | 1.8 | 97.0 | 14.0 | — | **304 R3** | **BN100LA4** | **M3LA4** | 15400 | 17700 | 28100 | 33800 | 9860 | 278 |
| **15.4** | 1241 | 1.5 | 91.5 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 15100 | 17400 | 27600 | 33200 | 9670 | 266 |
| **15.4** | 1241 | 2.9 | 91.5 | 14.0 | — | **305 R3** | **BN100LA4** | **M3LA4** | 15100 | 17400 | 27600 | 33200 | 9670 | 278 |
| **15.6** | 1223 | 1.8 | 90.2 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 264 |
| **15.6** | 1223 | 2.7 | 90.2 | 7.5 | **304 L3** | — | **BN100LA4** | **M3LA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **15.8** | 1172 | 2.8 | 89.4 | 12.0 | — | **304 R4** | **BN100LA4** | **M3LA4** | 15000 | 17300 | 27400 | 33000 | 9590 | 278 |
| **16.5** | 1161 | 1.4 | 85.6 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 4790 | 4790 | 13300 | 15200 | 3150 | 254 |
| **16.6** | 1155 | 1.1 | 85.2 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 4790 | 4790 | 13200 | 15200 | 3150 | 256 |
| **17.9** | 1067 | 2.0 | 78.7 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 14300 | 16500 | 26400 | 31800 | 9190 | 266 |
| **17.9** | 1067 | 2.7 | 78.7 | 14.0 | — | **304 R3** | **BN100LA4** | **M3LA4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **17.9** | 1066 | 1.5 | 78.7 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 4660 | 4660 | 12900 | 14900 | 3060 | 256 |
| **18.2** | 1051 | 1.6 | 77.5 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 4640 | 4640 | 12900 | 14800 | 3050 | 254 |
| **18.3** | 1047 | 2.4 | 77.2 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 264 |
| **19.2** | 994 | 1.8 | 73.3 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 14000 | 16200 | 25900 | 31100 | 8980 | 266 |
| **19.5** | 980 | 2.3 | 72.3 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 13900 | 16100 | 25700 | 31000 | 8940 | 264 |
| **20.2** | 947 | 1.4 | 69.9 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 4480 | 4480 | 12500 | 14300 | 2950 | 254 |
| **20.7** | 925 | 1.4 | 68.2 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 4440 | 4440 | 12400 | 14200 | 2920 | 256 |
| **21.8** | 908 | 1.3 | 64.8 | 7.5 | **301 L2** | — | **BN100LA4** | **M3LA4** | 4370 | 4370 | 12200 | 14000 | 2870 | 254 |
| **22.3** | 858 | 1.0 | 63.2 | 7.5 | **300 L3** | — | **BN100LA4** | **M3LA4** | 4330 | 4330 | 12100 | 13900 | 2850 | 244 |
| **22.3** | 858 | 1.9 | 63.2 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 4330 | 4330 | 12100 | 13900 | 2850 | 254 |
| **22.4** | 855 | 2.5 | 63.1 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 266 |
| **22.4** | 855 | 2.9 | 63.1 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 264 |
| **22.4** | 853 | 1.0 | 62.9 | 12.0 | — | **300 R3** | **BN100LA4** | **M3LA4** | 4330 | 4330 | 12100 | 13900 | 2840 | 246 |
| **22.4** | 853 | 1.9 | 62.9 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 4330 | 4330 | 12100 | 13900 | 2840 | 256 |
| **23.8** | 828 | 2.9 | 59.1 | 9.0 | **304 L2** | — | **BN100LA4** | **M3LA4** | 13000 | 15000 | 24200 | 29200 | 8360 | 288 |
| **25.3** | 782 | 2.3 | 55.8 | 9.0 | **303 L2** | — | **BN100LA4** | **M3LA4** | 12800 | 14800 | 23800 | 28700 | 8200 | 264 |
| **26.0** | 735 | 2.5 | 54.2 | 14.0 | — | **303 R3** | **BN100LA4** | **M3LA4** | 12700 | 14600 | 23600 | 28400 | 8120 | 266 |
| **26.4** | 724 | 3.0 | 53.4 | 7.5 | **303 L3** | — | **BN100LA4** | **M3LA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 264 |
| **27.2** | 727 | 1.8 | 51.9 | 7.5 | **301 L2** | — | **BN100LA4** | **M3LA4** | 4060 | 4060 | 11400 | 13100 | 2670 | 254 |
| **27.3** | 700 | 1.2 | 51.6 | 7.5 | **300 L3** | — | **BN100LA4** | **M3LA4** | 4050 | 4050 | 11400 | 13100 | 2660 | 244 |
| **27.3** | 700 | 2.3 | 51.6 | 7.5 | **301 L3** | — | **BN100LA4** | **M3LA4** | 4050 | 4050 | 11400 | 13100 | 2660 | 254 |
| **28.0** | 684 | 1.2 | 50.4 | 12.0 | — | **300 R3** | **BN100LA4** | **M3LA4** | 4020 | 4020 | 11300 | 13000 | 2640 | 246 |
| **28.0** | 684 | 2.4 | 50.4 | 12.0 | — | **301 R3** | **BN100LA4** | **M3LA4** | 4020 | 4020 | 11300 | 13000 | 2640 | 256 |
| **32** | 625 | 2.9 | 44.6 | 9.0 | **303 L2** | — | **BN100LA4** | **M3LA4** | 11900 | 13700 | 22300 | 26800 | 7610 | 264 |



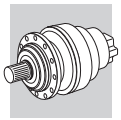
A

## $P_1$ = 2.2 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **34** | 582 | 1.1 | 41.5 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 3770 | 3770 | 10700 | 12300 | 2480 | 244 |
| **34** | 582 | 2.2 | 41.5 | 7.5 | **301 L2** | **—** | **BN100LA4** | **M3LA4** | 3770 | 3770 | 10700 | 12300 | 2480 | 254 |
| **34** | 558 | 1.2 | 41.2 | 12.0 | **—** | **300 R3** | **BN100LA4** | **M3LA4** | 3760 | 3760 | 10600 | 12200 | 2470 | 246 |
| **34** | 558 | 2.3 | 41.2 | 12.0 | **—** | **301 R3** | **BN100LA4** | **M3LA4** | 3760 | 3760 | 10600 | 12200 | 2470 | 256 |
| **37** | 537 | 1.6 | 38.4 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 3670 | 3670 | 10400 | 12000 | 2410 | 244 |
| **37** | 537 | 2.9 | 38.4 | 7.5 | **301 L2** | **—** | **BN100LA4** | **M3LA4** | 3670 | 3670 | 10400 | 12000 | 2410 | 254 |
| **38** | 505 | 1.7 | 37.3 | 12.0 | **—** | **300 R3** | **BN100LA4** | **M3LA4** | 3630 | 3630 | 10300 | 11900 | 2390 | 246 |
| **42** | 466 | 1.4 | 33.3 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 3500 | 3500 | 9990 | 11500 | 2300 | 244 |
| **42** | 466 | 2.8 | 33.3 | 7.5 | **301 L2** | **—** | **BN100LA4** | **M3LA4** | 3500 | 3500 | 9990 | 11500 | 2300 | 254 |
| **46** | 430 | 2.0 | 30.7 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 3410 | 3410 | 9750 | 11200 | 2240 | 244 |
| **46** | 412 | 2.0 | 30.4 | 12.0 | **—** | **300 R3** | **BN100LA4** | **M3LA4** | 3400 | 3400 | 9730 | 11200 | 2230 | 246 |
| **57** | 337 | 2.2 | 24.8 | 12.0 | **—** | **300 R3** | **BN100LA4** | **M3LA4** | 3170 | 3170 | 9150 | 10500 | 2090 | 246 |
| **57** | 347 | 2.5 | 24.8 | 18.0 | **—** | **303 R2** | **BN100LA4** | **M3LA4** | 9750 | 11300 | 18700 | 22500 | 6250 | 266 |
| **57** | 344 | 2.3 | 24.6 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 3160 | 3160 | 9130 | 10500 | 2080 | 244 |
| **70** | 281 | 2.3 | 20.1 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 2960 | 2960 | 8590 | 9870 | 1940 | 244 |
| **76** | 258 | 1.4 | 18.5 | 12.0 | **—** | **300 R2** | **BN100LA4** | **M3LA4** | 2870 | 2870 | 8370 | 9620 | 1890 | 246 |
| **76** | 258 | 2.9 | 18.5 | 12.0 | **—** | **301 R2** | **BN100LA4** | **M3LA4** | 2870 | 2870 | 8370 | 9620 | 1890 | 256 |
| **78** | 255 | 2.9 | 18.2 | 7.5 | **300 L2** | **—** | **BN100LA4** | **M3LA4** | 2860 | 2860 | 8330 | 9580 | 1880 | 244 |
| **96** | 207 | 2.5 | 14.8 | 12.0 | **—** | **300 R2** | **BN100LA4** | **M3LA4** | 2670 | 2670 | 7830 | 9000 | 1750 | 246 |
| **157** | 130 | 2.5 | 9.0 | 7.5 | **300 L1** | **—** | **BN100LA4** | **M3LA4** | 2260 | 2260 | 6750 | 7750 | 1490 | 244 |

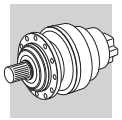
## $P_1$ = 3 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **0.64** | 38491 | 1.3 | 2187 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 192000 | 231000 | 80000 | 360 |
| **0.67** | 36897 | 0.9 | 2096 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 157000 | 195000 | 65000 | 348 |
| **0.78** | 31977 | 1.8 | 1817 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 192000 | 231000 | 80000 | 360 |
| **0.80** | 31089 | 1.4 | 1766 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 157000 | 195000 | 65000 | 348 |
| **0.84** | 29565 | 1.2 | 1680 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 157000 | 195000 | 65000 | 348 |
| **0.94** | 26435 | 2.2 | 1502 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 192000 | 231000 | 80000 | 360 |
| **0.98** | 25307 | 1.0 | 1438 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 133000 | 166000 | 65000 | 336 |
| **1.0** | 24911 | 1.7 | 1415 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 157000 | 195000 | 65000 | 348 |
| **1.0** | 24533 | 2.1 | 1394 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 192000 | 229000 | 79900 | 360 |
| **1.1** | 22274 | 2.5 | 1266 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 188000 | 222500 | 77400 | 360 |
| **1.1** | 22158 | 1.2 | 1259 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 128500 | 161600 | 62700 | 336 |
| **1.1** | 21655 | 2.0 | 1230 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 150800 | 187900 | 62300 | 348 |
| **1.2** | 20491 | 1.4 | 1164 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 125500 | 157900 | 61100 | 336 |
| **1.3** | 19658 | 2.7 | 1117 | 11.0 | **313 L4** | **—** | **BN100LB4** | **—** | — | — | 181100 | 214300 | 74200 | 360 |
| **1.3** | 18628 | 2.3 | 1058 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 144200 | 179600 | 59200 | 348 |
| **1.4** | 17963 | 1.6 | 1021 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 120700 | 151800 | 58500 | 336 |
| **1.4** | 17584 | 1.0 | 999 | 7.5 | **309 L4** | **—** | **BN100LB4** | **—** | — | — | 101200 | 130500 | 32200 | 324 |
| **1.4** | 17352 | 2.4 | 986 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 141100 | 175800 | 57800 | 348 |
| **1.5** | 16524 | 2.0 | 939 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 117700 | 148000 | 56900 | 336 |
| **1.6** | 15951 | 1.0 | 906 | 7.5 | **307 L4** | **—** | **BN100LB4** | **M3LB4** | 43800 | 54900 | 94700 | 124200 | 38000 | 312 |
| **1.6** | 15951 | 1.1 | 906 | 7.5 | **309 L4** | **—** | **BN100LB4** | **—** | — | — | 98300 | 126800 | 31100 | 324 |
| **1.6** | 15905 | 2.9 | 904 | 11.0 | **311 L4** | **—** | **BN100LB4** | **—** | — | — | 137500 | 171300 | 56200 | 348 |
| **1.6** | 15807 | 1.5 | 898 | 15.0 | **—** | **310 R4** | **BN100LB4** | **—** | — | — | 116100 | 146000 | 56100 | 338 |
| **1.7** | 14393 | 1.9 | 818 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 112900 | 142000 | 54300 | 336 |
| **1.8** | 14090 | 0.9 | 801 | 7.5 | **307 L4** | **—** | **BN100LB4** | **M3LB4** | 42000 | 52700 | 91300 | 119600 | 36500 | 312 |
| **1.8** | 14090 | 1.3 | 801 | 7.5 | **309 L4** | **—** | **BN100LB4** | **—** | — | — | 94700 | 122100 | 29900 | 324 |
| **1.9** | 13319 | 2.0 | 757 | 15.0 | **—** | **310 R4** | **BN100LB4** | **—** | — | — | 110300 | 138700 | 52900 | 338 |
| **1.9** | 13132 | 2.3 | 746 | 22.0 | **—** | **311 R4** | **BN100LB4** | **—** | — | — | 129800 | 161700 | 52700 | 374 |
| **1.9** | 12773 | 2.1 | 726 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 108900 | 137000 | 52200 | 336 |
| **2.0** | 12711 | 1.2 | 722 | 7.5 | **307 L4** | **—** | **BN100LB4** | **M3LB4** | 41500 | 52100 | 90400 | 118400 | 36100 | 312 |
| **2.0** | 12711 | 1.7 | 722 | 7.5 | **309 L4** | **—** | **BN100LB4** | **—** | — | — | 91800 | 118400 | 28900 | 324 |
| **2.0** | 12140 | 1.2 | 690 | 15.0 | **—** | **309 R4** | **BN100LB4** | **—** | — | — | 90600 | 116800 | 28400 | 326 |
| **2.2** | 11502 | 1.1 | 654 | 7.5 | **307 L4** | **—** | **BN100LB4** | **M3LB4** | 40200 | 50400 | 87700 | 114900 | 34900 | 312 |
| **2.2** | 11502 | 1.6 | 654 | 7.5 | **309 L4** | **—** | **BN100LB4** | **—** | — | — | 89100 | 114900 | 27900 | 324 |
| **2.2** | 11240 | 1.9 | 639 | 15.0 | **—** | **310 R4** | **BN100LB4** | **—** | — | — | 104800 | 131800 | 50000 | 338 |
| **2.2** | 11205 | 2.4 | 637 | 11.0 | **310 L4** | **—** | **BN100LB4** | **—** | — | — | 104700 | 131700 | 50000 | 336 |
| **2.4** | 10378 | 2.1 | 590 | 15.0 | **—** | **310 R4** | **BN100LB4** | **—** | — | — | 102400 | 128700 | 48700 | 338 |



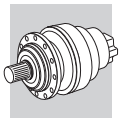
## $P_1$ = 3 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **2.4** | 10229 | 1.2 | 581 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 38600 | 48500 | 84700 | 110900 | 33600 | 314 |
| **2.4** | 10229 | 1.5 | 581 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 86000 | 110900 | 26900 | 326 |
| **2.4** | 10185 | 1.5 | 579 | 7.5 | **307 L4** | — | **BN100LB4** | **M3LB4** | 38600 | 48400 | 84500 | 110800 | 33500 | 312 |
| **2.4** | 10185 | 2.1 | 579 | 7.5 | **309 L4** | — | **BN100LB4** | — | — | — | 85900 | 110800 | 26800 | 324 |
| **2.7** | 9102 | 2.8 | 517 | 15.0 | — | **310 R4** | **BN100LB4** | — | — | — | 98400 | 123800 | 46600 | 338 |
| **2.8** | 8963 | 1.1 | 509 | 6.0 | **306 L4** | — | **BN100LB4** | **M3LB4** | 33300 | 37700 | 75600 | 88100 | 25000 | 300 |
| **2.8** | 8962 | 1.6 | 509 | 7.5 | **307 L4** | — | **BN100LB4** | **M3LB4** | 37000 | 46400 | 81400 | 106600 | 32100 | 312 |
| **2.8** | 8962 | 1.6 | 509 | 7.5 | **309 L4** | — | **BN100LB4** | — | — | — | 82700 | 106600 | 25700 | 324 |
| **2.8** | 8929 | 2.9 | 507 | 11.0 | **310 L4** | — | **BN100LB4** | — | — | — | 97900 | 123000 | 46300 | 336 |
| **2.9** | 8633 | 1.1 | 490 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 36500 | 45800 | 80500 | 105400 | 31700 | 314 |
| **2.9** | 8633 | 1.6 | 490 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 81700 | 105400 | 25400 | 326 |
| **2.9** | 8590 | 1.1 | 488 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 32800 | 37100 | 74700 | 87000 | 24600 | 302 |
| **3.0** | 8181 | 1.5 | 465 | 7.5 | **307 L4** | — | **BN100LB4** | **M3LB4** | 35800 | 45000 | 79200 | 103700 | 31200 | 312 |
| **3.0** | 8181 | 2.2 | 465 | 7.5 | **309 L4** | — | **BN100LB4** | — | — | — | 80400 | 103700 | 24900 | 324 |
| **3.1** | 8041 | 1.7 | 457 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 80000 | 103200 | 24800 | 326 |
| **3.1** | 7993 | 2.5 | 454 | 15.0 | — | **310 R4** | **BN100LB4** | — | — | — | 94700 | 119000 | 44700 | 338 |
| **3.1** | 7970 | 1.7 | 453 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 35500 | 44600 | 78600 | 102900 | 30900 | 314 |
| **3.2** | 7819 | 1.3 | 444 | 6.0 | **306 L4** | — | **BN100LB4** | **M3LB4** | 31800 | 36000 | 72600 | 84500 | 23900 | 300 |
| **3.4** | 7389 | 1.2 | 420 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 31200 | 35300 | 71400 | 83100 | 23400 | 302 |
| **3.4** | 7274 | 1.6 | 413 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 34500 | 43200 | 76400 | 100100 | 30000 | 314 |
| **3.4** | 7274 | 2.5 | 413 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 77700 | 100100 | 24000 | 326 |
| **3.5** | 7137 | 1.7 | 406 | 7.5 | **307 L4** | — | **BN100LB4** | **M3LB4** | 34300 | 43000 | 76000 | 99600 | 29800 | 312 |
| **3.5** | 7137 | 2.5 | 406 | 7.5 | **309 L4** | — | **BN100LB4** | — | — | — | 77200 | 99600 | 23800 | 324 |
| **3.6** | 6893 | 2.8 | 392 | 11.0 | **310 L4** | — | **BN100LB4** | — | — | — | 90500 | 113900 | 42500 | 336 |
| **3.6** | 6880 | 1.0 | 391 | 6.0 | **306 L4** | — | **BN100LB4** | **M3LB4** | 30400 | 34500 | 69900 | 81400 | 22900 | 300 |
| **3.6** | 6845 | 1.1 | 389 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 30400 | 34400 | 69800 | 81200 | 22800 | 302 |
| **3.8** | 6589 | 2.2 | 374 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 75400 | 97200 | 23200 | 326 |
| **3.9** | 6387 | 1.9 | 363 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 33000 | 41400 | 73500 | 96300 | 28700 | 314 |
| **4.0** | 6144 | 2.4 | 349 | 7.5 | **307 L4** | — | **BN100LB4** | **M3LB4** | 32600 | 40900 | 72700 | 95200 | 28300 | 312 |
| **4.2** | 6124 | 1.4 | 336 | 11.0 | **307 L3** | — | **BN100LB4** | **M3LB4** | 32200 | 40400 | 71900 | 94200 | 28000 | 312 |
| **4.2** | 6124 | 2.2 | 336 | 11.0 | **309 L3** | — | **BN100LB4** | — | — | — | 73000 | 94200 | 22400 | 324 |
| **4.3** | 5828 | 2.0 | 331 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 32000 | 40200 | 71500 | 93700 | 27800 | 314 |
| **4.3** | 5828 | 3.0 | 331 | 15.0 | — | **309 R4** | **BN100LB4** | — | — | — | 72700 | 93700 | 22300 | 326 |
| **4.3** | 5906 | 0.9 | 325 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 28600 | 32400 | 66100 | 76900 | 21500 | 300 |
| **4.5** | 5485 | 1.4 | 312 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 28200 | 32000 | 65300 | 76000 | 21200 | 302 |
| **4.7** | 5280 | 2.7 | 300 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 31000 | 38900 | 69400 | 91000 | 26900 | 314 |
| **4.9** | 5104 | 1.0 | 290 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 22100 | 25600 | 39100 | 47000 | 14200 | 278 |
| **4.9** | 5086 | 1.6 | 289 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 27500 | 31200 | 63800 | 74300 | 20700 | 302 |
| **4.9** | 5242 | 1.0 | 288 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 27500 | 31200 | 63700 | 74200 | 20700 | 300 |
| **5.0** | 5007 | 2.3 | 284 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 30400 | 38200 | 68300 | 89500 | 26500 | 314 |
| **5.0** | 5160 | 2.2 | 284 | 11.0 | **307 L3** | — | **BN100LB4** | **M3LB4** | 30400 | 38100 | 68300 | 89400 | 26400 | 312 |
| **5.3** | 4883 | 1.1 | 268 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 26900 | 30400 | 62400 | 72700 | 20200 | 300 |
| **5.7** | 4375 | 1.9 | 249 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 26200 | 29700 | 61000 | 71000 | 19700 | 302 |
| **5.9** | 4355 | 2.0 | 239 | 11.0 | **307 L3** | — | **BN100LB4** | **M3LB4** | 28700 | 36000 | 64900 | 85000 | 25000 | 312 |
| **5.9** | 4355 | 3.0 | 239 | 11.0 | **309 L3** | — | **BN100LB4** | — | — | — | 65900 | 85000 | 20000 | 324 |
| **5.9** | 4333 | 1.9 | 238 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 25800 | 29200 | 60200 | 70100 | 19400 | 300 |
| **6.1** | 4087 | 2.7 | 232 | 15.0 | — | **307 R4** | **BN100LB4** | **M3LB4** | 28400 | 35700 | 64300 | 84200 | 24700 | 314 |
| **6.1** | 4053 | 1.9 | 230 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 25500 | 28900 | 59600 | 69400 | 19200 | 302 |
| **6.4** | 4036 | 1.6 | 222 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 25200 | 28600 | 58900 | 68600 | 18900 | 300 |
| **6.4** | 4010 | 0.9 | 220 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 19700 | 22800 | 35200 | 42400 | 12700 | 288 |
| **6.4** | 4010 | 1.2 | 220 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 20200 | 23300 | 36000 | 43300 | 13000 | 288 |
| **6.6** | 3771 | 1.0 | 214 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.6** | 3771 | 1.4 | 214 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.6** | 3760 | 2.6 | 214 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 24900 | 28200 | 58300 | 67900 | 18700 | 302 |
| **6.9** | 3727 | 2.2 | 205 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 24500 | 27800 | 57600 | 67000 | 18400 | 300 |
| **7.0** | 3669 | 3.0 | 202 | 11.0 | **307 L3** | — | **BN100LB4** | **M3LB4** | 27100 | 34000 | 61600 | 80700 | 23600 | 312 |
| **7.4** | 3464 | 1.0 | 190 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 19200 | 22200 | 34400 | 41400 | 12300 | 288 |
| **7.4** | 3453 | 1.9 | 190 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 23900 | 27100 | 56200 | 65500 | 18000 | 300 |
| **7.6** | 3254 | 1.1 | 185 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.6** | 3254 | 1.4 | 185 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |
| **7.8** | 3185 | 3.0 | 181 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 23600 | 26700 | 55500 | 64600 | 17700 | 302 |
| **7.9** | 3231 | 1.4 | 178 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **8.4** | 2953 | 2.6 | 168 | 12.0 | — | **306 R4** | **BN100LB4** | **M3LB4** | 23000 | 26000 | 54200 | 63100 | 17300 | 302 |
| **8.6** | 2979 | 1.5 | 164 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 18300 | 21100 | 32900 | 39600 | 11700 | 288 |
| **8.9** | 2787 | 1.0 | 158 | 12.0 | — | **303 R4** | **BN100LB4** | **M3LB4** | 18100 | 20900 | 32600 | 39200 | 11600 | 266 |



## $P_1$ = 3 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **8.9** | 2787 | 1.3 | 158 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **8.9** | 2787 | 1.9 | 158 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.2** | 2775 | 1.3 | 152 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 17900 | 20600 | 32200 | 38700 | 11500 | 288 |
| **9.3** | 2767 | 2.7 | 152 | 7.5 | **306 L3** | — | **BN100LB4** | **M3LB4** | 22200 | 25200 | 52600 | 61300 | 16700 | 300 |
| **9.4** | 2722 | 1.3 | 150 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 17800 | 20500 | 32000 | 38500 | 11400 | 288 |
| **9.5** | 2608 | 1.3 | 148 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.5** | 2608 | 1.7 | 148 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.8** | 2623 | 2.1 | 144 | 14.0 | — | **306 R3** | **BN100LB4** | **M3LB4** | 21800 | 24700 | 51800 | 60300 | 16400 | 302 |
| **10.0** | 2575 | 1.0 | 141 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 17400 | 20100 | 31500 | 37900 | 11200 | 264 |
| **10.0** | 2575 | 1.4 | 141 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.0** | 2575 | 2.0 | 141 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.8** | 2374 | 1.5 | 130 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 17000 | 19600 | 30700 | 37000 | 10900 | 288 |
| **10.9** | 2275 | 1.2 | 129 | 12.0 | — | **303 R4** | **BN100LB4** | **M3LB4** | 16900 | 19500 | 30600 | 36900 | 10800 | 266 |
| **10.9** | 2275 | 1.6 | 129 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **10.9** | 2275 | 2.3 | 129 | 12.0 | — | **305 R4** | **BN100LB4** | **M3LB4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.3** | 2265 | 1.6 | 124 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 16700 | 19300 | 30300 | 36500 | 10700 | 288 |
| **11.6** | 2207 | 1.1 | 121 | 14.0 | — | **304 R3** | **BN100LB4** | **M3LB4** | 16600 | 19100 | 30100 | 36200 | 10600 | 278 |
| **11.8** | 2169 | 3.0 | 119 | 14.0 | — | **306 R3** | **BN100LB4** | **M3LB4** | 20500 | 23200 | 48900 | 57000 | 15400 | 302 |
| **12.3** | 2082 | 1.7 | 114 | 14.0 | — | **305 R3** | **BN100LB4** | **M3LB4** | 16200 | 18700 | 29500 | 35500 | 10400 | 278 |
| **12.5** | 2051 | 1.8 | 113 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 16200 | 18600 | 29400 | 35400 | 10400 | 288 |
| **12.8** | 2011 | 1.7 | 111 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 16000 | 18500 | 29200 | 35200 | 10300 | 288 |
| **12.9** | 1927 | 1.7 | 109 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 16000 | 18500 | 29200 | 35100 | 10300 | 278 |
| **13.3** | 1863 | 0.9 | 106 | 10.0 | — | **301 R4** | **BN100LB4** | **M3LB4** | 5030 | 5030 | 13800 | 15900 | 3310 | 256 |
| **13.5** | 1902 | 1.4 | 105 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 15800 | 18200 | 28800 | 34600 | 10100 | 264 |
| **13.5** | 1902 | 1.9 | 105 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **13.5** | 1902 | 2.6 | 105 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **14.5** | 1765 | 1.4 | 97.0 | 14.0 | — | **304 R3** | **BN100LB4** | **M3LB4** | 15400 | 17700 | 28100 | 33800 | 9860 | 278 |
| **15.4** | 1666 | 1.1 | 91.5 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 15100 | 17400 | 27600 | 33200 | 9670 | 266 |
| **15.4** | 1666 | 2.1 | 91.5 | 14.0 | — | **305 R3** | **BN100LB4** | **M3LB4** | 15100 | 17400 | 27600 | 33200 | 9670 | 278 |
| **15.6** | 1642 | 1.4 | 90.2 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 15000 | 17300 | 27500 | 33100 | 9620 | 264 |
| **15.6** | 1642 | 2.0 | 90.2 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **15.6** | 1642 | 2.6 | 90.2 | 7.5 | **305 L3** | — | **BN100LB4** | **M3LB4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **15.8** | 1573 | 2.1 | 89.4 | 12.0 | — | **304 R4** | **BN100LB4** | **M3LB4** | 15000 | 17300 | 27400 | 33000 | 9590 | 278 |
| **16.5** | 1558 | 1.1 | 85.6 | 7.5 | **301 L3** | — | **BN100LB4** | **M3LB4** | 4790 | 4790 | 13300 | 15200 | 3150 | 254 |
| **17.9** | 1433 | 1.5 | 78.7 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 14300 | 16500 | 26400 | 31800 | 9190 | 266 |
| **17.9** | 1433 | 2.0 | 78.7 | 14.0 | — | **304 R3** | **BN100LB4** | **M3LB4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **17.9** | 1432 | 1.1 | 78.7 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 4660 | 4660 | 12900 | 14900 | 3060 | 256 |
| **18.2** | 1410 | 1.2 | 77.5 | 7.5 | **301 L3** | — | **BN100LB4** | **M3LB4** | 4640 | 4640 | 12900 | 14800 | 3050 | 254 |
| **18.3** | 1406 | 1.8 | 77.2 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 14200 | 16400 | 26300 | 31600 | 9140 | 264 |
| **18.3** | 1406 | 2.5 | 77.2 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **19.2** | 1335 | 1.4 | 73.3 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 14000 | 16200 | 25900 | 31100 | 8980 | 266 |
| **19.2** | 1335 | 2.7 | 73.3 | 14.0 | — | **305 R3** | **BN100LB4** | **M3LB4** | 14000 | 16200 | 25900 | 31100 | 8980 | 278 |
| **19.5** | 1315 | 2.5 | 72.3 | 7.5 | **304 L3** | — | **BN100LB4** | **M3LB4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **19.5** | 1315 | 1.7 | 72.3 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 13900 | 16100 | 25700 | 31000 | 8940 | 264 |
| **20.2** | 1272 | 1.0 | 69.9 | 7.5 | **301 L3** | — | **BN100LB4** | **M3LB4** | 4480 | 4480 | 12500 | 14300 | 2950 | 254 |
| **20.7** | 1242 | 1.0 | 68.2 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 4440 | 4440 | 12400 | 14200 | 2920 | 256 |
| **21.8** | 1218 | 0.9 | 64.8 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 4370 | 4370 | 12200 | 14000 | 2870 | 254 |
| **22.3** | 1151 | 1.4 | 63.2 | 7.5 | **301 L3** | — | **BN100LB4** | **M3LB4** | 4330 | 4330 | 12100 | 13900 | 2850 | 254 |
| **22.4** | 1148 | 1.9 | 63.1 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 266 |
| **22.4** | 1148 | 2.5 | 63.1 | 14.0 | — | **304 R3** | **BN100LB4** | **M3LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.4** | 1148 | 2.2 | 63.1 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 264 |
| **22.4** | 1145 | 1.4 | 62.9 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 4330 | 4330 | 12100 | 13900 | 2840 | 256 |
| **23.8** | 1112 | 2.1 | 59.1 | 9.0 | **304 L2** | — | **BN100LB4** | **M3LB4** | 13000 | 15000 | 24200 | 29200 | 8360 | 288 |
| **25.3** | 1049 | 1.7 | 55.8 | 9.0 | **303 L2** | — | **BN100LB4** | **M3LB4** | 12800 | 14800 | 23800 | 28700 | 8200 | 264 |
| **26.0** | 986 | 1.8 | 54.2 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 12700 | 14600 | 23600 | 28400 | 8120 | 266 |
| **26.4** | 972 | 2.2 | 53.4 | 7.5 | **303 L3** | — | **BN100LB4** | **M3LB4** | 12600 | 14500 | 23500 | 28300 | 8080 | 264 |
| **27.2** | 976 | 1.3 | 51.9 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 4060 | 4060 | 11400 | 13100 | 2670 | 254 |
| **27.3** | 940 | 0.9 | 51.6 | 7.5 | **300 L3** | — | **BN100LB4** | **M3LB4** | 3960 | 3960 | 11200 | 12800 | 2600 | 244 |
| **27.3** | 940 | 1.7 | 51.6 | 7.5 | **301 L3** | — | **BN100LB4** | **M3LB4** | 4050 | 4050 | 11400 | 13100 | 2660 | 254 |
| **28.0** | 918 | 0.9 | 50.4 | 12.0 | — | **300 R3** | **BN100LB4** | **M3LB4** | 3930 | 3930 | 11100 | 12700 | 2580 | 246 |
| **28.0** | 918 | 1.8 | 50.4 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 4020 | 4020 | 11300 | 13000 | 2640 | 256 |
| **28.1** | 915 | 2.6 | 50.3 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 12300 | 14200 | 23100 | 27800 | 7920 | 266 |
| **29.8** | 890 | 2.7 | 47.3 | 9.0 | **304 L2** | — | **BN100LB4** | **M3LB4** | 12100 | 14000 | 22700 | 27300 | 7760 | 288 |
| **30** | 848 | 2.5 | 46.6 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 12000 | 13900 | 22600 | 27200 | 7720 | 266 |
| **32** | 839 | 2.2 | 44.6 | 9.0 | **303 L2** | — | **BN100LB4** | **M3LB4** | 11900 | 13700 | 22300 | 26800 | 7610 | 264 |

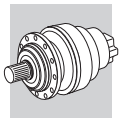


## $P_1$ = 3 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **33** | 775 | 2.7 | 42.6 | 14.0 | — | **303 R3** | **BN100LB4** | **M3LB4** | 11700 | 13500 | 22000 | 26400 | 7490 | 266 |
| **34** | 781 | 1.7 | 41.5 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 3770 | 3770 | 10700 | 12300 | 2480 | 254 |
| **34** | 749 | 1.7 | 41.2 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 3760 | 3760 | 10600 | 12200 | 2470 | 256 |
| **37** | 722 | 3.0 | 38.4 | 9.0 | **303 L2** | — | **BN100LB4** | **M3LB4** | 11300 | 13000 | 21300 | 25600 | 7240 | 264 |
| **37** | 721 | 1.2 | 38.4 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 3670 | 3670 | 10400 | 12000 | 2410 | 244 |
| **37** | 721 | 2.1 | 38.4 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 3670 | 3670 | 10400 | 12000 | 2410 | 254 |
| **38** | 678 | 1.2 | 37.3 | 12.0 | — | **300 R3** | **BN100LB4** | **M3LB4** | 3630 | 3630 | 10300 | 11900 | 2390 | 246 |
| **38** | 678 | 2.4 | 37.3 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 3630 | 3630 | 10300 | 11900 | 2390 | 256 |
| **39** | 672 | 2.7 | 35.8 | 9.0 | **303 L2** | — | **BN100LB4** | **M3LB4** | 10800 | 12400 | 20400 | 24600 | 6910 | 264 |
| **42** | 626 | 1.0 | 33.3 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 3420 | 3420 | 9790 | 11200 | 2250 | 244 |
| **42** | 626 | 2.1 | 33.3 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 3420 | 3420 | 9790 | 11200 | 2250 | 254 |
| **46** | 577 | 1.5 | 30.7 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 3330 | 3330 | 9550 | 11000 | 2190 | 244 |
| **46** | 577 | 2.7 | 30.7 | 7.5 | **301 L2** | — | **BN100LB4** | **M3LB4** | 3410 | 3410 | 9750 | 11200 | 2240 | 254 |
| **46** | 554 | 1.5 | 30.4 | 12.0 | — | **300 R3** | **BN100LB4** | **M3LB4** | 3400 | 3400 | 9730 | 11200 | 2230 | 246 |
| **46** | 554 | 2.9 | 30.4 | 12.0 | — | **301 R3** | **BN100LB4** | **M3LB4** | 3400 | 3400 | 9730 | 11200 | 2230 | 256 |
| **57** | 452 | 1.6 | 24.8 | 12.0 | — | **300 R3** | **BN100LB4** | **M3LB4** | 3170 | 3170 | 9150 | 10500 | 2090 | 246 |
| **57** | 466 | 1.8 | 24.8 | 18.0 | — | **303 R2** | **BN100LB4** | **M3LB4** | 9750 | 11300 | 18700 | 22500 | 6250 | 266 |
| **57** | 462 | 1.7 | 24.6 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 3160 | 3160 | 9130 | 10500 | 2080 | 244 |
| **70** | 377 | 1.7 | 20.1 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 2960 | 2960 | 8590 | 9870 | 1940 | 244 |
| **76** | 347 | 1.1 | 18.5 | 12.0 | — | **300 R2** | **BN100LB4** | **M3LB4** | 2870 | 2870 | 8370 | 9620 | 1890 | 246 |
| **76** | 347 | 2.1 | 18.5 | 12.0 | — | **301 R2** | **BN100LB4** | **M3LB4** | 2870 | 2870 | 8370 | 9620 | 1890 | 256 |
| **78** | 342 | 2.2 | 18.2 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 2860 | 2860 | 8330 | 9580 | 1880 | 244 |
| **95** | 279 | 2.6 | 14.8 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 2670 | 2670 | 7840 | 9010 | 1760 | 244 |
| **96** | 277 | 1.8 | 14.8 | 12.0 | — | **300 R2** | **BN100LB4** | **M3LB4** | 2670 | 2670 | 7830 | 9000 | 1750 | 246 |
| **116** | 228 | 3.0 | 12.1 | 7.5 | **300 L2** | — | **BN100LB4** | **M3LB4** | 2500 | 2500 | 7380 | 8480 | 1640 | 244 |
| **119** | 222 | 2.7 | 11.8 | 12.0 | — | **300 R2** | **BN100LB4** | **M3LB4** | 2480 | 2480 | 7330 | 8420 | 1630 | 246 |
| **157** | 175 | 1.8 | 9.0 | 7.5 | **300 L1** | — | **BN100LB4** | **M3LB4** | 2260 | 2260 | 6750 | 7750 | 1490 | 244 |
| **196** | 140 | 2.9 | 7.2 | 7.5 | **300 L1** | — | **BN100LB4** | **M3LB4** | 2100 | 2100 | 6310 | 7250 | 1380 | 244 |

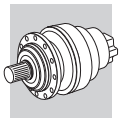
## $P_1$ = 4 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.65** | 51963 | 0.9 | 2187 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.79** | 43169 | 1.3 | 1817 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.81** | 41970 | 1.0 | 1766 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **0.95** | 35687 | 1.6 | 1502 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **1.0** | 33630 | 1.3 | 1415 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **1.0** | 33119 | 1.6 | 1394 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 192000 | 229000 | 79900 | 360 |
| **1.1** | 30069 | 1.9 | 1266 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 188000 | 222500 | 77400 | 360 |
| **1.1** | 29913 | 0.9 | 1259 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 128500 | 161600 | 62700 | 336 |
| **1.2** | 29234 | 1.5 | 1230 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 150800 | 187900 | 62300 | 348 |
| **1.2** | 27663 | 1.1 | 1164 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 125500 | 157900 | 61100 | 336 |
| **1.3** | 26538 | 2.0 | 1117 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 181100 | 214300 | 74200 | 360 |
| **1.4** | 25148 | 1.7 | 1058 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 144200 | 179600 | 59200 | 348 |
| **1.4** | 24249 | 1.2 | 1021 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 120700 | 151800 | 58500 | 336 |
| **1.4** | 24094 | 2.3 | 1014 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 175900 | 208200 | 71800 | 360 |
| **1.5** | 23425 | 1.8 | 986 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 141100 | 175800 | 57800 | 348 |
| **1.5** | 22307 | 1.5 | 939 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 117700 | 148000 | 56900 | 336 |
| **1.6** | 21472 | 2.2 | 904 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 137500 | 171300 | 56200 | 348 |
| **1.6** | 21339 | 1.1 | 898 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 116100 | 146000 | 56100 | 338 |
| **1.6** | 21130 | 2.5 | 889 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 169100 | 200100 | 68800 | 360 |
| **1.7** | 19596 | 2.3 | 825 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 133800 | 166600 | 54500 | 348 |
| **1.7** | 19431 | 1.4 | 818 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 112900 | 142000 | 54300 | 336 |
| **1.8** | 19022 | 1.0 | 801 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 94700 | 122100 | 29900 | 324 |
| **1.8** | 18768 | 2.8 | 790 | 11.0 | **313 L4** | — | **BN112M4** | — | — | — | 163200 | 193100 | 66100 | 360 |
| **1.8** | 18494 | 2.4 | 778 | 22.0 | — | **313 R4** | **BN112M4** | — | — | — | 162500 | 192300 | 65800 | 362 |
| **1.9** | 17980 | 1.5 | 757 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 110300 | 138700 | 52900 | 338 |
| **1.9** | 17728 | 1.7 | 746 | 22.0 | — | **311 R4** | **BN112M4** | — | — | — | 129800 | 161700 | 52700 | 374 |
| **2.0** | 17244 | 1.6 | 726 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 108900 | 137000 | 52200 | 336 |
| **2.0** | 17205 | 2.7 | 724 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 128700 | 160300 | 52200 | 348 |
| **2.0** | 17160 | 1.2 | 722 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 91800 | 118400 | 28900 | 324 |



## $P_1$ = 4 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **2.1** | 16388 | 0.9 | 690 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 90600 | 116800 | 28400 | 326 |
| **2.2** | 15527 | 1.2 | 654 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 89100 | 114900 | 27900 | 324 |
| **2.2** | 15174 | 1.4 | 639 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 104800 | 131800 | 50000 | 338 |
| **2.2** | 15126 | 1.8 | 637 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 104700 | 131700 | 50000 | 336 |
| **2.3** | 14937 | 2.7 | 629 | 22.0 | — | **311 R4** | **BN112M4** | — | — | — | 123300 | 153600 | 49800 | 374 |
| **2.3** | 14890 | 2.7 | 627 | 11.0 | **311 L4** | — | **BN112M4** | — | — | — | 123200 | 153500 | 49700 | 348 |
| **2.4** | 14010 | 1.6 | 590 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 102400 | 128700 | 48700 | 338 |
| **2.5** | 13809 | 0.9 | 581 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 37700 | 47400 | 82900 | 108700 | 32800 | 314 |
| **2.5** | 13809 | 1.1 | 581 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 86000 | 110900 | 26900 | 326 |
| **2.5** | 13750 | 1.1 | 579 | 7.5 | **307 L4** | — | **BN112M4** | **M3LC4** | 37700 | 47300 | 82800 | 108500 | 32800 | 312 |
| **2.5** | 13750 | 1.5 | 579 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 85900 | 110800 | 26800 | 324 |
| **2.6** | 13208 | 2.4 | 556 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 100600 | 126500 | 47800 | 336 |
| **2.8** | 12287 | 2.1 | 517 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 98400 | 123800 | 46600 | 338 |
| **2.8** | 12099 | 1.2 | 509 | 7.5 | **307 L4** | — | **BN112M4** | **M3LC4** | 36100 | 45300 | 79700 | 104400 | 31400 | 312 |
| **2.8** | 12099 | 1.2 | 509 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 82700 | 106600 | 25700 | 324 |
| **2.8** | 12054 | 2.1 | 507 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 97900 | 123000 | 46300 | 336 |
| **2.9** | 11654 | 1.2 | 490 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 81700 | 105400 | 25400 | 326 |
| **2.9** | 11639 | 3.0 | 490 | 22.0 | — | **311 R4** | **BN112M4** | — | — | — | 114400 | 142500 | 45800 | 374 |
| **3.1** | 11045 | 1.1 | 465 | 7.5 | **307 L4** | — | **BN112M4** | **M3LC4** | 35800 | 45000 | 79200 | 103700 | 31200 | 312 |
| **3.1** | 11045 | 1.7 | 465 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 80400 | 103700 | 24900 | 324 |
| **3.1** | 10856 | 1.3 | 457 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 80000 | 103200 | 24800 | 326 |
| **3.1** | 10791 | 1.9 | 454 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 94700 | 119000 | 44700 | 338 |
| **3.2** | 10760 | 1.2 | 453 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 34700 | 43600 | 76900 | 100800 | 30200 | 314 |
| **3.2** | 10708 | 2.8 | 451 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 94400 | 118700 | 44500 | 336 |
| **3.2** | 10555 | 0.9 | 444 | 6.0 | **306 L4** | — | **BN112M4** | **M3LC4** | 31100 | 35200 | 71100 | 82800 | 23300 | 300 |
| **3.4** | 9963 | 2.9 | 419 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 92400 | 116200 | 43500 | 338 |
| **3.5** | 9820 | 1.2 | 413 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 34500 | 43200 | 76400 | 100100 | 30000 | 314 |
| **3.5** | 9820 | 1.8 | 413 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 77700 | 100100 | 24000 | 326 |
| **3.5** | 9635 | 1.2 | 406 | 7.5 | **307 L4** | — | **BN112M4** | **M3LC4** | 34300 | 43000 | 76000 | 99600 | 29800 | 312 |
| **3.5** | 9635 | 1.8 | 406 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 77200 | 99600 | 23800 | 324 |
| **3.7** | 9306 | 2.1 | 392 | 11.0 | **310 L4** | — | **BN112M4** | — | — | — | 90500 | 113900 | 42500 | 336 |
| **3.8** | 8895 | 1.6 | 374 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 75400 | 97200 | 23200 | 326 |
| **3.9** | 8630 | 2.8 | 363 | 15.0 | — | **310 R4** | **BN112M4** | — | — | — | 88500 | 111300 | 41500 | 338 |
| **3.9** | 8622 | 1.4 | 363 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 33000 | 41400 | 73500 | 96300 | 28700 | 314 |
| **4.1** | 8294 | 1.8 | 349 | 7.5 | **307 L4** | — | **BN112M4** | **M3LC4** | 32600 | 40900 | 72700 | 95200 | 28300 | 312 |
| **4.1** | 8294 | 2.6 | 349 | 7.5 | **309 L4** | — | **BN112M4** | — | — | — | 73800 | 95200 | 22700 | 324 |
| **4.3** | 8267 | 1.1 | 336 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 32200 | 40400 | 71900 | 94200 | 28000 | 312 |
| **4.3** | 8267 | 1.6 | 336 | 11.0 | **309 L3** | — | **BN112M4** | — | — | — | 73000 | 94200 | 22400 | 324 |
| **4.3** | 7868 | 1.5 | 331 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 32000 | 40200 | 71500 | 93700 | 27800 | 314 |
| **4.3** | 7868 | 2.2 | 331 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 72700 | 93700 | 22300 | 326 |
| **4.6** | 7405 | 1.0 | 312 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 28200 | 32000 | 65300 | 76000 | 21200 | 302 |
| **4.8** | 7127 | 2.0 | 300 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 31000 | 38900 | 69400 | 91000 | 26900 | 314 |
| **4.9** | 6866 | 1.2 | 289 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 27500 | 31200 | 63800 | 74300 | 20700 | 302 |
| **5.0** | 6759 | 1.7 | 284 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 30400 | 38200 | 68300 | 89500 | 26500 | 314 |
| **5.0** | 6759 | 2.5 | 284 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 69400 | 89500 | 21200 | 326 |
| **5.0** | 6966 | 1.6 | 284 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 30400 | 38100 | 68300 | 89400 | 26400 | 312 |
| **5.0** | 6966 | 2.3 | 284 | 11.0 | **309 L3** | — | **BN112M4** | — | — | — | 69400 | 89400 | 21100 | 324 |
| **5.5** | 6131 | 2.4 | 258 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 29500 | 37000 | 66400 | 87000 | 25600 | 314 |
| **5.5** | 6131 | 2.8 | 258 | 15.0 | — | **309 R4** | **BN112M4** | — | — | — | 67400 | 87000 | 20500 | 326 |
| **5.8** | 5906 | 1.4 | 249 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 26200 | 29700 | 61000 | 71000 | 19700 | 302 |
| **6.0** | 5879 | 1.5 | 239 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 28700 | 36000 | 64900 | 85000 | 25000 | 312 |
| **6.0** | 5879 | 2.2 | 239 | 11.0 | **309 L3** | — | **BN112M4** | — | — | — | 65900 | 85000 | 20000 | 324 |
| **6.0** | 5850 | 1.4 | 238 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 25800 | 29200 | 60200 | 70100 | 19400 | 300 |
| **6.2** | 5517 | 2.0 | 232 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 28400 | 35700 | 64300 | 84200 | 24700 | 314 |
| **6.2** | 5472 | 1.4 | 230 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 25500 | 28900 | 59600 | 69400 | 19200 | 302 |
| **6.4** | 5476 | 2.4 | 223 | 11.0 | **309 L3** | — | **BN112M4** | — | — | — | 64500 | 83200 | 19500 | 324 |
| **6.4** | 5449 | 1.2 | 222 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 25200 | 28600 | 58900 | 68600 | 18900 | 300 |
| **6.5** | 5428 | 2.3 | 221 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 28000 | 35100 | 63300 | 83000 | 24300 | 312 |
| **6.7** | 5091 | 1.1 | 214 | 12.0 | — | **305 R4** | **BN112M4** | **M3LC4** | 20000 | 23100 | 35700 | 42900 | 12800 | 278 |
| **6.7** | 5076 | 1.9 | 214 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 24900 | 28200 | 58300 | 67900 | 18700 | 302 |
| **7.0** | 4886 | 2.9 | 206 | 15.0 | — | **307 R4** | **BN112M4** | **M3LC4** | 27300 | 34300 | 62000 | 81200 | 23700 | 314 |
| **7.0** | 5032 | 1.6 | 205 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 24500 | 27800 | 57600 | 67000 | 18400 | 300 |
| **7.1** | 4953 | 2.2 | 202 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 27100 | 34000 | 61600 | 80700 | 23600 | 312 |
| **7.5** | 4661 | 1.4 | 190 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 23900 | 27100 | 56200 | 65500 | 18000 | 300 |
| **7.7** | 4394 | 1.0 | 185 | 12.0 | — | **305 R4** | **BN112M4** | **M3LC4** | 19100 | 22000 | 34100 | 41100 | 12200 | 278 |



## $P_1$ = 4 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **7.9** | 4299 | 2.2 | 181 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 23600 | 26700 | 55500 | 64600 | 17700 | 302 |
| **8.1** | 4362 | 1.0 | 178 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 18800 | 21700 | 33700 | 40600 | 12100 | 288 |
| **8.1** | 4349 | 2.8 | 177 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 26000 | 32600 | 59300 | 77700 | 22600 | 312 |
| **8.5** | 3987 | 1.9 | 168 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 23000 | 26000 | 54200 | 63100 | 17300 | 302 |
| **8.7** | 4022 | 1.1 | 164 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 18300 | 21100 | 32900 | 39600 | 11700 | 288 |
| **8.9** | 3969 | 2.7 | 162 | 11.0 | **307 L3** | — | **BN112M4** | **M3LC4** | 25200 | 31600 | 57700 | 75600 | 21900 | 312 |
| **9.0** | 3762 | 0.9 | 158 | 12.0 | — | **304 R4** | **BN112M4** | **M3LC4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.0** | 3762 | 1.4 | 158 | 12.0 | — | **305 R4** | **BN112M4** | **M3LC4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.1** | 3751 | 2.6 | 158 | 12.0 | — | **306 R4** | **BN112M4** | **M3LC4** | 22500 | 25500 | 53200 | 62000 | 16900 | 302 |
| **9.4** | 3747 | 1.0 | 152 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 17900 | 20600 | 32200 | 38700 | 11500 | 288 |
| **9.4** | 3735 | 2.0 | 152 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 22200 | 25200 | 52600 | 61300 | 16700 | 300 |
| **9.6** | 3674 | 0.9 | 150 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 17800 | 20500 | 32000 | 38500 | 11400 | 288 |
| **9.7** | 3520 | 1.0 | 148 | 12.0 | — | **304 R4** | **BN112M4** | **M3LC4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.7** | 3520 | 1.3 | 148 | 12.0 | — | **305 R4** | **BN112M4** | **M3LC4** | 17700 | 20400 | 31900 | 38400 | 11400 | 278 |
| **9.9** | 3542 | 1.6 | 144 | 14.0 | — | **306 R3** | **BN112M4** | **M3LC4** | 21800 | 24700 | 51800 | 60300 | 16400 | 302 |
| **10.1** | 3476 | 1.0 | 141 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.1** | 3476 | 1.5 | 141 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.1** | 3464 | 2.3 | 141 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 21700 | 24600 | 51500 | 59900 | 16300 | 300 |
| **11.0** | 3205 | 1.1 | 130 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 17000 | 19600 | 30700 | 37000 | 10900 | 288 |
| **11.1** | 3071 | 1.1 | 129 | 12.0 | — | **304 R4** | **BN112M4** | **M3LC4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.1** | 3071 | 1.7 | 129 | 12.0 | — | **305 R4** | **BN112M4** | **M3LC4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.5** | 3058 | 1.2 | 124 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 16700 | 19300 | 30300 | 36500 | 10700 | 288 |
| **11.8** | 2979 | 2.6 | 121 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 20600 | 23400 | 49200 | 57300 | 15500 | 300 |
| **11.9** | 2942 | 2.9 | 120 | 22.0 | — | **307 R3** | **BN112M4** | **M3LC4** | 22800 | 28600 | 52700 | 69100 | 19800 | 314 |
| **12.0** | 2928 | 2.2 | 119 | 14.0 | — | **306 R3** | **BN112M4** | **M3LC4** | 20500 | 23200 | 48900 | 57000 | 15400 | 302 |
| **12.5** | 2811 | 1.3 | 114 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 16200 | 18700 | 29500 | 35500 | 10400 | 278 |
| **12.7** | 2769 | 1.3 | 113 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 16200 | 18600 | 29400 | 35400 | 10400 | 288 |
| **12.7** | 2760 | 2.7 | 112 | 7.5 | **306 L3** | — | **BN112M4** | **M3LC4** | 20100 | 22800 | 48100 | 56000 | 15100 | 300 |
| **12.9** | 2715 | 1.2 | 111 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 16000 | 18500 | 29200 | 35200 | 10300 | 288 |
| **13.1** | 2601 | 1.3 | 109 | 12.0 | — | **304 R4** | **BN112M4** | **M3LC4** | 16000 | 18500 | 29200 | 35100 | 10300 | 278 |
| **13.7** | 2568 | 1.0 | 105 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 15800 | 18200 | 28800 | 34600 | 10100 | 264 |
| **13.7** | 2568 | 1.4 | 105 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **13.7** | 2568 | 2.0 | 105 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **14.5** | 2420 | 2.7 | 98.5 | 14.0 | — | **306 R3** | **BN112M4** | **M3LC4** | 19200 | 21800 | 46200 | 53800 | 14400 | 302 |
| **14.7** | 2383 | 1.0 | 97.0 | 14.0 | — | **304 R3** | **BN112M4** | **M3LC4** | 15400 | 17700 | 28100 | 33800 | 9860 | 278 |
| **15.6** | 2248 | 1.6 | 91.5 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 15100 | 17400 | 27600 | 33200 | 9670 | 278 |
| **15.9** | 2216 | 1.0 | 90.2 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 15000 | 17300 | 27500 | 33100 | 9620 | 264 |
| **15.9** | 2216 | 1.5 | 90.2 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **15.9** | 2216 | 1.9 | 90.2 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **16.0** | 2124 | 1.6 | 89.4 | 12.0 | — | **304 R4** | **BN112M4** | **M3LC4** | 15000 | 17300 | 27400 | 33000 | 9590 | 278 |
| **18.2** | 1934 | 1.1 | 78.7 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 14300 | 16500 | 26400 | 31800 | 9190 | 266 |
| **18.2** | 1934 | 1.5 | 78.7 | 14.0 | — | **304 R3** | **BN112M4** | **M3LC4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.2** | 1934 | 2.2 | 78.7 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.5** | 1898 | 1.3 | 77.2 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 14200 | 16400 | 26300 | 31600 | 9140 | 264 |
| **18.5** | 1898 | 1.8 | 77.2 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **18.5** | 1898 | 2.5 | 77.2 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **19.5** | 1802 | 1.0 | 73.3 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 14000 | 16200 | 25900 | 31100 | 8980 | 266 |
| **19.5** | 1802 | 2.0 | 73.3 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 14000 | 16200 | 25900 | 31100 | 8980 | 278 |
| **19.8** | 1776 | 1.9 | 72.3 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **19.8** | 1776 | 1.3 | 72.3 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 13900 | 16100 | 25700 | 31000 | 8940 | 264 |
| **19.8** | 1776 | 2.3 | 72.3 | 7.5 | **305 L3** | — | **BN112M4** | **M3LC4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **22.6** | 1554 | 1.1 | 63.2 | 7.5 | **301 L3** | — | **BN112M4** | **M3LC4** | 4330 | 4330 | 12100 | 13900 | 2850 | 254 |
| **22.7** | 1550 | 1.4 | 63.1 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 266 |
| **22.7** | 1550 | 1.8 | 63.1 | 14.0 | — | **304 R3** | **BN112M4** | **M3LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.7** | 1550 | 2.8 | 63.1 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.7** | 1549 | 1.6 | 63.1 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 264 |
| **22.7** | 1549 | 2.2 | 63.1 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **22.7** | 1546 | 1.1 | 62.9 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 4330 | 4330 | 12100 | 13900 | 2840 | 256 |
| **24.2** | 1501 | 1.6 | 59.1 | 9.0 | **304 L2** | — | **BN112M4** | **M3LC4** | 13000 | 15000 | 24200 | 29200 | 8360 | 288 |
| **25.6** | 1416 | 1.3 | 55.8 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 12800 | 14800 | 23800 | 28700 | 8200 | 264 |
| **25.6** | 1416 | 2.5 | 55.8 | 9.0 | **305 L2** | — | **BN112M4** | **M3LC4** | 12800 | 14800 | 23800 | 28700 | 8200 | 288 |
| **26.4** | 1331 | 1.4 | 54.2 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 12700 | 14600 | 23600 | 28400 | 8120 | 266 |
| **26.4** | 1331 | 2.7 | 54.2 | 14.0 | — | **305 R3** | **BN112M4** | **M3LC4** | 12700 | 14600 | 23600 | 28400 | 8120 | 278 |
| **26.8** | 1312 | 1.7 | 53.4 | 7.5 | **303 L3** | — | **BN112M4** | **M3LC4** | 12600 | 14500 | 23500 | 28300 | 8080 | 264 |
| **26.8** | 1312 | 2.5 | 53.4 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |

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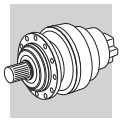

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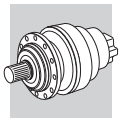
## $P_1$ = 4 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **27.5** | 1318 | 1.0 | 51.9 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 4060 | 4060 | 11400 | 13100 | 2670 | 254 |
| **27.7** | 1269 | 1.3 | 51.6 | 7.5 | **301 L3** | — | **BN112M4** | **M3LC4** | 4050 | 4050 | 11400 | 13100 | 2660 | 254 |
| **28.4** | 1239 | 1.3 | 50.4 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 4020 | 4020 | 11300 | 13000 | 2640 | 256 |
| **28.4** | 1235 | 1.9 | 50.3 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 12300 | 14200 | 23100 | 27800 | 7920 | 266 |
| **28.4** | 1235 | 2.8 | 50.3 | 14.0 | — | **304 R3** | **BN112M4** | **M3LC4** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **30** | 1201 | 2.0 | 47.3 | 9.0 | **304 L2** | — | **BN112M4** | **M3LC4** | 12100 | 14000 | 22700 | 27300 | 7760 | 288 |
| **31** | 1145 | 1.9 | 46.6 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 12000 | 13900 | 22600 | 27200 | 7720 | 266 |
| **31** | 1145 | 2.5 | 46.6 | 14.0 | — | **304 R3** | **BN112M4** | **M3LC4** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **32** | 1133 | 1.6 | 44.6 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 11900 | 13700 | 22300 | 26800 | 7610 | 264 |
| **33** | 1071 | 3.0 | 43.6 | 7.5 | **304 L3** | — | **BN112M4** | **M3LC4** | 11800 | 13600 | 22100 | 26600 | 7550 | 288 |
| **34** | 1046 | 2.0 | 42.6 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 11700 | 13500 | 22000 | 26400 | 7490 | 266 |
| **34** | 1054 | 1.2 | 41.5 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 3770 | 3770 | 10700 | 12300 | 2480 | 254 |
| **35** | 1011 | 1.3 | 41.2 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 3760 | 3760 | 10600 | 12200 | 2470 | 256 |
| **37** | 975 | 2.2 | 38.4 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 11300 | 13000 | 21300 | 25600 | 7240 | 264 |
| **37** | 975 | 2.9 | 38.4 | 9.0 | **304 L2** | — | **BN112M4** | **M3LC4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **37** | 974 | 1.6 | 38.4 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 3670 | 3670 | 10400 | 12000 | 2410 | 254 |
| **38** | 915 | 0.9 | 37.3 | 12.0 | — | **300 R3** | **BN112M4** | **M3LC4** | 3550 | 3550 | 10100 | 11600 | 2330 | 246 |
| **38** | 915 | 1.7 | 37.3 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 3630 | 3630 | 10300 | 11900 | 2390 | 256 |
| **39** | 913 | 2.6 | 37.1 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 11200 | 12900 | 21100 | 25400 | 7160 | 266 |
| **40** | 908 | 2.0 | 35.8 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 11000 | 12700 | 20800 | 25100 | 7070 | 264 |
| **43** | 845 | 1.5 | 33.3 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 3500 | 3500 | 9990 | 11500 | 2300 | 254 |
| **45** | 773 | 2.7 | 31.5 | 14.0 | — | **303 R3** | **BN112M4** | **M3LC4** | 10600 | 12200 | 20100 | 24100 | 6770 | 266 |
| **46** | 781 | 2.7 | 30.8 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 10500 | 12100 | 19900 | 24000 | 6720 | 264 |
| **47** | 779 | 1.1 | 30.7 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 3410 | 3410 | 9750 | 11200 | 2240 | 244 |
| **47** | 779 | 2.0 | 30.7 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 3410 | 3410 | 9750 | 11200 | 2240 | 254 |
| **47** | 747 | 1.1 | 30.4 | 12.0 | — | **300 R3** | **BN112M4** | **M3LC4** | 3400 | 3400 | 9730 | 11200 | 2230 | 246 |
| **47** | 747 | 2.1 | 30.4 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 3400 | 3400 | 9730 | 11200 | 2230 | 256 |
| **54** | 671 | 2.7 | 26.4 | 9.0 | **303 L2** | — | **BN112M4** | **M3LC4** | 9960 | 11500 | 19000 | 22900 | 6390 | 264 |
| **58** | 610 | 1.2 | 24.8 | 12.0 | — | **300 R3** | **BN112M4** | **M3LC4** | 3170 | 3170 | 9150 | 10500 | 2090 | 246 |
| **58** | 610 | 2.3 | 24.8 | 12.0 | — | **301 R3** | **BN112M4** | **M3LC4** | 3170 | 3170 | 9150 | 10500 | 2090 | 256 |
| **58** | 629 | 1.4 | 24.8 | 18.0 | — | **303 R2** | **BN112M4** | **M3LC4** | 9750 | 11300 | 18700 | 22500 | 6250 | 266 |
| **58** | 624 | 1.3 | 24.6 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 3160 | 3160 | 9130 | 10500 | 2080 | 244 |
| **58** | 624 | 2.4 | 24.6 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 3160 | 3160 | 9130 | 10500 | 2080 | 254 |
| **71** | 510 | 1.3 | 20.1 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 2960 | 2960 | 8590 | 9870 | 1940 | 244 |
| **71** | 510 | 2.5 | 20.1 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 2960 | 2960 | 8590 | 9870 | 1940 | 254 |
| **78** | 468 | 1.6 | 18.5 | 12.0 | — | **301 R2** | **BN112M4** | **M3LC4** | 2870 | 2870 | 8370 | 9620 | 1890 | 256 |
| **79** | 461 | 1.6 | 18.2 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 2860 | 2860 | 8330 | 9580 | 1880 | 244 |
| **79** | 461 | 2.9 | 18.2 | 7.5 | **301 L2** | — | **BN112M4** | **M3LC4** | 2860 | 2860 | 8330 | 9580 | 1880 | 254 |
| **96** | 377 | 1.9 | 14.8 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 2670 | 2670 | 7840 | 9010 | 1760 | 244 |
| **97** | 375 | 1.4 | 14.8 | 12.0 | — | **300 R2** | **BN112M4** | **M3LC4** | 2670 | 2670 | 7830 | 9000 | 1750 | 246 |
| **97** | 375 | 2.5 | 14.8 | 12.0 | — | **301 R2** | **BN112M4** | **M3LC4** | 2670 | 2670 | 7830 | 9000 | 1750 | 256 |
| **118** | 307 | 2.2 | 12.1 | 7.5 | **300 L2** | — | **BN112M4** | **M3LC4** | 2500 | 2500 | 7380 | 8480 | 1640 | 244 |
| **121** | 300 | 2.0 | 11.8 | 12.0 | — | **300 R2** | **BN112M4** | **M3LC4** | 2480 | 2480 | 7330 | 8420 | 1630 | 246 |
| **159** | 236 | 1.4 | 9.00 | 7.5 | **300 L1** | — | **BN112M4** | **M3LC4** | 2260 | 2260 | 6750 | 7750 | 1490 | 244 |
| **159** | 236 | 2.7 | 9.00 | 7.5 | **301 L1** | — | **BN112M4** | **M3LC4** | 2260 | 2260 | 6750 | 7750 | 1490 | 254 |
| **164** | 222 | 2.8 | 8.74 | 12.0 | — | **300 R2** | **BN112M4** | **M3LC4** | 2240 | 2240 | 6690 | 7690 | 1470 | 246 |
| **199** | 189 | 2.2 | 7.20 | 7.5 | **300 L1** | — | **BN112M4** | **M3LC4** | 2100 | 2100 | 6310 | 7250 | 1380 | 244 |

## $P_1$ = 5.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.76** | 59957 | 2.6 | 1893 | 18.0 | **317 L4** | — | **BN132S4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **0.79** | 57559 | 1.0 | 1817 | 11.0 | **313 L4** | — | **BN132S4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.80** | 57190 | 1.5 | 1805 | 18.0 | **315 L4** | — | **BN132S4** | — | — | — | 206000 | 243000 | 90000 | 384 |
| **0.80** | 56908 | 1.2 | 1796 | 15.0 | **314 L4** | — | **BN132S4** | — | — | — | 206000 | 243000 | 90000 | 372 |
| **0.96** | 47582 | 1.2 | 1502 | 11.0 | **313 L4** | — | **BN132S4** | — | — | — | 192000 | 231000 | 80000 | 360 |
| **0.96** | 47277 | 1.8 | 1492 | 18.0 | **315 L4** | — | **BN132S4** | — | — | — | 206000 | 243000 | 90000 | 384 |
| **0.97** | 47044 | 1.4 | 1485 | 15.0 | **314 L4** | — | **BN132S4** | — | — | — | 206000 | 243000 | 90000 | 372 |
| **1.0** | 44840 | 1.0 | 1415 | 11.0 | **311 L4** | — | **BN132S4** | — | — | — | 157000 | 195000 | 65000 | 348 |
| **1.0** | 44159 | 1.2 | 1394 | 11.0 | **313 L4** | — | **BN132S4** | — | — | — | 192000 | 229000 | 79900 | 360 |
| **1.1** | 40669 | 2.4 | 1284 | 18.0 | **315 L4** | — | **BN132S4** | — | — | — | 201500 | 236600 | 87400 | 384 |



## $P_1$ = 5.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1** | 40468 | 1.9 | 1277 | 15.0 | **314 L4** | **—** | **BN132S4** | **—** | — | — | 201200 | 236300 | 87300 | 372 |
| **1.1** | 40092 | 1.4 | 1266 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 188000 | 222500 | 77400 | 360 |
| **1.2** | 38979 | 1.1 | 1230 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 150800 | 187900 | 62300 | 348 |
| **1.3** | 35384 | 1.5 | 1117 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 181100 | 214300 | 74200 | 360 |
| **1.3** | 34984 | 2.7 | 1104 | 18.0 | **315 L4** | **—** | **BN132S4** | **—** | — | — | 192600 | 226200 | 83200 | 384 |
| **1.3** | 34811 | 2.2 | 1099 | 15.0 | **314 L4** | **—** | **BN132S4** | **—** | — | — | 192400 | 225800 | 83000 | 372 |
| **1.4** | 33530 | 1.3 | 1058 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 144200 | 179600 | 59200 | 348 |
| **1.4** | 32869 | 2.5 | 1038 | 15.0 | **314 L4** | **—** | **BN132S4** | **—** | — | — | 189100 | 222000 | 81400 | 372 |
| **1.4** | 32125 | 1.7 | 1014 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 175900 | 208200 | 71800 | 360 |
| **1.5** | 31233 | 1.4 | 986 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 141100 | 175800 | 57800 | 348 |
| **1.5** | 29743 | 1.1 | 939 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 115300 | 145000 | 55600 | 336 |
| **1.6** | 29331 | 2.5 | 926 | 15.0 | **314 L4** | **—** | **BN132S4** | **—** | — | — | 182700 | 214500 | 78400 | 372 |
| **1.6** | 28807 | 2.7 | 909 | 40.0 | **—** | **315 R4** | **BN132S4** | **—** | — | — | 181700 | 213400 | 77900 | 386 |
| **1.6** | 28630 | 1.6 | 904 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 137500 | 171300 | 56200 | 348 |
| **1.6** | 28174 | 1.9 | 889 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 169100 | 200100 | 68800 | 360 |
| **1.7** | 27172 | 3.0 | 858 | 15.0 | **314 L4** | **—** | **BN132S4** | **—** | — | — | 178600 | 209700 | 76400 | 372 |
| **1.7** | 26127 | 1.7 | 825 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 133800 | 166600 | 54500 | 348 |
| **1.8** | 25908 | 1.1 | 818 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 112900 | 142000 | 54300 | 336 |
| **1.8** | 25024 | 2.1 | 790 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 163200 | 193100 | 66100 | 360 |
| **1.9** | 24658 | 1.8 | 778 | 22.0 | **—** | **313 R4** | **BN132S4** | **—** | — | — | 162500 | 192300 | 65800 | 362 |
| **1.9** | 23973 | 1.1 | 757 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 110300 | 138700 | 52900 | 338 |
| **1.9** | 23637 | 1.3 | 746 | 22.0 | **—** | **311 R4** | **BN132S4** | **—** | — | — | 129800 | 161700 | 52700 | 374 |
| **2.0** | 22992 | 1.2 | 726 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 108900 | 137000 | 52200 | 336 |
| **2.0** | 22941 | 2.0 | 724 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 128700 | 160300 | 52200 | 348 |
| **2.0** | 22879 | 0.9 | 722 | 7.5 | **309 L4** | **—** | **BN132S4** | **—** | — | — | 89900 | 116000 | 28200 | 324 |
| **2.1** | 22021 | 2.3 | 695 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 157000 | 185900 | 63300 | 360 |
| **2.2** | 20485 | 2.5 | 647 | 22.0 | **—** | **313 R4** | **BN132S4** | **—** | — | — | 153700 | 181900 | 61800 | 362 |
| **2.3** | 20233 | 1.1 | 639 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 104800 | 131800 | 50000 | 338 |
| **2.3** | 20168 | 1.3 | 637 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 104700 | 131700 | 50000 | 336 |
| **2.3** | 20051 | 2.6 | 633 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 152700 | 180700 | 61400 | 360 |
| **2.3** | 19916 | 2.0 | 629 | 22.0 | **—** | **311 R4** | **BN132S4** | **—** | — | — | 123300 | 153600 | 49800 | 374 |
| **2.3** | 19853 | 2.0 | 627 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 123200 | 153500 | 49700 | 348 |
| **2.3** | 19443 | 3.0 | 614 | 22.0 | **—** | **314 R4** | **BN132S4** | **—** | — | — | 161500 | 189600 | 68400 | 374 |
| **2.4** | 18681 | 1.2 | 590 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 102400 | 128700 | 48700 | 338 |
| **2.5** | 18333 | 1.2 | 579 | 7.5 | **309 L4** | **—** | **BN132S4** | **—** | — | — | 85900 | 110800 | 26800 | 324 |
| **2.5** | 17984 | 2.4 | 568 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 119600 | 149000 | 48100 | 348 |
| **2.6** | 17611 | 1.8 | 556 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 100600 | 126500 | 47800 | 336 |
| **2.7** | 16935 | 2.9 | 535 | 22.0 | **—** | **313 R4** | **BN132S4** | **—** | — | — | 145100 | 171800 | 58000 | 362 |
| **2.8** | 16464 | 2.3 | 520 | 22.0 | **—** | **311 R4** | **BN132S4** | **—** | — | — | 116500 | 145100 | 46700 | 374 |
| **2.8** | 16383 | 1.6 | 517 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 98400 | 123800 | 46600 | 338 |
| **2.8** | 16273 | 3.0 | 514 | 11.0 | **313 L4** | **—** | **BN132S4** | **—** | — | — | 143400 | 169700 | 57300 | 360 |
| **2.8** | 16224 | 2.7 | 512 | 11.0 | **311 L4** | **—** | **BN132S4** | **—** | — | — | 116000 | 144500 | 46500 | 348 |
| **2.8** | 16072 | 1.6 | 507 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 97900 | 123000 | 46300 | 336 |
| **2.9** | 15539 | 0.9 | 490 | 15.0 | **—** | **309 R4** | **BN132S4** | **—** | — | — | 80100 | 103300 | 24800 | 326 |
| **2.9** | 15519 | 2.2 | 490 | 22.0 | **—** | **311 R4** | **BN132S4** | **—** | — | — | 114400 | 142500 | 45800 | 374 |
| **3.1** | 14726 | 1.2 | 465 | 7.5 | **309 L4** | **—** | **BN132S4** | **—** | — | — | 80400 | 103700 | 24900 | 324 |
| **3.2** | 14474 | 1.0 | 457 | 15.0 | **—** | **309 R4** | **BN132S4** | **—** | — | — | 80000 | 103200 | 24800 | 326 |
| **3.2** | 14388 | 1.4 | 454 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 94700 | 119000 | 44700 | 338 |
| **3.2** | 14347 | 0.9 | 453 | 15.0 | **—** | **307 R4** | **BN132S4** | **M4SA4** | 35500 | 44600 | 78600 | 102900 | 30900 | 314 |
| **3.2** | 14277 | 2.1 | 451 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 94400 | 118700 | 44500 | 336 |
| **3.3** | 13873 | 2.7 | 438 | 22.0 | **—** | **311 R4** | **BN132S4** | **—** | — | — | 110600 | 137800 | 44100 | 374 |
| **3.4** | 13284 | 2.2 | 419 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 92400 | 116200 | 43500 | 338 |
| **3.5** | 13093 | 0.9 | 413 | 15.0 | **—** | **307 R4** | **BN132S4** | **M4SA4** | 33700 | 42300 | 74900 | 98100 | 29300 | 314 |
| **3.5** | 13093 | 1.4 | 413 | 15.0 | **—** | **309 R4** | **BN132S4** | **—** | — | — | 77700 | 100100 | 24000 | 326 |
| **3.6** | 12847 | 0.9 | 406 | 7.5 | **307 L4** | **—** | **BN132S4** | **M4SA4** | 33500 | 42000 | 74400 | 97500 | 29100 | 312 |
| **3.6** | 12847 | 1.4 | 406 | 7.5 | **309 L4** | **—** | **BN132S4** | **—** | — | — | 77200 | 99600 | 23800 | 324 |
| **3.7** | 12407 | 1.6 | 392 | 11.0 | **310 L4** | **—** | **BN132S4** | **—** | — | — | 90500 | 113900 | 42500 | 336 |
| **3.8** | 11860 | 1.2 | 374 | 15.0 | **—** | **309 R4** | **BN132S4** | **—** | — | — | 75400 | 97200 | 23200 | 326 |
| **4.0** | 11507 | 2.1 | 363 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 88500 | 111300 | 41500 | 338 |
| **4.0** | 11496 | 1.1 | 363 | 15.0 | **—** | **307 R4** | **BN132S4** | **M4SA4** | 33000 | 41400 | 73500 | 96300 | 28700 | 314 |
| **4.1** | 11482 | 1.7 | 350 | 18.0 | **310 L3** | **—** | **BN132S4** | **—** | — | — | 87600 | 110100 | 41000 | 336 |
| **4.1** | 11058 | 1.3 | 349 | 7.5 | **307 L4** | **—** | **BN132S4** | **M4SA4** | 32600 | 40900 | 72700 | 95200 | 28300 | 312 |
| **4.1** | 11058 | 1.9 | 349 | 7.5 | **309 L4** | **—** | **BN132S4** | **—** | — | — | 73800 | 95200 | 22700 | 324 |
| **4.3** | 11022 | 1.2 | 336 | 11.0 | **309 L3** | **—** | **BN132S4** | **—** | — | — | 73000 | 94200 | 22400 | 324 |
| **4.3** | 10586 | 2.6 | 334 | 15.0 | **—** | **310 R4** | **BN132S4** | **—** | — | — | 86300 | 108600 | 40300 | 338 |

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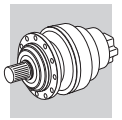
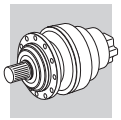


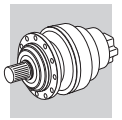
## $P_1$ = 5.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **4.3** | 10491 | 1.1 | 331 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 32000 | 40200 | 71500 | 93700 | 27800 | 314 |
| **4.3** | 10491 | 1.6 | 331 | 15.0 | — | **309 R4** | **BN132S4** | — | — | — | 72700 | 93700 | 22300 | 326 |
| **4.7** | 9660 | 2.4 | 305 | 15.0 | — | **310 R4** | **BN132S4** | — | — | — | 84000 | 105600 | 39100 | 338 |
| **4.8** | 9503 | 1.5 | 300 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 31000 | 38900 | 69400 | 91000 | 26900 | 314 |
| **4.9** | 9674 | 2.4 | 295 | 18.0 | **310 L3** | — | **BN132S4** | — | — | — | 83200 | 104600 | 38700 | 336 |
| **4.9** | 9539 | 2.8 | 291 | 18.0 | **311 L3** | — | **BN132S4** | — | — | — | 97900 | 121900 | 38500 | 348 |
| **5.0** | 9155 | 0.9 | 289 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 26900 | 30500 | 62500 | 72800 | 20200 | 302 |
| **5.1** | 9012 | 1.3 | 284 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 30400 | 38200 | 68300 | 89500 | 26500 | 314 |
| **5.1** | 9012 | 1.9 | 284 | 15.0 | — | **309 R4** | **BN132S4** | — | — | — | 69400 | 89500 | 21200 | 326 |
| **5.1** | 9287 | 1.2 | 284 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 30400 | 38100 | 68300 | 89400 | 26400 | 312 |
| **5.1** | 9287 | 1.7 | 284 | 11.0 | **309 L3** | — | **BN132S4** | — | — | — | 69400 | 89400 | 21100 | 324 |
| **5.1** | 8967 | 2.9 | 283 | 15.0 | — | **310 R4** | **BN132S4** | — | — | — | 82100 | 103300 | 38100 | 338 |
| **5.6** | 8183 | 2.8 | 258 | 15.0 | — | **310 R4** | **BN132S4** | — | — | — | 79900 | 100500 | 37000 | 338 |
| **5.6** | 8175 | 1.8 | 258 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 29500 | 37000 | 66400 | 87000 | 25600 | 314 |
| **5.6** | 8175 | 2.1 | 258 | 15.0 | — | **309 R4** | **BN132S4** | — | — | — | 67400 | 87000 | 20500 | 326 |
| **5.8** | 8165 | 2.3 | 249 | 18.0 | **310 L3** | — | **BN132S4** | — | — | — | 79100 | 99400 | 36600 | 336 |
| **5.8** | 7875 | 1.0 | 249 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 26200 | 29700 | 61000 | 71000 | 19700 | 302 |
| **6.0** | 7838 | 1.1 | 239 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 28700 | 36000 | 64900 | 85000 | 25000 | 312 |
| **6.0** | 7838 | 1.7 | 239 | 11.0 | **309 L3** | — | **BN132S4** | — | — | — | 65900 | 85000 | 20000 | 324 |
| **6.0** | 7800 | 1.0 | 238 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 25800 | 29200 | 60200 | 70100 | 19400 | 300 |
| **6.2** | 7356 | 1.5 | 232 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 28400 | 35700 | 64300 | 84200 | 24700 | 314 |
| **6.2** | 7356 | 2.3 | 232 | 15.0 | — | **309 R4** | **BN132S4** | — | — | — | 65300 | 84200 | 19800 | 326 |
| **6.3** | 7295 | 1.0 | 230 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 25500 | 28900 | 59600 | 69400 | 19200 | 302 |
| **6.3** | 7539 | 2.8 | 230 | 18.0 | **310 L3** | — | **BN132S4** | — | — | — | 77200 | 97100 | 35600 | 336 |
| **6.5** | 7301 | 1.8 | 223 | 11.0 | **309 L3** | — | **BN132S4** | — | — | — | 64500 | 83200 | 19500 | 324 |
| **6.5** | 7237 | 1.8 | 221 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 28000 | 35100 | 63300 | 83000 | 24300 | 312 |
| **6.7** | 6768 | 1.4 | 214 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 24900 | 28200 | 58300 | 67900 | 18700 | 302 |
| **7.0** | 6514 | 2.2 | 206 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 27300 | 34300 | 62000 | 81200 | 23700 | 314 |
| **7.0** | 6709 | 1.2 | 205 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 24500 | 27800 | 57600 | 67000 | 18400 | 300 |
| **7.1** | 6604 | 1.7 | 202 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 27100 | 34000 | 61600 | 80700 | 23600 | 312 |
| **7.1** | 6604 | 2.5 | 202 | 11.0 | **309 L3** | — | **BN132S4** | — | — | — | 62600 | 80700 | 18900 | 324 |
| **7.6** | 6041 | 2.3 | 191 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 26600 | 33400 | 60600 | 79400 | 23200 | 314 |
| **7.6** | 6041 | 2.9 | 191 | 15.0 | — | **309 R4** | **BN132S4** | — | — | — | 61600 | 79400 | 18500 | 326 |
| **7.6** | 6215 | 1.0 | 190 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 23900 | 27100 | 56200 | 65500 | 18000 | 300 |
| **7.9** | 5983 | 2.4 | 183 | 11.0 | **309 L3** | — | **BN132S4** | — | — | — | 60800 | 78400 | 18300 | 324 |
| **8.0** | 5733 | 1.6 | 181 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 23600 | 26700 | 55500 | 64600 | 17700 | 302 |
| **8.1** | 5799 | 2.1 | 177 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 26000 | 32600 | 59300 | 77700 | 22600 | 312 |
| **8.6** | 5316 | 1.4 | 168 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 23000 | 26000 | 54200 | 63100 | 17300 | 302 |
| **8.9** | 5292 | 2.0 | 162 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 25200 | 31600 | 57700 | 75600 | 21900 | 312 |
| **9.1** | 5016 | 1.1 | 158 | 12.0 | — | **305 R4** | **BN132S4** | **M4SA4** | 18100 | 20900 | 32600 | 39200 | 11600 | 278 |
| **9.1** | 5001 | 1.9 | 158 | 12.0 | — | **306 R4** | **BN132S4** | **M4SA4** | 22500 | 25500 | 53200 | 62000 | 16900 | 302 |
| **9.5** | 4980 | 1.5 | 152 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 22200 | 25200 | 52600 | 61300 | 16700 | 300 |
| **9.7** | 4694 | 1.0 | 148 | 12.0 | — | **305 R4** | **BN132S4** | **M4SA4** | 17300 | 20000 | 31300 | 37600 | 11100 | 278 |
| **9.8** | 4794 | 2.8 | 146 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 24400 | 30600 | 56000 | 73300 | 21200 | 312 |
| **10.0** | 4722 | 1.2 | 144 | 14.0 | — | **306 R3** | **BN132S4** | **M4SA4** | 21800 | 24700 | 51800 | 60300 | 16400 | 302 |
| **10.2** | 4634 | 1.1 | 141 | 7.5 | **305 L3** | — | **BN132S4** | **M4SA4** | 17400 | 20100 | 31500 | 37900 | 11200 | 288 |
| **10.2** | 4618 | 1.7 | 141 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 21700 | 24600 | 51500 | 59900 | 16300 | 300 |
| **10.4** | 4546 | 2.4 | 139 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 24000 | 30100 | 55100 | 72200 | 20800 | 312 |
| **11.1** | 4095 | 1.3 | 129 | 12.0 | — | **305 R4** | **BN132S4** | **M4SA4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.6** | 3929 | 2.8 | 124 | 15.0 | — | **307 R4** | **BN132S4** | **M4SA4** | 24800 | 31100 | 56900 | 74500 | 21600 | 314 |
| **11.9** | 3973 | 2.0 | 121 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 20600 | 23400 | 49200 | 57300 | 15500 | 300 |
| **12.0** | 3923 | 2.2 | 120 | 22.0 | — | **307 R3** | **BN132S4** | **M4SA4** | 22800 | 28600 | 52700 | 69100 | 19800 | 314 |
| **12.1** | 3904 | 1.7 | 119 | 14.0 | — | **306 R3** | **BN132S4** | **M4SA4** | 20500 | 23200 | 48900 | 57000 | 15400 | 302 |
| **12.6** | 3747 | 1.0 | 114 | 14.0 | — | **305 R3** | **BN132S4** | **M4SA4** | 16200 | 18700 | 29500 | 35500 | 10400 | 278 |
| **12.7** | 3711 | 2.8 | 113 | 11.0 | **307 L3** | — | **BN132S4** | **M4SA4** | 22400 | 28100 | 51800 | 67900 | 19500 | 312 |
| **12.8** | 3691 | 1.0 | 113 | 7.5 | **305 L3** | — | **BN132S4** | **M4SA4** | 16200 | 18600 | 29400 | 35400 | 10400 | 288 |
| **12.8** | 3680 | 2.0 | 112 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 20100 | 22800 | 48100 | 56000 | 15100 | 300 |
| **13.0** | 3620 | 0.9 | 111 | 7.5 | **304 L3** | — | **BN132S4** | **M4SA4** | 16000 | 18500 | 29200 | 35200 | 10300 | 288 |
| **13.2** | 3469 | 1.0 | 109 | 12.0 | — | **304 R4** | **BN132S4** | — | 16000 | 18500 | 29200 | 35100 | 10300 | 278 |
| **13.8** | 3424 | 1.0 | 105 | 7.5 | **304 L3** | — | **BN132S4** | **M4SA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **13.8** | 3424 | 1.5 | 105 | 7.5 | **305 L3** | — | **BN132S4** | **M4SA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **13.8** | 3414 | 2.6 | 104 | 7.5 | **306 L3** | — | **BN132S4** | **M4SA4** | 19600 | 22200 | 47000 | 54700 | 14700 | 300 |
| **14.5** | 3243 | 2.6 | 99.0 | 22.0 | — | **307 R3** | **BN132S4** | **M4SA4** | 21400 | 26900 | 49800 | 65200 | 18600 | 314 |
| **14.6** | 3227 | 2.0 | 98.5 | 14.0 | — | **306 R3** | **BN132S4** | **M4SA4** | 19200 | 21800 | 46200 | 53800 | 14400 | 302 |
| **15.7** | 2998 | 1.2 | 91.5 | 14.0 | — | **305 R3** | **BN132S4** | **M4SA4** | 15100 | 17400 | 27600 | 33200 | 9670 | 278 |



## $P_1$ = 5.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **16.0** | 2955 | 1.1 | 90.2 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **16.0** | 2955 | 1.4 | 90.2 | 7.5 | **305 L3** | **—** | **BN132S4** | **M4SA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **16.1** | 2831 | 1.2 | 89.4 | 12.0 | **—** | **304 R4** | **BN132S4** | **—** | 15000 | 17300 | 27400 | 33000 | 9590 | 278 |
| **16.3** | 2892 | 3.0 | 88.3 | 7.5 | **306 L3** | **—** | **BN132S4** | **M4SA4** | 18500 | 21000 | 44700 | 52100 | 13900 | 300 |
| **17.0** | 2776 | 2.7 | 84.7 | 14.0 | **—** | **306 R3** | **BN132S4** | **M4SA4** | 18300 | 20700 | 44200 | 51400 | 13700 | 302 |
| **17.6** | 2681 | 2.6 | 81.9 | 7.5 | **306 L3** | **—** | **BN132S4** | **M4SA4** | 18100 | 20500 | 43700 | 50900 | 13600 | 300 |
| **18.3** | 2579 | 1.1 | 78.7 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.3** | 2579 | 1.7 | 78.7 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.6** | 2530 | 1.0 | 77.2 | 7.5 | **303 L3** | **—** | **BN132S4** | **M4SA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 264 |
| **18.6** | 2530 | 1.4 | 77.2 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **18.6** | 2530 | 1.9 | 77.2 | 7.5 | **305 L3** | **—** | **BN132S4** | **M4SA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **19.6** | 2402 | 1.5 | 73.3 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 14000 | 16200 | 25900 | 31100 | 8980 | 278 |
| **19.9** | 2453 | 2.2 | 72.5 | 13.0 | **306 L2** | **—** | **BN132S4** | **M4SA4** | 17400 | 19700 | 42100 | 49100 | 13000 | 300 |
| **19.9** | 2368 | 1.4 | 72.3 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **19.9** | 2368 | 0.9 | 72.3 | 7.5 | **303 L3** | **—** | **BN132S4** | **M4SA4** | 13600 | 15700 | 25200 | 30300 | 8730 | 264 |
| **19.9** | 2368 | 1.8 | 72.3 | 7.5 | **305 L3** | **—** | **BN132S4** | **M4SA4** | 13600 | 15700 | 25200 | 30300 | 8730 | 288 |
| **22.8** | 2066 | 1.1 | 63.1 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 13300 | 15400 | 24700 | 29700 | 8540 | 266 |
| **22.8** | 2066 | 1.4 | 63.1 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.8** | 2066 | 2.1 | 63.1 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.8** | 2066 | 1.2 | 63.1 | 7.5 | **303 L3** | **—** | **BN132S4** | **M4SA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 264 |
| **22.8** | 2066 | 1.7 | 63.1 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **22.8** | 2066 | 2.3 | 63.1 | 7.5 | **305 L3** | **—** | **BN132S4** | **M4SA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **24.3** | 2001 | 1.2 | 59.1 | 9.0 | **304 L2** | **—** | **BN132S4** | **M4SA4** | 13000 | 15000 | 24200 | 29200 | 8360 | 288 |
| **25.6** | 1903 | 2.7 | 56.3 | 13.0 | **306 L2** | **—** | **BN132S4** | **M4SA4** | 16000 | 18100 | 39100 | 45500 | 12000 | 300 |
| **25.8** | 1888 | 1.0 | 55.8 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 12800 | 14800 | 23800 | 28700 | 8200 | 264 |
| **25.8** | 1888 | 1.9 | 55.8 | 9.0 | **305 L2** | **—** | **BN132S4** | **M4SA4** | 12800 | 14800 | 23800 | 28700 | 8200 | 288 |
| **26.6** | 1775 | 1.0 | 54.2 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 12700 | 14600 | 23600 | 28400 | 8120 | 266 |
| **26.6** | 1775 | 2.0 | 54.2 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 12700 | 14600 | 23600 | 28400 | 8120 | 278 |
| **27.0** | 1750 | 1.2 | 53.4 | 7.5 | **303 L3** | **—** | **BN132S4** | **M4SA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 264 |
| **27.0** | 1750 | 1.8 | 53.4 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 1750 | 2.3 | 53.4 | 7.5 | **305 L3** | **—** | **BN132S4** | **M4SA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.9** | 1691 | 1.0 | 51.6 | 7.5 | **301 L3** | **—** | **BN132S4** | **M4SA4** | 3960 | 3960 | 11200 | 12800 | 2600 | 254 |
| **28.6** | 1652 | 1.0 | 50.4 | 12.0 | **—** | **301 R3** | **BN132S4** | **—** | 3930 | 3930 | 11100 | 12700 | 2580 | 256 |
| **28.6** | 1647 | 1.4 | 50.3 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 12300 | 14200 | 23100 | 27800 | 7920 | 266 |
| **28.6** | 1647 | 2.1 | 50.3 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **28.6** | 1647 | 2.7 | 50.3 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **30** | 1601 | 1.5 | 47.3 | 9.0 | **304 L2** | **—** | **BN132S4** | **M4SA4** | 12100 | 14000 | 22700 | 27300 | 7760 | 288 |
| **31** | 1527 | 1.4 | 46.6 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 12000 | 13900 | 22600 | 27200 | 7720 | 266 |
| **31** | 1527 | 1.9 | 46.6 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **31** | 1527 | 2.8 | 46.6 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **32** | 1511 | 1.2 | 44.6 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 11900 | 13700 | 22300 | 26800 | 7610 | 264 |
| **32** | 1511 | 2.4 | 44.6 | 9.0 | **305 L2** | **—** | **BN132S4** | **M4SA4** | 11900 | 13700 | 22300 | 26800 | 7610 | 288 |
| **33** | 1428 | 2.2 | 43.6 | 7.5 | **304 L3** | **—** | **BN132S4** | **M4SA4** | 11800 | 13600 | 22100 | 26600 | 7550 | 288 |
| **34** | 1395 | 1.5 | 42.6 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 11700 | 13500 | 22000 | 26400 | 7490 | 266 |
| **34** | 1395 | 2.3 | 42.6 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **34** | 1395 | 2.7 | 42.6 | 14.0 | **—** | **305 R3** | **BN132S4** | **M4SA4** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **35** | 1406 | 0.9 | 41.5 | 7.5 | **301 L2** | **—** | **BN132S4** | **M4SA4** | 3770 | 3770 | 10700 | 12300 | 2480 | 254 |
| **35** | 1348 | 1.0 | 41.2 | 12.0 | **—** | **301 R3** | **BN132S4** | **—** | 3760 | 3760 | 10600 | 12200 | 2470 | 256 |
| **38** | 1299 | 1.7 | 38.4 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 11300 | 13000 | 21300 | 25600 | 7240 | 264 |
| **38** | 1299 | 2.2 | 38.4 | 9.0 | **304 L2** | **—** | **BN132S4** | **M4SA4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **38** | 1298 | 1.2 | 38.4 | 7.5 | **301 L2** | **—** | **BN132S4** | **M4SA4** | 3670 | 3670 | 10400 | 12000 | 2410 | 254 |
| **39** | 1221 | 1.3 | 37.3 | 12.0 | **—** | **301 R3** | **BN132S4** | **—** | 3630 | 3630 | 10300 | 11900 | 2390 | 256 |
| **39** | 1217 | 2.0 | 37.1 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 11200 | 12900 | 21100 | 25400 | 7160 | 266 |
| **39** | 1217 | 2.8 | 37.1 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **40** | 1210 | 1.5 | 35.8 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 11000 | 12700 | 20800 | 25100 | 7070 | 264 |
| **40** | 1210 | 2.9 | 35.8 | 9.0 | **305 L2** | **—** | **BN132S4** | **M4SA4** | 11000 | 12700 | 20800 | 25100 | 7070 | 288 |
| **43** | 1126 | 1.2 | 33.3 | 7.5 | **301 L2** | **—** | **BN132S4** | **M4SA4** | 3500 | 3500 | 9990 | 11500 | 2300 | 254 |
| **46** | 1031 | 2.0 | 31.5 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 10600 | 12200 | 20100 | 24100 | 6770 | 266 |
| **46** | 1031 | 3.0 | 31.5 | 14.0 | **—** | **304 R3** | **BN132S4** | **—** | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **47** | 1041 | 2.1 | 30.8 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 10500 | 12100 | 19900 | 24000 | 6720 | 264 |
| **47** | 1041 | 2.7 | 30.8 | 9.0 | **304 L2** | **—** | **BN132S4** | **M4SA4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 1039 | 1.5 | 30.7 | 7.5 | **301 L2** | **—** | **BN132S4** | **M4SA4** | 3410 | 3410 | 9750 | 11200 | 2240 | 254 |
| **47** | 996 | 1.6 | 30.4 | 12.0 | **—** | **301 R3** | **BN132S4** | **—** | 3400 | 3400 | 9730 | 11200 | 2230 | 256 |
| **54** | 894 | 2.0 | 26.4 | 9.0 | **303 L2** | **—** | **BN132S4** | **M4SA4** | 9960 | 11500 | 19000 | 22900 | 6390 | 264 |
| **56** | 841 | 2.4 | 25.7 | 14.0 | **—** | **303 R3** | **BN132S4** | **—** | 9870 | 11400 | 18900 | 22700 | 6330 | 266 |



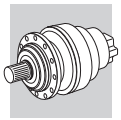
A

## $P_1$ = 5.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **58** | 813 | 1.7 | 24.8 | 12.0 | — | **301 R3** | **BN132S4** | — | 3170 | 3170 | 9150 | 10500 | 2090 | 256 |
| **58** | 838 | 1.0 | 24.8 | 18.0 | — | **303 R2** | **BN132S4** | **M4SA4** | 9750 | 11300 | 18700 | 22500 | 6250 | 266 |
| **59** | 832 | 1.0 | 24.6 | 7.5 | **300 L2** | — | **BN132S4** | **M4SA4** | 3090 | 3090 | 8940 | 10300 | 2030 | 244 |
| **59** | 832 | 1.8 | 24.6 | 7.5 | **301 L2** | — | **BN132S4** | **M4SA4** | 3160 | 3160 | 9130 | 10500 | 2080 | 254 |
| **59** | 830 | 2.6 | 24.5 | 9.0 | **303 L2** | — | **BN132S4** | **M4SA4** | 9720 | 11200 | 18600 | 22400 | 6230 | 264 |
| **63** | 769 | 2.7 | 22.7 | 9.0 | **303 L2** | — | **BN132S4** | **M4SA4** | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **69** | 703 | 2.6 | 20.8 | 9.0 | **303 L2** | — | **BN132S4** | **M4SA4** | 9190 | 10600 | 17700 | 21300 | 5900 | 264 |
| **72** | 679 | 0.9 | 20.1 | 7.5 | **300 L2** | — | **BN132S4** | **M4SA4** | 2960 | 2960 | 8590 | 9870 | 1940 | 244 |
| **72** | 679 | 1.9 | 20.1 | 7.5 | **301 L2** | — | **BN132S4** | **M4SA4** | 2960 | 2960 | 8590 | 9870 | 1940 | 254 |
| **75** | 650 | 2.4 | 19.2 | 18.0 | — | **303 R2** | **BN132S4** | **M4SA4** | 8960 | 10300 | 17300 | 20800 | 5750 | 266 |
| **78** | 624 | 1.2 | 18.5 | 12.0 | — | **301 R2** | **BN132S4** | **M4SA4** | 2870 | 2870 | 8370 | 9620 | 1890 | 256 |
| **79** | 615 | 1.2 | 18.2 | 7.5 | **300 L2** | — | **BN132S4** | **M4SA4** | 2860 | 2860 | 8330 | 9580 | 1880 | 244 |
| **79** | 615 | 2.2 | 18.2 | 7.5 | **301 L2** | — | **BN132S4** | **M4SA4** | 2860 | 2860 | 8330 | 9580 | 1880 | 254 |
| **97** | 502 | 1.4 | 14.8 | 7.5 | **300 L2** | — | **BN132S4** | **M4SA4** | 2670 | 2670 | 7840 | 9010 | 1760 | 244 |
| **97** | 502 | 2.5 | 14.8 | 7.5 | **301 L2** | — | **BN132S4** | **M4SA4** | 2670 | 2670 | 7840 | 9010 | 1760 | 254 |
| **98** | 499 | 1.0 | 14.8 | 12.0 | — | **300 R2** | **BN132S4** | **M4SA4** | 2670 | 2670 | 7830 | 9000 | 1750 | 246 |
| **98** | 499 | 1.9 | 14.8 | 12.0 | — | **301 R2** | **BN132S4** | **M4SA4** | 2670 | 2670 | 7830 | 9000 | 1750 | 256 |
| **119** | 410 | 1.7 | 12.1 | 7.5 | **300 L2** | — | **BN132S4** | **M4SA4** | 2500 | 2500 | 7380 | 8480 | 1640 | 244 |
| **119** | 410 | 3.0 | 12.1 | 7.5 | **301 L2** | — | **BN132S4** | **M4SA4** | 2500 | 2500 | 7380 | 8480 | 1640 | 254 |
| **122** | 400 | 1.5 | 11.8 | 12.0 | — | **300 R2** | **BN132S4** | **M4SA4** | 2480 | 2480 | 7330 | 8420 | 1630 | 246 |
| **122** | 400 | 2.9 | 11.8 | 12.0 | — | **301 R2** | **BN132S4** | **M4SA4** | 2480 | 2480 | 7330 | 8420 | 1630 | 256 |
| **149** | 338 | 2.2 | 9.67 | 11.0 | **303 L1** | — | **BN132S4** | **M4SA4** | 7120 | 8220 | 14100 | 16900 | 4570 | 264 |
| **160** | 314 | 1.0 | 9.00 | 7.5 | **300 L1** | — | **BN132S4** | **M4SA4** | 2260 | 2260 | 6750 | 7750 | 1490 | 244 |
| **160** | 314 | 2.0 | 9.00 | 7.5 | **301 L1** | — | **BN132S4** | **M4SA4** | 2260 | 2260 | 6750 | 7750 | 1490 | 254 |
| **165** | 296 | 2.1 | 8.74 | 12.0 | — | **300 R2** | **BN132S4** | **M4SA4** | 2240 | 2240 | 6690 | 7690 | 1470 | 246 |
| **200** | 251 | 1.6 | 7.20 | 7.5 | **300 L1** | — | **BN132S4** | **M4SA4** | 2100 | 2100 | 6310 | 7250 | 1380 | 244 |
| **200** | 251 | 3.0 | 7.20 | 7.5 | **301 L1** | — | **BN132S4** | **M4SA4** | 2100 | 2100 | 6310 | 7250 | 1380 | 254 |
| **202** | 241 | 2.4 | 7.13 | 12.0 | — | **300 R2** | **BN132S4** | **M4SA4** | 2090 | 2090 | 6300 | 7230 | 1380 | 246 |
| **250** | 201 | 2.3 | 5.77 | 7.5 | **300 L1** | — | **BN132S4** | **M4SA4** | 1950 | 1950 | 5910 | 6790 | 1280 | 244 |

## $P_1$ = 7.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.76** | 83274 | 1.9 | 1893 | 18.0 | **317 L4** | — | **BN132MA4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **0.80** | 79431 | 1.1 | 1805 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 206000 | 243000 | 90000 | 384 |
| **0.90** | 70166 | 2.4 | 1595 | 18.0 | **317 L4** | — | **BN132MA4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **0.96** | 65663 | 1.3 | 1492 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 206000 | 243000 | 90000 | 384 |
| **0.97** | 65339 | 1.0 | 1485 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 206000 | 243000 | 90000 | 372 |
| **1.1** | 58004 | 2.9 | 1318 | 18.0 | **317 L4** | — | **BN132MA4** | — | — | — | 434300 | 462400 | 147000 | 406 |
| **1.1** | 56484 | 1.7 | 1284 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 201500 | 236600 | 87400 | 384 |
| **1.1** | 56205 | 1.4 | 1277 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 201200 | 236300 | 87300 | 372 |
| **1.1** | 55684 | 1.0 | 1266 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 188000 | 222500 | 77400 | 360 |
| **1.2** | 54449 | 2.2 | 1237 | 18.0 | **316 L4** | — | **BN132MA4** | — | — | — | 331400 | 368600 | 144000 | 396 |
| **1.3** | 49144 | 1.1 | 1117 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 181100 | 214300 | 74200 | 360 |
| **1.3** | 48588 | 2.0 | 1104 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 192600 | 226200 | 83200 | 384 |
| **1.3** | 48349 | 1.6 | 1099 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 192400 | 225800 | 83000 | 372 |
| **1.4** | 46570 | 0.9 | 1058 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 141200 | 175900 | 57900 | 348 |
| **1.4** | 45878 | 2.2 | 1043 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 189400 | 222300 | 81600 | 384 |
| **1.4** | 45878 | 2.9 | 1043 | 18.0 | **316 L4** | — | **BN132MA4** | — | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 45651 | 1.8 | 1038 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 189100 | 222000 | 81400 | 372 |
| **1.4** | 44619 | 1.2 | 1014 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 175900 | 208200 | 71800 | 360 |
| **1.5** | 43379 | 1.0 | 986 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 141100 | 175800 | 57800 | 348 |
| **1.5** | 40915 | 2.3 | 930 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 183000 | 214800 | 78500 | 384 |
| **1.6** | 40738 | 1.8 | 926 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 182700 | 214500 | 78400 | 372 |
| **1.6** | 40010 | 1.9 | 909 | 40.0 | — | **315 R4** | **BN132MA4** | — | — | — | 181700 | 213400 | 77900 | 386 |
| **1.6** | 39764 | 1.2 | 904 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 137500 | 171300 | 56200 | 348 |
| **1.6** | 39130 | 1.4 | 889 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 169100 | 200100 | 68800 | 360 |
| **1.7** | 37926 | 2.7 | 862 | 18.0 | **315 L4** | — | **BN132MA4** | — | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 37738 | 2.2 | 858 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 178600 | 209700 | 76400 | 372 |
| **1.7** | 36288 | 1.2 | 825 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 133800 | 166600 | 54500 | 348 |
| **1.8** | 34755 | 1.5 | 790 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 163200 | 193100 | 66100 | 360 |



## $P_1$ = 7.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.8** | 34417 | 2.6 | 782 | 40.0 | — | **315 R4** | **BN132MA4** | — | — | — | 173700 | 203900 | 74100 | 386 |
| **1.9** | 34248 | 1.3 | 778 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 162500 | 192300 | 65800 | 362 |
| **1.9** | 32829 | 0.9 | 746 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 129800 | 161700 | 52700 | 374 |
| **2.0** | 32463 | 2.5 | 738 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 170700 | 200400 | 72700 | 372 |
| **2.0** | 31862 | 1.5 | 724 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 128700 | 160300 | 52200 | 348 |
| **2.1** | 30585 | 1.7 | 695 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 157000 | 185900 | 63300 | 360 |
| **2.2** | 29407 | 2.7 | 668 | 15.0 | **314 L4** | — | **BN132MA4** | — | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 28452 | 1.8 | 647 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 153700 | 181900 | 61800 | 362 |
| **2.3** | 28012 | 0.9 | 637 | 11.0 | **310 L4** | — | **BN132MA4** | — | — | — | 104700 | 131700 | 50000 | 336 |
| **2.3** | 27848 | 1.9 | 633 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 152700 | 180700 | 61400 | 360 |
| **2.3** | 27662 | 1.4 | 629 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 123300 | 153600 | 49800 | 374 |
| **2.3** | 27574 | 1.4 | 627 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 123200 | 153500 | 49700 | 348 |
| **2.3** | 27005 | 2.1 | 614 | 22.0 | — | **314 R4** | **BN132MA4** | — | — | — | 161500 | 189600 | 68400 | 374 |
| **2.5** | 24978 | 1.7 | 568 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 119600 | 149000 | 48100 | 348 |
| **2.6** | 24805 | 2.2 | 564 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 147500 | 174500 | 59100 | 360 |
| **2.6** | 24460 | 1.3 | 556 | 11.0 | **310 L4** | — | **BN132MA4** | — | — | — | 100600 | 126500 | 47800 | 336 |
| **2.7** | 23520 | 2.1 | 535 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 145100 | 171800 | 58000 | 362 |
| **2.7** | 23230 | 3.0 | 528 | 22.0 | — | **314 R4** | **BN132MA4** | — | — | — | 154400 | 181300 | 65000 | 374 |
| **2.8** | 22867 | 1.7 | 520 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 116500 | 145100 | 46700 | 374 |
| **2.8** | 22754 | 1.1 | 517 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 98400 | 123800 | 46600 | 338 |
| **2.8** | 22601 | 2.2 | 514 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 143400 | 169700 | 57300 | 360 |
| **2.8** | 22533 | 2.0 | 512 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 116000 | 144500 | 46500 | 348 |
| **2.8** | 22322 | 1.1 | 507 | 11.0 | **310 L4** | — | **BN132MA4** | — | — | — | 97900 | 123000 | 46300 | 336 |
| **2.9** | 21828 | 2.4 | 496 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 141900 | 168000 | 56600 | 362 |
| **2.9** | 21555 | 1.6 | 490 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 114400 | 142500 | 45800 | 374 |
| **3.2** | 19983 | 1.0 | 454 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 94700 | 119000 | 44700 | 338 |
| **3.2** | 19876 | 2.7 | 452 | 11.0 | **313 L4** | — | **BN132MA4** | — | — | — | 138000 | 163300 | 54900 | 360 |
| **3.2** | 19829 | 1.5 | 451 | 11.0 | **310 L4** | — | **BN132MA4** | — | — | — | 94400 | 118700 | 44500 | 336 |
| **3.2** | 19818 | 2.4 | 450 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 137900 | 163200 | 54800 | 362 |
| **3.3** | 19268 | 1.9 | 438 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 110600 | 137800 | 44100 | 374 |
| **3.4** | 18450 | 1.6 | 419 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 92400 | 116200 | 43500 | 338 |
| **3.5** | 18184 | 1.0 | 413 | 15.0 | — | **309 R4** | **BN132MA4** | — | — | — | 77700 | 100100 | 24000 | 326 |
| **3.5** | 18162 | 2.2 | 413 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 108700 | 135400 | 43300 | 374 |
| **3.5** | 18055 | 2.3 | 410 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 108500 | 135200 | 43200 | 348 |
| **3.6** | 17843 | 1.0 | 406 | 7.5 | **309 L4** | — | **BN132MA4** | — | — | — | 77200 | 99600 | 23800 | 324 |
| **3.7** | 17233 | 1.1 | 392 | 11.0 | **310 L4** | — | **BN132MA4** | — | — | — | 90500 | 113900 | 42500 | 336 |
| **3.7** | 17048 | 2.7 | 387 | 22.0 | — | **313 R4** | **BN132MA4** | — | — | — | 131800 | 156000 | 52100 | 362 |
| **4.0** | 15982 | 1.5 | 363 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 88500 | 111300 | 41500 | 338 |
| **4.1** | 15947 | 1.2 | 350 | 18.0 | **310 L3** | — | **BN132MA4** | — | — | — | 87600 | 110100 | 41000 | 336 |
| **4.1** | 15359 | 1.0 | 349 | 7.5 | **307 L4** | — | **BN132MA4** | **M4LA4** | 31800 | 40000 | 71200 | 93300 | 27700 | 312 |
| **4.1** | 15359 | 1.4 | 349 | 7.5 | **309 L4** | — | **BN132MA4** | — | — | — | 73800 | 95200 | 22700 | 324 |
| **4.1** | 15294 | 2.6 | 348 | 11.0 | **311 L4** | — | **BN132MA4** | — | — | — | 103200 | 128600 | 40900 | 348 |
| **4.2** | 15014 | 2.6 | 341 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 102700 | 127900 | 40600 | 374 |
| **4.3** | 14702 | 1.9 | 334 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 86300 | 108600 | 40300 | 338 |
| **4.3** | 14571 | 1.2 | 331 | 15.0 | — | **309 R4** | **BN132MA4** | — | — | — | 72700 | 93700 | 22300 | 326 |
| **4.5** | 14152 | 2.8 | 322 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 100900 | 125600 | 39800 | 374 |
| **4.7** | 13417 | 1.7 | 305 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 84000 | 105600 | 39100 | 338 |
| **4.7** | 13821 | 2.8 | 304 | 18.0 | **313 L3** | — | **BN132MA4** | — | — | — | 122500 | 145000 | 48100 | 360 |
| **4.8** | 13199 | 1.1 | 300 | 15.0 | — | **307 R4** | **BN132MA4** | **M4LA4** | 31000 | 38900 | 69400 | 91000 | 26900 | 314 |
| **4.9** | 13437 | 1.7 | 295 | 18.0 | **310 L3** | — | **BN132MA4** | — | — | — | 83200 | 104600 | 38700 | 336 |
| **4.9** | 12915 | 2.9 | 294 | 22.0 | — | **311 R4** | **BN132MA4** | — | — | — | 98100 | 122200 | 38600 | 374 |
| **4.9** | 13248 | 2.0 | 291 | 18.0 | **311 L3** | — | **BN132MA4** | — | — | — | 97900 | 121900 | 38500 | 348 |
| **5.1** | 12517 | 0.9 | 284 | 15.0 | — | **307 R4** | **BN132MA4** | **M4LA4** | 29700 | 37300 | 66900 | 87700 | 25900 | 314 |
| **5.1** | 12517 | 1.4 | 284 | 15.0 | — | **309 R4** | **BN132MA4** | — | — | — | 69400 | 89500 | 21200 | 326 |
| **5.1** | 12899 | 1.2 | 284 | 11.0 | **309 L3** | — | **BN132MA4** | — | — | — | 69400 | 89400 | 21100 | 324 |
| **5.1** | 12454 | 2.1 | 283 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 82100 | 103300 | 38100 | 338 |
| **5.6** | 11365 | 2.0 | 258 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 79900 | 100500 | 37000 | 338 |
| **5.6** | 11354 | 1.3 | 258 | 15.0 | — | **307 R4** | **BN132MA4** | **M4LA4** | 29500 | 37000 | 66400 | 87000 | 25600 | 314 |
| **5.6** | 11354 | 1.5 | 258 | 15.0 | — | **309 R4** | **BN132MA4** | — | — | — | 67400 | 87000 | 20500 | 326 |
| **5.8** | 11340 | 1.6 | 249 | 18.0 | **310 L3** | — | **BN132MA4** | — | — | — | 79100 | 99400 | 36600 | 336 |
| **6.0** | 10886 | 1.2 | 239 | 11.0 | **309 L3** | — | **BN132MA4** | — | — | — | 65900 | 85000 | 20000 | 324 |
| **6.2** | 10295 | 2.4 | 234 | 15.0 | — | **310 R4** | **BN132MA4** | — | — | — | 77600 | 97600 | 35800 | 338 |
| **6.2** | 10217 | 1.1 | 232 | 15.0 | — | **307 R4** | **BN132MA4** | **M4LA4** | 28400 | 35700 | 64300 | 84200 | 24700 | 314 |
| **6.2** | 10217 | 1.6 | 232 | 15.0 | — | **309 R4** | **BN132MA4** | — | — | — | 65300 | 84200 | 19800 | 326 |
| **6.3** | 10470 | 2.0 | 230 | 18.0 | **310 L3** | — | **BN132MA4** | — | — | — | 77200 | 97100 | 35600 | 336 |

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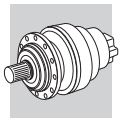
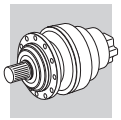


## $P_1$ = 7.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **6.5** | 10141 | 1.3 | 223 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 64500 | 83200 | 19500 | 324 |
| **6.5** | 10051 | 1.3 | 221 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 28000 | 35100 | 63300 | 83000 | 24300 | 312 |
| **6.7** | 9399 | 1.0 | 214 | 12.0 | **—** | **306 R4** | **BN132MA4** | **M4LA4** | 24900 | 28200 | 58300 | 67900 | 18700 | 302 |
| **7.0** | 9057 | 2.4 | 206 | 15.0 | **—** | **310 R4** | **BN132MA4** | **—** | — | — | 74700 | 93900 | 34300 | 338 |
| **7.0** | 9048 | 1.6 | 206 | 15.0 | **—** | **307 R4** | **BN132MA4** | **M4LA4** | 27300 | 34300 | 62000 | 81200 | 23700 | 314 |
| **7.0** | 9048 | 2.2 | 206 | 15.0 | **—** | **309 R4** | **BN132MA4** | **—** | — | — | 63000 | 81200 | 19000 | 326 |
| **7.1** | 9182 | 2.4 | 202 | 18.0 | **310 L3** | **—** | **BN132MA4** | **—** | — | — | 74200 | 93300 | 34100 | 336 |
| **7.1** | 9173 | 1.2 | 202 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 27100 | 34000 | 61600 | 80700 | 23600 | 312 |
| **7.1** | 9173 | 1.8 | 202 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 62600 | 80700 | 18900 | 324 |
| **7.6** | 8390 | 1.7 | 191 | 15.0 | **—** | **307 R4** | **BN132MA4** | **M4LA4** | 26600 | 33400 | 60600 | 79400 | 23200 | 314 |
| **7.6** | 8390 | 2.1 | 191 | 15.0 | **—** | **309 R4** | **BN132MA4** | **—** | — | — | 61600 | 79400 | 18500 | 326 |
| **7.6** | 8331 | 2.8 | 189 | 15.0 | **—** | **310 R4** | **BN132MA4** | **—** | — | — | 72800 | 91500 | 33400 | 338 |
| **7.9** | 8309 | 1.7 | 183 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 60800 | 78400 | 18300 | 324 |
| **8.0** | 7962 | 1.2 | 181 | 12.0 | **—** | **306 R4** | **BN132MA4** | **M4LA4** | 23600 | 26700 | 55500 | 64600 | 17700 | 302 |
| **8.1** | 8064 | 2.3 | 177 | 18.0 | **310 L3** | **—** | **BN132MA4** | **—** | — | — | 71400 | 89800 | 32600 | 336 |
| **8.1** | 8054 | 1.5 | 177 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 26000 | 32600 | 59300 | 77700 | 22600 | 312 |
| **8.6** | 7383 | 1.0 | 168 | 12.0 | **—** | **306 R4** | **BN132MA4** | **M4LA4** | 23000 | 26000 | 54200 | 63100 | 17300 | 302 |
| **8.7** | 7268 | 2.2 | 165 | 15.0 | **—** | **309 R4** | **BN132MA4** | **—** | — | — | 59000 | 76100 | 17700 | 326 |
| **8.8** | 7445 | 3.0 | 164 | 18.0 | **310 L3** | **—** | **BN132MA4** | **—** | — | — | 69700 | 87600 | 31800 | 336 |
| **8.9** | 7350 | 1.5 | 162 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 25200 | 31600 | 57700 | 75600 | 21900 | 312 |
| **8.9** | 7350 | 2.2 | 162 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 58600 | 75600 | 17500 | 324 |
| **9.1** | 6946 | 1.4 | 158 | 12.0 | **—** | **306 R4** | **BN132MA4** | **M4LA4** | 22500 | 25500 | 53200 | 62000 | 16900 | 302 |
| **9.5** | 6917 | 1.1 | 152 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 22200 | 25200 | 52600 | 61300 | 16700 | 300 |
| **9.5** | 6686 | 2.8 | 152 | 15.0 | **—** | **309 R4** | **BN132MA4** | **—** | — | — | 57500 | 74200 | 17200 | 326 |
| **9.8** | 6658 | 2.0 | 146 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 24400 | 30600 | 56000 | 73300 | 21200 | 312 |
| **10.2** | 6414 | 1.2 | 141 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 21700 | 24600 | 51500 | 59900 | 16300 | 300 |
| **10.4** | 6314 | 1.7 | 139 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 24000 | 30100 | 55100 | 72200 | 20800 | 312 |
| **10.4** | 6314 | 2.5 | 139 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 56000 | 72200 | 16700 | 324 |
| **11.1** | 5687 | 0.9 | 129 | 12.0 | **—** | **305 R4** | **BN132MA4** | **M4LA4** | 16900 | 19500 | 30600 | 36900 | 10800 | 278 |
| **11.4** | 5727 | 2.3 | 126 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 23200 | 29100 | 53500 | 70100 | 20200 | 312 |
| **11.4** | 5727 | 2.9 | 126 | 11.0 | **309 L3** | **—** | **BN132MA4** | **—** | — | — | 54400 | 70100 | 16100 | 324 |
| **11.6** | 5458 | 2.0 | 124 | 15.0 | **—** | **307 R4** | **BN132MA4** | **M4LA4** | 24800 | 31100 | 56900 | 74500 | 21600 | 314 |
| **11.9** | 5517 | 1.4 | 121 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 20600 | 23400 | 49200 | 57300 | 15500 | 300 |
| **12.0** | 5449 | 1.6 | 120 | 22.0 | **—** | **307 R3** | **BN132MA4** | **M4LA4** | 22800 | 28600 | 52700 | 69100 | 19800 | 314 |
| **12.0** | 5449 | 2.4 | 120 | 22.0 | **—** | **309 R3** | **BN132MA4** | **—** | — | — | 53600 | 69100 | 15900 | 326 |
| **12.1** | 5422 | 1.2 | 119 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 20500 | 23200 | 48900 | 57000 | 15400 | 302 |
| **12.7** | 5154 | 2.0 | 113 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 22400 | 28100 | 51800 | 67900 | 19500 | 312 |
| **12.8** | 5111 | 1.4 | 112 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 20100 | 22800 | 48100 | 56000 | 15100 | 300 |
| **13.7** | 4623 | 2.9 | 105 | 15.0 | **—** | **307 R4** | **BN132MA4** | **M4LA4** | 24100 | 30300 | 55400 | 72700 | 21000 | 314 |
| **13.8** | 4756 | 1.1 | 105 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 15800 | 18200 | 28800 | 34600 | 10100 | 288 |
| **13.8** | 4741 | 1.9 | 104 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 19600 | 22200 | 47000 | 54700 | 14700 | 300 |
| **14.4** | 4564 | 2.7 | 100 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 21500 | 27000 | 50000 | 65500 | 18700 | 312 |
| **14.5** | 4504 | 1.9 | 99.0 | 22.0 | **—** | **307 R3** | **BN132MA4** | **M4LA4** | 21400 | 26900 | 49800 | 65200 | 18600 | 314 |
| **14.5** | 4504 | 2.8 | 99.0 | 22.0 | **—** | **309 R3** | **BN132MA4** | **—** | — | — | 50600 | 65200 | 14900 | 326 |
| **14.6** | 4482 | 1.4 | 98.5 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 19200 | 21800 | 46200 | 53800 | 14400 | 302 |
| **15.5** | 4232 | 2.9 | 93.0 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 21000 | 26300 | 48900 | 64000 | 18200 | 312 |
| **16.0** | 4104 | 1.0 | 90.2 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 15000 | 17300 | 27500 | 33100 | 9620 | 288 |
| **16.3** | 4016 | 2.1 | 88.3 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 18500 | 21000 | 44700 | 52100 | 13900 | 300 |
| **17.0** | 3856 | 2.0 | 84.7 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 18300 | 20700 | 44200 | 51400 | 13700 | 302 |
| **17.3** | 3795 | 2.7 | 83.4 | 22.0 | **—** | **307 R3** | **BN132MA4** | **M4LA4** | 20200 | 25400 | 47300 | 62000 | 17600 | 314 |
| **17.6** | 3724 | 1.9 | 81.9 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 18100 | 20500 | 43700 | 50900 | 13600 | 300 |
| **17.9** | 3666 | 2.8 | 80.6 | 11.0 | **307 L3** | **—** | **BN132MA4** | **M4LA4** | 20000 | 25100 | 46800 | 61300 | 17400 | 312 |
| **18.3** | 3582 | 1.2 | 78.7 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.6** | 3514 | 1.0 | 77.2 | 7.5 | **304 L3** | **—** | **BN132MA4** | **M4LA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **18.6** | 3514 | 1.4 | 77.2 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **18.7** | 3504 | 2.4 | 77.0 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 17700 | 20100 | 42900 | 50000 | 13300 | 300 |
| **19.6** | 3336 | 1.1 | 73.3 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 14000 | 16200 | 25900 | 31100 | 8980 | 278 |
| **19.8** | 3317 | 2.2 | 72.9 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 17400 | 19700 | 42200 | 49200 | 13100 | 302 |
| **19.9** | 3407 | 1.6 | 72.5 | 13.0 | **306 L2** | **—** | **BN132MA4** | **M4LA4** | 17400 | 19700 | 42100 | 49100 | 13000 | 300 |
| **19.9** | 3289 | 1.0 | 72.3 | 7.5 | **304 L3** | **—** | **BN132MA4** | **M4LA4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **19.9** | 3289 | 1.3 | 72.3 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **21.3** | 3072 | 2.3 | 67.5 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 17000 | 19200 | 41300 | 48000 | 12700 | 302 |
| **22.1** | 2968 | 2.5 | 65.2 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 16800 | 19000 | 40800 | 47500 | 12600 | 300 |
| **22.8** | 2870 | 1.0 | 63.1 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.8** | 2870 | 1.5 | 63.1 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |



## $P_1$ = 7.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | $P_t$ | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **22.8** | 2869 | 1.2 | 63.1 | 7.5 | **304 L3** | **—** | **BN132MA4** | **M4LA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **22.8** | 2869 | 1.6 | 63.1 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **24.8** | 2643 | 2.9 | 58.1 | 14.0 | **—** | **306 R3** | **BN132MA4** | **M4LA4** | 16100 | 18300 | 39400 | 45900 | 12100 | 302 |
| **25.6** | 2644 | 2.0 | 56.3 | 13.0 | **306 L2** | **—** | **BN132MA4** | **M4LA4** | 16000 | 18100 | 39100 | 45500 | 12000 | 300 |
| **25.8** | 2623 | 1.3 | 55.8 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 12800 | 14800 | 23800 | 28700 | 8200 | 288 |
| **26.6** | 2465 | 1.4 | 54.2 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 12700 | 14600 | 23600 | 28400 | 8120 | 278 |
| **27.0** | 2430 | 1.3 | 53.4 | 7.5 | **304 L3** | **—** | **BN132MA4** | **M4LA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 2430 | 1.6 | 53.4 | 7.5 | **305 L3** | **—** | **BN132MA4** | **M4LA4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 2423 | 2.9 | 53.2 | 7.5 | **306 L3** | **—** | **BN132MA4** | **M4LA4** | 15700 | 17800 | 38400 | 44700 | 11800 | 300 |
| **28.6** | 2287 | 1.0 | 50.3 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 12300 | 14200 | 23100 | 27800 | 7920 | 266 |
| **28.6** | 2287 | 1.5 | 50.3 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **28.6** | 2287 | 1.9 | 50.3 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **30** | 2224 | 1.1 | 47.3 | 9.0 | **304 L2** | **—** | **BN132MA4** | **M4LA4** | 12100 | 14000 | 22700 | 27300 | 7760 | 288 |
| **31** | 2121 | 1.0 | 46.6 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 12000 | 13900 | 22600 | 27200 | 7720 | 266 |
| **31** | 2121 | 1.3 | 46.6 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **31** | 2121 | 2.0 | 46.6 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **31** | 2185 | 3.0 | 46.5 | 13.0 | **306 L2** | **—** | **BN132MA4** | **M4LA4** | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **32** | 2098 | 1.7 | 44.6 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 11900 | 13700 | 22300 | 26800 | 7610 | 288 |
| **33** | 1984 | 1.6 | 43.6 | 7.5 | **304 L3** | **—** | **BN132MA4** | **M4LA4** | 11800 | 13600 | 22100 | 26600 | 7550 | 288 |
| **34** | 1937 | 1.1 | 42.6 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 11700 | 13500 | 22000 | 26400 | 7490 | 266 |
| **34** | 1937 | 1.6 | 42.6 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **34** | 1937 | 2.0 | 42.6 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **38** | 1805 | 1.2 | 38.4 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 11300 | 13000 | 21300 | 25600 | 7240 | 264 |
| **38** | 1805 | 1.6 | 38.4 | 9.0 | **304 L2** | **—** | **BN132MA4** | **M4LA4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **38** | 1805 | 2.4 | 38.4 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **39** | 1695 | 0.9 | 37.3 | 10.0 | **—** | **301 R3** | **BN132MA4** | **—** | 3550 | 3550 | 10100 | 11600 | 2330 | 256 |
| **39** | 1690 | 1.4 | 37.1 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 11200 | 12900 | 21100 | 25400 | 7160 | 266 |
| **39** | 1690 | 2.0 | 37.1 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **39** | 1690 | 2.6 | 37.1 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **40** | 1681 | 1.1 | 35.8 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 11000 | 12700 | 20800 | 25100 | 7070 | 264 |
| **40** | 1681 | 2.1 | 35.8 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 11000 | 12700 | 20800 | 25100 | 7070 | 288 |
| **46** | 1432 | 1.5 | 31.5 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 10600 | 12200 | 20100 | 24100 | 6770 | 266 |
| **46** | 1432 | 2.2 | 31.5 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **46** | 1432 | 2.6 | 31.5 | 14.0 | **—** | **305 R3** | **BN132MA4** | **M4LA4** | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **47** | 1446 | 1.5 | 30.8 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 10500 | 12100 | 19900 | 24000 | 6720 | 264 |
| **47** | 1446 | 2.0 | 30.8 | 9.0 | **304 L2** | **—** | **BN132MA4** | **M4LA4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 1446 | 3.0 | 30.8 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 1443 | 1.1 | 30.7 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 3410 | 3410 | 9750 | 11200 | 2240 | 254 |
| **47** | 1384 | 1.1 | 30.4 | 12.0 | **—** | **301 R3** | **BN132MA4** | **—** | 3400 | 3400 | 9730 | 11200 | 2230 | 256 |
| **54** | 1242 | 1.5 | 26.4 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 9960 | 11500 | 19000 | 22900 | 6390 | 264 |
| **54** | 1242 | 2.8 | 26.4 | 9.0 | **305 L2** | **—** | **BN132MA4** | **M4LA4** | 9960 | 11500 | 19000 | 22900 | 6390 | 288 |
| **56** | 1169 | 1.7 | 25.7 | 14.0 | **—** | **303 R3** | **BN132MA4** | **—** | 9870 | 11400 | 18900 | 22700 | 6330 | 266 |
| **56** | 1169 | 2.6 | 25.7 | 14.0 | **—** | **304 R3** | **BN132MA4** | **—** | 9870 | 11400 | 18900 | 22700 | 6330 | 278 |
| **58** | 1130 | 1.2 | 24.8 | 12.0 | **—** | **301 R3** | **BN132MA4** | **—** | 3170 | 3170 | 9150 | 10500 | 2090 | 256 |
| **59** | 1156 | 1.3 | 24.6 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 3160 | 3160 | 9130 | 10500 | 2080 | 254 |
| **59** | 1152 | 1.9 | 24.5 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 9720 | 11200 | 18600 | 22400 | 6230 | 264 |
| **59** | 1152 | 2.8 | 24.5 | 9.0 | **304 L2** | **—** | **BN132MA4** | **M4LA4** | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **63** | 1069 | 2.0 | 22.7 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **63** | 1069 | 2.6 | 22.7 | 9.0 | **304 L2** | **—** | **BN132MA4** | **M4LA4** | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **69** | 976 | 1.9 | 20.8 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 9190 | 10600 | 17700 | 21300 | 5900 | 264 |
| **72** | 944 | 1.3 | 20.1 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 2960 | 2960 | 8590 | 9870 | 1940 | 254 |
| **75** | 903 | 1.7 | 19.2 | 18.0 | **—** | **303 R2** | **BN132MA4** | **M4LA4** | 8960 | 10300 | 17300 | 20800 | 5750 | 266 |
| **79** | 854 | 1.6 | 18.2 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 2860 | 2860 | 8330 | 9580 | 1880 | 254 |
| **79** | 852 | 2.4 | 18.1 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 8780 | 10100 | 17000 | 20400 | 5630 | 264 |
| **91** | 747 | 2.4 | 15.9 | 18.0 | **—** | **303 R2** | **BN132MA4** | **M4LA4** | 8410 | 9710 | 16300 | 19700 | 5390 | 266 |
| **94** | 721 | 2.4 | 15.3 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 8310 | 9590 | 16200 | 19500 | 5330 | 264 |
| **97** | 697 | 1.0 | 14.8 | 7.5 | **300 L2** | **—** | **BN132MA4** | **M4LA4** | 2610 | 2610 | 7680 | 8820 | 1720 | 244 |
| **97** | 697 | 1.8 | 14.8 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 2670 | 2670 | 7840 | 9010 | 1760 | 254 |
| **98** | 694 | 1.4 | 14.8 | 12.0 | **—** | **301 R2** | **BN132MA4** | **M4LA4** | 2670 | 2670 | 7830 | 9000 | 1750 | 256 |
| **115** | 589 | 2.8 | 12.5 | 9.0 | **303 L2** | **—** | **BN132MA4** | **M4LA4** | 7770 | 8970 | 15200 | 18300 | 4980 | 264 |
| **119** | 569 | 1.2 | 12.1 | 7.5 | **300 L2** | **—** | **BN132MA4** | **M4LA4** | 2500 | 2500 | 7380 | 8480 | 1640 | 244 |
| **119** | 569 | 2.1 | 12.1 | 7.5 | **301 L2** | **—** | **BN132MA4** | **M4LA4** | 2500 | 2500 | 7380 | 8480 | 1640 | 254 |
| **122** | 556 | 1.1 | 11.8 | 12.0 | **—** | **300 R2** | **BN132MA4** | **M4LA4** | 2480 | 2480 | 7330 | 8420 | 1630 | 246 |
| **122** | 556 | 2.1 | 11.8 | 12.0 | **—** | **301 R2** | **BN132MA4** | **M4LA4** | 2480 | 2480 | 7330 | 8420 | 1630 | 256 |
| **149** | 469 | 1.6 | 9.67 | 11.0 | **303 L1** | **—** | **BN132MA4** | **M4LA4** | 7120 | 8220 | 14100 | 16900 | 4570 | 264 |

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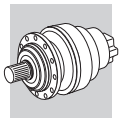

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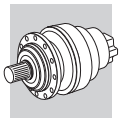
## $P_1$ = 7.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **160** | 437 | 1.4 | 9.00 | 7.5 | **301 L1** | **—** | **BN132MA4** | **M4LA4** | 2260 | 2260 | 6750 | 7750 | 1490 | 254 |
| **165** | 411 | 1.5 | 8.74 | 12.0 | **—** | **300 R2** | **BN132MA4** | **M4LA4** | 2240 | 2240 | 6690 | 7690 | 1470 | 246 |
| **165** | 411 | 2.7 | 8.74 | 12.0 | **—** | **301 R2** | **BN132MA4** | **M4LA4** | 2240 | 2240 | 6690 | 7690 | 1470 | 256 |
| **200** | 349 | 1.2 | 7.20 | 7.5 | **300 L1** | **—** | **BN132MA4** | **M4LA4** | 2100 | 2100 | 6310 | 7250 | 1380 | 244 |
| **200** | 349 | 2.1 | 7.20 | 7.5 | **301 L1** | **—** | **BN132MA4** | **M4LA4** | 2100 | 2100 | 6310 | 7250 | 1380 | 254 |
| **202** | 335 | 1.7 | 7.13 | 12.0 | **—** | **300 R2** | **BN132MA4** | **M4LA4** | 2090 | 2090 | 6300 | 7230 | 1380 | 246 |
| **250** | 280 | 1.7 | 5.77 | 7.5 | **300 L1** | **—** | **BN132MA4** | **M4LA4** | 1950 | 1950 | 5910 | 6790 | 1280 | 244 |
| **338** | 207 | 2.4 | 4.26 | 7.5 | **300 L1** | **—** | **BN132MA4** | **M4LA4** | 1760 | 1760 | 5390 | 6200 | 1160 | 244 |
| **414** | 169 | 2.8 | 3.48 | 7.5 | **300 L1** | **—** | **BN132MA4** | **M4LA4** | 1610 | 1610 | 4970 | 5710 | 1060 | 244 |

## $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.76** | 101595 | 1.5 | 1893 | 18.0 | **317 L4** | **—** | **BN132MB4** | **—** | — | — | 442000 | 470000 | 150000 | 406 |
| **0.90** | 85603 | 2.0 | 1595 | 18.0 | **317 L4** | **—** | **BN132MB4** | **—** | — | — | 442000 | 470000 | 150000 | 406 |
| **0.96** | 80109 | 1.0 | 1492 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 206000 | 243000 | 90000 | 384 |
| **1.1** | 70765 | 2.4 | 1318 | 18.0 | **317 L4** | **—** | **BN132MB4** | **—** | — | — | 434300 | 462400 | 147000 | 406 |
| **1.1** | 68911 | 1.4 | 1284 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 201500 | 236600 | 87400 | 384 |
| **1.1** | 68570 | 1.1 | 1277 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 201200 | 236300 | 87300 | 372 |
| **1.2** | 66427 | 1.8 | 1237 | 18.0 | **316 L4** | **—** | **BN132MB4** | **—** | — | — | 331400 | 368600 | 144000 | 396 |
| **1.3** | 60873 | 2.8 | 1134 | 18.0 | **317 L4** | **—** | **BN132MB4** | **—** | — | — | 415100 | 442000 | 139800 | 406 |
| **1.3** | 59278 | 1.6 | 1104 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 192600 | 226200 | 83200 | 384 |
| **1.3** | 58985 | 1.3 | 1099 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 192400 | 225800 | 83000 | 372 |
| **1.4** | 55971 | 1.8 | 1043 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 189400 | 222300 | 81600 | 384 |
| **1.4** | 55971 | 2.4 | 1043 | 18.0 | **316 L4** | **—** | **BN132MB4** | **—** | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 55695 | 1.5 | 1038 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 189100 | 222000 | 81400 | 372 |
| **1.4** | 54435 | 1.0 | 1014 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 175900 | 208200 | 71800 | 360 |
| **1.5** | 51174 | 2.8 | 953 | 50.0 | **—** | **317 R4** | **BN132MB4** | **—** | — | — | 394100 | 419600 | 132000 | 406 |
| **1.5** | 49916 | 1.9 | 930 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 183000 | 214800 | 78500 | 384 |
| **1.6** | 49701 | 1.5 | 926 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 182700 | 214500 | 78400 | 372 |
| **1.6** | 48812 | 1.6 | 909 | 40.0 | **—** | **315 R4** | **BN132MB4** | **—** | — | — | 181700 | 213400 | 77900 | 386 |
| **1.6** | 48512 | 1.0 | 904 | 11.0 | **311 L4** | **—** | **BN132MB4** | **—** | — | — | 137500 | 171300 | 56200 | 348 |
| **1.6** | 47739 | 1.1 | 889 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 169100 | 200100 | 68800 | 360 |
| **1.7** | 46269 | 2.2 | 862 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 46269 | 2.8 | 862 | 18.0 | **316 L4** | **—** | **BN132MB4** | **—** | — | — | 297400 | 330700 | 127600 | 396 |
| **1.7** | 46041 | 1.8 | 858 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 178600 | 209700 | 76400 | 372 |
| **1.7** | 44271 | 1.0 | 825 | 11.0 | **311 L4** | **—** | **BN132MB4** | **—** | — | — | 133800 | 166600 | 54500 | 348 |
| **1.8** | 43614 | 3.0 | 812 | 18.0 | **316 L4** | **—** | **BN132MB4** | **—** | — | — | 292100 | 324900 | 125100 | 396 |
| **1.8** | 42401 | 1.2 | 790 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 163200 | 193100 | 66100 | 360 |
| **1.8** | 41989 | 2.2 | 782 | 40.0 | **—** | **315 R4** | **BN132MB4** | **—** | — | — | 173700 | 203900 | 74100 | 386 |
| **1.9** | 41782 | 1.1 | 778 | 22.0 | **—** | **313 R4** | **BN132MB4** | **—** | — | — | 162500 | 192300 | 65800 | 362 |
| **1.9** | 39777 | 2.5 | 741 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 170900 | 200700 | 72800 | 384 |
| **2.0** | 39605 | 2.0 | 738 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 170700 | 200400 | 72700 | 372 |
| **2.0** | 38872 | 1.2 | 724 | 11.0 | **311 L4** | **—** | **BN132MB4** | **—** | — | — | 128700 | 160300 | 52200 | 348 |
| **2.1** | 37314 | 1.4 | 695 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 157000 | 185900 | 63300 | 360 |
| **2.1** | 36054 | 2.8 | 672 | 18.0 | **315 L4** | **—** | **BN132MB4** | **—** | — | — | 165900 | 194800 | 70500 | 384 |
| **2.2** | 35876 | 2.2 | 668 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 35379 | 2.5 | 659 | 40.0 | **—** | **315 R4** | **BN132MB4** | **—** | — | — | 165000 | 193700 | 70000 | 386 |
| **2.2** | 34711 | 1.5 | 647 | 22.0 | **—** | **313 R4** | **BN132MB4** | **—** | — | — | 153700 | 181900 | 61800 | 362 |
| **2.3** | 33975 | 1.5 | 633 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 152700 | 180700 | 61400 | 360 |
| **2.3** | 33747 | 1.2 | 629 | 22.0 | **—** | **311 R4** | **BN132MB4** | **—** | — | — | 123300 | 153600 | 49800 | 374 |
| **2.3** | 33640 | 1.2 | 627 | 11.0 | **311 L4** | **—** | **BN132MB4** | **—** | — | — | 123200 | 153500 | 49700 | 348 |
| **2.3** | 33460 | 3.0 | 623 | 40.0 | **—** | **315 R4** | **BN132MB4** | **—** | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 32946 | 1.7 | 614 | 22.0 | **—** | **314 R4** | **BN132MB4** | **—** | — | — | 161500 | 189600 | 68400 | 374 |
| **2.4** | 31560 | 2.5 | 588 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 159500 | 187200 | 67400 | 372 |
| **2.5** | 30473 | 1.4 | 568 | 11.0 | **311 L4** | **—** | **BN132MB4** | **—** | — | — | 119600 | 149000 | 48100 | 348 |
| **2.6** | 30263 | 1.8 | 564 | 11.0 | **313 L4** | **—** | **BN132MB4** | **—** | — | — | 147500 | 174500 | 59100 | 360 |
| **2.6** | 29841 | 1.1 | 556 | 11.0 | **310 L4** | **—** | **BN132MB4** | **—** | — | — | 100600 | 126500 | 47800 | 336 |
| **2.6** | 29749 | 2.7 | 554 | 15.0 | **314 L4** | **—** | **BN132MB4** | **—** | — | — | 156600 | 183900 | 66100 | 372 |
| **2.7** | 28695 | 1.7 | 535 | 22.0 | **—** | **313 R4** | **BN132MB4** | **—** | — | — | 145100 | 171800 | 58000 | 362 |
| **2.7** | 28341 | 2.4 | 528 | 22.0 | **—** | **314 R4** | **BN132MB4** | **—** | — | — | 154400 | 181300 | 65000 | 374 |



## $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.8** | 27898 | 1.4 | 520 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 116500 | 145100 | 46700 | 374 |
| **2.8** | 27760 | 0.9 | 517 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 98400 | 123800 | 46600 | 338 |
| **2.8** | 27573 | 1.8 | 514 | 11.0 | **313 L4** | — | **BN132MB4** | — | — | — | 143400 | 169700 | 57300 | 360 |
| **2.8** | 27490 | 1.6 | 512 | 11.0 | **311 L4** | — | **BN132MB4** | — | — | — | 116000 | 144500 | 46500 | 348 |
| **2.8** | 27233 | 0.9 | 507 | 11.0 | **310 L4** | — | **BN132MB4** | — | — | — | 97900 | 123000 | 46300 | 336 |
| **2.9** | 26630 | 2.0 | 496 | 22.0 | — | **313 R4** | **BN132MB4** | — | — | — | 141900 | 168000 | 56600 | 362 |
| **2.9** | 26547 | 3.0 | 495 | 15.0 | **314 L4** | — | **BN132MB4** | — | — | — | 151400 | 177700 | 63600 | 372 |
| **2.9** | 26297 | 1.3 | 490 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 114400 | 142500 | 45800 | 374 |
| **3.2** | 24249 | 2.2 | 452 | 11.0 | **313 L4** | — | **BN132MB4** | — | — | — | 138000 | 163300 | 54900 | 360 |
| **3.2** | 24191 | 1.2 | 451 | 11.0 | **310 L4** | — | **BN132MB4** | — | — | — | 94400 | 118700 | 44500 | 336 |
| **3.2** | 24178 | 2.0 | 450 | 22.0 | — | **313 R4** | **BN132MB4** | — | — | — | 137900 | 163200 | 54800 | 362 |
| **3.2** | 23880 | 2.8 | 445 | 22.0 | — | **314 R4** | **BN132MB4** | — | — | — | 146700 | 172200 | 61400 | 374 |
| **3.3** | 23506 | 1.6 | 438 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 110600 | 137800 | 44100 | 374 |
| **3.4** | 22509 | 1.3 | 419 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 92400 | 116200 | 43500 | 338 |
| **3.5** | 22157 | 1.8 | 413 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 108700 | 135400 | 43300 | 374 |
| **3.5** | 22027 | 1.9 | 410 | 11.0 | **311 L4** | — | **BN132MB4** | — | — | — | 108500 | 135200 | 43200 | 348 |
| **3.7** | 21154 | 2.6 | 394 | 11.0 | **313 L4** | — | **BN132MB4** | — | — | — | 132500 | 156800 | 52400 | 360 |
| **3.7** | 21024 | 0.9 | 392 | 11.0 | **310 L4** | — | **BN132MB4** | — | — | — | 90500 | 113900 | 42500 | 336 |
| **3.7** | 20798 | 2.2 | 387 | 22.0 | — | **313 R4** | **BN132MB4** | — | — | — | 131800 | 156000 | 52100 | 362 |
| **4.0** | 19498 | 1.2 | 363 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 88500 | 111300 | 41500 | 338 |
| **4.1** | 18895 | 2.8 | 352 | 11.0 | **313 L4** | — | **BN132MB4** | — | — | — | 128000 | 151500 | 50500 | 360 |
| **4.1** | 19455 | 1.0 | 350 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 87600 | 110100 | 41000 | 336 |
| **4.1** | 18738 | 1.1 | 349 | 7.5 | **309 L4** | — | **BN132MB4** | — | — | — | 73800 | 95200 | 22700 | 324 |
| **4.1** | 18658 | 2.1 | 348 | 11.0 | **311 L4** | — | **BN132MB4** | — | — | — | 103200 | 128600 | 40900 | 348 |
| **4.2** | 18549 | 2.9 | 346 | 22.0 | — | **313 R4** | **BN132MB4** | — | — | — | 127300 | 150700 | 50200 | 362 |
| **4.2** | 18317 | 2.1 | 341 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 102700 | 127900 | 40600 | 374 |
| **4.3** | 17937 | 1.5 | 334 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 86300 | 108600 | 40300 | 338 |
| **4.3** | 17776 | 1.0 | 331 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 72700 | 93700 | 22300 | 326 |
| **4.5** | 17265 | 2.3 | 322 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 100900 | 125600 | 39800 | 374 |
| **4.7** | 16574 | 2.7 | 309 | 22.0 | — | **313 R4** | **BN132MB4** | — | — | — | 123100 | 145700 | 48300 | 362 |
| **4.7** | 16369 | 1.4 | 305 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 84000 | 105600 | 39100 | 338 |
| **4.7** | 16861 | 2.3 | 304 | 18.0 | **313 L3** | — | **BN132MB4** | — | — | — | 122500 | 145000 | 48100 | 360 |
| **4.9** | 16393 | 1.4 | 295 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 83200 | 104600 | 38700 | 336 |
| **4.9** | 15756 | 2.4 | 294 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 98100 | 122200 | 38600 | 374 |
| **4.9** | 16163 | 1.7 | 291 | 18.0 | **311 L3** | — | **BN132MB4** | — | — | — | 97900 | 121900 | 38500 | 348 |
| **5.1** | 15270 | 1.1 | 284 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 69400 | 89500 | 21200 | 326 |
| **5.1** | 15737 | 1.0 | 284 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 69400 | 89400 | 21100 | 324 |
| **5.1** | 15194 | 1.7 | 283 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 82100 | 103300 | 38100 | 338 |
| **5.4** | 14273 | 2.6 | 266 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 95300 | 118700 | 37400 | 374 |
| **5.6** | 13866 | 1.6 | 258 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 79900 | 100500 | 37000 | 338 |
| **5.6** | 13852 | 1.1 | 258 | 15.0 | — | **307 R4** | **BN132MB4** | **M4LB4** | 29500 | 37000 | 66400 | 87000 | 25600 | 314 |
| **5.6** | 13852 | 1.3 | 258 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 67400 | 87000 | 20500 | 326 |
| **5.8** | 13835 | 1.3 | 249 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 79100 | 99400 | 36600 | 336 |
| **5.9** | 13619 | 2.5 | 245 | 18.0 | **311 L3** | — | **BN132MB4** | — | — | — | 93000 | 115800 | 36400 | 348 |
| **6.0** | 13281 | 1.0 | 239 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 65900 | 85000 | 20000 | 324 |
| **6.2** | 12560 | 2.0 | 234 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 77600 | 97600 | 35800 | 338 |
| **6.2** | 12465 | 1.3 | 232 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 65300 | 84200 | 19800 | 326 |
| **6.3** | 12774 | 1.7 | 230 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 77200 | 97100 | 35600 | 336 |
| **6.3** | 12278 | 2.9 | 229 | 22.0 | — | **311 R4** | **BN132MB4** | — | — | — | 91100 | 113400 | 35500 | 374 |
| **6.5** | 12372 | 1.1 | 223 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 64500 | 83200 | 19500 | 324 |
| **6.5** | 12263 | 1.0 | 221 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 28000 | 35100 | 63300 | 83000 | 24300 | 312 |
| **7.0** | 11049 | 2.0 | 206 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 74700 | 93900 | 34300 | 338 |
| **7.0** | 11038 | 1.3 | 206 | 15.0 | — | **307 R4** | **BN132MB4** | **M4LB4** | 27300 | 34300 | 62000 | 81200 | 23700 | 314 |
| **7.0** | 11038 | 1.8 | 206 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 63000 | 81200 | 19000 | 326 |
| **7.1** | 11258 | 3.0 | 203 | 18.0 | **311 L3** | — | **BN132MB4** | — | — | — | 87800 | 109400 | 34100 | 348 |
| **7.1** | 11202 | 2.0 | 202 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 74200 | 93300 | 34100 | 336 |
| **7.1** | 11191 | 1.0 | 202 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 27100 | 34000 | 61600 | 80700 | 23600 | 312 |
| **7.1** | 11191 | 1.5 | 202 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 62600 | 80700 | 18900 | 324 |
| **7.6** | 10236 | 1.4 | 191 | 15.0 | — | **307 R4** | **BN132MB4** | **M4LB4** | 26600 | 33400 | 60600 | 79400 | 23200 | 314 |
| **7.6** | 10236 | 1.7 | 191 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 61600 | 79400 | 18500 | 326 |
| **7.6** | 10164 | 2.3 | 189 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 72800 | 91500 | 33400 | 338 |
| **7.9** | 10137 | 1.4 | 183 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 60800 | 78400 | 18300 | 324 |
| **8.0** | 9713 | 1.0 | 181 | 12.0 | — | **306 R4** | **BN132MB4** | **M4LB4** | 23000 | 26100 | 54300 | 63200 | 17300 | 302 |
| **8.1** | 9838 | 1.9 | 177 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 71400 | 89800 | 32600 | 336 |
| **8.1** | 9826 | 1.3 | 177 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 26000 | 32600 | 59300 | 77700 | 22600 | 312 |

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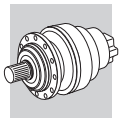
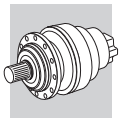


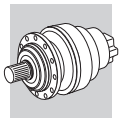
## $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8.7** | 8867 | 1.8 | 165 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 59000 | 76100 | 17700 | 326 |
| **8.8** | 9083 | 2.4 | 164 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 69700 | 87600 | 31800 | 336 |
| **8.9** | 8967 | 1.2 | 162 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 25200 | 31600 | 57700 | 75600 | 21900 | 312 |
| **8.9** | 8967 | 1.8 | 162 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 58600 | 75600 | 17500 | 324 |
| **9.0** | 8610 | 2.6 | 160 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 69300 | 87100 | 31600 | 338 |
| **9.1** | 8474 | 1.1 | 158 | 12.0 | — | **306 R4** | **BN132MB4** | **M4LB4** | 22500 | 25500 | 53200 | 62000 | 16900 | 302 |
| **9.5** | 8157 | 2.3 | 152 | 15.0 | — | **309 R4** | **BN132MB4** | — | — | — | 57500 | 74200 | 17200 | 326 |
| **9.8** | 8123 | 1.6 | 146 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 24400 | 30600 | 56000 | 73300 | 21200 | 312 |
| **10.2** | 7869 | 2.6 | 142 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 66700 | 83900 | 30300 | 336 |
| **10.2** | 7825 | 1.0 | 141 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 21700 | 24600 | 51500 | 59900 | 16300 | 300 |
| **10.4** | 7703 | 1.4 | 139 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 24000 | 30100 | 55100 | 72200 | 20800 | 312 |
| **10.4** | 7703 | 2.1 | 139 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 56000 | 72200 | 16700 | 324 |
| **10.6** | 7293 | 2.9 | 136 | 15.0 | — | **310 R4** | **BN132MB4** | — | — | — | 65900 | 82900 | 29900 | 338 |
| **11.0** | 7238 | 2.9 | 130 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 65100 | 81900 | 29500 | 336 |
| **11.4** | 6987 | 1.9 | 126 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 23200 | 29100 | 53500 | 70100 | 20200 | 312 |
| **11.4** | 6987 | 2.3 | 126 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 54400 | 70100 | 16100 | 324 |
| **11.6** | 6658 | 1.6 | 124 | 15.0 | — | **307 R4** | **BN132MB4** | **M4LB4** | 24800 | 31100 | 56900 | 74500 | 21600 | 314 |
| **11.9** | 6731 | 1.2 | 121 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 20600 | 23400 | 49200 | 57300 | 15500 | 300 |
| **12.0** | 6647 | 1.3 | 120 | 22.0 | — | **307 R3** | **BN132MB4** | **M4LB4** | 22800 | 28600 | 52700 | 69100 | 19800 | 314 |
| **12.0** | 6647 | 1.9 | 120 | 22.0 | — | **309 R3** | **BN132MB4** | — | — | — | 53600 | 69100 | 15900 | 326 |
| **12.0** | 6647 | 2.6 | 120 | 22.0 | — | **310 R3** | **BN132MB4** | — | — | — | 63500 | 79800 | 28600 | 338 |
| **12.1** | 6615 | 1.0 | 119 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 20500 | 23200 | 48900 | 57000 | 15400 | 302 |
| **12.1** | 6606 | 3.0 | 119 | 18.0 | **310 L3** | — | **BN132MB4** | — | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 6288 | 1.7 | 113 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 22400 | 28100 | 51800 | 67900 | 19500 | 312 |
| **12.7** | 6288 | 2.5 | 113 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 52700 | 67900 | 15600 | 324 |
| **12.8** | 6236 | 1.2 | 112 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 20100 | 22800 | 48100 | 56000 | 15100 | 300 |
| **13.7** | 5640 | 2.4 | 105 | 15.0 | — | **307 R4** | **BN132MB4** | **M4LB4** | 24100 | 30300 | 55400 | 72700 | 21000 | 314 |
| **13.8** | 5785 | 1.5 | 104 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 19600 | 22200 | 47000 | 54700 | 14700 | 300 |
| **14.4** | 5568 | 2.2 | 100 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 21500 | 27000 | 50000 | 65500 | 18700 | 312 |
| **14.4** | 5568 | 3.0 | 100 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 50800 | 65500 | 15000 | 324 |
| **14.5** | 5495 | 1.6 | 99.0 | 22.0 | — | **307 R3** | **BN132MB4** | **M4LB4** | 21400 | 26900 | 49800 | 65200 | 18600 | 314 |
| **14.5** | 5495 | 2.3 | 99.0 | 22.0 | — | **309 R3** | **BN132MB4** | — | — | — | 50600 | 65200 | 14900 | 326 |
| **14.5** | 5495 | 3.0 | 99.0 | 22.0 | — | **310 R3** | **BN132MB4** | — | — | — | 59900 | 75400 | 26900 | 338 |
| **14.6** | 5468 | 1.2 | 98.5 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 19200 | 21800 | 46200 | 53800 | 14400 | 302 |
| **15.5** | 5163 | 2.4 | 93.0 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 21000 | 26300 | 48900 | 64000 | 18200 | 312 |
| **15.5** | 5163 | 2.9 | 93.0 | 11.0 | **309 L3** | — | **BN132MB4** | — | — | — | 49600 | 64000 | 14600 | 324 |
| **16.3** | 4900 | 1.7 | 88.3 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 18500 | 21000 | 44700 | 52100 | 13900 | 300 |
| **17.0** | 4704 | 1.6 | 84.7 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 18300 | 20700 | 44200 | 51400 | 13700 | 302 |
| **17.3** | 4630 | 2.2 | 83.4 | 22.0 | — | **307 R3** | **BN132MB4** | **M4LB4** | 20200 | 25400 | 47300 | 62000 | 17600 | 314 |
| **17.6** | 4544 | 1.5 | 81.9 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 18100 | 20500 | 43700 | 50900 | 13600 | 300 |
| **17.9** | 4473 | 2.3 | 80.6 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 20000 | 25100 | 46800 | 61300 | 17400 | 312 |
| **18.3** | 4370 | 1.0 | 78.7 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 14300 | 16500 | 26400 | 31800 | 9190 | 278 |
| **18.3** | 4364 | 2.5 | 78.6 | 22.0 | — | **307 R3** | **BN132MB4** | **M4LB4** | 19800 | 24900 | 46500 | 60900 | 17200 | 314 |
| **18.6** | 4288 | 1.1 | 77.2 | 7.5 | **305 L3** | — | **BN132MB4** | **M4LB4** | 14200 | 16400 | 26300 | 31600 | 9140 | 288 |
| **18.7** | 4274 | 2.0 | 77.0 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 17700 | 20100 | 42900 | 50000 | 13300 | 300 |
| **19.4** | 4114 | 2.8 | 74.1 | 11.0 | **307 L3** | — | **BN132MB4** | **M4LB4** | 19400 | 24400 | 45600 | 59800 | 16900 | 312 |
| **19.8** | 4046 | 1.8 | 72.9 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 17400 | 19700 | 42200 | 49200 | 13100 | 302 |
| **19.9** | 4157 | 1.3 | 72.5 | 13.0 | **306 L2** | — | **BN132MB4** | **M4LB4** | 17400 | 19700 | 42100 | 49100 | 13000 | 300 |
| **19.9** | 4012 | 1.0 | 72.3 | 7.5 | **305 L3** | — | **BN132MB4** | **M4LB4** | 13900 | 16100 | 25700 | 31000 | 8940 | 288 |
| **20.1** | 3983 | 2.5 | 71.8 | 22.0 | — | **307 R3** | **BN132MB4** | **M4LB4** | 19200 | 24100 | 45200 | 59200 | 16700 | 314 |
| **21.3** | 3748 | 1.9 | 67.5 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 17000 | 19200 | 41300 | 48000 | 12700 | 302 |
| **22.1** | 3621 | 2.1 | 65.2 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 16800 | 19000 | 40800 | 47500 | 12600 | 300 |
| **22.8** | 3501 | 1.2 | 63.1 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.8** | 3500 | 1.0 | 63.1 | 7.5 | **304 L3** | — | **BN132MB4** | **M4LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **22.8** | 3500 | 1.3 | 63.1 | 7.5 | **305 L3** | — | **BN132MB4** | **M4LB4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **24.8** | 3224 | 2.4 | 58.1 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 16100 | 18300 | 39400 | 45900 | 12100 | 302 |
| **25.6** | 3225 | 1.6 | 56.3 | 13.0 | **306 L2** | — | **BN132MB4** | **M4LB4** | 16000 | 18100 | 39100 | 45500 | 12000 | 300 |
| **25.8** | 3200 | 1.1 | 55.8 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 12800 | 14800 | 23800 | 28700 | 8200 | 288 |
| **26.6** | 3008 | 1.2 | 54.2 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 12700 | 14600 | 23600 | 28400 | 8120 | 278 |
| **27.0** | 2965 | 1.1 | 53.4 | 7.5 | **304 L3** | — | **BN132MB4** | **M4LB4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 2965 | 1.3 | 53.4 | 7.5 | **305 L3** | — | **BN132MB4** | **M4LB4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 2956 | 2.4 | 53.2 | 7.5 | **306 L3** | — | **BN132MB4** | **M4LB4** | 15700 | 17800 | 38400 | 44700 | 11800 | 300 |
| **28.6** | 2790 | 1.2 | 50.3 | 14.0 | — | **304 R3** | **BN132MB4** | — | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **28.6** | 2790 | 1.6 | 50.3 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **31** | 2587 | 1.1 | 46.6 | 14.0 | — | **304 R3** | **BN132MB4** | — | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |



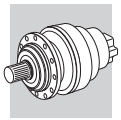
# $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **31** | 2587 | 1.7 | 46.6 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **31** | 2666 | 2.4 | 46.5 | 13.0 | **306 L2** | — | **BN132MB4** | **M4LB4** | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **31** | 2569 | 2.9 | 46.3 | 14.0 | — | **306 R3** | **BN132MB4** | **M4LB4** | 15000 | 16900 | 36800 | 42900 | 11200 | 302 |
| **32** | 2560 | 1.4 | 44.6 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 11900 | 13700 | 22300 | 26800 | 7610 | 288 |
| **33** | 2420 | 1.3 | 43.6 | 7.5 | **304 L3** | — | **BN132MB4** | **M4LB4** | 11800 | 13600 | 22100 | 26600 | 7550 | 288 |
| **34** | 2363 | 1.3 | 42.6 | 14.0 | — | **304 R3** | **BN132MB4** | — | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **34** | 2363 | 1.6 | 42.6 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **37** | 2204 | 2.9 | 38.4 | 13.0 | **306 L2** | — | **BN132MB4** | **M4LB4** | 14100 | 15900 | 34800 | 40600 | 10600 | 300 |
| **38** | 2202 | 1.0 | 38.4 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 11300 | 13000 | 21300 | 25600 | 7240 | 264 |
| **38** | 2202 | 1.3 | 38.4 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **38** | 2202 | 2.0 | 38.4 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **39** | 2062 | 1.2 | 37.1 | 14.0 | — | **303 R3** | **BN132MB4** | — | 11200 | 12900 | 21100 | 25400 | 7160 | 266 |
| **39** | 2062 | 1.7 | 37.1 | 14.0 | — | **304 R3** | **BN132MB4** | — | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **39** | 2062 | 2.1 | 37.1 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **40** | 2051 | 1.7 | 35.8 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 11000 | 12700 | 20800 | 25100 | 7070 | 288 |
| **46** | 1746 | 1.2 | 31.5 | 14.0 | — | **303 R3** | **BN132MB4** | — | 10600 | 12200 | 20100 | 24100 | 6770 | 266 |
| **46** | 1746 | 1.8 | 31.5 | 14.0 | — | **304 R3** | **BN132MB4** | — | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **46** | 1746 | 2.2 | 31.5 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **47** | 1764 | 1.2 | 30.8 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 10500 | 12100 | 19900 | 24000 | 6720 | 264 |
| **47** | 1764 | 1.6 | 30.8 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 1764 | 2.4 | 30.8 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 1688 | 0.9 | 30.4 | 10.0 | — | **301 R3** | **BN132MB4** | — | 3320 | 3320 | 9530 | 10900 | 2180 | 256 |
| **54** | 1516 | 1.2 | 26.4 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 9960 | 11500 | 19000 | 22900 | 6390 | 264 |
| **54** | 1516 | 2.3 | 26.4 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 9960 | 11500 | 19000 | 22900 | 6390 | 288 |
| **56** | 1426 | 1.4 | 25.7 | 14.0 | — | **303 R3** | **BN132MB4** | — | 9870 | 11400 | 18900 | 22700 | 6330 | 266 |
| **56** | 1426 | 2.1 | 25.7 | 14.0 | — | **304 R3** | **BN132MB4** | — | 9870 | 11400 | 18900 | 22700 | 6330 | 278 |
| **56** | 1426 | 2.5 | 25.7 | 14.0 | — | **305 R3** | **BN132MB4** | **M4LB4** | 9870 | 11400 | 18900 | 22700 | 6330 | 278 |
| **58** | 1378 | 1.0 | 24.8 | 12.0 | — | **301 R3** | **BN132MB4** | — | 3170 | 3170 | 9150 | 10500 | 2090 | 256 |
| **59** | 1410 | 1.1 | 24.6 | 7.5 | **301 L2** | — | **BN132MB4** | **M4LB4** | 3160 | 3160 | 9130 | 10500 | 2080 | 254 |
| **59** | 1406 | 1.5 | 24.5 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 9720 | 11200 | 18600 | 22400 | 6230 | 264 |
| **59** | 1406 | 2.3 | 24.5 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **59** | 1406 | 2.7 | 24.5 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **63** | 1304 | 1.6 | 22.7 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **63** | 1304 | 2.1 | 22.7 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **69** | 1191 | 1.5 | 20.8 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **69** | 1191 | 2.5 | 20.8 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **69** | 1191 | 2.7 | 20.8 | 9.0 | **305 L2** | — | **BN132MB4** | **M4LB4** | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **72** | 1151 | 1.1 | 20.1 | 7.5 | **301 L2** | — | **BN132MB4** | **M4LB4** | 2960 | 2960 | 8590 | 9870 | 1940 | 254 |
| **75** | 1102 | 1.4 | 19.2 | 18.0 | — | **303 R2** | **BN132MB4** | **M4LB4** | 8960 | 10300 | 17300 | 20800 | 5750 | 266 |
| **75** | 1102 | 2.6 | 19.2 | 18.0 | — | **305 R2** | **BN132MB4** | **M4LB4** | 8960 | 10300 | 17300 | 20800 | 5750 | 278 |
| **79** | 1042 | 1.3 | 18.2 | 7.5 | **301 L2** | — | **BN132MB4** | **M4LB4** | 2860 | 2860 | 8330 | 9580 | 1880 | 254 |
| **79** | 1039 | 1.9 | 18.1 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 8780 | 10100 | 17000 | 20400 | 5630 | 264 |
| **79** | 1039 | 2.8 | 18.1 | 9.0 | **304 L2** | — | **BN132MB4** | **M4LB4** | 8780 | 10100 | 17000 | 20400 | 5630 | 288 |
| **86** | 966 | 2.5 | 16.8 | 18.0 | — | **304 R2** | **BN132MB4** | **M4LB4** | 8570 | 9900 | 16600 | 20000 | 5500 | 278 |
| **91** | 911 | 2.0 | 15.9 | 18.0 | — | **303 R2** | **BN132MB4** | **M4LB4** | 8410 | 9710 | 16300 | 19700 | 5390 | 266 |
| **94** | 880 | 1.9 | 15.3 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 8310 | 9590 | 16200 | 19500 | 5330 | 264 |
| **97** | 851 | 1.5 | 14.8 | 7.5 | **301 L2** | — | **BN132MB4** | **M4LB4** | 2670 | 2670 | 7840 | 9010 | 1760 | 254 |
| **98** | 846 | 1.1 | 14.8 | 12.0 | — | **301 R2** | **BN132MB4** | **M4LB4** | 2670 | 2670 | 7830 | 9000 | 1750 | 256 |
| **105** | 784 | 2.5 | 13.7 | 18.0 | — | **303 R2** | **BN132MB4** | **M4LB4** | 8000 | 9230 | 15600 | 18800 | 5130 | 266 |
| **115** | 718 | 2.3 | 12.5 | 9.0 | **303 L2** | — | **BN132MB4** | **M4LB4** | 7770 | 8970 | 15200 | 18300 | 4980 | 264 |
| **119** | 694 | 1.0 | 12.1 | 7.5 | **300 L2** | — | **BN132MB4** | **M4LB4** | 2440 | 2440 | 7230 | 8300 | 1600 | 244 |
| **119** | 694 | 1.8 | 12.1 | 7.5 | **301 L2** | — | **BN132MB4** | **M4LB4** | 2500 | 2500 | 7380 | 8480 | 1640 | 254 |
| **122** | 678 | 1.7 | 11.8 | 12.0 | — | **301 R2** | **BN132MB4** | **M4LB4** | 2480 | 2480 | 7330 | 8420 | 1630 | 256 |
| **149** | 572 | 1.3 | 9.67 | 11.0 | **303 L1** | — | **BN132MB4** | **M4LB4** | 7120 | 8220 | 14100 | 16900 | 4570 | 264 |
| **160** | 533 | 1.2 | 9.00 | 7.5 | **301 L1** | — | **BN132MB4** | **M4LB4** | 2260 | 2260 | 6750 | 7750 | 1490 | 254 |
| **165** | 501 | 1.2 | 8.74 | 12.0 | — | **300 R2** | **BN132MB4** | **M4LB4** | 2240 | 2240 | 6690 | 7690 | 1470 | 246 |
| **165** | 501 | 2.2 | 8.74 | 12.0 | — | **301 R2** | **BN132MB4** | **M4LB4** | 2240 | 2240 | 6690 | 7690 | 1470 | 256 |
| **192** | 444 | 2.7 | 7.50 | 11.0 | **303 L1** | — | **BN132MB4** | **M4LB4** | 6550 | 7560 | 13000 | 15700 | 4200 | 264 |
| **200** | 426 | 1.0 | 7.20 | 7.5 | **300 L1** | — | **BN132MB4** | **M4LB4** | 2100 | 2100 | 6310 | 7250 | 1380 | 244 |
| **200** | 426 | 1.8 | 7.20 | 7.5 | **301 L1** | — | **BN132MB4** | **M4LB4** | 2100 | 2100 | 6310 | 7250 | 1380 | 254 |
| **202** | 409 | 1.4 | 7.13 | 12.0 | — | **300 R2** | **BN132MB4** | **M4LB4** | 2090 | 2090 | 6300 | 7230 | 1380 | 246 |
| **202** | 409 | 2.5 | 7.13 | 12.0 | — | **301 R2** | **BN132MB4** | **M4LB4** | 2090 | 2090 | 6300 | 7230 | 1380 | 256 |
| **250** | 341 | 1.4 | 5.77 | 7.5 | **300 L1** | — | **BN132MB4** | **M4LB4** | 1950 | 1950 | 5910 | 6790 | 1280 | 244 |
| **250** | 341 | 2.7 | 5.77 | 7.5 | **301 L1** | — | **BN132MB4** | **M4LB4** | 1950 | 1950 | 5910 | 6790 | 1280 | 254 |
| **338** | 252 | 1.9 | 4.26 | 7.5 | **300 L1** | — | **BN132MB4** | **M4LB4** | 1760 | 1760 | 5390 | 6200 | 1160 | 244 |
| **414** | 206 | 2.3 | 3.48 | 7.5 | **300 L1** | — | **BN132MB4** | **M4LB4** | 1610 | 1610 | 4970 | 5710 | 1060 | 244 |



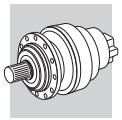
## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.76** | 121580 | 1.3 | 1893 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **0.90** | 102443 | 1.7 | 1595 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **1.1** | 84686 | 2.0 | 1318 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 434300 | 462400 | 147000 | 406 |
| **1.1** | 82467 | 1.2 | 1284 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 201500 | 236600 | 87400 | 384 |
| **1.1** | 82060 | 0.9 | 1277 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 201200 | 236300 | 87300 | 372 |
| **1.2** | 79495 | 1.5 | 1237 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 331400 | 368600 | 144000 | 396 |
| **1.3** | 72848 | 2.3 | 1134 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 415100 | 442000 | 139800 | 406 |
| **1.3** | 70939 | 1.3 | 1104 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 192600 | 226200 | 83200 | 384 |
| **1.3** | 70589 | 1.1 | 1099 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 192400 | 225800 | 83000 | 372 |
| **1.4** | 66982 | 1.5 | 1043 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 189400 | 222300 | 81600 | 384 |
| **1.4** | 66982 | 2.0 | 1043 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 66651 | 1.2 | 1038 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 189100 | 222000 | 81400 | 372 |
| **1.4** | 66317 | 2.7 | 1032 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 403600 | 429700 | 135500 | 406 |
| **1.5** | 61240 | 2.4 | 953 | 50.0 | — | **317 R4** | **BN160MR4** | — | — | — | 394100 | 419600 | 132000 | 406 |
| **1.5** | 59735 | 1.6 | 930 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 183000 | 214800 | 78500 | 384 |
| **1.6** | 59478 | 1.2 | 926 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 182700 | 214500 | 78400 | 372 |
| **1.6** | 58414 | 1.3 | 909 | 40.0 | — | **315 R4** | **BN160MR4** | — | — | — | 181700 | 213400 | 77900 | 386 |
| **1.6** | 58051 | 2.9 | 904 | 18.0 | **317 L4** | — | **BN160MR4** | — | — | — | 387800 | 412900 | 129600 | 406 |
| **1.6** | 57130 | 0.9 | 889 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 169100 | 200100 | 68800 | 360 |
| **1.7** | 55372 | 1.8 | 862 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 55372 | 2.3 | 862 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 297400 | 330700 | 127600 | 396 |
| **1.7** | 55098 | 1.5 | 858 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 178600 | 209700 | 76400 | 372 |
| **1.8** | 52194 | 2.5 | 812 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 292100 | 324900 | 125100 | 396 |
| **1.8** | 50742 | 1.0 | 790 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 163200 | 193100 | 66100 | 360 |
| **1.8** | 50249 | 1.8 | 782 | 40.0 | — | **315 R4** | **BN160MR4** | — | — | — | 173700 | 203900 | 74100 | 386 |
| **1.9** | 47602 | 2.1 | 741 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 170900 | 200700 | 72800 | 384 |
| **1.9** | 47602 | 2.7 | 741 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 284200 | 316100 | 121400 | 396 |
| **2.0** | 47396 | 1.7 | 738 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 170700 | 200400 | 72700 | 372 |
| **2.0** | 46656 | 2.8 | 726 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 282500 | 314100 | 120500 | 396 |
| **2.0** | 46518 | 1.0 | 724 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 128700 | 160300 | 52200 | 348 |
| **2.1** | 44655 | 1.1 | 695 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 157000 | 185900 | 63300 | 360 |
| **2.1** | 43978 | 2.9 | 685 | 18.0 | **316 L4** | — | **BN160MR4** | — | — | — | 277500 | 308600 | 118200 | 396 |
| **2.1** | 43147 | 2.3 | 672 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 165900 | 194800 | 70500 | 384 |
| **2.2** | 42934 | 1.9 | 668 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 42339 | 2.1 | 659 | 40.0 | — | **315 R4** | **BN160MR4** | — | — | — | 165000 | 193700 | 70000 | 386 |
| **2.2** | 41540 | 1.2 | 647 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 153700 | 181900 | 61800 | 362 |
| **2.3** | 40659 | 1.3 | 633 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 152700 | 180700 | 61400 | 360 |
| **2.3** | 40386 | 1.0 | 629 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 123300 | 153600 | 49800 | 374 |
| **2.3** | 40258 | 1.0 | 627 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 123200 | 153500 | 49700 | 348 |
| **2.3** | 40042 | 2.5 | 623 | 40.0 | — | **315 R4** | **BN160MR4** | — | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 40042 | 2.9 | 623 | 45.0 | — | **316 R4** | **BN160MR4** | — | — | — | 269800 | 300100 | 114500 | 386 |
| **2.3** | 39427 | 1.5 | 614 | 22.0 | — | **314 R4** | **BN160MR4** | — | — | — | 161500 | 189600 | 68400 | 374 |
| **2.4** | 37956 | 2.6 | 591 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 159700 | 187500 | 67500 | 384 |
| **2.4** | 37769 | 2.1 | 588 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 159500 | 187200 | 67400 | 372 |
| **2.5** | 36468 | 1.2 | 568 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 119600 | 149000 | 48100 | 348 |
| **2.6** | 36216 | 1.5 | 564 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 147500 | 174500 | 59100 | 360 |
| **2.6** | 35601 | 2.2 | 554 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 156600 | 183900 | 66100 | 372 |
| **2.7** | 34340 | 1.4 | 535 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 145100 | 171800 | 58000 | 362 |
| **2.7** | 34269 | 2.9 | 533 | 18.0 | **315 L4** | — | **BN160MR4** | — | — | — | 154900 | 181800 | 65200 | 384 |
| **2.7** | 33916 | 2.0 | 528 | 22.0 | — | **314 R4** | **BN160MR4** | — | — | — | 154400 | 181300 | 65000 | 374 |
| **2.7** | 33739 | 2.9 | 525 | 40.0 | — | **315 R4** | **BN160MR4** | — | — | — | 154100 | 181000 | 64900 | 386 |
| **2.8** | 33386 | 1.2 | 520 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 116500 | 145100 | 46700 | 374 |
| **2.8** | 32997 | 1.5 | 514 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 143400 | 169700 | 57300 | 360 |
| **2.8** | 32898 | 1.3 | 512 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 116000 | 144500 | 46500 | 348 |
| **2.9** | 31869 | 1.6 | 496 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 141900 | 168000 | 56600 | 362 |
| **2.9** | 31770 | 2.5 | 495 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 151400 | 177700 | 63600 | 372 |
| **2.9** | 31470 | 1.1 | 490 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 114400 | 142500 | 45800 | 374 |
| **3.1** | 29430 | 2.7 | 458 | 15.0 | **314 L4** | — | **BN160MR4** | — | — | — | 148000 | 173700 | 62000 | 372 |
| **3.2** | 29019 | 1.9 | 452 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 138000 | 163300 | 54900 | 360 |
| **3.2** | 28950 | 1.0 | 451 | 11.0 | **310 L4** | — | **BN160MR4** | — | | | 92500 | 116300 | 43500 | 336 |
| **3.2** | 28934 | 1.6 | 450 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 137900 | 163200 | 54800 | 362 |
| **3.2** | 28577 | 2.4 | 445 | 22.0 | — | **314 R4** | **BN160MR4** | — | — | — | 146700 | 172200 | 61400 | 374 |
| **3.3** | 28131 | 1.3 | 438 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 110600 | 137800 | 44100 | 374 |
| **3.4** | 27027 | 2.9 | 421 | 22.0 | — | **314 R4** | **BN160MR4** | — | — | — | 144200 | 169300 | 60300 | 374 |
| **3.4** | 26937 | 1.1 | 419 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 92400 | 116200 | 43500 | 338 |



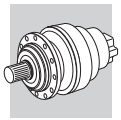
## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.5** | 26516 | 1.5 | 413 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 108700 | 135400 | 43300 | 374 |
| **3.5** | 26360 | 1.6 | 410 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 108500 | 135200 | 43200 | 348 |
| **3.7** | 25315 | 2.2 | 394 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 132500 | 156800 | 52400 | 360 |
| **3.7** | 24890 | 1.9 | 387 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 131800 | 156000 | 52100 | 362 |
| **4.0** | 23334 | 1.0 | 363 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 88500 | 111300 | 41500 | 338 |
| **4.1** | 22612 | 2.3 | 352 | 11.0 | **313 L4** | — | **BN160MR4** | — | — | — | 128000 | 151500 | 50500 | 360 |
| **4.1** | 22424 | 0.9 | 349 | 7.5 | **309 L4** | — | **BN160MR4** | — | — | — | 72300 | 93300 | 22100 | 324 |
| **4.1** | 22329 | 1.8 | 348 | 11.0 | **311 L4** | — | **BN160MR4** | — | — | — | 103200 | 128600 | 40900 | 348 |
| **4.2** | 22198 | 2.4 | 346 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 127300 | 150700 | 50200 | 362 |
| **4.2** | 21920 | 1.8 | 341 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 102700 | 127900 | 40600 | 374 |
| **4.3** | 21465 | 1.3 | 334 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 86300 | 108600 | 40300 | 338 |
| **4.5** | 20662 | 1.9 | 322 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 100900 | 125600 | 39800 | 374 |
| **4.7** | 19834 | 2.2 | 309 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 123100 | 145700 | 48300 | 362 |
| **4.7** | 19589 | 1.2 | 305 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 84000 | 105600 | 39100 | 338 |
| **4.7** | 20178 | 1.9 | 304 | 18.0 | **313 L3** | — | **BN160MR4** | — | — | — | 122500 | 145000 | 48100 | 360 |
| **4.9** | 19618 | 1.2 | 295 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 83200 | 104600 | 38700 | 336 |
| **4.9** | 18856 | 2.0 | 294 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 98100 | 122200 | 38600 | 374 |
| **4.9** | 19342 | 1.4 | 291 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 97900 | 121900 | 38500 | 348 |
| **5.1** | 18274 | 0.9 | 284 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 68000 | 87700 | 20700 | 326 |
| **5.1** | 18182 | 1.4 | 283 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 82100 | 103300 | 38100 | 338 |
| **5.1** | 18059 | 2.7 | 281 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 119700 | 141700 | 46800 | 362 |
| **5.4** | 17081 | 2.2 | 266 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 95300 | 118700 | 37400 | 374 |
| **5.6** | 16593 | 1.4 | 258 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 79900 | 100500 | 37000 | 338 |
| **5.6** | 16577 | 1.0 | 258 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 67400 | 87000 | 20500 | 326 |
| **5.7** | 16763 | 2.7 | 252 | 18.0 | **313 L3** | — | **BN160MR4** | — | — | — | 115900 | 137100 | 45200 | 360 |
| **5.8** | 16556 | 1.1 | 249 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 79100 | 99400 | 36600 | 336 |
| **5.9** | 16298 | 2.1 | 245 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 93000 | 115800 | 36400 | 348 |
| **6.1** | 15217 | 2.7 | 237 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 113700 | 134600 | 44200 | 362 |
| **6.2** | 15031 | 1.6 | 234 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 77600 | 97600 | 35800 | 338 |
| **6.2** | 14917 | 1.1 | 232 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 65300 | 84200 | 19800 | 326 |
| **6.3** | 15286 | 1.4 | 230 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 77200 | 97100 | 35600 | 336 |
| **6.3** | 14693 | 2.4 | 229 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 91100 | 113400 | 35500 | 374 |
| **7.0** | 13223 | 1.7 | 206 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 74700 | 93900 | 34300 | 338 |
| **7.0** | 13209 | 1.1 | 206 | 15.0 | — | **307 R4** | **BN160MR4** | **M4LC4** | 27300 | 34300 | 62000 | 81200 | 23700 | 314 |
| **7.0** | 13209 | 1.5 | 206 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 63000 | 81200 | 19000 | 326 |
| **7.1** | 13473 | 2.5 | 203 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 87800 | 109400 | 34100 | 348 |
| **7.1** | 13406 | 1.6 | 202 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 74200 | 93300 | 34100 | 336 |
| **7.1** | 13392 | 1.2 | 202 | 11.0 | **309 L3** | — | **BN160MR4** | — | — | — | 62600 | 80700 | 18900 | 324 |
| **7.2** | 12889 | 2.7 | 201 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 108200 | 128000 | 41900 | 362 |
| **7.3** | 12728 | 2.7 | 198 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 87200 | 108600 | 33900 | 374 |
| **7.5** | 12700 | 2.5 | 191 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 86300 | 107500 | 33500 | 348 |
| **7.6** | 12249 | 1.1 | 191 | 15.0 | — | **307 R4** | **BN160MR4** | **M4LC4** | 26600 | 33400 | 60600 | 79400 | 23200 | 314 |
| **7.6** | 12249 | 1.4 | 191 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 61600 | 79400 | 18500 | 326 |
| **7.6** | 12164 | 1.9 | 189 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 72800 | 91500 | 33400 | 338 |
| **7.8** | 11857 | 2.7 | 185 | 22.0 | — | **313 R4** | **BN160MR4** | — | — | — | 105500 | 124900 | 40700 | 362 |
| **7.9** | 12131 | 1.2 | 183 | 11.0 | **309 L3** | — | **BN160MR4** | — | — | — | 60800 | 78400 | 18300 | 324 |
| **7.9** | 11708 | 2.7 | 182 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 85100 | 106000 | 32900 | 374 |
| **8.1** | 11773 | 1.6 | 177 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 71400 | 89800 | 32600 | 336 |
| **8.1** | 11759 | 1.0 | 177 | 11.0 | **307 L3** | — | **BN160MR4** | **M4LC4** | 26000 | 32600 | 59300 | 77700 | 22600 | 312 |
| **8.4** | 11352 | 2.9 | 171 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 83400 | 103900 | 32200 | 348 |
| **8.7** | 10611 | 1.5 | 165 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 59000 | 76100 | 17700 | 326 |
| **8.8** | 10870 | 2.0 | 164 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 69700 | 87600 | 31800 | 336 |
| **8.9** | 10731 | 1.0 | 162 | 11.0 | **307 L3** | — | **BN160MR4** | **M4LC4** | 25200 | 31600 | 57700 | 75600 | 21900 | 312 |
| **8.9** | 10731 | 1.5 | 162 | 11.0 | **309 L3** | — | **BN160MR4** | — | — | — | 58600 | 75600 | 17500 | 324 |
| **8.9** | 10701 | 3.0 | 161 | 18.0 | **311 L3** | — | **BN160MR4** | — | — | — | 82000 | 102100 | 31600 | 348 |
| **9.0** | 10303 | 2.1 | 160 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 69300 | 87100 | 31600 | 338 |
| **9.1** | 10141 | 0.9 | 158 | 12.0 | — | **306 R4** | **BN160MR4** | **M4LC4** | 22000 | 24900 | 52100 | 60700 | 16500 | 302 |
| **9.3** | 9918 | 2.7 | 154 | 22.0 | — | **311 R4** | **BN160MR4** | — | — | — | 80900 | 100800 | 31200 | 374 |
| **9.5** | 9761 | 1.9 | 152 | 15.0 | — | **309 R4** | **BN160MR4** | — | — | — | 57500 | 74200 | 17200 | 326 |
| **9.8** | 9743 | 2.8 | 147 | 40.0 | — | **311 R3** | **BN160MR4** | — | — | — | 79700 | 99300 | 30600 | 374 |
| **9.8** | 9721 | 1.4 | 146 | 11.0 | **307 L3** | — | **BN160MR4** | **M4LC4** | 24400 | 30600 | 56000 | 73300 | 21200 | 312 |
| **10.2** | 9416 | 2.2 | 142 | 18.0 | **310 L3** | — | **BN160MR4** | — | — | — | 66700 | 83900 | 30300 | 336 |
| **10.4** | 9218 | 1.2 | 139 | 11.0 | **307 L3** | — | **BN160MR4** | **M4LC4** | 24000 | 30100 | 55100 | 72200 | 20800 | 312 |
| **10.4** | 9218 | 1.7 | 139 | 11.0 | **309 L3** | — | **BN160MR4** | — | — | — | 56000 | 72200 | 16700 | 324 |
| **10.6** | 8728 | 2.4 | 136 | 15.0 | — | **310 R4** | **BN160MR4** | — | — | — | 65900 | 82900 | 29900 | 338 |



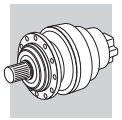
## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **11.0** | 8662 | 2.4 | 130 | 18.0 | **310 L3** | **—** | **BN160MR4** | **—** | — | — | 65100 | 81900 | 29500 | 336 |
| **11.4** | 8362 | 1.6 | 126 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 23200 | 29100 | 53500 | 70100 | 20200 | 312 |
| **11.4** | 8362 | 2.0 | 126 | 11.0 | **309 L3** | **—** | **BN160MR4** | **—** | — | — | 54400 | 70100 | 16100 | 324 |
| **11.6** | 7968 | 1.4 | 124 | 15.0 | **—** | **307 R4** | **BN160MR4** | **M4LC4** | 24800 | 31100 | 56900 | 74500 | 21600 | 314 |
| **11.9** | 8056 | 1.0 | 121 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 20600 | 23400 | 49200 | 57300 | 15500 | 300 |
| **12.0** | 7955 | 1.1 | 120 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 22800 | 28600 | 52700 | 69100 | 19800 | 314 |
| **12.0** | 7955 | 1.6 | 120 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 53600 | 69100 | 15900 | 326 |
| **12.0** | 7955 | 2.2 | 120 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 63500 | 79800 | 28600 | 338 |
| **12.1** | 7905 | 2.5 | 119 | 18.0 | **310 L3** | **—** | **BN160MR4** | **—** | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 7525 | 1.4 | 113 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 22400 | 28100 | 51800 | 67900 | 19500 | 312 |
| **12.7** | 7525 | 2.1 | 113 | 11.0 | **309 L3** | **—** | **BN160MR4** | **—** | — | — | 52700 | 67900 | 15600 | 324 |
| **12.8** | 7462 | 1.0 | 112 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 20100 | 22800 | 48100 | 56000 | 15100 | 300 |
| **13.0** | 7337 | 2.7 | 110 | 18.0 | **310 L3** | **—** | **BN160MR4** | **—** | — | — | 61900 | 77900 | 27900 | 336 |
| **13.7** | 6749 | 2.0 | 105 | 15.0 | **—** | **307 R4** | **BN160MR4** | **M4LC4** | 24100 | 30300 | 55400 | 72700 | 21000 | 314 |
| **13.8** | 6922 | 1.3 | 104 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 19600 | 22200 | 47000 | 54700 | 14700 | 300 |
| **14.3** | 6696 | 2.8 | 101 | 18.0 | **310 L3** | **—** | **BN160MR4** | **—** | — | — | 60300 | 75800 | 27000 | 336 |
| **14.4** | 6663 | 1.9 | 100 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 21500 | 27000 | 50000 | 65500 | 18700 | 312 |
| **14.4** | 6663 | 2.5 | 100 | 11.0 | **309 L3** | **—** | **BN160MR4** | **—** | — | — | 50800 | 65500 | 15000 | 324 |
| **14.5** | 6576 | 1.3 | 99.0 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 21400 | 26900 | 49800 | 65200 | 18600 | 314 |
| **14.5** | 6576 | 1.9 | 99.0 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 50600 | 65200 | 14900 | 326 |
| **14.5** | 6576 | 2.5 | 99.0 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 59900 | 75400 | 26900 | 338 |
| **14.6** | 6544 | 1.0 | 98.5 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 19200 | 21800 | 46200 | 53800 | 14400 | 302 |
| **15.5** | 6179 | 2.0 | 93.0 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 21000 | 26300 | 48900 | 64000 | 18200 | 312 |
| **15.5** | 6179 | 2.4 | 93.0 | 11.0 | **309 L3** | **—** | **BN160MR4** | **—** | — | — | 49600 | 64000 | 14600 | 324 |
| **16.3** | 5864 | 1.5 | 88.3 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 18500 | 21000 | 44700 | 52100 | 13900 | 300 |
| **17.0** | 5629 | 1.3 | 84.7 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 18300 | 20700 | 44200 | 51400 | 13700 | 302 |
| **17.3** | 5541 | 1.8 | 83.4 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 20200 | 25400 | 47300 | 62000 | 17600 | 314 |
| **17.3** | 5541 | 2.5 | 83.4 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 48000 | 62000 | 14100 | 326 |
| **17.3** | 5541 | 2.7 | 83.4 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 56900 | 71600 | 25400 | 338 |
| **17.6** | 5437 | 1.3 | 81.9 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 18100 | 20500 | 43700 | 50900 | 13600 | 300 |
| **17.9** | 5353 | 1.9 | 80.6 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 20000 | 25100 | 46800 | 61300 | 17400 | 312 |
| **17.9** | 5353 | 2.8 | 80.6 | 11.0 | **309 L3** | **—** | **BN160MR4** | **—** | — | — | 47600 | 61300 | 13900 | 324 |
| **18.3** | 5223 | 2.7 | 78.6 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 55900 | 70300 | 24900 | 338 |
| **18.3** | 5223 | 2.1 | 78.6 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 19800 | 24900 | 46500 | 60900 | 17200 | 314 |
| **18.6** | 5131 | 0.9 | 77.2 | 7.5 | **305 L3** | **—** | **BN160MR4** | **M4LC4** | 13900 | 16100 | 25700 | 30900 | 8930 | 288 |
| **18.7** | 5115 | 1.6 | 77.0 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 17700 | 20100 | 42900 | 50000 | 13300 | 300 |
| **19.4** | 4924 | 2.4 | 74.1 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 19400 | 24400 | 45600 | 59800 | 16900 | 312 |
| **19.8** | 4842 | 1.5 | 72.9 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 17400 | 19700 | 42200 | 49200 | 13100 | 302 |
| **19.9** | 4975 | 1.1 | 72.5 | 13.0 | **306 L2** | **—** | **BN160MR4** | **M4LC4** | 17400 | 19700 | 42100 | 49100 | 13000 | 300 |
| **20.1** | 4766 | 2.1 | 71.8 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 19200 | 24100 | 45200 | 59200 | 16700 | 314 |
| **20.1** | 4766 | 2.7 | 71.8 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 45900 | 59200 | 13400 | 326 |
| **20.1** | 4766 | 2.7 | 71.8 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 54400 | 68400 | 24100 | 338 |
| **21.3** | 4486 | 1.6 | 67.5 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 17000 | 19200 | 41300 | 48000 | 12700 | 302 |
| **22.1** | 4333 | 1.7 | 65.2 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 16800 | 19000 | 40800 | 47500 | 12600 | 300 |
| **22.2** | 4318 | 2.7 | 65.0 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 52800 | 66400 | 23400 | 338 |
| **22.2** | 4318 | 2.5 | 65.0 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 18600 | 23300 | 43900 | 57500 | 16200 | 314 |
| **22.2** | 4318 | 2.6 | 65.0 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 44600 | 57500 | 12900 | 326 |
| **22.8** | 4190 | 1.0 | 63.1 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 278 |
| **22.8** | 4189 | 1.1 | 63.1 | 7.5 | **305 L3** | **—** | **BN160MR4** | **M4LC4** | 13300 | 15400 | 24700 | 29700 | 8540 | 288 |
| **23.8** | 4019 | 2.8 | 60.5 | 11.0 | **307 L3** | **—** | **BN160MR4** | **M4LC4** | 18200 | 22800 | 42900 | 56300 | 15800 | 312 |
| **24.8** | 3859 | 2.0 | 58.1 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 16100 | 18300 | 39400 | 45900 | 12100 | 302 |
| **25.6** | 3860 | 1.3 | 56.3 | 13.0 | **306 L2** | **—** | **BN160MR4** | **M4LC4** | 16000 | 18100 | 39100 | 45500 | 12000 | 300 |
| **25.8** | 3714 | 2.7 | 55.9 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 50500 | 63500 | 22200 | 338 |
| **25.8** | 3714 | 2.7 | 55.9 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 17700 | 22200 | 41900 | 55000 | 15400 | 314 |
| **25.8** | 3714 | 2.7 | 55.9 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 42600 | 55000 | 12300 | 326 |
| **25.8** | 3829 | 0.9 | 55.8 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 12500 | 14400 | 23300 | 28100 | 8010 | 288 |
| **26.6** | 3599 | 1.0 | 54.2 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 12700 | 14600 | 23600 | 28400 | 8120 | 278 |
| **27.0** | 3548 | 0.9 | 53.4 | 7.5 | **304 L3** | **—** | **BN160MR4** | **M4LC4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 3548 | 1.1 | 53.4 | 7.5 | **305 L3** | **—** | **BN160MR4** | **M4LC4** | 12600 | 14500 | 23500 | 28300 | 8080 | 288 |
| **27.0** | 3537 | 2.0 | 53.2 | 7.5 | **306 L3** | **—** | **BN160MR4** | **M4LC4** | 15700 | 17800 | 38400 | 44700 | 11800 | 300 |
| **28.6** | 3339 | 1.3 | 50.3 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 12300 | 14200 | 23100 | 27800 | 7920 | 278 |
| **31** | 3207 | 2.6 | 46.7 | 18.0 | **307 L2** | **—** | **BN160MR4** | **M4LC4** | 16700 | 20900 | 39700 | 52100 | 14500 | 312 |
| **31** | 3096 | 1.4 | 46.6 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 12000 | 13900 | 22600 | 27200 | 7720 | 278 |
| **31** | 3191 | 2.0 | 46.5 | 13.0 | **306 L2** | **—** | **BN160MR4** | **M4LC4** | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **31** | 3075 | 2.4 | 46.3 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 15000 | 16900 | 36800 | 42900 | 11200 | 302 |



## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **32** | 3063 | 1.2 | 44.6 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 11900 | 13700 | 22300 | 26800 | 7610 | 288 |
| **32** | 2960 | 2.7 | 44.6 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 47200 | 59300 | 20600 | 338 |
| **32** | 2960 | 2.7 | 44.6 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 16400 | 20600 | 39200 | 51300 | 14300 | 314 |
| **32** | 2960 | 2.7 | 44.6 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 39800 | 51300 | 11400 | 326 |
| **33** | 2896 | 1.1 | 43.6 | 7.5 | **304 L3** | **—** | **BN160MR4** | **M4LC4** | 11800 | 13600 | 22100 | 26600 | 7550 | 288 |
| **34** | 2828 | 1.3 | 42.6 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 11700 | 13500 | 22000 | 26400 | 7490 | 278 |
| **37** | 2605 | 2.5 | 39.2 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 14100 | 16000 | 35000 | 40800 | 10600 | 302 |
| **37** | 2638 | 2.5 | 38.4 | 13.0 | **306 L2** | **—** | **BN160MR4** | **M4LC4** | 14100 | 15900 | 34800 | 40600 | 10600 | 300 |
| **38** | 2635 | 1.1 | 38.4 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **38** | 2635 | 1.6 | 38.4 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **38** | 2507 | 2.7 | 37.7 | 22.0 | **—** | **310 R3** | **BN160MR4** | **—** | — | — | 44900 | 56400 | 19500 | 338 |
| **38** | 2507 | 2.7 | 37.7 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 15500 | 19500 | 37300 | 48800 | 13500 | 314 |
| **38** | 2507 | 2.7 | 37.7 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 37900 | 48800 | 10800 | 326 |
| **39** | 2467 | 1.8 | 37.1 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 11200 | 12900 | 21100 | 25400 | 7160 | 278 |
| **40** | 2454 | 1.5 | 35.8 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 11000 | 12700 | 20800 | 25100 | 7070 | 288 |
| **43** | 2206 | 2.6 | 33.2 | 14.0 | **—** | **306 R3** | **BN160MR4** | **M4LC4** | 13400 | 15200 | 33300 | 38800 | 10100 | 302 |
| **46** | 2101 | 2.7 | 31.6 | 22.0 | **—** | **307 R3** | **BN160MR4** | **M4LC4** | 14600 | 18400 | 35400 | 46300 | 12700 | 314 |
| **46** | 2101 | 2.7 | 31.6 | 22.0 | **—** | **309 R3** | **BN160MR4** | **—** | — | — | 35900 | 46300 | 10200 | 326 |
| **46** | 2090 | 1.8 | 31.5 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 10600 | 12200 | 20100 | 24100 | 6770 | 278 |
| **47** | 2111 | 1.0 | 30.8 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 10500 | 12100 | 19900 | 24000 | 6720 | 264 |
| **47** | 2111 | 1.3 | 30.8 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 2111 | 2.0 | 30.8 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **54** | 1814 | 1.0 | 26.4 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 9960 | 11500 | 19000 | 22900 | 6390 | 264 |
| **54** | 1814 | 1.9 | 26.4 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 9960 | 11500 | 19000 | 22900 | 6390 | 288 |
| **56** | 1706 | 2.1 | 25.7 | 14.0 | **—** | **305 R3** | **—** | **M4LC4** | 9870 | 11400 | 18900 | 22700 | 6330 | 278 |
| **59** | 1683 | 1.3 | 24.5 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 9720 | 11200 | 18600 | 22400 | 6230 | 264 |
| **59** | 1683 | 1.9 | 24.5 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **59** | 1683 | 2.3 | 24.5 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **63** | 1560 | 1.3 | 22.7 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **63** | 1560 | 1.8 | 22.7 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **63** | 1560 | 2.5 | 22.7 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **69** | 1425 | 1.3 | 20.8 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 9190 | 10600 | 17700 | 21300 | 5900 | 264 |
| **69** | 1425 | 2.1 | 20.8 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **69** | 1425 | 2.3 | 20.8 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **72** | 1378 | 0.9 | 20.1 | 7.5 | **301 L2** | **—** | **—** | **M4LC4** | 2890 | 2890 | 8410 | 9660 | 1900 | 254 |
| **75** | 1319 | 2.6 | 19.2 | 18.0 | **—** | **306 R2** | **BN160MR4** | **M4LC4** | 11200 | 12600 | 28300 | 33000 | 8380 | 302 |
| **75** | 1319 | 1.2 | 19.2 | 18.0 | **—** | **303 R2** | **—** | **M4LC4** | 8960 | 10300 | 17300 | 20800 | 5750 | 266 |
| **75** | 1319 | 2.2 | 19.2 | 18.0 | **—** | **305 R2** | **—** | **M4LC4** | 8960 | 10300 | 17300 | 20800 | 5750 | 278 |
| **79** | 1247 | 1.1 | 18.2 | 7.5 | **301 L2** | **—** | **—** | **M4LC4** | 2860 | 2860 | 8330 | 9580 | 1880 | 254 |
| **79** | 1243 | 1.6 | 18.1 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 8780 | 10100 | 17000 | 20400 | 5630 | 264 |
| **79** | 1243 | 2.4 | 18.1 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 8780 | 10100 | 17000 | 20400 | 5630 | 288 |
| **79** | 1243 | 2.9 | 18.1 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 8780 | 10100 | 17000 | 20400 | 5630 | 288 |
| **86** | 1156 | 2.1 | 16.8 | 18.0 | **—** | **304 R2** | **—** | **M4LC4** | 8570 | 9900 | 16600 | 20000 | 5500 | 278 |
| **91** | 1090 | 2.7 | 15.9 | 18.0 | **—** | **306 R2** | **BN160MR4** | **M4LC4** | 10500 | 11900 | 26700 | 31100 | 7870 | 302 |
| **91** | 1090 | 1.7 | 15.9 | 18.0 | **—** | **303 R2** | **—** | **M4LC4** | 8410 | 9710 | 16300 | 19700 | 5390 | 266 |
| **91** | 1090 | 2.7 | 15.9 | 18.0 | **—** | **305 R2** | **—** | **M4LC4** | 8410 | 9710 | 16300 | 19700 | 5390 | 278 |
| **94** | 1053 | 1.6 | 15.3 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 8310 | 9590 | 16200 | 19500 | 5330 | 264 |
| **94** | 1053 | 2.7 | 15.3 | 9.0 | **304 L2** | **—** | **BN160MR4** | **M4LC4** | 8310 | 9590 | 16200 | 19500 | 5330 | 288 |
| **94** | 1053 | 2.9 | 15.3 | 9.0 | **305 L2** | **—** | **BN160MR4** | **M4LC4** | 8310 | 9590 | 16200 | 19500 | 5330 | 288 |
| **97** | 1018 | 1.3 | 14.8 | 7.5 | **301 L2** | **—** | **—** | **M4LC4** | 2670 | 2670 | 7840 | 9010 | 1760 | 254 |
| **98** | 1013 | 0.9 | 14.8 | 12.0 | **—** | **301 R2** | **—** | **M4LC4** | 2610 | 2610 | 7670 | 8810 | 1710 | 256 |
| **105** | 938 | 2.7 | 13.7 | 18.0 | **—** | **306 R2** | **BN160MR4** | **M4LC4** | 9960 | 11300 | 25500 | 29700 | 7480 | 302 |
| **105** | 938 | 2.1 | 13.7 | 18.0 | **—** | **303 R2** | **—** | **M4LC4** | 8000 | 9230 | 15600 | 18800 | 5130 | 266 |
| **105** | 938 | 2.7 | 13.7 | 18.0 | **—** | **304 R2** | **—** | **M4LC4** | 8000 | 9230 | 15600 | 18800 | 5130 | 278 |
| **105** | 938 | 2.7 | 13.7 | 18.0 | **—** | **305 R2** | **—** | **M4LC4** | 8000 | 9230 | 15600 | 18800 | 5130 | 278 |
| **115** | 860 | 1.9 | 12.5 | 9.0 | **303 L2** | **—** | **BN160MR4** | **M4LC4** | 7770 | 8970 | 15200 | 18300 | 4980 | 264 |
| **119** | 831 | 1.5 | 12.1 | 7.5 | **301 L2** | **—** | **—** | **M4LC4** | 2500 | 2500 | 7380 | 8480 | 1640 | 254 |
| **122** | 812 | 1.4 | 11.8 | 12.0 | **—** | **301 R2** | **—** | **M4LC4** | 2420 | 2420 | 7180 | 8240 | 1590 | 256 |
| **132** | 747 | 2.6 | 10.9 | 18.0 | **—** | **306 R2** | **BN160MR4** | **M4LC4** | 9230 | 10500 | 23900 | 27800 | 6930 | 302 |
| **132** | 747 | 2.5 | 10.9 | 18.0 | **—** | **303 R2** | **—** | **M4LC4** | 7410 | 8560 | 14600 | 17600 | 4760 | 266 |
| **132** | 747 | 2.6 | 10.9 | 18.0 | **—** | **304 R2** | **—** | **M4LC4** | 7410 | 8560 | 14600 | 17600 | 4760 | 278 |
| **132** | 747 | 2.6 | 10.9 | 18.0 | **—** | **305 R2** | **—** | **M4LC4** | 7410 | 8560 | 14600 | 17600 | 4760 | 278 |
| **149** | 684 | 1.1 | 9.67 | 11.0 | **303 L1** | **—** | **BN160MR4** | **M4LC4** | 7120 | 8220 | 14100 | 16900 | 4570 | 264 |
| **156** | 633 | 2.7 | 9.23 | 18.0 | **—** | **306 R2** | **BN160MR4** | **M4LC4** | 8730 | 9900 | 22700 | 26400 | 6560 | 302 |
| **156** | 633 | 2.7 | 9.23 | 18.0 | **—** | **303 R2** | **—** | **M4LC4** | 7010 | 8100 | 13900 | 16700 | 4500 | 266 |



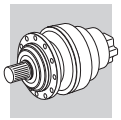
A

## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **156** | 633 | 2.7 | 9.23 | 18.0 | — | **304 R2** | — | **M4LC4** | 7010 | 8100 | 13900 | 16700 | 4500 | 278 |
| **156** | 633 | 2.7 | 9.23 | 18.0 | — | **305 R2** | — | **M4LC4** | 7010 | 8100 | 13900 | 16700 | 4500 | 278 |
| **160** | 637 | 1.0 | 9.00 | 7.5 | **301 L1** | — | — | **M4LC4** | 2260 | 2260 | 6750 | 7750 | 1490 | 254 |
| **165** | 600 | 1.0 | 8.74 | 11.0 | — | **300 R2** | — | **M4LC4** | 6550 | 7560 | 13000 | 15700 | 4200 | 246 |
| **165** | 600 | 1.8 | 8.74 | 7.5 | — | **301 R2** | — | **M4LC4** | 2100 | 2100 | 6310 | 7250 | 1380 | 256 |
| **192** | 531 | 2.3 | 7.50 | 11.0 | **303 L1** | — | **BN160MR4** | **M4LC4** | 6400 | 7390 | 12800 | 15400 | 4100 | 264 |
| **200** | 510 | 1.5 | 7.20 | 7.5 | **301 L1** | — | — | **M4LC4** | 2050 | 2050 | 6180 | 7100 | 1350 | 254 |
| **202** | 490 | 1.2 | 7.13 | 12.0 | — | **300 R2** | — | **M4LC4** | 2090 | 2090 | 6300 | 7230 | 1380 | 246 |
| **202** | 490 | 2.1 | 7.13 | 12.0 | — | **301 R2** | — | **M4LC4** | 2050 | 2050 | 6170 | 7080 | 1350 | 256 |
| **250** | 409 | 1.2 | 5.77 | 7.5 | **300 L1** | — | — | **M4LC4** | 1950 | 1950 | 5910 | 6790 | 1280 | 244 |
| **250** | 409 | 2.3 | 5.77 | 7.5 | **301 L1** | — | — | **M4LC4** | 1950 | 1950 | 5910 | 6790 | 1280 | 254 |
| **338** | 302 | 1.6 | 4.26 | 7.5 | **300 L1** | — | — | **M4LC4** | 1760 | 1760 | 5390 | 6200 | 1160 | 244 |
| **338** | 302 | 2.9 | 4.26 | 7.5 | **301 L1** | — | — | **M4LC4** | 1760 | 1760 | 5390 | 6200 | 1160 | 254 |
| **414** | 246 | 1.9 | 3.48 | 7.5 | **300 L1** | — | — | **M4LC4** | 1610 | 1610 | 4970 | 5710 | 1060 | 244 |

## $P_1$ = 15 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.77** | 163217 | 1.0 | 1893 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **0.92** | 137526 | 1.2 | 1595 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **1.1** | 113688 | 1.5 | 1318 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 434300 | 462400 | 147000 | 406 |
| **1.2** | 106719 | 1.1 | 1237 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 331400 | 368600 | 144000 | 396 |
| **1.3** | 97796 | 1.7 | 1134 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 415100 | 442000 | 139800 | 406 |
| **1.3** | 95233 | 1.0 | 1104 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 192600 | 226200 | 83200 | 384 |
| **1.4** | 89921 | 1.1 | 1043 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 189400 | 222300 | 81600 | 384 |
| **1.4** | 89921 | 1.5 | 1043 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 89477 | 0.9 | 1038 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 189100 | 222000 | 81400 | 372 |
| **1.4** | 89028 | 2.0 | 1032 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 403600 | 429700 | 135500 | 406 |
| **1.5** | 82213 | 1.8 | 953 | 50.0 | — | **317 R4** | **BN160L4** | — | — | — | 394100 | 419600 | 132000 | 406 |
| **1.6** | 80193 | 1.2 | 930 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 183000 | 214800 | 78500 | 384 |
| **1.6** | 79847 | 0.9 | 926 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 182700 | 214500 | 78400 | 372 |
| **1.6** | 78419 | 1.0 | 909 | 40.0 | — | **315 R4** | **BN160L4** | — | — | — | 181700 | 213400 | 77900 | 386 |
| **1.6** | 77931 | 2.1 | 904 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 387800 | 412900 | 129600 | 406 |
| **1.7** | 74334 | 1.4 | 862 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 74334 | 1.7 | 862 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 297400 | 330700 | 127600 | 396 |
| **1.7** | 73967 | 1.1 | 858 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 178600 | 209700 | 76400 | 372 |
| **1.8** | 70068 | 1.9 | 812 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 292100 | 324900 | 125100 | 396 |
| **1.8** | 69272 | 2.4 | 803 | 50.0 | — | **317 R4** | **BN160L4** | — | — | — | 374300 | 398500 | 124600 | 406 |
| **1.8** | 68302 | 2.7 | 792 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 372700 | 396900 | 124100 | 406 |
| **1.9** | 67457 | 1.3 | 782 | 40.0 | — | **315 R4** | **BN160L4** | — | — | — | 173700 | 203900 | 74100 | 386 |
| **2.0** | 63904 | 1.6 | 741 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 170900 | 200700 | 72800 | 384 |
| **2.0** | 63904 | 2.0 | 741 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 284200 | 316100 | 121400 | 396 |
| **2.0** | 63628 | 1.3 | 738 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 170700 | 200400 | 72700 | 372 |
| **2.0** | 62634 | 2.1 | 726 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 282500 | 314100 | 120500 | 396 |
| **2.0** | 62012 | 2.9 | 719 | 18.0 | **317 L4** | — | **BN160L4** | — | — | — | 362100 | 385500 | 120100 | 406 |
| **2.1** | 59039 | 2.2 | 685 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 277500 | 308600 | 118200 | 396 |
| **2.2** | 58368 | 2.8 | 677 | 50.0 | — | **317 R4** | **BN160L4** | — | — | — | 355600 | 378600 | 117700 | 406 |
| **2.2** | 57923 | 1.7 | 672 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 165900 | 194800 | 70500 | 384 |
| **2.2** | 57637 | 1.4 | 668 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 56839 | 1.6 | 659 | 40.0 | — | **315 R4** | **BN160L4** | — | — | — | 165000 | 193700 | 70000 | 386 |
| **2.3** | 55766 | 0.9 | 647 | 22.0 | — | **313 R4** | **BN160L4** | — | — | — | 150500 | 178100 | 60400 | 362 |
| **2.3** | 54583 | 1.0 | 633 | 11.0 | **313 L4** | — | **BN160L4** | — | — | — | 152700 | 180700 | 61400 | 360 |
| **2.3** | 53978 | 2.9 | 626 | 50.0 | — | **317 R4** | **BN160L4** | — | — | — | 347300 | 369800 | 114700 | 406 |
| **2.3** | 53845 | 2.3 | 624 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 270000 | 300300 | 114600 | 396 |
| **2.3** | 53755 | 1.9 | 623 | 40.0 | — | **315 R4** | **BN160L4** | — | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 53755 | 2.1 | 623 | 45.0 | — | **316 R4** | **BN160L4** | — | — | — | 269800 | 300100 | 114500 | 386 |
| **2.4** | 52929 | 1.1 | 614 | 22.0 | — | **314 R4** | **BN160L4** | — | — | — | 161500 | 189600 | 68400 | 374 |
| **2.5** | 50955 | 2.0 | 591 | 18.0 | **315 L4** | — | **BN160L4** | — | — | — | 159700 | 187500 | 67500 | 384 |
| **2.5** | 50955 | 2.4 | 591 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 265500 | 295300 | 112500 | 396 |
| **2.5** | 50703 | 1.6 | 588 | 15.0 | **314 L4** | — | **BN160L4** | — | — | — | 159500 | 187200 | 67400 | 372 |
| **2.6** | 48805 | 2.5 | 566 | 18.0 | **316 L4** | — | **BN160L4** | — | — | — | 262100 | 291500 | 110900 | 396 |



## $P_1$ = 15 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.6** | 48619 | 1.1 | 564 | 11.0 | **313 L4** | **—** | **BN160L4** | **—** | — | — | 147500 | 174500 | 59100 | 360 |
| **2.6** | 47793 | 1.7 | 554 | 15.0 | **314 L4** | **—** | **BN160L4** | **—** | — | — | 156600 | 183900 | 66100 | 372 |
| **2.7** | 46100 | 1.1 | 535 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 145100 | 171800 | 58000 | 362 |
| **2.7** | 46004 | 2.2 | 533 | 18.0 | **315 L4** | **—** | **BN160L4** | **—** | — | — | 154900 | 181800 | 65200 | 384 |
| **2.7** | 46004 | 2.6 | 533 | 18.0 | **316 L4** | **—** | **BN160L4** | **—** | — | — | 257500 | 286400 | 108700 | 396 |
| **2.8** | 45531 | 1.5 | 528 | 22.0 | **—** | **314 R4** | **BN160L4** | **—** | — | — | 154400 | 181300 | 65000 | 374 |
| **2.8** | 45293 | 2.2 | 525 | 40.0 | **—** | **315 R4** | **BN160L4** | **—** | — | — | 154100 | 181000 | 64900 | 386 |
| **2.8** | 45293 | 2.6 | 525 | 45.0 | **—** | **316 R4** | **BN160L4** | **—** | — | — | 256300 | 285000 | 108200 | 386 |
| **2.8** | 44298 | 1.1 | 514 | 11.0 | **313 L4** | **—** | **BN160L4** | **—** | — | — | 143400 | 169700 | 57300 | 360 |
| **2.9** | 44164 | 1.0 | 512 | 11.0 | **311 L4** | **—** | **BN160L4** | **—** | — | — | 116000 | 144500 | 46500 | 348 |
| **2.9** | 42783 | 1.2 | 496 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 141900 | 168000 | 56600 | 362 |
| **3.0** | 42650 | 1.9 | 495 | 15.0 | **314 L4** | **—** | **BN160L4** | **—** | — | — | 151400 | 177700 | 63600 | 372 |
| **3.0** | 41983 | 2.4 | 487 | 18.0 | **315 L4** | **—** | **BN160L4** | **—** | — | — | 150700 | 176900 | 63300 | 384 |
| **3.0** | 41983 | 2.8 | 487 | 18.0 | **316 L4** | **—** | **BN160L4** | **—** | — | — | 250500 | 278600 | 105500 | 396 |
| **3.2** | 39509 | 2.0 | 458 | 15.0 | **314 L4** | **—** | **BN160L4** | **—** | — | — | 148000 | 173700 | 62000 | 372 |
| **3.2** | 38957 | 1.4 | 452 | 11.0 | **313 L4** | **—** | **BN160L4** | **—** | — | — | 138000 | 163300 | 54900 | 360 |
| **3.2** | 38843 | 1.2 | 450 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 137900 | 163200 | 54800 | 362 |
| **3.3** | 38364 | 1.8 | 445 | 22.0 | **—** | **314 R4** | **BN160L4** | **—** | — | — | 146700 | 172200 | 61400 | 374 |
| **3.3** | 38030 | 2.6 | 441 | 18.0 | **315 L4** | **—** | **BN160L4** | **—** | — | — | 146300 | 171700 | 61200 | 384 |
| **3.3** | 37764 | 1.0 | 438 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 110600 | 137800 | 44100 | 374 |
| **3.5** | 36282 | 2.2 | 421 | 22.0 | **—** | **314 R4** | **BN160L4** | **—** | — | — | 144200 | 169300 | 60300 | 374 |
| **3.5** | 35597 | 1.1 | 413 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 108700 | 135400 | 43300 | 374 |
| **3.6** | 35388 | 1.2 | 410 | 11.0 | **311 L4** | **—** | **BN160L4** | **—** | — | — | 108500 | 135200 | 43200 | 348 |
| **3.6** | 35294 | 2.8 | 409 | 40.0 | **—** | **315 R4** | **BN160L4** | **—** | — | — | 143000 | 167900 | 59700 | 386 |
| **3.7** | 33985 | 1.6 | 394 | 11.0 | **313 L4** | **—** | **BN160L4** | **—** | — | — | 132500 | 156800 | 52400 | 360 |
| **3.8** | 33467 | 2.3 | 388 | 15.0 | **314 L4** | **—** | **BN160L4** | **—** | — | — | 140800 | 165300 | 58700 | 372 |
| **3.8** | 33414 | 1.4 | 387 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 131800 | 156000 | 52100 | 362 |
| **4.1** | 30571 | 2.6 | 354 | 22.0 | **—** | **314 R4** | **BN160L4** | **—** | — | — | 137000 | 160800 | 56900 | 374 |
| **4.1** | 30356 | 1.7 | 352 | 11.0 | **313 L4** | **—** | **BN160L4** | **—** | — | — | 128000 | 151500 | 50500 | 360 |
| **4.2** | 29976 | 1.3 | 348 | 11.0 | **311 L4** | **—** | **BN160L4** | **—** | — | — | 103200 | 128600 | 40900 | 348 |
| **4.2** | 29801 | 1.8 | 346 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 127300 | 150700 | 50200 | 362 |
| **4.3** | 29427 | 1.3 | 341 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 102700 | 127900 | 40600 | 374 |
| **4.4** | 28817 | 1.0 | 334 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 84600 | 106300 | 39400 | 338 |
| **4.5** | 27738 | 1.4 | 322 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 100900 | 125600 | 39800 | 374 |
| **4.6** | 27083 | 2.9 | 314 | 15.0 | **314 L4** | **—** | **BN160L4** | **—** | — | — | 132100 | 155100 | 54700 | 372 |
| **4.7** | 26627 | 1.7 | 309 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 123100 | 145700 | 48300 | 362 |
| **4.8** | 27088 | 1.4 | 304 | 18.0 | **313 L3** | **—** | **BN160L4** | **—** | — | — | 122500 | 145000 | 48100 | 360 |
| **5.0** | 25313 | 1.5 | 294 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 98100 | 122200 | 38600 | 374 |
| **5.0** | 25966 | 1.0 | 291 | 18.0 | **311 L3** | **—** | **BN160L4** | **—** | — | — | 97900 | 121900 | 38500 | 348 |
| **5.2** | 24409 | 1.1 | 283 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 82100 | 103300 | 38100 | 338 |
| **5.2** | 24244 | 2.0 | 281 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 119700 | 141700 | 46800 | 362 |
| **5.5** | 22930 | 1.6 | 266 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 95300 | 118700 | 37400 | 374 |
| **5.7** | 22276 | 1.0 | 258 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 79900 | 100500 | 37000 | 338 |
| **5.8** | 22504 | 2.0 | 252 | 18.0 | **313 L3** | **—** | **BN160L4** | **—** | — | — | 115900 | 137100 | 45200 | 360 |
| **6.0** | 21879 | 1.6 | 245 | 18.0 | **311 L3** | **—** | **BN160L4** | **—** | — | — | 93000 | 115800 | 36400 | 348 |
| **6.1** | 21360 | 2.4 | 240 | 25.0 | **314 L3** | **—** | **BN160L4** | **—** | — | — | 119300 | 140100 | 48800 | 372 |
| **6.2** | 20428 | 2.0 | 237 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 113700 | 134600 | 44200 | 362 |
| **6.2** | 20178 | 1.2 | 234 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 77600 | 97600 | 35800 | 338 |
| **6.3** | 20522 | 1.0 | 230 | 18.0 | **310 L3** | **—** | **BN160L4** | **—** | — | — | 77200 | 97100 | 35600 | 336 |
| **6.4** | 19725 | 1.8 | 229 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 91100 | 113400 | 35500 | 374 |
| **7.0** | 18603 | 2.4 | 209 | 18.0 | **313 L3** | **—** | **BN160L4** | **—** | — | — | 109400 | 129500 | 42400 | 360 |
| **7.1** | 17751 | 1.2 | 206 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 74700 | 93900 | 34300 | 338 |
| **7.1** | 17733 | 1.1 | 206 | 15.0 | **—** | **309 R4** | **BN160L4** | **—** | — | — | 63000 | 81200 | 19000 | 326 |
| **7.2** | 18087 | 1.8 | 203 | 18.0 | **311 L3** | **—** | **BN160L4** | **—** | — | — | 87800 | 109400 | 34100 | 348 |
| **7.2** | 17997 | 1.2 | 202 | 18.0 | **310 L3** | **—** | **BN160L4** | **—** | — | — | 74200 | 93300 | 34100 | 336 |
| **7.2** | 17979 | 0.9 | 202 | 11.0 | **309 L3** | **—** | **BN160L4** | **—** | — | — | 61300 | 79100 | 18400 | 324 |
| **7.3** | 17304 | 2.0 | 201 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 108200 | 128000 | 41900 | 362 |
| **7.4** | 17087 | 2.0 | 198 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 87200 | 108600 | 33900 | 374 |
| **7.5** | 17265 | 2.8 | 194 | 18.0 | **313 L3** | **—** | **BN160L4** | **—** | — | — | 107000 | 126700 | 41400 | 360 |
| **7.6** | 17049 | 1.9 | 191 | 18.0 | **311 L3** | **—** | **BN160L4** | **—** | — | — | 86300 | 107500 | 33500 | 348 |
| **7.7** | 16444 | 1.1 | 191 | 15.0 | **—** | **309 R4** | **BN160L4** | **—** | — | — | 61600 | 79400 | 18500 | 326 |
| **7.7** | 16329 | 1.4 | 189 | 15.0 | **—** | **310 R4** | **BN160L4** | **—** | — | — | 72800 | 91500 | 33400 | 338 |
| **7.9** | 15918 | 2.0 | 185 | 22.0 | **—** | **313 R4** | **BN160L4** | **—** | — | — | 105500 | 124900 | 40700 | 362 |
| **8.0** | 15718 | 2.0 | 182 | 22.0 | **—** | **311 R4** | **BN160L4** | **—** | — | — | 85100 | 106000 | 32900 | 374 |
| **8.0** | 16231 | 2.4 | 182 | 18.0 | **313 L3** | **—** | **BN160L4** | **—** | — | — | 105100 | 124300 | 40500 | 360 |

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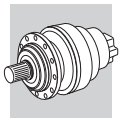
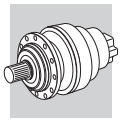


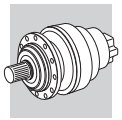
## $P_1$ = 15 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **8.2** | 15805 | 1.2 | 177 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 71400 | 89800 | 32600 | 336 |
| **8.3** | 15675 | 2.9 | 176 | 18.0 | **313 L3** | — | **BN160L4** | — | — | — | 104000 | 123000 | 40100 | 360 |
| **8.5** | 15240 | 2.1 | 171 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 83400 | 103900 | 32200 | 348 |
| **8.8** | 14245 | 1.1 | 165 | 15.0 | — | **309 R4** | **BN160L4** | — | — | — | 59000 | 76100 | 17700 | 326 |
| **8.9** | 14593 | 1.5 | 164 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 69700 | 87600 | 31800 | 336 |
| **9.0** | 14406 | 1.1 | 162 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 58600 | 75600 | 17500 | 324 |
| **9.1** | 14365 | 2.2 | 161 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 82000 | 102100 | 31600 | 348 |
| **9.1** | 13832 | 1.6 | 160 | 15.0 | — | **310 R4** | **BN160L4** | — | — | — | 69300 | 87100 | 31600 | 338 |
| **9.5** | 13314 | 2.0 | 154 | 22.0 | — | **311 R4** | **BN160L4** | — | — | — | 80900 | 100800 | 31200 | 374 |
| **9.5** | 13645 | 2.9 | 153 | 40.0 | — | **313 R3** | **BN160L4** | — | — | — | 99700 | 118000 | 38200 | 362 |
| **9.6** | 13104 | 1.4 | 152 | 15.0 | — | **309 R4** | **BN160L4** | — | — | — | 57500 | 74200 | 17200 | 326 |
| **9.9** | 13109 | 2.4 | 147 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 79700 | 99300 | 30700 | 348 |
| **10.0** | 13079 | 2.1 | 147 | 40.0 | — | **311 R3** | **BN160L4** | — | — | — | 79700 | 99300 | 30600 | 374 |
| **10.0** | 13050 | 1.0 | 146 | 11.0 | **307 L3** | — | **BN160L4** | — | 24400 | 30600 | 56000 | 73300 | 21200 | 312 |
| **10.3** | 12641 | 1.6 | 142 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 66700 | 83900 | 30300 | 336 |
| **10.5** | 12375 | 1.3 | 139 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 56000 | 72200 | 16700 | 324 |
| **10.7** | 11716 | 1.8 | 136 | 15.0 | — | **310 R4** | **BN160L4** | — | — | — | 65900 | 82900 | 29900 | 338 |
| **11.0** | 11875 | 2.5 | 133 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 77400 | 96400 | 29700 | 348 |
| **11.2** | 11629 | 1.8 | 130 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 65100 | 81900 | 29500 | 336 |
| **11.6** | 11225 | 1.2 | 126 | 11.0 | **307 L3** | — | **BN160L4** | — | 23200 | 29100 | 53500 | 70100 | 20200 | 312 |
| **11.6** | 11225 | 1.5 | 126 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 54400 | 70100 | 16100 | 324 |
| **11.6** | 11194 | 2.6 | 126 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 76100 | 94700 | 29100 | 348 |
| **11.8** | 10697 | 1.0 | 124 | 15.0 | — | **307 R4** | **BN160L4** | — | 24800 | 31100 | 56900 | 74500 | 21600 | 314 |
| **11.8** | 11021 | 2.7 | 124 | 40.0 | — | **311 R3** | **BN160L4** | — | — | — | 75700 | 94300 | 28900 | 374 |
| **12.2** | 10679 | 1.2 | 120 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 53600 | 69100 | 15900 | 326 |
| **12.2** | 10679 | 1.6 | 120 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 63500 | 79800 | 28600 | 338 |
| **12.3** | 10612 | 1.9 | 119 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 10215 | 2.8 | 115 | 18.0 | **311 L3** | — | **BN160L4** | — | — | — | 74000 | 92200 | 28200 | 348 |
| **12.9** | 10102 | 1.0 | 113 | 11.0 | **307 L3** | — | **BN160L4** | — | 22400 | 28100 | 51800 | 67900 | 19500 | 312 |
| **12.9** | 10102 | 1.5 | 113 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 52700 | 67900 | 15600 | 324 |
| **13.2** | 9850 | 2.0 | 110 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 61900 | 77900 | 27900 | 336 |
| **13.9** | 9061 | 1.5 | 105 | 15.0 | — | **307 R4** | **BN160L4** | — | 24100 | 30300 | 55400 | 72700 | 21000 | 314 |
| **14.0** | 9293 | 1.0 | 104 | 7.5 | **306 L3** | — | **BN160L4** | — | 19200 | 21700 | 46000 | 53600 | 14400 | 300 |
| **14.5** | 8989 | 2.1 | 101 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 60300 | 75800 | 27000 | 336 |
| **14.6** | 8945 | 1.4 | 100 | 11.0 | **307 L3** | — | **BN160L4** | — | 21500 | 27000 | 50000 | 65500 | 18700 | 312 |
| **14.6** | 8945 | 1.8 | 100 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 50800 | 65500 | 15000 | 324 |
| **14.7** | 8828 | 1.0 | 99.0 | 22.0 | — | **307 R3** | **BN160L4** | — | 21400 | 26900 | 49800 | 65200 | 18600 | 314 |
| **14.7** | 8828 | 1.4 | 99.0 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 50600 | 65200 | 14900 | 326 |
| **14.7** | 8828 | 1.9 | 99.0 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 59900 | 75400 | 26900 | 338 |
| **15.7** | 8295 | 1.5 | 93.0 | 11.0 | **307 L3** | — | **BN160L4** | — | 21000 | 26300 | 48900 | 64000 | 18200 | 312 |
| **15.7** | 8295 | 1.8 | 93.0 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 49600 | 64000 | 14600 | 324 |
| **16.0** | 8143 | 2.3 | 91.3 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 58500 | 73600 | 26200 | 336 |
| **16.5** | 7872 | 1.1 | 88.3 | 7.5 | **306 L3** | — | **BN160L4** | — | 18100 | 20500 | 43800 | 51000 | 13600 | 300 |
| **17.2** | 7557 | 1.0 | 84.7 | 14.0 | — | **306 R3** | **BN160L4** | — | 18300 | 20700 | 44200 | 51400 | 13700 | 302 |
| **17.5** | 7438 | 1.4 | 83.4 | 22.0 | — | **307 R3** | **BN160L4** | — | 20200 | 25400 | 47300 | 62000 | 17600 | 314 |
| **17.5** | 7438 | 1.9 | 83.4 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 48000 | 62000 | 14100 | 326 |
| **17.5** | 7438 | 2.0 | 83.4 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 56900 | 71600 | 25400 | 338 |
| **17.8** | 7300 | 0.9 | 81.9 | 7.5 | **306 L3** | — | **BN160L4** | — | 17700 | 20000 | 42800 | 49900 | 13300 | 300 |
| **18.1** | 7186 | 1.4 | 80.6 | 11.0 | **307 L3** | — | **BN160L4** | — | 20000 | 25100 | 46800 | 61300 | 17400 | 312 |
| **18.1** | 7186 | 2.1 | 80.6 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 47600 | 61300 | 13900 | 324 |
| **18.2** | 7163 | 2.4 | 80.3 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 56300 | 70800 | 25100 | 336 |
| **18.6** | 7012 | 2.0 | 78.6 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 55900 | 70300 | 24900 | 338 |
| **18.6** | 7012 | 1.6 | 78.6 | 22.0 | — | **307 R3** | **BN160L4** | — | 19800 | 24900 | 46500 | 60900 | 17200 | 314 |
| **19.0** | 6867 | 1.2 | 77.0 | 7.5 | **306 L3** | — | **BN160L4** | — | 17700 | 20100 | 42900 | 50000 | 13300 | 300 |
| **19.7** | 6610 | 1.8 | 74.1 | 11.0 | **307 L3** | — | **BN160L4** | — | 19400 | 24400 | 45600 | 59800 | 16900 | 312 |
| **19.7** | 6610 | 2.3 | 74.1 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 46400 | 59800 | 13500 | 324 |
| **19.8** | 6590 | 2.7 | 73.9 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 54900 | 69000 | 24400 | 336 |
| **20.0** | 6500 | 1.1 | 72.9 | 14.0 | — | **306 R3** | **BN160L4** | — | 17400 | 19700 | 42200 | 49200 | 13100 | 302 |
| **20.3** | 6399 | 1.6 | 71.8 | 22.0 | — | **307 R3** | **BN160L4** | — | 19200 | 24100 | 45200 | 59200 | 16700 | 314 |
| **20.3** | 6399 | 2.0 | 71.8 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 45900 | 59200 | 13400 | 326 |
| **20.3** | 6399 | 2.0 | 71.8 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 54400 | 68400 | 24100 | 338 |
| **21.6** | 6022 | 1.2 | 67.5 | 14.0 | — | **306 R3** | **BN160L4** | — | 17000 | 19200 | 41300 | 48000 | 12700 | 302 |
| **22.4** | 5817 | 1.3 | 65.2 | 7.5 | **306 L3** | — | **BN160L4** | — | 16800 | 19000 | 40800 | 47500 | 12600 | 300 |
| **22.5** | 5796 | 2.0 | 65.0 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 52800 | 66400 | 23400 | 338 |
| **22.5** | 5796 | 1.9 | 65.0 | 22.0 | — | **307 R3** | **BN160L4** | — | 18600 | 23300 | 43900 | 57500 | 16200 | 314 |



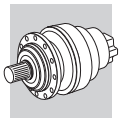
## $P_1$ = 15 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **22.5** | 5796 | 1.9 | 65.0 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 44600 | 57500 | 12900 | 326 |
| **23.3** | 5582 | 3.0 | 62.6 | 18.0 | **310 L3** | — | **BN160L4** | — | — | — | 52200 | 65700 | 23100 | 336 |
| **24.1** | 5396 | 2.1 | 60.5 | 11.0 | **307 L3** | — | **BN160L4** | — | 18200 | 22800 | 42900 | 56300 | 15800 | 312 |
| **24.1** | 5396 | 2.6 | 60.5 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 43600 | 56300 | 12600 | 324 |
| **25.1** | 5180 | 1.5 | 58.1 | 14.0 | — | **306 R3** | **BN160L4** | — | 16100 | 18300 | 39400 | 45900 | 12100 | 302 |
| **26.0** | 5182 | 1.0 | 56.3 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 16000 | 18100 | 39100 | 45500 | 12000 | 300 |
| **26.1** | 4986 | 2.0 | 55.9 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 50500 | 63500 | 22200 | 338 |
| **26.1** | 4986 | 2.0 | 55.9 | 22.0 | — | **307 R3** | **BN160L4** | — | 17700 | 22200 | 41900 | 55000 | 15400 | 314 |
| **26.1** | 4986 | 2.0 | 55.9 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 42600 | 55000 | 12300 | 326 |
| **27.4** | 4748 | 1.5 | 53.2 | 7.5 | **306 L3** | — | **BN160L4** | — | 15700 | 17800 | 38400 | 44700 | 11800 | 300 |
| **28.5** | 4571 | 2.3 | 51.3 | 11.0 | **307 L3** | — | **BN160L4** | — | 17200 | 21600 | 40900 | 53500 | 14900 | 312 |
| **28.5** | 4571 | 2.9 | 51.3 | 11.0 | **309 L3** | — | **BN160L4** | — | — | — | 41500 | 53500 | 12000 | 324 |
| **31** | 4305 | 1.9 | 46.7 | 18.0 | **307 L2** | — | **BN160L4** | **M5SB4** | 16700 | 20900 | 39700 | 52100 | 14500 | 312 |
| **31** | 4305 | 2.9 | 46.7 | 18.0 | **309 L2** | — | **BN160L4** | — | — | — | 40400 | 52100 | 11600 | 324 |
| **31** | 4284 | 1.5 | 46.5 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **32** | 4128 | 1.8 | 46.3 | 14.0 | — | **306 R3** | **BN160L4** | — | 15000 | 16900 | 36800 | 42900 | 11200 | 302 |
| **33** | 3973 | 2.0 | 44.6 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 47200 | 59300 | 20600 | 338 |
| **33** | 3973 | 2.0 | 44.6 | 22.0 | — | **307 R3** | **BN160L4** | — | 16400 | 20600 | 39200 | 51300 | 14300 | 314 |
| **33** | 3973 | 2.0 | 44.6 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 39800 | 51300 | 11400 | 326 |
| **37** | 3497 | 1.9 | 39.2 | 14.0 | — | **306 R3** | **BN160L4** | — | 14100 | 16000 | 35000 | 40800 | 10600 | 302 |
| **38** | 3559 | 2.3 | 38.6 | 18.0 | **307 L2** | — | **BN160L4** | **M5SB4** | 15600 | 19600 | 37500 | 49200 | 13600 | 312 |
| **38** | 3541 | 1.8 | 38.4 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 14100 | 15900 | 34800 | 40600 | 10600 | 300 |
| **38** | 3537 | 1.2 | 38.4 | 9.0 | **305 L2** | — | **BN160L4** | — | 11300 | 13000 | 21300 | 25600 | 7240 | 288 |
| **39** | 3366 | 2.0 | 37.7 | 22.0 | — | **310 R3** | **BN160L4** | — | — | — | 44900 | 56400 | 19500 | 338 |
| **39** | 3366 | 2.0 | 37.7 | 22.0 | — | **307 R3** | **BN160L4** | — | — | — | 37900 | 48800 | 10800 | 314 |
| **39** | 3366 | 2.0 | 37.7 | 22.0 | — | **309 R3** | **BN160L4** | — | 15500 | 19500 | 37300 | 48800 | 13500 | 326 |
| **41** | 3295 | 1.1 | 35.8 | 9.0 | **305 L2** | — | **BN160L4** | — | 11000 | 12700 | 20800 | 25100 | 7070 | 288 |
| **44** | 2962 | 2.0 | 33.2 | 14.0 | — | **306 R3** | **BN160L4** | — | 13400 | 15200 | 33300 | 38800 | 10100 | 302 |
| **44** | 3046 | 2.3 | 33.1 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 13400 | 15100 | 33300 | 38800 | 10000 | 300 |
| **46** | 2821 | 2.0 | 31.6 | 22.0 | — | **307 R3** | **BN160L4** | — | 14600 | 18400 | 35400 | 46300 | 12700 | 314 |
| **46** | 2821 | 2.0 | 31.6 | 22.0 | — | **309 R3** | **BN160L4** | — | — | — | 35900 | 46300 | 10200 | 326 |
| **47** | 2834 | 1.0 | 30.8 | 9.0 | **304 L2** | — | **BN160L4** | — | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **47** | 2834 | 1.5 | 30.8 | 9.0 | **305 L2** | — | **BN160L4** | — | 10500 | 12100 | 19900 | 24000 | 6720 | 288 |
| **51** | 2620 | 2.6 | 28.4 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 12700 | 14400 | 31800 | 37100 | 9550 | 300 |
| **55** | 2435 | 1.4 | 26.4 | 9.0 | **305 L2** | — | **BN160L4** | — | 9960 | 11500 | 19000 | 22900 | 6390 | 288 |
| **55** | 2427 | 2.6 | 26.4 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 12400 | 14000 | 31100 | 36200 | 9310 | 300 |
| **60** | 2259 | 1.0 | 24.5 | 9.0 | **303 L2** | — | **BN160L4** | — | 9490 | 11000 | 18200 | 21900 | 6090 | 264 |
| **60** | 2259 | 1.4 | 24.5 | 9.0 | **304 L2** | — | **BN160L4** | — | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **60** | 2259 | 1.7 | 24.5 | 9.0 | **305 L2** | — | **BN160L4** | — | 9720 | 11200 | 18600 | 22400 | 6230 | 288 |
| **64** | 2095 | 1.0 | 22.7 | 9.0 | **303 L2** | — | **BN160L4** | — | 9470 | 10900 | 18200 | 21900 | 6080 | 264 |
| **64** | 2095 | 1.3 | 22.7 | 9.0 | **304 L2** | — | **BN160L4** | — | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **64** | 2095 | 1.9 | 22.7 | 9.0 | **305 L2** | — | **BN160L4** | — | 9470 | 10900 | 18200 | 21900 | 6080 | 288 |
| **64** | 2088 | 2.9 | 22.7 | 13.0 | **306 L2** | — | **BN160L4** | **M5SB4** | 11800 | 13400 | 29700 | 34600 | 8850 | 300 |
| **70** | 1913 | 1.0 | 20.8 | 9.0 | **303 L2** | — | **BN160L4** | — | 8980 | 10400 | 17300 | 20900 | 5760 | 264 |
| **70** | 1913 | 1.5 | 20.8 | 9.0 | **304 L2** | — | **BN160L4** | — | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **70** | 1913 | 1.7 | 20.8 | 9.0 | **305 L2** | — | **BN160L4** | — | 9190 | 10600 | 17700 | 21300 | 5900 | 288 |
| **76** | 1771 | 2.0 | 19.2 | 18.0 | — | **306 R2** | **BN160L4** | — | 11200 | 12600 | 28300 | 33000 | 8380 | 302 |
| **81** | 1669 | 1.2 | 18.1 | 9.0 | **303 L2** | — | **BN160L4** | — | 8780 | 10100 | 17000 | 20400 | 5630 | 264 |
| **81** | 1669 | 1.8 | 18.1 | 9.0 | **304 L2** | — | **BN160L4** | — | 8780 | 10100 | 17000 | 20400 | 5630 | 288 |
| **81** | 1669 | 2.2 | 18.1 | 9.0 | **305 L2** | — | **BN160L4** | — | 8780 | 10100 | 17000 | 20400 | 5630 | 288 |
| **92** | 1464 | 2.0 | 15.9 | 18.0 | — | **306 R2** | **BN160L4** | — | 10500 | 11900 | 26700 | 31100 | 7870 | 302 |
| **95** | 1414 | 1.2 | 15.3 | 9.0 | **303 L2** | — | **BN160L4** | — | 8310 | 9590 | 16200 | 19500 | 5330 | 264 |
| **95** | 1414 | 2.0 | 15.3 | 9.0 | **304 L2** | — | **BN160L4** | — | 8310 | 9590 | 16200 | 19500 | 5330 | 288 |
| **95** | 1414 | 2.2 | 15.3 | 9.0 | **305 L2** | — | **BN160L4** | — | 8310 | 9590 | 16200 | 19500 | 5330 | 288 |
| **107** | 1259 | 2.0 | 13.7 | 18.0 | — | **306 R2** | **BN160L4** | — | 9960 | 11300 | 25500 | 29700 | 7480 | 302 |
| **117** | 1154 | 1.4 | 12.5 | 9.0 | **303 L2** | — | **BN160L4** | — | 7770 | 8970 | 15200 | 18300 | 4980 | 264 |
| **117** | 1154 | 2.3 | 12.5 | 9.0 | **304 L2** | — | **BN160L4** | — | 7770 | 8970 | 15200 | 18300 | 4980 | 288 |
| **117** | 1154 | 2.5 | 12.5 | 9.0 | **305 L2** | — | **BN160L4** | — | 7770 | 8970 | 15200 | 18300 | 4980 | 288 |
| **134** | 1003 | 2.0 | 10.9 | 18.0 | — | **306 R2** | **BN160L4** | — | 9230 | 10500 | 23900 | 27800 | 6930 | 302 |
| **158** | 850 | 2.0 | 9.23 | 18.0 | — | **306 R2** | **BN160L4** | — | 8730 | 9900 | 22700 | 26400 | 6560 | 302 |
| **195** | 713 | 1.7 | 7.50 | 11.0 | **303 L1** | — | **BN160L4** | **M5SB4** | 6550 | 7560 | 13000 | 15700 | 4200 | 264 |
| **222** | 625 | 3.0 | 6.57 | 12.0 | **304 L1** | — | **BN160L4** | **M5SB4** | 6260 | 7230 | 12500 | 15100 | 4020 | 288 |
| **235** | 589 | 2.4 | 6.20 | 11.0 | **303 L1** | — | **BN160L4** | **M5SB4** | 6140 | 7090 | 12300 | 14800 | 3940 | 264 |
| **274** | 507 | 2.9 | 5.33 | 11.0 | **303 L1** | — | **BN160L4** | **M5SB4** | 5840 | 6750 | 11800 | 14200 | 3750 | 264 |



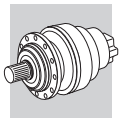
## $P_1$ = 18.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.92** | 169802 | 1.0 | 1595 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 442000 | 470000 | 150000 | 406 |
| **1.1** | 147863 | 2.4 | 1389 | 30.0 | **319 L4** | — | **BN180M4** | — | — | — | 636100 | 700800 | 199500 | 426 |
| **1.1** | 140370 | 1.2 | 1318 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 434300 | 462400 | 147000 | 406 |
| **1.2** | 131765 | 0.9 | 1237 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 331400 | 368600 | 144000 | 396 |
| **1.2** | 127194 | 2.8 | 1195 | 30.0 | **319 L4** | — | **BN180M4** | — | — | — | 608000 | 669900 | 189700 | 426 |
| **1.3** | 120748 | 1.4 | 1134 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 415100 | 442000 | 139800 | 406 |
| **1.4** | 112771 | 2.4 | 1059 | 22.0 | **318 L4** | — | **BN180M4** | — | — | — | 503000 | 520700 | 182200 | 416 |
| **1.4** | 111025 | 0.9 | 1043 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 189400 | 222300 | 81600 | 384 |
| **1.4** | 111025 | 1.2 | 1043 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 109922 | 1.6 | 1032 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 403600 | 429700 | 135500 | 406 |
| **1.5** | 101508 | 1.4 | 953 | 50.0 | — | **317 R4** | **BN180M4** | — | — | — | 394100 | 419600 | 132000 | 406 |
| **1.6** | 99014 | 0.9 | 930 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 183000 | 214800 | 78500 | 384 |
| **1.6** | 97007 | 2.8 | 911 | 22.0 | **318 L4** | — | **BN180M4** | — | — | — | 487700 | 497700 | 173300 | 416 |
| **1.6** | 96221 | 1.7 | 904 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 387800 | 412900 | 129600 | 406 |
| **1.7** | 91780 | 1.1 | 862 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 91780 | 1.4 | 862 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 297400 | 330700 | 127600 | 396 |
| **1.8** | 86513 | 1.5 | 812 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 292100 | 324900 | 125100 | 396 |
| **1.8** | 85530 | 1.9 | 803 | 50.0 | — | **317 R4** | **BN180M4** | — | — | — | 374300 | 398500 | 124600 | 406 |
| **1.8** | 84332 | 2.2 | 792 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 372700 | 396900 | 124100 | 406 |
| **1.9** | 83289 | 1.1 | 782 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 173700 | 203900 | 74100 | 386 |
| **2.0** | 78901 | 1.3 | 741 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 170900 | 200700 | 72800 | 384 |
| **2.0** | 78901 | 1.6 | 741 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 284200 | 316100 | 121400 | 396 |
| **2.0** | 78561 | 1.0 | 738 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 170700 | 200400 | 72700 | 372 |
| **2.0** | 77333 | 1.7 | 726 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 282500 | 314100 | 120500 | 396 |
| **2.0** | 76565 | 2.3 | 719 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 362100 | 385500 | 120100 | 406 |
| **2.1** | 72895 | 1.8 | 685 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 277500 | 308600 | 118200 | 396 |
| **2.2** | 72067 | 2.3 | 677 | 50.0 | — | **317 R4** | **BN180M4** | — | — | — | 355600 | 378600 | 117700 | 406 |
| **2.2** | 71517 | 1.4 | 672 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 165900 | 194800 | 70500 | 384 |
| **2.2** | 71164 | 1.1 | 668 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 70179 | 1.3 | 659 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 165000 | 193700 | 70000 | 386 |
| **2.3** | 66647 | 2.3 | 626 | 50.0 | — | **317 R4** | **BN180M4** | — | — | — | 347300 | 369800 | 114700 | 406 |
| **2.3** | 66482 | 1.9 | 624 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 270000 | 300300 | 114600 | 396 |
| **2.3** | 66371 | 1.5 | 623 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 66371 | 1.7 | 623 | 45.0 | — | **316 R4** | **BN180M4** | — | — | — | 269800 | 300100 | 114500 | 386 |
| **2.4** | 65863 | 2.7 | 619 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 346100 | 368500 | 114200 | 406 |
| **2.5** | 62914 | 1.6 | 591 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 159700 | 187500 | 67500 | 384 |
| **2.5** | 62914 | 1.9 | 591 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 265500 | 295300 | 112500 | 396 |
| **2.5** | 62603 | 1.3 | 588 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 159500 | 187200 | 67400 | 372 |
| **2.6** | 60260 | 2.1 | 566 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 262100 | 291500 | 110900 | 396 |
| **2.6** | 59010 | 1.4 | 554 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 156600 | 183900 | 66100 | 372 |
| **2.6** | 58741 | 3.0 | 552 | 18.0 | **317 L4** | — | **BN180M4** | — | — | — | 334400 | 356100 | 110000 | 406 |
| **2.7** | 56801 | 1.8 | 533 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 154900 | 181800 | 65200 | 384 |
| **2.7** | 56801 | 2.1 | 533 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 257500 | 286400 | 108700 | 396 |
| **2.8** | 55924 | 1.8 | 525 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 154100 | 181000 | 64900 | 386 |
| **2.8** | 55924 | 2.1 | 525 | 45.0 | — | **316 R4** | **BN180M4** | — | — | — | 256300 | 285000 | 108200 | 386 |
| **2.8** | 55368 | 3.0 | 520 | 50.0 | — | **317 R4** | **BN180M4** | — | — | — | 328500 | 349800 | 107800 | 406 |
| **3.0** | 52659 | 1.5 | 495 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 151400 | 177700 | 63600 | 372 |
| **3.0** | 51836 | 1.9 | 487 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 150700 | 176900 | 63300 | 384 |
| **3.0** | 51836 | 2.3 | 487 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 250500 | 278600 | 105500 | 396 |
| **3.2** | 48782 | 1.6 | 458 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 148000 | 173700 | 62000 | 372 |
| **3.3** | 47121 | 2.5 | 443 | 45.0 | — | **316 R4** | **BN180M4** | — | — | — | 243500 | 270800 | 102200 | 386 |
| **3.3** | 46956 | 2.1 | 441 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 146300 | 171700 | 61200 | 384 |
| **3.3** | 46956 | 2.5 | 441 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 243200 | 270500 | 102100 | 396 |
| **3.6** | 43577 | 2.3 | 409 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 143000 | 167900 | 59700 | 386 |
| **3.6** | 43577 | 2.6 | 409 | 45.0 | — | **316 R4** | **BN180M4** | — | — | — | 237800 | 264500 | 99600 | 386 |
| **3.8** | 41321 | 1.9 | 388 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 140800 | 165300 | 58700 | 372 |
| **4.0** | 39353 | 2.5 | 370 | 18.0 | **315 L4** | — | **BN180M4** | — | — | — | 138700 | 162900 | 57700 | 384 |
| **4.0** | 39353 | 2.8 | 370 | 18.0 | **316 L4** | — | **BN180M4** | — | — | — | 230600 | 256500 | 96200 | 396 |
| **4.2** | 36717 | 2.6 | 345 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 135900 | 159500 | 56400 | 386 |
| **4.2** | 36717 | 2.9 | 345 | 45.0 | — | **316 R4** | **BN180M4** | — | — | — | 225900 | 251200 | 94000 | 386 |
| **4.6** | 33439 | 2.3 | 314 | 15.0 | **314 L4** | — | **BN180M4** | — | — | — | 132100 | 155100 | 54700 | 372 |
| **4.8** | 33446 | 1.2 | 304 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 122500 | 145000 | 48100 | 360 |
| **5.4** | 28611 | 2.9 | 269 | 40.0 | — | **315 R4** | **BN180M4** | — | — | — | 126100 | 148000 | 51900 | 386 |
| **5.8** | 27786 | 1.6 | 252 | 50.0 | **313 L3** | — | **BN180M4** | — | — | — | 267500 | 284800 | 85800 | 360 |
| **6.0** | 27014 | 1.3 | 245 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 93000 | 115800 | 36400 | 348 |



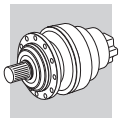
## $P_1$ = 18.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6.1** | 26503 | 2.5 | 241 | 30.0 | **315 L3** | — | **BN180M4** | — | — | — | 122000 | 143200 | 50000 | 384 |
| **6.1** | 26373 | 2.0 | 240 | 25.0 | **314 L3** | — | **BN180M4** | — | — | — | 121800 | 143000 | 50000 | 372 |
| **7.0** | 22970 | 2.0 | 209 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 109400 | 129500 | 42400 | 360 |
| **7.1** | 22686 | 2.8 | 206 | 25.0 | **314 L3** | — | **BN180M4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **7.2** | 22332 | 1.5 | 203 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 87800 | 109400 | 34100 | 348 |
| **7.2** | 22221 | 1.0 | 202 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 74200 | 93300 | 34100 | 336 |
| **7.5** | 21317 | 2.2 | 194 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 107000 | 126700 | 41400 | 360 |
| **7.6** | 21050 | 1.5 | 191 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 86300 | 107500 | 33500 | 348 |
| **8.0** | 20040 | 1.9 | 182 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 105100 | 124300 | 40500 | 360 |
| **8.2** | 19515 | 0.9 | 177 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 71400 | 89800 | 32600 | 336 |
| **8.3** | 19354 | 2.3 | 176 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 104000 | 123000 | 40100 | 360 |
| **8.5** | 18816 | 1.7 | 171 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 83400 | 103900 | 32200 | 348 |
| **8.9** | 18018 | 1.2 | 164 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 69700 | 87600 | 31800 | 336 |
| **9.0** | 17962 | 2.6 | 163 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 101700 | 120300 | 39100 | 360 |
| **9.1** | 17736 | 1.8 | 161 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 82000 | 102100 | 31600 | 348 |
| **9.5** | 16847 | 2.3 | 153 | 40.0 | — | **313 R3** | **BN180M4** | — | — | — | 99700 | 118000 | 38200 | 362 |
| **9.7** | 16649 | 2.7 | 151 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 99400 | 117600 | 38100 | 360 |
| **9.9** | 16186 | 2.0 | 147 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 79700 | 99300 | 30700 | 348 |
| **10.0** | 16149 | 1.7 | 147 | 40.0 | — | **311 R3** | **BN180M4** | — | — | — | 79700 | 99300 | 30600 | 374 |
| **10.2** | 15745 | 2.8 | 143 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 97700 | 115700 | 37400 | 360 |
| **10.3** | 15608 | 1.3 | 142 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 66700 | 83900 | 30300 | 336 |
| **10.8** | 14848 | 3.0 | 135 | 18.0 | **313 L3** | — | **BN180M4** | — | — | — | 96000 | 113600 | 36700 | 360 |
| **11.0** | 14662 | 2.0 | 133 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 77400 | 96400 | 29700 | 348 |
| **11.2** | 14358 | 1.4 | 130 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 65100 | 81900 | 29500 | 336 |
| **11.5** | 13996 | 2.9 | 127 | 40.0 | — | **313 R3** | **BN180M4** | — | — | — | 94300 | 111600 | 36000 | 362 |
| **11.6** | 13821 | 2.1 | 126 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 76100 | 94700 | 29100 | 348 |
| **11.8** | 13607 | 2.2 | 124 | 40.0 | — | **311 R3** | **BN180M4** | — | — | — | 75700 | 94300 | 28900 | 374 |
| **12.3** | 13103 | 1.5 | 119 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 12613 | 2.3 | 115 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 74000 | 92200 | 28200 | 348 |
| **13.2** | 12162 | 1.6 | 110 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 61900 | 77900 | 27900 | 336 |
| **14.0** | 11465 | 2.5 | 104 | 40.0 | — | **311 R3** | **BN180M4** | — | — | — | 71900 | 89600 | 27300 | 374 |
| **14.1** | 11425 | 2.4 | 104 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 71800 | 89500 | 27300 | 348 |
| **14.5** | 11099 | 1.7 | 101 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 60300 | 75800 | 27000 | 336 |
| **15.2** | 10603 | 2.6 | 96.3 | 40.0 | — | **311 R3** | **BN180M4** | — | — | — | 70200 | 87500 | 26600 | 374 |
| **16.0** | 10054 | 1.9 | 91.3 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 58500 | 73600 | 26200 | 336 |
| **16.4** | 9828 | 2.7 | 89.3 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 68100 | 84900 | 25700 | 348 |
| **18.0** | 8934 | 2.9 | 81.1 | 40.0 | — | **311 R3** | **BN180M4** | — | — | — | 66700 | 83100 | 25200 | 374 |
| **18.2** | 8845 | 2.0 | 80.3 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 56300 | 70800 | 25100 | 336 |
| **18.9** | 8514 | 3.0 | 77.3 | 18.0 | **311 L3** | — | **BN180M4** | — | — | — | 65800 | 81900 | 24800 | 348 |
| **19.8** | 8136 | 2.2 | 73.9 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 54900 | 69000 | 24400 | 336 |
| **23.3** | 6892 | 2.4 | 62.6 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 52200 | 65700 | 23100 | 336 |
| **27.5** | 5838 | 2.7 | 53.0 | 18.0 | **310 L3** | — | **BN180M4** | — | — | — | 49700 | 62500 | 21800 | 336 |
| **31** | 5315 | 1.6 | 46.7 | 18.0 | **307 L2** | — | **BN180M4** | **M5LA4** | 16700 | 20900 | 39700 | 52100 | 14500 | 312 |
| **31** | 5315 | 2.4 | 46.7 | 18.0 | **309 L2** | — | **BN180M4** | — | — | — | 40400 | 52100 | 11600 | 324 |
| **31** | 5315 | 2.7 | 46.7 | 22.0 | **310 L2** | — | **BN180M4** | — | — | — | 47800 | 60200 | 20900 | 336 |
| **31** | 5289 | 1.2 | 46.5 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **38** | 4394 | 1.9 | 38.6 | 18.0 | **307 L2** | — | **BN180M4** | **M5LA4** | 15600 | 19600 | 37500 | 49200 | 13600 | 312 |
| **38** | 4394 | 2.8 | 38.6 | 18.0 | **309 L2** | — | **BN180M4** | — | — | — | 38100 | 49200 | 10900 | 324 |
| **38** | 4372 | 1.5 | 38.4 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 14100 | 15900 | 34800 | 40600 | 10600 | 300 |
| **44** | 3761 | 1.8 | 33.1 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 13400 | 15100 | 33300 | 38800 | 10000 | 300 |
| **45** | 3702 | 2.5 | 32.6 | 18.0 | **307 L2** | — | **BN180M4** | **M5LA4** | 14800 | 18500 | 35700 | 46700 | 12800 | 312 |
| **48** | 3490 | 2.7 | 30.7 | 18.0 | **307 L2** | — | **BN180M4** | **M5LA4** | 14500 | 18200 | 35000 | 45900 | 12600 | 312 |
| **51** | 3235 | 2.1 | 28.4 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 12700 | 14400 | 31800 | 37100 | 9550 | 300 |
| **52** | 3185 | 2.9 | 28.0 | 18.0 | **307 L2** | — | **BN180M4** | **M5LA4** | 14100 | 17600 | 34100 | 44700 | 12200 | 312 |
| **55** | 2997 | 2.1 | 26.4 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 12400 | 14000 | 31100 | 36200 | 9310 | 300 |
| **62** | 2677 | 3.0 | 23.5 | 35.0 | — | **307 R2** | **BN180M4** | **M5LA4** | 13300 | 16600 | 32400 | 42400 | 11500 | 314 |
| **64** | 2578 | 2.4 | 22.7 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 11800 | 13400 | 29700 | 34600 | 8850 | 300 |
| **81** | 2054 | 2.9 | 18.1 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 10700 | 12100 | 27200 | 31700 | 8020 | 300 |
| **95** | 1740 | 2.9 | 15.3 | 13.0 | **306 L2** | — | **BN180M4** | **M5LA4** | 10300 | 11700 | 26400 | 30800 | 7770 | 300 |
| **195** | 880 | 1.4 | 7.50 | 11.0 | **303 L1** | — | **BN180M4** | **M5LA4** | 6550 | 7560 | 13000 | 15700 | 4200 | 264 |
| **195** | 880 | 2.6 | 7.50 | 13.0 | **305 L1** | — | **BN180M4** | **M5LA4** | 6550 | 7560 | 13000 | 15700 | 4200 | 288 |
| **222** | 771 | 2.4 | 6.57 | 12.0 | **304 L1** | — | **BN180M4** | **M5LA4** | 6260 | 7230 | 12500 | 15100 | 4020 | 288 |
| **235** | 728 | 1.9 | 6.20 | 11.0 | **303 L1** | — | **BN180M4** | **M5LA4** | 6140 | 7090 | 12300 | 14800 | 3940 | 264 |
| **274** | 626 | 2.4 | 5.33 | 11.0 | **303 L1** | — | **BN180M4** | **M5LA4** | 5840 | 6750 | 11800 | 14200 | 3750 | 264 |
| **344** | 499 | 2.9 | 4.25 | 11.0 | **303 L1** | — | **BN180M4** | **M5LA4** | 5420 | 6250 | 11000 | 13200 | 3480 | 264 |



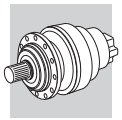
## $P_1$ = 22 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1** | 175970 | 2.0 | 1389 | 30.0 | **319 L4** | — | **BN180L4** | — | — | — | 636100 | 700800 | 199500 | 426 |
| **1.1** | 167052 | 1.0 | 1318 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 425400 | 452900 | 143700 | 406 |
| **1.2** | 151372 | 2.3 | 1195 | 30.0 | **319 L4** | — | **BN180L4** | — | — | — | 608000 | 669900 | 189700 | 426 |
| **1.3** | 143700 | 1.2 | 1134 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 415100 | 442000 | 139800 | 406 |
| **1.4** | 134206 | 2.0 | 1059 | 22.0 | **318 L4** | — | **BN180L4** | — | — | — | 503000 | 520700 | 182200 | 416 |
| **1.4** | 132128 | 1.0 | 1043 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 314800 | 350100 | 136000 | 396 |
| **1.4** | 130816 | 1.4 | 1032 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 403600 | 429700 | 135500 | 406 |
| **1.5** | 127545 | 2.7 | 1007 | 30.0 | **319 L4** | — | **BN180L4** | — | — | — | 577600 | 636300 | 179200 | 426 |
| **1.5** | 120803 | 1.2 | 953 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 394100 | 419600 | 132000 | 406 |
| **1.6** | 115536 | 2.9 | 912 | 30.0 | **319 L4** | — | **BN180L4** | — | — | — | 560700 | 617700 | 173400 | 426 |
| **1.6** | 115446 | 2.3 | 911 | 22.0 | **318 L4** | — | **BN180L4** | — | — | — | 487700 | 497700 | 173300 | 416 |
| **1.6** | 114851 | 2.9 | 906 | 115.0 | — | **319 R4 (C)** | **BN180L4** | — | — | — | 559700 | 616600 | 173000 | 428 |
| **1.6** | 114511 | 1.5 | 904 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 387800 | 412900 | 129600 | 406 |
| **1.7** | 109226 | 0.9 | 862 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 178800 | 210000 | 76600 | 384 |
| **1.7** | 109226 | 1.2 | 862 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 297400 | 330700 | 127600 | 396 |
| **1.8** | 102957 | 1.3 | 812 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 292100 | 324900 | 125100 | 396 |
| **1.8** | 101788 | 1.6 | 803 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 374300 | 398500 | 124600 | 406 |
| **1.8** | 100362 | 1.9 | 792 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 372700 | 396900 | 124100 | 406 |
| **1.9** | 99121 | 0.9 | 782 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 173700 | 203900 | 74100 | 386 |
| **1.9** | 97274 | 2.8 | 768 | 22.0 | **318 L4** | — | **BN180L4** | — | — | — | 463300 | 472800 | 163700 | 416 |
| **2.0** | 93899 | 1.1 | 741 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 170900 | 200700 | 72800 | 384 |
| **2.0** | 93899 | 1.3 | 741 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 284200 | 316100 | 121400 | 396 |
| **2.0** | 92033 | 1.4 | 726 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 282500 | 314100 | 120500 | 396 |
| **2.0** | 91996 | 2.9 | 726 | 22.0 | **318 L4** | — | **BN180L4** | — | — | — | 455600 | 464900 | 160700 | 416 |
| **2.0** | 91119 | 2.0 | 719 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 362100 | 385500 | 120100 | 406 |
| **2.1** | 86751 | 1.5 | 685 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 277500 | 308600 | 118200 | 396 |
| **2.2** | 85766 | 1.9 | 677 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 355600 | 378600 | 117700 | 406 |
| **2.2** | 85111 | 1.2 | 672 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 165900 | 194800 | 70500 | 384 |
| **2.2** | 84691 | 1.0 | 668 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 165700 | 194500 | 70300 | 372 |
| **2.2** | 83518 | 1.1 | 659 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 165000 | 193700 | 70000 | 386 |
| **2.3** | 79315 | 2.0 | 626 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 347300 | 369800 | 114700 | 406 |
| **2.3** | 79119 | 1.6 | 624 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 270000 | 300300 | 114600 | 396 |
| **2.3** | 78987 | 1.3 | 623 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 78987 | 1.5 | 623 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 269800 | 300100 | 114500 | 386 |
| **2.4** | 78382 | 2.3 | 619 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 346100 | 368500 | 114200 | 406 |
| **2.5** | 74873 | 1.3 | 591 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 159700 | 187500 | 67500 | 384 |
| **2.5** | 74873 | 1.6 | 591 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 265500 | 295300 | 112500 | 396 |
| **2.5** | 74503 | 1.1 | 588 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 159500 | 187200 | 67400 | 372 |
| **2.6** | 71714 | 1.7 | 566 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 262100 | 291500 | 110900 | 396 |
| **2.6** | 70227 | 1.1 | 554 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 156600 | 183900 | 66100 | 372 |
| **2.6** | 69906 | 2.5 | 552 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 334400 | 356100 | 110000 | 406 |
| **2.7** | 67598 | 1.5 | 533 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 154900 | 181800 | 65200 | 384 |
| **2.7** | 67598 | 1.8 | 533 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 257500 | 286400 | 108700 | 396 |
| **2.8** | 66554 | 1.5 | 525 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 154100 | 181000 | 64900 | 386 |
| **2.8** | 66554 | 1.8 | 525 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 256300 | 285000 | 108200 | 386 |
| **2.8** | 65893 | 2.5 | 520 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 328500 | 349800 | 107800 | 406 |
| **3.0** | 62669 | 1.3 | 495 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 151400 | 177700 | 63600 | 372 |
| **3.0** | 62461 | 2.7 | 493 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 323300 | 344200 | 105900 | 406 |
| **3.0** | 61690 | 1.6 | 487 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 150700 | 176900 | 63300 | 384 |
| **3.0** | 61690 | 1.9 | 487 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 250500 | 278600 | 105500 | 396 |
| **3.2** | 58054 | 1.4 | 458 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 148000 | 173700 | 62000 | 372 |
| **3.3** | 56872 | 2.9 | 449 | 18.0 | **317 L4** | — | **BN180L4** | — | — | — | 314300 | 334700 | 102700 | 406 |
| **3.3** | 56078 | 2.1 | 443 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 243500 | 270800 | 102200 | 386 |
| **3.3** | 55881 | 1.8 | 441 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 146300 | 171700 | 61200 | 384 |
| **3.3** | 55881 | 2.1 | 441 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 243200 | 270500 | 102100 | 396 |
| **3.3** | 55521 | 2.8 | 438 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 312100 | 332300 | 101800 | 406 |
| **3.6** | 51860 | 1.9 | 409 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 143000 | 167900 | 59700 | 386 |
| **3.6** | 51860 | 2.2 | 409 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 237800 | 264500 | 99600 | 386 |
| **3.7** | 50553 | 2.9 | 399 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 303400 | 323100 | 98700 | 406 |
| **3.8** | 49175 | 1.6 | 388 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 140800 | 165300 | 58700 | 372 |
| **4.0** | 46834 | 2.1 | 370 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 138700 | 162900 | 57700 | 384 |
| **4.0** | 46834 | 2.3 | 370 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 230600 | 256500 | 96200 | 396 |
| **4.2** | 43697 | 2.2 | 345 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 135900 | 159500 | 56400 | 386 |
| **4.2** | 43697 | 2.5 | 345 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 225900 | 251200 | 94000 | 386 |
| **4.3** | 42595 | 2.9 | 336 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 288200 | 306900 | 93200 | 406 |



# $P_1$ = 22 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.4** | 41640 | 2.5 | 329 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 222700 | 247600 | 92500 | 396 |
| **4.6** | 39795 | 2.0 | 314 | 15.0 | **314 L4** | — | **BN180L4** | — | — | — | 132100 | 155100 | 54700 | 372 |
| **4.8** | 39803 | 1.0 | 304 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 122500 | 145000 | 48100 | 360 |
| **4.8** | 38306 | 2.5 | 302 | 18.0 | **315 L4** | — | **BN180L4** | — | — | — | 130600 | 153300 | 54000 | 384 |
| **4.8** | 38306 | 2.7 | 302 | 18.0 | **316 L4** | — | **BN180L4** | — | — | — | 217100 | 241500 | 90000 | 396 |
| **5.1** | 36622 | 2.9 | 289 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 214200 | 238300 | 88700 | 386 |
| **5.4** | 34049 | 2.4 | 269 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 126100 | 148000 | 51900 | 386 |
| **5.4** | 34049 | 2.9 | 269 | 45.0 | — | **316 R4** | **BN180L4** | — | — | — | 209600 | 233100 | 86500 | 386 |
| **5.6** | 33191 | 2.9 | 262 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 267500 | 284800 | 85800 | 406 |
| **5.8** | 33067 | 1.4 | 252 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 115900 | 137100 | 45200 | 360 |
| **6.0** | 32149 | 1.1 | 245 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 93000 | 115800 | 36400 | 348 |
| **6.1** | 31541 | 2.1 | 241 | 30.0 | **315 L3** | — | **BN180L4** | — | — | — | 122000 | 143200 | 50000 | 384 |
| **6.1** | 31385 | 1.7 | 240 | 25.0 | **314 L3** | — | **BN180L4** | — | — | — | 121800 | 143000 | 50000 | 372 |
| **6.5** | 28537 | 2.7 | 225 | 40.0 | — | **315 R4** | **BN180L4** | — | — | — | 119600 | 140400 | 48900 | 386 |
| **6.7** | 27817 | 2.9 | 220 | 50.0 | — | **317 R4** | **BN180L4** | — | — | — | 253600 | 270100 | 80900 | 406 |
| **7.0** | 27336 | 1.6 | 209 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 109400 | 129500 | 42400 | 360 |
| **7.1** | 27132 | 2.9 | 207 | 30.0 | **315 L3** | — | **BN180L4** | — | — | — | 116600 | 136900 | 47600 | 384 |
| **7.1** | 26998 | 2.4 | 206 | 25.0 | **314 L3** | — | **BN180L4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **7.2** | 26576 | 1.3 | 203 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 87800 | 109400 | 34100 | 348 |
| **7.5** | 25369 | 1.9 | 194 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 107000 | 126700 | 41400 | 360 |
| **7.6** | 25051 | 1.3 | 191 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 86300 | 107500 | 33500 | 348 |
| **8.0** | 23849 | 1.6 | 182 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 105100 | 124300 | 40500 | 360 |
| **8.3** | 23033 | 2.0 | 176 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 104000 | 123000 | 40100 | 360 |
| **8.4** | 22749 | 2.8 | 174 | 25.0 | **314 L3** | — | **BN180L4** | — | — | — | 110600 | 129800 | 44900 | 372 |
| **8.5** | 22393 | 1.5 | 171 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 83400 | 103900 | 32200 | 348 |
| **8.9** | 21514 | 3.0 | 164 | 25.0 | **314 L3** | — | **BN180L4** | — | — | — | 108700 | 127700 | 44100 | 372 |
| **8.9** | 21443 | 1.0 | 164 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 69700 | 87600 | 31800 | 336 |
| **9.0** | 21376 | 2.2 | 163 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 101700 | 120300 | 39100 | 360 |
| **9.1** | 21108 | 1.5 | 161 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 82000 | 102100 | 31600 | 348 |
| **9.3** | 20586 | 2.5 | 157 | 55.0 | — | **314 R3 (C)** | **BN180L4** | — | — | — | 107300 | 126000 | 43400 | 374 |
| **9.5** | 20049 | 1.9 | 153 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 99700 | 118000 | 38200 | 362 |
| **9.7** | 19813 | 2.3 | 151 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 99400 | 117600 | 38100 | 360 |
| **9.9** | 19263 | 1.7 | 147 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 79700 | 99300 | 30700 | 348 |
| **10.0** | 19219 | 1.4 | 147 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 79700 | 99300 | 30600 | 374 |
| **10.2** | 18738 | 2.4 | 143 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 97700 | 115700 | 37400 | 360 |
| **10.3** | 18575 | 1.1 | 142 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 66700 | 83900 | 30300 | 336 |
| **10.8** | 17671 | 2.5 | 135 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 96000 | 113600 | 36700 | 360 |
| **11.0** | 17449 | 1.7 | 133 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 77400 | 96400 | 29700 | 348 |
| **11.2** | 17087 | 1.2 | 130 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 65100 | 81900 | 29500 | 336 |
| **11.5** | 16656 | 2.4 | 127 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 94300 | 111600 | 36000 | 362 |
| **11.6** | 16448 | 1.8 | 126 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 76100 | 94700 | 29100 | 348 |
| **11.8** | 16194 | 1.9 | 124 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 75700 | 94300 | 28900 | 374 |
| **12.1** | 15789 | 2.7 | 120 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 92800 | 109900 | 35300 | 360 |
| **12.3** | 15594 | 1.3 | 119 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 15010 | 1.9 | 115 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 74000 | 92200 | 28200 | 348 |
| **13.2** | 14474 | 1.4 | 110 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 61900 | 77900 | 27900 | 336 |
| **13.3** | 14376 | 2.9 | 110 | 18.0 | **313 L3** | — | **BN180L4** | — | — | — | 90300 | 106800 | 34200 | 360 |
| **13.6** | 14034 | 2.8 | 107 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 89600 | 106000 | 34000 | 362 |
| **14.0** | 13645 | 2.1 | 104 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 71900 | 89600 | 27300 | 374 |
| **14.1** | 13597 | 2.0 | 104 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 71800 | 89500 | 27300 | 348 |
| **14.5** | 13209 | 1.4 | 101 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 60300 | 75800 | 27000 | 336 |
| **15.0** | 12779 | 2.9 | 97.5 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 87100 | 103100 | 32900 | 362 |
| **15.2** | 12618 | 2.2 | 96.3 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 70200 | 87500 | 26600 | 374 |
| **16.0** | 11965 | 1.6 | 91.3 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 58500 | 73600 | 26200 | 336 |
| **16.4** | 11696 | 2.3 | 89.3 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 68100 | 84900 | 25700 | 348 |
| **17.8** | 10767 | 2.9 | 82.2 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 82800 | 97900 | 31100 | 362 |
| **18.0** | 10632 | 2.4 | 81.1 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 66700 | 83100 | 25200 | 374 |
| **18.2** | 10526 | 1.7 | 80.3 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 56300 | 70800 | 25100 | 336 |
| **18.9** | 10132 | 2.5 | 77.3 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 65800 | 81900 | 24800 | 348 |
| **19.8** | 9683 | 1.8 | 73.9 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 54900 | 69000 | 24400 | 336 |
| **20.5** | 9320 | 2.7 | 71.1 | 18.0 | **311 L3** | — | **BN180L4** | — | — | — | 64100 | 79900 | 24100 | 348 |
| **20.9** | 9165 | 2.9 | 69.9 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 78900 | 93300 | 29500 | 362 |
| **21.5** | 8911 | 2.7 | 68.0 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 63300 | 78800 | 23700 | 374 |
| **22.8** | 8390 | 2.9 | 64.0 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 76800 | 90900 | 28600 | 362 |
| **23.1** | 8285 | 2.9 | 63.2 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 61900 | 77100 | 23100 | 374 |



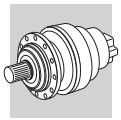
A

## $P_1$ = 22 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **23.3** | 8202 | 2.0 | 62.6 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 52200 | 65700 | 23100 | 336 |
| **27.2** | 7032 | 2.9 | 53.7 | 40.0 | — | **313 R3** | **BN180L4** | — | — | — | 72800 | 86200 | 27000 | 362 |
| **27.4** | 6977 | 1.0 | 53.2 | 7.5 | **306 L3** | — | **BN180L4** | — | 15300 | 17300 | 37600 | 43800 | 11500 | 300 |
| **27.5** | 6948 | 2.3 | 53.0 | 18.0 | **310 L3** | — | **BN180L4** | — | — | — | 49700 | 62500 | 21800 | 336 |
| **27.6** | 6943 | 2.9 | 53.0 | 40.0 | — | **311 R3** | **BN180L4** | — | — | — | 58700 | 73100 | 21800 | 374 |
| **31** | 6325 | 1.3 | 46.7 | 18.0 | **307 L2** | — | **BN180L4** | — | 16700 | 20900 | 39700 | 52100 | 14500 | 312 |
| **31** | 6325 | 2.0 | 46.7 | 18.0 | **309 L2** | — | **BN180L4** | — | — | — | 40400 | 52100 | 11600 | 324 |
| **31** | 6325 | 2.2 | 46.7 | 22.0 | **310 L2** | — | **BN180L4** | — | — | — | 47800 | 60200 | 20900 | 336 |
| **31** | 6294 | 1.0 | 46.5 | 13.0 | **306 L2** | — | **BN180L4** | — | 15000 | 17000 | 36900 | 43000 | 11300 | 300 |
| **38** | 5229 | 1.6 | 38.6 | 18.0 | **307 L2** | — | **BN180L4** | — | 15600 | 19600 | 37500 | 49200 | 13600 | 312 |
| **38** | 5229 | 2.4 | 38.6 | 18.0 | **309 L2** | — | **BN180L4** | — | — | — | 38100 | 49200 | 10900 | 324 |
| **38** | 5229 | 2.6 | 38.6 | 22.0 | **310 L2** | — | **BN180L4** | — | — | — | 45200 | 56800 | 19600 | 336 |
| **38** | 5203 | 1.2 | 38.4 | 13.0 | **306 L2** | — | **BN180L4** | — | 14100 | 15900 | 34800 | 40600 | 10600 | 300 |
| **44** | 4476 | 1.5 | 33.1 | 13.0 | **306 L2** | — | **BN180L4** | — | 13400 | 15100 | 33300 | 38800 | 10000 | 300 |
| **45** | 4406 | 2.1 | 32.6 | 18.0 | **307 L2** | — | **BN180L4** | — | 14800 | 18500 | 35700 | 46700 | 12800 | 312 |
| **45** | 4406 | 3.0 | 32.6 | 18.0 | **309 L2** | — | **BN180L4** | — | — | — | 36200 | 46700 | 10300 | 324 |
| **48** | 4153 | 2.3 | 30.7 | 18.0 | **307 L2** | — | **BN180L4** | — | 14500 | 18200 | 35000 | 45900 | 12600 | 312 |
| **51** | 3850 | 1.7 | 28.4 | 22.0 | **306 L2** | — | **BN180L4** | — | — | — | 42200 | 53000 | 18200 | 300 |
| **52** | 3790 | 2.4 | 28.0 | 13.0 | **307 L2** | — | **BN180L4** | — | 12700 | 14400 | 31800 | 37100 | 9550 | 312 |
| **55** | 3567 | 1.8 | 26.4 | 13.0 | **306 L2** | — | **BN180L4** | — | 12400 | 14000 | 31100 | 36200 | 9310 | 300 |
| **58** | 3433 | 2.6 | 25.4 | 18.0 | **307 L2** | — | **BN180L4** | — | 13600 | 17100 | 33100 | 43400 | 11800 | 312 |
| **62** | 3186 | 2.9 | 23.5 | 35.0 | — | **309 R2** | **BN180L4** | — | — | — | 32900 | 42400 | 9220 | 326 |
| **62** | 3186 | 2.5 | 23.5 | 35.0 | — | **307 R2** | **BN180L4** | — | 13300 | 16600 | 32400 | 42400 | 11500 | 314 |
| **64** | 3068 | 2.0 | 22.7 | 13.0 | **306 L2** | — | **BN180L4** | — | 11800 | 13400 | 29700 | 34600 | 8850 | 300 |
| **67** | 2953 | 2.9 | 21.8 | 18.0 | **307 L2** | — | **BN180L4** | — | 12900 | 16200 | 31600 | 41400 | 11200 | 312 |
| **74** | 2685 | 2.9 | 19.8 | 35.0 | — | **309 R2** | **BN180L4** | — | — | — | 31200 | 40300 | 8710 | 326 |
| **74** | 2685 | 2.9 | 19.8 | 35.0 | — | **307 R2** | **BN180L4** | — | 12500 | 15700 | 30700 | 40300 | 10900 | 314 |
| **81** | 2445 | 2.4 | 18.1 | 13.0 | **306 L2** | — | **BN180L4** | — | 10900 | 12400 | 27800 | 32300 | 8210 | 300 |
| **94** | 2092 | 2.9 | 15.5 | 35.0 | — | **309 R2** | **BN180L4** | — | — | — | 29000 | 37400 | 8020 | 326 |
| **94** | 2092 | 2.9 | 15.5 | 35.0 | — | **307 R2** | **BN180L4** | — | 11500 | 14500 | 28500 | 37400 | 10000 | 314 |
| **95** | 2071 | 2.4 | 15.3 | 13.0 | **306 L2** | — | **BN180L4** | — | 10300 | 11700 | 26400 | 30800 | 7770 | 300 |
| **113** | 1754 | 2.7 | 13.0 | 13.0 | **306 L2** | — | **BN180L4** | — | 9780 | 11100 | 25100 | 29300 | 7350 | 300 |
| **113** | 1753 | 2.9 | 13.0 | 35.0 | — | **309 R2** | **BN180L4** | — | — | — | 27500 | 35400 | 7560 | 326 |
| **113** | 1753 | 2.9 | 13.0 | 35.0 | — | **307 R2** | **BN180L4** | — | 10900 | 13600 | 27000 | 35400 | 9450 | 314 |
| **195** | 1048 | 1.2 | 7.50 | 11.0 | **303 L1** | — | **BN180L4** | — | 6550 | 7560 | 13000 | 15700 | 4200 | 264 |
| **195** | 1048 | 2.2 | 7.50 | 13.0 | **305 L1** | — | **BN180L4** | — | 6550 | 7560 | 13000 | 15700 | 4200 | 288 |
| **222** | 918 | 2.0 | 6.57 | 12.0 | **304 L1** | — | **BN180L4** | — | 6260 | 7230 | 12500 | 15100 | 4020 | 288 |
| **235** | 866 | 1.6 | 6.20 | 11.0 | **303 L1** | — | **BN180L4** | — | 6140 | 7090 | 12300 | 14800 | 3940 | 264 |
| **274** | 745 | 2.0 | 5.33 | 11.0 | **303 L1** | — | **BN180L4** | — | 5840 | 6750 | 11800 | 14200 | 3750 | 264 |
| **274** | 745 | 2.7 | 5.33 | 12.0 | **304 L1** | — | **BN180L4** | — | 5840 | 6750 | 11800 | 14200 | 3750 | 288 |
| **344** | 594 | 2.4 | 4.25 | 11.0 | **303 L1** | — | **BN180L4** | — | 5420 | 6250 | 11000 | 13200 | 3480 | 264 |
| **406** | 503 | 2.7 | 3.60 | 11.0 | **303 L1** | — | **BN180L4** | — | 5010 | 5780 | 10300 | 12300 | 3210 | 264 |

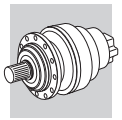
## $P_1$ = 30 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1** | 239514 | 1.5 | 1389 | 30.0 | **319 L4** | — | **BN200L4** | — | — | — | 636100 | 700800 | 199500 | 426 |
| **1.2** | 206034 | 1.7 | 1195 | 30.0 | **319 L4** | — | **BN200L4** | — | — | — | 608000 | 669900 | 189700 | 426 |
| **1.3** | 193443 | 2.7 | 1122 | 35.0 | **321 L4** | — | **BN200L4** | — | — | — | 731900 | 867900 | 1114500 | 436 |
| **1.4** | 182670 | 1.5 | 1059 | 22.0 | **318 L4** | — | **BN200L4** | — | — | — | 503000 | 520700 | 182200 | 416 |
| **1.4** | 178055 | 1.0 | 1032 | 18.0 | **317 L4** | — | **BN200L4** | — | — | — | 403600 | 429700 | 135500 | 406 |
| **1.5** | 173603 | 2.0 | 1007 | 30.0 | **319 L4** | — | **BN200L4** | — | — | — | 577600 | 636300 | 179200 | 426 |
| **1.6** | 157257 | 2.1 | 912 | 30.0 | **319 L4** | — | **BN200L4** | — | — | — | 560700 | 617700 | 173400 | 426 |
| **1.6** | 157135 | 1.7 | 911 | 22.0 | **318 L4** | — | **BN200L4** | — | — | — | 487700 | 497700 | 173300 | 416 |
| **1.6** | 156325 | 2.1 | 906 | 115.0 | — | **319 R4 (C)** | **BN200L4** | — | — | — | 559700 | 616600 | 173000 | 428 |
| **1.6** | 155863 | 1.1 | 904 | 18.0 | **317 L4** | — | **BN200L4** | — | — | — | 387800 | 412900 | 129600 | 406 |
| **1.7** | 146694 | 2.5 | 850 | 30.0 | **319 L4** | — | **BN200L4** | — | — | — | 549100 | 605000 | 169400 | 426 |
| **1.8** | 140136 | 0.9 | 812 | 18.0 | **316 L4** | — | **BN200L4** | — | — | — | 286100 | 318200 | 122300 | 396 |
| **1.8** | 138545 | 1.2 | 803 | 50.0 | — | **317 R4** | **BN200L4** | — | — | — | 374300 | 398500 | 124600 | 406 |
| **1.8** | 136603 | 1.4 | 792 | 18.0 | **317 L4** | — | **BN200L4** | — | — | — | 372700 | 396900 | 124100 | 406 |
| **1.9** | 134473 | 2.5 | 780 | 115.0 | — | **319 R4 (C)** | **BN200L4** | — | — | — | 535000 | 589400 | 164500 | 428 |



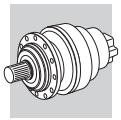
## $P_1$ = 30 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.9** | 132401 | 2.0 | 768 | 22.0 | **318 L4** | **—** | **BN200L4** | **—** | — | — | 463300 | 472800 | 163700 | 416 |
| **2.0** | 127807 | 1.0 | 741 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 284200 | 316100 | 121400 | 396 |
| **2.0** | 125267 | 1.0 | 726 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 282500 | 314100 | 120500 | 396 |
| **2.0** | 125217 | 2.1 | 726 | 22.0 | **318 L4** | **—** | **BN200L4** | **—** | — | — | 455600 | 464900 | 160700 | 416 |
| **2.0** | 124023 | 1.4 | 719 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 362100 | 385500 | 120100 | 406 |
| **2.0** | 123603 | 2.9 | 717 | 30.0 | **319 L4** | **—** | **BN200L4** | **—** | — | — | 521600 | 574700 | 160000 | 426 |
| **2.1** | 119224 | 2.2 | 691 | 110.0 | **—** | **318 R4 (C)** | **BN200L4** | **—** | — | — | 448900 | 458100 | 158100 | 418 |
| **2.1** | 118078 | 1.1 | 685 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 277500 | 308600 | 118200 | 396 |
| **2.2** | 116737 | 1.4 | 677 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 355600 | 378600 | 117700 | 406 |
| **2.2** | 113306 | 2.8 | 657 | 115.0 | **—** | **319 R4 (C)** | **BN200L4** | **—** | — | — | 508200 | 559900 | 155400 | 428 |
| **2.2** | 112919 | 2.8 | 655 | 95.0 | **—** | **319 R4 (B)** | **BN200L4** | **—** | — | — | 507700 | 559300 | 155200 | 428 |
| **2.3** | 111560 | 2.4 | 647 | 22.0 | **318 L4** | **—** | **BN200L4** | **—** | — | — | 440100 | 449100 | 154600 | 416 |
| **2.3** | 107957 | 1.4 | 626 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 347300 | 369800 | 114700 | 406 |
| **2.3** | 107690 | 1.2 | 624 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 270000 | 300300 | 114600 | 396 |
| **2.3** | 107510 | 0.9 | 623 | 40.0 | **—** | **315 R4** | **BN200L4** | **—** | — | — | 162300 | 190500 | 68700 | 386 |
| **2.3** | 107510 | 1.1 | 623 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 269800 | 300100 | 114500 | 386 |
| **2.4** | 106687 | 1.7 | 619 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 346100 | 368500 | 114200 | 406 |
| **2.4** | 105507 | 2.5 | 612 | 22.0 | **318 L4** | **—** | **BN200L4** | **—** | — | — | 432800 | 441700 | 151800 | 416 |
| **2.5** | 102558 | 2.6 | 595 | 110.0 | **—** | **318 R4 (C)** | **BN200L4** | **—** | — | — | 429100 | 437900 | 150300 | 418 |
| **2.5** | 101910 | 1.0 | 591 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 159700 | 187500 | 67500 | 384 |
| **2.5** | 101910 | 1.2 | 591 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 265500 | 295300 | 112500 | 396 |
| **2.6** | 97611 | 1.3 | 566 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 262100 | 291500 | 110900 | 396 |
| **2.6** | 95150 | 1.8 | 552 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 334400 | 356100 | 110000 | 406 |
| **2.7** | 92009 | 1.1 | 533 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 154900 | 181800 | 65200 | 384 |
| **2.7** | 92009 | 1.3 | 533 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 257500 | 286400 | 108700 | 396 |
| **2.8** | 90587 | 1.1 | 525 | 40.0 | **—** | **315 R4** | **BN200L4** | **—** | — | — | 154100 | 181000 | 64900 | 386 |
| **2.8** | 90587 | 1.3 | 525 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 256300 | 285000 | 108200 | 386 |
| **2.8** | 89687 | 1.8 | 520 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 328500 | 349800 | 107800 | 406 |
| **2.8** | 88899 | 2.8 | 515 | 22.0 | **318 L4** | **—** | **BN200L4** | **—** | — | — | 411100 | 419500 | 143300 | 416 |
| **2.9** | 86415 | 2.9 | 501 | 110.0 | **—** | **318 R4 (C)** | **BN200L4** | **—** | — | — | 407600 | 416000 | 142000 | 418 |
| **2.9** | 86120 | 2.9 | 499 | 90.0 | **—** | **318 R4 (B)** | **BN200L4** | **—** | — | — | 407200 | 415600 | 141800 | 418 |
| **3.0** | 85299 | 0.9 | 495 | 15.0 | **314 L4** | **—** | **BN200L4** | **—** | — | — | 151400 | 177700 | 63600 | 372 |
| **3.0** | 85016 | 2.0 | 493 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 323300 | 344200 | 105900 | 406 |
| **3.0** | 83966 | 1.2 | 487 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 150700 | 176900 | 63300 | 384 |
| **3.0** | 83966 | 1.4 | 487 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 250500 | 278600 | 105500 | 396 |
| **3.2** | 79018 | 1.0 | 458 | 15.0 | **314 L4** | **—** | **BN200L4** | **—** | — | — | 148000 | 173700 | 62000 | 372 |
| **3.3** | 77409 | 2.1 | 449 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 314300 | 334700 | 102700 | 406 |
| **3.3** | 76328 | 1.5 | 443 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 243500 | 270800 | 102200 | 386 |
| **3.3** | 76060 | 1.3 | 441 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 146300 | 171700 | 61200 | 384 |
| **3.3** | 76060 | 1.5 | 441 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 243200 | 270500 | 102100 | 396 |
| **3.3** | 75570 | 2.1 | 438 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 312100 | 332300 | 101800 | 406 |
| **3.6** | 70587 | 1.4 | 409 | 40.0 | **—** | **315 R4** | **BN200L4** | **—** | — | — | 143000 | 167900 | 59700 | 386 |
| **3.6** | 70587 | 1.6 | 409 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 237800 | 264500 | 99600 | 386 |
| **3.7** | 68808 | 2.2 | 399 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 303400 | 323100 | 98700 | 406 |
| **3.8** | 66933 | 1.2 | 388 | 15.0 | **314 L4** | **—** | **BN200L4** | **—** | — | — | 140800 | 165300 | 58700 | 372 |
| **4.0** | 63746 | 1.5 | 370 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 138700 | 162900 | 57700 | 384 |
| **4.0** | 63746 | 1.7 | 370 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 230600 | 256500 | 96200 | 396 |
| **4.1** | 62139 | 2.5 | 360 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 294300 | 313300 | 95400 | 406 |
| **4.2** | 59476 | 1.6 | 345 | 40.0 | **—** | **315 R4** | **BN200L4** | **—** | — | — | 135900 | 159500 | 56400 | 386 |
| **4.2** | 59476 | 1.8 | 345 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 225900 | 251200 | 94000 | 386 |
| **4.3** | 57977 | 2.2 | 336 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 288200 | 306900 | 93200 | 406 |
| **4.4** | 56677 | 1.9 | 329 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 222700 | 247600 | 92500 | 396 |
| **4.6** | 54166 | 1.4 | 314 | 15.0 | **314 L4** | **—** | **BN200L4** | **—** | — | — | 132100 | 155100 | 54700 | 372 |
| **4.7** | 53453 | 2.7 | 310 | 18.0 | **317 L4** | **—** | **BN200L4** | **—** | — | — | 281300 | 299500 | 90700 | 406 |
| **4.8** | 52138 | 1.9 | 302 | 18.0 | **315 L4** | **—** | **BN200L4** | **—** | — | — | 130600 | 153300 | 54000 | 384 |
| **4.8** | 52138 | 2.0 | 302 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 217100 | 241500 | 90000 | 396 |
| **5.1** | 49847 | 2.1 | 289 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 214200 | 238300 | 88700 | 386 |
| **5.4** | 46345 | 1.8 | 269 | 40.0 | **—** | **315 R4** | **BN200L4** | **—** | — | — | 126100 | 148000 | 51900 | 386 |
| **5.4** | 46345 | 2.2 | 269 | 45.0 | **—** | **316 R4** | **BN200L4** | **—** | — | — | 209600 | 233100 | 86500 | 386 |
| **5.6** | 45177 | 2.2 | 262 | 50.0 | **—** | **317 R4** | **BN200L4** | **—** | — | — | 267500 | 284800 | 85800 | 406 |
| **5.7** | 44164 | 2.2 | 256 | 18.0 | **316 L4** | **—** | **BN200L4** | **—** | — | — | 206600 | 229800 | 85100 | 396 |
| **5.8** | 45008 | 1.0 | 252 | 18.0 | **317 L3** | **—** | **BN200L4** | **—** | — | — | 115900 | 137100 | 45200 | 406 |
| **5.8** | 45008 | 2.7 | 252 | 35.0 | **313 L3** | **—** | **BN200L4** | **—** | — | — | 264500 | 281600 | 84700 | 360 |
| **6.1** | 42931 | 1.5 | 241 | 30.0 | **315 L3** | **—** | **BN200L4** | **—** | — | — | 122000 | 143200 | 50000 | 384 |
| **6.1** | 42719 | 1.2 | 240 | 25.0 | **314 L3** | **—** | **BN200L4** | **—** | — | — | 121800 | 143000 | 50000 | 372 |



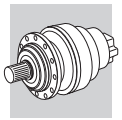
## $P_1$ = 30 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **6.5** | 38842 | 2.0 | 225 | 40.0 | — | **315 R4** | **BN200L4** | — | — | — | 119600 | 140400 | 48900 | 386 |
| **6.5** | 38842 | 2.4 | 225 | 45.0 | — | **316 R4** | **BN200L4** | — | — | — | 198800 | 221100 | 81600 | 386 |
| **6.7** | 37862 | 2.1 | 220 | 50.0 | — | **317 R4** | **BN200L4** | — | — | — | 253600 | 270100 | 80900 | 406 |
| **6.8** | 37014 | 2.5 | 215 | 18.0 | **316 L4** | — | **BN200L4** | — | — | — | 195900 | 217900 | 80300 | 396 |
| **7.0** | 37207 | 1.2 | 209 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 109400 | 129500 | 42400 | 360 |
| **7.1** | 36930 | 2.2 | 207 | 30.0 | **315 L3** | — | **BN200L4** | — | — | — | 116600 | 136900 | 47600 | 384 |
| **7.1** | 36748 | 1.7 | 206 | 25.0 | **314 L3** | — | **BN200L4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **7.2** | 36173 | 0.9 | 203 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 86000 | 107200 | 33400 | 348 |
| **7.5** | 34530 | 1.4 | 194 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 107000 | 126700 | 41400 | 360 |
| **7.6** | 34097 | 0.9 | 191 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 86300 | 107500 | 33500 | 348 |
| **8.0** | 32462 | 1.2 | 182 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 105100 | 124300 | 40500 | 360 |
| **8.3** | 31350 | 1.4 | 176 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 104000 | 123000 | 40100 | 360 |
| **8.4** | 31117 | 2.5 | 174 | 30.0 | **315 L3** | — | **BN200L4** | — | — | — | 110700 | 130000 | 45000 | 384 |
| **8.4** | 30963 | 2.0 | 174 | 25.0 | **314 L3** | — | **BN200L4** | — | — | — | 110600 | 129800 | 44900 | 372 |
| **8.5** | 30479 | 1.1 | 171 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 83400 | 103900 | 32200 | 348 |
| **8.8** | 29429 | 2.7 | 165 | 30.0 | **315 L3** | — | **BN200L4** | — | — | — | 108900 | 127900 | 44100 | 384 |
| **8.8** | 29429 | 2.8 | 165 | 35.0 | **316 L3** | — | **BN200L4** | — | — | — | 181100 | 201400 | 73500 | 396 |
| **8.9** | 29283 | 2.2 | 164 | 25.0 | **314 L3** | — | **BN200L4** | — | — | — | 108700 | 127700 | 44100 | 372 |
| **9.0** | 29095 | 1.6 | 163 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 101700 | 120300 | 39100 | 360 |
| **9.1** | 28730 | 1.1 | 161 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 82000 | 102100 | 31600 | 348 |
| **9.3** | 28020 | 1.9 | 157 | 55.0 | — | **314 R3 (C)** | **BN200L4** | — | — | — | 107300 | 126000 | 43400 | 374 |
| **9.3** | 28020 | 2.3 | 157 | 90.0 | — | **315 R3 (C)** | **BN200L4** | — | — | — | 107300 | 126000 | 43400 | 386 |
| **9.5** | 27289 | 1.4 | 153 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 99700 | 118000 | 38200 | 362 |
| **9.7** | 26968 | 1.7 | 151 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 99400 | 117600 | 38100 | 360 |
| **9.9** | 26219 | 1.2 | 147 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 79700 | 99300 | 30700 | 348 |
| **10.0** | 26159 | 1.0 | 147 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 79700 | 99300 | 30600 | 374 |
| **10.2** | 25505 | 1.7 | 143 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 97700 | 115700 | 37400 | 360 |
| **10.6** | 24674 | 2.6 | 138 | 25.0 | **314 L3** | — | **BN200L4** | — | — | — | 103300 | 121300 | 41600 | 372 |
| **10.8** | 24103 | 2.5 | 135 | 55.0 | — | **314 R3 (C)** | **BN200L4** | — | — | — | 102600 | 120400 | 41300 | 374 |
| **10.8** | 24052 | 1.8 | 135 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 96000 | 113600 | 36700 | 360 |
| **11.0** | 23750 | 1.3 | 133 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 77400 | 96400 | 29700 | 348 |
| **11.5** | 22671 | 1.8 | 127 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 94300 | 111600 | 36000 | 362 |
| **11.6** | 22387 | 1.3 | 126 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 76100 | 94700 | 29100 | 348 |
| **11.8** | 22041 | 1.4 | 124 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 75700 | 94300 | 28900 | 374 |
| **12.1** | 21490 | 2.0 | 120 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 92800 | 109900 | 35300 | 360 |
| **12.3** | 21225 | 0.9 | 119 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 63300 | 79600 | 28600 | 336 |
| **12.7** | 20430 | 1.4 | 115 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 74000 | 92200 | 28200 | 348 |
| **12.8** | 20309 | 2.5 | 114 | 55.0 | — | **314 R3 (C)** | **BN200L4** | — | — | — | 97400 | 114400 | 39000 | 374 |
| **12.9** | 20240 | 2.4 | 113 | 55.0 | — | **314 R3 (B)** | **BN200L4** | — | — | — | 97300 | 114300 | 38900 | 374 |
| **12.9** | 20240 | 3.0 | 113 | 75.0 | — | **315 R3 (B)** | **BN200L4** | — | — | — | 97300 | 114300 | 38900 | 386 |
| **13.2** | 19701 | 1.0 | 110 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 60700 | 76300 | 27200 | 336 |
| **13.3** | 19567 | 2.1 | 110 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 90300 | 106800 | 34200 | 360 |
| **13.5** | 19226 | 3.0 | 108 | 25.0 | **314 L3** | — | **BN200L4** | — | — | — | 95900 | 112500 | 38300 | 372 |
| **13.6** | 19207 | 2.6 | 108 | 55.0 | — | **314 R3 (C)** | **BN200L4** | — | — | — | 95800 | 112500 | 38300 | 374 |
| **13.6** | 19102 | 2.0 | 107 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 89600 | 106000 | 34000 | 362 |
| **14.0** | 18572 | 1.5 | 104 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 71900 | 89600 | 27300 | 374 |
| **14.1** | 18507 | 1.5 | 104 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 71800 | 89500 | 27300 | 348 |
| **14.5** | 17979 | 1.0 | 101 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 60300 | 75800 | 27000 | 336 |
| **15.0** | 17393 | 2.1 | 97.5 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 87100 | 103100 | 32900 | 362 |
| **15.2** | 17175 | 1.6 | 96.3 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 70200 | 87500 | 26600 | 374 |
| **15.8** | 16487 | 2.4 | 92.4 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 85700 | 101500 | 32300 | 360 |
| **16.0** | 16286 | 1.1 | 91.3 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 58500 | 73600 | 26200 | 336 |
| **16.1** | 16184 | 2.9 | 90.7 | 55.0 | — | **314 R3 (C)** | **BN200L4** | — | — | — | 91000 | 106900 | 36200 | 374 |
| **16.4** | 15920 | 1.7 | 89.3 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 68100 | 84900 | 25700 | 348 |
| **17.8** | 14655 | 2.1 | 82.2 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 82800 | 97900 | 31100 | 362 |
| **18.0** | 14471 | 1.8 | 81.1 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 66700 | 83100 | 25200 | 374 |
| **18.2** | 14327 | 1.2 | 80.3 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 56300 | 70800 | 25100 | 336 |
| **18.6** | 13966 | 2.7 | 78.3 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 81600 | 96500 | 30600 | 360 |
| **18.9** | 13790 | 1.8 | 77.3 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 65800 | 81900 | 24800 | 348 |
| **19.8** | 13179 | 1.3 | 73.9 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 54900 | 69000 | 24400 | 336 |
| **20.3** | 12847 | 2.8 | 72.0 | 18.0 | **313 L3** | — | **BN200L4** | — | — | — | 79600 | 94100 | 29800 | 360 |
| **20.5** | 12686 | 2.0 | 71.1 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 64100 | 79900 | 24100 | 348 |
| **20.9** | 12475 | 2.1 | 69.9 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 78900 | 93300 | 29500 | 362 |
| **21.5** | 12128 | 2.0 | 68.0 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 63300 | 78800 | 23700 | 374 |
| **22.8** | 11420 | 2.1 | 64.0 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 76800 | 90900 | 28600 | 362 |



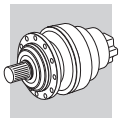
## $P_1$ = 30 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | MC | MZ | HC/PC | HZ/PZ | FZ | |
| **23.1** | 11276 | 2.1 | 63.2 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 61900 | 77100 | 23100 | 374 |
| **23.3** | 11164 | 1.5 | 62.6 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 52200 | 65700 | 23100 | 336 |
| **24.2** | 10746 | 2.2 | 60.2 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 61000 | 76000 | 22800 | 348 |
| **27.2** | 9571 | 2.1 | 53.7 | 40.0 | — | **313 R3** | **BN200L4** | — | — | — | 72800 | 86200 | 27000 | 362 |
| **27.5** | 9456 | 1.7 | 53.0 | 18.0 | **310 L3** | — | **BN200L4** | — | — | — | 49700 | 62500 | 21800 | 336 |
| **27.6** | 9451 | 2.1 | 53.0 | 40.0 | — | **311 R3** | **BN200L4** | — | — | — | 58700 | 73100 | 21800 | 374 |
| **28.9** | 9006 | 2.5 | 50.5 | 18.0 | **311 L3** | — | **BN200L4** | — | — | — | 57900 | 72100 | 21500 | 348 |
| **31** | 8610 | 1.0 | 46.7 | 18.0 | **307 L2** | — | **BN200L4** | — | 16700 | 20900 | 39700 | 52100 | 14500 | 312 |
| **31** | 8610 | 1.5 | 46.7 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 40400 | 52100 | 11600 | 324 |
| **31** | 8610 | 1.6 | 46.7 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 47800 | 60200 | 20900 | 336 |
| **38** | 7153 | 2.8 | 38.8 | 26.0 | **311 L2** | — | **BN200L4** | — | — | — | 53500 | 66600 | 19700 | 348 |
| **38** | 7117 | 1.2 | 38.6 | 18.0 | **307 L2** | — | **BN200L4** | — | 15600 | 19600 | 37500 | 49200 | 13600 | 312 |
| **38** | 7117 | 1.8 | 38.6 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 38100 | 49200 | 10900 | 324 |
| **38** | 7117 | 1.9 | 38.6 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 45200 | 56800 | 19600 | 336 |
| **38** | 7082 | 0.9 | 38.4 | 13.0 | **306 L2** | — | **BN200L4** | — | 13700 | 15600 | 34100 | 39700 | 10300 | 300 |
| **44** | 6092 | 1.1 | 33.1 | 13.0 | **306 L2** | — | **BN200L4** | — | 13400 | 15100 | 33300 | 38800 | 10000 | 300 |
| **45** | 5997 | 1.6 | 32.6 | 18.0 | **307 L2** | — | **BN200L4** | — | 14800 | 18500 | 35700 | 46700 | 12800 | 312 |
| **45** | 5997 | 2.2 | 32.6 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 36200 | 46700 | 10300 | 324 |
| **45** | 5997 | 2.2 | 32.6 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 42900 | 54000 | 18600 | 336 |
| **48** | 5653 | 2.4 | 30.7 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 42200 | 53000 | 18200 | 336 |
| **48** | 5653 | 1.7 | 30.7 | 18.0 | **307 L2** | — | **BN200L4** | — | 14500 | 18200 | 35000 | 45900 | 12600 | 312 |
| **51** | 5241 | 1.3 | 28.4 | 13.0 | **306 L2** | — | **BN200L4** | — | 12700 | 14400 | 31800 | 37100 | 9550 | 300 |
| **52** | 5159 | 1.8 | 28.0 | 18.0 | **307 L2** | — | **BN200L4** | — | 14100 | 17600 | 34100 | 44700 | 12200 | 312 |
| **52** | 5159 | 2.4 | 28.0 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 34600 | 44700 | 9770 | 324 |
| **52** | 5159 | 2.5 | 28.0 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 41000 | 51600 | 17600 | 336 |
| **55** | 4855 | 1.3 | 26.4 | 13.0 | **306 L2** | — | **BN200L4** | — | 12400 | 14000 | 31100 | 36200 | 9310 | 300 |
| **58** | 4673 | 2.7 | 25.4 | 22.0 | **310 L2** | — | **BN200L4** | — | — | — | 39800 | 50100 | 17100 | 336 |
| **58** | 4673 | 1.9 | 25.4 | 18.0 | **307 L2** | — | **BN200L4** | — | 13600 | 17100 | 33100 | 43400 | 11800 | 312 |
| **58** | 4673 | 2.2 | 25.4 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 33600 | 43400 | 9460 | 324 |
| **58** | 4668 | 2.6 | 25.3 | 55.0 | — | **310 R2 (C)** | **BN200L4** | — | — | — | 39800 | 50100 | 17100 | 338 |
| **62** | 4337 | 2.1 | 23.5 | 35.0 | — | **309 R2** | **BN200L4** | — | — | — | 32900 | 42400 | 9220 | 326 |
| **62** | 4337 | 1.8 | 23.5 | 35.0 | — | **307 R2** | **BN200L4** | — | 13300 | 16600 | 32400 | 42400 | 11500 | 314 |
| **64** | 4176 | 1.5 | 22.7 | 13.0 | **306 L2** | — | **BN200L4** | — | 11800 | 13400 | 29700 | 34600 | 8850 | 300 |
| **67** | 4020 | 2.2 | 21.8 | 18.0 | **307 L2** | — | **BN200L4** | — | 12900 | 16200 | 31600 | 41400 | 11200 | 312 |
| **67** | 4020 | 2.5 | 21.8 | 18.0 | **309 L2** | — | **BN200L4** | — | — | — | 32100 | 41400 | 8990 | 324 |
| **68** | 3934 | 3.0 | 21.3 | 55.0 | — | **310 R2 (C)** | **BN200L4** | — | — | — | 37800 | 47600 | 16100 | 338 |
| **74** | 3654 | 2.1 | 19.8 | 35.0 | — | **309 R2** | **BN200L4** | — | — | — | 31200 | 40300 | 8710 | 326 |
| **74** | 3654 | 2.1 | 19.8 | 35.0 | — | **307 R2** | **BN200L4** | — | 12500 | 15700 | 30700 | 40300 | 10900 | 314 |
| **81** | 3328 | 1.8 | 18.1 | 13.0 | **306 L2** | — | **BN200L4** | — | 10900 | 12400 | 27800 | 32300 | 8210 | 300 |
| **84** | 3203 | 2.5 | 17.4 | 18.0 | **307 L2** | — | **BN200L4** | — | 12000 | 15000 | 29500 | 38700 | 10400 | 312 |
| **94** | 2847 | 2.1 | 15.5 | 35.0 | — | **309 R2** | **BN200L4** | — | — | — | 29000 | 37400 | 8020 | 326 |
| **94** | 2847 | 2.1 | 15.5 | 35.0 | — | **307 R2** | **BN200L4** | — | 11500 | 14500 | 28500 | 37400 | 10000 | 314 |
| **95** | 2819 | 1.8 | 15.3 | 13.0 | **306 L2** | — | **BN200L4** | — | 10300 | 11700 | 26400 | 30800 | 7770 | 300 |
| **99** | 2713 | 2.8 | 14.7 | 18.0 | **307 L2** | — | **BN200L4** | — | 11300 | 14200 | 28100 | 36800 | 9860 | 312 |
| **113** | 2388 | 2.0 | 13.0 | 13.0 | **306 L2** | — | **BN200L4** | — | 9780 | 11100 | 25100 | 29300 | 7350 | 300 |
| **113** | 2386 | 2.1 | 13.0 | 35.0 | — | **309 R2** | **BN200L4** | — | — | — | 27500 | 35400 | 7560 | 326 |
| **113** | 2386 | 2.1 | 13.0 | 35.0 | — | **307 R2** | **BN200L4** | — | 10900 | 13600 | 27000 | 35400 | 9450 | 314 |
| **195** | 1426 | 1.6 | 7.50 | 13.0 | **305 L1** | — | **BN200L4** | — | 6550 | 7560 | 13000 | 15700 | 4200 | 288 |
| **195** | 1426 | 2.9 | 7.50 | 18.0 | **306 L1** | — | **BN200L4** | — | 8150 | 9240 | 21300 | 24800 | 6120 | 300 |
| **222** | 1249 | 1.5 | 6.57 | 12.0 | **304 L1** | — | **BN200L4** | — | 6260 | 7230 | 12500 | 15100 | 4020 | 288 |
| **235** | 1179 | 1.2 | 6.20 | 11.0 | **303 L1** | — | **BN200L4** | — | 6140 | 7090 | 12300 | 14800 | 3940 | 264 |
| **235** | 1179 | 2.2 | 6.20 | 13.0 | **305 L1** | — | **BN200L4** | — | 6140 | 7090 | 12300 | 14800 | 3940 | 288 |
| **274** | 1014 | 1.5 | 5.33 | 11.0 | **303 L1** | — | **BN200L4** | — | 5840 | 6750 | 11800 | 14200 | 3750 | 264 |
| **274** | 1014 | 2.0 | 5.33 | 12.0 | **304 L1** | — | **BN200L4** | — | 5840 | 6750 | 11800 | 14200 | 3750 | 288 |
| **274** | 1014 | 2.5 | 5.33 | 13.0 | **305 L1** | — | **BN200L4** | — | 5840 | 6750 | 11800 | 14200 | 3750 | 288 |
| **344** | 808 | 1.8 | 4.25 | 11.0 | **303 L1** | — | **BN200L4** | — | 5420 | 6250 | 11000 | 13200 | 3480 | 264 |
| **344** | 808 | 2.4 | 4.25 | 12.0 | **304 L1** | — | **BN200L4** | — | 5420 | 6250 | 11000 | 13200 | 3480 | 288 |
| **406** | 684 | 2.0 | 3.60 | 13.0 | **303 L1** | — | **BN200L4** | — | 5420 | 6250 | 11000 | 13200 | 3480 | 264 |
| **406** | 684 | 2.7 | 3.60 | 18.0 | **304 L1** | — | **BN200L4** | — | 6750 | 7640 | 18000 | 21000 | 5070 | 288 |



## $P_1$ = 37 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1** | 292061 | 1.2 | 1389 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 636100 | 700800 | 199500 | 426 |
| **1.2** | 251235 | 1.4 | 1195 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 608000 | 669900 | 189700 | 426 |
| **1.3** | 235882 | 2.2 | 1122 | 35.0 | **321 L4** | — | **BN225S4** | — | — | — | 731900 | 867900 | 1114500 | 436 |
| **1.4** | 222745 | 1.2 | 1059 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 503000 | 520700 | 182200 | 416 |
| **1.5** | 211689 | 1.6 | 1007 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 577600 | 636300 | 179200 | 426 |
| **1.6** | 198752 | 2.9 | 945 | 35.0 | **321 L4** | — | **BN225S4** | — | — | — | 695300 | 824500 | 1052600 | 436 |
| **1.6** | 191757 | 1.8 | 912 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 560700 | 617700 | 173400 | 426 |
| **1.6** | 191609 | 1.4 | 911 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 487700 | 497700 | 173300 | 416 |
| **1.6** | 190621 | 1.8 | 906 | 115.0 | — | **319 R4 (C)** | **BN225S4** | — | — | — | 559700 | 616600 | 173000 | 428 |
| **1.7** | 178877 | 2.0 | 850 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 549100 | 605000 | 169400 | 426 |
| **1.9** | 163975 | 2.0 | 780 | 115.0 | — | **319 R4 (C)** | **BN225S4** | — | — | — | 535000 | 589400 | 164500 | 428 |
| **1.9** | 161448 | 1.7 | 768 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 463300 | 472800 | 163700 | 416 |
| **2.0** | 152688 | 1.7 | 726 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 455600 | 464900 | 160700 | 416 |
| **2.1** | 150721 | 2.4 | 717 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 521600 | 574700 | 160000 | 426 |
| **2.1** | 145380 | 1.8 | 691 | 110.0 | — | **318 R4 (C)** | **BN225S4** | — | — | — | 448900 | 458100 | 158100 | 418 |
| **2.2** | 142543 | 2.5 | 678 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 513000 | 565100 | 157000 | 426 |
| **2.3** | 138164 | 2.3 | 657 | 115.0 | — | **319 R4 (C)** | **BN225S4** | — | — | — | 508200 | 559900 | 155400 | 428 |
| **2.3** | 137692 | 2.3 | 655 | 95.0 | — | **319 R4 (B)** | **BN225S4** | — | — | — | 507700 | 559300 | 155200 | 428 |
| **2.3** | 136035 | 1.9 | 647 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 440100 | 449100 | 154600 | 416 |
| **2.4** | 128654 | 2.0 | 612 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 432800 | 441700 | 151800 | 416 |
| **2.5** | 125058 | 2.1 | 595 | 110.0 | — | **318 R4 (C)** | **BN225S4** | — | — | — | 429100 | 437900 | 150300 | 418 |
| **2.6** | 120105 | 2.9 | 571 | 30.0 | **319 L4** | — | **BN225S4** | — | — | — | 487300 | 536800 | 148300 | 426 |
| **2.6** | 118445 | 2.6 | 563 | 95.0 | — | **319 R4 (B)** | **BN225S4** | — | — | — | 485200 | 534600 | 147600 | 428 |
| **2.7** | 116749 | 2.6 | 555 | 115.0 | — | **319 R4 (C)** | **BN225S4** | — | — | — | 483100 | 532300 | 146900 | 428 |
| **2.8** | 110414 | 2.7 | 525 | 115.0 | — | **319 R4 (C)** | **BN225S4** | — | — | — | 475100 | 523500 | 144200 | 428 |
| **2.9** | 108403 | 2.3 | 515 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 411100 | 419500 | 143300 | 416 |
| **3.0** | 105373 | 2.4 | 501 | 110.0 | — | **318 R4 (C)** | **BN225S4** | — | — | — | 407600 | 416000 | 142000 | 418 |
| **3.0** | 105013 | 2.4 | 499 | 90.0 | — | **318 R4 (B)** | **BN225S4** | — | — | — | 407200 | 415600 | 141800 | 418 |
| **3.1** | 100250 | 2.5 | 477 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 401600 | 409800 | 139700 | 416 |
| **3.1** | 99656 | 2.5 | 474 | 110.0 | — | **318 R4 (C)** | **BN225S4** | — | — | — | 400900 | 409100 | 139400 | 418 |
| **3.4** | 90334 | 2.7 | 430 | 90.0 | — | **318 R4 (B)** | **BN225S4** | — | — | — | 389200 | 397200 | 134900 | 418 |
| **3.5** | 88839 | 2.7 | 422 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 387300 | 395200 | 134100 | 416 |
| **3.7** | 84470 | 2.8 | 402 | 22.0 | **318 L4** | — | **BN225S4** | — | — | — | 381500 | 389300 | 131900 | 416 |
| **3.7** | 83969 | 2.8 | 399 | 110.0 | — | **318 R4 (C)** | **BN225S4** | — | — | — | 380800 | 388600 | 131600 | 418 |
| **5.9** | 54883 | 2.2 | 252 | 35.0 | **317 L3** | — | **BN225S4** | — | — | — | 264500 | 281600 | 84700 | 406 |
| **6.1** | 52350 | 1.2 | 241 | 30.0 | **315 L3** | — | **BN225S4** | — | — | — | 122000 | 143200 | 50000 | 384 |
| **6.2** | 52091 | 1.0 | 240 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 121800 | 143000 | 50000 | 372 |
| **7.1** | 45032 | 1.8 | 207 | 30.0 | **315 L3** | — | **BN225S4** | — | — | — | 116600 | 136900 | 47600 | 384 |
| **7.2** | 44810 | 1.4 | 206 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **8.5** | 37944 | 2.1 | 174 | 30.0 | **315 L3** | — | **BN225S4** | — | — | — | 110700 | 130000 | 45000 | 384 |
| **8.5** | 37756 | 1.7 | 174 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 110600 | 129800 | 44900 | 372 |
| **9.0** | 35885 | 2.2 | 165 | 30.0 | **315 L3** | — | **BN225S4** | — | — | — | 108900 | 127900 | 44100 | 384 |
| **9.0** | 35885 | 2.3 | 165 | 35.0 | **316 L3** | — | **BN225S4** | — | — | — | 181100 | 201400 | 73500 | 396 |
| **9.0** | 35708 | 1.8 | 164 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 108700 | 127700 | 44100 | 372 |
| **9.4** | 34167 | 1.5 | 157 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 107300 | 126000 | 43400 | 374 |
| **9.4** | 34167 | 1.9 | 157 | 90.0 | — | **315 R3 (C)** | **BN225S4** | — | — | — | 107300 | 126000 | 43400 | 386 |
| **10.6** | 30236 | 2.7 | 139 | 30.0 | **315 L3** | — | **BN225S4** | — | — | — | 103500 | 121500 | 41700 | 384 |
| **10.6** | 30236 | 2.7 | 139 | 35.0 | **316 L3** | — | **BN225S4** | — | — | — | 172000 | 191300 | 69500 | 396 |
| **10.7** | 30087 | 2.2 | 138 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 103300 | 121300 | 41600 | 372 |
| **11.0** | 29391 | 2.1 | 135 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 102600 | 120400 | 41300 | 374 |
| **11.0** | 29391 | 2.6 | 135 | 90.0 | — | **315 R3 (C)** | **BN225S4** | — | — | — | 102600 | 120400 | 41300 | 386 |
| **13.0** | 24765 | 2.1 | 114 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 97400 | 114400 | 39000 | 374 |
| **13.0** | 24765 | 2.6 | 114 | 90.0 | — | **315 R3 (C)** | **BN225S4** | — | — | — | 97400 | 114400 | 39000 | 386 |
| **13.0** | 24680 | 1.9 | 113 | 55.0 | — | **314 R3 (B)** | **BN225S4** | — | — | — | 97300 | 114300 | 38900 | 374 |
| **13.0** | 24680 | 2.4 | 113 | 75.0 | — | **315 R3 (B)** | **BN225S4** | — | — | — | 97300 | 114300 | 38900 | 386 |
| **13.7** | 23444 | 2.4 | 108 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 95900 | 112500 | 38300 | 372 |
| **13.7** | 23421 | 2.1 | 108 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 95800 | 112500 | 38300 | 374 |
| **13.7** | 23421 | 2.7 | 108 | 90.0 | — | **315 R3 (C)** | **BN225S4** | — | — | — | 95800 | 112500 | 38300 | 386 |
| **15.2** | 21230 | 2.6 | 97.6 | 55.0 | — | **314 R3 (B)** | **BN225S4** | — | — | — | 93000 | 109200 | 37000 | 374 |
| **16.0** | 20167 | 2.7 | 92.7 | 25.0 | **314 L3** | — | **BN225S4** | — | — | — | 91600 | 107600 | 36400 | 372 |
| **16.3** | 19734 | 2.4 | 90.7 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 91000 | 106900 | 36200 | 374 |
| **16.3** | 19734 | 3.0 | 90.7 | 90.0 | — | **315 R3 (C)** | **BN225S4** | — | — | — | 91000 | 106900 | 36200 | 386 |
| **18.0** | 17889 | 2.9 | 82.3 | 55.0 | — | **314 R3 (B)** | **BN225S4** | — | — | — | 88400 | 103800 | 35000 | 374 |
| **20.9** | 15378 | 2.9 | 70.7 | 55.0 | — | **314 R3 (C)** | **BN225S4** | — | — | — | 84500 | 99200 | 33300 | 374 |
| **32** | 10499 | 1.4 | 46.7 | 22.0 | **310 L2** | — | **BN225S4** | — | — | — | 47800 | 60200 | 20900 | 336 |

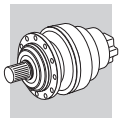


## $P_1$ = 37 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **38** | 8722 | 2.3 | 38.8 | 26.0 | **311 L2** | **—** | **BN225S4** | **—** | — | — | 53500 | 66600 | 19700 | 348 |
| **38** | 8679 | 1.6 | 38.6 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 45200 | 56800 | 19600 | 336 |
| **45** | 7349 | 2.7 | 32.7 | 26.0 | **311 L2** | **—** | **BN225S4** | **—** | — | — | 50800 | 63300 | 18600 | 348 |
| **45** | 7313 | 1.8 | 32.6 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 42900 | 54000 | 18600 | 336 |
| **48** | 6893 | 1.9 | 30.7 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 42200 | 53000 | 18200 | 336 |
| **53** | 6290 | 2.0 | 28.0 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 41000 | 51600 | 17600 | 336 |
| **58** | 5698 | 2.2 | 25.4 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 39800 | 50100 | 17100 | 336 |
| **58** | 5693 | 2.1 | 25.3 | 55.0 | **—** | **310 R2 (C)** | **BN225S4** | **—** | — | — | 39800 | 50100 | 17100 | 338 |
| **68** | 4902 | 2.5 | 21.8 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 38100 | 47900 | 16200 | 336 |
| **69** | 4796 | 2.5 | 21.3 | 55.0 | **—** | **310 R2 (C)** | **BN225S4** | **—** | — | — | 37800 | 47600 | 16100 | 338 |
| **81** | 4112 | 2.7 | 18.3 | 55.0 | **—** | **310 R2 (B)** | **BN225S4** | **—** | — | — | 36100 | 45400 | 15300 | 338 |
| **85** | 3906 | 2.9 | 17.4 | 22.0 | **310 L2** | **—** | **BN225S4** | **—** | — | — | 35600 | 44700 | 15100 | 336 |
| **89** | 3738 | 3.0 | 16.6 | 55.0 | **—** | **310 R2 (C)** | **BN225S4** | **—** | — | — | 35100 | 44100 | 14800 | 338 |
| **197** | 1739 | 2.4 | 7.50 | 18.0 | **306 L1** | **—** | **BN225S4** | **—** | 8150 | 9240 | 21300 | 24800 | 6120 | 300 |
| **239** | 1437 | 2.9 | 6.20 | 18.0 | **306 L1** | **—** | **BN225S4** | **—** | 7650 | 8670 | 20200 | 23500 | 5750 | 300 |

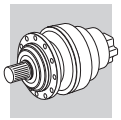
## $P_1$ = 45 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1** | 355606 | 1.0 | 1389 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 636100 | 700800 | 199500 | 426 |
| **1.2** | 327642 | 2.7 | 1279 | 50.0 | **323 L4** | **—** | **BN225M4** | **—** | — | — | — | — | 1043200 | 446 |
| **1.2** | 305897 | 1.2 | 1195 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 608000 | 669900 | 189700 | 426 |
| **1.3** | 287204 | 1.8 | 1122 | 35.0 | **321 L4** | **—** | **BN225M4** | **—** | — | — | 731900 | 867900 | 1114500 | 436 |
| **1.4** | 271209 | 1.0 | 1059 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 499800 | 510000 | 178100 | 416 |
| **1.5** | 257747 | 1.3 | 1007 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 577600 | 636300 | 179200 | 426 |
| **1.6** | 241996 | 2.4 | 945 | 35.0 | **321 L4** | **—** | **BN225M4** | **—** | — | — | 695300 | 824500 | 1052600 | 436 |
| **1.6** | 233478 | 1.4 | 912 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 560700 | 617700 | 173400 | 426 |
| **1.6** | 233298 | 1.2 | 911 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 487700 | 497700 | 173300 | 416 |
| **1.6** | 232095 | 1.4 | 906 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 559700 | 616600 | 173000 | 428 |
| **1.7** | 217796 | 1.7 | 850 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 549100 | 605000 | 169400 | 426 |
| **1.9** | 203904 | 2.7 | 796 | 35.0 | **321 L4** | **—** | **BN225M4** | **—** | — | — | 660400 | 783200 | 994200 | 436 |
| **1.9** | 199651 | 1.7 | 780 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 535000 | 589400 | 164500 | 428 |
| **1.9** | 196575 | 1.4 | 768 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 463300 | 472800 | 163700 | 416 |
| **2.0** | 188568 | 2.9 | 736 | 35.0 | **321 L4** | **—** | **BN225M4** | **—** | — | — | 645100 | 765000 | 968700 | 436 |
| **2.0** | 187451 | 2.8 | 732 | 125.0 | **—** | **321 R4 (C)** | **BN225M4** | **—** | — | — | 644000 | 763700 | 966700 | 438 |
| **2.0** | 185909 | 1.4 | 726 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 455600 | 464900 | 160700 | 416 |
| **2.1** | 183513 | 1.9 | 717 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 521600 | 574700 | 160000 | 426 |
| **2.1** | 177011 | 1.5 | 691 | 110.0 | **—** | **318 R4 (C)** | **BN225M4** | **—** | — | — | 448900 | 458100 | 158100 | 418 |
| **2.2** | 173556 | 2.0 | 678 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 513000 | 565100 | 157000 | 426 |
| **2.3** | 168225 | 1.9 | 657 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 508200 | 559900 | 155400 | 428 |
| **2.3** | 167650 | 1.9 | 655 | 95.0 | **—** | **319 R4 (B)** | **BN225M4** | **—** | — | — | 507700 | 559300 | 155200 | 428 |
| **2.3** | 165633 | 1.6 | 647 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 440100 | 449100 | 154600 | 416 |
| **2.4** | 156646 | 1.7 | 612 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 432800 | 441700 | 151800 | 416 |
| **2.5** | 152268 | 1.7 | 595 | 110.0 | **—** | **318 R4 (C)** | **BN225M4** | **—** | — | — | 429100 | 437900 | 150300 | 418 |
| **2.6** | 146237 | 2.4 | 571 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 487300 | 536800 | 148300 | 426 |
| **2.6** | 144215 | 2.2 | 563 | 95.0 | **—** | **319 R4 (B)** | **BN225M4** | **—** | — | — | 485200 | 534600 | 147600 | 428 |
| **2.7** | 142150 | 2.2 | 555 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 483100 | 532300 | 146900 | 428 |
| **2.8** | 135239 | 2.5 | 528 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 476000 | 524400 | 144500 | 426 |
| **2.8** | 134437 | 2.2 | 525 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 475100 | 523500 | 144200 | 428 |
| **2.9** | 131988 | 1.9 | 515 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 411100 | 419500 | 143300 | 416 |
| **3.0** | 128299 | 2.0 | 501 | 110.0 | **—** | **318 R4 (C)** | **BN225M4** | **—** | — | — | 407600 | 416000 | 142000 | 418 |
| **3.0** | 127861 | 2.0 | 499 | 90.0 | **—** | **318 R4 (B)** | **BN225M4** | **—** | — | — | 407200 | 415600 | 141800 | 418 |
| **3.1** | 122062 | 2.0 | 477 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 401600 | 409800 | 139700 | 416 |
| **3.1** | 121515 | 2.5 | 475 | 95.0 | **—** | **319 R4 (B)** | **BN225M4** | **—** | — | — | 460900 | 507800 | 139400 | 428 |
| **3.1** | 121338 | 2.0 | 474 | 110.0 | **—** | **318 R4 (C)** | **BN225M4** | **—** | — | — | 400900 | 409100 | 139400 | 418 |
| **3.3** | 113951 | 2.8 | 445 | 30.0 | **319 L4** | **—** | **BN225M4** | **—** | — | — | 452100 | 498100 | 136500 | 426 |
| **3.3** | 113276 | 2.5 | 442 | 115.0 | **—** | **319 R4 (C)** | **BN225M4** | **—** | — | — | 451300 | 497200 | 136200 | 428 |
| **3.4** | 109988 | 2.2 | 430 | 90.0 | **—** | **318 R4 (B)** | **BN225M4** | **—** | — | — | 389200 | 397200 | 134900 | 418 |
| **3.5** | 108168 | 2.2 | 422 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 387300 | 395200 | 134100 | 416 |
| **3.7** | 102848 | 2.3 | 402 | 22.0 | **318 L4** | **—** | **BN225M4** | **—** | — | — | 381500 | 389300 | 131900 | 416 |
| **3.7** | 102239 | 2.3 | 399 | 110.0 | **—** | **318 R4 (C)** | **BN225M4** | **—** | — | — | 380800 | 388600 | 131600 | 418 |



## $P_1$ = 45 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **4.1** | 92675 | 2.5 | 362 | 90.0 | — | **318 R4 (B)** | **BN225M4** | — | — | — | 369700 | 377300 | 127400 | 418 |
| **4.3** | 88267 | 2.9 | 345 | 115.0 | — | **319 R4 (C)** | **BN225M4** | — | — | — | 418800 | 461400 | 125400 | 428 |
| **4.3** | 87647 | 2.6 | 342 | 90.0 | — | **318 R4 (B)** | **BN225M4** | — | — | — | 363600 | 371000 | 125100 | 418 |
| **4.4** | 86197 | 2.6 | 337 | 22.0 | **318 L4** | — | **BN225M4** | — | — | — | 361800 | 369200 | 124400 | 416 |
| **4.7** | 80141 | 2.8 | 313 | 22.0 | **318 L4** | — | **BN225M4** | — | — | — | 353900 | 361200 | 121400 | 416 |
| **4.8** | 79666 | 2.8 | 311 | 110.0 | — | **318 R4 (C)** | **BN225M4** | — | — | — | 353300 | 360600 | 121100 | 418 |
| **5.1** | 73851 | 2.9 | 288 | 90.0 | — | **318 R4 (B)** | **BN225M4** | — | — | — | 345400 | 352500 | 118100 | 418 |
| **5.9** | 66824 | 1.8 | 252 | 35.0 | **317 L3** | — | **BN225M4** | — | — | — | 264500 | 281600 | 84700 | 406 |
| **6.1** | 63740 | 1.0 | 241 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 122000 | 143200 | 50000 | 384 |
| **7.0** | 56305 | 2.5 | 213 | 35.0 | **317 L3** | — | **BN225M4** | — | — | — | 251200 | 267500 | 80000 | 406 |
| **7.1** | 54830 | 1.5 | 207 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 116600 | 136900 | 47600 | 384 |
| **7.2** | 54559 | 1.2 | 206 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **8.3** | 47442 | 2.9 | 179 | 35.0 | **317 L3** | — | **BN225M4** | — | — | — | 238700 | 254100 | 75600 | 406 |
| **8.5** | 46199 | 1.7 | 174 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 110700 | 130000 | 45000 | 384 |
| **8.5** | 45971 | 1.4 | 174 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 110600 | 129800 | 44900 | 372 |
| **8.9** | 43874 | 2.7 | 166 | 35.0 | **317 L3** | — | **BN225M4** | — | — | — | 233100 | 248200 | 73600 | 406 |
| **9.0** | 43692 | 1.8 | 165 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 108900 | 127900 | 44100 | 384 |
| **9.0** | 43692 | 1.9 | 165 | 35.0 | **316 L3** | — | **BN225M4** | — | — | — | 181100 | 201400 | 73500 | 396 |
| **9.0** | 43614 | 2.7 | 165 | 100.0 | — | **317 R3 (C)** | **BN225M4** | — | — | — | 232700 | 247800 | 73500 | 406 |
| **9.0** | 43477 | 1.5 | 164 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 108700 | 127700 | 44100 | 372 |
| **9.4** | 41601 | 1.2 | 157 | 55.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 107300 | 126000 | 43400 | 374 |
| **9.4** | 41601 | 1.6 | 157 | 90.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 107300 | 126000 | 43400 | 386 |
| **10.6** | 36815 | 2.2 | 139 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 103500 | 121500 | 41700 | 384 |
| **10.6** | 36815 | 2.2 | 139 | 35.0 | **316 L3** | — | **BN225M4** | — | — | — | 172000 | 191300 | 69500 | 396 |
| **10.7** | 36633 | 1.8 | 138 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 103300 | 121300 | 41600 | 372 |
| **11.0** | 35786 | 1.7 | 135 | 55.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 102600 | 120400 | 41300 | 374 |
| **11.0** | 35786 | 2.1 | 135 | 90.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 102600 | 120400 | 41300 | 386 |
| **12.6** | 31020 | 2.6 | 117 | 35.0 | **316 L3** | — | **BN225M4** | — | — | — | 163400 | 181700 | 65600 | 396 |
| **13.0** | 30153 | 1.7 | 114 | 55.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 97400 | 114400 | 39000 | 374 |
| **13.0** | 30153 | 2.1 | 114 | 90.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 97400 | 114400 | 39000 | 386 |
| **13.0** | 30050 | 1.6 | 113 | 55.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 97300 | 114300 | 38900 | 374 |
| **13.0** | 30050 | 2.0 | 113 | 75.0 | — | **315 R3 (B)** | **BN225M4** | — | — | — | 97300 | 114300 | 38900 | 386 |
| **13.7** | 28687 | 2.5 | 108 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 96000 | 112700 | 38400 | 384 |
| **13.7** | 28687 | 2.6 | 108 | 35.0 | **316 L3** | — | **BN225M4** | — | — | — | 159600 | 177500 | 63900 | 396 |
| **13.7** | 28545 | 2.0 | 108 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 95900 | 112500 | 38300 | 372 |
| **13.7** | 28517 | 1.7 | 108 | 55.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 95800 | 112500 | 38300 | 374 |
| **13.7** | 28517 | 2.2 | 108 | 90.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 95800 | 112500 | 38300 | 386 |
| **13.7** | 28517 | 2.5 | 108 | 90.0 | — | **316 R3 (C)** | **BN225M4** | — | — | — | 159300 | 177200 | 63800 | 386 |
| **15.2** | 25850 | 2.1 | 97.6 | 55.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 93000 | 109200 | 37000 | 374 |
| **15.2** | 25850 | 2.7 | 97.6 | 75.0 | — | **315 R3 (B)** | **BN225M4** | — | — | — | 93000 | 109200 | 37000 | 386 |
| **16.0** | 24555 | 2.2 | 92.7 | 25.0 | **314 L3** | — | **BN225M4** | — | — | — | 91600 | 107600 | 36400 | 372 |
| **16.2** | 24171 | 2.8 | 91.3 | 30.0 | **315 L3** | — | **BN225M4** | — | — | — | 91200 | 107100 | 36200 | 384 |
| **16.2** | 24171 | 3.0 | 91.3 | 35.0 | **316 L3** | — | **BN225M4** | — | — | — | 151600 | 168600 | 60400 | 396 |
| **16.3** | 24028 | 2.0 | 90.7 | 55.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 91000 | 106900 | 36200 | 374 |
| **16.3** | 24028 | 2.5 | 90.7 | 90.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 91000 | 106900 | 36200 | 386 |
| **16.3** | 24028 | 2.9 | 90.7 | 90.0 | — | **316 R3 (C)** | **BN225M4** | — | — | — | 151300 | 168300 | 60300 | 386 |
| **18.0** | 21781 | 2.4 | 82.3 | 100.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 194000 | 206600 | 60100 | 374 |
| **19.0** | 20599 | 2.5 | 77.8 | 55.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 88400 | 103800 | 35000 | 374 |
| **20.0** | 19567 | 2.6 | 73.9 | 55.0 | **314 L3** | — | **BN225M4** | — | — | — | 86900 | 102000 | 34300 | 372 |
| **20.9** | 18723 | 2.3 | 70.7 | 35.0 | — | **314 R3 (C)** | **BN225M4** | — | — | — | 143800 | 159900 | 56900 | 374 |
| **20.9** | 18723 | 2.9 | 70.7 | 25.0 | — | **315 R3 (C)** | **BN225M4** | — | — | — | 85600 | 100500 | 33800 | 386 |
| **22.6** | 17356 | 2.9 | 65.5 | 30.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 84600 | 99300 | 33300 | 374 |
| **23.6** | 16575 | 2.9 | 62.6 | 35.0 | **314 L3** | — | **BN225M4** | — | — | — | 140700 | 156500 | 55600 | 372 |
| **29.0** | 13524 | 2.8 | 51.1 | 55.0 | — | **314 R3 (B)** | **BN225M4** | — | — | — | 76600 | 89900 | 29800 | 374 |
| **32** | 12783 | 1.1 | 46.7 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 47800 | 60200 | 20900 | 336 |
| **37** | 11078 | 2.7 | 40.5 | 30.0 | **313 L2** | — | **BN225M4** | — | — | — | 66900 | 79200 | 24600 | 360 |
| **38** | 10620 | 1.9 | 38.8 | 26.0 | **311 L2** | — | **BN225M4** | — | — | — | 53500 | 66600 | 19700 | 348 |
| **38** | 10567 | 1.3 | 38.6 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 45200 | 56800 | 19600 | 336 |
| **45** | 8948 | 2.3 | 32.7 | 26.0 | **311 L2** | — | **BN225M4** | — | — | — | 50800 | 63300 | 18600 | 348 |
| **45** | 8904 | 1.5 | 32.6 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 42900 | 54000 | 18600 | 336 |
| **48** | 8393 | 1.6 | 30.7 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 42200 | 53000 | 18200 | 336 |
| **53** | 7659 | 1.7 | 28.0 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 41000 | 51600 | 17600 | 336 |
| **54** | 7539 | 2.5 | 27.6 | 26.0 | **311 L2** | — | **BN225M4** | — | — | — | 48300 | 60100 | 17600 | 348 |
| **58** | 6972 | 2.6 | 25.5 | 26.0 | **311 L2** | — | **BN225M4** | — | — | — | 47100 | 58700 | 17100 | 348 |
| **58** | 6938 | 1.8 | 25.4 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 39800 | 50100 | 17100 | 336 |

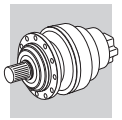


## $P_1$ = 45 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **58** | 6931 | 1.8 | 25.3 | 55.0 | — | **310 R2 (C)** | **BN225M4** | — | — | — | 39800 | 50100 | 17100 | 338 |
| **58** | 6931 | 2.5 | 25.3 | 90.0 | — | **311 R2 (C)** | **BN225M4** | — | — | — | 47100 | 58600 | 17100 | 374 |
| **68** | 5968 | 2.0 | 21.8 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 38100 | 47900 | 16200 | 336 |
| **69** | 5875 | 3.0 | 21.5 | 26.0 | **311 L2** | — | **BN225M4** | — | — | — | 44800 | 55800 | 16200 | 348 |
| **69** | 5840 | 2.0 | 21.3 | 55.0 | — | **310 R2 (C)** | **BN225M4** | — | — | — | 37800 | 47600 | 16100 | 338 |
| **69** | 5840 | 2.9 | 21.3 | 90.0 | — | **311 R2 (C)** | **BN225M4** | — | — | — | 44700 | 55700 | 16100 | 374 |
| **81** | 5007 | 2.2 | 18.3 | 55.0 | — | **310 R2 (B)** | **BN225M4** | — | — | — | 36100 | 45400 | 15300 | 338 |
| **85** | 4756 | 2.4 | 17.4 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 35600 | 44700 | 15100 | 336 |
| **89** | 4551 | 2.5 | 16.6 | 55.0 | — | **310 R2 (C)** | **BN225M4** | — | — | — | 35100 | 44100 | 14800 | 338 |
| **96** | 4218 | 2.5 | 15.4 | 55.0 | — | **310 R2 (B)** | **BN225M4** | — | — | — | 34300 | 43100 | 14500 | 338 |
| **100** | 4028 | 2.7 | 14.7 | 22.0 | **310 L2** | — | **BN225M4** | — | — | — | 33800 | 42600 | 14200 | 336 |
| **197** | 2117 | 1.9 | 7.50 | 18.0 | **306 L1** | — | **BN225M4** | — | 8150 | 9240 | 21300 | 24800 | 6120 | 300 |
| **239** | 1750 | 2.4 | 6.20 | 18.0 | **306 L1** | — | **BN225M4** | — | 7650 | 8670 | 20200 | 23500 | 5750 | 300 |
| **278** | 1505 | 2.7 | 5.33 | 18.0 | **306 L1** | — | **BN225M4** | — | 7280 | 8240 | 19300 | 22400 | 5470 | 300 |

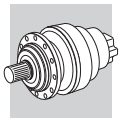
## $P_1$ = 55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.2** | 399701 | 2.2 | 1279 | 50.0 | **323 L4** | — | **BN250M4** | — | — | — | — | — | 1043200 | 446 |
| **1.2** | 373174 | 0.9 | 1195 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 595600 | 656200 | 185400 | 426 |
| **1.3** | 350369 | 1.5 | 1122 | 35.0 | **321 L4** | — | **BN250M4** | — | — | — | 731900 | 867900 | 1114500 | 436 |
| **1.3** | 343828 | 2.5 | 1101 | 50.0 | **323 L4** | — | **BN250M4** | — | — | — | — | — | 992100 | 446 |
| **1.4** | 320273 | 2.7 | 1025 | 50.0 | **323 L4** | — | **BN250M4** | — | — | — | — | — | 968900 | 446 |
| **1.5** | 314433 | 1.1 | 1007 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 577600 | 636300 | 179200 | 426 |
| **1.6** | 295218 | 2.0 | 945 | 35.0 | **321 L4** | — | **BN250M4** | — | — | — | 695300 | 824500 | 1052600 | 436 |
| **1.6** | 284828 | 1.2 | 912 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 560700 | 617700 | 173400 | 426 |
| **1.6** | 284607 | 1.0 | 911 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 477700 | 487500 | 169400 | 416 |
| **1.6** | 283140 | 1.2 | 906 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 559700 | 616600 | 173000 | 428 |
| **1.7** | 265696 | 1.4 | 850 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 549100 | 605000 | 169400 | 426 |
| **1.9** | 248748 | 2.2 | 796 | 35.0 | **321 L4** | — | **BN250M4** | — | — | — | 660400 | 783200 | 994200 | 436 |
| **1.9** | 243561 | 1.4 | 780 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 535000 | 589400 | 164500 | 428 |
| **1.9** | 239808 | 1.1 | 768 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 463300 | 472800 | 163700 | 416 |
| **2.0** | 230040 | 2.4 | 736 | 35.0 | **321 L4** | — | **BN250M4** | — | — | — | 645100 | 765000 | 968700 | 436 |
| **2.0** | 228677 | 2.3 | 732 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 644000 | 763700 | 966700 | 438 |
| **2.0** | 226796 | 1.2 | 726 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 455600 | 464900 | 160700 | 416 |
| **2.1** | 223874 | 1.6 | 717 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 521600 | 574700 | 160000 | 426 |
| **2.1** | 215941 | 1.2 | 691 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 448900 | 458100 | 158100 | 418 |
| **2.2** | 211727 | 1.7 | 678 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 513000 | 565100 | 157000 | 426 |
| **2.3** | 205223 | 1.6 | 657 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 508200 | 559900 | 155400 | 428 |
| **2.3** | 204522 | 1.6 | 655 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 507700 | 559300 | 155200 | 428 |
| **2.3** | 202060 | 1.3 | 647 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 440100 | 449100 | 154600 | 416 |
| **2.4** | 192681 | 2.6 | 617 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 611700 | 725400 | 913100 | 438 |
| **2.4** | 191110 | 2.7 | 612 | 35.0 | **321 L4** | — | **BN250M4** | — | — | — | 610200 | 723600 | 910600 | 436 |
| **2.4** | 191097 | 1.4 | 612 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 432800 | 441700 | 151800 | 416 |
| **2.5** | 185756 | 1.4 | 595 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 429100 | 437900 | 150300 | 418 |
| **2.6** | 178399 | 1.9 | 571 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 487300 | 536800 | 148300 | 426 |
| **2.6** | 175933 | 1.8 | 563 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 485200 | 534600 | 147600 | 428 |
| **2.7** | 173413 | 1.8 | 555 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 483100 | 532300 | 146900 | 428 |
| **2.8** | 165181 | 2.9 | 529 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 584100 | 692700 | 867400 | 438 |
| **2.8** | 164982 | 2.0 | 528 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 476000 | 524400 | 144500 | 426 |
| **2.8** | 164004 | 1.8 | 525 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 475100 | 523500 | 144200 | 428 |
| **2.9** | 161017 | 1.6 | 515 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 411100 | 419500 | 143300 | 416 |
| **2.9** | 160074 | 2.6 | 512 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 578600 | 686200 | 858400 | 438 |
| **3.0** | 156517 | 1.6 | 501 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 407600 | 416000 | 142000 | 418 |
| **3.0** | 155982 | 1.6 | 499 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 407200 | 415600 | 141800 | 418 |
| **3.1** | 150141 | 2.6 | 481 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 567600 | 673100 | 840200 | 438 |
| **3.1** | 148907 | 1.7 | 477 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 401600 | 409800 | 139700 | 416 |
| **3.1** | 148240 | 2.0 | 475 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 460900 | 507800 | 139400 | 428 |
| **3.1** | 148024 | 1.7 | 474 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 400900 | 409100 | 139400 | 418 |
| **3.3** | 139181 | 2.9 | 446 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 554800 | 658000 | 819300 | 438 |
| **3.3** | 139012 | 2.3 | 445 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 452100 | 498100 | 136500 | 426 |



## $P_1$ = 55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.3** | 138189 | 2.0 | 442 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 451300 | 497200 | 136200 | 428 |
| **3.4** | 134178 | 1.8 | 430 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 389200 | 397200 | 134900 | 418 |
| **3.5** | 131958 | 1.8 | 422 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 387300 | 395200 | 134100 | 416 |
| **3.7** | 125468 | 1.9 | 402 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 381500 | 389300 | 131900 | 416 |
| **3.7** | 125263 | 2.5 | 401 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 438200 | 482800 | 131800 | 428 |
| **3.7** | 124733 | 2.6 | 399 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 536900 | 636700 | 789900 | 438 |
| **3.7** | 124724 | 1.9 | 399 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 380800 | 388600 | 131600 | 418 |
| **3.9** | 118466 | 2.6 | 379 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 430900 | 474800 | 129400 | 428 |
| **4.0** | 115627 | 3.0 | 370 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 524800 | 622400 | 770200 | 438 |
| **4.1** | 113058 | 2.0 | 362 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 369700 | 377300 | 127400 | 418 |
| **4.3** | 108452 | 3.0 | 347 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 514800 | 610500 | 753900 | 438 |
| **4.3** | 108321 | 2.8 | 347 | 30.0 | **319 L4** | — | **BN250M4** | — | — | — | 419500 | 462200 | 125600 | 426 |
| **4.3** | 107679 | 2.4 | 345 | 115.0 | — | **319 R4 (C)** | **BN250M4** | — | — | — | 418800 | 461400 | 125400 | 428 |
| **4.3** | 106923 | 2.1 | 342 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 363600 | 371000 | 125100 | 418 |
| **4.4** | 105154 | 2.1 | 337 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 361800 | 369200 | 124400 | 416 |
| **4.6** | 99819 | 2.9 | 320 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 409400 | 451000 | 122200 | 428 |
| **4.7** | 97767 | 2.3 | 313 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 353900 | 361200 | 121400 | 416 |
| **4.8** | 97188 | 2.3 | 311 | 110.0 | — | **318 R4 (C)** | **BN250M4** | — | — | — | 353300 | 360600 | 121100 | 418 |
| **4.8** | 95694 | 2.6 | 306 | 125.0 | — | **321 R4 (C)** | **BN250M4** | — | — | — | 495900 | 588000 | 723100 | 438 |
| **5.1** | 90099 | 2.9 | 288 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 487000 | 577500 | 708700 | 438 |
| **5.1** | 90093 | 2.4 | 288 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 345400 | 352500 | 118100 | 418 |
| **5.6** | 81938 | 2.6 | 262 | 22.0 | **318 L4** | — | **BN250M4** | — | — | — | 335700 | 342600 | 114400 | 416 |
| **5.9** | 81520 | 1.5 | 252 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 471100 | 558700 | 683100 | 406 |
| **5.9** | 77781 | 2.9 | 249 | 95.0 | — | **319 R4 (B)** | **BN250M4** | — | — | — | 379800 | 418500 | 112500 | 428 |
| **6.6** | 70202 | 2.9 | 225 | 90.0 | — | **318 R4 (B)** | **BN250M4** | — | — | — | 320500 | 327000 | 108700 | 418 |
| **6.7** | 69124 | 3.0 | 221 | 105.0 | — | **321 R4 (B)** | **BN250M4** | — | — | — | 449800 | 533400 | 648800 | 438 |
| **7.0** | 68689 | 2.1 | 213 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 251200 | 267500 | 80000 | 406 |
| **7.1** | 66889 | 1.2 | 207 | 30.0 | **315 L3** | — | **BN250M4** | — | — | — | 116600 | 136900 | 47600 | 384 |
| **7.2** | 66558 | 1.0 | 206 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 116400 | 136700 | 47500 | 372 |
| **8.3** | 57876 | 2.4 | 179 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 238700 | 254100 | 75600 | 406 |
| **8.5** | 56360 | 1.4 | 174 | 30.0 | **315 L3** | — | **BN250M4** | — | — | — | 110700 | 130000 | 45000 | 384 |
| **8.5** | 56081 | 1.1 | 174 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 110600 | 129800 | 44900 | 372 |
| **8.9** | 53524 | 2.3 | 166 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 233100 | 248200 | 73600 | 406 |
| **9.0** | 53302 | 1.5 | 165 | 30.0 | **315 L3** | — | **BN250M4** | — | — | — | 108900 | 127900 | 44100 | 384 |
| **9.0** | 53302 | 1.5 | 165 | 35.0 | **316 L3** | — | **BN250M4** | — | — | — | 181100 | 201400 | 73500 | 396 |
| **9.0** | 53206 | 2.2 | 165 | 100.0 | — | **317 R3 (C)** | **BN250M4** | — | — | — | 232700 | 247800 | 73500 | 406 |
| **9.0** | 53039 | 1.2 | 164 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 108700 | 127700 | 44100 | 372 |
| **9.4** | 50751 | 1.0 | 157 | 55.0 | — | **314 R3 (C)** | **BN250M4** | — | — | — | 107300 | 126000 | 43400 | 374 |
| **9.4** | 50751 | 1.3 | 157 | 90.0 | — | **315 R3 (C)** | **BN250M4** | — | — | — | 107300 | 126000 | 43400 | 386 |
| **10.6** | 44912 | 1.8 | 139 | 30.0 | **315 L3** | — | **BN250M4** | — | — | — | 103500 | 121500 | 41700 | 384 |
| **10.6** | 44912 | 1.8 | 139 | 35.0 | **316 L3** | — | **BN250M4** | — | — | — | 172000 | 191300 | 69500 | 396 |
| **10.7** | 44831 | 2.6 | 139 | 100.0 | — | **317 R3 (C)** | **BN250M4** | — | — | — | 221000 | 235400 | 69400 | 406 |
| **10.7** | 44690 | 1.4 | 138 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 103300 | 121300 | 41600 | 372 |
| **10.8** | 44466 | 2.6 | 138 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 220500 | 234800 | 69200 | 406 |
| **11.0** | 43656 | 1.4 | 135 | 55.0 | — | **314 R3 (C)** | **BN250M4** | — | — | — | 102600 | 120400 | 41300 | 374 |
| **11.0** | 43656 | 1.7 | 135 | 90.0 | — | **315 R3 (C)** | **BN250M4** | — | — | — | 102600 | 120400 | 41300 | 386 |
| **12.4** | 38433 | 2.9 | 119 | 90.0 | — | **317 R3 (B)** | **BN250M4** | — | — | — | 211100 | 224700 | 65900 | 406 |
| **12.6** | 37842 | 2.1 | 117 | 35.0 | **316 L3** | — | **BN250M4** | — | — | — | 163400 | 181700 | 65600 | 396 |
| **12.8** | 37466 | 2.9 | 116 | 35.0 | **317 L3** | — | **BN250M4** | — | — | — | 209500 | 223000 | 65400 | 406 |
| **12.8** | 37244 | 2.6 | 115 | 100.0 | — | **317 R3 (C)** | **BN250M4** | — | — | — | 209100 | 222600 | 65300 | 406 |
| **13.0** | 36785 | 1.4 | 114 | 55.0 | — | **314 R3 (C)** | **BN250M4** | — | — | — | 97400 | 114400 | 39000 | 374 |
| **13.0** | 36785 | 1.8 | 114 | 90.0 | — | **315 R3 (C)** | **BN250M4** | — | — | — | 97400 | 114400 | 39000 | 386 |
| **13.0** | 36659 | 1.3 | 113 | 40.0 | — | **314 R3 (B)** | **BN250M4** | — | — | — | 95300 | 111900 | 38100 | 374 |
| **13.0** | 36659 | 1.6 | 113 | 75.0 | — | **315 R3 (B)** | **BN250M4** | — | — | — | 97300 | 114300 | 38900 | 386 |
| **13.7** | 34996 | 2.0 | 108 | 30.0 | **315 L3** | — | **BN250M4** | — | — | — | 96000 | 112700 | 38400 | 384 |
| **13.7** | 34996 | 2.2 | 108 | 35.0 | **316 L3** | — | **BN250M4** | — | — | — | 159600 | 177500 | 63900 | 396 |
| **13.7** | 34933 | 2.6 | 108 | 100.0 | — | **317 R3 (C)** | **BN250M4** | — | — | — | 205100 | 218400 | 63900 | 406 |
| **13.7** | 34823 | 1.6 | 108 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 95900 | 112500 | 38300 | 372 |
| **13.7** | 34789 | 1.4 | 108 | 55.0 | — | **314 R3 (C)** | **BN250M4** | — | — | — | 95800 | 112500 | 38300 | 374 |
| **13.7** | 34789 | 1.8 | 108 | 90.0 | — | **315 R3 (C)** | **BN250M4** | — | — | — | 95800 | 112500 | 38300 | 386 |
| **13.7** | 34789 | 2.1 | 108 | 90.0 | — | **316 R3 (C)** | **BN250M4** | — | — | — | 159300 | 177200 | 63800 | 386 |
| **14.8** | 32383 | 3.0 | 100 | 90.0 | — | **317 R3 (B)** | **BN250M4** | — | — | — | 200500 | 213500 | 62300 | 406 |
| **15.2** | 31535 | 1.7 | 97.6 | 40.0 | — | **314 R3 (B)** | **BN250M4** | — | — | — | 91100 | 107000 | 36200 | 374 |
| **15.2** | 31535 | 2.2 | 97.6 | 75.0 | — | **315 R3 (B)** | **BN250M4** | — | — | — | 93000 | 109200 | 37000 | 386 |
| **16.0** | 29956 | 1.8 | 92.7 | 25.0 | **314 L3** | — | **BN250M4** | — | — | — | 91600 | 107600 | 36400 | 372 |



## $P_1$ = 55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | $P_t$ kW | | | | | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **16.2** | 29487 | 2.3 | 91.3 | 30.0 | **315 L3** | **—** | **BN250M4** | **—** | — | — | 91200 | 107100 | 36200 | 384 |
| **16.2** | 29487 | 2.4 | 91.3 | 35.0 | **316 L3** | **—** | **BN250M4** | **—** | — | — | 151600 | 168600 | 60400 | 396 |
| **16.3** | 29313 | 1.6 | 90.7 | 55.0 | **—** | **314 R3 (C)** | **BN250M4** | **—** | — | — | 91000 | 106900 | 36200 | 374 |
| **16.3** | 29313 | 2.0 | 90.7 | 90.0 | **—** | **315 R3 (C)** | **BN250M4** | **—** | — | — | 91000 | 106900 | 36200 | 386 |
| **16.3** | 29313 | 2.4 | 90.7 | 90.0 | **—** | **316 R3 (C)** | **BN250M4** | **—** | — | — | 151300 | 168300 | 60300 | 386 |
| **16.5** | 29022 | 2.6 | 89.8 | 100.0 | **—** | **317 R3 (C)** | **BN250M4** | **—** | — | — | 194000 | 206600 | 60100 | 406 |
| **17.8** | 26903 | 3.0 | 83.3 | 90.0 | **—** | **317 R3 (B)** | **BN250M4** | **—** | — | — | 189700 | 201900 | 58600 | 406 |
| **18.0** | 26571 | 2.0 | 82.3 | 40.0 | **—** | **314 R3 (B)** | **BN250M4** | **—** | — | — | 86600 | 101600 | 34200 | 374 |
| **18.0** | 26571 | 2.5 | 82.3 | 75.0 | **—** | **315 R3 (B)** | **BN250M4** | **—** | — | — | 88400 | 103800 | 35000 | 386 |
| **18.9** | 25234 | 3.0 | 78.1 | 90.0 | **—** | **317 R3 (B)** | **BN250M4** | **—** | — | — | 186000 | 198100 | 57300 | 406 |
| **19.0** | 25129 | 2.0 | 77.8 | 40.0 | **—** | **314 R3 (B)** | **BN250M4** | **—** | — | — | 85100 | 100000 | 33600 | 374 |
| **19.0** | 25129 | 2.6 | 77.8 | 75.0 | **—** | **315 R3 (B)** | **BN250M4** | **—** | — | — | 86900 | 102000 | 34300 | 386 |
| **19.0** | 25129 | 2.6 | 77.8 | 75.0 | **—** | **316 R3 (B)** | **BN250M4** | **—** | — | — | 144500 | 160700 | 57200 | 386 |
| **19.3** | 24713 | 2.8 | 76.5 | 35.0 | **316 L3** | **—** | **BN250M4** | **—** | — | — | 143800 | 159900 | 56900 | 396 |
| **20.0** | 23871 | 2.1 | 73.9 | 25.0 | **314 L3** | **—** | **BN250M4** | **—** | — | — | 85600 | 100500 | 33800 | 372 |
| **20.8** | 22977 | 2.7 | 71.1 | 30.0 | **315 L3** | **—** | **BN250M4** | **—** | — | — | 84600 | 99300 | 33300 | 384 |
| **20.8** | 22977 | 2.9 | 71.1 | 35.0 | **316 L3** | **—** | **BN250M4** | **—** | — | — | 140700 | 156500 | 55600 | 396 |
| **20.9** | 22841 | 1.9 | 70.7 | 55.0 | **—** | **314 R3 (C)** | **BN250M4** | **—** | — | — | 84500 | 99200 | 33300 | 374 |
| **20.9** | 22841 | 2.4 | 70.7 | 90.0 | **—** | **315 R3 (C)** | **BN250M4** | **—** | — | — | 84500 | 99200 | 33300 | 386 |
| **20.9** | 22841 | 2.6 | 70.7 | 90.0 | **—** | **316 R3 (C)** | **BN250M4** | **—** | — | — | 140400 | 156200 | 55400 | 386 |
| **21.5** | 22265 | 2.6 | 68.9 | 100.0 | **—** | **317 R3 (C)** | **BN250M4** | **—** | — | — | 179200 | 190800 | 55000 | 406 |
| **22.6** | 21174 | 2.3 | 65.5 | 40.0 | **—** | **314 R3 (B)** | **BN250M4** | **—** | — | — | 80900 | 94900 | 31700 | 374 |
| **22.6** | 21174 | 2.9 | 65.5 | 75.0 | **—** | **315 R3 (B)** | **BN250M4** | **—** | — | — | 82600 | 96900 | 32400 | 386 |
| **22.8** | 20963 | 2.9 | 64.9 | 90.0 | **—** | **317 R3 (B)** | **BN250M4** | **—** | — | — | 176000 | 187400 | 53900 | 406 |
| **23.6** | 20220 | 2.4 | 62.6 | 25.0 | **314 L3** | **—** | **BN250M4** | **—** | — | — | 81400 | 95600 | 31900 | 372 |
| **29.0** | 16499 | 2.3 | 51.1 | 40.0 | **—** | **314 R3 (B)** | **BN250M4** | **—** | — | — | 75000 | 88100 | 29200 | 374 |
| **29.0** | 16499 | 2.9 | 51.1 | 75.0 | **—** | **315 R3 (B)** | **BN250M4** | **—** | — | — | 76600 | 89900 | 29800 | 386 |
| **29.7** | 16083 | 2.9 | 49.8 | 90.0 | **—** | **317 R3 (B)** | **BN250M4** | **—** | — | — | 162500 | 173000 | 49300 | 406 |
| **32** | 15594 | 0.9 | 46.7 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 47800 | 60200 | 20900 | 336 |
| **37** | 13515 | 2.2 | 40.5 | 30.0 | **313 L2** | **—** | **BN250M4** | **—** | — | — | 66900 | 79200 | 24600 | 360 |
| **38** | 12955 | 1.5 | 38.8 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 53500 | 66600 | 19700 | 348 |
| **38** | 12891 | 1.1 | 38.6 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 45200 | 56800 | 19600 | 336 |
| **38** | 12891 | 2.7 | 38.6 | 40.0 | **314 L2** | **—** | **BN250M4** | **—** | — | — | 69000 | 81000 | 26600 | 372 |
| **44** | 11228 | 2.6 | 33.6 | 30.0 | **313 L2** | **—** | **BN250M4** | **—** | — | — | 63300 | 74900 | 23100 | 360 |
| **45** | 10916 | 1.9 | 32.7 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 50800 | 63300 | 18600 | 348 |
| **45** | 10862 | 1.2 | 32.6 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 42900 | 54000 | 18600 | 336 |
| **48** | 10239 | 1.3 | 30.7 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 42200 | 53000 | 18200 | 336 |
| **52** | 9460 | 2.9 | 28.4 | 30.0 | **313 L2** | **—** | **BN250M4** | **—** | — | — | 60100 | 71200 | 21800 | 360 |
| **53** | 9344 | 1.4 | 28.0 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 41000 | 51600 | 17600 | 336 |
| **54** | 9198 | 2.1 | 27.6 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 48300 | 60100 | 17600 | 348 |
| **56** | 8821 | 2.6 | 26.4 | 90.0 | **—** | **313 R2 (C)** | **BN250M4** | **—** | — | — | 58900 | 69700 | 21300 | 362 |
| **58** | 8506 | 2.2 | 25.5 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 47100 | 58700 | 17100 | 348 |
| **58** | 8464 | 1.5 | 25.4 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 39800 | 50100 | 17100 | 336 |
| **58** | 8455 | 2.1 | 25.3 | 55.0 | **—** | **311 R2 (C)** | **BN250M4** | **—** | — | — | 39800 | 50100 | 17100 | 374 |
| **67** | 7328 | 2.6 | 22.0 | 90.0 | **—** | **313 R2 (C)** | **BN250M4** | **—** | — | — | 47100 | 58600 | 17100 | 362 |
| **68** | 7281 | 1.7 | 21.8 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 38100 | 47900 | 16200 | 336 |
| **69** | 7167 | 2.4 | 21.5 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 44800 | 55800 | 16200 | 348 |
| **69** | 7124 | 2.4 | 21.3 | 90.0 | **—** | **311 R2 (C)** | **BN250M4** | **—** | — | — | 44700 | 55700 | 16100 | 374 |
| **78** | 6372 | 3.0 | 19.1 | 75.0 | **—** | **313 R2 (B)** | **BN250M4** | **—** | — | — | 53400 | 63200 | 19100 | 362 |
| **81** | 6108 | 2.6 | 18.3 | 75.0 | **—** | **311 R2 (B)** | **BN250M4** | **—** | — | — | 42700 | 53200 | 15300 | 374 |
| **82** | 6007 | 2.8 | 18.0 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 42500 | 52900 | 15200 | 348 |
| **85** | 5802 | 1.9 | 17.4 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 35600 | 44700 | 15100 | 336 |
| **88** | 5622 | 2.6 | 16.8 | 90.0 | **—** | **313 R2 (C)** | **BN250M4** | **—** | — | — | 51400 | 60900 | 18300 | 362 |
| **88** | 5585 | 2.9 | 16.7 | 26.0 | **311 L2** | **—** | **BN250M4** | **—** | — | — | 41600 | 51800 | 14900 | 348 |
| **89** | 5552 | 2.6 | 16.6 | 90.0 | **—** | **311 R2 (C)** | **BN250M4** | **—** | — | — | 41500 | 51700 | 14800 | 374 |
| **93** | 5293 | 3.0 | 15.9 | 75.0 | **—** | **313 R2 (B)** | **BN250M4** | **—** | — | — | 50500 | 59800 | 18000 | 362 |
| **96** | 5146 | 3.0 | 15.4 | 75.0 | **—** | **311 R2 (B)** | **BN250M4** | **—** | — | — | 40500 | 50500 | 14500 | 374 |
| **100** | 4914 | 2.2 | 14.7 | 22.0 | **310 L2** | **—** | **BN250M4** | **—** | — | — | 33800 | 42600 | 14200 | 336 |
| **122** | 4061 | 3.0 | 12.2 | 75.0 | **—** | **313 R2 (B)** | **BN250M4** | **—** | — | — | 46700 | 55200 | 16400 | 362 |
| **123** | 4010 | 3.0 | 12.0 | 75.0 | **—** | **311 R2 (B)** | **BN250M4** | **—** | — | — | 37600 | 46900 | 13300 | 374 |
| **197** | 2583 | 1.6 | 7.50 | 18.0 | **306 L1** | **—** | **BN250M4** | **—** | 8150 | 9240 | 21300 | 24800 | 6120 | 300 |
| **238** | 2146 | 2.7 | 6.23 | 22.0 | **307 L1** | **—** | **BN250M4** | **—** | 8520 | 10700 | 21700 | 28500 | 7400 | 312 |
| **239** | 2135 | 2.0 | 6.20 | 18.0 | **306 L1** | **—** | **BN250M4** | **—** | 7650 | 8670 | 20200 | 23500 | 5750 | 300 |
| **278** | 1837 | 2.2 | 5.33 | 18.0 | **306 L1** | **—** | **BN250M4** | **—** | 7280 | 8240 | 19300 | 22400 | 5470 | 300 |
| **348** | 1463 | 2.7 | 4.25 | 18.0 | **306 L1** | **—** | **BN250M4** | **—** | 6750 | 7640 | 18000 | 21000 | 5070 | 300 |

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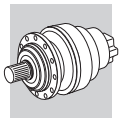

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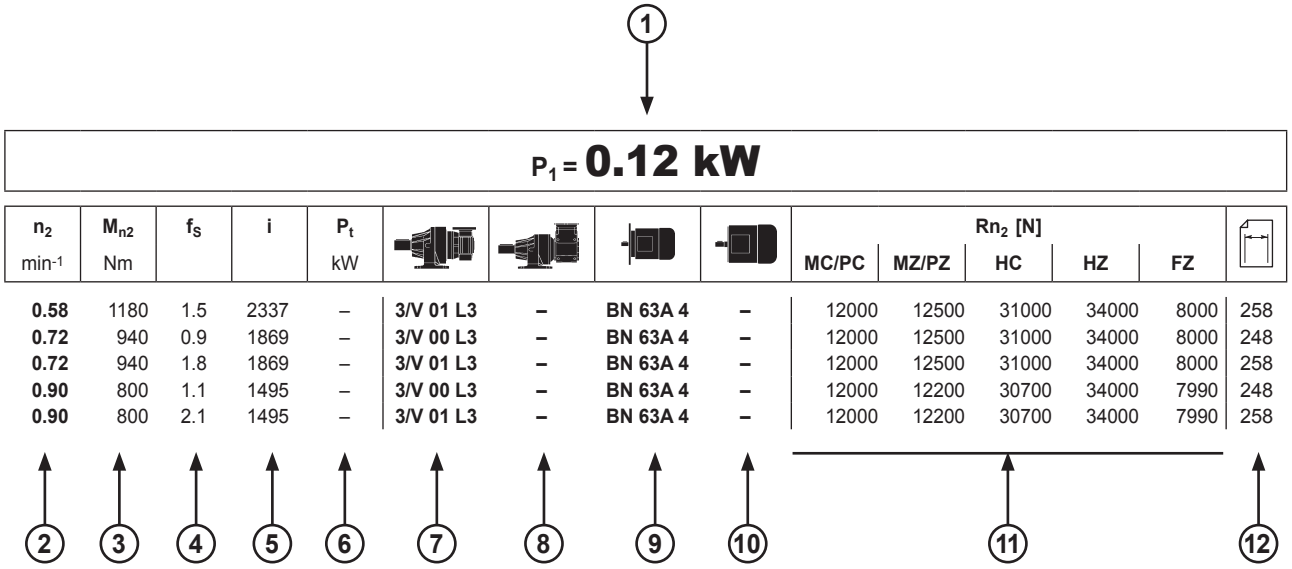
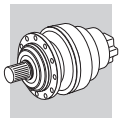
## 25.2 TABLAS DE DATOS TÉCNICOS DE LOS REDUCTORES Y DIMENSIONES

Guía para consultar las tablas.




| | |
|---|---|
| **1** | Potencia trasmitida en la entrada del reductor |
| **2** | Velocidad angular en el eje de salida |
| **3** | Par nominal del eje de salida del reductor basado en:<br>- factor de servicio indicado<br>- vida teórica de 10000 h |
| **4** | Factor de servicio |
| **5** | Relación de reducción |
| **6** | Potencia térmica del reductor |
| **7** | Tamaño de reductor combinado serie 300<br>+ reductor tornillo sin fin |
| **8** | Tamaño reductor combinado serie 300<br>+ reductor de ejes ortogonales |
| **9** | Tamaño motor IEC y polaridad |
| **10** | Tamaño motor compacto y polaridad |
| **11** | Carga radial aplicada al eje lento, calculado para:<br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br>Para fuerzas no aplicadas en el centro del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **12** | Páginas de las dimensiones<br>Las dimensiones del motorreductor se refieren al montaje con motores de marca BONFIGLIOLI |



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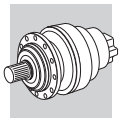
## $P_1$ = 0.12 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.58** | 1180 | 1.5 | 2337 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |
| **0.72** | 940 | 0.9 | 1869 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 12000 | 12500 | 31000 | 34000 | 8000 | 248 |
| **0.72** | 940 | 1.8 | 1869 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |
| **0.90** | 800 | 1.1 | 1495 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 12000 | 12200 | 30700 | 34000 | 7990 | 248 |
| **0.90** | 800 | 2.1 | 1495 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 12000 | 12200 | 30700 | 34000 | 7990 | 258 |
| **0.98** | 700 | 1.8 | 1381 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 11800 | 11800 | 29900 | 34000 | 7780 | 248 |
| **0.98** | 700 | 2.7 | 1381 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 11800 | 11800 | 29900 | 34000 | 7780 | 258 |
| **1.1** | 640 | 1.3 | 1198 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 11300 | 11300 | 28700 | 33000 | 7420 | 248 |
| **1.1** | 640 | 2.6 | 1198 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 11300 | 11300 | 28700 | 33000 | 7420 | 258 |
| **1.2** | 560 | 2.1 | 1107 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 11000 | 11000 | 28000 | 32200 | 7230 | 248 |
| **1.4** | 600 | 1.3 | 997 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 10600 | 10600 | 27100 | 31200 | 6980 | 248 |
| **1.4** | 600 | 2.7 | 997 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 10600 | 10600 | 27100 | 31200 | 6980 | 258 |
| **1.5** | 455 | 1.7 | 903 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 10300 | 10300 | 26400 | 30300 | 6760 | 248 |
| **1.5** | 455 | 2.7 | 903 | – | **3/V 01 L3** | **–** | **BN 63A 4** | **–** | 10300 | 10300 | 26400 | 30300 | 6760 | 258 |
| **1.7** | 410 | 2.7 | 818 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 9940 | 9940 | 25600 | 29400 | 6540 | 248 |
| **2.0** | 390 | 2.8 | 689 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 248 |
| **2.0** | 520 | 2.2 | 665 | – | **–** | **3/A 01 L2** | **BN 63A 4** | **–** | 9280 | 9280 | 24000 | 27600 | 6100 | 259 |
| **2.0** | 510 | 1.2 | 660 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 9250 | 9250 | 24000 | 27500 | 6080 | 249 |
| **2.4** | 320 | 2.3 | 562 | – | **3/V 00 L3** | **–** | **BN 63A 4** | **–** | 8770 | 8770 | 22900 | 26300 | 5770 | 248 |
| **2.5** | 425 | 1.4 | 550 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 8710 | 8710 | 22700 | 26100 | 5730 | 249 |
| **2.5** | 415 | 2.7 | 533 | – | **–** | **3/A 01 L2** | **BN 63A 4** | **–** | 8620 | 8620 | 22500 | 25800 | 5660 | 259 |
| **3.1** | 340 | 2.0 | 441 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 8090 | 8090 | 21200 | 24400 | 5320 | 249 |
| **3.4** | 305 | 2.7 | 393 | – | **–** | **3/A 01 L2** | **BN 63A 4** | **–** | 7790 | 7790 | 20500 | 23600 | 5120 | 259 |
| **3.5** | 305 | 1.8 | 391 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 7770 | 7770 | 20500 | 23500 | 5110 | 249 |
| **3.7** | 285 | 2.0 | 369 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 7630 | 7630 | 20100 | 23100 | 5010 | 249 |
| **4.2** | 245 | 1.8 | 319 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 7260 | 7260 | 19300 | 22100 | 4770 | 249 |
| **4.6** | 230 | 2.8 | 296 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 7080 | 7080 | 18900 | 21700 | 4660 | 249 |
| **5.3** | 195 | 2.8 | 253 | – | **–** | **3/A 00 L2** | **BN 63A 4** | **–** | 6720 | 6720 | 18000 | 20700 | 4420 | 249 |

## $P_1$ = 0.18 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.56** | 1800 | 1.0 | 2337 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |
| **0.71** | 1440 | 1.2 | 1869 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |
| **0.88** | 1230 | 1.4 | 1495 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 12000 | 12200 | 30700 | 34000 | 7990 | 258 |
| **0.96** | 1060 | 1.2 | 1381 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 11800 | 11800 | 29900 | 34000 | 7780 | 248 |
| **0.96** | 1060 | 1.8 | 1381 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 11800 | 11800 | 29900 | 34000 | 7780 | 258 |
| **1.1** | 980 | 1.7 | 1198 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 11300 | 11300 | 28700 | 33000 | 7420 | 258 |
| **1.2** | 850 | 1.4 | 1107 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 11000 | 11000 | 28000 | 32200 | 7230 | 248 |
| **1.2** | 910 | 2.2 | 1105 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 11000 | 11000 | 28000 | 32200 | 7230 | 258 |
| **1.3** | 910 | 1.7 | 997 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 10600 | 10600 | 27100 | 31200 | 6980 | 258 |
| **1.5** | 700 | 1.1 | 903 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 10300 | 10300 | 26400 | 30300 | 6760 | 248 |
| **1.5** | 700 | 1.8 | 903 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 10300 | 10300 | 26400 | 30300 | 6760 | 258 |
| **1.6** | 630 | 1.8 | 818 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 9940 | 9940 | 25600 | 29400 | 6540 | 248 |
| **1.7** | 730 | 2.1 | 799 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 9860 | 9860 | 25400 | 29200 | 6480 | 258 |
| **1.8** | 870 | 2.1 | 731 | – | **–** | **3/A 03 L2** | **BN 63B 4** | **–** | 29400 | 34000 | 50500 | 60700 | 18900 | 269 |
| **1.9** | 600 | 1.8 | 689 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 248 |
| **1.9** | 600 | 2.9 | 689 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 258 |
| **2.0** | 790 | 1.5 | 665 | – | **–** | **3/A 01 L2** | **BN 63B 4** | **–** | 9280 | 9280 | 24000 | 27600 | 6100 | 259 |
| **2.0** | 540 | 2.0 | 654 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 9230 | 9230 | 23900 | 27500 | 6070 | 248 |
| **2.0** | 540 | 2.2 | 654 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 9230 | 9230 | 23900 | 27500 | 6070 | 258 |
| **2.2** | 720 | 2.5 | 605 | – | **–** | **3/A 03 L2** | **BN 63B 4** | **–** | 27600 | 31900 | 47700 | 57400 | 17700 | 269 |
| **2.3** | 680 | 2.6 | 574 | – | **–** | **3/A 03 L2** | **BN 63B 4** | **–** | 27200 | 31400 | 46900 | 56500 | 17400 | 269 |
| **2.3** | 490 | 1.5 | 562 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 8770 | 8770 | 22900 | 26300 | 5770 | 248 |
| **2.3** | 490 | 2.9 | 562 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 8770 | 8770 | 22900 | 26300 | 5770 | 258 |
| **2.4** | 650 | 0.9 | 550 | – | **–** | **3/A 00 L2** | **BN 63B 4** | **–** | 8710 | 8710 | 22700 | 26100 | 5730 | 249 |
| **2.5** | 630 | 1.8 | 533 | – | **–** | **3/A 01 L2** | **BN 63B 4** | **–** | 8620 | 8620 | 22500 | 25800 | 5660 | 259 |
| **2.6** | 440 | 2.4 | 509 | – | **3/V 00 L3** | **–** | **BN 63B 4** | **–** | 8490 | 8490 | 22200 | 25500 | 5580 | 248 |
| **2.6** | 440 | 2.9 | 509 | – | **3/V 01 L3** | **–** | **BN 63B 4** | **–** | 8490 | 8490 | 22200 | 25500 | 5580 | 258 |
| **2.7** | 590 | 2.9 | 495 | – | **–** | **3/A 03 L2** | **BN 63B 4** | **–** | 25900 | 29800 | 44900 | 54000 | 16600 | 269 |
| **2.9** | 540 | 2.1 | 454 | – | **–** | **3/A 01 L2** | **BN 63B 4** | **–** | 8170 | 8170 | 21400 | 24600 | 5370 | 259 |

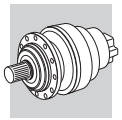


## $P_1$ = 0.18 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.0** | 520 | 1.3 | 441 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 8090 | 8090 | 21200 | 24400 | 5320 | 249 |
| **3.0** | 355 | 2.0 | 436 | – | **3/V 00 L3** | – | **BN 63B 4** | – | 8060 | 8060 | 21200 | 24300 | 5300 | 248 |
| **3.2** | 360 | 2.8 | 415 | – | **3/V 00 L3** | – | **BN 63B 4** | – | 7930 | 7930 | 20900 | 24000 | 5210 | 248 |
| **3.4** | 465 | 1.8 | 393 | – | – | **3/A 01 L2** | **BN 63B 4** | – | 7790 | 7790 | 20500 | 23600 | 5120 | 259 |
| **3.4** | 465 | 1.2 | 391 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 7770 | 7770 | 20500 | 23500 | 5110 | 249 |
| **3.6** | 440 | 1.3 | 369 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 7630 | 7630 | 20100 | 23100 | 5010 | 249 |
| **4.1** | 380 | 1.2 | 319 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 7260 | 7260 | 19300 | 22100 | 4770 | 249 |
| **4.5** | 350 | 1.9 | 296 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 7080 | 7080 | 18900 | 21700 | 4660 | 249 |
| **5.2** | 300 | 1.8 | 253 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 6720 | 6720 | 18000 | 20700 | 4420 | 249 |
| **6.0** | 260 | 2.4 | 219 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 6400 | 6400 | 17200 | 19800 | 4210 | 249 |
| **6.5** | 240 | 2.7 | 203 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 6240 | 6240 | 16800 | 19300 | 4100 | 249 |
| **7.7** | 205 | 2.7 | 171 | – | – | **3/A 00 L2** | **BN 63B 4** | – | 5900 | 5900 | 16000 | 18400 | 3880 | 249 |

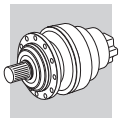
## $P_1$ = 0.25 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.90** | 1680 | 1.0 | 1495 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 12000 | 12200 | 30700 | 34000 | 7990 | 258 |
| **0.97** | 1460 | 1.3 | 1381 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 11800 | 11800 | 29900 | 34000 | 7780 | 258 |
| **1.1** | 1340 | 1.2 | 1198 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 11300 | 11300 | 28700 | 33000 | 7420 | 258 |
| **1.2** | 1170 | 1.0 | 1107 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 11000 | 11000 | 28000 | 32200 | 7230 | 248 |
| **1.2** | 1240 | 1.6 | 1105 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 11000 | 11000 | 28000 | 32200 | 7230 | 258 |
| **1.3** | 1250 | 1.3 | 997 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 10600 | 10600 | 27100 | 31200 | 6980 | 258 |
| **1.5** | 950 | 1.3 | 903 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 10300 | 10300 | 26400 | 30300 | 6760 | 258 |
| **1.6** | 860 | 1.3 | 818 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 9940 | 9940 | 25600 | 29400 | 6540 | 248 |
| **1.7** | 1000 | 1.5 | 799 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 9860 | 9860 | 25400 | 29200 | 6480 | 258 |
| **1.8** | 1190 | 1.5 | 731 | – | – | **3/A 03 L2** | **BN 63C 4** | – | 29400 | 34000 | 50500 | 60700 | 18900 | 269 |
| **1.9** | 820 | 1.3 | 689 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 9390 | 9390 | 24300 | 27900 | 6170 | 248 |
| **1.9** | 820 | 2.1 | 689 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 9390 | 9390 | 24300 | 27900 | 6170 | 258 |
| **2.0** | 1080 | 1.1 | 665 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 9280 | 9280 | 24000 | 27600 | 6100 | 259 |
| **2.0** | 730 | 1.5 | 654 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 9230 | 9230 | 23900 | 27500 | 6070 | 248 |
| **2.0** | 730 | 1.6 | 654 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 9230 | 9230 | 23900 | 27500 | 6070 | 258 |
| **2.2** | 980 | 1.8 | 605 | – | – | **3/A 03 L2** | **BN 63C 4** | – | 27600 | 31900 | 47700 | 57400 | 17700 | 269 |
| **2.3** | 930 | 1.9 | 574 | – | – | **3/A 03 L2** | **BN 63C 4** | – | 27200 | 31400 | 46900 | 56500 | 17400 | 269 |
| **2.4** | 670 | 1.1 | 562 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 8770 | 8770 | 22900 | 26300 | 5770 | 248 |
| **2.4** | 670 | 2.1 | 562 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 8770 | 8770 | 22900 | 26300 | 5770 | 258 |
| **2.5** | 860 | 1.3 | 533 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 8620 | 8620 | 22500 | 25800 | 5660 | 259 |
| **2.6** | 840 | 3.0 | 520 | – | – | **3/A 04 L2** | **BN 63C 4** | – | 26300 | 30300 | 45600 | 54800 | 16900 | 281 |
| **2.6** | 610 | 1.7 | 509 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 8490 | 8490 | 22200 | 25500 | 5580 | 248 |
| **2.6** | 610 | 2.1 | 509 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 8490 | 8490 | 22200 | 25500 | 5580 | 258 |
| **2.7** | 800 | 2.1 | 495 | – | – | **3/A 03 L2** | **BN 63C 4** | – | 25900 | 29800 | 44900 | 54000 | 16600 | 269 |
| **2.9** | 740 | 1.6 | 454 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 8170 | 8170 | 21400 | 24600 | 5370 | 259 |
| **3.0** | 580 | 2.4 | 443 | – | **3/V 01 L3** | – | **BN 63C 4** | – | 8100 | 8100 | 21300 | 24400 | 5330 | 258 |
| **3.0** | 720 | 1.0 | 441 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 8090 | 8090 | 21200 | 24400 | 5320 | 249 |
| **3.1** | 490 | 1.5 | 436 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 8060 | 8060 | 21200 | 24300 | 5300 | 248 |
| **3.2** | 495 | 2.0 | 415 | – | **3/V 00 L3** | – | **BN 63C 4** | – | 7930 | 7930 | 20900 | 24000 | 5210 | 248 |
| **3.3** | 660 | 2.9 | 409 | – | – | **3/A 03 L2** | **BN 63C 4** | – | 24300 | 28000 | 42400 | 51000 | 15600 | 269 |
| **3.4** | 640 | 1.3 | 393 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 7790 | 7790 | 20500 | 23600 | 5120 | 259 |
| **3.6** | 600 | 0.9 | 369 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 7630 | 7630 | 20100 | 23100 | 5010 | 249 |
| **3.7** | 590 | 2.3 | 364 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 7590 | 7590 | 20100 | 23000 | 4990 | 259 |
| **4.3** | 500 | 2.3 | 311 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 7200 | 7200 | 19100 | 22000 | 4740 | 259 |
| **4.5** | 480 | 1.4 | 296 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 7080 | 7080 | 18900 | 21700 | 4660 | 249 |
| **5.0** | 435 | 2.3 | 269 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 6860 | 6860 | 18300 | 21000 | 4510 | 259 |
| **5.3** | 415 | 2.8 | 255 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 6740 | 6740 | 18000 | 20700 | 4430 | 259 |
| **5.3** | 410 | 1.3 | 253 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 6720 | 6720 | 18000 | 20700 | 4420 | 249 |
| **6.1** | 355 | 2.3 | 220 | – | – | **3/A 01 L2** | **BN 63C 4** | – | 6410 | 6410 | 17200 | 19800 | 4220 | 259 |
| **6.1** | 355 | 1.7 | 219 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 6400 | 6400 | 17200 | 19800 | 4210 | 249 |
| **6.6** | 330 | 2.0 | 203 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 6240 | 6240 | 16800 | 19300 | 4100 | 249 |
| **7.8** | 280 | 2.0 | 171 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 5900 | 5900 | 16000 | 18400 | 3880 | 249 |
| **10.0** | 215 | 2.5 | 134 | – | – | **3/A 00 L2** | **BN 63C 4** | – | 5440 | 5440 | 14900 | 17100 | 3580 | 249 |

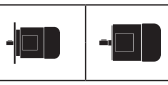


## $P_1$ = 0.37 kW

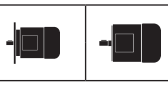
| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.53** | 4620 | 1.5 | 2588 | – | **3/V 06 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.61** | 3930 | 1.1 | 2232 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| **0.64** | 3820 | 2.2 | 2139 | – | **3/V 06 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.77** | 3150 | 1.5 | 1786 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| **0.77** | 3160 | 2.7 | 1768 | – | **3/V 06 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.79** | 2830 | 1.0 | 1728 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |
| **0.82** | 3150 | 1.4 | 1674 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| **0.85** | 2640 | 0.9 | 1610 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |
| **0.89** | 2710 | 1.4 | 1536 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 63100 | 74000 | 24000 | 280 |
| **0.96** | 2520 | 1.8 | 1431 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 61700 | 74000 | 23600 | 292 |
| **0.97** | 2670 | 1.1 | 1419 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 61600 | 74000 | 23600 | 280 |
| **0.99** | 2270 | 1.2 | 1385 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 36000 | 42000 | 61100 | 73600 | 23400 | 268 |
| **1.1** | 2170 | 1.7 | 1231 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 35000 | 40400 | 59000 | 71000 | 22500 | 280 |
| **1.1** | 2170 | 2.5 | 1231 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 35000 | 40400 | 59000 | 71000 | 22500 | 292 |
| **1.2** | 1950 | 1.2 | 1189 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 34600 | 40000 | 58400 | 70300 | 22200 | 268 |
| **1.2** | 2170 | 1.6 | 1152 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 34300 | 39600 | 57900 | 69600 | 22000 | 280 |
| **1.2** | 2180 | 2.0 | 1116 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 33900 | 39100 | 57300 | 69000 | 21700 | 292 |
| **1.2** | 1810 | 1.1 | 1105 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 11000 | 11000 | 28000 | 32200 | 7230 | 258 |
| **1.3** | 1860 | 2.4 | 1057 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 33300 | 38400 | 56400 | 67800 | 21400 | 292 |
| **1.3** | 1680 | 1.6 | 1023 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 32900 | 38000 | 55800 | 67200 | 21100 | 268 |
| **1.4** | 1730 | 2.2 | 981 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 32500 | 37500 | 55100 | 66300 | 20800 | 280 |
| **1.5** | 1670 | 1.6 | 923 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 31800 | 36700 | 54100 | 65100 | 20400 | 268 |
| **1.5** | 1750 | 2.5 | 894 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 31500 | 36300 | 53600 | 64500 | 20200 | 292 |
| **1.5** | 1840 | 1.5 | 887 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 31400 | 36300 | 53500 | 64400 | 20100 | 280 |
| **1.7** | 1470 | 1.1 | 799 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 9860 | 9860 | 25400 | 29200 | 6480 | 258 |
| **1.7** | 1440 | 1.5 | 793 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 30200 | 34900 | 51700 | 62200 | 19400 | 268 |
| **1.7** | 1490 | 2.8 | 793 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 30200 | 34900 | 51700 | 62200 | 19400 | 292 |
| **1.8** | 1510 | 2.2 | 769 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 29900 | 34600 | 51300 | 61700 | 19200 | 280 |
| **1.9** | 1330 | 2.0 | 736 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 29500 | 34100 | 50600 | 60800 | 18900 | 268 |
| **1.9** | 1730 | 1.0 | 731 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **–** | 29400 | 34000 | 50500 | 60700 | 18900 | 269 |
| **1.9** | 1450 | 2.8 | 715 | – | **3/V 05 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 29200 | 33700 | 50200 | 60300 | 18800 | 292 |
| **1.9** | 1480 | 1.8 | 710 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 29200 | 33700 | 50000 | 60200 | 18700 | 280 |
| **2.0** | 1200 | 0.9 | 689 | – | **3/V 00 L3** | **–** | **BN 71B 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 248 |
| **2.0** | 1200 | 1.4 | 689 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 258 |
| **2.1** | 1070 | 1.0 | 654 | – | **3/V 00 L3** | **–** | **BN 71B 4** | **–** | 9230 | 9230 | 23900 | 27500 | 6070 | 248 |
| **2.1** | 1070 | 1.1 | 654 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 9230 | 9230 | 23900 | 27500 | 6070 | 258 |
| **2.2** | 1130 | 2.0 | 623 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 27900 | 32200 | 48100 | 57900 | 17900 | 268 |
| **2.3** | 1430 | 1.3 | 605 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **–** | 27600 | 31900 | 47700 | 57400 | 17700 | 269 |
| **2.3** | 1410 | 2.3 | 594 | – | **–** | **3/A 05 L2** | **BN 71B 4** | **M 1SD 4** | 27500 | 31700 | 47400 | 57100 | 17600 | 293 |
| **2.4** | 1360 | 1.3 | 574 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 27200 | 31400 | 46900 | 56500 | 17400 | 269 |
| **2.4** | 1110 | 2.8 | 568 | – | **3/V 04 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 27100 | 31300 | 46800 | 56300 | 17400 | 280 |
| **2.4** | 980 | 1.4 | 562 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 8770 | 8770 | 22900 | 26300 | 5770 | 258 |
| **2.5** | 980 | 2.8 | 544 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 26700 | 30800 | 46200 | 55600 | 17100 | 268 |
| **2.6** | 1230 | 2.0 | 520 | – | **–** | **3/A 04 L2** | **BN 71B 4** | **M 1SD 4** | 26300 | 30300 | 45600 | 54800 | 16900 | 281 |
| **2.7** | 880 | 1.2 | 509 | – | **3/V 00 L3** | **–** | **BN 71B 4** | **–** | 8490 | 8490 | 22200 | 25500 | 5580 | 248 |
| **2.7** | 880 | 1.4 | 509 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 8490 | 8490 | 22200 | 25500 | 5580 | 258 |
| **2.7** | 1000 | 2.0 | 502 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 26000 | 30000 | 45100 | 54300 | 16700 | 268 |
| **2.8** | 1170 | 1.5 | 495 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 25900 | 29800 | 44900 | 54000 | 16600 | 269 |
| **2.9** | 1110 | 2.3 | 469 | – | **–** | **3/A 04 L2** | **BN 71B 4** | **M 1SD 4** | 25400 | 29300 | 44200 | 53100 | 16300 | 281 |
| **3.0** | 830 | 2.8 | 460 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 25200 | 29100 | 43900 | 52900 | 16200 | 268 |
| **3.0** | 1080 | 1.1 | 454 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 8170 | 8170 | 21400 | 24600 | 5370 | 259 |
| **3.1** | 840 | 1.6 | 443 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 8100 | 8100 | 21300 | 24400 | 5330 | 258 |
| **3.1** | 710 | 1.0 | 436 | – | **3/V 00 L3** | **–** | **BN 71B 4** | **–** | 8060 | 8060 | 21200 | 24300 | 5300 | 248 |
| **3.2** | 850 | 2.2 | 430 | – | **3/V 01 L3** | **–** | **BN 71B 4** | **–** | 8020 | 8020 | 21100 | 24200 | 5270 | 258 |
| **3.3** | 720 | 1.4 | 415 | – | **3/V 00 L3** | **–** | **BN 71B 4** | **–** | 7930 | 7930 | 20900 | 24000 | 5210 | 248 |
| **3.3** | 970 | 2.0 | 409 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 24300 | 28000 | 42400 | 51000 | 15600 | 269 |
| **3.5** | 780 | 2.8 | 395 | – | **3/V 03 L3** | **–** | **BN 71B 4** | **M 1SD 4** | 24000 | 27700 | 42000 | 50500 | 15400 | 268 |
| **3.5** | 920 | 2.7 | 386 | – | **–** | **3/A 04 L2** | **BN 71B 4** | **M 1SD 4** | 23800 | 27500 | 41700 | 50200 | 15300 | 281 |
| **3.8** | 860 | 1.6 | 364 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 7590 | 7590 | 20100 | 23000 | 4990 | 259 |
| **3.9** | 830 | 2.4 | 352 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 23100 | 26600 | 40500 | 48800 | 14800 | 269 |
| **3.9** | 830 | 2.9 | 349 | – | **–** | **3/A 04 L2** | **BN 71B 4** | **M 1SD 4** | 23000 | 26600 | 40400 | 48600 | 14800 | 281 |
| **4.2** | 770 | 2.2 | 326 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 22500 | 26000 | 39600 | 47600 | 14400 | 269 |
| **4.4** | 740 | 1.6 | 311 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 7200 | 7200 | 19100 | 22000 | 4740 | 259 |
| **4.6** | 700 | 0.9 | 296 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 7080 | 7080 | 18900 | 21700 | 4660 | 249 |
| **5.1** | 640 | 2.9 | 269 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |

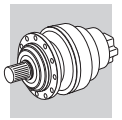


## $P_1$ = 0.37 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | |  | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5.1** | 640 | 2.9 | 269 | – | **–** | **3/A 03 L2** | **BN 71B 4** | **M 1SD 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.1** | 640 | 1.6 | 269 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 6860 | 6860 | 18300 | 21000 | 4510 | 259 |
| **5.4** | 600 | 1.9 | 255 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 6740 | 6740 | 18000 | 20700 | 4430 | 259 |
| **5.4** | 600 | 0.9 | 253 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 6720 | 6720 | 18000 | 20700 | 4420 | 249 |
| **6.2** | 520 | 1.6 | 220 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 6410 | 6410 | 17200 | 19800 | 4220 | 259 |
| **6.3** | 520 | 1.2 | 219 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 6400 | 6400 | 17200 | 19800 | 4210 | 249 |
| **6.7** | 485 | 2.7 | 204 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 6260 | 6260 | 16900 | 19400 | 4120 | 259 |
| **6.8** | 480 | 1.4 | 203 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 6240 | 6240 | 16800 | 19300 | 4100 | 249 |
| **7.4** | 435 | 2.4 | 184 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 6050 | 6050 | 16400 | 18800 | 3980 | 259 |
| **8.0** | 405 | 1.4 | 171 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 5900 | 5900 | 16000 | 18400 | 3880 | 249 |
| **8.2** | 395 | 2.9 | 166 | – | **–** | **3/A 01 L2** | **BN 71B 4** | **M 1SD 4** | 5850 | 5850 | 15900 | 18200 | 3840 | 259 |
| **10.2** | 315 | 1.7 | 134 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 5440 | 5440 | 14900 | 17100 | 3580 | 249 |
| **12.8** | 255 | 2.6 | 107 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 5050 | 5050 | 13900 | 16000 | 3320 | 249 |
| **13.7** | 235 | 2.3 | 100 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 4940 | 4940 | 13600 | 15600 | 3240 | 249 |
| **15.5** | 210 | 2.6 | 88.6 | – | **–** | **3/A 00 L2** | **BN 71B 4** | **M 1SD 4** | 4740 | 4740 | 13100 | 15100 | 3120 | 249 |

## $P_1$ = 0.55 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | |  | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.27** | 12900 | 2.7 | 5081 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.27** | 12900 | 2.7 | 5081 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.30** | 11700 | 2.6 | 4637 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.30** | 11700 | 2.6 | 4637 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.34** | 11800 | 2.6 | 4036 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.34** | 11800 | 2.6 | 4036 | – | **3/V 10 L4** | **–** | **BN 80A 4** | **M 1LA 4** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.54** | 6750 | 1.0 | 2588 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.56** | 6190 | 1.8 | 2472 | – | **3/V 07 L3** | **–** | **BN 80A 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.65** | 5690 | 1.9 | 2150 | – | **3/V 07 L3** | **–** | **BN 80A 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.65** | 5580 | 1.5 | 2139 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.71** | 4910 | 2.5 | 1964 | – | **3/V 07 L3** | **–** | **BN 80A 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.78** | 4600 | 1.0 | 1786 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| **0.79** | 4620 | 1.9 | 1768 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.83** | 4610 | 1.0 | 1674 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| **0.90** | 4200 | 2.6 | 1545 | – | **3/V 07 L3** | **–** | **BN 80A 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.90** | 3950 | 0.9 | 1536 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 36000 | 42000 | 63100 | 74000 | 24000 | 280 |
| **0.97** | 3680 | 1.3 | 1431 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 36000 | 42000 | 61700 | 74000 | 23600 | 292 |
| **1.0** | 3790 | 2.2 | 1395 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 45000 | 51000 | 100200 | 116700 | 34200 | 304 |
| **1.1** | 3170 | 1.1 | 1231 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 35000 | 40400 | 59000 | 71000 | 22500 | 280 |
| **1.1** | 3170 | 1.7 | 1231 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 35000 | 40400 | 59000 | 71000 | 22500 | 292 |
| **1.1** | 3160 | 2.5 | 1212 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 43400 | 49200 | 96100 | 111900 | 32600 | 304 |
| **1.2** | 3130 | 2.6 | 1153 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 42700 | 48400 | 94700 | 110200 | 32100 | 304 |
| **1.2** | 3170 | 1.1 | 1152 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 34300 | 39600 | 57900 | 69600 | 22000 | 280 |
| **1.2** | 3190 | 1.4 | 1116 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 33900 | 39100 | 57300 | 69000 | 21700 | 292 |
| **1.3** | 2720 | 1.6 | 1057 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 33300 | 38400 | 56400 | 67800 | 21400 | 292 |
| **1.4** | 2450 | 1.1 | 1023 | – | **3/V 03 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 32900 | 38000 | 55800 | 67200 | 21100 | 268 |
| **1.4** | 2520 | 1.5 | 981 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 32500 | 37500 | 55100 | 66300 | 20800 | 280 |
| **1.5** | 2790 | 2.8 | 930 | – | **3/V 06 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 39700 | 45000 | 88800 | 103400 | 29800 | 304 |
| **1.5** | 2440 | 1.1 | 923 | – | **3/V 03 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 31800 | 36700 | 54100 | 65100 | 20400 | 268 |
| **1.6** | 2560 | 1.7 | 894 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 31500 | 36300 | 53600 | 64500 | 20200 | 292 |
| **1.6** | 2700 | 1.0 | 887 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 31400 | 36300 | 53500 | 64400 | 20100 | 280 |
| **1.8** | 2100 | 1.0 | 793 | – | **3/V 03 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 30200 | 34900 | 51700 | 62200 | 19400 | 268 |
| **1.8** | 2180 | 1.9 | 793 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 30200 | 34900 | 51700 | 62200 | 19400 | 292 |
| **1.8** | 2200 | 1.5 | 769 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 29900 | 34600 | 51300 | 61700 | 19200 | 280 |
| **1.9** | 1950 | 1.4 | 736 | – | **3/V 03 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 29500 | 34100 | 50600 | 60800 | 18900 | 268 |
| **1.9** | 2120 | 1.9 | 715 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 29200 | 33700 | 50200 | 60300 | 18800 | 292 |
| **2.0** | 2160 | 1.2 | 710 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 29200 | 33700 | 50000 | 60200 | 18700 | 280 |
| **2.0** | 1750 | 1.0 | 689 | – | **3/V 01 L3** | **–** | **BN 80A 4** | **–** | 9390 | 9390 | 24300 | 27900 | 6170 | 258 |
| **2.1** | 2250 | 2.7 | 671 | – | **–** | **3/A 06 L2** | **BN 80A 4** | **M 1LA 4** | 35600 | 40400 | 80500 | 93700 | 26800 | 305 |
| **2.2** | 1720 | 2.1 | 623 | – | **3/V 04 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 27900 | 32200 | 48100 | 57900 | 17900 | 280 |
| **2.2** | 1650 | 1.3 | 623 | – | **3/V 03 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 27900 | 32200 | 48100 | 57900 | 17900 | 268 |
| **2.2** | 1720 | 2.6 | 623 | – | **3/V 05 L3** | **–** | **BN 80A 4** | **M 1LA 4** | 27900 | 32200 | 48100 | 57900 | 17900 | 292 |



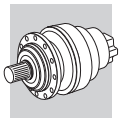
A

## $P_1$ = 0.55 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **2.3** | 2050 | 2.9 | 611 | – | – | **3/A 06 L2** | **BN 80A 4** | **M 1LA 4** | 34500 | 39100 | 78300 | 91100 | 25900 | 305 |
| **2.3** | 2060 | 1.6 | 594 | – | – | **3/A 05 L2** | **BN 80A 4** | **M 1LA 4** | 27500 | 31700 | 47400 | 57100 | 17600 | 293 |
| **2.4** | 1750 | 2.8 | 576 | – | **3/V 05 L3** | – | **BN 80A 4** | **M 1LA 4** | 27200 | 31400 | 47000 | 56500 | 17400 | 292 |
| **2.4** | 1630 | 1.9 | 568 | – | **3/V 04 L3** | – | **BN 80A 4** | **M 1LA 4** | 27100 | 31300 | 46800 | 56300 | 17400 | 280 |
| **2.5** | 1430 | 1.0 | 562 | – | **3/V 01 L3** | – | **BN 80A 4** | – | 8770 | 8770 | 22900 | 26300 | 5770 | 258 |
| **2.6** | 1440 | 1.9 | 544 | – | **3/V 03 L3** | – | **BN 80A 4** | **M 1LA 4** | 26700 | 30800 | 46200 | 55600 | 17100 | 268 |
| **2.6** | 1570 | 2.5 | 529 | – | **3/V 05 L3** | – | **BN 80A 4** | **M 1LA 4** | 26400 | 30500 | 45800 | 55100 | 17000 | 292 |
| **2.7** | 1800 | 1.4 | 520 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 26300 | 30300 | 45600 | 54800 | 16900 | 281 |
| **2.7** | 1290 | 1.0 | 509 | – | **3/V 01 L3** | – | **BN 80A 4** | – | 8490 | 8490 | 22200 | 25500 | 5580 | 258 |
| **2.8** | 1450 | 1.4 | 502 | – | **3/V 03 L3** | – | **BN 80A 4** | **M 1LA 4** | 26000 | 30000 | 45100 | 54300 | 16700 | 268 |
| **2.8** | 1290 | 2.3 | 501 | – | **3/V 04 L3** | – | **BN 80A 4** | **M 1LA 4** | 26000 | 30000 | 45100 | 54200 | 16700 | 280 |
| **2.8** | 1720 | 1.0 | 495 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 25900 | 29800 | 44900 | 54000 | 16600 | 269 |
| **2.8** | 1700 | 2.3 | 491 | – | – | **3/A 05 L2** | **BN 80A 4** | **M 1LA 4** | 25800 | 29800 | 44800 | 53900 | 16500 | 293 |
| **3.0** | 1620 | 1.5 | 469 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 25400 | 29300 | 44200 | 53100 | 16300 | 281 |
| **3.0** | 1220 | 1.9 | 460 | – | **3/V 03 L3** | – | **BN 80A 4** | **M 1LA 4** | 25200 | 29100 | 43900 | 52900 | 16200 | 268 |
| **3.1** | 1300 | 2.9 | 453 | – | **3/V 04 L3** | – | **BN 80A 4** | **M 1LA 4** | 25100 | 29000 | 43700 | 52600 | 16100 | 280 |
| **3.1** | 1230 | 1.1 | 443 | – | **3/V 01 L3** | – | **BN 80A 4** | – | 8100 | 8100 | 21300 | 24400 | 5330 | 258 |
| **3.2** | 1240 | 1.5 | 430 | – | **3/V 01 L3** | – | **BN 80A 4** | – | 8020 | 8020 | 21100 | 24200 | 5270 | 258 |
| **3.3** | 1050 | 0.9 | 415 | – | **3/V 00 L3** | – | **BN 80A 4** | – | 7930 | 7930 | 20900 | 24000 | 5210 | 248 |
| **3.4** | 1420 | 1.4 | 409 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 24300 | 28000 | 42400 | 51000 | 15600 | 269 |
| **3.5** | 1380 | 2.3 | 398 | – | – | **3/A 05 L2** | **BN 80A 4** | **M 1LA 4** | 24000 | 27800 | 42100 | 50600 | 15400 | 293 |
| **3.5** | 1140 | 1.9 | 395 | – | **3/V 03 L3** | – | **BN 80A 4** | **M 1LA 4** | 24000 | 27700 | 42000 | 50500 | 15400 | 268 |
| **3.6** | 1340 | 1.8 | 386 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 23800 | 27500 | 41700 | 50200 | 15300 | 281 |
| **3.8** | 1260 | 1.1 | 364 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 7590 | 7590 | 20100 | 23000 | 4990 | 259 |
| **3.9** | 1220 | 1.7 | 352 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 23100 | 26600 | 40500 | 48800 | 14800 | 269 |
| **4.0** | 1210 | 2.0 | 349 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 23000 | 26600 | 40400 | 48600 | 14800 | 281 |
| **4.3** | 1130 | 1.5 | 326 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 22500 | 26000 | 39600 | 47600 | 14400 | 269 |
| **4.4** | 1100 | 2.2 | 317 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 22300 | 25700 | 39300 | 47300 | 14300 | 281 |
| **4.5** | 1080 | 1.1 | 311 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 7200 | 7200 | 19100 | 22000 | 4740 | 259 |
| **4.9** | 980 | 2.9 | 283 | – | – | **3/A 04 L2** | **BN 80A 4** | **M 1LA 4** | 21500 | 24800 | 38000 | 45700 | 13800 | 281 |
| **5.2** | 930 | 2.0 | 269 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.2** | 930 | 2.0 | 269 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.2** | 930 | 1.1 | 269 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 6860 | 6860 | 18300 | 21000 | 4510 | 259 |
| **5.5** | 880 | 1.3 | 255 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 6740 | 6740 | 18000 | 20700 | 4430 | 259 |
| **6.3** | 760 | 2.2 | 220 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 19700 | 22800 | 35200 | 42300 | 12700 | 269 |
| **6.3** | 760 | 1.1 | 220 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 6410 | 6410 | 17200 | 19800 | 4220 | 259 |
| **6.8** | 710 | 1.8 | 204 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 6260 | 6260 | 16900 | 19400 | 4120 | 259 |
| **6.9** | 700 | 0.9 | 203 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 6240 | 6240 | 16800 | 19300 | 4100 | 249 |
| **7.5** | 640 | 1.6 | 184 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 6050 | 6050 | 16400 | 18800 | 3980 | 259 |
| **7.7** | 630 | 2.9 | 182 | – | – | **3/A 03 L2** | **BN 80A 4** | **M 1LA 4** | 18500 | 21400 | 33200 | 40000 | 11900 | 269 |
| **8.1** | 590 | 0.9 | 171 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 5900 | 5900 | 16000 | 18400 | 3880 | 249 |
| **8.4** | 580 | 2.0 | 166 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 5850 | 5850 | 15900 | 18200 | 3840 | 259 |
| **10.4** | 465 | 1.2 | 134 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 5440 | 5440 | 14900 | 17100 | 3580 | 249 |
| **10.4** | 460 | 2.8 | 133 | – | – | **3/A 01 L2** | **BN 80A 4** | **M 1LA 4** | 5430 | 5430 | 14800 | 17100 | 3570 | 259 |
| **13.0** | 370 | 1.7 | 107 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 5050 | 5050 | 13900 | 16000 | 3320 | 249 |
| **13.9** | 345 | 1.6 | 100 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 4940 | 4940 | 13600 | 15600 | 3240 | 249 |
| **15.7** | 305 | 1.8 | 88.6 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 4740 | 4740 | 13100 | 15100 | 3120 | 249 |
| **17.3** | 280 | 2.3 | 80.2 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 4580 | 4580 | 12700 | 14600 | 3010 | 249 |
| **19.6** | 245 | 2.6 | 71.0 | – | – | **3/A 00 L2** | **BN 80A 4** | **M 1LA 4** | 4400 | 4400 | 12300 | 14100 | 2890 | 249 |

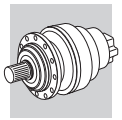
## $P_1$ = 0.75 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.28** | 17300 | 2.0 | 5081 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.28** | 17300 | 2.0 | 5081 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.28** | 17800 | 2.7 | 5021 | – | **3/V 11 L4** | – | **BN 80B 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.30** | 15800 | 1.9 | 4637 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.30** | 15800 | 1.9 | 4637 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.32** | 15800 | 2.9 | 4410 | – | **3/V 11 L4** | – | **BN 80B 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.35** | 15800 | 1.9 | 4036 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.35** | 15800 | 1.9 | 4036 | – | **3/V 10 L4** | – | **BN 80B 4** | – | – | – | 133000 | 166000 | 65000 | 340 |



# $P_1$ = 0.75 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.39** | 12600 | 2.4 | 3570 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 12600 | 2.4 | 3570 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 12800 | 2.7 | 3273 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 12800 | 2.7 | 3273 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.49** | 11100 | 2.8 | 2835 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.49** | 11100 | 2.8 | 2835 | – | **3/V 10 L4** | **–** | **BN 80B 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 8300 | 1.3 | 2472 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.65** | 7630 | 1.4 | 2150 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.65** | 7490 | 1.1 | 2139 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.71** | 6600 | 1.9 | 1964 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.79** | 6190 | 1.4 | 1768 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.91** | 5640 | 2.0 | 1545 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.98** | 4940 | 0.9 | 1431 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 36000 | 42000 | 61700 | 74000 | 23600 | 292 |
| **0.99** | 5010 | 2.5 | 1411 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 50700 | 63600 | 108200 | 141800 | 44100 | 316 |
| **1.0** | 5090 | 1.7 | 1395 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 45000 | 51000 | 100200 | 116700 | 34200 | 304 |
| **1.1** | 4250 | 1.3 | 1231 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 35000 | 40400 | 59000 | 71000 | 22500 | 292 |
| **1.2** | 4250 | 1.8 | 1212 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 43400 | 49200 | 96100 | 111900 | 32600 | 304 |
| **1.2** | 4280 | 2.5 | 1159 | – | **3/V 07 L3** | **–** | **BN 80B 4** | **–** | 47500 | 59600 | 102000 | 133700 | 41300 | 316 |
| **1.2** | 4210 | 2.0 | 1153 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 42700 | 48400 | 94700 | 110200 | 32100 | 304 |
| **1.3** | 4280 | 1.0 | 1116 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 33900 | 39100 | 57300 | 69000 | 21700 | 292 |
| **1.3** | 3650 | 1.2 | 1057 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 33300 | 38400 | 56400 | 67800 | 21400 | 292 |
| **1.4** | 3620 | 2.6 | 992 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 40600 | 46000 | 90500 | 105400 | 30500 | 304 |
| **1.4** | 3390 | 1.1 | 981 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 32500 | 37500 | 55100 | 66300 | 20800 | 280 |
| **1.5** | 3750 | 2.1 | 930 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 39700 | 45000 | 88800 | 103400 | 29800 | 304 |
| **1.6** | 3430 | 1.2 | 894 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 31500 | 36300 | 53600 | 64500 | 20200 | 292 |
| **1.8** | 2930 | 1.4 | 793 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 30200 | 34900 | 51700 | 62200 | 19400 | 292 |
| **1.8** | 2880 | 2.7 | 791 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| **1.8** | 2950 | 1.1 | 769 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 29900 | 34600 | 51300 | 61700 | 19200 | 280 |
| **1.9** | 2610 | 1.0 | 736 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 29500 | 34100 | 50600 | 60800 | 18900 | 268 |
| **2.0** | 2850 | 1.4 | 715 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 29200 | 33700 | 50200 | 60300 | 18800 | 292 |
| **2.0** | 2890 | 0.9 | 710 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 29200 | 33700 | 50000 | 60200 | 18700 | 280 |
| **2.0** | 2840 | 2.7 | 698 | – | **3/V 06 L3** | **–** | **BN 80B 4** | **–** | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| **2.1** | 3020 | 2.0 | 671 | – | **–** | **3/A 06 L2** | **BN 80B 4** | **M 2SA 4** | 35600 | 40400 | 80500 | 93700 | 26800 | 305 |
| **2.2** | 2300 | 1.5 | 623 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 280 |
| **2.2** | 2210 | 1.0 | 623 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 268 |
| **2.2** | 2300 | 1.9 | 623 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 292 |
| **2.3** | 2750 | 2.2 | 611 | – | **–** | **3/A 06 L2** | **BN 80B 4** | **M 2SA 4** | 34500 | 39100 | 78300 | 91100 | 25900 | 305 |
| **2.4** | 2760 | 1.2 | 594 | – | **–** | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 27500 | 31700 | 47400 | 57100 | 17600 | 293 |
| **2.4** | 2350 | 2.1 | 576 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 27200 | 31400 | 47000 | 56500 | 17400 | 292 |
| **2.5** | 2180 | 1.4 | 568 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 27100 | 31300 | 46800 | 56300 | 17400 | 280 |
| **2.5** | 2500 | 2.9 | 555 | – | **–** | **3/A 06 L2** | **BN 80B 4** | **M 2SA 4** | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| **2.6** | 1930 | 1.4 | 544 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 26700 | 30800 | 46200 | 55600 | 17100 | 268 |
| **2.6** | 2110 | 1.9 | 529 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 26400 | 30500 | 45800 | 55100 | 17000 | 292 |
| **2.7** | 2420 | 1.0 | 520 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 26300 | 30300 | 45600 | 54800 | 16900 | 281 |
| **2.8** | 1950 | 1.0 | 502 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 26000 | 30000 | 45100 | 54300 | 16700 | 268 |
| **2.8** | 1730 | 1.7 | 501 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 26000 | 30000 | 45100 | 54200 | 16700 | 280 |
| **2.9** | 2280 | 1.7 | 491 | – | **–** | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 25800 | 29800 | 44800 | 53900 | 16500 | 293 |
| **3.0** | 2180 | 1.1 | 469 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 25400 | 29300 | 44200 | 53100 | 16300 | 281 |
| **3.0** | 1880 | 2.6 | 462 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 25300 | 29200 | 44000 | 52900 | 16200 | 292 |
| **3.0** | 1630 | 1.4 | 460 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 25200 | 29100 | 43900 | 52900 | 16200 | 268 |
| **3.1** | 1740 | 2.1 | 453 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 25100 | 29000 | 43700 | 52600 | 16100 | 280 |
| **3.3** | 1670 | 1.1 | 430 | – | **3/V 01 L3** | **–** | **BN 80B 4** | **–** | 8020 | 8020 | 21100 | 24200 | 5270 | 258 |
| **3.3** | 1960 | 2.2 | 422 | – | **–** | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 24500 | 28300 | 42800 | 51500 | 15700 | 293 |
| **3.4** | 1900 | 1.0 | 409 | – | **–** | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 24300 | 28000 | 42400 | 51000 | 15600 | 269 |
| **3.5** | 1850 | 1.7 | 398 | – | **–** | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 24000 | 27800 | 42100 | 50600 | 15400 | 293 |
| **3.5** | 1620 | 2.3 | 396 | – | **3/V 05 L3** | **–** | **BN 80B 4** | **–** | 24000 | 27700 | 42000 | 50500 | 15400 | 292 |
| **3.5** | 1530 | 1.4 | 395 | – | **3/V 03 L3** | **–** | **BN 80B 4** | **–** | 24000 | 27700 | 42000 | 50500 | 15400 | 268 |
| **3.6** | 1800 | 1.4 | 386 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 23800 | 27500 | 41700 | 50200 | 15300 | 281 |
| **3.6** | 1470 | 2.4 | 384 | – | **3/V 04 L3** | **–** | **BN 80B 4** | **–** | 23700 | 27400 | 41600 | 50100 | 15200 | 280 |
| **4.0** | 1640 | 1.2 | 352 | – | **–** | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 23100 | 26600 | 40500 | 48800 | 14800 | 269 |
| **4.0** | 1620 | 1.5 | 349 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 23000 | 26600 | 40400 | 48600 | 14800 | 281 |
| **4.3** | 1530 | 2.4 | 329 | – | **–** | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 22600 | 26100 | 39700 | 47800 | 14500 | 293 |
| **4.3** | 1510 | 1.1 | 326 | – | **–** | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 22500 | 26000 | 39600 | 47600 | 14400 | 269 |
| **4.4** | 1480 | 1.6 | 317 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 22300 | 25700 | 39300 | 47300 | 14300 | 281 |
| **4.9** | 1320 | 2.2 | 283 | – | **–** | **3/A 04 L2** | **BN 80B 4** | **M 2SA 4** | 21500 | 24800 | 38000 | 45700 | 13800 | 281 |



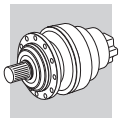
A

## $P_1$ = 0.75 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **5.0** | 1300 | 2.8 | 280 | – | – | **3/A 05 L2** | **BN 80B 4** | **M 2SA 4** | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| **5.2** | 1250 | 1.5 | 269 | – | – | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.2** | 1250 | 1.5 | 269 | – | – | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.5** | 1190 | 1.0 | 255 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 6740 | 6740 | 18000 | 20700 | 4430 | 259 |
| **6.4** | 1020 | 1.6 | 220 | – | – | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 19700 | 22800 | 35200 | 42300 | 12700 | 269 |
| **6.9** | 950 | 1.4 | 204 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 6260 | 6260 | 16900 | 19400 | 4120 | 259 |
| **7.6** | 860 | 1.2 | 184 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 6050 | 6050 | 16400 | 18800 | 3980 | 259 |
| **7.7** | 840 | 2.2 | 182 | – | – | **3/A 03 L2** | **BN 80B 4** | **M 2SA 4** | 18500 | 21400 | 33200 | 40000 | 11900 | 269 |
| **8.4** | 770 | 1.5 | 166 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 5850 | 5850 | 15900 | 18200 | 3840 | 259 |
| **10.5** | 620 | 2.1 | 133 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 5430 | 5430 | 14800 | 17100 | 3570 | 259 |
| **13.0** | 500 | 1.3 | 107 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 5050 | 5050 | 13900 | 16000 | 3320 | 249 |
| **13.8** | 470 | 2.4 | 102 | – | – | **3/A 01 L2** | **BN 80B 4** | **M 2SA 4** | 4960 | 4960 | 13700 | 15700 | 3260 | 259 |
| **14.0** | 465 | 1.2 | 100 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 4940 | 4940 | 13600 | 15600 | 3240 | 249 |
| **15.8** | 410 | 1.3 | 88.6 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 4740 | 4740 | 13100 | 15100 | 3120 | 249 |
| **17.5** | 375 | 1.7 | 80.2 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 4580 | 4580 | 12700 | 14600 | 3010 | 249 |
| **19.7** | 330 | 2.0 | 71.0 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 4400 | 4400 | 12300 | 14100 | 2890 | 249 |
| **22.9** | 285 | 2.3 | 61.2 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 4190 | 4190 | 11700 | 13500 | 2750 | 249 |
| **27.0** | 240 | 2.3 | 51.8 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 3960 | 3960 | 11200 | 12800 | 2610 | 249 |
| **35** | 185 | 3.0 | 39.6 | – | – | **3/A 00 L2** | **BN 80B 4** | **M 2SA 4** | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |

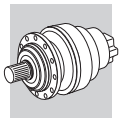
## $P_1$ = 1.1 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.28** | 25400 | 1.3 | 5081 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.28** | 25400 | 1.3 | 5081 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.28** | 25600 | 2.1 | 5046 | – | **3/V 13 L4** | – | **BN 90S 4** | – | – | – | 192000 | 231000 | 80000 | 364 |
| **0.28** | 26100 | 1.8 | 5021 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.30** | 23200 | 1.3 | 4637 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.30** | 23200 | 1.3 | 4637 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.31** | 23900 | 2.4 | 4536 | – | **3/V 13 L4** | – | **BN 90S 4** | – | – | – | 192000 | 231000 | 80000 | 364 |
| **0.32** | 23200 | 1.9 | 4410 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.34** | 20800 | 2.3 | 4106 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.35** | 21300 | 2.6 | 4046 | – | **3/V 13 L4** | – | **BN 90S 4** | – | – | – | 192000 | 231000 | 80000 | 364 |
| **0.35** | 23200 | 1.3 | 4036 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.35** | 23200 | 1.3 | 4036 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 18600 | 1.6 | 3570 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 18600 | 1.6 | 3570 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 18000 | 2.3 | 3557 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.40** | 20200 | 2.9 | 3515 | – | **3/V 13 L4** | – | **BN 90S 4** | – | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 18800 | 1.8 | 3273 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 18800 | 1.8 | 3273 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 18800 | 3.0 | 3263 | – | **3/V 13 L4** | – | **BN 90S 4** | – | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 18500 | 2.5 | 3222 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.48** | 16400 | 2.9 | 2887 | – | **3/V 11 L4** | – | **BN 90S 4** | – | – | – | 157000 | 195000 | 65000 | 352 |
| **0.49** | 16300 | 1.9 | 2835 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.49** | 16300 | 1.9 | 2835 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 12200 | 0.9 | 2472 | – | **3/V 07 L3** | – | **BN 90S 4** | – | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.57** | 14300 | 2.4 | 2455 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 14300 | 2.4 | 2455 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 12700 | 2.5 | 2209 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 12700 | 2.5 | 2209 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.65** | 11200 | 1.0 | 2150 | – | **3/V 07 L3** | – | **BN 90S 4** | – | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.69** | 11600 | 2.5 | 2016 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.69** | 11600 | 2.5 | 2016 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.71** | 9700 | 1.3 | 1964 | – | **3/V 07 L3** | – | **BN 90S 4** | – | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.77** | 10500 | 2.5 | 1826 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.77** | 10500 | 2.5 | 1826 | – | **3/V 10 L4** | – | **BN 90S 4** | – | – | – | 133000 | 166000 | 65000 | 340 |
| **0.79** | 9110 | 0.9 | 1768 | – | **3/V 06 L3** | – | **BN 90S 4** | – | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| **0.91** | 8290 | 1.3 | 1545 | – | **3/V 07 L3** | – | **BN 90S 4** | – | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.99** | 7370 | 1.7 | 1411 | – | **3/V 07 L3** | – | **BN 90S 4** | – | 50700 | 63600 | 108200 | 141800 | 44100 | 316 |
| **1.0** | 7480 | 1.1 | 1395 | – | **3/V 06 L3** | – | **BN 90S 4** | – | 45000 | 51000 | 100200 | 116700 | 34200 | 304 |



# $P_1$ = 1.1 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **1.1** | 6730 | 2.2 | 1288 | – | **3/V 07 L3** | **–** | **BN 90S 4** | **–** | 49200 | 61700 | 105300 | 138000 | 42800 | 316 |
| **1.2** | 6240 | 1.3 | 1212 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 43400 | 49200 | 96100 | 111900 | 32600 | 304 |
| **1.2** | 6300 | 1.7 | 1159 | – | **3/V 07 L3** | **–** | **BN 90S 4** | **–** | 47500 | 59600 | 102000 | 133700 | 41300 | 316 |
| **1.2** | 6180 | 1.3 | 1153 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 42700 | 48400 | 94700 | 110200 | 32100 | 304 |
| **1.4** | 5440 | 2.6 | 1015 | – | **3/V 07 L3** | **–** | **BN 90S 4** | **–** | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| **1.4** | 5320 | 1.8 | 992 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 40600 | 46000 | 90500 | 105400 | 30500 | 304 |
| **1.5** | 5510 | 1.4 | 930 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 39700 | 45000 | 88800 | 103400 | 29800 | 304 |
| **1.5** | 5000 | 2.5 | 920 | – | **3/V 07 L3** | **–** | **BN 90S 4** | **–** | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| **1.8** | 4310 | 1.0 | 793 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 30200 | 34900 | 51700 | 62200 | 19400 | 292 |
| **1.8** | 4240 | 1.8 | 791 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| **1.8** | 4580 | 2.2 | 773 | – | **3/V 07 L3** | **–** | **BN 90S 4** | **–** | 41500 | 52100 | 90300 | 118400 | 36100 | 316 |
| **2.0** | 4190 | 1.0 | 715 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 29200 | 33700 | 50200 | 60300 | 18800 | 292 |
| **2.0** | 4180 | 1.8 | 698 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| **2.1** | 4440 | 1.4 | 671 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 35600 | 40400 | 80500 | 93700 | 26800 | 305 |
| **2.1** | 3920 | 2.4 | 661 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 35500 | 40200 | 80100 | 93300 | 26600 | 304 |
| **2.2** | 3390 | 1.0 | 623 | – | **3/V 04 L3** | **–** | **BN 90S 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 280 |
| **2.2** | 3390 | 1.3 | 623 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 292 |
| **2.3** | 4050 | 1.5 | 611 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 34500 | 39100 | 78300 | 91100 | 25900 | 305 |
| **2.4** | 3450 | 1.4 | 576 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 27200 | 31400 | 47000 | 56500 | 17400 | 292 |
| **2.5** | 3370 | 2.5 | 569 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| **2.5** | 3210 | 1.0 | 568 | – | **3/V 04 L3** | **–** | **BN 90S 4** | **–** | 27100 | 31300 | 46800 | 56300 | 17400 | 280 |
| **2.5** | 3670 | 2.0 | 555 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| **2.6** | 2840 | 1.0 | 544 | – | **3/V 03 L3** | **–** | **BN 90S 4** | **–** | 26700 | 30800 | 46200 | 55600 | 17100 | 268 |
| **2.6** | 3100 | 1.3 | 529 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 26400 | 30500 | 45800 | 55100 | 17000 | 292 |
| **2.7** | 3120 | 2.4 | 527 | – | **3/V 06 L3** | **–** | **BN 90S 4** | **–** | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| **2.8** | 3350 | 2.1 | 505 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 32400 | 36700 | 73900 | 86100 | 24400 | 305 |
| **2.8** | 2550 | 1.2 | 501 | – | **3/V 04 L3** | **–** | **BN 90S 4** | **–** | 26000 | 30000 | 45100 | 54200 | 16700 | 280 |
| **2.9** | 3360 | 1.2 | 491 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 25800 | 29800 | 44800 | 53900 | 16500 | 293 |
| **3.0** | 2770 | 1.7 | 462 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 25300 | 29200 | 44000 | 52900 | 16200 | 292 |
| **3.0** | 2400 | 1.0 | 460 | – | **3/V 03 L3** | **–** | **BN 90S 4** | **–** | 25200 | 29100 | 43900 | 52900 | 16200 | 268 |
| **3.1** | 2560 | 1.5 | 453 | – | **3/V 04 L3** | **–** | **BN 90S 4** | **–** | 25100 | 29000 | 43700 | 52600 | 16100 | 280 |
| **3.2** | 2880 | 2.7 | 435 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| **3.3** | 2890 | 1.5 | 422 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 24500 | 28300 | 42800 | 51500 | 15700 | 293 |
| **3.5** | 2720 | 1.2 | 398 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 24000 | 27800 | 42100 | 50600 | 15400 | 293 |
| **3.5** | 2380 | 1.6 | 396 | – | **3/V 05 L3** | **–** | **BN 90S 4** | **–** | 24000 | 27700 | 42000 | 50500 | 15400 | 292 |
| **3.5** | 2260 | 1.0 | 395 | – | **3/V 03 L3** | **–** | **BN 90S 4** | **–** | 24000 | 27700 | 42000 | 50500 | 15400 | 268 |
| **3.6** | 2570 | 2.2 | 388 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 29700 | 33600 | 68300 | 79500 | 22300 | 305 |
| **3.6** | 2640 | 0.9 | 386 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 23800 | 27500 | 41700 | 50200 | 15300 | 281 |
| **3.6** | 2170 | 1.6 | 384 | – | **3/V 04 L3** | **–** | **BN 90S 4** | **–** | 23700 | 27400 | 41600 | 50100 | 15200 | 280 |
| **3.7** | 2520 | 2.5 | 380 | – | **–** | **3/A 06 L2** | **BN 90S 4** | **M 2SB 4** | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| **4.0** | 2390 | 1.0 | 349 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 23000 | 26600 | 40400 | 48600 | 14800 | 281 |
| **4.3** | 2250 | 1.6 | 329 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 22600 | 26100 | 39700 | 47800 | 14500 | 293 |
| **4.4** | 2170 | 1.1 | 317 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 22300 | 25700 | 39300 | 47300 | 14300 | 281 |
| **4.9** | 1940 | 1.5 | 283 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 21500 | 24800 | 38000 | 45700 | 13800 | 281 |
| **5.0** | 1910 | 1.9 | 280 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| **5.2** | 1840 | 1.0 | 269 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.2** | 1840 | 1.0 | 269 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| **5.6** | 1710 | 2.0 | 250 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 20600 | 23800 | 36600 | 44000 | 13200 | 281 |
| **5.8** | 1640 | 2.6 | 241 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| **6.2** | 1540 | 2.3 | 226 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 19900 | 23000 | 35500 | 42700 | 12800 | 281 |
| **6.4** | 1500 | 1.1 | 220 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 19700 | 22800 | 35200 | 42300 | 12700 | 269 |
| **6.6** | 1450 | 2.1 | 212 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.6** | 1450 | 2.1 | 212 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.8** | 1400 | 2.5 | 205 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| **6.9** | 1400 | 0.9 | 204 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 6260 | 6260 | 16900 | 19400 | 4120 | 259 |
| **7.7** | 1240 | 1.5 | 182 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 18500 | 21400 | 33200 | 40000 | 11900 | 269 |
| **8.1** | 1190 | 2.5 | 174 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| **8.4** | 1140 | 1.0 | 166 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 5850 | 5850 | 15900 | 18200 | 3840 | 259 |
| **8.6** | 1110 | 2.6 | 162 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| **8.6** | 1110 | 2.6 | 162 | – | **–** | **3/A 05 L2** | **BN 90S 4** | **M 2SB 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| **9.4** | 1020 | 2.3 | 149 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 17300 | 20000 | 31300 | 37700 | 11100 | 281 |
| **10.5** | 910 | 1.4 | 133 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 5430 | 5430 | 14800 | 17100 | 3570 | 259 |
| **12.0** | 800 | 3.0 | 117 | – | **–** | **3/A 04 L2** | **BN 90S 4** | **M 2SB 4** | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| **13.8** | 690 | 1.7 | 102 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 4960 | 4960 | 13700 | 15700 | 3260 | 259 |
| **14.4** | 660 | 2.6 | 96.9 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |

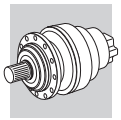


## $P_1$ = 1.1 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **15.8** | 610 | 0.9 | 88.6 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 4740 | 4740 | 13100 | 15100 | 3120 | 249 |
| **15.8** | 610 | 2.7 | 88.5 | – | **–** | **3/A 03 L2** | **BN 90S 4** | **M 2SB 4** | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| **17.2** | 560 | 2.3 | 81.3 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 4610 | 4610 | 12800 | 14700 | 3030 | 259 |
| **17.5** | 550 | 1.2 | 80.2 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 4580 | 4580 | 12700 | 14600 | 3010 | 249 |
| **18.9** | 510 | 2.3 | 74.2 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 4470 | 4470 | 12400 | 14300 | 2940 | 259 |
| **19.7** | 485 | 1.3 | 71.0 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 4400 | 4400 | 12300 | 14100 | 2890 | 249 |
| **22.9** | 420 | 1.6 | 61.2 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 4190 | 4190 | 11700 | 13500 | 2750 | 249 |
| **27.0** | 355 | 1.6 | 51.8 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 3960 | 3960 | 11200 | 12800 | 2610 | 249 |
| **28.5** | 335 | 2.5 | 49.1 | – | **–** | **3/A 01 L2** | **BN 90S 4** | **M 2SB 4** | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |
| **34** | 285 | 2.3 | 41.5 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 3680 | 3680 | 10500 | 12000 | 2420 | 249 |
| **35** | 270 | 2.0 | 39.6 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |
| **44** | 215 | 3.0 | 31.7 | – | **–** | **3/A 00 L2** | **BN 90S 4** | **M 2SB 4** | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |

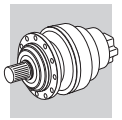
## $P_1$ = 1.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.27** | 34900 | 1.0 | 5081 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.27** | 34900 | 1.0 | 5081 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.28** | 35100 | 1.5 | 5046 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.28** | 35900 | 1.3 | 5021 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.30** | 31800 | 1.0 | 4637 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.30** | 31800 | 1.0 | 4637 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.31** | 32800 | 1.8 | 4536 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.32** | 31900 | 1.4 | 4410 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.34** | 28600 | 1.7 | 4106 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.34** | 29300 | 1.9 | 4046 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.34** | 31900 | 1.0 | 4036 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.34** | 31900 | 1.0 | 4036 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 25500 | 1.2 | 3570 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 25500 | 1.2 | 3570 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 24700 | 1.7 | 3557 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.40** | 27800 | 2.1 | 3515 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.42** | 25800 | 1.3 | 3273 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.42** | 25800 | 1.3 | 3273 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 25800 | 2.2 | 3263 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 25400 | 1.8 | 3222 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.48** | 22500 | 2.1 | 2887 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.49** | 22400 | 1.4 | 2835 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.49** | 22400 | 1.4 | 2835 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.50** | 20100 | 2.8 | 2773 | – | **3/V 13 L4** | **–** | **BN 90LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.55** | 19800 | 2.4 | 2510 | – | **3/V 11 L4** | **–** | **BN 90LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.57** | 19600 | 1.7 | 2455 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 19600 | 1.7 | 2455 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 17400 | 1.9 | 2209 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 17400 | 1.9 | 2209 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.69** | 15900 | 1.8 | 2016 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.69** | 15900 | 1.8 | 2016 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.71** | 13300 | 0.9 | 1964 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.76** | 14400 | 1.9 | 1826 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.76** | 14400 | 1.9 | 1826 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.84** | 13200 | 2.5 | 1657 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.84** | 13200 | 2.5 | 1657 | – | **3/V 10 L4** | **–** | **BN 90LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.90** | 11400 | 1.0 | 1545 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| **0.98** | 10100 | 1.2 | 1411 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 50700 | 63600 | 108200 | 141800 | 44100 | 316 |
| **1.1** | 9240 | 1.6 | 1288 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 49200 | 61700 | 105300 | 138000 | 42800 | 316 |
| **1.1** | 8580 | 0.9 | 1212 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 43400 | 49200 | 96100 | 111900 | 32600 | 304 |
| **1.2** | 8650 | 1.2 | 1159 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 47500 | 59600 | 102000 | 133700 | 41300 | 316 |
| **1.2** | 8490 | 1.0 | 1153 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 42700 | 48400 | 94700 | 110200 | 32100 | 304 |
| **1.4** | 7470 | 1.9 | 1015 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| **1.4** | 7310 | 1.3 | 992 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 40600 | 46000 | 90500 | 105400 | 30500 | 304 |
| **1.5** | 7570 | 1.0 | 930 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 39700 | 45000 | 88800 | 103400 | 29800 | 304 |



# $P_1$ = 1.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **1.5** | 6870 | 1.8 | 920 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| **1.8** | 5820 | 1.3 | 791 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| **1.8** | 6290 | 1.6 | 773 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 41500 | 52100 | 90300 | 118400 | 36100 | 316 |
| **1.8** | 5680 | 2.5 | 761 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| **2.0** | 5750 | 1.3 | 698 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| **2.1** | 6100 | 1.0 | 671 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 35600 | 40400 | 80500 | 93700 | 26800 | 305 |
| **2.1** | 5380 | 1.7 | 661 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 35500 | 40200 | 80100 | 93300 | 26600 | 304 |
| **2.1** | 4880 | 2.9 | 655 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |
| **2.2** | 4650 | 1.0 | 623 | – | **3/V 05 L3** | **–** | **BN 90LA 4** | **–** | 27900 | 32200 | 48100 | 57900 | 17900 | 292 |
| **2.3** | 5560 | 1.1 | 611 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 34500 | 39100 | 78300 | 91100 | 25900 | 305 |
| **2.4** | 4740 | 1.0 | 576 | – | **3/V 05 L3** | **–** | **BN 90LA 4** | **–** | 27200 | 31400 | 47000 | 56500 | 17400 | 292 |
| **2.4** | 4630 | 1.8 | 569 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| **2.5** | 5050 | 1.4 | 555 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| **2.6** | 4250 | 0.9 | 529 | – | **3/V 05 L3** | **–** | **BN 90LA 4** | **–** | 26400 | 30500 | 45800 | 55100 | 17000 | 292 |
| **2.6** | 4290 | 1.8 | 527 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| **2.8** | 4590 | 1.6 | 505 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 32400 | 36700 | 73900 | 86100 | 24400 | 305 |
| **3.0** | 3800 | 1.3 | 462 | – | **3/V 05 L3** | **–** | **BN 90LA 4** | **–** | 25300 | 29200 | 44000 | 52900 | 16200 | 292 |
| **3.1** | 3510 | 1.1 | 453 | – | **3/V 04 L3** | **–** | **BN 90LA 4** | **–** | 25100 | 29000 | 43700 | 52600 | 16100 | 280 |
| **3.2** | 3990 | 2.3 | 439 | – | **–** | **3/A 07 L2** | **BN 90LA 4** | **M 3SA 4** | 34400 | 43100 | 76200 | 99900 | 29900 | 317 |
| **3.2** | 3950 | 2.0 | 435 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| **3.3** | 3510 | 2.5 | 427 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| **3.3** | 3970 | 1.1 | 422 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 24500 | 28300 | 42800 | 51500 | 15700 | 293 |
| **3.4** | 3680 | 2.5 | 405 | – | **–** | **3/A 07 L2** | **BN 90LA 4** | **M 3SA 4** | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| **3.5** | 3270 | 1.2 | 396 | – | **3/V 05 L3** | **–** | **BN 90LA 4** | **–** | 24000 | 27700 | 42000 | 50500 | 15400 | 292 |
| **3.5** | 3260 | 2.3 | 395 | – | **3/V 06 L3** | **–** | **BN 90LA 4** | **–** | 29900 | 33800 | 68700 | 80000 | 22400 | 304 |
| **3.6** | 3530 | 1.6 | 388 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 29700 | 33600 | 68300 | 79500 | 22300 | 305 |
| **3.6** | 3260 | 2.8 | 386 | – | **3/V 07 L3** | **–** | **BN 90LA 4** | **–** | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| **3.6** | 2970 | 1.2 | 384 | – | **3/V 04 L3** | **–** | **BN 90LA 4** | **–** | 23700 | 27400 | 41600 | 50100 | 15200 | 280 |
| **3.7** | 3460 | 1.8 | 380 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| **4.2** | 3090 | 1.2 | 329 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 22600 | 26100 | 39700 | 47800 | 14500 | 293 |
| **4.3** | 2910 | 2.3 | 321 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 27900 | 31600 | 64500 | 75100 | 20900 | 305 |
| **4.9** | 2660 | 1.1 | 283 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 21500 | 24800 | 38000 | 45700 | 13800 | 281 |
| **5.0** | 2630 | 1.4 | 280 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| **5.2** | 2430 | 2.3 | 267 | – | **–** | **3/A 06 L2** | **BN 90LA 4** | **M 3SA 4** | 26200 | 29700 | 61000 | 71100 | 19700 | 305 |
| **5.6** | 2350 | 1.5 | 250 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 20600 | 23800 | 36600 | 44000 | 13200 | 281 |
| **5.8** | 2260 | 1.9 | 241 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| **6.2** | 2120 | 1.7 | 226 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 19900 | 23000 | 35500 | 42700 | 12800 | 281 |
| **6.5** | 1990 | 1.6 | 212 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.5** | 1990 | 1.6 | 212 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.8** | 1930 | 1.8 | 205 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| **7.7** | 1710 | 1.1 | 182 | – | **–** | **3/A 03 L2** | **BN 90LA 4** | **M 3SA 4** | 18500 | 21400 | 33200 | 40000 | 11900 | 269 |
| **7.9** | 1650 | 2.2 | 175 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 18300 | 21100 | 32900 | 39600 | 11700 | 293 |
| **8.0** | 1630 | 1.8 | 174 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| **8.6** | 1520 | 1.9 | 162 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| **8.6** | 1520 | 1.9 | 162 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| **9.3** | 1400 | 1.7 | 149 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 17300 | 20000 | 31300 | 37700 | 11100 | 281 |
| **9.9** | 1320 | 2.7 | 141 | – | **–** | **3/A 05 L2** | **BN 90LA 4** | **M 3SA 4** | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| **10.4** | 1250 | 1.0 | 133 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 5430 | 5430 | 14800 | 17100 | 3570 | 259 |
| **10.8** | 1210 | 2.2 | 129 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 16500 | 19100 | 30000 | 36100 | 10600 | 281 |
| **11.9** | 1100 | 2.2 | 117 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| **13.6** | 960 | 2.7 | 102 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| **13.7** | 950 | 1.2 | 102 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 4960 | 4960 | 13700 | 15700 | 3260 | 259 |
| **14.3** | 910 | 1.9 | 96.9 | – | **–** | **3/A 03 L2** | **BN 90LA 4** | **M 3SA 4** | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |
| **15.3** | 850 | 2.8 | 90.7 | – | **–** | **3/A 04 L2** | **BN 90LA 4** | **M 3SA 4** | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| **15.7** | 830 | 2.0 | 88.5 | – | **–** | **3/A 03 L2** | **BN 90LA 4** | **M 3SA 4** | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| **17.1** | 760 | 1.7 | 81.3 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 4610 | 4610 | 12800 | 14700 | 3030 | 259 |
| **18.7** | 700 | 1.7 | 74.2 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 4470 | 4470 | 12400 | 14300 | 2940 | 259 |
| **19.0** | 690 | 2.6 | 73.2 | – | **–** | **3/A 03 L2** | **BN 90LA 4** | **M 3SA 4** | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| **19.6** | 670 | 1.0 | 71.0 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 4400 | 4400 | 12300 | 14100 | 2890 | 249 |
| **22.1** | 590 | 2.6 | 62.9 | – | **–** | **3/A 03 L2** | **BN 90LA 4** | **M 3SA 4** | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| **22.7** | 570 | 1.1 | 61.2 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 4190 | 4190 | 11700 | 13500 | 2750 | 249 |
| **23.4** | 560 | 2.3 | 59.4 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 4150 | 4150 | 11600 | 13400 | 2730 | 259 |
| **25.6** | 510 | 2.3 | 54.2 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 4020 | 4020 | 11300 | 13000 | 2650 | 259 |
| **26.8** | 485 | 1.1 | 51.8 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 3960 | 3960 | 11200 | 12800 | 2610 | 249 |
| **28.3** | 460 | 1.8 | 49.1 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |

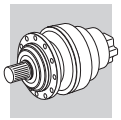


## $P_1$ = 1.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **32** | 410 | 2.3 | 43.9 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 3750 | 3750 | 10600 | 12200 | 2470 | 259 |
| **33** | 390 | 1.7 | 41.5 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 3680 | 3680 | 10500 | 12000 | 2420 | 249 |
| **35** | 375 | 2.3 | 40.1 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 3640 | 3640 | 10300 | 11900 | 2390 | 259 |
| **35** | 370 | 1.5 | 39.6 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |
| **39** | 335 | 2.3 | 35.8 | – | **–** | **3/A 01 L2** | **BN 90LA 4** | **M 3SA 4** | 3500 | 3500 | 10000 | 11500 | 2300 | 259 |
| **44** | 300 | 2.2 | 31.7 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |
| **59** | 220 | 2.6 | 23.4 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |
| **73** | 180 | 2.6 | 19.1 | – | **–** | **3/A 00 L2** | **BN 90LA 4** | **M 3SA 4** | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |

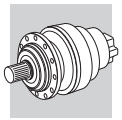
## $P_1$ = 1.85 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.28** | 43300 | 1.2 | 5046 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.28** | 44200 | 1.1 | 5021 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.31** | 40500 | 1.4 | 4536 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.32** | 39400 | 1.1 | 4410 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.34** | 35200 | 1.4 | 4106 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.34** | 36100 | 1.5 | 4046 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.39** | 31400 | 1.0 | 3570 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 31400 | 1.0 | 3570 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.39** | 30500 | 1.4 | 3557 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.40** | 34200 | 1.7 | 3515 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.42** | 31900 | 1.1 | 3273 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.42** | 31900 | 1.1 | 3273 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 31800 | 1.7 | 3263 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 31400 | 1.5 | 3222 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.48** | 27800 | 1.7 | 2887 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.49** | 27600 | 1.1 | 2835 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.49** | 27600 | 1.1 | 2835 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.50** | 24800 | 2.2 | 2773 | – | **3/V 13 L4** | **–** | **BN 90LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.55** | 24400 | 2.0 | 2510 | – | **3/V 11 L4** | **–** | **BN 90LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.57** | 24200 | 1.4 | 2455 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 24200 | 1.4 | 2455 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 21500 | 1.5 | 2209 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.63** | 21500 | 1.5 | 2209 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.69** | 19600 | 1.5 | 2016 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.69** | 19600 | 1.5 | 2016 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.76** | 17800 | 1.5 | 1826 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.76** | 17800 | 1.5 | 1826 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.84** | 16300 | 2.0 | 1657 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.84** | 16300 | 2.0 | 1657 | – | **3/V 10 L4** | **–** | **BN 90LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.98** | 12500 | 1.0 | 1411 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 50700 | 63600 | 108200 | 141800 | 44100 | 316 |
| **1.1** | 11400 | 1.3 | 1288 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 49200 | 61700 | 105300 | 138000 | 42800 | 316 |
| **1.2** | 10700 | 1.0 | 1159 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 47500 | 59600 | 102000 | 133700 | 41300 | 316 |
| **1.4** | 9210 | 1.6 | 1015 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| **1.4** | 9010 | 1.0 | 992 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 40600 | 46000 | 90500 | 105400 | 30500 | 304 |
| **1.5** | 8470 | 1.5 | 920 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| **1.8** | 7180 | 1.1 | 791 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| **1.8** | 7760 | 1.3 | 773 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 41500 | 52100 | 90300 | 118400 | 36100 | 316 |
| **1.8** | 7000 | 2.0 | 761 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| **2.0** | 7080 | 1.1 | 698 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| **2.1** | 6640 | 1.4 | 661 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 35500 | 40200 | 80100 | 93300 | 26600 | 304 |
| **2.1** | 6020 | 2.4 | 655 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |
| **2.4** | 5710 | 1.5 | 569 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| **2.5** | 6220 | 1.2 | 555 | – | **–** | **3/A 06 L2** | **BN 90LB 4** | **–** | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| **2.6** | 5290 | 1.4 | 527 | – | **3/V 06 L3** | **–** | **BN 90LB 4** | **–** | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| **2.7** | 5090 | 2.7 | 507 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| **2.8** | 5660 | 1.3 | 505 | – | **–** | **3/A 06 L2** | **BN 90LB 4** | **–** | 32400 | 36700 | 73900 | 86100 | 24400 | 305 |
| **3.0** | 4690 | 1.0 | 462 | – | **3/V 05 L3** | **–** | **BN 90LB 4** | **–** | 25300 | 29200 | 44000 | 52900 | 16200 | 292 |
| **3.0** | 4620 | 2.7 | 460 | – | **3/V 07 L3** | **–** | **BN 90LB 4** | **–** | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| **3.2** | 4920 | 1.9 | 439 | – | **–** | **3/A 07 L2** | **BN 90LB 4** | **–** | 34400 | 43100 | 76200 | 99900 | 29900 | 317 |



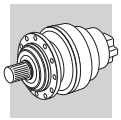
## $P_1$ = 1.85 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.2** | 4870 | 1.6 | 435 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| **3.3** | 4330 | 2.0 | 427 | – | **3/V 06 L3** | – | **BN 90LB 4** | – | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| **3.4** | 4540 | 2.0 | 405 | – | – | **3/A 07 L2** | **BN 90LB 4** | – | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| **3.5** | 4030 | 0.9 | 396 | – | **3/V 05 L3** | – | **BN 90LB 4** | – | 24000 | 27700 | 42000 | 50500 | 15400 | 292 |
| **3.5** | 4010 | 1.9 | 395 | – | **3/V 06 L3** | – | **BN 90LB 4** | – | 29900 | 33800 | 68700 | 80000 | 22400 | 304 |
| **3.6** | 4350 | 1.3 | 388 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 29700 | 33600 | 68300 | 79500 | 22300 | 305 |
| **3.6** | 4020 | 2.2 | 386 | – | **3/V 07 L3** | – | **BN 90LB 4** | – | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| **3.6** | 3670 | 1.0 | 384 | – | **3/V 04 L3** | – | **BN 90LB 4** | – | 23700 | 27400 | 41600 | 50100 | 15200 | 280 |
| **3.7** | 4260 | 1.4 | 380 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| **4.2** | 3810 | 1.0 | 329 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 22600 | 26100 | 39700 | 47800 | 14500 | 293 |
| **4.3** | 3590 | 1.8 | 321 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 27900 | 31600 | 64500 | 75100 | 20900 | 305 |
| **4.9** | 3160 | 2.8 | 282 | – | – | **3/A 07 L2** | **BN 90LB 4** | – | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| **5.0** | 3240 | 1.1 | 280 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| **5.0** | 3090 | 2.5 | 276 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 26500 | 30000 | 61600 | 71800 | 19900 | 305 |
| **5.2** | 2990 | 1.8 | 267 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 26200 | 29700 | 61000 | 71100 | 19700 | 305 |
| **5.6** | 2890 | 1.2 | 250 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 20600 | 23800 | 36600 | 44000 | 13200 | 281 |
| **5.8** | 2790 | 1.5 | 241 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| **6.2** | 2610 | 1.3 | 226 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 19900 | 23000 | 35500 | 42700 | 12800 | 281 |
| **6.3** | 2470 | 2.6 | 221 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| **6.5** | 2460 | 1.3 | 212 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.5** | 2460 | 1.3 | 212 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.8** | 2380 | 1.5 | 205 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| **7.0** | 2220 | 2.5 | 198 | – | – | **3/A 06 L2** | **BN 90LB 4** | – | 23700 | 26900 | 55800 | 65000 | 17800 | 305 |
| **7.9** | 2030 | 1.8 | 175 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 18300 | 21100 | 32900 | 39600 | 11700 | 293 |
| **8.0** | 2010 | 1.5 | 174 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| **8.6** | 1880 | 1.5 | 162 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| **8.6** | 1880 | 1.5 | 162 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| **9.3** | 1730 | 1.4 | 149 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 17300 | 20000 | 31300 | 37700 | 11100 | 281 |
| **9.9** | 1630 | 2.2 | 141 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| **10.8** | 1500 | 1.8 | 129 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 16500 | 19100 | 30000 | 36100 | 10600 | 281 |
| **11.5** | 1400 | 2.5 | 121 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 16200 | 18700 | 29400 | 35400 | 10400 | 293 |
| **11.9** | 1350 | 1.8 | 117 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| **13.4** | 1200 | 2.6 | 104 | – | – | **3/A 05 L2** | **BN 90LB 4** | – | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| **13.6** | 1180 | 2.2 | 102 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| **13.7** | 1180 | 1.0 | 102 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 4960 | 4960 | 13700 | 15700 | 3260 | 259 |
| **14.3** | 1120 | 1.5 | 96.9 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |
| **15.3** | 1050 | 2.3 | 90.7 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| **15.7** | 1020 | 1.6 | 88.5 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| **17.0** | 950 | 2.5 | 81.7 | – | – | **3/A 04 L2** | **BN 90LB 4** | – | 14200 | 16400 | 26200 | 31500 | 9100 | 281 |
| **17.1** | 940 | 1.4 | 81.3 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 4610 | 4610 | 12800 | 14700 | 3030 | 259 |
| **18.7** | 860 | 1.3 | 74.2 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 4470 | 4470 | 12400 | 14300 | 2940 | 259 |
| **19.0** | 850 | 2.1 | 73.2 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| **22.1** | 730 | 2.1 | 62.9 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| **22.7** | 710 | 0.9 | 61.2 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 4190 | 4190 | 11700 | 13500 | 2750 | 249 |
| **23.4** | 690 | 1.8 | 59.4 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 4150 | 4150 | 11600 | 13400 | 2730 | 259 |
| **25.6** | 630 | 1.9 | 54.2 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 4020 | 4020 | 11300 | 13000 | 2650 | 259 |
| **26.5** | 610 | 2.7 | 52.5 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **26.5** | 610 | 2.7 | 52.5 | – | – | **3/A 03 L2** | **BN 90LB 4** | – | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **26.8** | 600 | 0.9 | 51.8 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 3960 | 3960 | 11200 | 12800 | 2610 | 249 |
| **28.3** | 570 | 1.5 | 49.1 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |
| **32** | 510 | 1.8 | 43.9 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 3750 | 3750 | 10600 | 12200 | 2470 | 259 |
| **33** | 480 | 1.4 | 41.5 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 3680 | 3680 | 10500 | 12000 | 2420 | 249 |
| **35** | 465 | 1.9 | 40.1 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 3640 | 3640 | 10300 | 11900 | 2390 | 259 |
| **35** | 460 | 1.2 | 39.6 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |
| **39** | 415 | 1.8 | 35.8 | – | – | **3/A 01 L2** | **BN 90LB 4** | – | 3500 | 3500 | 10000 | 11500 | 2300 | 259 |
| **44** | 365 | 1.8 | 31.7 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |
| **59** | 270 | 2.1 | 23.4 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |
| **73** | 220 | 2.1 | 19.1 | – | – | **3/A 00 L2** | **BN 90LB 4** | – | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |



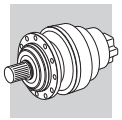
# $P_1$ = 2.2 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.27** | 56900 | 1.7 | 5234 | – | **3/V 15 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.28** | 50800 | 1.0 | 5046 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.28** | 51900 | 0.9 | 5021 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.28** | 51900 | 1.6 | 4959 | – | **3/V 14 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.28** | 53800 | 1.9 | 4950 | – | **3/V 15 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.28** | 53800 | 2.3 | 4950 | – | **3/V 16 L4** | **–** | **BN 100LA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.31** | 47500 | 1.2 | 4536 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.32** | 46200 | 1.0 | 4410 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.33** | 45100 | 1.8 | 4312 | – | **3/V 14 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.34** | 45400 | 2.3 | 4171 | – | **3/V 15 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.34** | 41300 | 1.2 | 4106 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.35** | 42400 | 1.3 | 4046 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.35** | 45100 | 1.7 | 3993 | – | **3/V 14 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.40** | 35800 | 1.2 | 3557 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.40** | 40200 | 1.4 | 3515 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 37400 | 0.9 | 3273 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 37400 | 0.9 | 3273 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.43** | 37300 | 1.5 | 3263 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.44** | 36800 | 1.3 | 3222 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.44** | 35900 | 2.2 | 3182 | – | **3/V 14 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.49** | 32600 | 1.5 | 2887 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.50** | 32400 | 0.9 | 2835 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.50** | 32400 | 0.9 | 2835 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.51** | 30300 | 2.7 | 2782 | – | **3/V 14 L4** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.51** | 29000 | 1.9 | 2773 | – | **3/V 13 L4** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.56** | 28700 | 1.7 | 2510 | – | **3/V 11 L4** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.57** | 28400 | 1.2 | 2455 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.57** | 28400 | 1.2 | 2455 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.58** | 25200 | 1.9 | 2430 | – | **3/V 13 L3** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.61** | 24200 | 1.4 | 2329 | – | **3/V 11 L3** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.61** | 24000 | 2.8 | 2318 | – | **3/V 14 L3** | **–** | **BN 100LA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.64** | 25200 | 1.3 | 2209 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.64** | 25200 | 1.3 | 2209 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.70** | 20900 | 2.8 | 2019 | – | **3/V 13 L3** | **–** | **BN 100LA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.70** | 23000 | 1.3 | 2016 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.70** | 23000 | 1.3 | 2016 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.72** | 20400 | 2.1 | 1963 | – | **3/V 11 L3** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.77** | 20900 | 1.3 | 1826 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.77** | 20900 | 1.3 | 1826 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.79** | 18100 | 1.2 | 1792 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 110000 | 145000 | 36000 | 352 |
| **0.85** | 19200 | 1.7 | 1657 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.85** | 19200 | 1.7 | 1657 | – | **3/V 10 L4** | **–** | **BN 100LA 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.86** | 17400 | 2.5 | 1636 | – | **3/V 11 L3** | **–** | **BN 100LA 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.94** | 16200 | 1.1 | 1497 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 110000 | 144300 | 36000 | 352 |
| **1.0** | 15200 | 1.4 | 1411 | – | **3/V 10 L3** | **–** | **BN 100LA 4** | **–** | – | – | 130300 | 163800 | 63700 | 340 |
| **1.1** | 13400 | 1.1 | 1288 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 49200 | 61700 | 105300 | 138000 | 42800 | 316 |
| **1.1** | 13900 | 1.5 | 1288 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 107000 | 138000 | 34200 | 352 |
| **1.1** | 13600 | 2.6 | 1274 | – | **3/V 11 L3** | **–** | **BN 100LA 4** | **–** | – | – | 149300 | 186000 | 61600 | 352 |
| **1.1** | 13200 | 1.6 | 1227 | – | **3/V 10 L3** | **–** | **BN 100LA 4** | **–** | – | – | 124900 | 157100 | 60800 | 340 |
| **1.2** | 13000 | 1.2 | 1159 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 103600 | 133700 | 33000 | 352 |
| **1.3** | 12100 | 2.4 | 1120 | – | **3/V 10 L3** | **–** | **BN 100LA 4** | **–** | – | – | 121600 | 152800 | 59000 | 340 |
| **1.4** | 10800 | 1.3 | 1015 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| **1.4** | 10800 | 1.7 | 1004 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 99300 | 128000 | 31500 | 352 |
| **1.4** | 10800 | 2.9 | 1004 | – | **3/V 10 L3** | **–** | **BN 100LA 4** | **–** | – | – | 117600 | 147900 | 56900 | 340 |
| **1.5** | 9940 | 1.2 | 920 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| **1.5** | 10300 | 2.1 | 920 | – | **3/V 10 L3** | **–** | **BN 100LA 4** | **–** | – | – | 114600 | 144100 | 55200 | 340 |
| **1.7** | 9420 | 2.1 | 840 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 94100 | 121400 | 29700 | 352 |
| **1.8** | 8630 | 2.5 | 800 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 92700 | 119600 | 29200 | 352 |
| **1.8** | 8420 | 0.9 | 791 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| **1.8** | 9100 | 1.1 | 773 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 41500 | 52100 | 90300 | 118400 | 36100 | 316 |
| **1.9** | 8210 | 1.7 | 761 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| **1.9** | 8530 | 1.7 | 761 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 91300 | 117800 | 28700 | 352 |
| **2.0** | 8310 | 0.9 | 698 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| **2.1** | 7790 | 1.2 | 661 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 35500 | 40200 | 80100 | 93300 | 26600 | 304 |
| **2.2** | 7070 | 2.0 | 655 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |



# $P_1$ = 2.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.2** | 7340 | 2.4 | 655 | – | **3/V 09 L3** | **–** | **BN 100LA 4** | **–** | – | – | 87300 | 112600 | 27300 | 352 |
| **2.5** | 6700 | 1.3 | 569 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| **2.5** | 7300 | 1.0 | 555 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| **2.7** | 6210 | 1.2 | 527 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| **2.8** | 5970 | 2.3 | 507 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| **2.8** | 6650 | 1.1 | 505 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 32400 | 36700 | 73900 | 86100 | 24400 | 305 |
| **3.1** | 5420 | 2.3 | 460 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| **3.2** | 5770 | 1.6 | 439 | – | **–** | **3/A 07 L2** | **BN 100LA 4** | **M 3LA 4** | 34400 | 43100 | 76200 | 99900 | 29900 | 317 |
| **3.2** | 5720 | 1.4 | 435 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| **3.3** | 5080 | 1.7 | 427 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| **3.5** | 5330 | 1.7 | 405 | – | **–** | **3/A 07 L2** | **BN 100LA 4** | **M 3LA 4** | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| **3.6** | 4710 | 1.6 | 395 | – | **3/V 06 L3** | **–** | **BN 100LA 4** | **–** | 29900 | 33800 | 68700 | 80000 | 22400 | 304 |
| **3.6** | 5100 | 1.1 | 388 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 29700 | 33600 | 68300 | 79500 | 22300 | 305 |
| **3.6** | 4710 | 1.9 | 386 | – | **3/V 07 L3** | **–** | **BN 100LA 4** | **–** | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| **3.7** | 5000 | 1.2 | 380 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| **4.1** | 4490 | 2.6 | 341 | – | **–** | **3/A 07 L2** | **BN 100LA 4** | **M 3LA 4** | 31600 | 39700 | 70700 | 92600 | 27500 | 317 |
| **4.4** | 4220 | 1.6 | 321 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 27900 | 31600 | 64500 | 75100 | 20900 | 305 |
| **5.0** | 3700 | 2.3 | 282 | – | **–** | **3/A 07 L2** | **BN 100LA 4** | **M 3LA 4** | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| **5.0** | 3800 | 0.9 | 280 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| **5.1** | 3630 | 2.1 | 276 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 26500 | 30000 | 61600 | 71800 | 19900 | 305 |
| **5.3** | 3510 | 1.6 | 267 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 26200 | 29700 | 61000 | 71100 | 19700 | 305 |
| **5.6** | 3400 | 1.0 | 250 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 20600 | 23800 | 36600 | 44000 | 13200 | 281 |
| **5.8** | 3170 | 2.8 | 241 | – | **–** | **3/A 07 L2** | **BN 100LA 4** | **M 3LA 4** | 28200 | 35300 | 63700 | 83500 | 24500 | 317 |
| **5.9** | 3270 | 1.3 | 241 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| **6.2** | 3070 | 1.1 | 226 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 19900 | 23000 | 35500 | 42700 | 12800 | 281 |
| **6.4** | 2900 | 2.2 | 221 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| **6.6** | 2880 | 1.1 | 212 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.6** | 2880 | 1.1 | 212 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| **6.9** | 2790 | 1.3 | 205 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| **7.1** | 2600 | 2.1 | 198 | – | **–** | **3/A 06 L2** | **BN 100LA 4** | **M 3LA 4** | 23700 | 26900 | 55800 | 65000 | 17800 | 305 |
| **8.0** | 2380 | 1.5 | 175 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 18300 | 21100 | 32900 | 39600 | 11700 | 293 |
| **8.1** | 2360 | 1.3 | 174 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| **8.7** | 2210 | 1.3 | 162 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| **8.7** | 2210 | 1.3 | 162 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| **9.5** | 2030 | 1.2 | 149 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 17300 | 20000 | 31300 | 37700 | 11100 | 281 |
| **10.0** | 1910 | 1.9 | 141 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| **10.9** | 1760 | 1.5 | 129 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 16500 | 19100 | 30000 | 36100 | 10600 | 281 |
| **11.6** | 1640 | 2.1 | 121 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 16200 | 18700 | 29400 | 35400 | 10400 | 293 |
| **12.1** | 1590 | 1.5 | 117 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| **13.6** | 1410 | 2.2 | 104 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| **13.8** | 1380 | 1.8 | 102 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| **14.6** | 1320 | 1.3 | 96.9 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |
| **15.5** | 1230 | 1.9 | 90.7 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| **15.9** | 1200 | 1.4 | 88.5 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| **17.3** | 1110 | 2.1 | 81.7 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 14200 | 16400 | 26200 | 31500 | 9100 | 281 |
| **17.3** | 1110 | 1.2 | 81.3 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 4610 | 4610 | 12800 | 14700 | 3030 | 259 |
| **18.6** | 1030 | 3.0 | 75.8 | – | **–** | **3/A 05 L2** | **BN 100LA 4** | **M 3LA 4** | 13800 | 16000 | 25600 | 30800 | 8870 | 293 |
| **19.0** | 1010 | 1.1 | 74.2 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 4470 | 4470 | 12400 | 14300 | 2940 | 259 |
| **19.3** | 990 | 1.8 | 73.2 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| **20.6** | 930 | 2.7 | 68.4 | – | **–** | **3/A 04 L2** | **BN 100LA 4** | **M 3LA 4** | 13400 | 15400 | 24800 | 29800 | 8580 | 281 |
| **22.4** | 860 | 1.8 | 62.9 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| **23.7** | 810 | 1.6 | 59.4 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 4150 | 4150 | 11600 | 13400 | 2730 | 259 |
| **26.0** | 740 | 1.6 | 54.2 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 4020 | 4020 | 11300 | 13000 | 2650 | 259 |
| **26.9** | 710 | 2.3 | 52.5 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **26.9** | 710 | 2.3 | 52.5 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **28.7** | 670 | 1.2 | 49.1 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |
| **32** | 600 | 1.6 | 43.9 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3750 | 3750 | 10600 | 12200 | 2470 | 259 |
| **34** | 560 | 1.2 | 41.5 | – | **–** | **3/A 00 L2** | **BN 100LA 4** | **M 3LA 4** | 3680 | 3680 | 10500 | 12000 | 2420 | 249 |
| **35** | 550 | 3.0 | 40.5 | – | **–** | **3/A 03 L2** | **BN 100LA 4** | **M 3LA 4** | 11200 | 13000 | 21200 | 25500 | 7200 | 269 |
| **35** | 540 | 1.6 | 40.1 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3640 | 3640 | 10300 | 11900 | 2390 | 259 |
| **36** | 540 | 1.0 | 39.6 | – | **–** | **3/A 00 L2** | **BN 100LA 4** | **M 3LA 4** | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |
| **39** | 485 | 1.6 | 35.8 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3500 | 3500 | 10000 | 11500 | 2300 | 259 |
| **44** | 430 | 1.5 | 31.7 | – | **–** | **3/A 00 L2** | **BN 100LA 4** | **M 3LA 4** | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |
| **45** | 425 | 2.8 | 31.2 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3340 | 3340 | 9600 | 11000 | 2200 | 259 |
| **60** | 320 | 1.8 | 23.4 | – | **–** | **3/A 00 L2** | **BN 100LA 4** | **M 3LA 4** | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |

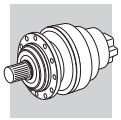


## $P_1$ = 2.2 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **61** | 315 | 2.8 | 23.0 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 3020 | 3020 | 8760 | 10100 | 1990 | 259 |
| **74** | 260 | 1.8 | 19.1 | – | **–** | **3/A 00 L2** | **BN 100LA 4** | **M 3LA 4** | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |
| **75** | 255 | 2.8 | 18.8 | – | **–** | **3/A 01 L2** | **BN 100LA 4** | **M 3LA 4** | 2830 | 2830 | 8250 | 9470 | 1860 | 259 |

## $P_1$ = 3 kW

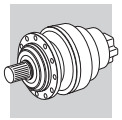
| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.27** | 76400 | 1.3 | 5234 | – | **3/V 15 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.28** | 69700 | 1.2 | 4959 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.28** | 72300 | 1.5 | 4950 | – | **3/V 15 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.28** | 72300 | 1.7 | 4950 | – | **3/V 16 L4** | **–** | **BN 100LB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.31** | 63800 | 0.9 | 4536 | – | **3/V 13 L4** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.33** | 60600 | 1.4 | 4312 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.34** | 60900 | 1.7 | 4171 | – | **3/V 15 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.34** | 60900 | 2.3 | 4171 | – | **3/V 16 L4** | **–** | **BN 100LB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.35** | 56900 | 1.0 | 4046 | – | **3/V 13 L4** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.35** | 60500 | 1.2 | 3993 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.40** | 53900 | 1.1 | 3515 | – | **3/V 13 L4** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.40** | 51300 | 2.7 | 3514 | – | **3/V 16 L4** | **–** | **BN 100LB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.43** | 50000 | 1.1 | 3263 | – | **3/V 13 L4** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.43** | 47500 | 2.9 | 3250 | – | **3/V 16 L4** | **–** | **BN 100LB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.44** | 49400 | 0.9 | 3222 | – | **3/V 11 L4** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.44** | 48200 | 1.7 | 3182 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.49** | 43700 | 1.1 | 2887 | – | **3/V 11 L4** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.51** | 40600 | 2.0 | 2782 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.51** | 39000 | 1.4 | 2773 | – | **3/V 13 L4** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.51** | 40000 | 2.9 | 2738 | – | **3/V 16 L4** | **–** | **BN 100LB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.56** | 38500 | 1.3 | 2510 | – | **3/V 11 L4** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.56** | 35200 | 2.4 | 2504 | – | **3/V 14 L4** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.58** | 33800 | 1.4 | 2430 | – | **3/V 13 L3** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.61** | 32400 | 1.0 | 2329 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.61** | 32300 | 2.1 | 2318 | – | **3/V 14 L3** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.64** | 33900 | 1.0 | 2209 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.64** | 33900 | 1.0 | 2209 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.70** | 28100 | 2.1 | 2019 | – | **3/V 13 L3** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.70** | 30900 | 1.0 | 2016 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.70** | 30900 | 1.0 | 2016 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.71** | 27800 | 2.6 | 1994 | – | **3/V 14 L3** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.72** | 27300 | 1.6 | 1963 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.77** | 28000 | 1.0 | 1826 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.77** | 28000 | 1.0 | 1826 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.79** | 24300 | 0.9 | 1792 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 110000 | 145000 | 36000 | 352 |
| **0.84** | 24100 | 2.4 | 1682 | – | **3/V 13 L3** | **–** | **BN 100LB 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.85** | 25700 | 1.3 | 1657 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.85** | 25700 | 1.3 | 1657 | – | **3/V 10 L4** | **–** | **BN 100LB 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.86** | 23400 | 1.8 | 1636 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.89** | 22100 | 2.6 | 1589 | – | **3/V 14 L3** | **–** | **BN 100LB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.99** | 20300 | 2.8 | 1418 | – | **3/V 13 L3** | **–** | **BN 100LB 4** | **–** | – | – | 190500 | 225400 | 78500 | 364 |
| **1.0** | 20500 | 1.1 | 1411 | – | **3/V 10 L3** | **–** | **BN 100LB 4** | **–** | – | – | 130300 | 163800 | 63700 | 340 |
| **1.0** | 19700 | 2.3 | 1378 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 152900 | 190400 | 63200 | 352 |
| **1.1** | 18600 | 2.6 | 1339 | – | **3/V 14 L3** | **–** | **BN 100LB 4** | **–** | – | – | 199900 | 234700 | 86700 | 376 |
| **1.1** | 18500 | 2.9 | 1291 | – | **3/V 13 L3** | **–** | **BN 100LB 4** | **–** | – | – | 185200 | 219200 | 76100 | 364 |
| **1.1** | 18700 | 1.2 | 1288 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 107000 | 138000 | 34200 | 352 |
| **1.1** | 18200 | 1.9 | 1274 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 149300 | 186000 | 61600 | 352 |
| **1.1** | 17800 | 1.2 | 1227 | – | **3/V 10 L3** | **–** | **BN 100LB 4** | **–** | – | – | 124900 | 157100 | 60800 | 340 |
| **1.2** | 17400 | 0.9 | 1159 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 103600 | 133700 | 33000 | 352 |
| **1.3** | 16200 | 1.8 | 1120 | – | **3/V 10 L3** | **–** | **BN 100LB 4** | **–** | – | – | 121600 | 152800 | 59000 | 340 |
| **1.4** | 14500 | 1.0 | 1015 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| **1.4** | 14000 | 2.6 | 1004 | – | **3/V 11 L3** | **–** | **BN 100LB 4** | **–** | – | – | 139000 | 173200 | 56900 | 352 |
| **1.4** | 14500 | 1.2 | 1004 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 99300 | 128000 | 31500 | 352 |
| **1.4** | 14500 | 2.2 | 1004 | – | **3/V 10 L3** | **–** | **BN 100LB 4** | **–** | – | – | 117600 | 147900 | 56900 | 340 |



## $P_1$ = 3 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.5** | 13300 | 0.9 | 920 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| **1.5** | 13900 | 1.6 | 920 | – | **3/V 10 L3** | **–** | **BN 100LB 4** | **–** | – | – | 114600 | 144100 | 55200 | 340 |
| **1.7** | 12600 | 1.6 | 840 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 94100 | 121400 | 29700 | 352 |
| **1.8** | 11600 | 1.8 | 800 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 92700 | 119600 | 29200 | 352 |
| **1.9** | 11000 | 1.3 | 761 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| **1.9** | 11500 | 1.3 | 761 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 91300 | 117800 | 28700 | 352 |
| **2.2** | 9480 | 1.5 | 655 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |
| **2.2** | 9850 | 1.8 | 655 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 87300 | 112600 | 27300 | 352 |
| **2.5** | 8990 | 1.0 | 569 | – | **3/V 06 L3** | **–** | **BN 100LB 4** | **–** | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| **2.7** | 8330 | 0.9 | 527 | – | **3/V 06 L3** | **–** | **BN 100LB 4** | **–** | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| **2.8** | 8020 | 1.7 | 507 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| **3.1** | 7270 | 1.7 | 460 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| **3.2** | 6650 | 2.7 | 442 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 77600 | 100100 | 24000 | 352 |
| **3.2** | 7740 | 1.2 | 439 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 34400 | 43100 | 76200 | 99900 | 29900 | 317 |
| **3.2** | 7670 | 1.0 | 435 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| **3.3** | 6820 | 1.3 | 427 | – | **3/V 06 L3** | **–** | **BN 100LB 4** | **–** | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| **3.5** | 7150 | 1.3 | 405 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| **3.6** | 6320 | 1.2 | 395 | – | **3/V 06 L3** | **–** | **BN 100LB 4** | **–** | 29900 | 33800 | 68700 | 80000 | 22400 | 304 |
| **3.6** | 6320 | 1.4 | 386 | – | **3/V 07 L3** | **–** | **BN 100LB 4** | **–** | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| **3.7** | 6720 | 0.9 | 380 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| **3.8** | 5570 | 2.3 | 370 | – | **3/V 09 L3** | **–** | **BN 100LB 4** | **–** | – | – | 73600 | 94900 | 22600 | 352 |
| **4.1** | 6020 | 1.9 | 341 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 31600 | 39700 | 70700 | 92600 | 27500 | 317 |
| **4.4** | 5660 | 1.2 | 321 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 27900 | 31600 | 64500 | 75100 | 20900 | 305 |
| **5.0** | 4970 | 1.7 | 282 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| **5.1** | 4870 | 1.6 | 276 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 26500 | 30000 | 61600 | 71800 | 19900 | 305 |
| **5.3** | 4710 | 1.2 | 267 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 26200 | 29700 | 61000 | 71100 | 19700 | 305 |
| **5.8** | 4260 | 2.1 | 241 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 28200 | 35300 | 63700 | 83500 | 24500 | 317 |
| **5.9** | 4390 | 1.0 | 241 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| **6.3** | 3930 | 2.3 | 223 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 27400 | 34400 | 62200 | 81500 | 23800 | 317 |
| **6.4** | 3900 | 1.7 | 221 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| **6.9** | 3740 | 0.9 | 205 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| **7.1** | 3500 | 1.6 | 198 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 23700 | 26900 | 55800 | 65000 | 17800 | 305 |
| **7.1** | 3490 | 2.5 | 198 | – | **–** | **3/A 07 L2** | **BN 100LB 4** | **M 3LB 4** | 26300 | 33000 | 60000 | 78600 | 22900 | 317 |
| **7.4** | 3350 | 2.3 | 190 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 23400 | 26500 | 55100 | 64200 | 17600 | 305 |
| **8.0** | 3200 | 1.1 | 175 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 18300 | 21100 | 32900 | 39600 | 11700 | 293 |
| **8.1** | 3170 | 0.9 | 174 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| **8.6** | 2890 | 2.2 | 164 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 22300 | 25200 | 52700 | 61400 | 16700 | 305 |
| **8.7** | 2960 | 1.0 | 162 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| **8.7** | 2960 | 1.0 | 162 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| **10.0** | 2570 | 1.4 | 141 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| **10.9** | 2360 | 1.2 | 129 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 16500 | 19100 | 30000 | 36100 | 10600 | 281 |
| **11.3** | 2270 | 2.4 | 125 | – | **–** | **3/A 06 L2** | **BN 100LB 4** | **M 3LB 4** | 20300 | 23000 | 48600 | 56500 | 15300 | 305 |
| **11.6** | 2210 | 1.6 | 121 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 16200 | 18700 | 29400 | 35400 | 10400 | 293 |
| **12.1** | 2130 | 1.1 | 117 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| **13.6** | 1890 | 1.6 | 104 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| **13.8** | 1860 | 1.4 | 102 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| **14.6** | 1770 | 1.0 | 96.9 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |
| **15.5** | 1650 | 1.4 | 90.7 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| **15.9** | 1610 | 1.0 | 88.5 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| **16.5** | 1560 | 2.3 | 85.6 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 14400 | 16600 | 26500 | 31900 | 9240 | 293 |
| **17.3** | 1490 | 1.6 | 81.7 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 14200 | 16400 | 26200 | 31500 | 9100 | 281 |
| **18.6** | 1380 | 2.2 | 75.8 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 13800 | 16000 | 25600 | 30800 | 8870 | 293 |
| **19.3** | 1330 | 1.3 | 73.2 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| **19.4** | 1320 | 2.5 | 72.5 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 13600 | 15700 | 25200 | 30400 | 8740 | 293 |
| **20.6** | 1250 | 2.0 | 68.4 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 13400 | 15400 | 24800 | 29800 | 8580 | 281 |
| **22.4** | 1150 | 1.4 | 62.9 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| **22.5** | 1140 | 2.8 | 62.6 | – | **–** | **3/A 05 L2** | **BN 100LB 4** | **M 3LB 4** | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| **22.6** | 1140 | 2.5 | 62.4 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 13000 | 15000 | 24100 | 29000 | 8320 | 281 |
| **23.7** | 1080 | 1.2 | 59.4 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 4150 | 4150 | 11600 | 13400 | 2730 | 259 |
| **25.9** | 990 | 2.4 | 54.5 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 12400 | 14300 | 23200 | 27900 | 7950 | 281 |
| **26.0** | 990 | 1.2 | 54.2 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 4020 | 4020 | 11300 | 13000 | 2650 | 259 |
| **26.9** | 960 | 1.7 | 52.5 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **26.9** | 960 | 1.7 | 52.5 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **28.4** | 910 | 2.5 | 49.7 | – | **–** | **3/A 04 L2** | **BN 100LB 4** | **M 3LB 4** | 12000 | 13900 | 22500 | 27100 | 7710 | 281 |
| **28.7** | 890 | 0.9 | 49.1 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |

A



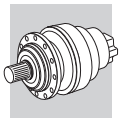
A

## $P_1$ = 3 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | Rn$_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **32** | 800 | 1.2 | 43.9 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3750 | 3750 | 10600 | 12200 | 2470 | 259 |
| **32** | 790 | 2.3 | 43.4 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 11500 | 13300 | 21600 | 26000 | 7370 | 269 |
| **35** | 740 | 2.2 | 40.5 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 11200 | 13000 | 21200 | 25500 | 7200 | 269 |
| **35** | 730 | 1.2 | 40.1 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3640 | 3640 | 10300 | 11900 | 2390 | 259 |
| **39** | 650 | 1.2 | 35.8 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3500 | 3500 | 10000 | 11500 | 2300 | 259 |
| **42** | 610 | 2.9 | 33.5 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 10500 | 12200 | 20000 | 24100 | 6760 | 269 |
| **44** | 580 | 1.1 | 31.7 | – | **–** | **3/A 00 L2** | **BN 100LB 4** | **M 3LB 4** | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |
| **45** | 570 | 2.1 | 31.2 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3340 | 3340 | 9600 | 11000 | 2200 | 259 |
| **49** | 530 | 3.0 | 28.8 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 10000 | 11600 | 19100 | 23000 | 6430 | 269 |
| **60** | 430 | 1.4 | 23.4 | – | **–** | **3/A 00 L2** | **BN 100LB 4** | **M 3LB 4** | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |
| **61** | 420 | 2.1 | 23.0 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 3020 | 3020 | 8760 | 10100 | 1990 | 259 |
| **61** | 420 | 3.0 | 23.0 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 9290 | 10700 | 17900 | 21500 | 5960 | 269 |
| **73** | 355 | 3.0 | 19.4 | – | **–** | **3/A 03 L2** | **BN 100LB 4** | **M 3LB 4** | 8790 | 10100 | 17000 | 20500 | 5640 | 269 |
| **74** | 350 | 1.3 | 19.1 | – | **–** | **3/A 00 L2** | **BN 100LB 4** | **M 3LB 4** | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |
| **75** | 345 | 2.1 | 18.8 | – | **–** | **3/A 01 L2** | **BN 100LB 4** | **M 3LB 4** | 2830 | 2830 | 8250 | 9470 | 1860 | 259 |

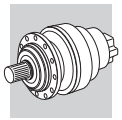
## $P_1$ = 4 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | Rn$_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.27** | 103200 | 1.0 | 5234 | – | **3/V 15 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.29** | 97600 | 1.1 | 4950 | – | **3/V 15 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.29** | 97600 | 1.3 | 4950 | – | **3/V 16 L4** | **–** | **BN 112M 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.32** | 83300 | 2.4 | 4449 | – | **3/V 17 L4** | **–** | **BN 112M 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.33** | 81800 | 1.0 | 4312 | – | **3/V 14 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.34** | 82200 | 1.3 | 4171 | – | **3/V 15 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.34** | 82200 | 1.7 | 4171 | – | **3/V 16 L4** | **–** | **BN 112M 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.36** | 81700 | 0.9 | 3993 | – | **3/V 14 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.41** | 69300 | 2.0 | 3514 | – | **3/V 16 L4** | **–** | **BN 112M 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.44** | 64100 | 2.1 | 3250 | – | **3/V 16 L4** | **–** | **BN 112M 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.45** | 65100 | 1.2 | 3182 | – | **3/V 14 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.51** | 54800 | 1.5 | 2782 | – | **3/V 14 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.52** | 52600 | 1.1 | 2773 | – | **3/V 13 L4** | **–** | **BN 112M 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.52** | 54000 | 2.1 | 2738 | – | **3/V 16 L4** | **–** | **BN 112M 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.57** | 52000 | 0.9 | 2510 | – | **3/V 11 L4** | **–** | **BN 112M 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.57** | 47500 | 1.8 | 2504 | – | **3/V 14 L4** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.59** | 45700 | 1.1 | 2430 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.62** | 43600 | 1.5 | 2318 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.71** | 38000 | 1.5 | 2019 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.72** | 37500 | 1.9 | 1994 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.73** | 36900 | 1.2 | 1963 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.85** | 32500 | 1.8 | 1682 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.86** | 32100 | 2.4 | 1662 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.86** | 34700 | 1.0 | 1657 | – | **3/V 10 L4** | **–** | **BN 112M 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.86** | 34700 | 1.0 | 1657 | – | **3/V 10 L4** | **–** | **BN 112M 4** | **–** | – | – | 133000 | 166000 | 65000 | 340 |
| **0.87** | 31600 | 1.4 | 1636 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.90** | 29900 | 1.9 | 1589 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **1.0** | 27400 | 2.1 | 1418 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 190500 | 225400 | 78500 | 364 |
| **1.0** | 26600 | 1.7 | 1378 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 152900 | 190400 | 63200 | 352 |
| **1.1** | 25200 | 1.9 | 1339 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 199900 | 234700 | 86700 | 376 |
| **1.1** | 25600 | 2.4 | 1324 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 199300 | 233900 | 86300 | 376 |
| **1.1** | 24900 | 2.1 | 1291 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 185200 | 219200 | 76100 | 364 |
| **1.1** | 24600 | 1.4 | 1274 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 149300 | 186000 | 61600 | 352 |
| **1.2** | 24000 | 0.9 | 1227 | – | **3/V 10 L3** | **–** | **BN 112M 4** | **–** | – | – | 124900 | 157100 | 60800 | 340 |
| **1.3** | 21900 | 1.3 | 1120 | – | **3/V 10 L3** | **–** | **BN 112M 4** | **–** | – | – | 121600 | 152800 | 59000 | 340 |
| **1.3** | 21500 | 2.4 | 1116 | – | **3/V 14 L3** | **–** | **BN 112M 4** | **–** | – | – | 189300 | 222200 | 81500 | 376 |
| **1.3** | 21000 | 2.4 | 1088 | – | **3/V 13 L3** | **–** | **BN 112M 4** | **–** | – | – | 175900 | 208200 | 71900 | 364 |
| **1.4** | 18900 | 1.9 | 1004 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 139000 | 173200 | 56900 | 352 |
| **1.4** | 19600 | 0.9 | 1004 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 99300 | 128000 | 31500 | 352 |
| **1.4** | 19600 | 1.6 | 1004 | – | **3/V 10 L3** | **–** | **BN 112M 4** | **–** | – | – | 117600 | 147900 | 56900 | 340 |
| **1.6** | 18700 | 1.2 | 920 | – | **3/V 10 L3** | **–** | **BN 112M 4** | **–** | – | – | 114600 | 144100 | 55200 | 340 |
| **1.6** | 17400 | 2.4 | 900 | – | **3/V 11 L3** | **–** | **BN 112M 4** | **–** | – | – | 134500 | 167600 | 54800 | 352 |



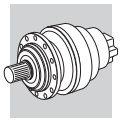
## $P_1$ = 4 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **1.7** | 17100 | 1.2 | 840 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 94100 | 121400 | 29700 | 352 |
| **1.8** | 15600 | 1.4 | 800 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 92700 | 119600 | 29200 | 352 |
| **1.9** | 14900 | 1.0 | 761 | – | **3/V 07 L3** | **–** | **BN 112M 4** | **–** | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| **1.9** | 15500 | 0.9 | 761 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 91300 | 117800 | 28700 | 352 |
| **2.2** | 12800 | 1.1 | 655 | – | **3/V 07 L3** | **–** | **BN 112M 4** | **–** | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |
| **2.2** | 13300 | 1.3 | 655 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 87300 | 112600 | 27300 | 352 |
| **2.8** | 10800 | 1.3 | 507 | – | **3/V 07 L3** | **–** | **BN 112M 4** | **–** | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| **3.1** | 9820 | 1.3 | 460 | – | **3/V 07 L3** | **–** | **BN 112M 4** | **–** | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| **3.2** | 8980 | 2.0 | 442 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 77600 | 100100 | 24000 | 352 |
| **3.4** | 9210 | 1.0 | 427 | – | **3/V 06 L3** | **–** | **BN 112M 4** | **–** | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| **3.5** | 9650 | 0.9 | 405 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| **3.7** | 8540 | 1.1 | 386 | – | **3/V 07 L3** | **–** | **BN 112M 4** | **–** | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| **3.9** | 7530 | 1.7 | 370 | – | **3/V 09 L3** | **–** | **BN 112M 4** | **–** | – | – | 73600 | 94900 | 22600 | 352 |
| **4.2** | 8130 | 1.4 | 341 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 31600 | 39700 | 70700 | 92600 | 27500 | 317 |
| **5.1** | 6710 | 1.3 | 282 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| **5.2** | 6570 | 1.2 | 276 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 26500 | 30000 | 61600 | 71800 | 19900 | 305 |
| **5.9** | 5750 | 1.6 | 241 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 28200 | 35300 | 63700 | 83500 | 24500 | 317 |
| **6.4** | 5310 | 1.7 | 223 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 27400 | 34400 | 62200 | 81500 | 23800 | 317 |
| **6.5** | 5260 | 1.2 | 221 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| **7.2** | 4720 | 1.2 | 198 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 23700 | 26900 | 55800 | 65000 | 17800 | 305 |
| **7.2** | 4710 | 1.8 | 198 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 26300 | 33000 | 60000 | 78600 | 22900 | 317 |
| **7.5** | 4530 | 1.7 | 190 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 23400 | 26500 | 55100 | 64200 | 17600 | 305 |
| **7.9** | 4290 | 2.5 | 180 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| **8.7** | 3900 | 1.7 | 164 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 22300 | 25200 | 52700 | 61400 | 16700 | 305 |
| **9.2** | 3690 | 2.4 | 155 | – | **–** | **3/A 07 L2** | **BN 112M 4** | **M 3LC 4** | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| **10.2** | 3360 | 2.3 | 141 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 21200 | 24000 | 50400 | 58700 | 15900 | 305 |
| **10.2** | 3460 | 1.0 | 141 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| **11.5** | 3070 | 1.8 | 125 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 20300 | 23000 | 48600 | 56500 | 15300 | 305 |
| **11.8** | 2980 | 1.2 | 121 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 16200 | 18700 | 29400 | 35400 | 10400 | 293 |
| **12.7** | 2670 | 2.3 | 112 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 19600 | 22200 | 47100 | 54800 | 14700 | 305 |
| **13.8** | 2550 | 1.2 | 104 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| **14.0** | 2510 | 1.0 | 102 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| **14.6** | 2420 | 2.2 | 98.3 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 18800 | 21300 | 45200 | 52700 | 14100 | 305 |
| **15.8** | 2230 | 1.1 | 90.7 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| **16.2** | 2180 | 2.8 | 88.5 | – | **–** | **3/A 06 L2** | **BN 112M 4** | **M 3LC 4** | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| **16.7** | 2110 | 1.7 | 85.6 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 14400 | 16600 | 26500 | 31900 | 9240 | 293 |
| **17.5** | 2010 | 1.2 | 81.7 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 14200 | 16400 | 26200 | 31500 | 9100 | 281 |
| **18.9** | 1860 | 1.6 | 75.8 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 13800 | 16000 | 25600 | 30800 | 8870 | 293 |
| **19.5** | 1800 | 1.0 | 73.2 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| **19.7** | 1790 | 1.9 | 72.5 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 13600 | 15700 | 25200 | 30400 | 8740 | 293 |
| **20.9** | 1680 | 1.5 | 68.4 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 13400 | 15400 | 24800 | 29800 | 8580 | 281 |
| **22.7** | 1550 | 1.0 | 62.9 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| **22.8** | 1540 | 2.1 | 62.6 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| **22.9** | 1540 | 1.9 | 62.4 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 13000 | 15000 | 24100 | 29000 | 8320 | 281 |
| **25.1** | 1400 | 2.4 | 57.0 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 12600 | 14500 | 23500 | 28300 | 8070 | 293 |
| **26.2** | 1340 | 1.8 | 54.5 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 12400 | 14300 | 23200 | 27900 | 7950 | 281 |
| **26.9** | 1310 | 2.3 | 53.3 | – | **–** | **3/A 05 L2** | **BN 112M 4** | **M 3LC 4** | 12300 | 14200 | 23000 | 27700 | 7890 | 293 |
| **27.2** | 1290 | 1.3 | 52.5 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **27.2** | 1290 | 1.3 | 52.5 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| **28.8** | 1220 | 1.9 | 49.7 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 12000 | 13900 | 22500 | 27100 | 7710 | 281 |
| **32** | 1090 | 2.6 | 44.3 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| **33** | 1070 | 1.7 | 43.4 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 11500 | 13300 | 21600 | 26000 | 7370 | 269 |
| **35** | 1000 | 1.7 | 40.5 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 11200 | 13000 | 21200 | 25500 | 7200 | 269 |
| **37** | 960 | 2.4 | 39.1 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 11100 | 12800 | 21000 | 25200 | 7120 | 281 |
| **41** | 870 | 2.6 | 35.3 | – | **–** | **3/A 04 L2** | **BN 112M 4** | **M 3LC 4** | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| **43** | 820 | 2.2 | 33.5 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 10500 | 12200 | 20000 | 24100 | 6760 | 269 |
| **46** | 770 | 1.5 | 31.2 | – | **–** | **3/A 01 L2** | **BN 112M 4** | **M 3LC 4** | 3340 | 3340 | 9600 | 11000 | 2200 | 259 |
| **50** | 710 | 2.2 | 28.8 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 10000 | 11600 | 19100 | 23000 | 6430 | 269 |
| **61** | 580 | 1.0 | 23.4 | – | **–** | **3/A 00 L2** | **BN 112M 4** | **M 3LC 4** | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |
| **62** | 570 | 1.5 | 23.0 | – | **–** | **3/A 01 L2** | **BN 112M 4** | **M 3LC 4** | 3020 | 3020 | 8760 | 10100 | 1990 | 259 |
| **62** | 560 | 2.2 | 23.0 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 9290 | 10700 | 17900 | 21500 | 5960 | 269 |
| **74** | 480 | 2.2 | 19.4 | – | **–** | **3/A 03 L2** | **BN 112M 4** | **M 3LC 4** | 8790 | 10100 | 17000 | 20500 | 5640 | 269 |
| **75** | 470 | 1.0 | 19.1 | – | **–** | **3/A 00 L2** | **BN 112M 4** | **M 3LC 4** | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |
| **76** | 465 | 1.5 | 18.8 | – | **–** | **3/A 01 L2** | **BN 112M 4** | **M 3LC 4** | 2830 | 2830 | 8250 | 9470 | 1860 | 259 |



## $P_1$ = 5.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.28** | 139100 | 2.0 | 5099 | – | **3/V 18 L4** | **–** | **BN 132S 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.29** | 135500 | 1.1 | 4970 | – | **3/V 17 L4** | **–** | **BN 132S 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.29** | 130100 | 1.0 | 4950 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.32** | 124500 | 2.9 | 4457 | – | **3/V 19 L4** | **–** | **BN 132S 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.32** | 111100 | 1.8 | 4449 | – | **3/V 17 L4** | **–** | **BN 132S 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.33** | 119600 | 2.3 | 4386 | – | **3/V 18 L4** | **–** | **BN 132S 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.35** | 109600 | 1.0 | 4171 | – | **3/V 15 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.35** | 109600 | 1.3 | 4171 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.35** | 112600 | 1.6 | 4129 | – | **3/V 17 L4** | **–** | **BN 132S 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.39** | 100800 | 2.8 | 3696 | – | **3/V 18 L4** | **–** | **BN 132S 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.41** | 92400 | 1.5 | 3514 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.41** | 95300 | 2.9 | 3495 | – | **3/V 18 L4** | **–** | **BN 132S 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.41** | 96300 | 1.0 | 3489 | – | **3/V 15 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.44** | 91100 | 1.2 | 3300 | – | **3/V 15 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.44** | 85400 | 1.6 | 3250 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.45** | 86800 | 0.9 | 3182 | – | **3/V 14 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.45** | 86400 | 2.2 | 3168 | – | **3/V 17 L4** | **–** | **BN 132S 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.52** | 73100 | 1.1 | 2782 | – | **3/V 14 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.52** | 76700 | 1.4 | 2780 | – | **3/V 15 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.52** | 71100 | 2.3 | 2773 | – | **3/V 17 L4** | **–** | **BN 132S 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.53** | 72000 | 1.6 | 2738 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.58** | 63300 | 1.3 | 2504 | – | **3/V 14 L4** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.61** | 64700 | 2.1 | 2343 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.62** | 58100 | 1.1 | 2318 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.62** | 57300 | 1.5 | 2318 | – | **3/V 15 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.66** | 59800 | 2.1 | 2167 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.71** | 50600 | 1.1 | 2019 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.72** | 50000 | 1.4 | 1994 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.72** | 49300 | 1.9 | 1994 | – | **3/V 15 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.79** | 50400 | 2.1 | 1826 | – | **3/V 16 L4** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.86** | 43300 | 1.3 | 1682 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.87** | 42800 | 1.8 | 1662 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.87** | 42800 | 2.3 | 1662 | – | **3/V 15 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.88** | 42100 | 1.0 | 1636 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 157000 | 195000 | 65000 | 352 |
| **0.89** | 42800 | 1.1 | 1620 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.91** | 39800 | 1.4 | 1589 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.91** | 40900 | 2.7 | 1589 | – | **3/V 16 L3** | **–** | **BN 132S 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **1.0** | 36500 | 1.6 | 1418 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 190500 | 225400 | 78500 | 364 |
| **1.0** | 36000 | 2.4 | 1400 | – | **3/V 15 L3** | **–** | **BN 132S 4** | **–** | – | – | 202600 | 237900 | 88000 | 388 |
| **1.0** | 35500 | 1.3 | 1378 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 152900 | 190400 | 63200 | 352 |
| **1.1** | 33600 | 1.4 | 1339 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 199900 | 234700 | 86700 | 376 |
| **1.1** | 35100 | 2.8 | 1329 | – | **3/V 15 L3** | **–** | **BN 132S 4** | **–** | – | – | 199500 | 234200 | 86400 | 388 |
| **1.1** | 34100 | 1.8 | 1324 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 199300 | 233900 | 86300 | 376 |
| **1.1** | 33200 | 1.6 | 1291 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 185200 | 219200 | 76100 | 364 |
| **1.1** | 32800 | 1.1 | 1274 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 149300 | 186000 | 61600 | 352 |
| **1.3** | 29200 | 1.0 | 1120 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 121600 | 152800 | 59000 | 340 |
| **1.3** | 28700 | 1.8 | 1116 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 189300 | 222200 | 81500 | 376 |
| **1.3** | 29100 | 1.5 | 1103 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 143000 | 178100 | 58700 | 352 |
| **1.3** | 28000 | 1.8 | 1088 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 175900 | 208200 | 71900 | 364 |
| **1.4** | 28400 | 1.9 | 1009 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 172000 | 203600 | 70100 | 364 |
| **1.4** | 25200 | 1.4 | 1004 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 139000 | 173200 | 56900 | 352 |
| **1.4** | 26200 | 1.2 | 1004 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 117600 | 147900 | 56900 | 340 |
| **1.4** | 28000 | 2.2 | 997 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 183000 | 214800 | 78500 | 376 |
| **1.6** | 23200 | 1.8 | 900 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 134500 | 167600 | 54800 | 352 |
| **1.6** | 23600 | 2.3 | 893 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 177000 | 207800 | 75700 | 376 |
| **1.7** | 23000 | 2.3 | 870 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 164500 | 194700 | 66700 | 364 |
| **1.7** | 23200 | 1.8 | 827 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 131100 | 163400 | 53300 | 352 |
| **1.8** | 20900 | 1.0 | 800 | – | **3/V 09 L3** | **–** | **BN 132S 4** | **–** | – | – | 92700 | 119600 | 29200 | 352 |
| **1.8** | 22300 | 2.2 | 794 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 170900 | 200700 | 72800 | 376 |
| **1.9** | 22000 | 1.0 | 773 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 108700 | 136700 | 52100 | 340 |
| **1.9** | 19600 | 2.3 | 741 | – | **3/V 13 L3** | **–** | **BN 132S 4** | **–** | – | – | 156800 | 185500 | 63200 | 364 |
| **2.0** | 19000 | 2.1 | 720 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 125800 | 156700 | 50900 | 352 |
| **2.1** | 20700 | 1.1 | 701 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 105600 | 132800 | 50400 | 340 |
| **2.1** | 18400 | 2.3 | 695 | – | **3/V 14 L3** | **–** | **BN 132S 4** | **–** | – | – | 164300 | 192800 | 69700 | 376 |
| **2.2** | 17700 | 1.0 | 655 | – | **3/V 09 L3** | **–** | **BN 132S 4** | **–** | – | – | 87300 | 112600 | 27300 | 352 |

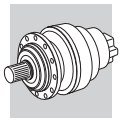


## $P_1$ = 5.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **2.2** | 18100 | 2.2 | 644 | – | **3/V 11 L3** | **–** | **BN 132S 4** | **–** | – | – | 121700 | 151600 | 49000 | 352 |
| **2.3** | 17500 | 1.2 | 614 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 101500 | 127600 | 48300 | 340 |
| **2.6** | 15900 | 1.6 | 560 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 98700 | 124100 | 46800 | 340 |
| **2.8** | 14400 | 0.9 | 507 | – | **3/V 07 L3** | **–** | **BN 132S 4** | **–** | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| **2.8** | 14400 | 1.0 | 507 | – | **3/V 09 L3** | **–** | **BN 132S 4** | **–** | – | – | 80900 | 104300 | 25100 | 352 |
| **2.8** | 14400 | 1.8 | 507 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 95800 | 120500 | 45300 | 340 |
| **3.1** | 13100 | 0.9 | 460 | – | **3/V 07 L3** | **–** | **BN 132S 4** | **–** | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| **3.3** | 12000 | 1.5 | 442 | – | **3/V 09 L3** | **–** | **BN 132S 4** | **–** | – | – | 77600 | 100100 | 24000 | 352 |
| **3.3** | 12400 | 2.2 | 436 | – | **3/V 10 L3** | **–** | **BN 132S 4** | **–** | – | – | 91600 | 115200 | 43100 | 340 |
| **3.9** | 10000 | 1.3 | 370 | – | **3/V 09 L3** | **–** | **BN 132S 4** | **–** | – | – | 73600 | 94900 | 22600 | 352 |
| **4.2** | 10800 | 1.1 | 341 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 31600 | 39700 | 70700 | 92600 | 27500 | 317 |
| **5.1** | 8950 | 1.0 | 282 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| **6.0** | 7670 | 1.2 | 241 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 28200 | 35300 | 63700 | 83500 | 24500 | 317 |
| **6.5** | 7080 | 1.3 | 223 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 27400 | 34400 | 62200 | 81500 | 23800 | 317 |
| **6.5** | 7010 | 0.9 | 221 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| **7.3** | 6280 | 1.4 | 198 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 26300 | 33000 | 60000 | 78600 | 22900 | 317 |
| **7.6** | 6030 | 1.3 | 190 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 23400 | 26500 | 55100 | 64200 | 17600 | 305 |
| **8.0** | 5720 | 1.9 | 180 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| **8.8** | 5200 | 1.2 | 164 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 22300 | 25200 | 52700 | 61400 | 16700 | 305 |
| **9.3** | 4920 | 1.8 | 155 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| **10.2** | 4470 | 1.7 | 141 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 21200 | 24000 | 50400 | 58700 | 15900 | 305 |
| **10.3** | 4460 | 2.5 | 140 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| **11.1** | 4120 | 2.7 | 130 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| **11.6** | 4090 | 1.3 | 125 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 20300 | 23000 | 48600 | 56500 | 15300 | 305 |
| **12.8** | 3570 | 1.7 | 112 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 19600 | 22200 | 47100 | 54800 | 14700 | 305 |
| **13.2** | 3450 | 2.6 | 109 | – | **–** | **3/A 07 L2** | **BN 132S 4** | **–** | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| **13.9** | 3400 | 0.9 | 104 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| **14.7** | 3230 | 1.7 | 98.3 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 18800 | 21300 | 45200 | 52700 | 14100 | 305 |
| **16.3** | 2910 | 2.1 | 88.5 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| **16.8** | 2810 | 1.3 | 85.6 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 14400 | 16600 | 26500 | 31900 | 9240 | 293 |
| **17.7** | 2670 | 2.4 | 81.2 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 17600 | 20000 | 42700 | 49700 | 13200 | 305 |
| **19.0** | 2490 | 1.2 | 75.8 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 13800 | 16000 | 25600 | 30800 | 8870 | 293 |
| **19.9** | 2380 | 1.4 | 72.5 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 13600 | 15700 | 25200 | 30400 | 8740 | 293 |
| **20.6** | 2290 | 2.5 | 69.9 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| **21.0** | 2250 | 1.1 | 68.4 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 13400 | 15400 | 24800 | 29800 | 8580 | 281 |
| **23.0** | 2060 | 1.6 | 62.6 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| **23.1** | 2050 | 1.4 | 62.4 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 13000 | 15000 | 24100 | 29000 | 8320 | 281 |
| **25.2** | 1870 | 1.8 | 57.0 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 12600 | 14500 | 23500 | 28300 | 8070 | 293 |
| **25.9** | 1830 | 2.5 | 55.7 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |
| **26.4** | 1790 | 1.3 | 54.5 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 12400 | 14300 | 23200 | 27900 | 7950 | 281 |
| **27.0** | 1750 | 1.7 | 53.3 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 12300 | 14200 | 23000 | 27700 | 7890 | 293 |
| **29.0** | 1630 | 1.4 | 49.7 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 12000 | 13900 | 22500 | 27100 | 7710 | 281 |
| **31** | 1550 | 2.5 | 47.2 | – | **–** | **3/A 06 L2** | **BN 132S 4** | **–** | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| **33** | 1450 | 2.0 | 44.3 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| **33** | 1440 | 2.3 | 44.0 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 11500 | 13300 | 21700 | 26100 | 7400 | 293 |
| **37** | 1280 | 1.8 | 39.1 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 11100 | 12800 | 21000 | 25200 | 7120 | 281 |
| **37** | 1280 | 2.4 | 39.0 | – | **–** | **3/A 05 L2** | **BN 132S 4** | **–** | 11100 | 12800 | 21000 | 25200 | 7110 | 293 |
| **41** | 1160 | 2.0 | 35.3 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| **48** | 990 | 2.3 | 30.2 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 10200 | 11700 | 19400 | 23300 | 6530 | 281 |
| **56** | 840 | 2.3 | 25.6 | – | **–** | **3/A 04 L2** | **BN 132S 4** | **–** | 9630 | 11100 | 18500 | 22200 | 6180 | 281 |

## $P_1$ = 7.5 kW

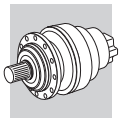
| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.28** | 183800 | 2.2 | 5164 | – | **3/V 19 L4** | **–** | **BN 132MA 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.28** | 193100 | 1.5 | 5099 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.32** | 172900 | 2.1 | 4457 | – | **3/V 19 L4** | **–** | **BN 132MA 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.32** | 154300 | 1.3 | 4449 | – | **3/V 17 L4** | **–** | **BN 132MA 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.33** | 166100 | 1.7 | 4386 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.35** | 152300 | 0.9 | 4171 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.35** | 156400 | 1.2 | 4129 | – | **3/V 17 L4** | **–** | **BN 132MA 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |



A

## $P_1$ = 7.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.35** | 155100 | 2.5 | 4095 | – | **3/V 19 L4** | **–** | **BN 132MA 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.39** | 140000 | 2.0 | 3696 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.41** | 128300 | 1.1 | 3514 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.41** | 132400 | 2.1 | 3495 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.44** | 118600 | 1.1 | 3250 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.45** | 125300 | 2.9 | 3231 | – | **3/V 19 L4** | **–** | **BN 132MA 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.45** | 120000 | 1.6 | 3168 | – | **3/V 17 L4** | **–** | **BN 132MA 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.49** | 111600 | 2.4 | 2945 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.52** | 106600 | 1.0 | 2780 | – | **3/V 15 L4** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.52** | 98700 | 1.7 | 2773 | – | **3/V 17 L4** | **–** | **BN 132MA 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.53** | 100000 | 1.1 | 2738 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.58** | 88000 | 0.9 | 2504 | – | **3/V 14 L4** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.58** | 95600 | 2.9 | 2464 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.61** | 89800 | 1.5 | 2343 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.62** | 79600 | 1.0 | 2318 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.63** | 86900 | 2.4 | 2295 | – | **3/V 18 L4** | **–** | **BN 132MA 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.66** | 83100 | 1.5 | 2167 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.72** | 69400 | 1.0 | 1994 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.72** | 68500 | 1.4 | 1994 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.79** | 70000 | 1.5 | 1826 | – | **3/V 16 L4** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.86** | 60100 | 1.0 | 1682 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 192000 | 231000 | 80000 | 364 |
| **0.87** | 59400 | 1.3 | 1662 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.87** | 59400 | 1.7 | 1662 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.91** | 55300 | 1.0 | 1589 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.91** | 56800 | 2.0 | 1589 | – | **3/V 16 L3** | **–** | **BN 132MA 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **1.0** | 50700 | 1.1 | 1418 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 190500 | 225400 | 78500 | 364 |
| **1.0** | 50100 | 1.7 | 1400 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 202600 | 237900 | 88000 | 388 |
| **1.0** | 49300 | 0.9 | 1378 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 152900 | 190400 | 63200 | 352 |
| **1.1** | 46600 | 1.0 | 1339 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 199900 | 234700 | 86700 | 376 |
| **1.1** | 48800 | 2.0 | 1329 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 199500 | 234200 | 86400 | 388 |
| **1.1** | 47300 | 1.3 | 1324 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 199300 | 233900 | 86300 | 376 |
| **1.1** | 47300 | 2.4 | 1324 | – | **3/V 16 L3** | **–** | **BN 132MA 4** | **–** | – | – | 331300 | 368500 | 143900 | 400 |
| **1.1** | 46100 | 1.1 | 1291 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 185200 | 219200 | 76100 | 364 |
| **1.3** | 41100 | 2.2 | 1120 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 189500 | 222500 | 81600 | 388 |
| **1.3** | 39900 | 1.3 | 1116 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 189300 | 222200 | 81500 | 376 |
| **1.3** | 40500 | 1.1 | 1103 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 143000 | 178100 | 58700 | 352 |
| **1.3** | 38900 | 1.3 | 1088 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 175900 | 208200 | 71900 | 364 |
| **1.4** | 39400 | 1.4 | 1009 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 172000 | 203600 | 70100 | 364 |
| **1.4** | 35000 | 1.0 | 1004 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 139000 | 173200 | 56900 | 352 |
| **1.4** | 38900 | 1.6 | 997 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 183000 | 214800 | 78500 | 376 |
| **1.4** | 38900 | 2.4 | 997 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 183000 | 214800 | 78500 | 388 |
| **1.6** | 32200 | 1.3 | 900 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 134500 | 167600 | 54800 | 352 |
| **1.6** | 32800 | 1.7 | 893 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 177000 | 207800 | 75700 | 376 |
| **1.7** | 31900 | 1.7 | 870 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 164500 | 194700 | 66700 | 364 |
| **1.7** | 32800 | 2.5 | 840 | – | **3/V 15 L3** | **–** | **BN 132MA 4** | **–** | – | – | 173800 | 204100 | 74200 | 388 |
| **1.7** | 32300 | 1.3 | 827 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 131100 | 163400 | 53300 | 352 |
| **1.8** | 31000 | 1.6 | 794 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 170900 | 200700 | 72800 | 376 |
| **1.9** | 27200 | 1.7 | 741 | – | **3/V 13 L3** | **–** | **BN 132MA 4** | **–** | – | – | 156800 | 185500 | 63200 | 364 |
| **2.0** | 26400 | 1.5 | 720 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 125800 | 156700 | 50900 | 352 |
| **2.1** | 25500 | 1.7 | 695 | – | **3/V 14 L3** | **–** | **BN 132MA 4** | **–** | – | – | 164300 | 192800 | 69700 | 376 |
| **2.2** | 25200 | 1.6 | 644 | – | **3/V 11 L3** | **–** | **BN 132MA 4** | **–** | – | – | 121700 | 151600 | 49000 | 352 |
| **2.6** | 22100 | 1.2 | 560 | – | **3/V 10 L3** | **–** | **BN 132MA 4** | **–** | – | – | 98700 | 124100 | 46800 | 340 |
| **2.8** | 20000 | 1.3 | 507 | – | **3/V 10 L3** | **–** | **BN 132MA 4** | **–** | – | – | 95800 | 120500 | 45300 | 340 |
| **3.3** | 16600 | 1.1 | 442 | – | **3/V 09 L3** | **–** | **BN 132MA 4** | **–** | – | – | 77600 | 100100 | 24000 | 352 |
| **3.3** | 17200 | 1.5 | 436 | – | **3/V 10 L3** | **–** | **BN 132MA 4** | **–** | – | – | 91600 | 115200 | 43100 | 340 |
| **3.9** | 13900 | 0.9 | 370 | – | **3/V 09 L3** | **–** | **BN 132MA 4** | **–** | – | – | 73600 | 94900 | 22600 | 352 |
| **6.5** | 9840 | 0.9 | 223 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 27400 | 34400 | 62200 | 81500 | 23800 | 317 |
| **7.3** | 8720 | 1.0 | 198 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 26300 | 33000 | 60000 | 78600 | 22900 | 317 |
| **7.6** | 8380 | 0.9 | 190 | – | **–** | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 23400 | 26500 | 55100 | 64200 | 17600 | 305 |
| **8.0** | 7950 | 1.4 | 180 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| **9.3** | 6840 | 1.3 | 155 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| **10.2** | 6210 | 1.2 | 141 | – | **–** | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 21200 | 24000 | 50400 | 58700 | 15900 | 305 |
| **10.3** | 6190 | 1.8 | 140 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| **11.1** | 5720 | 1.9 | 130 | – | **–** | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| **11.6** | 5680 | 1.0 | 125 | – | **–** | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 20300 | 23000 | 48600 | 56500 | 15300 | 305 |

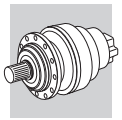


## $P_1$ = 7.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **12.8** | 4950 | 1.2 | 112 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 19600 | 22200 | 47100 | 54800 | 14700 | 305 |
| **13.2** | 4800 | 1.8 | 109 | – | – | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| **14.7** | 4480 | 1.2 | 98.3 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 18800 | 21300 | 45200 | 52700 | 14100 | 305 |
| **16.3** | 4040 | 1.5 | 88.5 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| **16.4** | 4000 | 2.6 | 87.7 | – | – | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| **16.8** | 3900 | 0.9 | 85.6 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 14400 | 16600 | 26500 | 31900 | 9240 | 293 |
| **17.7** | 3700 | 1.8 | 81.2 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 17600 | 20000 | 42700 | 49700 | 13200 | 305 |
| **19.9** | 3310 | 1.0 | 72.5 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 13600 | 15700 | 25200 | 30400 | 8740 | 293 |
| **20.6** | 3190 | 1.8 | 69.9 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| **21.1** | 3110 | 2.5 | 68.3 | – | – | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| **23.0** | 2850 | 1.1 | 62.6 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| **23.1** | 2840 | 1.0 | 62.4 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 13000 | 15000 | 24100 | 29000 | 8320 | 281 |
| **23.9** | 2740 | 2.2 | 60.1 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| **25.1** | 2610 | 2.5 | 57.3 | – | – | **3/A 07 L2** | **BN 132MA 4** | **M 4LA 4** | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| **25.2** | 2600 | 1.3 | 57.0 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 12600 | 14500 | 23500 | 28300 | 8070 | 293 |
| **25.9** | 2540 | 1.8 | 55.7 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |
| **26.4** | 2490 | 1.0 | 54.5 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 12400 | 14300 | 23200 | 27900 | 7950 | 281 |
| **27.0** | 2430 | 1.3 | 53.3 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 12300 | 14200 | 23000 | 27700 | 7890 | 293 |
| **27.8** | 2360 | 2.2 | 51.7 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| **29.0** | 2270 | 1.0 | 49.7 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 12000 | 13900 | 22500 | 27100 | 7710 | 281 |
| **31** | 2150 | 1.8 | 47.2 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| **33** | 2020 | 1.4 | 44.3 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| **33** | 2010 | 1.6 | 44.0 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 11500 | 13300 | 21700 | 26100 | 7400 | 293 |
| **35** | 1870 | 2.6 | 41.1 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **37** | 1780 | 1.3 | 39.1 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 11100 | 12800 | 21000 | 25200 | 7120 | 281 |
| **37** | 1780 | 1.7 | 39.0 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 11100 | 12800 | 21000 | 25200 | 7110 | 293 |
| **41** | 1610 | 1.4 | 35.3 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| **41** | 1590 | 2.2 | 34.9 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| **44** | 1490 | 2.6 | 32.7 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 1470 | 2.3 | 32.2 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 10400 | 12000 | 19800 | 23800 | 6670 | 293 |
| **48** | 1380 | 1.7 | 30.2 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 10200 | 11700 | 19400 | 23300 | 6530 | 281 |
| **52** | 1260 | 2.2 | 27.7 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 281 |
| **52** | 1260 | 2.3 | 27.7 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 293 |
| **52** | 1260 | 2.6 | 27.7 | – | – | **3/A 06 L2** | **BN 132MA 4** | **M 4LA 4** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **56** | 1170 | 1.6 | 25.6 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 9630 | 11100 | 18500 | 22200 | 6180 | 281 |
| **65** | 1010 | 2.3 | 22.1 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 281 |
| **65** | 1010 | 2.3 | 22.1 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 293 |
| **77** | 850 | 2.2 | 18.7 | – | – | **3/A 04 L2** | **BN 132MA 4** | **M 4LA 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 281 |
| **77** | 850 | 2.2 | 18.7 | – | – | **3/A 05 L2** | **BN 132MA 4** | **M 4LA 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 293 |

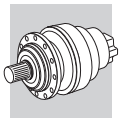
## $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.28** | 224200 | 1.8 | 5164 | – | **3/V 19 L4** | – | **BN 132MB 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.28** | 235600 | 1.2 | 5099 | – | **3/V 18 L4** | – | **BN 132MB 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.29** | 221700 | 2.5 | 5040 | – | **3/V 21 L4** | – | **BN 132MB 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 212800 | 2.6 | 4550 | – | **3/V 21 L4** | – | **BN 132MB 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 210900 | 1.7 | 4457 | – | **3/V 19 L4** | – | **BN 132MB 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.32** | 188200 | 1.1 | 4449 | – | **3/V 17 L4** | – | **BN 132MB 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.33** | 202700 | 1.4 | 4386 | – | **3/V 18 L4** | – | **BN 132MB 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.35** | 190800 | 1.0 | 4129 | – | **3/V 17 L4** | – | **BN 132MB 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.35** | 189200 | 2.0 | 4095 | – | **3/V 19 L4** | – | **BN 132MB 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.38** | 176800 | 2.6 | 3780 | – | **3/V 21 L4** | – | **BN 132MB 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.39** | 170800 | 1.6 | 3696 | – | **3/V 18 L4** | – | **BN 132MB 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.41** | 161500 | 1.7 | 3495 | – | **3/V 18 L4** | – | **BN 132MB 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.44** | 144700 | 0.9 | 3250 | – | **3/V 16 L4** | – | **BN 132MB 4** | – | – | – | 345000 | 385000 | 150000 | 400 |
| **0.45** | 152900 | 2.4 | 3231 | – | **3/V 19 L4** | – | **BN 132MB 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.45** | 146400 | 1.3 | 3168 | – | **3/V 17 L4** | – | **BN 132MB 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.49** | 136100 | 2.0 | 2945 | – | **3/V 18 L4** | – | **BN 132MB 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.52** | 120400 | 1.4 | 2773 | – | **3/V 17 L4** | – | **BN 132MB 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.53** | 122000 | 0.9 | 2738 | – | **3/V 16 L4** | – | **BN 132MB 4** | – | – | – | 345000 | 385000 | 150000 | 400 |



## $P_1$ = 9.2 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.56** | 122200 | 3.0 | 2582 | – | **3/V 19 L4** | **–** | **BN 132MB 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.58** | 116600 | 2.4 | 2464 | – | **3/V 18 L4** | **–** | **BN 132MB 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.61** | 109600 | 1.3 | 2343 | – | **3/V 16 L4** | **–** | **BN 132MB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.63** | 106000 | 2.0 | 2295 | – | **3/V 18 L4** | **–** | **BN 132MB 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.66** | 101300 | 1.3 | 2167 | – | **3/V 16 L4** | **–** | **BN 132MB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.72** | 83500 | 1.1 | 1994 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.79** | 85400 | 1.3 | 1826 | – | **3/V 16 L4** | **–** | **BN 132MB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.87** | 72500 | 1.0 | 1662 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 206000 | 243000 | 90000 | 376 |
| **0.87** | 72500 | 1.4 | 1662 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 206000 | 243000 | 90000 | 388 |
| **0.91** | 69300 | 1.6 | 1589 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **1.0** | 61800 | 0.9 | 1418 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 190500 | 225400 | 78500 | 364 |
| **1.0** | 61100 | 1.4 | 1400 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 202600 | 237900 | 88000 | 388 |
| **1.1** | 61900 | 2.5 | 1365 | – | **3/V 17 L3** | **–** | **BN 132MB 4** | **–** | – | – | 429900 | 457700 | 145400 | 410 |
| **1.1** | 59500 | 1.6 | 1329 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 199500 | 234200 | 86400 | 388 |
| **1.1** | 57800 | 1.1 | 1324 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 199300 | 233900 | 86300 | 376 |
| **1.1** | 57800 | 1.9 | 1324 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 331300 | 368500 | 143900 | 400 |
| **1.1** | 56300 | 0.9 | 1291 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 185200 | 219200 | 76100 | 364 |
| **1.2** | 58600 | 2.6 | 1215 | – | **3/V 17 L3** | **–** | **BN 132MB 4** | **–** | – | – | 415100 | 442000 | 139800 | 410 |
| **1.3** | 51400 | 2.5 | 1134 | – | **3/V 17 L3** | **–** | **BN 132MB 4** | **–** | – | – | 406600 | 432900 | 136600 | 410 |
| **1.3** | 50100 | 1.8 | 1120 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 189500 | 222500 | 81600 | 388 |
| **1.3** | 48700 | 1.1 | 1116 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 189300 | 222200 | 81500 | 376 |
| **1.3** | 47400 | 1.1 | 1088 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 175900 | 208200 | 71900 | 364 |
| **1.4** | 48000 | 2.5 | 1059 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 309800 | 344600 | 133600 | 400 |
| **1.4** | 49400 | 2.6 | 1024 | – | **3/V 17 L3** | **–** | **BN 132MB 4** | **–** | – | – | 394300 | 419900 | 132100 | 410 |
| **1.4** | 48100 | 1.1 | 1009 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 172000 | 203600 | 70100 | 364 |
| **1.4** | 47500 | 1.3 | 997 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 183000 | 214800 | 78500 | 376 |
| **1.4** | 47500 | 2.0 | 997 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 183000 | 214800 | 78500 | 388 |
| **1.6** | 39300 | 1.0 | 900 | – | **3/V 11 L3** | **–** | **BN 132MB 4** | **–** | – | – | 134500 | 167600 | 54800 | 352 |
| **1.6** | 40000 | 1.4 | 893 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 177000 | 207800 | 75700 | 376 |
| **1.6** | 40500 | 2.5 | 893 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 294300 | 327300 | 126200 | 400 |
| **1.7** | 38900 | 1.4 | 870 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 164500 | 194700 | 66700 | 364 |
| **1.7** | 41000 | 2.6 | 851 | – | **3/V 17 L3** | **–** | **BN 132MB 4** | **–** | – | – | 373000 | 397100 | 124200 | 410 |
| **1.7** | 40000 | 2.0 | 840 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 173800 | 204100 | 74200 | 388 |
| **1.7** | 39400 | 1.1 | 827 | – | **3/V 11 L3** | **–** | **BN 132MB 4** | **–** | – | – | 131100 | 163400 | 53300 | 352 |
| **1.8** | 37800 | 1.3 | 794 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 170900 | 200700 | 72800 | 376 |
| **1.8** | 38300 | 2.6 | 794 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 284200 | 316100 | 121400 | 400 |
| **1.9** | 33200 | 1.4 | 741 | – | **3/V 13 L3** | **–** | **BN 132MB 4** | **–** | – | – | 156800 | 185500 | 63200 | 364 |
| **2.0** | 32200 | 1.2 | 720 | – | **3/V 11 L3** | **–** | **BN 132MB 4** | **–** | – | – | 125800 | 156700 | 50900 | 352 |
| **2.1** | 31100 | 1.4 | 695 | – | **3/V 14 L3** | **–** | **BN 132MB 4** | **–** | – | – | 164300 | 192800 | 69700 | 376 |
| **2.2** | 32300 | 2.6 | 669 | – | **3/V 16 L3** | **–** | **BN 132MB 4** | **–** | – | – | 270000 | 300300 | 114600 | 400 |
| **2.2** | 32400 | 2.7 | 665 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 162000 | 190200 | 68600 | 388 |
| **2.2** | 30700 | 1.3 | 644 | – | **3/V 11 L3** | **–** | **BN 132MB 4** | **–** | – | – | 121700 | 151600 | 49000 | 352 |
| **2.6** | 27000 | 1.0 | 560 | – | **3/V 10 L3** | **–** | **BN 132MB 4** | **–** | – | – | 98700 | 124100 | 46800 | 340 |
| **2.6** | 27300 | 3.0 | 560 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 153900 | 180700 | 64800 | 388 |
| **2.8** | 24500 | 1.1 | 507 | – | **3/V 10 L3** | **–** | **BN 132MB 4** | **–** | – | – | 95800 | 120500 | 45300 | 340 |
| **3.2** | 21800 | 3.0 | 446 | – | **3/V 15 L3** | **–** | **BN 132MB 4** | **–** | – | – | 143800 | 168800 | 60100 | 388 |
| **3.3** | 21000 | 1.3 | 436 | – | **3/V 10 L3** | **–** | **BN 132MB 4** | **–** | – | – | 91600 | 115200 | 43100 | 340 |
| **8.0** | 9700 | 1.1 | 180 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| **9.3** | 8340 | 1.1 | 155 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| **10.2** | 7580 | 1.0 | 141 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 21200 | 24000 | 50400 | 58700 | 15900 | 305 |
| **10.3** | 7560 | 1.5 | 140 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| **11.1** | 6980 | 1.6 | 130 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| **12.8** | 6040 | 1.0 | 112 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 19600 | 22200 | 47100 | 54800 | 14700 | 305 |
| **13.2** | 5850 | 1.5 | 109 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| **14.7** | 5460 | 1.0 | 98.3 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 18800 | 21300 | 45200 | 52700 | 14100 | 305 |
| **16.3** | 4920 | 1.3 | 88.5 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| **16.4** | 4880 | 2.1 | 87.7 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| **17.7** | 4520 | 1.4 | 81.2 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 17600 | 20000 | 42700 | 49700 | 13200 | 305 |
| **20.6** | 3890 | 1.5 | 69.9 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| **21.1** | 3800 | 2.1 | 68.3 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| **23.0** | 3480 | 0.9 | 62.6 | – | **–** | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| **23.9** | 3340 | 1.8 | 60.1 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| **25.1** | 3180 | 2.1 | 57.3 | – | **–** | **3/A 07 L2** | **BN 132MB 4** | **M 4LB 4** | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| **25.2** | 3170 | 1.0 | 57.0 | – | **–** | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 12600 | 14500 | 23500 | 28300 | 8070 | 293 |
| **25.9** | 3100 | 1.5 | 55.7 | – | **–** | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |

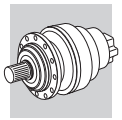


## $P_1$ = 9.2 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **27.0** | 2960 | 1.0 | 53.3 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 12300 | 14200 | 23000 | 27700 | 7890 | 293 |
| **27.8** | 2880 | 1.8 | 51.7 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| **31** | 2620 | 1.5 | 47.2 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| **33** | 2460 | 1.2 | 44.3 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| **33** | 2450 | 1.4 | 44.0 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 11500 | 13300 | 21700 | 26100 | 7400 | 293 |
| **35** | 2280 | 2.1 | 41.1 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **37** | 2170 | 1.0 | 39.1 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 11100 | 12800 | 21000 | 25200 | 7120 | 281 |
| **37** | 2170 | 1.4 | 39.0 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 11100 | 12800 | 21000 | 25200 | 7110 | 293 |
| **41** | 1960 | 1.2 | 35.3 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| **41** | 1940 | 1.8 | 34.9 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| **44** | 1820 | 2.2 | 32.7 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 1790 | 1.8 | 32.2 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 10400 | 12000 | 19800 | 23800 | 6670 | 293 |
| **48** | 1680 | 1.4 | 30.2 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 10200 | 11700 | 19400 | 23300 | 6530 | 281 |
| **52** | 1540 | 1.8 | 27.7 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 281 |
| **52** | 1540 | 1.8 | 27.7 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 293 |
| **52** | 1540 | 2.2 | 27.7 | – | – | **3/A 06 L2** | **BN 132MB 4** | **M 4LB 4** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **56** | 1420 | 1.4 | 25.6 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 9630 | 11100 | 18500 | 22200 | 6180 | 281 |
| **65** | 1230 | 1.8 | 22.1 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 281 |
| **65** | 1230 | 1.8 | 22.1 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 293 |
| **77** | 1040 | 1.8 | 18.7 | – | – | **3/A 04 L2** | **BN 132MB 4** | **M 4LB 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 281 |
| **77** | 1040 | 1.8 | 18.7 | – | – | **3/A 05 L2** | **BN 132MB 4** | **M 4LB 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 293 |

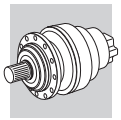
## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.28** | 268300 | 1.5 | 5164 | – | **3/V 19 L4** | – | **BN 160MR 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.28** | 282000 | 1.0 | 5099 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.29** | 265300 | 2.1 | 5040 | – | **3/V 21 L4** | – | **BN 160MR 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 254600 | 2.2 | 4550 | – | **3/V 21 L4** | – | **BN 160MR 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 252400 | 1.4 | 4457 | – | **3/V 19 L4** | – | **BN 160MR 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.33** | 242600 | 1.2 | 4386 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.35** | 226400 | 1.7 | 4095 | – | **3/V 19 L4** | – | **BN 160MR 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.38** | 211500 | 2.2 | 3780 | – | **3/V 21 L4** | – | **BN 160MR 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.39** | 204400 | 1.4 | 3696 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.40** | 206300 | 2.6 | 3600 | – | **3/V 21 L4** | – | **BN 160MR 4** | – | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.41** | 193300 | 1.5 | 3495 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.45** | 183000 | 2.0 | 3231 | – | **3/V 19 L4** | – | **BN 160MR 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.45** | 175200 | 1.1 | 3168 | – | **3/V 17 L4** | – | **BN 160MR 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.49** | 162900 | 1.7 | 2945 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.52** | 144100 | 1.2 | 2773 | – | **3/V 17 L4** | – | **BN 160MR 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.56** | 146200 | 2.5 | 2582 | – | **3/V 19 L4** | – | **BN 160MR 4** | – | – | – | 638000 | 702000 | 200000 | 430 |
| **0.58** | 145700 | 1.1 | 2485 | – | **3/V 17 L4** | – | **BN 160MR 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.58** | 139500 | 2.0 | 2464 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.61** | 131100 | 1.1 | 2343 | – | **3/V 16 L4** | – | **BN 160MR 4** | – | – | – | 345000 | 385000 | 150000 | 400 |
| **0.63** | 126900 | 1.7 | 2295 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.66** | 121300 | 1.1 | 2167 | – | **3/V 16 L4** | – | **BN 160MR 4** | – | – | – | 345000 | 385000 | 150000 | 400 |
| **0.70** | 121100 | 1.5 | 2065 | – | **3/V 17 L4** | – | **BN 160MR 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.72** | 100000 | 0.9 | 1994 | – | **3/V 15 L3** | – | **BN 160MR 4** | – | – | – | 206000 | 243000 | 90000 | 388 |
| **0.78** | 108300 | 2.6 | 1848 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.79** | 102200 | 1.1 | 1826 | – | **3/V 16 L4** | – | **BN 160MR 4** | – | – | – | 345000 | 385000 | 150000 | 400 |
| **0.81** | 100800 | 1.8 | 1780 | – | **3/V 17 L4** | – | **BN 160MR 4** | – | – | – | 442000 | 470000 | 150000 | 410 |
| **0.82** | 102500 | 2.7 | 1748 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 565000 | 200000 | 420 |
| **0.87** | 86700 | 1.1 | 1662 | – | **3/V 15 L3** | – | **BN 160MR 4** | – | – | – | 206000 | 243000 | 90000 | 388 |
| **0.91** | 82900 | 1.4 | 1589 | – | **3/V 16 L3** | – | **BN 160MR 4** | – | – | – | 345000 | 385000 | 150000 | 400 |
| **0.98** | 86300 | 3.0 | 1473 | – | **3/V 18 L4** | – | **BN 160MR 4** | – | – | – | 503000 | 563100 | 198800 | 420 |
| **1.0** | 73100 | 1.2 | 1400 | – | **3/V 15 L3** | – | **BN 160MR 4** | – | – | – | 202600 | 237900 | 88000 | 388 |
| **1.1** | 74100 | 2.1 | 1365 | – | **3/V 17 L3** | – | **BN 160MR 4** | – | – | – | 429900 | 457700 | 145400 | 410 |
| **1.1** | 71200 | 1.4 | 1329 | – | **3/V 15 L3** | – | **BN 160MR 4** | – | – | – | 199500 | 234200 | 86400 | 388 |
| **1.1** | 69100 | 1.6 | 1324 | – | **3/V 16 L3** | – | **BN 160MR 4** | – | – | – | 331300 | 368500 | 143900 | 400 |
| **1.2** | 70100 | 2.2 | 1215 | – | **3/V 17 L3** | – | **BN 160MR 4** | – | – | – | 415100 | 442000 | 139800 | 410 |
| **1.3** | 61500 | 2.1 | 1134 | – | **3/V 17 L3** | – | **BN 160MR 4** | – | – | – | 406600 | 432900 | 136600 | 410 |

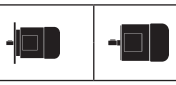


## $P_1$ = 11 kW

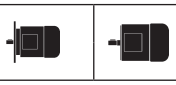
| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **1.3** | 60000 | 1.5 | 1120 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 189500 | 222500 | 81600 | 388 |
| **1.4** | 57500 | 2.1 | 1059 | – | **3/V 16 L3** | **–** | **BN 160MR 4** | **–** | – | – | 309800 | 344600 | 133600 | 400 |
| **1.4** | 59100 | 2.2 | 1024 | – | **3/V 17 L3** | **–** | **BN 160MR 4** | **–** | – | – | 394300 | 419900 | 132100 | 410 |
| **1.4** | 57500 | 0.9 | 1009 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 172000 | 203600 | 70100 | 364 |
| **1.4** | 56800 | 1.1 | 997 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 183000 | 214800 | 78500 | 376 |
| **1.4** | 56800 | 1.6 | 997 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 183000 | 214800 | 78500 | 388 |
| **1.6** | 47800 | 1.2 | 893 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 177000 | 207800 | 75700 | 376 |
| **1.6** | 48400 | 2.1 | 893 | – | **3/V 16 L3** | **–** | **BN 160MR 4** | **–** | – | – | 294300 | 327300 | 126200 | 400 |
| **1.7** | 46600 | 1.2 | 870 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 164500 | 194700 | 66700 | 364 |
| **1.7** | 49100 | 2.2 | 851 | – | **3/V 17 L3** | **–** | **BN 160MR 4** | **–** | – | – | 373000 | 397100 | 124200 | 410 |
| **1.7** | 47900 | 1.7 | 840 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 173800 | 204100 | 74200 | 388 |
| **1.8** | 47300 | 0.9 | 810 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 161100 | 190600 | 65100 | 364 |
| **1.8** | 47800 | 3.0 | 810 | – | **3/V 17 L3** | **–** | **BN 160MR 4** | **–** | – | – | 367600 | 391400 | 122100 | 410 |
| **1.8** | 45300 | 1.1 | 794 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 170900 | 200700 | 72800 | 376 |
| **1.8** | 45800 | 2.2 | 794 | – | **3/V 16 L3** | **–** | **BN 160MR 4** | **–** | – | – | 284200 | 316100 | 121400 | 400 |
| **1.9** | 39700 | 1.2 | 741 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 156800 | 185500 | 63200 | 364 |
| **2.0** | 38600 | 1.0 | 720 | – | **3/V 11 L3** | **–** | **BN 160MR 4** | **–** | – | – | 125800 | 156700 | 50900 | 352 |
| **2.1** | 37300 | 1.2 | 695 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 164300 | 192800 | 69700 | 376 |
| **2.1** | 39300 | 1.3 | 673 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 152300 | 180300 | 61200 | 364 |
| **2.2** | 38600 | 2.2 | 669 | – | **3/V 16 L3** | **–** | **BN 160MR 4** | **–** | – | – | 270000 | 300300 | 114600 | 400 |
| **2.2** | 38800 | 1.8 | 665 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 162000 | 190200 | 68600 | 376 |
| **2.2** | 38800 | 2.3 | 665 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 162000 | 190200 | 68600 | 388 |
| **2.2** | 36700 | 1.1 | 644 | – | **3/V 11 L3** | **–** | **BN 160MR 4** | **–** | – | – | 121700 | 151600 | 49000 | 352 |
| **2.5** | 35000 | 1.6 | 579 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 155500 | 182600 | 65500 | 376 |
| **2.5** | 33100 | 1.5 | 567 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 144700 | 171300 | 57800 | 364 |
| **2.6** | 32700 | 2.5 | 560 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 153900 | 180700 | 64800 | 388 |
| **2.6** | 32200 | 1.2 | 551 | – | **3/V 11 L3** | **–** | **BN 160MR 4** | **–** | – | – | 116100 | 144600 | 46600 | 352 |
| **2.8** | 30100 | 1.7 | 516 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 140700 | 166500 | 56100 | 364 |
| **2.8** | 29800 | 1.2 | 510 | – | **3/V 11 L3** | **–** | **BN 160MR 4** | **–** | – | – | 113400 | 141300 | 45400 | 352 |
| **2.9** | 30100 | 1.9 | 498 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 148600 | 174500 | 62300 | 376 |
| **2.9** | 30100 | 2.8 | 498 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 148600 | 174500 | 62300 | 388 |
| **3.2** | 26100 | 1.8 | 446 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 143800 | 168800 | 60100 | 376 |
| **3.2** | 26100 | 2.5 | 446 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 143800 | 168800 | 60100 | 388 |
| **3.3** | 25200 | 1.1 | 436 | – | **3/V 10 L3** | **–** | **BN 160MR 4** | **–** | – | – | 91600 | 115200 | 43100 | 340 |
| **3.4** | 25100 | 1.6 | 430 | – | **3/V 11 L3** | **–** | **BN 160MR 4** | **–** | – | – | 107800 | 134200 | 42800 | 352 |
| **3.4** | 25700 | 1.8 | 425 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 132700 | 157100 | 52600 | 364 |
| **3.6** | 24000 | 1.9 | 397 | – | **3/V 14 L3** | **–** | **BN 160MR 4** | **–** | – | – | 138800 | 163000 | 57800 | 376 |
| **3.7** | 23600 | 2.9 | 386 | – | **3/V 15 L3** | **–** | **BN 160MR 4** | **–** | – | – | 137700 | 161700 | 57300 | 388 |
| **3.9** | 21600 | 1.8 | 370 | – | **3/V 13 L3** | **–** | **BN 160MR 4** | **–** | – | – | 127300 | 150700 | 50200 | 364 |
| **8.0** | 11600 | 0.9 | 180 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| **9.3** | 9990 | 0.9 | 155 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| **10.3** | 9040 | 1.2 | 140 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| **11.1** | 8360 | 1.3 | 130 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| **13.2** | 7000 | 1.3 | 109 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| **16.3** | 5890 | 1.1 | 88.5 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| **16.4** | 5840 | 1.7 | 87.7 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| **17.7** | 5410 | 1.2 | 81.2 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 17600 | 20000 | 42700 | 49700 | 13200 | 305 |
| **20.6** | 4650 | 1.2 | 69.9 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| **21.1** | 4550 | 1.7 | 68.3 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| **23.9** | 4000 | 1.5 | 60.1 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| **25.1** | 3810 | 1.7 | 57.3 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| **25.9** | 3710 | 1.2 | 55.7 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |
| **27.8** | 3440 | 1.5 | 51.7 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| **29.3** | 3280 | 2.6 | 49.2 | – | **–** | **3/A 07 L2** | **BN 160MR 4** | **M 4LC 4** | 16600 | 20800 | 39500 | 51800 | 14400 | 317 |
| **31** | 3140 | 1.2 | 47.2 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| **33** | 2950 | 1.0 | 44.3 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| **33** | 2930 | 1.1 | 44.0 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 11500 | 13300 | 21700 | 26100 | 7400 | 293 |
| **35** | 2730 | 1.8 | 41.1 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **37** | 2600 | 1.2 | 39.0 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 11100 | 12800 | 21000 | 25200 | 7110 | 293 |
| **41** | 2350 | 1.0 | 35.3 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| **41** | 2320 | 1.5 | 34.9 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| **44** | 2180 | 1.8 | 32.7 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 2150 | 1.5 | 32.2 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 10400 | 12000 | 19800 | 23800 | 6670 | 293 |
| **48** | 2010 | 1.1 | 30.2 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 10200 | 11700 | 19400 | 23300 | 6530 | 281 |
| **52** | 1850 | 1.5 | 27.7 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 281 |

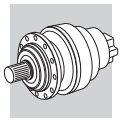


## $P_1$ = 11 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | |  | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **52** | 1850 | 1.5 | 27.7 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 9890 | 11400 | 18900 | 22800 | 6350 | 293 |
| **52** | 1850 | 1.8 | 27.7 | – | **–** | **3/A 06 L2** | **BN 160MR 4** | **M 4LC 4** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **56** | 1700 | 1.1 | 25.6 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 9630 | 11100 | 18500 | 22200 | 6180 | 281 |
| **65** | 1470 | 1.5 | 22.1 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 281 |
| **65** | 1470 | 1.5 | 22.1 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 9170 | 10600 | 17700 | 21300 | 5880 | 293 |
| **77** | 1250 | 1.5 | 18.7 | – | **–** | **3/A 04 L2** | **–** | **M 4LC 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 281 |
| **77** | 1250 | 1.5 | 18.7 | – | **–** | **3/A 05 L2** | **–** | **M 4LC 4** | 8680 | 10000 | 16800 | 20200 | 5570 | 293 |

## $P_1$ = 15 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | |  | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.28** | 360200 | 1.1 | 5164 | – | **3/V 19 L4** | **–** | **BN 160L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.29** | 356100 | 1.6 | 5040 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 341800 | 1.6 | 4550 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.33** | 338900 | 1.1 | 4457 | – | **3/V 19 L4** | **–** | **BN 160L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.36** | 304000 | 1.3 | 4095 | – | **3/V 19 L4** | **–** | **BN 160L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.39** | 284000 | 1.6 | 3780 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.40** | 274400 | 1.0 | 3696 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.41** | 276900 | 1.9 | 3600 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.42** | 259500 | 1.1 | 3495 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.45** | 245600 | 1.5 | 3231 | – | **3/V 19 L4** | **–** | **BN 160L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.50** | 218600 | 1.2 | 2945 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.54** | 212500 | 2.5 | 2700 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.57** | 196300 | 1.9 | 2582 | – | **3/V 19 L4** | **–** | **BN 160L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.58** | 193800 | 2.6 | 2520 | – | **3/V 21 L4** | **–** | **BN 160L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.59** | 187300 | 1.5 | 2464 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.64** | 170400 | 1.2 | 2295 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.71** | 162500 | 1.1 | 2065 | – | **3/V 17 L4** | **–** | **BN 160L 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.79** | 145500 | 1.9 | 1848 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.82** | 135300 | 1.4 | 1780 | – | **3/V 17 L4** | **–** | **BN 160L 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.84** | 137600 | 2.0 | 1748 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.92** | 111300 | 1.0 | 1589 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 345000 | 385000 | 150000 | 400 |
| **0.99** | 115900 | 2.2 | 1473 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 563100 | 198800 | 420 |
| **1.1** | 99400 | 1.5 | 1365 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 429900 | 457700 | 145400 | 410 |
| **1.1** | 95600 | 1.0 | 1329 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 199500 | 234200 | 86400 | 388 |
| **1.1** | 92800 | 1.2 | 1324 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 331300 | 368500 | 143900 | 400 |
| **1.2** | 98100 | 2.8 | 1232 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 533700 | 187300 | 420 |
| **1.2** | 94100 | 1.6 | 1215 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 415100 | 442000 | 139800 | 410 |
| **1.3** | 92800 | 3.0 | 1165 | – | **3/V 18 L4** | **–** | **BN 160L 4** | **–** | – | – | 503000 | 524900 | 183800 | 420 |
| **1.3** | 82600 | 1.5 | 1134 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 406600 | 432900 | 136600 | 410 |
| **1.3** | 80600 | 1.1 | 1120 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 189500 | 222500 | 81600 | 388 |
| **1.4** | 77200 | 1.6 | 1059 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 309800 | 344600 | 133600 | 400 |
| **1.4** | 79300 | 1.6 | 1024 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 394300 | 419900 | 132100 | 410 |
| **1.5** | 76300 | 1.2 | 997 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 183000 | 214800 | 78500 | 388 |
| **1.6** | 65000 | 1.6 | 893 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 294300 | 327300 | 126200 | 400 |
| **1.7** | 65900 | 1.6 | 851 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 373000 | 397100 | 124200 | 410 |
| **1.7** | 64300 | 1.3 | 840 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 173800 | 204100 | 74200 | 388 |
| **1.8** | 64200 | 2.2 | 810 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 367600 | 391400 | 122100 | 410 |
| **1.8** | 61500 | 1.6 | 794 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 284200 | 316100 | 121400 | 400 |
| **2.1** | 54100 | 2.6 | 683 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 349200 | 371800 | 115400 | 410 |
| **2.2** | 52700 | 1.0 | 673 | – | **3/V 13 L3** | **–** | **BN 160L 4** | **–** | – | – | 152300 | 180300 | 61200 | 364 |
| **2.2** | 51800 | 1.6 | 669 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 270000 | 300300 | 114600 | 400 |
| **2.2** | 52100 | 1.3 | 665 | – | **3/V 14 L3** | **–** | **BN 160L 4** | **–** | – | – | 162000 | 190200 | 68600 | 376 |
| **2.2** | 52100 | 1.7 | 665 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 162000 | 190200 | 68600 | 388 |
| **2.4** | 49300 | 2.7 | 608 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 337200 | 359000 | 111000 | 410 |
| **2.5** | 47000 | 1.2 | 579 | – | **3/V 14 L3** | **–** | **BN 160L 4** | **–** | – | – | 155500 | 182600 | 65500 | 376 |
| **2.6** | 44400 | 1.1 | 567 | – | **3/V 13 L3** | **–** | **BN 160L 4** | **–** | – | – | 144700 | 171300 | 57800 | 364 |
| **2.6** | 45000 | 2.6 | 567 | – | **3/V 17 L3** | **–** | **BN 160L 4** | **–** | – | – | 330300 | 351700 | 108500 | 410 |
| **2.6** | 43900 | 1.9 | 560 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 153900 | 180700 | 64800 | 388 |
| **2.6** | 43200 | 0.9 | 551 | – | **3/V 11 L3** | **–** | **BN 160L 4** | **–** | – | – | 116100 | 144600 | 46600 | 352 |
| **2.8** | 42000 | 2.6 | 530 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 251700 | 279900 | 106000 | 400 |



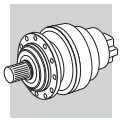
A

## $P_1$ = 15 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **2.8** | 40500 | 1.3 | 516 | – | **3/V 13 L3** | **–** | **BN 160L 4** | **–** | – | – | 140700 | 166500 | 56100 | 364 |
| **2.9** | 40400 | 1.4 | 498 | – | **3/V 14 L3** | **–** | **BN 160L 4** | **–** | – | – | 148600 | 174500 | 62300 | 376 |
| **2.9** | 40400 | 2.1 | 498 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 148600 | 174500 | 62300 | 388 |
| **3.3** | 35000 | 1.4 | 446 | – | **3/V 14 L3** | **–** | **BN 160L 4** | **–** | – | – | 143800 | 168800 | 60100 | 376 |
| **3.3** | 35000 | 1.9 | 446 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 143800 | 168800 | 60100 | 388 |
| **3.3** | 35400 | 2.6 | 446 | – | **3/V 16 L3** | **–** | **BN 160L 4** | **–** | – | – | 239100 | 265900 | 100100 | 400 |
| **3.4** | 33700 | 1.2 | 430 | – | **3/V 11 L3** | **–** | **BN 160L 4** | **–** | – | – | 107800 | 134200 | 42800 | 352 |
| **3.4** | 34500 | 1.4 | 425 | – | **3/V 13 L3** | **–** | **BN 160L 4** | **–** | – | – | 132700 | 157100 | 52600 | 364 |
| **3.7** | 32200 | 1.4 | 397 | – | **3/V 14 L3** | **–** | **BN 160L 4** | **–** | – | – | 138800 | 163000 | 57800 | 376 |
| **3.8** | 31700 | 2.1 | 386 | – | **3/V 15 L3** | **–** | **BN 160L 4** | **–** | – | – | 137700 | 161700 | 57300 | 388 |
| **3.9** | 29000 | 1.4 | 370 | – | **3/V 13 L3** | **–** | **BN 160L 4** | **–** | – | – | 127300 | 150700 | 50200 | 364 |
| **10.4** | 12100 | 0.9 | 140 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| **11.3** | 11200 | 1.0 | 130 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| **13.4** | 9400 | 0.9 | 109 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| **16.7** | 7830 | 1.3 | 87.7 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| **20.9** | 6240 | 0.9 | 69.9 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| **21.4** | 6100 | 1.3 | 68.3 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| **24.3** | 5370 | 1.1 | 60.1 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| **25.5** | 5120 | 1.3 | 57.3 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| **26.2** | 4970 | 0.9 | 55.7 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |
| **28.2** | 4620 | 1.1 | 51.7 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| **29.7** | 4400 | 1.9 | 49.2 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 16600 | 20800 | 39500 | 51800 | 14400 | 317 |
| **31** | 4210 | 0.9 | 47.2 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| **35** | 3710 | 2.6 | 41.5 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 15700 | 19600 | 37600 | 49200 | 13600 | 317 |
| **36** | 3670 | 1.3 | 41.1 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **42** | 3120 | 1.1 | 34.9 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| **45** | 2920 | 1.3 | 32.7 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 2890 | 2.7 | 32.3 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 14400 | 18100 | 34900 | 45700 | 12500 | 317 |
| **53** | 2480 | 1.3 | 27.7 | – | **–** | **3/A 06 L2** | **BN 160L 4** | **M 5SB 4** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **54** | 2420 | 2.7 | 27.1 | – | **–** | **3/A 07 L2** | **BN 160L 4** | **M 5SB 4** | 13600 | 17000 | 33100 | 43300 | 11800 | 317 |

## $P_1$ = 18.5 kW

| $n_2$ | $M_{n2}$ | $f_S$ | i | Pt | | | | | $Rn_2$ [N] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| min$^{-1}$ | Nm | | | kW | | | | | MC/PC | MZ/PZ | HC | HZ | FZ | |
| **0.28** | 444800 | 0.9 | 5164 | – | **3/V 19 L4** | **–** | **BN 180M 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.29** | 439700 | 1.3 | 5040 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 422100 | 1.3 | 4550 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.36** | 375300 | 1.0 | 4095 | – | **3/V 19 L4** | **–** | **BN 180M 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.39** | 350600 | 1.3 | 3780 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.41** | 341900 | 1.6 | 3600 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.45** | 303300 | 1.2 | 3231 | – | **3/V 19 L4** | **–** | **BN 180M 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.50** | 270000 | 1.0 | 2945 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.54** | 262400 | 2.0 | 2700 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.57** | 242400 | 1.5 | 2582 | – | **3/V 19 L4** | **–** | **BN 180M 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.58** | 239300 | 2.1 | 2520 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.59** | 231300 | 1.2 | 2464 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.64** | 210400 | 1.0 | 2295 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.64** | 221100 | 2.5 | 2275 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.71** | 200600 | 0.9 | 2065 | – | **3/V 17 L4** | **–** | **BN 180M 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.77** | 183700 | 2.5 | 1890 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.79** | 179600 | 1.6 | 1848 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.81** | 178900 | 3.0 | 1800 | – | **3/V 21 L4** | **–** | **BN 180M 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.82** | 167000 | 1.1 | 1780 | – | **3/V 17 L4** | **–** | **BN 180M 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.84** | 169800 | 1.7 | 1748 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.99** | 143100 | 1.8 | 1473 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 563100 | 198800 | 420 |
| **1.1** | 122800 | 1.3 | 1365 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 429900 | 457700 | 145400 | 410 |
| **1.1** | 114600 | 1.0 | 1324 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 331300 | 368500 | 143900 | 400 |
| **1.2** | 121100 | 2.3 | 1232 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 533700 | 187300 | 420 |
| **1.2** | 116200 | 1.3 | 1215 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 415100 | 442000 | 139800 | 410 |
| **1.3** | 114500 | 2.4 | 1165 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 503000 | 524900 | 183800 | 420 |
| **1.3** | 102000 | 1.3 | 1134 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 406600 | 432900 | 136600 | 410 |

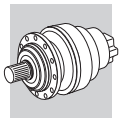


## $P_1$ = 18.5 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.3** | 99500 | 0.9 | 1120 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 189500 | 222500 | 81600 | 388 |
| **1.4** | 95300 | 1.3 | 1059 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 309800 | 344600 | 133600 | 400 |
| **1.4** | 97900 | 1.3 | 1024 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 394300 | 419900 | 132100 | 410 |
| **1.5** | 94200 | 1.0 | 997 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 183000 | 214800 | 78500 | 388 |
| **1.5** | 96500 | 2.5 | 982 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 488500 | 498600 | 173600 | 420 |
| **1.6** | 80300 | 1.3 | 893 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 294300 | 327300 | 126200 | 400 |
| **1.7** | 81300 | 1.3 | 851 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 373000 | 397100 | 124200 | 410 |
| **1.7** | 79400 | 1.0 | 840 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 173800 | 204100 | 74200 | 388 |
| **1.8** | 79300 | 1.8 | 810 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 367600 | 391400 | 122100 | 410 |
| **1.8** | 76000 | 1.3 | 794 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 284200 | 316100 | 121400 | 400 |
| **1.9** | 75200 | 2.5 | 765 | – | **3/V 18 L4** | **–** | **BN 180M 4** | **–** | – | – | 453300 | 462600 | 159800 | 420 |
| **2.1** | 66800 | 2.1 | 683 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 349200 | 371800 | 115400 | 410 |
| **2.2** | 64000 | 1.3 | 669 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 270000 | 300300 | 114600 | 400 |
| **2.2** | 64300 | 1.1 | 665 | – | **3/V 14 L3** | **–** | **BN 180M 4** | **–** | – | – | 162000 | 190200 | 68600 | 376 |
| **2.2** | 64300 | 1.4 | 665 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 162000 | 190200 | 68600 | 388 |
| **2.4** | 60900 | 2.2 | 608 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 337200 | 359000 | 111000 | 410 |
| **2.5** | 58100 | 1.0 | 579 | – | **3/V 14 L3** | **–** | **BN 180M 4** | **–** | – | – | 155500 | 182600 | 65500 | 376 |
| **2.6** | 55500 | 2.1 | 567 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 330300 | 351700 | 108500 | 410 |
| **2.6** | 54200 | 1.5 | 560 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 153900 | 180700 | 64800 | 388 |
| **2.8** | 51900 | 2.1 | 530 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 251700 | 279900 | 106000 | 400 |
| **2.8** | 50000 | 1.0 | 516 | – | **3/V 13 L3** | **–** | **BN 180M 4** | **–** | – | – | 140700 | 166500 | 56100 | 364 |
| **2.9** | 51300 | 2.5 | 512 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 320300 | 341000 | 104800 | 410 |
| **2.9** | 49900 | 1.2 | 498 | – | **3/V 14 L3** | **–** | **BN 180M 4** | **–** | – | – | 148600 | 174500 | 62300 | 376 |
| **2.9** | 49900 | 1.7 | 498 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 148600 | 174500 | 62300 | 388 |
| **3.3** | 43200 | 1.1 | 446 | – | **3/V 14 L3** | **–** | **BN 180M 4** | **–** | – | – | 143800 | 168800 | 60100 | 376 |
| **3.3** | 43200 | 1.5 | 446 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 143800 | 168800 | 60100 | 388 |
| **3.3** | 43700 | 2.1 | 446 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 239100 | 265900 | 100100 | 400 |
| **3.4** | 41600 | 1.0 | 430 | – | **3/V 11 L3** | **–** | **BN 180M 4** | **–** | – | – | 107800 | 134200 | 42800 | 352 |
| **3.4** | 42600 | 1.1 | 425 | – | **3/V 13 L3** | **–** | **BN 180M 4** | **–** | – | – | 132700 | 157100 | 52600 | 364 |
| **3.4** | 42600 | 2.5 | 425 | – | **3/V 17 L3** | **–** | **BN 180M 4** | **–** | – | – | 303000 | 322600 | 98500 | 410 |
| **3.7** | 39800 | 1.2 | 397 | – | **3/V 14 L3** | **–** | **BN 180M 4** | **–** | – | – | 138800 | 163000 | 57800 | 376 |
| **3.7** | 39800 | 2.5 | 397 | – | **3/V 16 L3** | **–** | **BN 180M 4** | **–** | – | – | 230900 | 256800 | 96300 | 400 |
| **3.8** | 39100 | 1.7 | 386 | – | **3/V 15 L3** | **–** | **BN 180M 4** | **–** | – | – | 137700 | 161700 | 57300 | 388 |
| **3.9** | 35800 | 1.1 | 370 | – | **3/V 13 L3** | **–** | **BN 180M 4** | **–** | – | – | 127300 | 150700 | 50200 | 364 |
| **16.7** | 9670 | 1.1 | 87.7 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| **21.4** | 7540 | 1.1 | 68.3 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| **24.3** | 6640 | 0.9 | 60.1 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| **25.5** | 6320 | 1.1 | 57.3 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| **28.2** | 5710 | 0.9 | 51.7 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| **29.7** | 5430 | 1.5 | 49.2 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 16600 | 20800 | 39500 | 51800 | 14400 | 317 |
| **35** | 4580 | 2.1 | 41.5 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 15700 | 19600 | 37600 | 49200 | 13600 | 317 |
| **36** | 4530 | 1.1 | 41.1 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **42** | 3850 | 0.9 | 34.9 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| **45** | 3610 | 1.1 | 32.7 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 3570 | 2.2 | 32.3 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 14400 | 18100 | 34900 | 45700 | 12500 | 317 |
| **53** | 3060 | 1.1 | 27.7 | – | **–** | **3/A 06 L2** | **BN 180M 4** | **M 5LA 4** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **54** | 2990 | 2.2 | 27.1 | – | **–** | **3/A 07 L2** | **BN 180M 4** | **M 5LA 4** | 13600 | 17000 | 33100 | 43300 | 11800 | 317 |

## $P_1$ = 22 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.29** | 523300 | 1.1 | 5040 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.32** | 502300 | 1.1 | 4550 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.39** | 417300 | 1.1 | 3780 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.41** | 406900 | 1.3 | 3600 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.45** | 360900 | 1.0 | 3231 | – | **3/V 19 L4** | **–** | **BN 180L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.54** | 312300 | 1.7 | 2700 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.57** | 288400 | 1.3 | 2582 | – | **3/V 19 L4** | **–** | **BN 180L 4** | **–** | – | – | 638000 | 702000 | 200000 | 430 |
| **0.58** | 284800 | 1.8 | 2520 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.59** | 275300 | 1.0 | 2464 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.64** | 263100 | 2.1 | 2275 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |



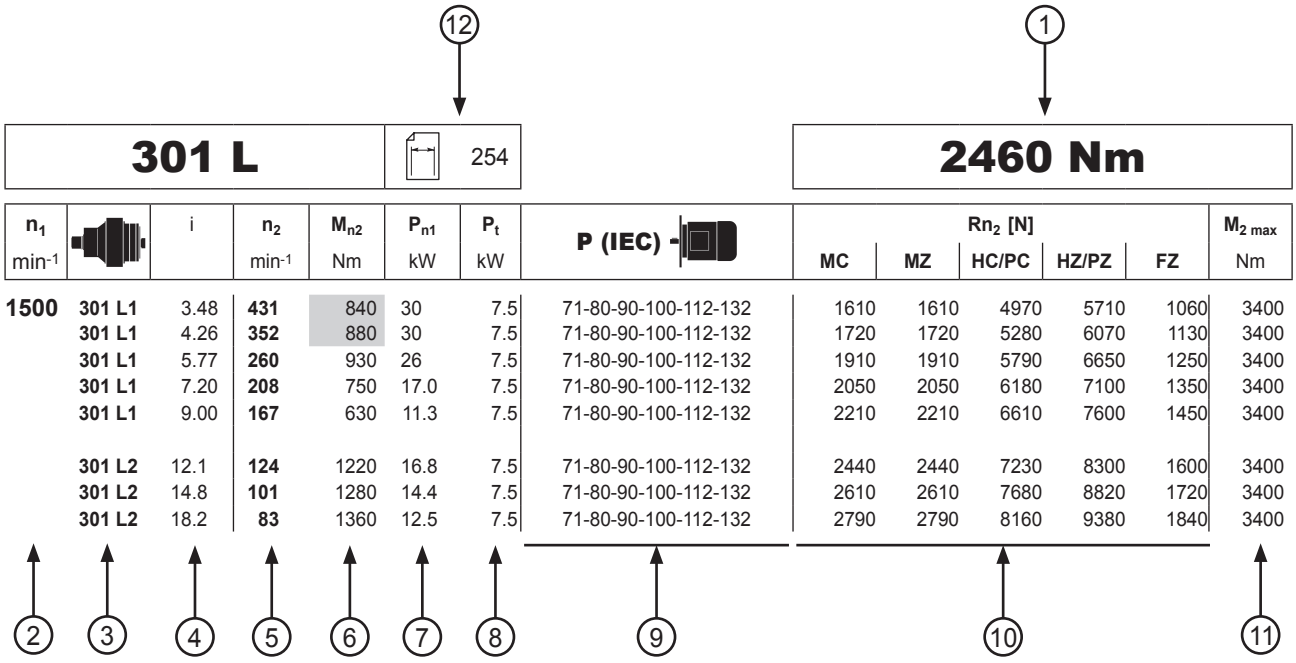
A

## $P_1$ = 22 kW

| $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $f_S$ | i | Pt kW | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0.77** | 218600 | 2.1 | 1890 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.79** | 213700 | 1.3 | 1848 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.81** | 212900 | 2.5 | 1800 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.82** | 198800 | 0.9 | 1780 | – | **3/V 17 L4** | **–** | **BN 180L 4** | **–** | – | – | 442000 | 470000 | 150000 | 410 |
| **0.84** | 202100 | 1.4 | 1748 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 565000 | 200000 | 420 |
| **0.96** | 179400 | 2.9 | 1517 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 779000 | 923000 | 1200000 | 440 |
| **0.99** | 170300 | 1.5 | 1473 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 563100 | 198800 | 420 |
| **1.1** | 146100 | 1.1 | 1365 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 429900 | 457700 | 145400 | 410 |
| **1.2** | 149000 | 2.9 | 1260 | – | **3/V 21 L4** | **–** | **BN 180L 4** | **–** | – | – | 742400 | 880400 | 1132200 | 440 |
| **1.2** | 144100 | 1.9 | 1232 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 533700 | 187300 | 420 |
| **1.2** | 138300 | 1.1 | 1215 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 415100 | 442000 | 139800 | 410 |
| **1.3** | 136300 | 2.0 | 1165 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 503000 | 524900 | 183800 | 420 |
| **1.3** | 121400 | 1.1 | 1134 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 406600 | 432900 | 136600 | 410 |
| **1.4** | 113400 | 1.1 | 1059 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 309800 | 344600 | 133600 | 400 |
| **1.4** | 116500 | 1.1 | 1024 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 394300 | 419900 | 132100 | 410 |
| **1.5** | 114800 | 2.1 | 982 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 488500 | 498600 | 173600 | 420 |
| **1.6** | 95500 | 1.1 | 893 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 294300 | 327300 | 126200 | 400 |
| **1.7** | 96800 | 1.1 | 851 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 373000 | 397100 | 124200 | 410 |
| **1.8** | 94400 | 1.5 | 810 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 367600 | 391400 | 122100 | 410 |
| **1.8** | 90400 | 1.1 | 794 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 284200 | 316100 | 121400 | 400 |
| **1.9** | 89500 | 2.1 | 765 | – | **3/V 18 L4** | **–** | **BN 180L 4** | **–** | – | – | 453300 | 462600 | 159800 | 420 |
| **2.1** | 79500 | 1.8 | 683 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 349200 | 371800 | 115400 | 410 |
| **2.2** | 76200 | 1.1 | 669 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 270000 | 300300 | 114600 | 400 |
| **2.2** | 76500 | 0.9 | 665 | – | **3/V 14 L3** | **–** | **BN 180L 4** | **–** | – | – | 162000 | 190200 | 68600 | 376 |
| **2.2** | 76500 | 1.2 | 665 | – | **3/V 15 L3** | **–** | **BN 180L 4** | **–** | – | – | 162000 | 190200 | 68600 | 388 |
| **2.4** | 72400 | 1.9 | 608 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 337200 | 359000 | 111000 | 410 |
| **2.6** | 66100 | 1.8 | 567 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 330300 | 351700 | 108500 | 410 |
| **2.6** | 64500 | 1.3 | 560 | – | **3/V 15 L3** | **–** | **BN 180L 4** | **–** | – | – | 153900 | 180700 | 64800 | 388 |
| **2.8** | 61700 | 1.8 | 530 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 251700 | 279900 | 106000 | 400 |
| **2.9** | 61000 | 2.1 | 512 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 320300 | 341000 | 104800 | 410 |
| **2.9** | 59400 | 1.0 | 498 | – | **3/V 14 L3** | **–** | **BN 180L 4** | **–** | – | – | 148600 | 174500 | 62300 | 376 |
| **2.9** | 59400 | 1.4 | 498 | – | **3/V 15 L3** | **–** | **BN 180L 4** | **–** | – | – | 148600 | 174500 | 62300 | 388 |
| **3.3** | 51400 | 0.9 | 446 | – | **3/V 14 L3** | **–** | **BN 180L 4** | **–** | – | – | 143800 | 168800 | 60100 | 376 |
| **3.3** | 51400 | 1.3 | 446 | – | **3/V 15 L3** | **–** | **BN 180L 4** | **–** | – | – | 143800 | 168800 | 60100 | 388 |
| **3.3** | 52000 | 1.8 | 446 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 239100 | 265900 | 100100 | 400 |
| **3.4** | 50700 | 0.9 | 425 | – | **3/V 13 L3** | **–** | **BN 180L 4** | **–** | – | – | 132700 | 157100 | 52600 | 364 |
| **3.4** | 50700 | 2.1 | 425 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 303000 | 322600 | 98500 | 410 |
| **3.6** | 49400 | 2.6 | 405 | – | **3/V 17 L3** | **–** | **BN 180L 4** | **–** | – | – | 298600 | 317900 | 96900 | 410 |
| **3.7** | 47400 | 1.0 | 397 | – | **3/V 14 L3** | **–** | **BN 180L 4** | **–** | – | – | 138800 | 163000 | 57800 | 376 |
| **3.7** | 47400 | 2.1 | 397 | – | **3/V 16 L3** | **–** | **BN 180L 4** | **–** | – | – | 230900 | 256800 | 96300 | 400 |
| **3.8** | 46600 | 1.4 | 386 | – | **3/V 15 L3** | **–** | **BN 180L 4** | **–** | – | – | 137700 | 161700 | 57300 | 388 |
| **3.9** | 42600 | 0.9 | 370 | – | **3/V 13 L3** | **–** | **BN 180L 4** | **–** | – | – | 127300 | 150700 | 50200 | 364 |
| **29.7** | 6460 | 1.3 | 49.2 | – | **–** | **3/A 07 L2** | **BN 180L 4** | **–** | 16600 | 20800 | 39500 | 51800 | 14400 | 317 |
| **35** | 5450 | 1.8 | 41.5 | – | **–** | **3/A 07 L2** | **BN 180L 4** | **–** | 15700 | 19600 | 37600 | 49200 | 13600 | 317 |
| **36** | 5390 | 0.9 | 41.1 | – | **–** | **3/A 06 L2** | **BN 180L 4** | **–** | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| **45** | 4300 | 0.9 | 32.7 | – | **–** | **3/A 06 L2** | **BN 180L 4** | **–** | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| **45** | 4240 | 1.9 | 32.3 | – | **–** | **3/A 07 L2** | **BN 180L 4** | **–** | 14400 | 18100 | 34900 | 45700 | 12500 | 317 |
| **53** | 3640 | 0.9 | 27.7 | – | **–** | **3/A 06 L2** | **BN 180L 4** | **–** | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| **54** | 3560 | 1.9 | 27.1 | – | **–** | **3/A 07 L2** | **BN 180L 4** | **–** | 13600 | 17000 | 33100 | 43300 | 11800 | 317 |

## 25.3 DATOS TÉCNICOS REDUCTOR EN LÍNEA 300 L

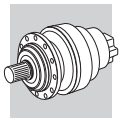
Guía para consultar las tablas.




| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 L1** | 3.48 | **431** | 840 | 30 | 7.5 | 71-80-90-100-112-132 | 1610 | 1610 | 4970 | 5710 | 1060 | 3400 |
| | **301 L1** | 4.26 | **352** | 880 | 30 | 7.5 | 71-80-90-100-112-132 | 1720 | 1720 | 5280 | 6070 | 1130 | 3400 |
| | **301 L1** | 5.77 | **260** | 930 | 26 | 7.5 | 71-80-90-100-112-132 | 1910 | 1910 | 5790 | 6650 | 1250 | 3400 |
| | **301 L1** | 7.20 | **208** | 750 | 17.0 | 7.5 | 71-80-90-100-112-132 | 2050 | 2050 | 6180 | 7100 | 1350 | 3400 |
| | **301 L1** | 9.00 | **167** | 630 | 11.3 | 7.5 | 71-80-90-100-112-132 | 2210 | 2210 | 6610 | 7600 | 1450 | 3400 |
| | **301 L2** | 12.1 | **124** | 1220 | 16.8 | 7.5 | 71-80-90-100-112-132 | 2440 | 2440 | 7230 | 8300 | 1600 | 3400 |
| | **301 L2** | 14.8 | **101** | 1280 | 14.4 | 7.5 | 71-80-90-100-112-132 | 2610 | 2610 | 7680 | 8820 | 1720 | 3400 |
| | **301 L2** | 18.2 | **83** | 1360 | 12.5 | 7.5 | 71-80-90-100-112-132 | 2790 | 2790 | 8160 | 9380 | 1840 | 3400 |
| | | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | 11 |

Valor de par nominal del reductor independiente de la potencia mecánica instalada

| | |
|---|---|
| **1** | Par de referencia |
| **2** | Velocidad angular en el eje de entrada del reductor |
| **3** | Tamaño de reductor en ejecución lineal |
| **4** | Relación de reducción |
| **5** | Velocidad angular en el eje de salida |
| **6** | Par nominal del eje lento del reductor, basado en:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **7** | Potencia nominal aplicable al reductor, para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **8** | Potencia térmica del reductor |
| **9** | Tamaño motor eléctrico IEC instalable |
| **10** | Carga radial aplicable al eje lento, calculado para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br><br>Para fuerzas no aplicadas en el centro del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **11** | Par máximo |
| **12** | Pagina de las dimensiones |

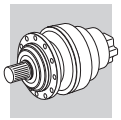


## 300 L

244

## 1250 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **300 L1** | **3.48** | 431 | 470 | 20 | 7.5 | 71-80-90-100-112-132 | 1610 | 1610 | 4970 | 5710 | 1060 | 2000 |
| | **300 L1** | **4.26** | 352 | 490 | 18.8 | 7.5 | 71-80-90-100-112-132 | 1720 | 1720 | 5280 | 6070 | 1130 | 2400 |
| | **300 L1** | **5.77** | 260 | 470 | 13.3 | 7.5 | 71-80-90-100-112-132 | 1910 | 1910 | 5790 | 6650 | 1250 | 2400 |
| | **300 L1** | **7.20** | 208 | 410 | 9.2 | 7.5 | 71-80-90-100-112-132 | 2050 | 2050 | 6180 | 7100 | 1350 | 2400 |
| | **300 L1** | **9.00** | 167 | 320 | 5.7 | 7.5 | 71-80-90-100-112-132 | 2210 | 2210 | 6610 | 7600 | 1450 | 2400 |
| | **300 L2** | **12.1** | 124 | 680 | 9.4 | 7.5 | 71-80-90-100-112-132 | 2440 | 2440 | 7230 | 8300 | 1600 | 2000 |
| | **300 L2** | **14.8** | 101 | 720 | 8.1 | 7.5 | 71-80-90-100-112-132 | 2610 | 2610 | 7680 | 8820 | 1720 | 2000 |
| | **300 L2** | **18.2** | 83 | 750 | 6.9 | 7.5 | 71-80-90-100-112-132 | 2790 | 2790 | 8160 | 9380 | 1840 | 2400 |
| | **300 L2** | **20.1** | 75 | 640 | 5.3 | 7.5 | 71-80-90-100-112-132 | 2890 | 2890 | 8410 | 9660 | 1900 | 2000 |
| | **300 L2** | **24.6** | 61 | 800 | 5.5 | 7.5 | 71-80-90-100-112-132 | 3090 | 3090 | 8940 | 10300 | 2030 | 2400 |
| | **300 L2** | **30.7** | 49 | 840 | 4.6 | 7.5 | 71-80-90-100-112-132 | 3330 | 3330 | 9550 | 11000 | 2190 | 2400 |
| | **300 L2** | **33.3** | 45 | 650 | 3.3 | 7.5 | 71-80-90-100-112-132 | 3420 | 3420 | 9790 | 11200 | 2250 | 2400 |
| | **300 L2** | **38.4** | 39 | 840 | 3.7 | 7.5 | 71-80-90-100-112-132 | 3590 | 3590 | 10200 | 11700 | 2360 | 2400 |
| | **300 L2** | **41.5** | 36 | 650 | 2.6 | 7.5 | 71-80-90-100-112-132 | 3680 | 3680 | 10500 | 12000 | 2420 | 2400 |
| | **300 L2** | **51.9** | 28.9 | 650 | 2.1 | 7.5 | 71-80-90-100-112-132 | 3970 | 3970 | 11200 | 12900 | 2610 | 2400 |
| | **300 L2** | **64.8** | 23.1 | 550 | 1.4 | 7.5 | 71-80-90-100-112-132 | 4270 | 4270 | 12000 | 13700 | 2810 | 2400 |
| | **300 L3** | **51.6** | 29.1 | 850 | 2.8 | 7.5 | 71-80-90-100-112-132 | 3960 | 3960 | 11200 | 12800 | 2600 | 2000 |
| | **300 L3** | **63.2** | 23.7 | 850 | 2.3 | 7.5 | 71-80-90-100-112-132 | 4240 | 4240 | 11900 | 13600 | 2780 | 2400 |
| | **300 L3** | **69.9** | 21.5 | 650 | 1.6 | 7.5 | 71-80-90-100-112-132 | 4380 | 4380 | 12200 | 14000 | 2880 | 2000 |
| | **300 L3** | **77.5** | 19.4 | 850 | 1.9 | 7.5 | 71-80-90-100-112-132 | 4530 | 4530 | 12600 | 14500 | 2980 | 2400 |
| | **300 L3** | **85.6** | 17.5 | 850 | 1.7 | 7.5 | 71-80-90-100-112-132 | 4680 | 4680 | 13000 | 14900 | 3080 | 2400 |
| | **300 L3** | **105** | 14.3 | 860 | 1.4 | 7.5 | 71-80-90-100-112-132 | 5010 | 5010 | 13800 | 15900 | 3300 | 2400 |
| | **300 L3** | **116** | 13.0 | 650 | 0.97 | 7.5 | 71-80-90-100-112-132 | 5180 | 5180 | 14200 | 16300 | 3410 | 2400 |
| | **300 L3** | **131** | 11.5 | 860 | 1.1 | 7.5 | 71-80-90-100-112-132 | 5400 | 5400 | 14800 | 17000 | 3550 | 2400 |
| | **300 L3** | **142** | 10.6 | 860 | 1.0 | 7.5 | 71-80-90-100-112-132 | 5540 | 5540 | 15100 | 17400 | 3650 | 2400 |
| | **300 L3** | **177** | 8.5 | 880 | 0.86 | 7.5 | 71-80-90-100-112-132 | 5970 | 5970 | 16200 | 18600 | 3920 | 2400 |
| | **300 L3** | **192** | 7.8 | 650 | 0.58 | 7.5 | 71-80-90-100-112-132 | 6130 | 6130 | 16600 | 19000 | 4030 | 2400 |
| | **300 L3** | **221** | 6.8 | 910 | 0.71 | 7.5 | 71-80-90-100-112-132 | 6430 | 6430 | 17300 | 19800 | 4230 | 2400 |
| | **300 L3** | **240** | 6.3 | 650 | 0.47 | 7.5 | 71-80-90-100-112-132 | 6600 | 6600 | 17700 | 20300 | 4340 | 2400 |
| | **300 L3** | **299** | 5.0 | 650 | 0.37 | 7.5 | 71-80-90-100-112-132 | 7110 | 7110 | 18900 | 21700 | 4670 | 2400 |
| | **300 L3** | **374** | 4.0 | 670 | 0.31 | 7.5 | 71-80-90-100-112-132 | 7660 | 7660 | 20200 | 23200 | 5030 | 2400 |
| | **300 L4** | **330** | 4.5 | 970 | 0.52 | 6.0 | 71-80-90-100-112-132 | 7350 | 7350 | 19500 | 22400 | 4830 | 2400 |
| | **300 L4** | **403** | 3.7 | 680 | 0.30 | 6.0 | 71-80-90-100-112-132 | 7850 | 7850 | 20700 | 23800 | 5160 | 2400 |
| | **300 L4** | **447** | 3.4 | 1020 | 0.40 | 6.0 | 71-80-90-100-112-132 | 8130 | 8130 | 21300 | 24500 | 5340 | 2400 |
| | **300 L4** | **494** | 3.0 | 1030 | 0.37 | 6.0 | 71-80-90-100-112-132 | 8400 | 8400 | 22000 | 25300 | 5520 | 2400 |
| | **300 L4** | **558** | 2.7 | 1060 | 0.34 | 6.0 | 71-80-90-100-112-132 | 8750 | 8750 | 22800 | 26200 | 5750 | 2400 |
| | **300 L4** | **616** | 2.4 | 1070 | 0.31 | 6.0 | 71-80-90-100-112-132 | 9050 | 9050 | 23500 | 27000 | 5950 | 2400 |
| | **300 L4** | **755** | 2.0 | 1110 | 0.26 | 6.0 | 71-80-90-100-112-132 | 9680 | 9680 | 25000 | 28700 | 6360 | 2400 |
| | **300 L4** | **819** | 1.8 | 1130 | 0.24 | 6.0 | 71-80-90-100-112-132 | 9940 | 9940 | 25600 | 29400 | 6540 | 2400 |
| | **300 L4** | **942** | 1.6 | 1160 | 0.22 | 6.0 | 71-80-90-100-112-132 | 10400 | 10400 | 26700 | 30700 | 6850 | 2400 |
| | **300 L4** | **1022** | 1.5 | 1170 | 0.20 | 6.0 | 71-80-90-100-112-132 | 10700 | 10700 | 27300 | 31400 | 7040 | 2400 |
| | **300 L4** | **1108** | 1.4 | 810 | 0.13 | 6.0 | 71-80-90-100-112-132 | 11000 | 11000 | 28000 | 32200 | 7230 | 2400 |
| | **300 L4** | **1275** | 1.2 | 1220 | 0.17 | 6.0 | 71-80-90-100-112-132 | 11500 | 11500 | 29200 | 33600 | 7580 | 2400 |
| | **300 L4** | **1383** | 1.1 | 850 | 0.11 | 6.0 | 71-80-90-100-112-132 | 11800 | 11800 | 29900 | 34000 | 7790 | 2400 |
| | **300 L4** | **1591** | 0.94 | 1250 | 0.14 | 6.0 | 71-80-90-100-112-132 | 12000 | 12400 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1725** | 0.87 | 860 | 0.09 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2153** | 0.70 | 860 | 0.07 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2692** | 0.56 | 1000 | 0.07 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| **1000** | **300 L1** | **3.48** | 287 | 530 | 16.5 | 9.0 | 71-80-90-100-112-132 | 1840 | 1840 | 5610 | 6450 | 1210 | 2000 |
| | **300 L1** | **4.26** | 235 | 560 | 14.1 | 9.0 | 71-80-90-100-112-132 | 1970 | 1970 | 5970 | 6860 | 1300 | 2400 |
| | **300 L1** | **5.77** | 173 | 530 | 10.0 | 9.0 | 71-80-90-100-112-132 | 2180 | 2180 | 6530 | 7510 | 1430 | 2400 |
| | **300 L1** | **7.20** | 139 | 460 | 6.9 | 9.0 | 71-80-90-100-112-132 | 2350 | 2350 | 6980 | 8020 | 1540 | 2400 |
| | **300 L1** | **9.00** | 111 | 360 | 4.3 | 9.0 | 71-80-90-100-112-132 | 2530 | 2530 | 7470 | 8580 | 1660 | 2400 |
| | **300 L2** | **12.1** | 83 | 730 | 6.7 | 9.0 | 71-80-90-100-112-132 | 2790 | 2790 | 8160 | 9380 | 1840 | 2000 |
| | **300 L2** | **14.8** | 67 | 790 | 5.9 | 9.0 | 71-80-90-100-112-132 | 2990 | 2990 | 8670 | 9970 | 1970 | 2000 |
| | **300 L2** | **18.2** | 55 | 820 | 5.0 | 9.0 | 71-80-90-100-112-132 | 3200 | 3200 | 9220 | 10600 | 2100 | 2400 |
| | **300 L2** | **20.1** | 50 | 650 | 3.6 | 9.0 | 71-80-90-100-112-132 | 3310 | 3310 | 9500 | 10900 | 2170 | 2000 |
| | **300 L2** | **24.6** | 41 | 840 | 3.8 | 9.0 | 71-80-90-100-112-132 | 3540 | 3540 | 10100 | 11600 | 2330 | 2400 |
| | **300 L2** | **30.7** | 33 | 850 | 3.1 | 9.0 | 71-80-90-100-112-132 | 3810 | 3810 | 10800 | 12400 | 2500 | 2400 |
| | **300 L2** | **33.3** | 30 | 650 | 2.2 | 9.0 | 71-80-90-100-112-132 | 3910 | 3910 | 11100 | 12700 | 2570 | 2400 |
| | **300 L2** | **38.4** | 26.1 | 850 | 2.5 | 9.0 | 71-80-90-100-112-132 | 4100 | 4100 | 11500 | 13300 | 2700 | 2400 |



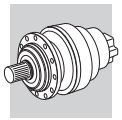
# 300 L

244

# 1250 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **300 L2** | **41.5** | 24.1 | 650 | 1.7 | 9.0 | 71-80-90-100-112-132 | 4210 | 4210 | 11800 | 13600 | 2770 | 2400 |
| | **300 L2** | **51.9** | 19.3 | 650 | 1.4 | 9.0 | 71-80-90-100-112-132 | 4540 | 4540 | 12600 | 14500 | 2980 | 2400 |
| | **300 L2** | **64.8** | 15.4 | 550 | 0.94 | 9.0 | 71-80-90-100-112-132 | 4890 | 4890 | 13500 | 15500 | 3210 | 2400 |
| | **300 L3** | **51.6** | 19.4 | 850 | 1.9 | 9.0 | 71-80-90-100-112-132 | 4530 | 4530 | 12600 | 14500 | 2980 | 2000 |
| | **300 L3** | **63.2** | 15.8 | 850 | 1.5 | 9.0 | 71-80-90-100-112-132 | 4850 | 4850 | 13400 | 15400 | 3190 | 2400 |
| | **300 L3** | **69.9** | 14.3 | 650 | 1.1 | 9.0 | 71-80-90-100-112-132 | 5010 | 5010 | 13800 | 15900 | 3290 | 2000 |
| | **300 L3** | **77.5** | 12.9 | 860 | 1.3 | 9.0 | 71-80-90-100-112-132 | 5190 | 5190 | 14200 | 16400 | 3410 | 2400 |
| | **300 L3** | **85.6** | 11.7 | 860 | 1.2 | 9.0 | 71-80-90-100-112-132 | 5360 | 5360 | 14700 | 16900 | 3530 | 2400 |
| | **300 L3** | **105** | 9.5 | 870 | 0.95 | 9.0 | 71-80-90-100-112-132 | 5740 | 5740 | 15600 | 17900 | 3770 | 2400 |
| | **300 L3** | **116** | 8.6 | 650 | 0.64 | 9.0 | 71-80-90-100-112-132 | 5930 | 5930 | 16100 | 18500 | 3900 | 2400 |
| | **300 L3** | **131** | 7.6 | 890 | 0.78 | 9.0 | 71-80-90-100-112-132 | 6180 | 6180 | 16700 | 19200 | 4060 | 2400 |
| | **300 L3** | **142** | 7.0 | 900 | 0.73 | 9.0 | 71-80-90-100-112-132 | 6350 | 6350 | 17100 | 19600 | 4170 | 2400 |
| | **300 L3** | **177** | 5.6 | 930 | 0.60 | 9.0 | 71-80-90-100-112-132 | 6830 | 6830 | 18300 | 21000 | 4490 | 2400 |
| | **300 L3** | **192** | 5.2 | 650 | 0.39 | 9.0 | 71-80-90-100-112-132 | 7020 | 7020 | 18700 | 21500 | 4620 | 2400 |
| | **300 L3** | **221** | 4.5 | 970 | 0.50 | 9.0 | 71-80-90-100-112-132 | 7360 | 7360 | 19500 | 22400 | 4840 | 2400 |
| | **300 L3** | **240** | 4.2 | 670 | 0.32 | 9.0 | 71-80-90-100-112-132 | 7560 | 7560 | 20000 | 23000 | 4970 | 2400 |
| | **300 L3** | **299** | 3.3 | 700 | 0.27 | 9.0 | 71-80-90-100-112-132 | 8140 | 8140 | 21400 | 24500 | 5350 | 2400 |
| | **300 L3** | **374** | 2.7 | 720 | 0.22 | 9.0 | 71-80-90-100-112-132 | 8770 | 8770 | 22800 | 26200 | 5760 | 2400 |
| | **300 L4** | **330** | 3.0 | 1040 | 0.37 | 7.2 | 71-80-90-100-112-132 | 8410 | 8410 | 22000 | 25300 | 5530 | 2400 |
| | **300 L4** | **403** | 2.5 | 730 | 0.21 | 7.2 | 71-80-90-100-112-132 | 8990 | 8990 | 23400 | 26800 | 5910 | 2400 |
| | **300 L4** | **447** | 2.2 | 1090 | 0.29 | 7.2 | 71-80-90-100-112-132 | 9300 | 9300 | 24100 | 27700 | 6120 | 2400 |
| | **300 L4** | **494** | 2.0 | 1110 | 0.27 | 7.2 | 71-80-90-100-112-132 | 9620 | 9620 | 24800 | 28500 | 6320 | 2400 |
| | **300 L4** | **558** | 1.8 | 1130 | 0.24 | 7.2 | 71-80-90-100-112-132 | 10000 | 10000 | 25800 | 29600 | 6590 | 2400 |
| | **300 L4** | **616** | 1.6 | 1150 | 0.22 | 7.2 | 71-80-90-100-112-132 | 10400 | 10400 | 26500 | 30500 | 6810 | 2400 |
| | **300 L4** | **755** | 1.3 | 1190 | 0.19 | 7.2 | 71-80-90-100-112-132 | 11100 | 11100 | 28200 | 32400 | 7280 | 2400 |
| | **300 L4** | **819** | 1.2 | 1210 | 0.17 | 7.2 | 71-80-90-100-112-132 | 11400 | 11400 | 28900 | 33200 | 7480 | 2400 |
| | **300 L4** | **942** | 1.1 | 1240 | 0.16 | 7.2 | 71-80-90-100-112-132 | 11900 | 11900 | 30100 | 34000 | 7840 | 2400 |
| | **300 L4** | **1022** | 0.98 | 1250 | 0.14 | 7.2 | 71-80-90-100-112-132 | 12000 | 12300 | 30900 | 34000 | 8000 | 2400 |
| | **300 L4** | **1108** | 0.90 | 860 | 0.09 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1275** | 0.78 | 1250 | 0.12 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1383** | 0.72 | 860 | 0.07 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1591** | 0.63 | 1250 | 0.09 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1725** | 0.58 | 860 | 0.06 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2153** | 0.46 | 860 | 0.05 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2692** | 0.37 | 1000 | 0.04 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| **500** | **300 L1** | **3.48** | 144 | 650 | 10.2 | 15.0 | 71-80-90-100-112-132 | 2320 | 2320 | 6910 | 7940 | 1530 | 2000 |
| | **300 L1** | **4.26** | 117 | 690 | 8.7 | 15.0 | 71-80-90-100-112-132 | 2490 | 2490 | 7350 | 8440 | 1630 | 2400 |
| | **300 L1** | **5.77** | 87 | 630 | 5.9 | 15.0 | 71-80-90-100-112-132 | 2750 | 2750 | 8040 | 9240 | 1810 | 2400 |
| | **300 L1** | **7.20** | 69 | 530 | 4.0 | 15.0 | 71-80-90-100-112-132 | 2960 | 2960 | 8600 | 9880 | 1950 | 2400 |
| | **300 L1** | **9.00** | 56 | 370 | 2.2 | 15.0 | 71-80-90-100-112-132 | 3190 | 3190 | 9190 | 10600 | 2100 | 2400 |
| | **300 L2** | **12.1** | 41 | 730 | 3.4 | 15.0 | 71-80-90-100-112-132 | 3520 | 3520 | 10000 | 11500 | 2310 | 2000 |
| | **300 L2** | **14.8** | 34 | 840 | 3.2 | 15.0 | 71-80-90-100-112-132 | 3770 | 3770 | 10700 | 12300 | 2480 | 2000 |
| | **300 L2** | **18.2** | 27.5 | 850 | 2.6 | 15.0 | 71-80-90-100-112-132 | 4030 | 4030 | 11300 | 13000 | 2650 | 2400 |
| | **300 L2** | **20.1** | 24.9 | 650 | 1.8 | 15.0 | 71-80-90-100-112-132 | 4170 | 4170 | 11700 | 13400 | 2740 | 2000 |
| | **300 L2** | **24.6** | 20.3 | 850 | 1.9 | 15.0 | 71-80-90-100-112-132 | 4460 | 4460 | 12400 | 14300 | 2930 | 2400 |
| | **300 L2** | **30.7** | 16.3 | 850 | 1.5 | 15.0 | 71-80-90-100-112-132 | 4800 | 4800 | 13300 | 15300 | 3160 | 2400 |
| | **300 L2** | **33.3** | 15.0 | 650 | 1.1 | 15.0 | 71-80-90-100-112-132 | 4930 | 4930 | 13600 | 15600 | 3240 | 2400 |
| | **300 L2** | **38.4** | 13.0 | 860 | 1.2 | 15.0 | 71-80-90-100-112-132 | 5170 | 5170 | 14200 | 16300 | 3400 | 2400 |
| | **300 L2** | **41.5** | 12.0 | 650 | 0.87 | 15.0 | 71-80-90-100-112-132 | 5310 | 5310 | 14500 | 16700 | 3490 | 2400 |
| | **300 L2** | **51.9** | 9.6 | 650 | 0.70 | 15.0 | 71-80-90-100-112-132 | 5720 | 5720 | 15600 | 17900 | 3760 | 2400 |
| | **300 L2** | **64.8** | 7.7 | 550 | 0.47 | 15.0 | 71-80-90-100-112-132 | 6160 | 6160 | 16600 | 19100 | 4050 | 2400 |
| | **300 L3** | **51.6** | 9.7 | 860 | 0.96 | 15.0 | 71-80-90-100-112-132 | 5710 | 5710 | 15500 | 17800 | 3750 | 2000 |
| | **300 L3** | **63.2** | 7.9 | 890 | 0.81 | 15.0 | 71-80-90-100-112-132 | 6110 | 6110 | 16500 | 19000 | 4020 | 2400 |
| | **300 L3** | **69.9** | 7.2 | 650 | 0.53 | 15.0 | 71-80-90-100-112-132 | 6310 | 6310 | 17000 | 19500 | 4150 | 2000 |
| | **300 L3** | **77.5** | 6.5 | 920 | 0.68 | 15.0 | 71-80-90-100-112-132 | 6540 | 6540 | 17500 | 20100 | 4300 | 2400 |
| | **300 L3** | **85.6** | 5.8 | 930 | 0.62 | 15.0 | 71-80-90-100-112-132 | 6760 | 6760 | 18100 | 20800 | 4440 | 2400 |
| | **300 L3** | **105** | 4.8 | 960 | 0.52 | 15.0 | 71-80-90-100-112-132 | 7230 | 7230 | 19200 | 22100 | 4750 | 2400 |
| | **300 L3** | **116** | 4.3 | 670 | 0.33 | 15.0 | 71-80-90-100-112-132 | 7470 | 7470 | 19800 | 22700 | 4910 | 2400 |
| | **300 L3** | **131** | 3.8 | 990 | 0.44 | 15.0 | 71-80-90-100-112-132 | 7780 | 7780 | 20500 | 23600 | 5120 | 2400 |
| | **300 L3** | **142** | 3.5 | 1010 | 0.41 | 15.0 | 71-80-90-100-112-132 | 8000 | 8000 | 21000 | 24200 | 5260 | 2400 |

B



## 300 L

244

## 1250 Nm

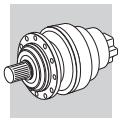
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **300 L3** | **177** | 2.8 | 1050 | 0.34 | 15.0 | 71-80-90-100-112-132 | 8610 | 8610 | 22500 | 25800 | 5660 | 2400 |
| | **300 L3** | **192** | 2.6 | 730 | 0.22 | 15.0 | 71-80-90-100-112-132 | 8850 | 8850 | 23000 | 26500 | 5820 | 2400 |
| | **300 L3** | **221** | 2.3 | 1090 | 0.28 | 15.0 | 71-80-90-100-112-132 | 9270 | 9270 | 24000 | 27600 | 6090 | 2400 |
| | **300 L3** | **240** | 2.1 | 750 | 0.18 | 15.0 | 71-80-90-100-112-132 | 9520 | 9520 | 24600 | 28300 | 6260 | 2400 |
| | **300 L3** | **299** | 1.7 | 780 | 0.15 | 15.0 | 71-80-90-100-112-132 | 10300 | 10300 | 26300 | 30200 | 6740 | 2400 |
| | **300 L3** | **374** | 1.3 | 820 | 0.13 | 15.0 | 71-80-90-100-112-132 | 11000 | 11000 | 28100 | 32300 | 7260 | 2400 |
| | **300 L4** | **330** | 1.5 | 1170 | 0.21 | 12.0 | 71-80-90-100-112-132 | 10600 | 10600 | 27100 | 31100 | 6970 | 2400 |
| | **300 L4** | **403** | 1.2 | 830 | 0.12 | 12.0 | 71-80-90-100-112-132 | 11300 | 11300 | 28800 | 33000 | 7450 | 2400 |
| | **300 L4** | **447** | 1.1 | 1230 | 0.16 | 12.0 | 71-80-90-100-112-132 | 11700 | 11700 | 29700 | 34000 | 7710 | 2400 |
| | **300 L4** | **494** | 1.0 | 1250 | 0.15 | 12.0 | 71-80-90-100-112-132 | 12000 | 12100 | 30600 | 34000 | 7970 | 2400 |
| | **300 L4** | **558** | 0.90 | 1250 | 0.13 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **616** | 0.81 | 1250 | 0.12 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **755** | 0.66 | 1250 | 0.10 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **819** | 0.61 | 1250 | 0.09 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **942** | 0.53 | 1250 | 0.08 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1022** | 0.49 | 1250 | 0.07 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1108** | 0.45 | 860 | 0.05 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1275** | 0.39 | 1250 | 0.06 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1383** | 0.36 | 860 | 0.04 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1591** | 0.31 | 1250 | 0.05 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **1725** | 0.29 | 860 | 0.03 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2153** | 0.23 | 860 | 0.02 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 L4** | **2692** | 0.19 | 1000 | 0.02 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |

## 301 L

254

## 2460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 L1** | **3.48** | 431 | 840 | 30 | 7.5 | 71-80-90-100-112-132 | 1610 | 1610 | 4970 | 5710 | 1060 | 3400 |
| | **301 L1** | **4.26** | 352 | 880 | 30 | 7.5 | 71-80-90-100-112-132 | 1720 | 1720 | 5280 | 6070 | 1130 | 3400 |
| | **301 L1** | **5.77** | 260 | 930 | 26 | 7.5 | 71-80-90-100-112-132 | 1910 | 1910 | 5790 | 6650 | 1250 | 3400 |
| | **301 L1** | **7.20** | 208 | 750 | 17.0 | 7.5 | 71-80-90-100-112-132 | 2050 | 2050 | 6180 | 7100 | 1350 | 3400 |
| | **301 L1** | **9.00** | 167 | 630 | 11.3 | 7.5 | 71-80-90-100-112-132 | 2210 | 2210 | 6610 | 7600 | 1450 | 3400 |
| | **301 L2** | **12.1** | 124 | 1220 | 16.8 | 7.5 | 71-80-90-100-112-132 | 2440 | 2440 | 7230 | 8300 | 1600 | 3400 |
| | **301 L2** | **14.8** | 101 | 1280 | 14.4 | 7.5 | 71-80-90-100-112-132 | 2610 | 2610 | 7680 | 8820 | 1720 | 3400 |
| | **301 L2** | **18.2** | 83 | 1360 | 12.5 | 7.5 | 71-80-90-100-112-132 | 2790 | 2790 | 8160 | 9380 | 1840 | 3400 |
| | **301 L2** | **20.1** | 75 | 1260 | 10.5 | 7.5 | 71-80-90-100-112-132 | 2890 | 2890 | 8410 | 9660 | 1900 | 3400 |
| | **301 L2** | **24.6** | 61 | 1490 | 10.1 | 7.5 | 71-80-90-100-112-132 | 3090 | 3090 | 8940 | 10300 | 2030 | 3400 |
| | **301 L2** | **30.7** | 49 | 1580 | 8.6 | 7.5 | 71-80-90-100-112-132 | 3330 | 3330 | 9550 | 11000 | 2190 | 3400 |
| | **301 L2** | **33.3** | 45 | 1300 | 6.5 | 7.5 | 71-80-90-100-112-132 | 3420 | 3420 | 9790 | 11200 | 2250 | 3400 |
| | **301 L2** | **38.4** | 39 | 1540 | 6.7 | 7.5 | 71-80-90-100-112-132 | 3590 | 3590 | 10200 | 11700 | 2360 | 3400 |
| | **301 L2** | **41.5** | 36 | 1300 | 5.2 | 7.5 | 71-80-90-100-112-132 | 3680 | 3680 | 10500 | 12000 | 2420 | 3400 |
| | **301 L2** | **51.9** | 28.9 | 1300 | 4.2 | 7.5 | 71-80-90-100-112-132 | 3970 | 3970 | 11200 | 12900 | 2610 | 3400 |
| | **301 L2** | **64.8** | 23.1 | 1150 | 3.0 | 7.5 | 71-80-90-100-112-132 | 4270 | 4270 | 12000 | 13700 | 2810 | 3400 |
| | **301 L3** | **51.6** | 29.1 | 1630 | 5.4 | 7.5 | 71-80-90-100-112-132 | 3960 | 3960 | 11200 | 12800 | 2600 | 3400 |
| | **301 L3** | **63.2** | 23.7 | 1650 | 4.5 | 7.5 | 71-80-90-100-112-132 | 4240 | 4240 | 11900 | 13600 | 2780 | 3400 |
| | **301 L3** | **69.9** | 21.5 | 1300 | 3.2 | 7.5 | 71-80-90-100-112-132 | 4380 | 4380 | 12200 | 14000 | 2880 | 3400 |
| | **301 L3** | **77.5** | 19.4 | 1670 | 3.7 | 7.5 | 71-80-90-100-112-132 | 4530 | 4530 | 12600 | 14500 | 2980 | 3400 |
| | **301 L3** | **85.6** | 17.5 | 1680 | 3.4 | 7.5 | 71-80-90-100-112-132 | 4680 | 4680 | 13000 | 14900 | 3080 | 3400 |
| | **301 L3** | **105** | 14.3 | 1700 | 2.8 | 7.5 | 71-80-90-100-112-132 | 5010 | 5010 | 13800 | 15900 | 3300 | 3400 |
| | **301 L3** | **116** | 13.0 | 1300 | 1.9 | 7.5 | 71-80-90-100-112-132 | 5180 | 5180 | 14200 | 16300 | 3410 | 3400 |
| | **301 L3** | **131** | 11.5 | 1720 | 2.3 | 7.5 | 71-80-90-100-112-132 | 5400 | 5400 | 14800 | 17000 | 3550 | 3400 |
| | **301 L3** | **142** | 10.6 | 1720 | 2.1 | 7.5 | 71-80-90-100-112-132 | 5540 | 5540 | 15100 | 17400 | 3650 | 3400 |
| | **301 L3** | **177** | 8.5 | 1770 | 1.7 | 7.5 | 71-80-90-100-112-132 | 5970 | 5970 | 16200 | 18600 | 3920 | 3400 |
| | **301 L3** | **192** | 7.8 | 1300 | 1.2 | 7.5 | 71-80-90-100-112-132 | 6130 | 6130 | 16600 | 19000 | 4030 | 3400 |
| | **301 L3** | **221** | 6.8 | 1790 | 1.4 | 7.5 | 71-80-90-100-112-132 | 6430 | 6430 | 17300 | 19800 | 4230 | 3400 |
| | **301 L3** | **240** | 6.3 | 1300 | 0.93 | 7.5 | 71-80-90-100-112-132 | 6600 | 6600 | 17700 | 20300 | 4340 | 3400 |
| | **301 L3** | **299** | 5.0 | 1300 | 0.75 | 7.5 | 71-80-90-100-112-132 | 7110 | 7110 | 18900 | 21700 | 4670 | 3400 |
| | **301 L3** | **374** | 4.0 | 1350 | 0.62 | 7.5 | 71-80-90-100-112-132 | 7660 | 7660 | 20200 | 23200 | 5030 | 3400 |



# 301 L

254

# 2460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 L4** | **330** | 4.5 | 1920 | 1.0 | 6.0 | 71-80-90-100-112-132 | 7350 | 7350 | 19500 | 22400 | 4830 | 3400 |
| | **301 L4** | **403** | 3.7 | 1370 | 0.60 | 6.0 | 71-80-90-100-112-132 | 7850 | 7850 | 20700 | 23800 | 5160 | 3400 |
| | **301 L4** | **447** | 3.4 | 2030 | 0.81 | 6.0 | 71-80-90-100-112-132 | 8130 | 8130 | 21300 | 24500 | 5340 | 3400 |
| | **301 L4** | **494** | 3.0 | 2070 | 0.74 | 6.0 | 71-80-90-100-112-132 | 8400 | 8400 | 22000 | 25300 | 5520 | 3400 |
| | **301 L4** | **558** | 2.7 | 2110 | 0.67 | 6.0 | 71-80-90-100-112-132 | 8750 | 8750 | 22800 | 26200 | 5750 | 3400 |
| | **301 L4** | **616** | 2.4 | 2150 | 0.62 | 6.0 | 71-80-90-100-112-132 | 9050 | 9050 | 23500 | 27000 | 5950 | 3400 |
| | **301 L4** | **755** | 2.0 | 2220 | 0.52 | 6.0 | 71-80-90-100-112-132 | 9680 | 9680 | 25000 | 28700 | 6360 | 3400 |
| | **301 L4** | **819** | 1.8 | 2240 | 0.49 | 6.0 | 71-80-90-100-112-132 | 9940 | 9940 | 25600 | 29400 | 6540 | 3400 |
| | **301 L4** | **942** | 1.6 | 2290 | 0.43 | 6.0 | 71-80-90-100-112-132 | 10400 | 10400 | 26700 | 30700 | 6850 | 3400 |
| | **301 L4** | **1022** | 1.5 | 2320 | 0.40 | 6.0 | 71-80-90-100-112-132 | 10700 | 10700 | 27300 | 31400 | 7040 | 3400 |
| | **301 L4** | **1108** | 1.4 | 1630 | 0.26 | 6.0 | 71-80-90-100-112-132 | 11000 | 11000 | 28000 | 32200 | 7230 | 3400 |
| | **301 L4** | **1275** | 1.2 | 2400 | 0.33 | 6.0 | 71-80-90-100-112-132 | 11500 | 11500 | 29200 | 33600 | 7580 | 3400 |
| | **301 L4** | **1383** | 1.1 | 1700 | 0.22 | 6.0 | 71-80-90-100-112-132 | 11800 | 11800 | 29900 | 34000 | 7790 | 3400 |
| | **301 L4** | **1591** | 0.94 | 2000 | 0.22 | 6.0 | 71-80-90-100-112-132 | 12000 | 12400 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1725** | 0.87 | 1720 | 0.18 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2153** | 0.70 | 1720 | 0.14 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2692** | 0.56 | 1720 | 0.11 | 6.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| **1000** | **301 L1** | **3.48** | 287 | 950 | 29 | 9.0 | 71-80-90-100-112-132 | 1840 | 1840 | 5610 | 6450 | 1210 | 3400 |
| | **301 L1** | **4.26** | 235 | 990 | 25 | 9.0 | 71-80-90-100-112-132 | 1970 | 1970 | 5970 | 6860 | 1300 | 3400 |
| | **301 L1** | **5.77** | 173 | 1050 | 19.7 | 9.0 | 71-80-90-100-112-132 | 2180 | 2180 | 6530 | 7510 | 1430 | 3400 |
| | **301 L1** | **7.20** | 139 | 850 | 12.8 | 9.0 | 71-80-90-100-112-132 | 2350 | 2350 | 6980 | 8020 | 1540 | 3400 |
| | **301 L1** | **9.00** | 111 | 710 | 8.5 | 9.0 | 71-80-90-100-112-132 | 2530 | 2530 | 7470 | 8580 | 1660 | 3400 |
| | **301 L2** | **12.1** | 83 | 1330 | 12.3 | 9.0 | 71-80-90-100-112-132 | 2790 | 2790 | 8160 | 9380 | 1840 | 3400 |
| | **301 L2** | **14.8** | 67 | 1440 | 10.8 | 9.0 | 71-80-90-100-112-132 | 2990 | 2990 | 8670 | 9970 | 1970 | 3400 |
| | **301 L2** | **18.2** | 55 | 1530 | 9.4 | 9.0 | 71-80-90-100-112-132 | 3200 | 3200 | 9220 | 10600 | 2100 | 3400 |
| | **301 L2** | **20.1** | 50 | 1300 | 7.2 | 9.0 | 71-80-90-100-112-132 | 3310 | 3310 | 9500 | 10900 | 2170 | 3400 |
| | **301 L2** | **24.6** | 41 | 1600 | 7.2 | 9.0 | 71-80-90-100-112-132 | 3540 | 3540 | 10100 | 11600 | 2330 | 3400 |
| | **301 L2** | **30.7** | 33 | 1620 | 5.9 | 9.0 | 71-80-90-100-112-132 | 3810 | 3810 | 10800 | 12400 | 2500 | 3400 |
| | **301 L2** | **33.3** | 30 | 1300 | 4.3 | 9.0 | 71-80-90-100-112-132 | 3910 | 3910 | 11100 | 12700 | 2570 | 3400 |
| | **301 L2** | **38.4** | 26.1 | 1550 | 4.5 | 9.0 | 71-80-90-100-112-132 | 4100 | 4100 | 11500 | 13300 | 2700 | 3400 |
| | **301 L2** | **41.5** | 24.1 | 1300 | 3.5 | 9.0 | 71-80-90-100-112-132 | 4210 | 4210 | 11800 | 13600 | 2770 | 3400 |
| | **301 L2** | **51.9** | 19.3 | 1300 | 2.8 | 9.0 | 71-80-90-100-112-132 | 4540 | 4540 | 12600 | 14500 | 2980 | 3400 |
| | **301 L2** | **64.8** | 15.4 | 1150 | 2.0 | 9.0 | 71-80-90-100-112-132 | 4890 | 4890 | 13500 | 15500 | 3210 | 3400 |
| | **301 L3** | **51.6** | 19.4 | 1670 | 3.7 | 9.0 | 71-80-90-100-112-132 | 4530 | 4530 | 12600 | 14500 | 2980 | 3400 |
| | **301 L3** | **63.2** | 15.8 | 1690 | 3.1 | 9.0 | 71-80-90-100-112-132 | 4850 | 4850 | 13400 | 15400 | 3190 | 3400 |
| | **301 L3** | **69.9** | 14.3 | 1300 | 2.1 | 9.0 | 71-80-90-100-112-132 | 5010 | 5010 | 13800 | 15900 | 3290 | 3400 |
| | **301 L3** | **77.5** | 12.9 | 1710 | 2.5 | 9.0 | 71-80-90-100-112-132 | 5190 | 5190 | 14200 | 16400 | 3410 | 3400 |
| | **301 L3** | **85.6** | 11.7 | 1710 | 2.3 | 9.0 | 71-80-90-100-112-132 | 5360 | 5360 | 14700 | 16900 | 3530 | 3400 |
| | **301 L3** | **105** | 9.5 | 1740 | 1.9 | 9.0 | 71-80-90-100-112-132 | 5740 | 5740 | 15600 | 17900 | 3770 | 3400 |
| | **301 L3** | **116** | 8.6 | 1300 | 1.3 | 9.0 | 71-80-90-100-112-132 | 5930 | 5930 | 16100 | 18500 | 3900 | 3400 |
| | **301 L3** | **131** | 7.6 | 1790 | 1.6 | 9.0 | 71-80-90-100-112-132 | 6180 | 6180 | 16700 | 19200 | 4060 | 3400 |
| | **301 L3** | **142** | 7.0 | 1810 | 1.5 | 9.0 | 71-80-90-100-112-132 | 6350 | 6350 | 17100 | 19600 | 4170 | 3400 |
| | **301 L3** | **177** | 5.6 | 1860 | 1.2 | 9.0 | 71-80-90-100-112-132 | 6830 | 6830 | 18300 | 21000 | 4490 | 3400 |
| | **301 L3** | **192** | 5.2 | 1300 | 0.78 | 9.0 | 71-80-90-100-112-132 | 7020 | 7020 | 18700 | 21500 | 4620 | 3400 |
| | **301 L3** | **221** | 4.5 | 1850 | 0.96 | 9.0 | 71-80-90-100-112-132 | 7360 | 7360 | 19500 | 22400 | 4840 | 3400 |
| | **301 L3** | **240** | 4.2 | 1340 | 0.64 | 9.0 | 71-80-90-100-112-132 | 7560 | 7560 | 20000 | 23000 | 4970 | 3400 |
| | **301 L3** | **299** | 3.3 | 1390 | 0.53 | 9.0 | 71-80-90-100-112-132 | 8140 | 8140 | 21400 | 24500 | 5350 | 3400 |
| | **301 L3** | **374** | 2.7 | 1440 | 0.44 | 9.0 | 71-80-90-100-112-132 | 8770 | 8770 | 22800 | 26200 | 5760 | 3400 |
| | **301 L4** | **330** | 3.0 | 2070 | 0.74 | 7.2 | 71-80-90-100-112-132 | 8410 | 8410 | 22000 | 25300 | 5530 | 3400 |
| | **301 L4** | **403** | 2.5 | 1460 | 0.43 | 7.2 | 71-80-90-100-112-132 | 8990 | 8990 | 23400 | 26800 | 5910 | 3400 |
| | **301 L4** | **447** | 2.2 | 2180 | 0.58 | 7.2 | 71-80-90-100-112-132 | 9300 | 9300 | 24100 | 27700 | 6120 | 3400 |
| | **301 L4** | **494** | 2.0 | 2210 | 0.53 | 7.2 | 71-80-90-100-112-132 | 9620 | 9620 | 24800 | 28500 | 6320 | 3400 |
| | **301 L4** | **558** | 1.8 | 2250 | 0.48 | 7.2 | 71-80-90-100-112-132 | 10000 | 10000 | 25800 | 29600 | 6590 | 3400 |
| | **301 L4** | **616** | 1.6 | 2290 | 0.44 | 7.2 | 71-80-90-100-112-132 | 10400 | 10400 | 26500 | 30500 | 6810 | 3400 |
| | **301 L4** | **755** | 1.3 | 2360 | 0.37 | 7.2 | 71-80-90-100-112-132 | 11100 | 11100 | 28200 | 32400 | 7280 | 3400 |
| | **301 L4** | **819** | 1.2 | 2390 | 0.34 | 7.2 | 71-80-90-100-112-132 | 11400 | 11400 | 28900 | 33200 | 7480 | 3400 |
| | **301 L4** | **942** | 1.1 | 2440 | 0.31 | 7.2 | 71-80-90-100-112-132 | 11900 | 11900 | 30100 | 34000 | 7840 | 3400 |
| | **301 L4** | **1022** | 0.98 | 2460 | 0.28 | 7.2 | 71-80-90-100-112-132 | 12000 | 12300 | 30900 | 34000 | 8000 | 3400 |
| | **301 L4** | **1108** | 0.90 | 1720 | 0.18 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1275** | 0.78 | 2460 | 0.23 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1383** | 0.72 | 1720 | 0.15 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |

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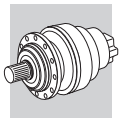

# 301 L

254

# 2460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **301 L4** | **1591** | 0.63 | 2000 | 0.15 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1725** | 0.58 | 1720 | 0.12 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2153** | 0.46 | 1720 | 0.09 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2692** | 0.37 | 1720 | 0.08 | 7.2 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| **500** | **301 L1** | **3.48** | 144 | 1170 | 18.1 | 15.0 | 71-80-90-100-112-132 | 2320 | 2320 | 6910 | 7940 | 1530 | 3400 |
| | **301 L1** | **4.26** | 117 | 1220 | 15.4 | 15.0 | 71-80-90-100-112-132 | 2490 | 2490 | 7350 | 8440 | 1630 | 3400 |
| | **301 L1** | **5.77** | 87 | 1250 | 11.7 | 15.0 | 71-80-90-100-112-132 | 2750 | 2750 | 8040 | 9240 | 1810 | 3400 |
| | **301 L1** | **7.20** | 69 | 1050 | 7.8 | 15.0 | 71-80-90-100-112-132 | 2960 | 2960 | 8600 | 9880 | 1950 | 3400 |
| | **301 L1** | **9.00** | 56 | 730 | 4.4 | 15.0 | 71-80-90-100-112-132 | 3190 | 3190 | 9190 | 10600 | 2100 | 3400 |
| | **301 L2** | **12.1** | 41 | 1430 | 6.6 | 15.0 | 71-80-90-100-112-132 | 3520 | 3520 | 10000 | 11500 | 2310 | 3400 |
| | **301 L2** | **14.8** | 34 | 1620 | 6.1 | 15.0 | 71-80-90-100-112-132 | 3770 | 3770 | 10700 | 12300 | 2480 | 3400 |
| | **301 L2** | **18.2** | 27.5 | 1630 | 5.0 | 15.0 | 71-80-90-100-112-132 | 4030 | 4030 | 11300 | 13000 | 2650 | 3400 |
| | **301 L2** | **20.1** | 24.9 | 1300 | 3.6 | 15.0 | 71-80-90-100-112-132 | 4170 | 4170 | 11700 | 13400 | 2740 | 3400 |
| | **301 L2** | **24.6** | 20.3 | 1660 | 3.8 | 15.0 | 71-80-90-100-112-132 | 4460 | 4460 | 12400 | 14300 | 2930 | 3400 |
| | **301 L2** | **30.7** | 16.3 | 1680 | 3.1 | 15.0 | 71-80-90-100-112-132 | 4800 | 4800 | 13300 | 15300 | 3160 | 3400 |
| | **301 L2** | **33.3** | 15.0 | 1300 | 2.2 | 15.0 | 71-80-90-100-112-132 | 4930 | 4930 | 13600 | 15600 | 3240 | 3400 |
| | **301 L2** | **38.4** | 13.0 | 1560 | 2.3 | 15.0 | 71-80-90-100-112-132 | 5170 | 5170 | 14200 | 16300 | 3400 | 3400 |
| | **301 L2** | **41.5** | 12.0 | 1300 | 1.7 | 15.0 | 71-80-90-100-112-132 | 5310 | 5310 | 14500 | 16700 | 3490 | 3400 |
| | **301 L2** | **51.9** | 9.6 | 1300 | 1.4 | 15.0 | 71-80-90-100-112-132 | 5720 | 5720 | 15600 | 17900 | 3760 | 3400 |
| | **301 L2** | **64.8** | 7.7 | 1150 | 0.99 | 15.0 | 71-80-90-100-112-132 | 6160 | 6160 | 16600 | 19100 | 4050 | 3400 |
| | **301 L3** | **51.6** | 9.7 | 1740 | 1.9 | 15.0 | 71-80-90-100-112-132 | 5710 | 5710 | 15500 | 17800 | 3750 | 3400 |
| | **301 L3** | **63.2** | 7.9 | 1780 | 1.6 | 15.0 | 71-80-90-100-112-132 | 6110 | 6110 | 16500 | 19000 | 4020 | 3400 |
| | **301 L3** | **69.9** | 7.2 | 1300 | 1.1 | 15.0 | 71-80-90-100-112-132 | 6310 | 6310 | 17000 | 19500 | 4150 | 3400 |
| | **301 L3** | **77.5** | 6.5 | 1830 | 1.4 | 15.0 | 71-80-90-100-112-132 | 6540 | 6540 | 17500 | 20100 | 4300 | 3400 |
| | **301 L3** | **85.6** | 5.8 | 1850 | 1.2 | 15.0 | 71-80-90-100-112-132 | 6760 | 6760 | 18100 | 20800 | 4440 | 3400 |
| | **301 L3** | **105** | 4.8 | 1910 | 1.0 | 15.0 | 71-80-90-100-112-132 | 7230 | 7230 | 19200 | 22100 | 4750 | 3400 |
| | **301 L3** | **116** | 4.3 | 1330 | 0.66 | 15.0 | 71-80-90-100-112-132 | 7470 | 7470 | 19800 | 22700 | 4910 | 3400 |
| | **301 L3** | **131** | 3.8 | 1980 | 0.87 | 15.0 | 71-80-90-100-112-132 | 7780 | 7780 | 20500 | 23600 | 5120 | 3400 |
| | **301 L3** | **142** | 3.5 | 2010 | 0.81 | 15.0 | 71-80-90-100-112-132 | 8000 | 8000 | 21000 | 24200 | 5260 | 3400 |
| | **301 L3** | **177** | 2.8 | 2090 | 0.68 | 15.0 | 71-80-90-100-112-132 | 8610 | 8610 | 22500 | 25800 | 5660 | 3400 |
| | **301 L3** | **192** | 2.6 | 1450 | 0.43 | 15.0 | 71-80-90-100-112-132 | 8850 | 8850 | 23000 | 26500 | 5820 | 3400 |
| | **301 L3** | **221** | 2.3 | 2000 | 0.52 | 15.0 | 71-80-90-100-112-132 | 9270 | 9270 | 24000 | 27600 | 6090 | 3400 |
| | **301 L3** | **240** | 2.1 | 1510 | 0.36 | 15.0 | 71-80-90-100-112-132 | 9520 | 9520 | 24600 | 28300 | 6260 | 3400 |
| | **301 L3** | **299** | 1.7 | 1570 | 0.30 | 15.0 | 71-80-90-100-112-132 | 10300 | 10300 | 26300 | 30200 | 6740 | 3400 |
| | **301 L3** | **374** | 1.3 | 1630 | 0.25 | 15.0 | 71-80-90-100-112-132 | 11000 | 11000 | 28100 | 32300 | 7260 | 3400 |
| | **301 L4** | **330** | 1.5 | 2310 | 0.41 | 12.0 | 71-80-90-100-112-132 | 10600 | 10600 | 27100 | 31100 | 6970 | 3400 |
| | **301 L4** | **403** | 1.2 | 1650 | 0.24 | 12.0 | 71-80-90-100-112-132 | 11300 | 11300 | 28800 | 33000 | 7450 | 3400 |
| | **301 L4** | **447** | 1.1 | 2420 | 0.32 | 12.0 | 71-80-90-100-112-132 | 11700 | 11700 | 29700 | 34000 | 7710 | 3400 |
| | **301 L4** | **494** | 1.0 | 2460 | 0.29 | 12.0 | 71-80-90-100-112-132 | 12000 | 12100 | 30600 | 34000 | 7970 | 3400 |
| | **301 L4** | **558** | 0.90 | 2460 | 0.26 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **616** | 0.81 | 2460 | 0.24 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **755** | 0.66 | 2460 | 0.19 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **819** | 0.61 | 2460 | 0.18 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **942** | 0.53 | 2460 | 0.15 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1022** | 0.49 | 2460 | 0.14 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1108** | 0.45 | 1720 | 0.09 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1275** | 0.39 | 2460 | 0.11 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1383** | 0.36 | 1720 | 0.07 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1591** | 0.31 | 2000 | 0.07 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **1725** | 0.29 | 1720 | 0.06 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2153** | 0.23 | 1720 | 0.05 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 L4** | **2692** | 0.19 | 1720 | 0.04 | 12.0 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |

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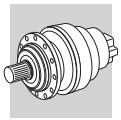

# 303 L

264

# 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **303 L1** | **3.60** | 417 | 1380 | 40 | 11.0 | 132-160-180-200 | 5010 | 5780 | 10300 | 12300 | 3210 | 5200 |
| | **303 L1** | **4.25** | 353 | 1430 | 40 | 11.0 | 132-160-180-200 | 5290 | 6110 | 10800 | 13000 | 3400 | 5200 |
| | **303 L1** | **5.33** | 281 | 1490 | 40 | 11.0 | 132-160-180-200 | 5710 | 6590 | 11500 | 13900 | 3660 | 5200 |
| | **303 L1** | **6.20** | 242 | 1400 | 36 | 11.0 | 132-160-180-200 | 6000 | 6930 | 12100 | 14500 | 3850 | 5200 |
| | **303 L1** | **7.50** | 200 | 1220 | 26 | 11.0 | 132-160-180-200 | 6400 | 7390 | 12800 | 15400 | 4100 | 5200 |
| | **303 L1** | **9.67** | 155 | 750 | 12.6 | 11.0 | 132-160-180-200 | 6960 | 8040 | 13800 | 16600 | 4470 | 5200 |
| | **303 L2** | **12.5** | 120 | 1640 | 20.0 | 9.0 | 71-80-90-100-112-132-160 | 7590 | 8760 | 14900 | 17900 | 4870 | 5200 |
| | **303 L2** | **15.3** | 98 | 1710 | 18.6 | 9.0 | 71-80-90-100-112-132-160 | 8120 | 9380 | 15800 | 19100 | 5210 | 5200 |
| | **303 L2** | **18.1** | 83 | 2020 | 18.6 | 9.0 | 71-80-90-100-112-132-160 | 8580 | 9910 | 16600 | 20000 | 5510 | 5200 |
| | **303 L2** | **20.8** | 72 | 1820 | 14.6 | 9.0 | 71-80-90-100-112-132-160 | 8980 | 10400 | 17300 | 20900 | 5760 | 5200 |
| | **303 L2** | **22.7** | 66 | 2100 | 15.4 | 9.0 | 71-80-90-100-112-132-160 | 9260 | 10700 | 17800 | 21400 | 5940 | 5200 |
| | **303 L2** | **24.5** | 61 | 2150 | 14.6 | 9.0 | 71-80-90-100-112-132-160 | 9490 | 11000 | 18200 | 21900 | 6090 | 5200 |
| | **303 L2** | **26.4** | 57 | 1820 | 11.5 | 9.0 | 71-80-90-100-112-132-160 | 9740 | 11200 | 18600 | 22400 | 6250 | 5200 |
| | **303 L2** | **30.8** | 49 | 2140 | 11.6 | 9.0 | 71-80-90-100-112-132-160 | 10200 | 11800 | 19500 | 23500 | 6570 | 5200 |
| | **303 L2** | **35.8** | 42 | 1820 | 8.5 | 9.0 | 71-80-90-100-112-132-160 | 10800 | 12400 | 20400 | 24600 | 6910 | 5200 |
| | **303 L2** | **38.4** | 39 | 2150 | 9.3 | 9.0 | 71-80-90-100-112-132-160 | 11000 | 12700 | 20900 | 25100 | 7070 | 5200 |
| | **303 L2** | **44.6** | 34 | 1820 | 6.8 | 9.0 | 71-80-90-100-112-132-160 | 11600 | 13400 | 21800 | 26300 | 7440 | 5200 |
| | **303 L2** | **55.8** | 26.9 | 1820 | 5.4 | 9.0 | 71-80-90-100-112-132-160 | 12500 | 14400 | 23300 | 28100 | 8010 | 5200 |
| | **303 L3** | **53.4** | 28.1 | 2170 | 7.0 | 7.5 | 71-80-90-100-112-132-160 | 12300 | 14200 | 23000 | 27700 | 7900 | 5200 |
| | **303 L3** | **63.1** | 23.8 | 2510 | 6.8 | 7.5 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24200 | 29100 | 8340 | 5200 |
| | **303 L3** | **72.3** | 20.8 | 2230 | 5.3 | 7.5 | 71-80-90-100-112-132-160 | 13600 | 15700 | 25200 | 30300 | 8730 | 5200 |
| | **303 L3** | **77.2** | 19.4 | 2520 | 5.6 | 7.5 | 71-80-90-100-112-132-160 | 13900 | 16100 | 25700 | 30900 | 8930 | 5200 |
| | **303 L3** | **90.2** | 16.6 | 2250 | 4.3 | 7.5 | 71-80-90-100-112-132-160 | 14700 | 16900 | 26900 | 32400 | 9400 | 5200 |
| | **303 L3** | **105** | 14.4 | 2580 | 4.2 | 7.5 | 71-80-90-100-112-132-160 | 15400 | 17800 | 28200 | 33900 | 9880 | 5200 |
| | **303 L3** | **113** | 13.3 | 1820 | 2.8 | 7.5 | 71-80-90-100-112-132-160 | 15800 | 18200 | 28800 | 34700 | 10100 | 5200 |
| | **303 L3** | **124** | 12.1 | 1820 | 2.5 | 7.5 | 71-80-90-100-112-132-160 | 16300 | 18800 | 29700 | 35700 | 10500 | 5200 |
| | **303 L3** | **141** | 10.6 | 2610 | 3.2 | 7.5 | 71-80-90-100-112-132-160 | 17000 | 19700 | 30800 | 37100 | 10900 | 5200 |
| | **303 L3** | **152** | 9.8 | 1820 | 2.1 | 7.5 | 71-80-90-100-112-132-160 | 17500 | 20200 | 31500 | 37900 | 11200 | 5200 |
| | **303 L3** | **164** | 9.2 | 2200 | 2.3 | 7.5 | 71-80-90-100-112-132-160 | 17900 | 20600 | 32200 | 38800 | 11500 | 5200 |
| | **303 L3** | **178** | 8.5 | 2210 | 2.1 | 7.5 | 71-80-90-100-112-132-160 | 18400 | 21200 | 33000 | 39700 | 11800 | 5200 |
| | **303 L3** | **190** | 7.9 | 1830 | 1.7 | 7.5 | 71-80-90-100-112-132-160 | 18800 | 21700 | 33700 | 40600 | 12100 | 5200 |
| | **303 L3** | **220** | 6.8 | 2250 | 1.8 | 7.5 | 71-80-90-100-112-132-160 | 19700 | 22800 | 35200 | 42400 | 12700 | 5200 |
| | **303 L3** | **258** | 5.8 | 1840 | 1.2 | 7.5 | 71-80-90-100-112-132-160 | 20800 | 24000 | 36900 | 44400 | 13300 | 5200 |
| | **303 L3** | **276** | 5.4 | 2230 | 1.4 | 7.5 | 71-80-90-100-112-132-160 | 21300 | 24600 | 37700 | 45400 | 13700 | 5200 |
| | **303 L3** | **321** | 4.7 | 1860 | 1.00 | 7.5 | 71-80-90-100-112-132-160 | 22400 | 25800 | 39400 | 47500 | 14400 | 5200 |
| | **303 L3** | **389** | 3.9 | 1690 | 0.75 | 7.5 | 71-80-90-100-112-132-160 | 23900 | 27500 | 41800 | 50300 | 15300 | 5200 |
| | **303 L3** | **402** | 3.7 | 1940 | 0.83 | 7.5 | 71-80-90-100-112-132-160 | 24100 | 27800 | 42200 | 50700 | 15500 | 5200 |
| | **303 L4** | **413** | 3.6 | 2360 | 1.0 | 6.0 | 71-80-90-100-112-132-160 | 24300 | 28100 | 42500 | 51200 | 15600 | 5200 |
| | **303 L4** | **446** | 3.4 | 2810 | 1.1 | 6.0 | 71-80-90-100-112-132-160 | 25000 | 28800 | 43500 | 52400 | 16000 | 5200 |
| | **303 L4** | **492** | 3.0 | 2690 | 0.97 | 6.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44800 | 53900 | 16600 | 5200 |
| | **303 L4** | **556** | 2.7 | 2810 | 0.90 | 6.0 | 71-80-90-100-112-132-160 | 26900 | 31000 | 46500 | 55900 | 17200 | 5200 |
| | **303 L4** | **649** | 2.3 | 2320 | 0.63 | 6.0 | 71-80-90-100-112-132-160 | 28300 | 32700 | 48700 | 58600 | 18200 | 5200 |
| | **303 L4** | **718** | 2.1 | 2150 | 0.53 | 6.0 | 71-80-90-100-112-132-160 | 29300 | 33800 | 50200 | 60400 | 18800 | 5200 |
| | **303 L4** | **816** | 1.8 | 2720 | 0.59 | 6.0 | 71-80-90-100-112-132-160 | 30500 | 35300 | 52200 | 62800 | 19600 | 5200 |
| | **303 L4** | **896** | 1.7 | 2230 | 0.44 | 6.0 | 71-80-90-100-112-132-160 | 31500 | 36400 | 53700 | 64600 | 20200 | 5200 |
| | **303 L4** | **1018** | 1.5 | 2740 | 0.48 | 6.0 | 71-80-90-100-112-132-160 | 32900 | 38000 | 55800 | 67100 | 21100 | 5200 |
| | **303 L4** | **1098** | 1.4 | 2310 | 0.37 | 6.0 | 71-80-90-100-112-132-160 | 33700 | 38900 | 57000 | 68600 | 21600 | 5200 |
| | **303 L4** | **1278** | 1.2 | 2790 | 0.39 | 6.0 | 71-80-90-100-112-132-160 | 35500 | 40900 | 59700 | 71800 | 22800 | 5200 |
| | **303 L4** | **1370** | 1.1 | 2400 | 0.31 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 41900 | 60900 | 73300 | 23300 | 5200 |
| | **303 L4** | **1586** | 0.95 | 2250 | 0.25 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63700 | 74000 | 24000 | 5200 |
| | **303 L4** | **1854** | 0.81 | 2440 | 0.23 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1991** | 0.75 | 2850 | 0.25 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2243** | 0.67 | 2000 | 0.16 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2799** | 0.54 | 2000 | 0.13 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| **1000** | **303 L1** | **3.60** | 278 | 1560 | 40 | 13.2 | 132-160-180-200 | 5730 | 6620 | 11600 | 13900 | 3680 | 5200 |
| | **303 L1** | **4.25** | 235 | 1620 | 40 | 13.2 | 132-160-180-200 | 6060 | 7000 | 12200 | 14600 | 3890 | 5200 |
| | **303 L1** | **5.33** | 188 | 1680 | 34 | 13.2 | 132-160-180-200 | 6540 | 7550 | 13000 | 15700 | 4190 | 5200 |
| | **303 L1** | **6.20** | 161 | 1580 | 27 | 13.2 | 132-160-180-200 | 6870 | 7930 | 13600 | 16400 | 4410 | 5200 |
| | **303 L1** | **7.50** | 133 | 1380 | 19.8 | 13.2 | 132-160-180-200 | 7320 | 8450 | 14400 | 17400 | 4700 | 5200 |
| | **303 L1** | **9.67** | 103 | 850 | 9.5 | 13.2 | 132-160-180-200 | 7970 | 9200 | 15600 | 18700 | 5110 | 5200 |

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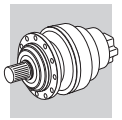
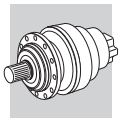


# 303 L

264

# 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **303 L2** | **12.5** | 80 | 1850 | 16.4 | 10.8 | 71-80-90-100-112-132-160 | 8690 | 10000 | 16800 | 20300 | 5570 | 5200 |
| | **303 L2** | **15.3** | 65 | 1940 | 14.0 | 10.8 | 71-80-90-100-112-132-160 | 9300 | 10700 | 17900 | 21500 | 5960 | 5200 |
| | **303 L2** | **18.1** | 55 | 2280 | 14.0 | 10.8 | 71-80-90-100-112-132-160 | 9830 | 11300 | 18800 | 22600 | 6300 | 5200 |
| | **303 L2** | **20.8** | 48 | 2030 | 10.9 | 10.8 | 71-80-90-100-112-132-160 | 10300 | 11900 | 19600 | 23600 | 6600 | 5200 |
| | **303 L2** | **22.7** | 44 | 2140 | 10.5 | 10.8 | 71-80-90-100-112-132-160 | 10600 | 12200 | 20100 | 24200 | 6800 | 5200 |
| | **303 L2** | **24.5** | 41 | 2320 | 10.5 | 10.8 | 71-80-90-100-112-132-160 | 10900 | 12500 | 20600 | 24800 | 6970 | 5200 |
| | **303 L2** | **26.4** | 38 | 1820 | 7.7 | 10.8 | 71-80-90-100-112-132-160 | 11100 | 12900 | 21100 | 25300 | 7150 | 5200 |
| | **303 L2** | **30.8** | 33 | 2160 | 7.8 | 10.8 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7520 | 5200 |
| | **303 L2** | **35.8** | 28.0 | 1820 | 5.7 | 10.8 | 71-80-90-100-112-132-160 | 12300 | 14200 | 23100 | 27700 | 7910 | 5200 |
| | **303 L2** | **38.4** | 26.0 | 2160 | 6.3 | 10.8 | 71-80-90-100-112-132-160 | 12600 | 14600 | 23600 | 28300 | 8100 | 5200 |
| | **303 L2** | **44.6** | 22.4 | 1820 | 4.5 | 10.8 | 71-80-90-100-112-132-160 | 13300 | 15300 | 24600 | 29600 | 8510 | 5200 |
| | **303 L2** | **55.8** | 17.9 | 1820 | 3.6 | 10.8 | 71-80-90-100-112-132-160 | 14300 | 16500 | 26300 | 31700 | 9170 | 5200 |
| | **303 L3** | **53.4** | 18.7 | 2230 | 4.8 | 9.0 | 71-80-90-100-112-132-160 | 14100 | 16300 | 26000 | 31300 | 9040 | 5200 |
| | **303 L3** | **63.1** | 15.9 | 2570 | 4.7 | 9.0 | 71-80-90-100-112-132-160 | 14900 | 17200 | 27300 | 32900 | 9550 | 5200 |
| | **303 L3** | **72.3** | 13.8 | 2270 | 3.6 | 9.0 | 71-80-90-100-112-132-160 | 15600 | 18000 | 28500 | 34300 | 10000 | 5200 |
| | **303 L3** | **77.2** | 12.9 | 2600 | 3.9 | 9.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 5200 |
| | **303 L3** | **90.2** | 11.1 | 2300 | 2.9 | 9.0 | 71-80-90-100-112-132-160 | 16800 | 19400 | 30400 | 36600 | 10800 | 5200 |
| | **303 L3** | **105** | 9.6 | 2660 | 2.9 | 9.0 | 71-80-90-100-112-132-160 | 17600 | 20300 | 31800 | 38300 | 11300 | 5200 |
| | **303 L3** | **113** | 8.9 | 1820 | 1.9 | 9.0 | 71-80-90-100-112-132-160 | 18100 | 20900 | 32500 | 39100 | 11600 | 5200 |
| | **303 L3** | **124** | 8.0 | 1830 | 1.7 | 9.0 | 71-80-90-100-112-132-160 | 18700 | 21600 | 33500 | 40300 | 12000 | 5200 |
| | **303 L3** | **141** | 7.1 | 2630 | 2.1 | 9.0 | 71-80-90-100-112-132-160 | 19500 | 22500 | 34800 | 41900 | 12500 | 5200 |
| | **303 L3** | **152** | 6.6 | 1830 | 1.4 | 9.0 | 71-80-90-100-112-132-160 | 20000 | 23100 | 35600 | 42900 | 12800 | 5200 |
| | **303 L3** | **164** | 6.1 | 2220 | 1.6 | 9.0 | 71-80-90-100-112-132-160 | 20500 | 23600 | 36400 | 43800 | 13100 | 5200 |
| | **303 L3** | **178** | 5.6 | 2220 | 1.4 | 9.0 | 71-80-90-100-112-132-160 | 21000 | 24300 | 37300 | 44900 | 13500 | 5200 |
| | **303 L3** | **190** | 5.3 | 1840 | 1.1 | 9.0 | 71-80-90-100-112-132-160 | 21500 | 24800 | 38100 | 45800 | 13800 | 5200 |
| | **303 L3** | **220** | 4.5 | 2240 | 1.2 | 9.0 | 71-80-90-100-112-132-160 | 22600 | 26100 | 39800 | 47900 | 14500 | 5200 |
| | **303 L3** | **258** | 3.9 | 1920 | 0.86 | 9.0 | 71-80-90-100-112-132-160 | 23800 | 27500 | 41700 | 50200 | 15300 | 5200 |
| | **303 L3** | **276** | 3.6 | 2330 | 0.97 | 9.0 | 71-80-90-100-112-132-160 | 24400 | 28100 | 42600 | 51200 | 15600 | 5200 |
| | **303 L3** | **321** | 3.1 | 2000 | 0.71 | 9.0 | 71-80-90-100-112-132-160 | 25600 | 29600 | 44600 | 53600 | 16400 | 5200 |
| | **303 L3** | **389** | 2.6 | 1750 | 0.52 | 9.0 | 71-80-90-100-112-132-160 | 27300 | 31500 | 47200 | 56800 | 17500 | 5200 |
| | **303 L3** | **402** | 2.5 | 2080 | 0.59 | 9.0 | 71-80-90-100-112-132-160 | 27600 | 31900 | 47600 | 57300 | 17700 | 5200 |
| | **303 L4** | **413** | 2.4 | 2530 | 0.72 | 7.2 | 71-80-90-100-112-132-160 | 27900 | 32200 | 48000 | 57800 | 17900 | 5200 |
| | **303 L4** | **446** | 2.2 | 2830 | 0.75 | 7.2 | 71-80-90-100-112-132-160 | 28600 | 33000 | 49100 | 59100 | 18300 | 5200 |
| | **303 L4** | **492** | 2.0 | 2720 | 0.65 | 7.2 | 71-80-90-100-112-132-160 | 29500 | 34100 | 50600 | 60900 | 19000 | 5200 |
| | **303 L4** | **556** | 1.8 | 2870 | 0.61 | 7.2 | 71-80-90-100-112-132-160 | 30800 | 35500 | 52500 | 63200 | 19700 | 5200 |
| | **303 L4** | **649** | 1.5 | 2360 | 0.43 | 7.2 | 71-80-90-100-112-132-160 | 32400 | 37400 | 55000 | 66200 | 20800 | 5200 |
| | **303 L4** | **718** | 1.4 | 2300 | 0.38 | 7.2 | 71-80-90-100-112-132-160 | 33500 | 38700 | 56700 | 68200 | 21500 | 5200 |
| | **303 L4** | **816** | 1.2 | 2750 | 0.40 | 7.2 | 71-80-90-100-112-132-160 | 35000 | 40400 | 58900 | 70900 | 22400 | 5200 |
| | **303 L4** | **896** | 1.1 | 2390 | 0.32 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60600 | 72900 | 23100 | 5200 |
| | **303 L4** | **1018** | 0.98 | 2770 | 0.32 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1098** | 0.91 | 2440 | 0.26 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1278** | 0.78 | 2850 | 0.26 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1370** | 0.73 | 2440 | 0.21 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1586** | 0.63 | 2250 | 0.17 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1854** | 0.54 | 2440 | 0.16 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1991** | 0.50 | 2850 | 0.17 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2243** | 0.45 | 2000 | 0.11 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2799** | 0.36 | 2000 | 0.08 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| **500** | **303 L1** | **3.60** | 139 | 1920 | 29 | 22 | 132-160-180-200 | 7220 | 8340 | 14300 | 17200 | 4630 | 5200 |
| | **303 L1** | **4.25** | 118 | 1990 | 25 | 22 | 132-160-180-200 | 7630 | 8810 | 15000 | 18000 | 4900 | 5200 |
| | **303 L1** | **5.33** | 94 | 2040 | 21 | 22 | 132-160-180-200 | 8240 | 9510 | 16000 | 19300 | 5280 | 5200 |
| | **303 L1** | **6.20** | 81 | 1820 | 15.8 | 22 | 132-160-180-200 | 8660 | 10000 | 16800 | 20200 | 5560 | 5200 |
| | **303 L1** | **7.50** | 67 | 1590 | 11.4 | 22 | 132-160-180-200 | 9230 | 10700 | 17800 | 21400 | 5920 | 5200 |
| | **303 L1** | **9.67** | 52 | 860 | 4.8 | 22 | 132-160-180-200 | 10000 | 11600 | 19200 | 23100 | 6440 | 5200 |
| | **303 L2** | **12.5** | 40 | 2150 | 9.6 | 18.0 | 71-80-90-100-112-132-160 | 10900 | 12600 | 20700 | 24900 | 7020 | 5200 |
| | **303 L2** | **15.3** | 33 | 2150 | 7.8 | 18.0 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7510 | 5200 |
| | **303 L2** | **18.1** | 27.6 | 2460 | 7.5 | 18.0 | 71-80-90-100-112-132-160 | 12400 | 14300 | 23100 | 27800 | 7940 | 5200 |
| | **303 L2** | **20.8** | 24.1 | 2110 | 5.7 | 18.0 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24100 | 29000 | 8310 | 5200 |
| | **303 L2** | **22.7** | 22.0 | 2170 | 5.3 | 18.0 | 71-80-90-100-112-132-160 | 13400 | 15400 | 24800 | 29800 | 8570 | 5200 |
| | **303 L2** | **24.5** | 20.4 | 2460 | 5.6 | 18.0 | 71-80-90-100-112-132-160 | 13700 | 15800 | 25300 | 30500 | 8780 | 5200 |
| | **303 L2** | **26.4** | 18.9 | 1820 | 3.8 | 18.0 | 71-80-90-100-112-132-160 | 14000 | 16200 | 25900 | 31200 | 9010 | 5200 |



## 303 L

264

## 2970 Nm

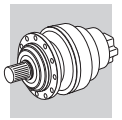
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **303 L2** | **30.8** | 16.3 | 2180 | 3.9 | 18.0 | 71-80-90-100-112-132-160 | 14800 | 17100 | 27100 | 32600 | 9480 | 5200 |
| | **303 L2** | **35.8** | 14.0 | 1820 | 2.8 | 18.0 | 71-80-90-100-112-132-160 | 15500 | 17900 | 28400 | 34200 | 9960 | 5200 |
| | **303 L2** | **38.4** | 13.0 | 2190 | 3.2 | 18.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 5200 |
| | **303 L2** | **44.6** | 11.2 | 1820 | 2.3 | 18.0 | 71-80-90-100-112-132-160 | 16700 | 19300 | 30300 | 36500 | 10700 | 5200 |
| | **303 L2** | **55.8** | 9.0 | 1820 | 1.8 | 18.0 | 71-80-90-100-112-132-160 | 18000 | 20800 | 32400 | 39000 | 11600 | 5200 |
| | **303 L3** | **53.4** | 9.4 | 2310 | 2.5 | 15.0 | 71-80-90-100-112-132-160 | 17800 | 20500 | 32000 | 38500 | 11400 | 5200 |
| | **303 L3** | **63.1** | 7.9 | 2700 | 2.5 | 15.0 | 71-80-90-100-112-132-160 | 18800 | 21700 | 33600 | 40500 | 12000 | 5200 |
| | **303 L3** | **72.3** | 6.9 | 2310 | 1.8 | 15.0 | 71-80-90-100-112-132-160 | 19600 | 22700 | 35100 | 42200 | 12600 | 5200 |
| | **303 L3** | **77.2** | 6.5 | 2750 | 2.0 | 15.0 | 71-80-90-100-112-132-160 | 20100 | 23200 | 35800 | 43000 | 12900 | 5200 |
| | **303 L3** | **90.2** | 5.5 | 2310 | 1.5 | 15.0 | 71-80-90-100-112-132-160 | 21100 | 24400 | 37500 | 45100 | 13600 | 5200 |
| | **303 L3** | **105** | 4.8 | 2810 | 1.5 | 15.0 | 71-80-90-100-112-132-160 | 22200 | 25600 | 39200 | 47100 | 14200 | 5200 |
| | **303 L3** | **113** | 4.4 | 1880 | 0.96 | 15.0 | 71-80-90-100-112-132-160 | 22800 | 26300 | 40100 | 48200 | 14600 | 5200 |
| | **303 L3** | **124** | 4.0 | 1910 | 0.88 | 15.0 | 71-80-90-100-112-132-160 | 23500 | 27200 | 41300 | 49600 | 15100 | 5200 |
| | **303 L3** | **141** | 3.5 | 2670 | 1.1 | 15.0 | 71-80-90-100-112-132-160 | 24600 | 28400 | 42900 | 51600 | 15800 | 5200 |
| | **303 L3** | **152** | 3.3 | 1980 | 0.75 | 15.0 | 71-80-90-100-112-132-160 | 25200 | 29100 | 43900 | 52800 | 16200 | 5200 |
| | **303 L3** | **164** | 3.1 | 2430 | 0.85 | 15.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44800 | 53900 | 16500 | 5200 |
| | **303 L3** | **178** | 2.8 | 2470 | 0.80 | 15.0 | 71-80-90-100-112-132-160 | 26500 | 30600 | 45900 | 55200 | 17000 | 5200 |
| | **303 L3** | **190** | 2.6 | 2060 | 0.62 | 15.0 | 71-80-90-100-112-132-160 | 27100 | 31300 | 46900 | 56400 | 17400 | 5200 |
| | **303 L3** | **220** | 2.3 | 2210 | 0.57 | 15.0 | 71-80-90-100-112-132-160 | 28500 | 32900 | 49000 | 58900 | 18300 | 5200 |
| | **303 L3** | **258** | 1.9 | 2170 | 0.48 | 15.0 | 71-80-90-100-112-132-160 | 30000 | 34600 | 51300 | 61700 | 19200 | 5200 |
| | **303 L3** | **276** | 1.8 | 2580 | 0.54 | 15.0 | 71-80-90-100-112-132-160 | 30700 | 35400 | 52400 | 63100 | 19700 | 5200 |
| | **303 L3** | **321** | 1.6 | 2260 | 0.40 | 15.0 | 71-80-90-100-112-132-160 | 32300 | 37300 | 54900 | 66000 | 20700 | 5200 |
| | **303 L3** | **389** | 1.3 | 1930 | 0.28 | 15.0 | 71-80-90-100-112-132-160 | 34400 | 39700 | 58100 | 69900 | 22100 | 5200 |
| | **303 L3** | **402** | 1.2 | 2350 | 0.34 | 15.0 | 71-80-90-100-112-132-160 | 34800 | 40200 | 58600 | 70600 | 22300 | 5200 |
| | **303 L4** | **413** | 1.2 | 2780 | 0.40 | 12.0 | 71-80-90-100-112-132-160 | 35100 | 40500 | 59100 | 71200 | 22500 | 5200 |
| | **303 L4** | **446** | 1.1 | 2950 | 0.39 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60500 | 72800 | 23100 | 5200 |
| | **303 L4** | **492** | 1.0 | 2770 | 0.33 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 62300 | 74000 | 23900 | 5200 |
| | **303 L4** | **556** | 0.90 | 2970 | 0.32 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **649** | 0.77 | 2410 | 0.22 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **718** | 0.70 | 2440 | 0.20 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **816** | 0.61 | 2770 | 0.20 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **896** | 0.56 | 2440 | 0.16 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1018** | 0.49 | 2770 | 0.16 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1098** | 0.46 | 2440 | 0.13 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1278** | 0.39 | 2850 | 0.13 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1370** | 0.36 | 2440 | 0.11 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1586** | 0.32 | 2250 | 0.08 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1854** | 0.27 | 2440 | 0.08 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **1991** | 0.25 | 2850 | 0.08 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2243** | 0.22 | 2000 | 0.05 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 L4** | **2799** | 0.18 | 2000 | 0.04 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |

## 304 L

276

## 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **304 L1** | **3.60** | 417 | 1840 | 50 | 12.0 | 132-160-180-200 | 5010 | 5780 | 10300 | 12300 | 3210 | 7300 |
| | **304 L1** | **4.25** | 353 | 1900 | 50 | 12.0 | 132-160-180-200 | 5290 | 6110 | 10800 | 13000 | 3400 | 7300 |
| | **304 L1** | **5.33** | 281 | 1990 | 50 | 12.0 | 132-160-180-200 | 5710 | 6590 | 11500 | 13900 | 3660 | 7300 |
| | **304 L1** | **6.57** | 228 | 1870 | 46 | 12.0 | 132-160-180-200 | 6120 | 7070 | 12300 | 14800 | 3930 | 7300 |
| | **304 L2** | **12.5** | 120 | 2680 | 30 | 9.0 | 71-80-90-100-112-132-160 | 7590 | 8760 | 14900 | 17900 | 4870 | 7300 |
| | **304 L2** | **15.3** | 98 | 2840 | 30 | 9.0 | 71-80-90-100-112-132-160 | 8120 | 9380 | 15800 | 19100 | 5210 | 7300 |
| | **304 L2** | **18.1** | 83 | 2940 | 27 | 9.0 | 71-80-90-100-112-132-160 | 8580 | 9910 | 16600 | 20000 | 5510 | 7300 |
| | **304 L2** | **20.8** | 72 | 2960 | 24 | 9.0 | 71-80-90-100-112-132-160 | 8980 | 10400 | 17300 | 20900 | 5760 | 7300 |
| | **304 L2** | **22.7** | 66 | 2790 | 21 | 9.0 | 71-80-90-100-112-132-160 | 9260 | 10700 | 17800 | 21400 | 5940 | 7300 |
| | **304 L2** | **24.5** | 61 | 3230 | 22 | 9.0 | 71-80-90-100-112-132-160 | 9490 | 11000 | 18200 | 21900 | 6090 | 7300 |
| | **304 L2** | **30.8** | 49 | 2850 | 15.5 | 9.0 | 71-80-90-100-112-132-160 | 10200 | 11800 | 19500 | 23500 | 6570 | 7300 |
| | **304 L2** | **38.4** | 39 | 2850 | 12.4 | 9.0 | 71-80-90-100-112-132-160 | 11000 | 12700 | 20900 | 25100 | 7070 | 7300 |
| | **304 L2** | **47.3** | 32 | 2390 | 8.4 | 9.0 | 71-80-90-100-112-132-160 | 11800 | 13600 | 22200 | 26700 | 7580 | 7300 |



# 304 L

276

# 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **304 L2** | **59.1** | 25.4 | 2390 | 6.7 | 9.0 | 71-80-90-100-112-132-160 | 12700 | 14700 | 23700 | 28600 | 8170 | 7300 |
| | **304 L3** | **43.6** | 34 | 3190 | 12.6 | 7.5 | 71-80-90-100-112-132-160 | 11500 | 13300 | 21700 | 26100 | 7380 | 7300 |
| | **304 L3** | **53.4** | 28.1 | 3230 | 10.4 | 7.5 | 71-80-90-100-112-132-160 | 12300 | 14200 | 23000 | 27700 | 7900 | 7300 |
| | **304 L3** | **63.1** | 23.8 | 3480 | 9.5 | 7.5 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24200 | 29100 | 8340 | 7300 |
| | **304 L3** | **72.3** | 20.8 | 3290 | 7.8 | 7.5 | 71-80-90-100-112-132-160 | 13600 | 15700 | 25200 | 30300 | 8730 | 7300 |
| | **304 L3** | **77.2** | 19.4 | 3490 | 7.8 | 7.5 | 71-80-90-100-112-132-160 | 13900 | 16100 | 25700 | 30900 | 8930 | 7300 |
| | **304 L3** | **90.2** | 16.6 | 3320 | 6.3 | 7.5 | 71-80-90-100-112-132-160 | 14700 | 16900 | 26900 | 32400 | 9400 | 7300 |
| | **304 L3** | **105** | 14.4 | 3520 | 5.8 | 7.5 | 71-80-90-100-112-132-160 | 15400 | 17800 | 28200 | 33900 | 9880 | 7300 |
| | **304 L3** | **111** | 13.6 | 3380 | 5.3 | 7.5 | 71-80-90-100-112-132-160 | 15700 | 18100 | 28600 | 34500 | 10100 | 7300 |
| | **304 L3** | **130** | 11.5 | 3530 | 4.7 | 7.5 | 71-80-90-100-112-132-160 | 16600 | 19100 | 30100 | 36200 | 10600 | 7300 |
| | **304 L3** | **141** | 10.6 | 3540 | 4.3 | 7.5 | 71-80-90-100-112-132-160 | 17000 | 19700 | 30800 | 37100 | 10900 | 7300 |
| | **304 L3** | **150** | 10.0 | 3440 | 4.0 | 7.5 | 71-80-90-100-112-132-160 | 17300 | 20000 | 31400 | 37700 | 11100 | 7300 |
| | **304 L3** | **165** | 9.1 | 2390 | 2.5 | 7.5 | 71-80-90-100-112-132-160 | 17900 | 20700 | 32300 | 38800 | 11500 | 7300 |
| | **304 L3** | **178** | 8.5 | 2850 | 2.8 | 7.5 | 71-80-90-100-112-132-160 | 18400 | 21200 | 33000 | 39700 | 11800 | 7300 |
| | **304 L3** | **202** | 7.4 | 2390 | 2.0 | 7.5 | 71-80-90-100-112-132-160 | 19200 | 22100 | 34300 | 41300 | 12300 | 7300 |
| | **304 L3** | **220** | 6.8 | 3610 | 2.8 | 7.5 | 71-80-90-100-112-132-160 | 19700 | 22800 | 35200 | 42400 | 12700 | 7300 |
| | **304 L3** | **273** | 5.5 | 2390 | 1.5 | 7.5 | 71-80-90-100-112-132-160 | 21200 | 24500 | 37600 | 45200 | 13600 | 7300 |
| | **304 L3** | **341** | 4.4 | 2420 | 1.2 | 7.5 | 71-80-90-100-112-132-160 | 22800 | 26400 | 40200 | 48300 | 14700 | 7300 |
| | **304 L3** | **426** | 3.5 | 2470 | 1.0 | 7.5 | 71-80-90-100-112-132-160 | 24600 | 28400 | 42900 | 51600 | 15800 | 7300 |
| | **304 L4** | **413** | 3.6 | 3000 | 1.3 | 6.0 | 71-80-90-100-112-132-160 | 24300 | 28100 | 42500 | 51200 | 15600 | 7300 |
| | **304 L4** | **446** | 3.4 | 3720 | 1.5 | 6.0 | 71-80-90-100-112-132-160 | 25000 | 28800 | 43500 | 52400 | 16000 | 7300 |
| | **304 L4** | **492** | 3.0 | 3730 | 1.3 | 6.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44800 | 53900 | 16600 | 7300 |
| | **304 L4** | **556** | 2.7 | 3740 | 1.2 | 6.0 | 71-80-90-100-112-132-160 | 26900 | 31000 | 46500 | 55900 | 17200 | 7300 |
| | **304 L4** | **649** | 2.3 | 3540 | 0.97 | 6.0 | 71-80-90-100-112-132-160 | 28300 | 32700 | 48700 | 58600 | 18200 | 7300 |
| | **304 L4** | **702** | 2.1 | 2630 | 0.66 | 6.0 | 71-80-90-100-112-132-160 | 29000 | 33500 | 49900 | 60000 | 18600 | 7300 |
| | **304 L4** | **816** | 1.8 | 3820 | 0.83 | 6.0 | 71-80-90-100-112-132-160 | 30500 | 35300 | 52200 | 62800 | 19600 | 7300 |
| | **304 L4** | **1018** | 1.5 | 3870 | 0.67 | 6.0 | 71-80-90-100-112-132-160 | 32900 | 38000 | 55800 | 67100 | 21100 | 7300 |
| | **304 L4** | **1164** | 1.3 | 2870 | 0.44 | 6.0 | 71-80-90-100-112-132-160 | 34400 | 39700 | 58000 | 69800 | 22100 | 7300 |
| | **304 L4** | **1271** | 1.2 | 3920 | 0.55 | 6.0 | 71-80-90-100-112-132-160 | 35400 | 40900 | 59600 | 71700 | 22700 | 7300 |
| | **304 L4** | **1344** | 1.1 | 3690 | 0.49 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60600 | 72900 | 23100 | 7300 |
| | **304 L4** | **1586** | 0.95 | 3960 | 0.44 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63700 | 74000 | 24000 | 7300 |
| | **304 L4** | **1815** | 0.83 | 3000 | 0.29 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1991** | 0.75 | 3740 | 0.33 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2269** | 0.66 | 3000 | 0.23 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2453** | 0.61 | 3000 | 0.22 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| **1000** | **304 L1** | **3.60** | 278 | 2080 | 50 | 14.4 | 132-160-180-200 | 5730 | 6620 | 11600 | 13900 | 3680 | 7300 |
| | **304 L1** | **4.25** | 235 | 2150 | 50 | 14.4 | 132-160-180-200 | 6060 | 7000 | 12200 | 14600 | 3890 | 7300 |
| | **304 L1** | **5.33** | 188 | 2240 | 45 | 14.4 | 132-160-180-200 | 6540 | 7550 | 13000 | 15700 | 4190 | 7300 |
| | **304 L1** | **6.57** | 152 | 2110 | 35 | 14.4 | 132-160-180-200 | 7010 | 8090 | 13900 | 16700 | 4500 | 7300 |
| | **304 L2** | **12.5** | 80 | 2920 | 26 | 10.8 | 71-80-90-100-112-132-160 | 8690 | 10000 | 16800 | 20300 | 5570 | 7300 |
| | **304 L2** | **15.3** | 65 | 3010 | 22 | 10.8 | 71-80-90-100-112-132-160 | 9300 | 10700 | 17900 | 21500 | 5960 | 7300 |
| | **304 L2** | **18.1** | 55 | 3330 | 20 | 10.8 | 71-80-90-100-112-132-160 | 9830 | 11300 | 18800 | 22600 | 6300 | 7300 |
| | **304 L2** | **20.8** | 48 | 3130 | 16.8 | 10.8 | 71-80-90-100-112-132-160 | 10300 | 11900 | 19600 | 23600 | 6600 | 7300 |
| | **304 L2** | **22.7** | 44 | 2850 | 13.9 | 10.8 | 71-80-90-100-112-132-160 | 10600 | 12200 | 20100 | 24200 | 6800 | 7300 |
| | **304 L2** | **24.5** | 41 | 3440 | 15.6 | 10.8 | 71-80-90-100-112-132-160 | 10900 | 12500 | 20600 | 24800 | 6970 | 7300 |
| | **304 L2** | **30.8** | 33 | 2850 | 10.3 | 10.8 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7520 | 7300 |
| | **304 L2** | **38.4** | 26.0 | 2850 | 8.3 | 10.8 | 71-80-90-100-112-132-160 | 12600 | 14600 | 23600 | 28300 | 8100 | 7300 |
| | **304 L2** | **47.3** | 21.1 | 2390 | 5.6 | 10.8 | 71-80-90-100-112-132-160 | 13500 | 15600 | 25100 | 30200 | 8680 | 7300 |
| | **304 L2** | **59.1** | 16.9 | 2390 | 4.5 | 10.8 | 71-80-90-100-112-132-160 | 14600 | 16800 | 26800 | 32300 | 9350 | 7300 |
| | **304 L3** | **43.6** | 22.9 | 3270 | 8.6 | 9.0 | 71-80-90-100-112-132-160 | 13200 | 15200 | 24500 | 29400 | 8450 | 7300 |
| | **304 L3** | **53.4** | 18.7 | 3310 | 7.1 | 9.0 | 71-80-90-100-112-132-160 | 14100 | 16300 | 26000 | 31300 | 9040 | 7300 |
| | **304 L3** | **63.1** | 15.9 | 3510 | 6.4 | 9.0 | 71-80-90-100-112-132-160 | 14900 | 17200 | 27300 | 32900 | 9550 | 7300 |
| | **304 L3** | **72.3** | 13.8 | 3370 | 5.4 | 9.0 | 71-80-90-100-112-132-160 | 15600 | 18000 | 28500 | 34300 | 10000 | 7300 |
| | **304 L3** | **77.2** | 12.9 | 3520 | 5.2 | 9.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 7300 |
| | **304 L3** | **90.2** | 11.1 | 3420 | 4.3 | 9.0 | 71-80-90-100-112-132-160 | 16800 | 19400 | 30400 | 36600 | 10800 | 7300 |
| | **304 L3** | **105** | 9.6 | 3550 | 3.9 | 9.0 | 71-80-90-100-112-132-160 | 17600 | 20300 | 31800 | 38300 | 11300 | 7300 |
| | **304 L3** | **111** | 9.0 | 3450 | 3.6 | 9.0 | 71-80-90-100-112-132-160 | 18000 | 20700 | 32300 | 38900 | 11500 | 7300 |
| | **304 L3** | **130** | 7.7 | 3600 | 3.2 | 9.0 | 71-80-90-100-112-132-160 | 19000 | 21900 | 34000 | 40900 | 12200 | 7300 |
| | **304 L3** | **141** | 7.1 | 3610 | 2.9 | 9.0 | 71-80-90-100-112-132-160 | 19500 | 22500 | 34800 | 41900 | 12500 | 7300 |
| | **304 L3** | **150** | 6.7 | 3470 | 2.7 | 9.0 | 71-80-90-100-112-132-160 | 19900 | 22900 | 35400 | 42600 | 12700 | 7300 |

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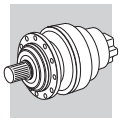

# 304 L

276

# 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **304 L3** | **165** | 6.1 | 2390 | 1.7 | 9.0 | 71-80-90-100-112-132-160 | 20500 | 23700 | 36500 | 43900 | 13200 | 7300 |
| | **304 L3** | **178** | 5.6 | 2850 | 1.8 | 9.0 | 71-80-90-100-112-132-160 | 21000 | 24300 | 37300 | 44900 | 13500 | 7300 |
| | **304 L3** | **202** | 5.0 | 2390 | 1.4 | 9.0 | 71-80-90-100-112-132-160 | 21900 | 25300 | 38700 | 46600 | 14100 | 7300 |
| | **304 L3** | **220** | 4.5 | 3670 | 1.9 | 9.0 | 71-80-90-100-112-132-160 | 22600 | 26100 | 39800 | 47900 | 14500 | 7300 |
| | **304 L3** | **273** | 3.7 | 2460 | 1.0 | 9.0 | 71-80-90-100-112-132-160 | 24300 | 28000 | 42400 | 51000 | 15600 | 7300 |
| | **304 L3** | **341** | 2.9 | 2520 | 0.85 | 9.0 | 71-80-90-100-112-132-160 | 26100 | 30200 | 45400 | 54600 | 16800 | 7300 |
| | **304 L3** | **426** | 2.3 | 2590 | 0.70 | 9.0 | 71-80-90-100-112-132-160 | 28100 | 32500 | 48500 | 58300 | 18100 | 7300 |
| | **304 L4** | **413** | 2.4 | 3210 | 0.92 | 7.2 | 71-80-90-100-112-132-160 | 27900 | 32200 | 48000 | 57800 | 17900 | 7300 |
| | **304 L4** | **446** | 2.2 | 3770 | 1.0 | 7.2 | 71-80-90-100-112-132-160 | 28600 | 33000 | 49100 | 59100 | 18300 | 7300 |
| | **304 L4** | **492** | 2.0 | 3800 | 0.91 | 7.2 | 71-80-90-100-112-132-160 | 29500 | 34100 | 50600 | 60900 | 19000 | 7300 |
| | **304 L4** | **556** | 1.8 | 3820 | 0.81 | 7.2 | 71-80-90-100-112-132-160 | 30800 | 35500 | 52500 | 63200 | 19700 | 7300 |
| | **304 L4** | **649** | 1.5 | 3620 | 0.66 | 7.2 | 71-80-90-100-112-132-160 | 32400 | 37400 | 55000 | 66200 | 20800 | 7300 |
| | **304 L4** | **702** | 1.4 | 2820 | 0.48 | 7.2 | 71-80-90-100-112-132-160 | 33200 | 38400 | 56300 | 67800 | 21300 | 7300 |
| | **304 L4** | **816** | 1.2 | 3910 | 0.57 | 7.2 | 71-80-90-100-112-132-160 | 35000 | 40400 | 58900 | 70900 | 22400 | 7300 |
| | **304 L4** | **1018** | 0.98 | 3960 | 0.46 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1164** | 0.86 | 3000 | 0.30 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1271** | 0.79 | 3960 | 0.37 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1344** | 0.74 | 3710 | 0.33 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1586** | 0.63 | 3960 | 0.30 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1815** | 0.55 | 3000 | 0.20 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1991** | 0.50 | 3740 | 0.22 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2269** | 0.44 | 3000 | 0.16 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2453** | 0.41 | 3000 | 0.14 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| **500** | **304 L1** | **3.60** | 139 | 2560 | 38 | 24 | 132-160-180-200 | 7220 | 8340 | 14300 | 17200 | 4630 | 7300 |
| | **304 L1** | **4.25** | 118 | 2650 | 34 | 24 | 132-160-180-200 | 7630 | 8810 | 15000 | 18000 | 4900 | 7300 |
| | **304 L1** | **5.33** | 94 | 2720 | 28 | 24 | 132-160-180-200 | 8240 | 9510 | 16000 | 19300 | 5280 | 7300 |
| | **304 L1** | **6.57** | 76 | 2390 | 19.6 | 24 | 132-160-180-200 | 8830 | 10200 | 17100 | 20500 | 5660 | 7300 |
| | **304 L2** | **12.5** | 40 | 3160 | 14.0 | 18.0 | 71-80-90-100-112-132-160 | 10900 | 12600 | 20700 | 24900 | 7020 | 7300 |
| | **304 L2** | **15.3** | 33 | 3200 | 11.6 | 18.0 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7510 | 7300 |
| | **304 L2** | **18.1** | 27.6 | 3470 | 10.7 | 18.0 | 71-80-90-100-112-132-160 | 12400 | 14300 | 23100 | 27800 | 7940 | 7300 |
| | **304 L2** | **20.8** | 24.1 | 3260 | 8.7 | 18.0 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24100 | 29000 | 8310 | 7300 |
| | **304 L2** | **22.7** | 22.0 | 2850 | 7.0 | 18.0 | 71-80-90-100-112-132-160 | 13400 | 15400 | 24800 | 29800 | 8570 | 7300 |
| | **304 L2** | **24.5** | 20.4 | 3490 | 7.9 | 18.0 | 71-80-90-100-112-132-160 | 13700 | 15800 | 25300 | 30500 | 8780 | 7300 |
| | **304 L2** | **30.8** | 16.3 | 2850 | 5.2 | 18.0 | 71-80-90-100-112-132-160 | 14800 | 17100 | 27100 | 32600 | 9480 | 7300 |
| | **304 L2** | **38.4** | 13.0 | 2850 | 4.1 | 18.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 7300 |
| | **304 L2** | **47.3** | 10.6 | 2390 | 2.8 | 18.0 | 71-80-90-100-112-132-160 | 17000 | 19700 | 30900 | 37100 | 10900 | 7300 |
| | **304 L2** | **59.1** | 8.5 | 2390 | 2.2 | 18.0 | 71-80-90-100-112-132-160 | 18400 | 21200 | 33000 | 39700 | 11800 | 7300 |
| | **304 L3** | **43.6** | 11.5 | 3410 | 4.5 | 15.0 | 71-80-90-100-112-132-160 | 16600 | 19200 | 30100 | 36200 | 10600 | 7300 |
| | **304 L3** | **53.4** | 9.4 | 3450 | 3.7 | 15.0 | 71-80-90-100-112-132-160 | 17800 | 20500 | 32000 | 38500 | 11400 | 7300 |
| | **304 L3** | **63.1** | 7.9 | 3590 | 3.3 | 15.0 | 71-80-90-100-112-132-160 | 18800 | 21700 | 33600 | 40500 | 12000 | 7300 |
| | **304 L3** | **72.3** | 6.9 | 3470 | 2.8 | 15.0 | 71-80-90-100-112-132-160 | 19600 | 22700 | 35100 | 42200 | 12600 | 7300 |
| | **304 L3** | **77.2** | 6.5 | 3630 | 2.7 | 15.0 | 71-80-90-100-112-132-160 | 20100 | 23200 | 35800 | 43000 | 12900 | 7300 |
| | **304 L3** | **90.2** | 5.5 | 3490 | 2.2 | 15.0 | 71-80-90-100-112-132-160 | 21100 | 24400 | 37500 | 45100 | 13600 | 7300 |
| | **304 L3** | **105** | 4.8 | 3690 | 2.0 | 15.0 | 71-80-90-100-112-132-160 | 22200 | 25600 | 39200 | 47100 | 14200 | 7300 |
| | **304 L3** | **111** | 4.5 | 3500 | 1.8 | 15.0 | 71-80-90-100-112-132-160 | 22600 | 26100 | 39800 | 47900 | 14500 | 7300 |
| | **304 L3** | **130** | 3.8 | 3710 | 1.6 | 15.0 | 71-80-90-100-112-132-160 | 23900 | 27600 | 41900 | 50400 | 15300 | 7300 |
| | **304 L3** | **141** | 3.5 | 3720 | 1.5 | 15.0 | 71-80-90-100-112-132-160 | 24600 | 28400 | 42900 | 51600 | 15800 | 7300 |
| | **304 L3** | **150** | 3.3 | 3510 | 1.3 | 15.0 | 71-80-90-100-112-132-160 | 25000 | 28900 | 43600 | 52500 | 16000 | 7300 |
| | **304 L3** | **165** | 3.0 | 2510 | 0.87 | 15.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44900 | 54000 | 16600 | 7300 |
| | **304 L3** | **178** | 2.8 | 3130 | 1.0 | 15.0 | 71-80-90-100-112-132-160 | 26500 | 30600 | 45900 | 55200 | 17000 | 7300 |
| | **304 L3** | **202** | 2.5 | 2560 | 0.73 | 15.0 | 71-80-90-100-112-132-160 | 27600 | 31900 | 47700 | 57400 | 17700 | 7300 |
| | **304 L3** | **220** | 2.3 | 3740 | 0.97 | 15.0 | 71-80-90-100-112-132-160 | 28500 | 32900 | 49000 | 58900 | 18300 | 7300 |
| | **304 L3** | **273** | 1.8 | 2700 | 0.57 | 15.0 | 71-80-90-100-112-132-160 | 30600 | 35300 | 52200 | 62800 | 19600 | 7300 |
| | **304 L3** | **341** | 1.5 | 2810 | 0.47 | 15.0 | 71-80-90-100-112-132-160 | 32900 | 38000 | 55800 | 67200 | 21100 | 7300 |
| | **304 L3** | **426** | 1.2 | 2920 | 0.39 | 15.0 | 71-80-90-100-112-132-160 | 35500 | 40900 | 59700 | 71800 | 22700 | 7300 |
| | **304 L4** | **413** | 1.2 | 3620 | 0.52 | 12.0 | 71-80-90-100-112-132-160 | 35100 | 40500 | 59100 | 71200 | 22500 | 7300 |
| | **304 L4** | **446** | 1.1 | 3930 | 0.52 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60500 | 72800 | 23100 | 7300 |
| | **304 L4** | **492** | 1.0 | 3960 | 0.48 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 62300 | 74000 | 23900 | 7300 |
| | **304 L4** | **556** | 0.90 | 3960 | 0.42 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **649** | 0.77 | 3710 | 0.34 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |

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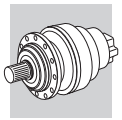

## 304 L

276

## 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **304 L4** | **702** | 0.71 | 3000 | 0.25 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **816** | 0.61 | 3960 | 0.29 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1018** | 0.49 | 3960 | 0.23 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1164** | 0.43 | 3000 | 0.15 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1271** | 0.39 | 3960 | 0.18 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1344** | 0.37 | 3710 | 0.16 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1586** | 0.32 | 3960 | 0.15 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1815** | 0.28 | 3000 | 0.10 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **1991** | 0.25 | 3740 | 0.11 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2269** | 0.22 | 3000 | 0.08 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 L4** | **2453** | 0.20 | 3000 | 0.07 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |

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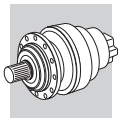
## 305 L

288

## 5800 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **305 L1** | **3.60** | 417 | 2370 | 60 | 13.0 | 132-160-180-200 | 5010 | 5780 | 10300 | 12300 | 3210 | 8800 |
| | **305 L1** | **4.25** | 353 | 2450 | 60 | 13.0 | 132-160-180-200 | 5290 | 6110 | 10800 | 13000 | 3400 | 8800 |
| | **305 L1** | **5.33** | 281 | 2560 | 60 | 13.0 | 132-160-180-200 | 5710 | 6590 | 11500 | 13900 | 3660 | 8800 |
| | **305 L1** | **6.20** | 242 | 2650 | 60 | 13.0 | 132-160-180-200 | 6000 | 6930 | 12100 | 14500 | 3850 | 8800 |
| | **305 L1** | **7.50** | 200 | 2270 | 49 | 13.0 | 132-160-180-200 | 6400 | 7390 | 12800 | 15400 | 4100 | 8800 |
| | **305 L2** | **12.5** | 120 | 2930 | 30 | 9.0 | 71-80-90-100-112-132-160 | 7590 | 8760 | 14900 | 17900 | 4870 | 8800 |
| | **305 L2** | **15.3** | 98 | 3060 | 30 | 9.0 | 71-80-90-100-112-132-160 | 8120 | 9380 | 15800 | 19100 | 5210 | 8800 |
| | **305 L2** | **18.1** | 83 | 3620 | 30 | 9.0 | 71-80-90-100-112-132-160 | 8580 | 9910 | 16600 | 20000 | 5510 | 8800 |
| | **305 L2** | **20.8** | 72 | 3250 | 26 | 9.0 | 71-80-90-100-112-132-160 | 8980 | 10400 | 17300 | 20900 | 5760 | 8800 |
| | **305 L2** | **22.7** | 66 | 3940 | 29 | 9.0 | 71-80-90-100-112-132-160 | 9260 | 10700 | 17800 | 21400 | 5940 | 8800 |
| | **305 L2** | **24.5** | 61 | 3830 | 26 | 9.0 | 71-80-90-100-112-132-160 | 9490 | 11000 | 18200 | 21900 | 6090 | 8800 |
| | **305 L2** | **26.4** | 57 | 3530 | 22 | 9.0 | 71-80-90-100-112-132-160 | 9740 | 11200 | 18600 | 22400 | 6250 | 8800 |
| | **305 L2** | **30.8** | 49 | 4280 | 23 | 9.0 | 71-80-90-100-112-132-160 | 10200 | 11800 | 19500 | 23500 | 6570 | 8800 |
| | **305 L2** | **35.8** | 42 | 3560 | 16.6 | 9.0 | 71-80-90-100-112-132-160 | 10800 | 12400 | 20400 | 24600 | 6910 | 8800 |
| | **305 L2** | **38.4** | 39 | 4300 | 18.7 | 9.0 | 71-80-90-100-112-132-160 | 11000 | 12700 | 20900 | 25100 | 7070 | 8800 |
| | **305 L2** | **44.6** | 34 | 3560 | 13.3 | 9.0 | 71-80-90-100-112-132-160 | 11600 | 13400 | 21800 | 26300 | 7440 | 8800 |
| | **305 L2** | **55.8** | 26.9 | 3540 | 10.6 | 9.0 | 71-80-90-100-112-132-160 | 12500 | 14400 | 23300 | 28100 | 8010 | 8800 |
| | **305 L3** | **53.4** | 28.1 | 4000 | 12.9 | 7.5 | 71-80-90-100-112-132-160 | 12300 | 14200 | 23000 | 27700 | 7900 | 8800 |
| | **305 L3** | **63.1** | 23.8 | 4720 | 12.9 | 7.5 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24200 | 29100 | 8340 | 8800 |
| | **305 L3** | **72.3** | 20.8 | 4160 | 9.9 | 7.5 | 71-80-90-100-112-132-160 | 13600 | 15700 | 25200 | 30300 | 8730 | 8800 |
| | **305 L3** | **77.2** | 19.4 | 4820 | 10.7 | 7.5 | 71-80-90-100-112-132-160 | 13900 | 16100 | 25700 | 30900 | 8930 | 8800 |
| | **305 L3** | **90.2** | 16.6 | 4260 | 8.1 | 7.5 | 71-80-90-100-112-132-160 | 14700 | 16900 | 26900 | 32400 | 9400 | 8800 |
| | **305 L3** | **105** | 14.4 | 5030 | 8.3 | 7.5 | 71-80-90-100-112-132-160 | 15400 | 17800 | 28200 | 33900 | 9880 | 8800 |
| | **305 L3** | **113** | 13.3 | 3590 | 5.5 | 7.5 | 71-80-90-100-112-132-160 | 15800 | 18200 | 28800 | 34700 | 10100 | 8800 |
| | **305 L3** | **124** | 12.1 | 3590 | 5.0 | 7.5 | 71-80-90-100-112-132-160 | 16300 | 18800 | 29700 | 35700 | 10500 | 8800 |
| | **305 L3** | **141** | 10.6 | 5180 | 6.3 | 7.5 | 71-80-90-100-112-132-160 | 17000 | 19700 | 30800 | 37100 | 10900 | 8800 |
| | **305 L3** | **152** | 9.8 | 3600 | 4.1 | 7.5 | 71-80-90-100-112-132-160 | 17500 | 20200 | 31500 | 37900 | 11200 | 8800 |
| | **305 L3** | **164** | 9.2 | 4410 | 4.6 | 7.5 | 71-80-90-100-112-132-160 | 17900 | 20600 | 32200 | 38800 | 11500 | 8800 |
| | **305 L3** | **178** | 8.5 | 4420 | 4.3 | 7.5 | 71-80-90-100-112-132-160 | 18400 | 21200 | 33000 | 39700 | 11800 | 8800 |
| | **305 L3** | **190** | 7.9 | 3600 | 3.3 | 7.5 | 71-80-90-100-112-132-160 | 18800 | 21700 | 33700 | 40600 | 12100 | 8800 |
| | **305 L3** | **220** | 6.8 | 4750 | 3.7 | 7.5 | 71-80-90-100-112-132-160 | 19700 | 22800 | 35200 | 42400 | 12700 | 8800 |
| | **305 L3** | **258** | 5.8 | 3600 | 2.4 | 7.5 | 71-80-90-100-112-132-160 | 20800 | 24000 | 36900 | 44400 | 13300 | 8800 |
| | **305 L3** | **276** | 5.4 | 4460 | 2.8 | 7.5 | 71-80-90-100-112-132-160 | 21300 | 24600 | 37700 | 45400 | 13700 | 8800 |
| | **305 L3** | **321** | 4.7 | 3640 | 1.9 | 7.5 | 71-80-90-100-112-132-160 | 22400 | 25800 | 39400 | 47500 | 14400 | 8800 |
| | **305 L3** | **389** | 3.9 | 3170 | 1.4 | 7.5 | 71-80-90-100-112-132-160 | 23900 | 27500 | 41800 | 50300 | 15300 | 8800 |
| | **305 L3** | **402** | 3.7 | 3760 | 1.6 | 7.5 | 71-80-90-100-112-132-160 | 24100 | 27800 | 42200 | 50700 | 15500 | 8800 |
| | **305 L4** | **413** | 3.6 | 4720 | 2.0 | 6.0 | 71-80-90-100-112-132-160 | 24300 | 28100 | 42500 | 51200 | 15600 | 8800 |
| | **305 L4** | **446** | 3.4 | 5490 | 2.2 | 6.0 | 71-80-90-100-112-132-160 | 25000 | 28800 | 43500 | 52400 | 16000 | 8800 |
| | **305 L4** | **492** | 3.0 | 5340 | 1.9 | 6.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44800 | 53900 | 16600 | 8800 |
| | **305 L4** | **556** | 2.7 | 5500 | 1.8 | 6.0 | 71-80-90-100-112-132-160 | 26900 | 31000 | 46500 | 55900 | 17200 | 8800 |
| | **305 L4** | **649** | 2.3 | 4510 | 1.2 | 6.0 | 71-80-90-100-112-132-160 | 28300 | 32700 | 48700 | 58600 | 18200 | 8800 |
| | **305 L4** | **718** | 2.1 | 4130 | 1.0 | 6.0 | 71-80-90-100-112-132-160 | 29300 | 33800 | 50200 | 60400 | 18800 | 8800 |
| | **305 L4** | **816** | 1.8 | 5410 | 1.2 | 6.0 | 71-80-90-100-112-132-160 | 30500 | 35300 | 52200 | 62800 | 19600 | 8800 |



# 305 L

288

# 5800 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **305 L4** | **896** | 1.7 | 4290 | 0.85 | 6.0 | 71-80-90-100-112-132-160 | 31500 | 36400 | 53700 | 64600 | 20200 | 8800 |
| | **305 L4** | **1018** | 1.5 | 5450 | 0.95 | 6.0 | 71-80-90-100-112-132-160 | 32900 | 38000 | 55800 | 67100 | 21100 | 8800 |
| | **305 L4** | **1098** | 1.4 | 4440 | 0.72 | 6.0 | 71-80-90-100-112-132-160 | 33700 | 38900 | 57000 | 68600 | 21600 | 8800 |
| | **305 L4** | **1278** | 1.2 | 5500 | 0.76 | 6.0 | 71-80-90-100-112-132-160 | 35500 | 40900 | 59700 | 71800 | 22800 | 8800 |
| | **305 L4** | **1370** | 1.1 | 4620 | 0.60 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 41900 | 60900 | 73300 | 23300 | 8800 |
| | **305 L4** | **1586** | 0.95 | 4750 | 0.53 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63700 | 74000 | 24000 | 8800 |
| | **305 L4** | **1854** | 0.81 | 4690 | 0.45 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1991** | 0.75 | 5600 | 0.50 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **2243** | 0.67 | 3800 | 0.30 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **2799** | 0.54 | 3800 | 0.24 | 6.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| **1000** | **305 L1** | **3.60** | 278 | 2680 | 60 | 15.6 | 132-160-180-200 | 5730 | 6620 | 11600 | 13900 | 3680 | 8800 |
| | **305 L1** | **4.25** | 235 | 2770 | 60 | 15.6 | 132-160-180-200 | 6060 | 7000 | 12200 | 14600 | 3890 | 8800 |
| | **305 L1** | **5.33** | 188 | 2890 | 58 | 15.6 | 132-160-180-200 | 6540 | 7550 | 13000 | 15700 | 4190 | 8800 |
| | **305 L1** | **6.20** | 161 | 3000 | 52 | 15.6 | 132-160-180-200 | 6870 | 7930 | 13600 | 16400 | 4410 | 8800 |
| | **305 L1** | **7.50** | 133 | 2560 | 37 | 15.6 | 132-160-180-200 | 7320 | 8450 | 14400 | 17400 | 4700 | 8800 |
| | **305 L2** | **12.5** | 80 | 3300 | 29 | 10.8 | 71-80-90-100-112-132-160 | 8690 | 10000 | 16800 | 20300 | 5570 | 8800 |
| | **305 L2** | **15.3** | 65 | 3460 | 25 | 10.8 | 71-80-90-100-112-132-160 | 9300 | 10700 | 17900 | 21500 | 5960 | 8800 |
| | **305 L2** | **18.1** | 55 | 4090 | 25 | 10.8 | 71-80-90-100-112-132-160 | 9830 | 11300 | 18800 | 22600 | 6300 | 8800 |
| | **305 L2** | **20.8** | 48 | 3650 | 19.5 | 10.8 | 71-80-90-100-112-132-160 | 10300 | 11900 | 19600 | 23600 | 6600 | 8800 |
| | **305 L2** | **22.7** | 44 | 4290 | 21 | 10.8 | 71-80-90-100-112-132-160 | 10600 | 12200 | 20100 | 24200 | 6800 | 8800 |
| | **305 L2** | **24.5** | 41 | 4200 | 19.1 | 10.8 | 71-80-90-100-112-132-160 | 10900 | 12500 | 20600 | 24800 | 6970 | 8800 |
| | **305 L2** | **26.4** | 38 | 3560 | 15.0 | 10.8 | 71-80-90-100-112-132-160 | 11100 | 12900 | 21100 | 25300 | 7150 | 8800 |
| | **305 L2** | **30.8** | 33 | 4310 | 15.6 | 10.8 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7520 | 8800 |
| | **305 L2** | **35.8** | 28.0 | 3570 | 11.1 | 10.8 | 71-80-90-100-112-132-160 | 12300 | 14200 | 23100 | 27700 | 7910 | 8800 |
| | **305 L2** | **38.4** | 26.0 | 4330 | 12.5 | 10.8 | 71-80-90-100-112-132-160 | 12600 | 14600 | 23600 | 28300 | 8100 | 8800 |
| | **305 L2** | **44.6** | 22.4 | 3570 | 8.9 | 10.8 | 71-80-90-100-112-132-160 | 13300 | 15300 | 24600 | 29600 | 8510 | 8800 |
| | **305 L2** | **55.8** | 17.9 | 3560 | 7.1 | 10.8 | 71-80-90-100-112-132-160 | 14300 | 16500 | 26300 | 31700 | 9170 | 8800 |
| | **305 L3** | **53.4** | 18.7 | 4190 | 9.0 | 9.0 | 71-80-90-100-112-132-160 | 14100 | 16300 | 26000 | 31300 | 9040 | 8800 |
| | **305 L3** | **63.1** | 15.9 | 4980 | 9.1 | 9.0 | 71-80-90-100-112-132-160 | 14900 | 17200 | 27300 | 32900 | 9550 | 8800 |
| | **305 L3** | **72.3** | 13.8 | 4340 | 6.9 | 9.0 | 71-80-90-100-112-132-160 | 15600 | 18000 | 28500 | 34300 | 10000 | 8800 |
| | **305 L3** | **77.2** | 12.9 | 5110 | 7.6 | 9.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 8800 |
| | **305 L3** | **90.2** | 11.1 | 4440 | 5.7 | 9.0 | 71-80-90-100-112-132-160 | 16800 | 19400 | 30400 | 36600 | 10800 | 8800 |
| | **305 L3** | **105** | 9.6 | 5310 | 5.8 | 9.0 | 71-80-90-100-112-132-160 | 17600 | 20300 | 31800 | 38300 | 11300 | 8800 |
| | **305 L3** | **113** | 8.9 | 3600 | 3.7 | 9.0 | 71-80-90-100-112-132-160 | 18100 | 20900 | 32500 | 39100 | 11600 | 8800 |
| | **305 L3** | **124** | 8.0 | 3600 | 3.3 | 9.0 | 71-80-90-100-112-132-160 | 18700 | 21600 | 33500 | 40300 | 12000 | 8800 |
| | **305 L3** | **141** | 7.1 | 5260 | 4.3 | 9.0 | 71-80-90-100-112-132-160 | 19500 | 22500 | 34800 | 41900 | 12500 | 8800 |
| | **305 L3** | **152** | 6.6 | 3600 | 2.7 | 9.0 | 71-80-90-100-112-132-160 | 20000 | 23100 | 35600 | 42900 | 12800 | 8800 |
| | **305 L3** | **164** | 6.1 | 4450 | 3.1 | 9.0 | 71-80-90-100-112-132-160 | 20500 | 23600 | 36400 | 43800 | 13100 | 8800 |
| | **305 L3** | **178** | 5.6 | 4460 | 2.9 | 9.0 | 71-80-90-100-112-132-160 | 21000 | 24300 | 37300 | 44900 | 13500 | 8800 |
| | **305 L3** | **190** | 5.3 | 3600 | 2.2 | 9.0 | 71-80-90-100-112-132-160 | 21500 | 24800 | 38100 | 45800 | 13800 | 8800 |
| | **305 L3** | **220** | 4.5 | 4750 | 2.5 | 9.0 | 71-80-90-100-112-132-160 | 22600 | 26100 | 39800 | 47900 | 14500 | 8800 |
| | **305 L3** | **258** | 3.9 | 3740 | 1.7 | 9.0 | 71-80-90-100-112-132-160 | 23800 | 27500 | 41700 | 50200 | 15300 | 8800 |
| | **305 L3** | **276** | 3.6 | 4670 | 1.9 | 9.0 | 71-80-90-100-112-132-160 | 24400 | 28100 | 42600 | 51200 | 15600 | 8800 |
| | **305 L3** | **321** | 3.1 | 3870 | 1.4 | 9.0 | 71-80-90-100-112-132-160 | 25600 | 29600 | 44600 | 53600 | 16400 | 8800 |
| | **305 L3** | **389** | 2.6 | 3290 | 0.97 | 9.0 | 71-80-90-100-112-132-160 | 27300 | 31500 | 47200 | 56800 | 17500 | 8800 |
| | **305 L3** | **402** | 2.5 | 4000 | 1.1 | 9.0 | 71-80-90-100-112-132-160 | 27600 | 31900 | 47600 | 57300 | 17700 | 8800 |
| | **305 L4** | **413** | 2.4 | 5060 | 1.4 | 7.2 | 71-80-90-100-112-132-160 | 27900 | 32200 | 48000 | 57800 | 17900 | 8800 |
| | **305 L4** | **446** | 2.2 | 5530 | 1.5 | 7.2 | 71-80-90-100-112-132-160 | 28600 | 33000 | 49100 | 59100 | 18300 | 8800 |
| | **305 L4** | **492** | 2.0 | 5390 | 1.3 | 7.2 | 71-80-90-100-112-132-160 | 29500 | 34100 | 50600 | 60900 | 19000 | 8800 |
| | **305 L4** | **556** | 1.8 | 5610 | 1.2 | 7.2 | 71-80-90-100-112-132-160 | 30800 | 35500 | 52500 | 63200 | 19700 | 8800 |
| | **305 L4** | **649** | 1.5 | 4600 | 0.84 | 7.2 | 71-80-90-100-112-132-160 | 32400 | 37400 | 55000 | 66200 | 20800 | 8800 |
| | **305 L4** | **718** | 1.4 | 4430 | 0.73 | 7.2 | 71-80-90-100-112-132-160 | 33500 | 38700 | 56700 | 68200 | 21500 | 8800 |
| | **305 L4** | **816** | 1.2 | 5490 | 0.80 | 7.2 | 71-80-90-100-112-132-160 | 35000 | 40400 | 58900 | 70900 | 22400 | 8800 |
| | **305 L4** | **896** | 1.1 | 4600 | 0.61 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60600 | 72900 | 23100 | 8800 |
| | **305 L4** | **1018** | 0.98 | 5530 | 0.64 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 63000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1098** | 0.91 | 4690 | 0.51 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1278** | 0.78 | 5600 | 0.52 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1370** | 0.73 | 4690 | 0.40 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1586** | 0.63 | 4750 | 0.35 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1854** | 0.54 | 4690 | 0.30 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1991** | 0.50 | 5600 | 0.33 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |

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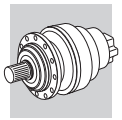

# 305 L

288

# 5800 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **305 L4** | **2243** | 0.45 | 3800 | 0.20 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **2799** | 0.36 | 3800 | 0.16 | 7.2 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| **500** | **305 L1** | **3.60** | 139 | 3300 | 49 | 26 | 132-160-180-200 | 7220 | 8340 | 14300 | 17200 | 4630 | 8800 |
| | **305 L1** | **4.25** | 118 | 3410 | 43 | 26 | 132-160-180-200 | 7630 | 8810 | 15000 | 18000 | 4900 | 8800 |
| | **305 L1** | **5.33** | 94 | 3560 | 36 | 26 | 132-160-180-200 | 8240 | 9510 | 16000 | 19300 | 5280 | 8800 |
| | **305 L1** | **6.20** | 81 | 3490 | 30 | 26 | 132-160-180-200 | 8660 | 10000 | 16800 | 20200 | 5560 | 8800 |
| | **305 L1** | **7.50** | 67 | 2910 | 21 | 26 | 132-160-180-200 | 9230 | 10700 | 17800 | 21400 | 5920 | 8800 |
| | **305 L2** | **12.5** | 40 | 3890 | 17.3 | 18.0 | 71-80-90-100-112-132-160 | 10900 | 12600 | 20700 | 24900 | 7020 | 8800 |
| | **305 L2** | **15.3** | 33 | 3930 | 14.3 | 18.0 | 71-80-90-100-112-132-160 | 11700 | 13500 | 22000 | 26500 | 7510 | 8800 |
| | **305 L2** | **18.1** | 27.6 | 4580 | 14.1 | 18.0 | 71-80-90-100-112-132-160 | 12400 | 14300 | 23100 | 27800 | 7940 | 8800 |
| | **305 L2** | **20.8** | 24.1 | 3970 | 10.6 | 18.0 | 71-80-90-100-112-132-160 | 13000 | 15000 | 24100 | 29000 | 8310 | 8800 |
| | **305 L2** | **22.7** | 22.0 | 4340 | 10.6 | 18.0 | 71-80-90-100-112-132-160 | 13400 | 15400 | 24800 | 29800 | 8570 | 8800 |
| | **305 L2** | **24.5** | 20.4 | 4680 | 10.6 | 18.0 | 71-80-90-100-112-132-160 | 13700 | 15800 | 25300 | 30500 | 8780 | 8800 |
| | **305 L2** | **26.4** | 18.9 | 3580 | 7.5 | 18.0 | 71-80-90-100-112-132-160 | 14000 | 16200 | 25900 | 31200 | 9010 | 8800 |
| | **305 L2** | **30.8** | 16.3 | 4360 | 7.9 | 18.0 | 71-80-90-100-112-132-160 | 14800 | 17100 | 27100 | 32600 | 9480 | 8800 |
| | **305 L2** | **35.8** | 14.0 | 3590 | 5.6 | 18.0 | 71-80-90-100-112-132-160 | 15500 | 17900 | 28400 | 34200 | 9960 | 8800 |
| | **305 L2** | **38.4** | 13.0 | 4380 | 6.3 | 18.0 | 71-80-90-100-112-132-160 | 15900 | 18400 | 29000 | 34900 | 10200 | 8800 |
| | **305 L2** | **44.6** | 11.2 | 3600 | 4.5 | 18.0 | 71-80-90-100-112-132-160 | 16700 | 19300 | 30300 | 36500 | 10700 | 8800 |
| | **305 L2** | **55.8** | 9.0 | 3600 | 3.6 | 18.0 | 71-80-90-100-112-132-160 | 18000 | 20800 | 32400 | 39000 | 11600 | 8800 |
| | **305 L3** | **53.4** | 9.4 | 4490 | 4.8 | 15.0 | 71-80-90-100-112-132-160 | 17800 | 20500 | 32000 | 38500 | 11400 | 8800 |
| | **305 L3** | **63.1** | 7.9 | 5360 | 4.9 | 15.0 | 71-80-90-100-112-132-160 | 18800 | 21700 | 33600 | 40500 | 12000 | 8800 |
| | **305 L3** | **72.3** | 6.9 | 4490 | 3.6 | 15.0 | 71-80-90-100-112-132-160 | 19600 | 22700 | 35100 | 42200 | 12600 | 8800 |
| | **305 L3** | **77.2** | 6.5 | 5410 | 4.0 | 15.0 | 71-80-90-100-112-132-160 | 20100 | 23200 | 35800 | 43000 | 12900 | 8800 |
| | **305 L3** | **90.2** | 5.5 | 4490 | 2.9 | 15.0 | 71-80-90-100-112-132-160 | 21100 | 24400 | 37500 | 45100 | 13600 | 8800 |
| | **305 L3** | **105** | 4.8 | 5480 | 3.0 | 15.0 | 71-80-90-100-112-132-160 | 22200 | 25600 | 39200 | 47100 | 14200 | 8800 |
| | **305 L3** | **113** | 4.4 | 3670 | 1.9 | 15.0 | 71-80-90-100-112-132-160 | 22800 | 26300 | 40100 | 48200 | 14600 | 8800 |
| | **305 L3** | **124** | 4.0 | 3720 | 1.7 | 15.0 | 71-80-90-100-112-132-160 | 23500 | 27200 | 41300 | 49600 | 15100 | 8800 |
| | **305 L3** | **141** | 3.5 | 5320 | 2.2 | 15.0 | 71-80-90-100-112-132-160 | 24600 | 28400 | 42900 | 51600 | 15800 | 8800 |
| | **305 L3** | **152** | 3.3 | 3840 | 1.4 | 15.0 | 71-80-90-100-112-132-160 | 25200 | 29100 | 43900 | 52800 | 16200 | 8800 |
| | **305 L3** | **164** | 3.1 | 4870 | 1.7 | 15.0 | 71-80-90-100-112-132-160 | 25800 | 29800 | 44800 | 53900 | 16500 | 8800 |
| | **305 L3** | **178** | 2.8 | 4940 | 1.6 | 15.0 | 71-80-90-100-112-132-160 | 26500 | 30600 | 45900 | 55200 | 17000 | 8800 |
| | **305 L3** | **190** | 2.6 | 3970 | 1.2 | 15.0 | 71-80-90-100-112-132-160 | 27100 | 31300 | 46900 | 56400 | 17400 | 8800 |
| | **305 L3** | **220** | 2.3 | 4750 | 1.2 | 15.0 | 71-80-90-100-112-132-160 | 28500 | 32900 | 49000 | 58900 | 18300 | 8800 |
| | **305 L3** | **258** | 1.9 | 4180 | 0.93 | 15.0 | 71-80-90-100-112-132-160 | 30000 | 34600 | 51300 | 61700 | 19200 | 8800 |
| | **305 L3** | **276** | 1.8 | 5140 | 1.1 | 15.0 | 71-80-90-100-112-132-160 | 30700 | 35400 | 52400 | 63100 | 19700 | 8800 |
| | **305 L3** | **321** | 1.6 | 4340 | 0.78 | 15.0 | 71-80-90-100-112-132-160 | 32300 | 37300 | 54900 | 66000 | 20700 | 8800 |
| | **305 L3** | **389** | 1.3 | 3660 | 0.54 | 15.0 | 71-80-90-100-112-132-160 | 34400 | 39700 | 58100 | 69900 | 22100 | 8800 |
| | **305 L3** | **402** | 1.2 | 4520 | 0.64 | 15.0 | 71-80-90-100-112-132-160 | 34800 | 40200 | 58600 | 70600 | 22300 | 8800 |
| | **305 L4** | **413** | 1.2 | 5480 | 0.78 | 12.0 | 71-80-90-100-112-132-160 | 35100 | 40500 | 59100 | 71200 | 22500 | 8800 |
| | **305 L4** | **446** | 1.1 | 5760 | 0.76 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 41600 | 60500 | 72800 | 23100 | 8800 |
| | **305 L4** | **492** | 1.0 | 5530 | 0.66 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 62300 | 74000 | 23900 | 8800 |
| | **305 L4** | **556** | 0.90 | 5800 | 0.62 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **649** | 0.77 | 4700 | 0.43 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **718** | 0.70 | 4690 | 0.39 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **816** | 0.61 | 5530 | 0.40 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **896** | 0.56 | 4690 | 0.31 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1018** | 0.49 | 5530 | 0.32 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1098** | 0.46 | 4690 | 0.25 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1278** | 0.39 | 5600 | 0.26 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1370** | 0.36 | 4690 | 0.20 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1586** | 0.32 | 4750 | 0.18 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1854** | 0.27 | 4690 | 0.15 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **1991** | 0.25 | 5600 | 0.17 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **2243** | 0.22 | 3800 | 0.10 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 L4** | **2799** | 0.18 | 3800 | 0.08 | 12.0 | 71-80-90-100-112-132-160 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |

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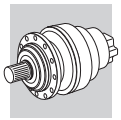

# 306 L

300

# 10840 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **306 L1** | **3.60** | 417 | 3760 | 75 | 18.0 | 160-180-200-225-250 | 6240 | 7070 | 16800 | 19500 | 4690 | 14900 |
| | **306 L1** | **4.25** | 353 | 3890 | 75 | 18.0 | 160-180-200-225-250 | 6590 | 7470 | 17600 | 20500 | 4950 | 14900 |
| | **306 L1** | **5.33** | 281 | 4060 | 75 | 18.0 | 160-180-200-225-250 | 7110 | 8060 | 18900 | 22000 | 5340 | 14900 |
| | **306 L1** | **6.20** | 242 | 4200 | 75 | 18.0 | 160-180-200-225-250 | 7480 | 8470 | 19700 | 23000 | 5620 | 14900 |
| | **306 L1** | **7.50** | 200 | 4090 | 75 | 18.0 | 160-180-200-225-250 | 7970 | 9030 | 20900 | 24300 | 5980 | 14900 |
| | **306 L2** | **13.0** | 116 | 4820 | 40 | 13.0 | 132-160-180-200 | 9560 | 10800 | 24600 | 28700 | 7180 | 14900 |
| | **306 L2** | **15.3** | 98 | 4990 | 40 | 13.0 | 132-160-180-200 | 10100 | 11400 | 25900 | 30100 | 7590 | 14900 |
| | **306 L2** | **18.1** | 83 | 5890 | 40 | 13.0 | 132-160-180-200 | 10700 | 12100 | 27200 | 31700 | 8020 | 14900 |
| | **306 L2** | **22.7** | 66 | 6140 | 40 | 13.0 | 132-160-180-200 | 11500 | 13000 | 29100 | 33900 | 8650 | 14900 |
| | **306 L2** | **26.4** | 57 | 6370 | 40 | 13.0 | 132-160-180-200 | 12100 | 13700 | 30500 | 35500 | 9100 | 14900 |
| | **306 L2** | **28.4** | 53 | 6700 | 39 | 13.0 | 132-160-180-200 | 12400 | 14100 | 31200 | 36300 | 9330 | 14900 |
| | **306 L2** | **33.1** | 45 | 6870 | 35 | 13.0 | 132-160-180-200 | 13100 | 14800 | 32600 | 38000 | 9810 | 14900 |
| | **306 L2** | **38.4** | 39 | 6470 | 28 | 13.0 | 132-160-180-200 | 13700 | 15600 | 34100 | 39700 | 10300 | 14900 |
| | **306 L2** | **46.5** | 32 | 6470 | 23 | 13.0 | 132-160-180-200 | 14600 | 16600 | 36100 | 42100 | 11000 | 14900 |
| | **306 L2** | **56.3** | 26.7 | 5210 | 15.5 | 13.0 | 132-160-180-200 | 15600 | 17700 | 38300 | 44500 | 11700 | 14900 |
| | **306 L2** | **72.5** | 20.7 | 5290 | 12.2 | 13.0 | 132-160-180-200 | 17000 | 19200 | 41300 | 48100 | 12700 | 14900 |
| | **306 L3** | **53.2** | 28.2 | 7100 | 20.0 | 7.5 | 71-80-90-100-112-132-160 | 15300 | 17300 | 37600 | 43800 | 11500 | 14900 |
| | **306 L3** | **65.2** | 23.0 | 7480 | 19.7 | 7.5 | 71-80-90-100-112-132-160 | 16400 | 18600 | 40000 | 46600 | 12300 | 14900 |
| | **306 L3** | **77.0** | 19.5 | 8350 | 18.7 | 7.5 | 71-80-90-100-112-132-160 | 17300 | 19600 | 42000 | 48900 | 13000 | 14900 |
| | **306 L3** | **81.9** | 18.3 | 6890 | 14.5 | 7.5 | 71-80-90-100-112-132-160 | 17700 | 20000 | 42800 | 49900 | 13300 | 14900 |
| | **306 L3** | **88.3** | 17.0 | 8550 | 16.7 | 7.5 | 71-80-90-100-112-132-160 | 18100 | 20500 | 43800 | 51000 | 13600 | 14900 |
| | **306 L3** | **104** | 14.4 | 8900 | 14.7 | 7.5 | 71-80-90-100-112-132-160 | 19200 | 21700 | 46000 | 53600 | 14400 | 14900 |
| | **306 L3** | **112** | 13.4 | 7410 | 11.3 | 7.5 | 71-80-90-100-112-132-160 | 19600 | 22200 | 47100 | 54800 | 14800 | 14900 |
| | **306 L3** | **121** | 12.4 | 7790 | 11.1 | 7.5 | 71-80-90-100-112-132-160 | 20100 | 22800 | 48200 | 56100 | 15100 | 14900 |
| | **306 L3** | **141** | 10.6 | 7900 | 9.6 | 7.5 | 71-80-90-100-112-132-160 | 21200 | 24000 | 50400 | 58700 | 15900 | 14900 |
| | **306 L3** | **152** | 9.9 | 7590 | 8.6 | 7.5 | 71-80-90-100-112-132-160 | 21700 | 24600 | 51600 | 60000 | 16300 | 14900 |
| | **306 L3** | **190** | 7.9 | 6510 | 5.9 | 7.5 | 71-80-90-100-112-132-160 | 23400 | 26500 | 55100 | 64200 | 17600 | 14900 |
| | **306 L3** | **205** | 7.3 | 8110 | 6.8 | 7.5 | 71-80-90-100-112-132-160 | 24000 | 27200 | 56400 | 65600 | 18000 | 14900 |
| | **306 L3** | **222** | 6.8 | 6520 | 5.1 | 7.5 | 71-80-90-100-112-132-160 | 24600 | 27900 | 57700 | 67200 | 18500 | 14900 |
| | **306 L3** | **238** | 6.3 | 8180 | 5.9 | 7.5 | 71-80-90-100-112-132-160 | 25200 | 28600 | 59000 | 68700 | 19000 | 14900 |
| | **306 L3** | **268** | 5.6 | 5500 | 3.5 | 7.5 | 71-80-90-100-112-132-160 | 26200 | 29700 | 61100 | 71200 | 19700 | 14900 |
| | **306 L3** | **288** | 5.2 | 5500 | 3.3 | 7.5 | 71-80-90-100-112-132-160 | 26900 | 30500 | 62400 | 72700 | 20200 | 14900 |
| | **306 L3** | **325** | 4.6 | 5540 | 2.9 | 7.5 | 71-80-90-100-112-132-160 | 28000 | 31700 | 64700 | 75400 | 21000 | 14900 |
| | **306 L3** | **405** | 3.7 | 5670 | 2.4 | 7.5 | 71-80-90-100-112-132-160 | 30100 | 34100 | 69200 | 80500 | 22600 | 14900 |
| | **306 L4** | **391** | 3.8 | 6840 | 3.1 | 6.0 | 71-80-90-100-112-132-160 | 29800 | 33700 | 68400 | 79700 | 22400 | 14900 |
| | **306 L4** | **444** | 3.4 | 9850 | 3.9 | 6.0 | 71-80-90-100-112-132-160 | 31100 | 35200 | 71100 | 82800 | 23300 | 14900 |
| | **306 L4** | **509** | 2.9 | 9450 | 3.3 | 6.0 | 71-80-90-100-112-132-160 | 32500 | 36800 | 74100 | 86300 | 24400 | 14900 |
| | **306 L4** | **589** | 2.5 | 9320 | 2.8 | 6.0 | 71-80-90-100-112-132-160 | 34100 | 38700 | 77400 | 90100 | 25600 | 14900 |
| | **306 L4** | **636** | 2.4 | 9450 | 2.6 | 6.0 | 71-80-90-100-112-132-160 | 35000 | 39600 | 79200 | 92200 | 26300 | 14900 |
| | **306 L4** | **700** | 2.1 | 9470 | 2.4 | 6.0 | 71-80-90-100-112-132-160 | 36100 | 40900 | 81500 | 94900 | 27100 | 14900 |
| | **306 L4** | **809** | 1.9 | 7690 | 1.7 | 6.0 | 71-80-90-100-112-132-160 | 37900 | 43000 | 85100 | 99100 | 28500 | 14900 |
| | **306 L4** | **877** | 1.7 | 7710 | 1.6 | 6.0 | 71-80-90-100-112-132-160 | 39000 | 44100 | 87200 | 101600 | 29300 | 14900 |
| | **306 L4** | **1015** | 1.5 | 9460 | 1.7 | 6.0 | 71-80-90-100-112-132-160 | 40900 | 46300 | 91100 | 106100 | 30700 | 14900 |
| | **306 L4** | **1095** | 1.4 | 7790 | 1.3 | 6.0 | 71-80-90-100-112-132-160 | 41900 | 47500 | 93200 | 108500 | 31500 | 14900 |
| | **306 L4** | **1279** | 1.2 | 8400 | 1.2 | 6.0 | 71-80-90-100-112-132-160 | 44200 | 50100 | 97700 | 113700 | 33200 | 14900 |
| | **306 L4** | **1475** | 1.0 | 10100 | 1.2 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 118700 | 34800 | 14900 |
| | **306 L4** | **1597** | 0.94 | 8630 | 0.96 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1843** | 0.81 | 10100 | 0.97 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2074** | 0.72 | 7000 | 0.60 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2337** | 0.64 | 7000 | 0.53 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2916** | 0.51 | 7000 | 0.43 | 6.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| **1000** | **306 L1** | **3.60** | 278 | 4250 | 75 | 22 | 160-180-200-225-250 | 7140 | 8090 | 18900 | 22100 | 5360 | 14900 |
| | **306 L1** | **4.25** | 235 | 4390 | 75 | 22 | 160-180-200-225-250 | 7550 | 8550 | 19900 | 23200 | 5670 | 14900 |
| | **306 L1** | **5.33** | 188 | 4580 | 75 | 22 | 160-180-200-225-250 | 8140 | 9220 | 21300 | 24800 | 6120 | 14900 |
| | **306 L1** | **6.20** | 161 | 4750 | 75 | 22 | 160-180-200-225-250 | 8560 | 9700 | 22300 | 26000 | 6430 | 14900 |
| | **306 L1** | **7.50** | 133 | 4620 | 67 | 22 | 160-180-200-225-250 | 9120 | 10300 | 23600 | 27500 | 6850 | 14900 |
| | **306 L2** | **13.0** | 77 | 5450 | 40 | 15.6 | 132-160-180-200 | 10900 | 12400 | 27800 | 32400 | 8220 | 14900 |
| | **306 L2** | **15.3** | 65 | 5640 | 40 | 15.6 | 132-160-180-200 | 11600 | 13100 | 29200 | 34000 | 8690 | 14900 |
| | **306 L2** | **18.1** | 55 | 6650 | 40 | 15.6 | 132-160-180-200 | 12200 | 13800 | 30700 | 35800 | 9180 | 14900 |
| | **306 L2** | **22.7** | 44 | 6840 | 34 | 15.6 | 132-160-180-200 | 13200 | 14900 | 32900 | 38300 | 9910 | 14900 |

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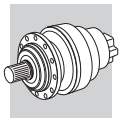

# 306 L

300

# 10840 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **306 L2** | **26.4** | 38 | 6780 | 29 | 15.6 | 132-160-180-200 | 13900 | 15700 | 34400 | 40100 | 10400 | 14900 |
| | **306 L2** | **28.4** | 35 | 7040 | 28 | 15.6 | 132-160-180-200 | 14200 | 16100 | 35200 | 41000 | 10700 | 14900 |
| | **306 L2** | **33.1** | 30 | 7150 | 24 | 15.6 | 132-160-180-200 | 15000 | 16900 | 36800 | 42900 | 11200 | 14900 |
| | **306 L2** | **38.4** | 26 | 6480 | 18.7 | 15.6 | 132-160-180-200 | 15700 | 17800 | 38500 | 44900 | 11800 | 14900 |
| | **306 L2** | **46.5** | 21.5 | 6480 | 15.5 | 15.6 | 132-160-180-200 | 16800 | 19000 | 40800 | 47500 | 12600 | 14900 |
| | **306 L2** | **56.3** | 17.8 | 5330 | 10.5 | 15.6 | 132-160-180-200 | 17800 | 20200 | 43200 | 50300 | 13400 | 14900 |
| | **306 L2** | **72.5** | 13.8 | 5400 | 8.3 | 15.6 | 132-160-180-200 | 19400 | 22000 | 46600 | 54300 | 14600 | 14900 |
| | **306 L3** | **53.2** | 18.8 | 7890 | 17.0 | 9.0 | 71-80-90-100-112-132-160 | 17500 | 19900 | 42500 | 49500 | 13200 | 14900 |
| | **306 L3** | **65.2** | 15.3 | 8320 | 14.6 | 9.0 | 71-80-90-100-112-132-160 | 18800 | 21200 | 45200 | 52600 | 14100 | 14900 |
| | **306 L3** | **77.0** | 13.0 | 9090 | 13.5 | 9.0 | 71-80-90-100-112-132-160 | 19800 | 22500 | 47500 | 55300 | 14900 | 14900 |
| | **306 L3** | **81.9** | 12.2 | 7310 | 10.2 | 9.0 | 71-80-90-100-112-132-160 | 20200 | 22900 | 48400 | 56300 | 15200 | 14900 |
| | **306 L3** | **88.3** | 11.3 | 9230 | 12.0 | 9.0 | 71-80-90-100-112-132-160 | 20700 | 23500 | 49500 | 57600 | 15600 | 14900 |
| | **306 L3** | **104** | 9.6 | 9610 | 10.6 | 9.0 | 71-80-90-100-112-132-160 | 21900 | 24800 | 52000 | 60500 | 16500 | 14900 |
| | **306 L3** | **112** | 8.9 | 7590 | 7.8 | 9.0 | 71-80-90-100-112-132-160 | 22500 | 25500 | 53200 | 61900 | 16900 | 14900 |
| | **306 L3** | **121** | 8.2 | 8050 | 7.6 | 9.0 | 71-80-90-100-112-132-160 | 23100 | 26100 | 54400 | 63300 | 17300 | 14900 |
| | **306 L3** | **141** | 7.1 | 8120 | 6.6 | 9.0 | 71-80-90-100-112-132-160 | 24200 | 27500 | 56900 | 66300 | 18200 | 14900 |
| | **306 L3** | **152** | 6.6 | 7590 | 5.7 | 9.0 | 71-80-90-100-112-132-160 | 24900 | 28200 | 58200 | 67800 | 18700 | 14900 |
| | **306 L3** | **190** | 5.3 | 6530 | 3.9 | 9.0 | 71-80-90-100-112-132-160 | 26800 | 30300 | 62200 | 72500 | 20100 | 14900 |
| | **306 L3** | **205** | 4.9 | 8330 | 4.7 | 9.0 | 71-80-90-100-112-132-160 | 27500 | 31100 | 63700 | 74100 | 20600 | 14900 |
| | **306 L3** | **222** | 4.5 | 6650 | 3.4 | 9.0 | 71-80-90-100-112-132-160 | 28200 | 31900 | 65200 | 75900 | 21200 | 14900 |
| | **306 L3** | **238** | 4.2 | 8550 | 4.1 | 9.0 | 71-80-90-100-112-132-160 | 28900 | 32700 | 66600 | 77600 | 21700 | 14900 |
| | **306 L3** | **268** | 3.7 | 5670 | 2.4 | 9.0 | 71-80-90-100-112-132-160 | 30000 | 34000 | 69000 | 80400 | 22600 | 14900 |
| | **306 L3** | **288** | 3.5 | 5710 | 2.3 | 9.0 | 71-80-90-100-112-132-160 | 30800 | 34900 | 70500 | 82100 | 23100 | 14900 |
| | **306 L3** | **325** | 3.1 | 5780 | 2.0 | 9.0 | 71-80-90-100-112-132-160 | 32000 | 36300 | 73100 | 85100 | 24100 | 14900 |
| | **306 L3** | **405** | 2.5 | 5910 | 1.7 | 9.0 | 71-80-90-100-112-132-160 | 34500 | 39100 | 78100 | 91000 | 25900 | 14900 |
| | **306 L4** | **391** | 2.6 | 7340 | 2.2 | 7.2 | 71-80-90-100-112-132-160 | 34100 | 38600 | 77300 | 90000 | 25600 | 14900 |
| | **306 L4** | **444** | 2.3 | 9910 | 2.6 | 7.2 | 71-80-90-100-112-132-160 | 35500 | 40300 | 80300 | 93500 | 26700 | 14900 |
| | **306 L4** | **509** | 2.0 | 9450 | 2.2 | 7.2 | 71-80-90-100-112-132-160 | 37200 | 42200 | 83700 | 97400 | 27900 | 14900 |
| | **306 L4** | **589** | 1.7 | 9650 | 1.9 | 7.2 | 71-80-90-100-112-132-160 | 39100 | 44300 | 87400 | 101800 | 29300 | 14900 |
| | **306 L4** | **636** | 1.6 | 9450 | 1.8 | 7.2 | 71-80-90-100-112-132-160 | 40100 | 45400 | 89400 | 104100 | 30100 | 14900 |
| | **306 L4** | **700** | 1.4 | 9790 | 1.7 | 7.2 | 71-80-90-100-112-132-160 | 41400 | 46900 | 92000 | 107200 | 31100 | 14900 |
| | **306 L4** | **809** | 1.2 | 7820 | 1.1 | 7.2 | 71-80-90-100-112-132-160 | 43400 | 49200 | 96100 | 111900 | 32600 | 14900 |
| | **306 L4** | **877** | 1.1 | 7850 | 1.1 | 7.2 | 71-80-90-100-112-132-160 | 44600 | 50500 | 98500 | 114700 | 33500 | 14900 |
| | **306 L4** | **1015** | 0.99 | 9540 | 1.1 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1095** | 0.91 | 7890 | 0.85 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1279** | 0.78 | 8630 | 0.80 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1475** | 0.68 | 10100 | 0.81 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1597** | 0.63 | 8630 | 0.64 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1843** | 0.54 | 10100 | 0.65 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2074** | 0.48 | 7000 | 0.40 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2337** | 0.43 | 7000 | 0.35 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2916** | 0.34 | 7000 | 0.28 | 7.2 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| **500** | **306 L1** | **3.60** | 139 | 5230 | 75 | 36 | 160-180-200-225-250 | 9000 | 10200 | 23300 | 27200 | 6760 | 14900 |
| | **306 L1** | **4.25** | 118 | 5410 | 69 | 36 | 160-180-200-225-250 | 9510 | 10800 | 24500 | 28500 | 7140 | 14900 |
| | **306 L1** | **5.33** | 94 | 5640 | 57 | 36 | 160-180-200-225-250 | 10300 | 11600 | 26200 | 30600 | 7700 | 14900 |
| | **306 L1** | **6.20** | 81 | 5770 | 50 | 36 | 160-180-200-225-250 | 10800 | 12200 | 27400 | 32000 | 8100 | 14900 |
| | **306 L1** | **7.50** | 67 | 5040 | 36 | 36 | 160-180-200-225-250 | 11500 | 13000 | 29100 | 33800 | 8630 | 14900 |
| | **306 L2** | **13.0** | 39 | 6470 | 28 | 26 | 132-160-180-200 | 13800 | 15600 | 34200 | 39900 | 10400 | 14900 |
| | **306 L2** | **15.3** | 33 | 6830 | 25 | 26 | 132-160-180-200 | 14600 | 16500 | 36000 | 41900 | 10900 | 14900 |
| | **306 L2** | **18.1** | 27.7 | 7760 | 24 | 26 | 132-160-180-200 | 15400 | 17400 | 37800 | 44100 | 11600 | 14900 |
| | **306 L2** | **22.7** | 22.1 | 7820 | 19.2 | 26 | 132-160-180-200 | 16600 | 18800 | 40500 | 47200 | 12500 | 14900 |
| | **306 L2** | **26.4** | 19.0 | 7190 | 15.2 | 26 | 132-160-180-200 | 17500 | 19800 | 42400 | 49300 | 13100 | 14900 |
| | **306 L2** | **28.4** | 17.6 | 7530 | 14.7 | 26 | 132-160-180-200 | 17900 | 20300 | 43400 | 50500 | 13500 | 14900 |
| | **306 L2** | **33.1** | 15.1 | 7640 | 12.9 | 26 | 132-160-180-200 | 18800 | 21300 | 45400 | 52800 | 14200 | 14900 |
| | **306 L2** | **38.4** | 13.0 | 6490 | 9.4 | 26 | 132-160-180-200 | 19800 | 22400 | 47500 | 55300 | 14900 | 14900 |
| | **306 L2** | **46.5** | 10.8 | 6500 | 7.8 | 26 | 132-160-180-200 | 21100 | 23900 | 50200 | 58500 | 15900 | 14900 |
| | **306 L2** | **56.3** | 8.9 | 5500 | 5.4 | 26 | 132-160-180-200 | 22500 | 25500 | 53200 | 61900 | 16900 | 14900 |
| | **306 L2** | **72.5** | 6.9 | 5500 | 4.2 | 26 | 132-160-180-200 | 24500 | 27700 | 57400 | 66800 | 18400 | 14900 |
| | **306 L3** | **53.2** | 9.4 | 9300 | 10.0 | 15.0 | 71-80-90-100-112-132-160 | 22100 | 25000 | 52300 | 60900 | 16600 | 14900 |
| | **306 L3** | **65.2** | 7.7 | 9320 | 8.2 | 15.0 | 71-80-90-100-112-132-160 | 23600 | 26800 | 55600 | 64800 | 17800 | 14900 |

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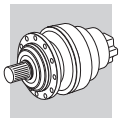
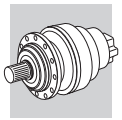


## 306 L — 300 — 10840 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **306 L3** | **77.0** | 6.5 | 9750 | 7.3 | 15.0 | 71-80-90-100-112-132-160 | 25000 | 28300 | 58400 | 68100 | 18800 | 14900 |
| | **306 L3** | **81.9** | 6.1 | 7650 | 5.4 | 15.0 | 71-80-90-100-112-132-160 | 25500 | 28900 | 59500 | 69300 | 19100 | 14900 |
| | **306 L3** | **88.3** | 5.7 | 9450 | 6.1 | 15.0 | 71-80-90-100-112-132-160 | 26100 | 29600 | 60900 | 70900 | 19600 | 14900 |
| | **306 L3** | **104** | 4.8 | 9850 | 5.4 | 15.0 | 71-80-90-100-112-132-160 | 27600 | 31300 | 64000 | 74500 | 20800 | 14900 |
| | **306 L3** | **112** | 4.5 | 7590 | 3.9 | 15.0 | 71-80-90-100-112-132-160 | 28300 | 32100 | 65500 | 76200 | 21300 | 14900 |
| | **306 L3** | **121** | 4.1 | 8580 | 4.1 | 15.0 | 71-80-90-100-112-132-160 | 29100 | 32900 | 67000 | 78000 | 21800 | 14900 |
| | **306 L3** | **141** | 3.5 | 8800 | 3.6 | 15.0 | 71-80-90-100-112-132-160 | 30500 | 34600 | 70100 | 81600 | 23000 | 14900 |
| | **306 L3** | **152** | 3.3 | 7590 | 2.9 | 15.0 | 71-80-90-100-112-132-160 | 31300 | 35500 | 71700 | 83500 | 23500 | 14900 |
| | **306 L3** | **190** | 2.6 | 7300 | 2.2 | 15.0 | 71-80-90-100-112-132-160 | 33700 | 38200 | 76600 | 89200 | 25300 | 14900 |
| | **306 L3** | **205** | 2.4 | 9370 | 2.6 | 15.0 | 71-80-90-100-112-132-160 | 34600 | 39200 | 78400 | 91300 | 26000 | 14900 |
| | **306 L3** | **222** | 2.3 | 7500 | 1.9 | 15.0 | 71-80-90-100-112-132-160 | 35500 | 40300 | 80300 | 93500 | 26700 | 14900 |
| | **306 L3** | **238** | 2.1 | 9390 | 2.3 | 15.0 | 71-80-90-100-112-132-160 | 36400 | 41200 | 82000 | 95500 | 27300 | 14900 |
| | **306 L3** | **268** | 1.9 | 6230 | 1.3 | 15.0 | 71-80-90-100-112-132-160 | 37900 | 42900 | 85000 | 99000 | 28400 | 14900 |
| | **306 L3** | **288** | 1.7 | 6320 | 1.3 | 15.0 | 71-80-90-100-112-132-160 | 38800 | 43900 | 86800 | 101100 | 29100 | 14900 |
| | **306 L3** | **325** | 1.5 | 6460 | 1.1 | 15.0 | 71-80-90-100-112-132-160 | 40300 | 45700 | 90000 | 104800 | 30300 | 14900 |
| | **306 L3** | **405** | 1.2 | 6730 | 0.95 | 15.0 | 71-80-90-100-112-132-160 | 43400 | 49200 | 96200 | 112000 | 32600 | 14900 |
| | **306 L4** | **391** | 1.3 | 8270 | 1.3 | 12.0 | 71-80-90-100-112-132-160 | 42900 | 48600 | 95200 | 110800 | 32200 | 14900 |
| | **306 L4** | **444** | 1.1 | 10300 | 1.4 | 12.0 | 71-80-90-100-112-132-160 | 44800 | 50700 | 98900 | 115100 | 33600 | 14900 |
| | **306 L4** | **509** | 0.98 | 9450 | 1.1 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **589** | 0.85 | 10100 | 1.0 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **636** | 0.79 | 9450 | 0.88 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **700** | 0.71 | 10100 | 0.85 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **809** | 0.62 | 7890 | 0.58 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **877** | 0.57 | 7890 | 0.53 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1015** | 0.49 | 9540 | 0.56 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1095** | 0.46 | 7890 | 0.43 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1279** | 0.39 | 8630 | 0.40 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1475** | 0.34 | 10100 | 0.40 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1597** | 0.31 | 8630 | 0.32 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **1843** | 0.27 | 10100 | 0.32 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2074** | 0.24 | 7000 | 0.20 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2337** | 0.21 | 7000 | 0.18 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 L4** | **2916** | 0.17 | 7000 | 0.14 | 12.0 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |

## 307 L — 312 — 15680 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **307 L1** | **3.43** | 438 | 5110 | 115 | 22 | 180-200-225-250 | 6820 | 8560 | 17800 | 23300 | 5930 | 18600 |
| | **307 L1** | **4.09** | 367 | 5260 | 115 | 22 | 180-200-225-250 | 7230 | 9070 | 18700 | 24600 | 6290 | 21000 |
| | **307 L1** | **5.25** | 286 | 5540 | 115 | 22 | 180-200-225-250 | 7860 | 9860 | 20200 | 26500 | 6830 | 21000 |
| | **307 L1** | **6.23** | 241 | 5750 | 115 | 22 | 180-200-225-250 | 8320 | 10400 | 21300 | 27900 | 7230 | 21000 |
| | **307 L2** | **12.3** | 122 | 7510 | 60 | 18.0 | 132-160-180-200 | 10500 | 13100 | 26100 | 34200 | 9080 | 18600 |
| | **307 L2** | **14.7** | 102 | 7730 | 60 | 18.0 | 132-160-180-200 | 11100 | 13900 | 27500 | 36100 | 9640 | 21000 |
| | **307 L2** | **17.4** | 86 | 8120 | 60 | 18.0 | 132-160-180-200 | 11700 | 14700 | 28900 | 37900 | 10200 | 21000 |
| | **307 L2** | **21.8** | 69 | 8690 | 60 | 18.0 | 132-160-180-200 | 12600 | 15900 | 31000 | 40600 | 11000 | 21000 |
| | **307 L2** | **25.4** | 59 | 9090 | 60 | 18.0 | 132-160-180-200 | 13300 | 16700 | 32400 | 42500 | 11600 | 21000 |
| | **307 L2** | **28.0** | 54 | 9150 | 55 | 18.0 | 132-160-180-200 | 13700 | 17200 | 33400 | 43700 | 11900 | 21000 |
| | **307 L2** | **30.7** | 49 | 9590 | 52 | 18.0 | 132-160-180-200 | 14200 | 17800 | 34300 | 45000 | 12300 | 21000 |
| | **307 L2** | **32.6** | 46 | 9410 | 48 | 18.0 | 132-160-180-200 | 14400 | 18100 | 34900 | 45800 | 12600 | 21000 |
| | **307 L2** | **38.6** | 39 | 8310 | 36 | 18.0 | 132-160-180-200 | 15300 | 19200 | 36800 | 48200 | 13300 | 21000 |
| | **307 L2** | **46.7** | 32 | 8360 | 30 | 18.0 | 132-160-180-200 | 16300 | 20400 | 38900 | 51000 | 14200 | 21000 |
| | **307 L3** | **51.3** | 29.3 | 10700 | 30 | 11.0 | 71-80-90-100-112-132-160 | 16800 | 21100 | 40000 | 52400 | 14600 | 21000 |
| | **307 L3** | **60.5** | 24.8 | 11100 | 30 | 11.0 | 71-80-90-100-112-132-160 | 17800 | 22300 | 42100 | 55100 | 15400 | 21000 |
| | **307 L3** | **74.1** | 20.2 | 11600 | 27 | 11.0 | 71-80-90-100-112-132-160 | 19000 | 23800 | 44700 | 58600 | 16500 | 21000 |
| | **307 L3** | **80.6** | 18.6 | 10200 | 22 | 11.0 | 71-80-90-100-112-132-160 | 19500 | 24500 | 45800 | 60100 | 17000 | 21000 |
| | **307 L3** | **93.0** | 16.1 | 12200 | 23 | 11.0 | 71-80-90-100-112-132-160 | 20500 | 25700 | 47900 | 62700 | 17800 | 21000 |
| | **307 L3** | **100** | 15.0 | 12400 | 21 | 11.0 | 71-80-90-100-112-132-160 | 21000 | 26400 | 49000 | 64100 | 18300 | 21000 |
| | **307 L3** | **113** | 13.2 | 10500 | 16.0 | 11.0 | 71-80-90-100-112-132-160 | 21900 | 27500 | 50800 | 66500 | 19000 | 21000 |



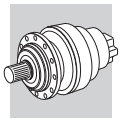
# 307 L

312

# 15680 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **307 L3** | **126** | 11.9 | 13000 | 17.8 | 11.0 | 71-80-90-100-112-132-160 | 22700 | 28400 | 52400 | 68700 | 19700 | 21000 |
| | **307 L3** | **139** | 10.8 | 10700 | 13.3 | 11.0 | 71-80-90-100-112-132-160 | 23400 | 29400 | 54000 | 70700 | 20400 | 21000 |
| | **307 L3** | **146** | 10.3 | 13400 | 15.8 | 11.0 | 71-80-90-100-112-132-160 | 23800 | 29900 | 54800 | 71800 | 20700 | 21000 |
| | **307 L3** | **162** | 9.3 | 10800 | 11.6 | 11.0 | 71-80-90-100-112-132-160 | 24600 | 30900 | 56500 | 74000 | 21400 | 21000 |
| | **307 L3** | **177** | 8.5 | 12300 | 12.0 | 11.0 | 71-80-90-100-112-132-160 | 25400 | 31900 | 58000 | 76100 | 22100 | 21000 |
| | **307 L3** | **202** | 7.4 | 11000 | 9.4 | 11.0 | 71-80-90-100-112-132-160 | 26500 | 33300 | 60400 | 79100 | 23100 | 21000 |
| | **307 L3** | **221** | 6.8 | 12700 | 9.9 | 11.0 | 71-80-90-100-112-132-160 | 27300 | 34300 | 62000 | 81300 | 23800 | 21000 |
| | **307 L3** | **239** | 6.3 | 8700 | 6.3 | 11.0 | 71-80-90-100-112-132-160 | 28100 | 35200 | 63500 | 83300 | 24400 | 21000 |
| | **307 L3** | **284** | 5.3 | 11300 | 6.8 | 11.0 | 71-80-90-100-112-132-160 | 29700 | 37300 | 66900 | 87600 | 25800 | 21000 |
| | **307 L3** | **336** | 4.5 | 8840 | 4.5 | 11.0 | 71-80-90-100-112-132-160 | 31500 | 39500 | 70400 | 92200 | 27300 | 21000 |
| | **307 L4** | **349** | 4.3 | 14900 | 7.6 | 7.5 | 71-80-90-100-112-132-160 | 31800 | 40000 | 71200 | 93300 | 27700 | 21000 |
| | **307 L4** | **406** | 3.7 | 11900 | 5.2 | 7.5 | 71-80-90-100-112-132-160 | 33500 | 42000 | 74400 | 97500 | 29100 | 21000 |
| | **307 L4** | **465** | 3.2 | 12200 | 4.6 | 7.5 | 71-80-90-100-112-132-160 | 35000 | 44000 | 77500 | 101600 | 30500 | 21000 |
| | **307 L4** | **509** | 2.9 | 14000 | 4.9 | 7.5 | 71-80-90-100-112-132-160 | 36100 | 45300 | 79700 | 104400 | 31400 | 21000 |
| | **307 L4** | **579** | 2.6 | 14900 | 4.6 | 7.5 | 71-80-90-100-112-132-160 | 37700 | 47300 | 82800 | 108500 | 32800 | 21000 |
| | **307 L4** | **654** | 2.3 | 12900 | 3.5 | 7.5 | 71-80-90-100-112-132-160 | 39200 | 49200 | 85900 | 112600 | 34100 | 21000 |
| | **307 L4** | **722** | 2.1 | 15000 | 3.7 | 7.5 | 71-80-90-100-112-132-160 | 40600 | 50900 | 88500 | 116000 | 35300 | 21000 |
| | **307 L4** | **801** | 1.9 | 13300 | 3.0 | 7.5 | 71-80-90-100-112-132-160 | 42000 | 52700 | 91300 | 119600 | 36500 | 21000 |
| | **307 L4** | **906** | 1.7 | 15200 | 3.0 | 7.5 | 71-80-90-100-112-132-160 | 43800 | 54900 | 94700 | 124200 | 38000 | 21000 |
| | **307 L4** | **999** | 1.5 | 13800 | 2.5 | 7.5 | 71-80-90-100-112-132-160 | 45200 | 56700 | 97600 | 127800 | 39300 | 21000 |
| | **307 L4** | **1157** | 1.3 | 14200 | 2.2 | 7.5 | 71-80-90-100-112-132-160 | 47500 | 59600 | 101900 | 133600 | 41300 | 21000 |
| | **307 L4** | **1274** | 1.2 | 12300 | 1.7 | 7.5 | 71-80-90-100-112-132-160 | 49000 | 61500 | 104900 | 137500 | 42600 | 21000 |
| | **307 L4** | **1408** | 1.1 | 15600 | 2.0 | 7.5 | 71-80-90-100-112-132-160 | 50700 | 63600 | 108100 | 141700 | 44100 | 21000 |
| | **307 L4** | **1591** | 0.94 | 15000 | 1.7 | 7.5 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1767** | 0.85 | 15700 | 1.6 | 7.5 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2041** | 0.73 | 14300 | 1.2 | 7.5 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2423** | 0.62 | 11000 | 0.81 | 7.5 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| **1000** | **307 L1** | **3.43** | 292 | 5770 | 115 | 26 | 180-200-225-250 | 7810 | 9790 | 20100 | 26300 | 6790 | 18600 |
| | **307 L1** | **4.09** | 244 | 5940 | 115 | 26 | 180-200-225-250 | 8280 | 10400 | 21200 | 27700 | 7200 | 21000 |
| | **307 L1** | **5.25** | 190 | 6260 | 115 | 26 | 180-200-225-250 | 9000 | 11300 | 22800 | 29900 | 7820 | 21000 |
| | **307 L1** | **6.23** | 160 | 6500 | 113 | 26 | 180-200-225-250 | 9530 | 12000 | 24000 | 31500 | 8280 | 21000 |
| | **307 L2** | **12.3** | 81 | 8060 | 60 | 22 | 132-160-180-200 | 12000 | 15000 | 29500 | 38600 | 10400 | 18600 |
| | **307 L2** | **14.7** | 68 | 8720 | 60 | 22 | 132-160-180-200 | 12700 | 15900 | 31100 | 40700 | 11000 | 21000 |
| | **307 L2** | **17.4** | 58 | 9170 | 59 | 22 | 132-160-180-200 | 13400 | 16800 | 32700 | 42800 | 11700 | 21000 |
| | **307 L2** | **21.8** | 46 | 9740 | 50 | 22 | 132-160-180-200 | 14500 | 18100 | 35000 | 45800 | 12600 | 21000 |
| | **307 L2** | **25.4** | 39 | 10100 | 44 | 22 | 132-160-180-200 | 15200 | 19100 | 36600 | 48000 | 13200 | 21000 |
| | **307 L2** | **28.0** | 36 | 9630 | 38 | 22 | 132-160-180-200 | 15700 | 19700 | 37700 | 49400 | 13700 | 21000 |
| | **307 L2** | **30.7** | 33 | 10200 | 37 | 22 | 132-160-180-200 | 16200 | 20300 | 38800 | 50800 | 14100 | 21000 |
| | **307 L2** | **32.6** | 31 | 9760 | 33 | 22 | 132-160-180-200 | 16500 | 20700 | 39400 | 51700 | 14400 | 21000 |
| | **307 L2** | **38.6** | 25.9 | 8430 | 24 | 22 | 132-160-180-200 | 17500 | 22000 | 41500 | 54400 | 15200 | 21000 |
| | **307 L2** | **46.7** | 21.4 | 8480 | 20 | 22 | 132-160-180-200 | 18600 | 23400 | 44000 | 57600 | 16200 | 21000 |
| | **307 L3** | **51.3** | 19.5 | 11700 | 26 | 13.2 | 71-80-90-100-112-132-160 | 19200 | 24100 | 45200 | 59200 | 16700 | 21000 |
| | **307 L3** | **60.5** | 16.5 | 12100 | 23 | 13.2 | 71-80-90-100-112-132-160 | 20300 | 25500 | 47500 | 62300 | 17700 | 21000 |
| | **307 L3** | **74.1** | 13.5 | 12700 | 19.6 | 13.2 | 71-80-90-100-112-132-160 | 21700 | 27300 | 50500 | 66200 | 18900 | 21000 |
| | **307 L3** | **80.6** | 12.4 | 10600 | 15.1 | 13.2 | 71-80-90-100-112-132-160 | 22400 | 28100 | 51800 | 67800 | 19400 | 21000 |
| | **307 L3** | **93.0** | 10.8 | 13300 | 16.4 | 13.2 | 71-80-90-100-112-132-160 | 23500 | 29400 | 54000 | 70800 | 20400 | 21000 |
| | **307 L3** | **100** | 10.0 | 13500 | 15.5 | 13.2 | 71-80-90-100-112-132-160 | 24100 | 30200 | 55300 | 72400 | 20900 | 21000 |
| | **307 L3** | **113** | 8.8 | 10900 | 11.0 | 13.2 | 71-80-90-100-112-132-160 | 25000 | 31400 | 57300 | 75100 | 21800 | 21000 |
| | **307 L3** | **126** | 7.9 | 14000 | 12.7 | 13.2 | 71-80-90-100-112-132-160 | 25900 | 32600 | 59200 | 77600 | 22600 | 21000 |
| | **307 L3** | **139** | 7.2 | 11000 | 9.1 | 13.2 | 71-80-90-100-112-132-160 | 26800 | 33600 | 60900 | 79900 | 23300 | 21000 |
| | **307 L3** | **146** | 6.8 | 13800 | 10.8 | 13.2 | 71-80-90-100-112-132-160 | 27300 | 34200 | 61900 | 81100 | 23700 | 21000 |
| | **307 L3** | **162** | 6.2 | 11100 | 7.9 | 13.2 | 71-80-90-100-112-132-160 | 28200 | 35400 | 63800 | 83600 | 24500 | 21000 |
| | **307 L3** | **177** | 5.6 | 12300 | 8.0 | 13.2 | 71-80-90-100-112-132-160 | 29100 | 36500 | 65600 | 85900 | 25300 | 21000 |
| | **307 L3** | **202** | 5.0 | 11300 | 6.4 | 13.2 | 71-80-90-100-112-132-160 | 30400 | 38100 | 68200 | 89300 | 26400 | 21000 |
| | **307 L3** | **221** | 4.5 | 13000 | 6.8 | 13.2 | 71-80-90-100-112-132-160 | 31300 | 39300 | 70100 | 91800 | 27200 | 21000 |
| | **307 L3** | **239** | 4.2 | 8920 | 4.3 | 13.2 | 71-80-90-100-112-132-160 | 32100 | 40300 | 71800 | 94000 | 27900 | 21000 |
| | **307 L3** | **284** | 3.5 | 12000 | 4.8 | 13.2 | 71-80-90-100-112-132-160 | 34000 | 42700 | 75500 | 98900 | 29600 | 21000 |
| | **307 L3** | **336** | 3.0 | 9370 | 3.2 | 13.2 | 71-80-90-100-112-132-160 | 36000 | 45200 | 79500 | 104200 | 31300 | 21000 |
| | **307 L4** | **349** | 2.9 | 14900 | 5.0 | 9.0 | 71-80-90-100-112-132-160 | 36500 | 45700 | 80400 | 105300 | 31700 | 21000 |
| | **307 L4** | **406** | 2.5 | 12700 | 3.7 | 9.0 | 71-80-90-100-112-132-160 | 38300 | 48100 | 84100 | 110200 | 33300 | 21000 |
| | **307 L4** | **465** | 2.2 | 13000 | 3.3 | 9.0 | 71-80-90-100-112-132-160 | 40100 | 50300 | 87600 | 114800 | 34900 | 21000 |

B

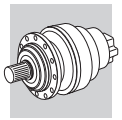


# 307 L

312

# 15680 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **307 L4** | **509** | 2.0 | 14300 | 3.3 | 9.0 | 71-80-90-100-112-132-160 | 41300 | 51900 | 90000 | 117900 | 35900 | 21000 |
| | **307 L4** | **579** | 1.7 | 15200 | 3.1 | 9.0 | 71-80-90-100-112-132-160 | 43100 | 54100 | 93500 | 122600 | 37500 | 21000 |
| | **307 L4** | **654** | 1.5 | 13800 | 2.5 | 9.0 | 71-80-90-100-112-132-160 | 44900 | 56400 | 97000 | 127100 | 39100 | 21000 |
| | **307 L4** | **722** | 1.4 | 15400 | 2.5 | 9.0 | 71-80-90-100-112-132-160 | 46400 | 58300 | 100000 | 131000 | 40400 | 21000 |
| | **307 L4** | **801** | 1.2 | 14300 | 2.1 | 9.0 | 71-80-90-100-112-132-160 | 48100 | 60300 | 103100 | 135100 | 41800 | 21000 |
| | **307 L4** | **906** | 1.1 | 15600 | 2.0 | 9.0 | 71-80-90-100-112-132-160 | 50100 | 62900 | 107000 | 140200 | 43500 | 21000 |
| | **307 L4** | **999** | 1.0 | 14800 | 1.8 | 9.0 | 71-80-90-100-112-132-160 | 51800 | 64900 | 109000 | 144400 | 45000 | 21000 |
| | **307 L4** | **1157** | 0.86 | 14800 | 1.5 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1274** | 0.78 | 12300 | 1.1 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1408** | 0.71 | 15700 | 1.3 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1591** | 0.63 | 15000 | 1.1 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1767** | 0.57 | 15700 | 1.0 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2041** | 0.49 | 14300 | 0.83 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2423** | 0.41 | 11000 | 0.54 | 9.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| **500** | **307 L1** | **3.43** | 146 | 7110 | 112 | 44 | 180-200-225-250 | 9840 | 12300 | 24700 | 32400 | 8550 | 18600 |
| | **307 L1** | **4.09** | 122 | 7320 | 97 | 44 | 180-200-225-250 | 10400 | 13100 | 26100 | 34200 | 9070 | 21000 |
| | **307 L1** | **5.25** | 95 | 7700 | 79 | 44 | 180-200-225-250 | 11300 | 14200 | 28100 | 36800 | 9850 | 21000 |
| | **307 L1** | **6.23** | 80 | 7720 | 67 | 44 | 180-200-225-250 | 12000 | 15100 | 29600 | 38800 | 10400 | 21000 |
| | **307 L2** | **12.3** | 41 | 8390 | 38 | 36 | 132-160-180-200 | 15100 | 18900 | 36300 | 47600 | 13100 | 18600 |
| | **307 L2** | **14.7** | 34 | 10400 | 39 | 36 | 132-160-180-200 | 16000 | 20100 | 38300 | 50200 | 13900 | 21000 |
| | **307 L2** | **17.4** | 28.8 | 10800 | 34 | 36 | 132-160-180-200 | 16900 | 21200 | 40200 | 52700 | 14700 | 21000 |
| | **307 L2** | **21.8** | 22.9 | 11300 | 29 | 36 | 132-160-180-200 | 18200 | 22900 | 43100 | 56400 | 15800 | 21000 |
| | **307 L2** | **25.4** | 19.7 | 11700 | 26 | 36 | 132-160-180-200 | 19200 | 24000 | 45100 | 59000 | 16700 | 21000 |
| | **307 L2** | **28.0** | 17.9 | 10200 | 20 | 36 | 132-160-180-200 | 19800 | 24900 | 46400 | 60800 | 17200 | 21000 |
| | **307 L2** | **30.7** | 16.3 | 11400 | 21 | 36 | 132-160-180-200 | 20400 | 25600 | 47700 | 62500 | 17700 | 21000 |
| | **307 L2** | **32.6** | 15.4 | 10400 | 17.7 | 36 | 132-160-180-200 | 20800 | 26100 | 48600 | 63600 | 18100 | 21000 |
| | **307 L2** | **38.6** | 12.9 | 8620 | 12.4 | 36 | 132-160-180-200 | 22000 | 27700 | 51100 | 67000 | 19200 | 21000 |
| | **307 L2** | **46.7** | 10.7 | 8680 | 10.3 | 36 | 132-160-180-200 | 23500 | 29500 | 54100 | 70900 | 20400 | 21000 |
| | **307 L3** | **51.3** | 9.8 | 13600 | 15.2 | 22 | 71-80-90-100-112-132-160 | 24200 | 30400 | 55600 | 72900 | 21100 | 21000 |
| | **307 L3** | **60.5** | 8.3 | 13900 | 13.2 | 22 | 71-80-90-100-112-132-160 | 25600 | 32100 | 58500 | 76600 | 22300 | 21000 |
| | **307 L3** | **74.1** | 6.7 | 14300 | 11.0 | 22 | 71-80-90-100-112-132-160 | 27400 | 34400 | 62200 | 81500 | 23800 | 21000 |
| | **307 L3** | **80.6** | 6.2 | 11100 | 7.9 | 22 | 71-80-90-100-112-132-160 | 28200 | 35300 | 63700 | 83500 | 24500 | 21000 |
| | **307 L3** | **93.0** | 5.4 | 14700 | 9.1 | 22 | 71-80-90-100-112-132-160 | 29600 | 37100 | 66500 | 87200 | 25700 | 21000 |
| | **307 L3** | **100** | 5.0 | 14900 | 8.5 | 22 | 71-80-90-100-112-132-160 | 30300 | 38000 | 68100 | 89200 | 26300 | 21000 |
| | **307 L3** | **113** | 4.4 | 11500 | 5.8 | 22 | 71-80-90-100-112-132-160 | 31600 | 39600 | 70600 | 92500 | 27400 | 21000 |
| | **307 L3** | **126** | 4.0 | 14900 | 6.8 | 22 | 71-80-90-100-112-132-160 | 32700 | 41000 | 72900 | 95500 | 28400 | 21000 |
| | **307 L3** | **139** | 3.6 | 11900 | 4.9 | 22 | 71-80-90-100-112-132-160 | 33800 | 42400 | 75000 | 98300 | 29400 | 21000 |
| | **307 L3** | **146** | 3.4 | 14000 | 5.5 | 22 | 71-80-90-100-112-132-160 | 34400 | 43100 | 76200 | 99900 | 29900 | 21000 |
| | **307 L3** | **162** | 3.1 | 12300 | 4.4 | 22 | 71-80-90-100-112-132-160 | 35500 | 44600 | 78500 | 102900 | 30900 | 21000 |
| | **307 L3** | **177** | 2.8 | 12300 | 4.0 | 22 | 71-80-90-100-112-132-160 | 36600 | 45900 | 80700 | 105800 | 31800 | 21000 |
| | **307 L3** | **202** | 2.5 | 12700 | 3.6 | 22 | 71-80-90-100-112-132-160 | 38200 | 48000 | 83900 | 110000 | 33200 | 21000 |
| | **307 L3** | **221** | 2.3 | 13900 | 3.6 | 22 | 71-80-90-100-112-132-160 | 39400 | 49500 | 86300 | 113000 | 34300 | 21000 |
| | **307 L3** | **239** | 2.1 | 9860 | 2.4 | 22 | 71-80-90-100-112-132-160 | 40500 | 50800 | 88300 | 115800 | 35200 | 21000 |
| | **307 L3** | **284** | 1.8 | 13300 | 2.7 | 22 | 71-80-90-100-112-132-160 | 42800 | 53800 | 93000 | 121800 | 37200 | 21000 |
| | **307 L3** | **336** | 1.5 | 10400 | 1.8 | 22 | 71-80-90-100-112-132-160 | 45400 | 56900 | 97900 | 128200 | 39400 | 21000 |
| | **307 L4** | **349** | 1.4 | 15400 | 2.6 | 15.0 | 71-80-90-100-112-132-160 | 45900 | 57600 | 98900 | 129700 | 39900 | 21000 |
| | **307 L4** | **406** | 1.2 | 14300 | 2.1 | 15.0 | 71-80-90-100-112-132-160 | 48300 | 60600 | 103500 | 135600 | 42000 | 21000 |
| | **307 L4** | **465** | 1.1 | 14700 | 1.9 | 15.0 | 71-80-90-100-112-132-160 | 50500 | 63400 | 107800 | 141300 | 43900 | 21000 |
| | **307 L4** | **509** | 0.98 | 15000 | 1.7 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **579** | 0.86 | 15700 | 1.6 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **654** | 0.77 | 14800 | 1.3 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **722** | 0.69 | 15700 | 1.3 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **801** | 0.62 | 14800 | 1.1 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **906** | 0.55 | 15700 | 1.0 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **999** | 0.50 | 14800 | 0.88 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1157** | 0.43 | 14800 | 0.76 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1274** | 0.39 | 12300 | 0.57 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1408** | 0.36 | 15700 | 0.66 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1591** | 0.31 | 15000 | 0.56 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **1767** | 0.28 | 15700 | 0.52 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2041** | 0.24 | 14300 | 0.42 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 L4** | **2423** | 0.21 | 11000 | 0.27 | 15.0 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |

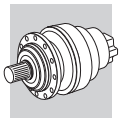


# 309 L

324

# 23240 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **309 L1** | **3.43** | 438 | 7010 | 150 | 25 | 180-200-225-250 | — | — | 18100 | 23300 | 4740 | 27900 |
| | **309 L1** | **4.09** | 367 | 7220 | 150 | 25 | 180-200-225-250 | — | — | 19000 | 24600 | 5030 | 29000 |
| | **309 L1** | **5.25** | 286 | 7600 | 150 | 25 | 180-200-225-250 | — | — | 20500 | 26500 | 5470 | 29000 |
| | **309 L1** | **6.23** | 241 | 7900 | 150 | 25 | 180-200-225-250 | — | — | 21600 | 27900 | 5790 | 29000 |
| | **309 L2** | **12.3** | 122 | 7890 | 60 | 18.0 | 132-160-180-200 | — | — | 26500 | 34200 | 7270 | 27900 |
| | **309 L2** | **14.7** | 102 | 9410 | 60 | 18.0 | 132-160-180-200 | — | — | 28000 | 36100 | 7710 | 29000 |
| | **309 L2** | **17.4** | 86 | 9730 | 60 | 18.0 | 132-160-180-200 | — | — | 29400 | 37900 | 8150 | 29000 |
| | **309 L2** | **21.8** | 69 | 10100 | 60 | 18.0 | 132-160-180-200 | — | — | 31500 | 40600 | 8790 | 29000 |
| | **309 L2** | **25.4** | 59 | 10500 | 60 | 18.0 | 132-160-180-200 | — | — | 32900 | 42500 | 9240 | 29000 |
| | **309 L2** | **28.0** | 54 | 12500 | 60 | 18.0 | 132-160-180-200 | — | — | 33900 | 43700 | 9550 | 29000 |
| | **309 L2** | **32.6** | 46 | 13000 | 60 | 18.0 | 132-160-180-200 | — | — | 35500 | 45800 | 10000 | 29000 |
| | **309 L2** | **38.6** | 39 | 12500 | 54 | 18.0 | 132-160-180-200 | — | — | 37400 | 48200 | 10600 | 29000 |
| | **309 L2** | **46.7** | 32 | 12500 | 45 | 18.0 | 132-160-180-200 | — | — | 39600 | 51000 | 11300 | 29000 |
| | **309 L3** | **51.3** | 29.3 | 13400 | 30 | 11.0 | 71-80-90-100-112-132-160 | — | — | 40700 | 52400 | 11700 | 29000 |
| | **309 L3** | **60.5** | 24.8 | 14100 | 30 | 11.0 | 71-80-90-100-112-132-160 | — | — | 42700 | 55100 | 12300 | 29000 |
| | **309 L3** | **74.1** | 20.2 | 15000 | 30 | 11.0 | 71-80-90-100-112-132-160 | — | — | 45400 | 58600 | 13200 | 29000 |
| | **309 L3** | **80.6** | 18.6 | 14800 | 30 | 11.0 | 71-80-90-100-112-132-160 | — | — | 46600 | 60100 | 13600 | 29000 |
| | **309 L3** | **93.0** | 16.1 | 15100 | 28 | 11.0 | 71-80-90-100-112-132-160 | — | — | 48600 | 62700 | 14200 | 29000 |
| | **309 L3** | **100** | 15 | 16500 | 28 | 11.0 | 71-80-90-100-112-132-160 | — | — | 49700 | 64100 | 14600 | 29000 |
| | **309 L3** | **113** | 13.2 | 15500 | 24 | 11.0 | 71-80-90-100-112-132-160 | — | — | 51600 | 66500 | 15200 | 29000 |
| | **309 L3** | **126** | 11.9 | 16400 | 22 | 11.0 | 71-80-90-100-112-132-160 | — | — | 53200 | 68700 | 15800 | 29000 |
| | **309 L3** | **139** | 10.8 | 16000 | 19.9 | 11.0 | 71-80-90-100-112-132-160 | — | — | 54800 | 70700 | 16300 | 29000 |
| | **309 L3** | **162** | 9.3 | 16300 | 17.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 57400 | 74000 | 17100 | 29000 |
| | **309 L3** | **183** | 8.2 | 14300 | 13.5 | 11.0 | 71-80-90-100-112-132-160 | — | — | 59500 | 76800 | 17800 | 29000 |
| | **309 L3** | **202** | 7.4 | 16500 | 14.1 | 11.0 | 71-80-90-100-112-132-160 | — | — | 61300 | 79100 | 18400 | 29000 |
| | **309 L3** | **223** | 6.7 | 13000 | 10.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 63200 | 81500 | 19100 | 29000 |
| | **309 L3** | **239** | 6.3 | 13000 | 9.4 | 11.0 | 71-80-90-100-112-132-160 | — | — | 64600 | 83300 | 19500 | 29000 |
| | **309 L3** | **284** | 5.3 | 15700 | 9.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 67900 | 87600 | 20700 | 29000 |
| | **309 L3** | **336** | 4.5 | 13200 | 6.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 71500 | 92200 | 21900 | 29000 |
| | **309 L4** | **349** | 4.3 | 21300 | 10.8 | 7.5 | 71-80-90-100-112-132-160 | — | — | 72300 | 93300 | 22100 | 29000 |
| | **309 L4** | **406** | 3.7 | 17800 | 7.8 | 7.5 | 71-80-90-100-112-132-160 | — | — | 75600 | 97500 | 23300 | 29000 |
| | **309 L4** | **465** | 3.2 | 18300 | 7.0 | 7.5 | 71-80-90-100-112-132-160 | — | — | 78800 | 101600 | 24400 | 29000 |
| | **309 L4** | **509** | 2.9 | 14300 | 5.0 | 7.5 | 71-80-90-100-112-132-160 | — | — | 81000 | 104400 | 25100 | 29000 |
| | **309 L4** | **579** | 2.6 | 21300 | 6.5 | 7.5 | 71-80-90-100-112-132-160 | — | — | 84100 | 108500 | 26200 | 29000 |
| | **309 L4** | **654** | 2.3 | 18100 | 4.9 | 7.5 | 71-80-90-100-112-132-160 | — | — | 87300 | 112600 | 27300 | 29000 |
| | **309 L4** | **722** | 2.1 | 21300 | 5.2 | 7.5 | 71-80-90-100-112-132-160 | — | — | 89900 | 116000 | 28200 | 29000 |
| | **309 L4** | **801** | 1.9 | 18200 | 4.0 | 7.5 | 71-80-90-100-112-132-160 | — | — | 92800 | 119600 | 29200 | 29000 |
| | **309 L4** | **906** | 1.7 | 17900 | 3.5 | 7.5 | 71-80-90-100-112-132-160 | — | — | 96300 | 124200 | 30400 | 29000 |
| | **309 L4** | **999** | 1.5 | 18200 | 3.2 | 7.5 | 71-80-90-100-112-132-160 | — | — | 99100 | 127800 | 31400 | 29000 |
| | **309 L4** | **1149** | 1.3 | 16200 | 2.5 | 7.5 | 71-80-90-100-112-132-160 | — | — | 103400 | 133300 | 32900 | 29000 |
| | **309 L4** | **1286** | 1.2 | 16500 | 2.3 | 7.5 | 71-80-90-100-112-132-160 | — | — | 106900 | 137900 | 34200 | 29000 |
| | **309 L4** | **1380** | 1.1 | 16700 | 2.2 | 7.5 | 71-80-90-100-112-132-160 | — | — | 109200 | 140900 | 35000 | 29000 |
| | **309 L4** | **1605** | 0.93 | 17000 | 1.9 | 7.5 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1723** | 0.87 | 17000 | 1.8 | 7.5 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2003** | 0.75 | 17000 | 1.5 | 7.5 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2423** | 0.62 | 17000 | 1.2 | 7.5 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| **1000** | **309 L1** | **3.43** | 292 | 7920 | 150 | 30 | 180-200-225-250 | — | — | 20400 | 26300 | 5430 | 27900 |
| | **309 L1** | **4.09** | 244 | 8150 | 150 | 30 | 180-200-225-250 | — | — | 21500 | 27700 | 5760 | 29000 |
| | **309 L1** | **5.25** | 190 | 8580 | 150 | 30 | 180-200-225-250 | — | — | 23200 | 29900 | 6260 | 29000 |
| | **309 L1** | **6.23** | 160 | 8920 | 150 | 30 | 180-200-225-250 | — | — | 24400 | 31500 | 6620 | 29000 |
| | **309 L2** | **12.3** | 81 | 8900 | 60 | 22 | 132-160-180-200 | — | — | 30000 | 38600 | 8320 | 27900 |
| | **309 L2** | **14.7** | 68 | 10600 | 60 | 22 | 132-160-180-200 | — | — | 31600 | 40700 | 8820 | 29000 |
| | **309 L2** | **17.4** | 58 | 11000 | 60 | 22 | 132-160-180-200 | — | — | 33200 | 42800 | 9330 | 29000 |
| | **309 L2** | **21.8** | 46 | 11400 | 58 | 22 | 132-160-180-200 | — | — | 35500 | 45800 | 10100 | 29000 |
| | **309 L2** | **25.4** | 39 | 11500 | 50 | 22 | 132-160-180-200 | — | — | 37200 | 48000 | 10600 | 29000 |
| | **309 L2** | **28.0** | 36 | 13500 | 53 | 22 | 132-160-180-200 | — | — | 38300 | 49400 | 10900 | 29000 |
| | **309 L2** | **32.6** | 31 | 13800 | 47 | 22 | 132-160-180-200 | — | — | 40100 | 51700 | 11500 | 29000 |
| | **309 L2** | **38.6** | 25.9 | 12600 | 36 | 22 | 132-160-180-200 | — | — | 42200 | 54400 | 12200 | 29000 |
| | **309 L2** | **46.7** | 21.4 | 12700 | 30 | 22 | 132-160-180-200 | — | — | 44700 | 57600 | 13000 | 29000 |



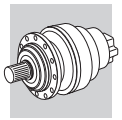
# 309 L

324

# 23240 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **309 L3** | **51.3** | 19.5 | 14900 | 30 | 13.2 | 71-80-90-100-112-132-160 | — | — | 45900 | 59200 | 13400 | 29000 |
| | **309 L3** | **60.5** | 16.5 | 16000 | 30 | 13.2 | 71-80-90-100-112-132-160 | — | — | 48300 | 62300 | 14100 | 29000 |
| | **309 L3** | **74.1** | 13.5 | 17000 | 26 | 13.2 | 71-80-90-100-112-132-160 | — | — | 51300 | 66200 | 15100 | 29000 |
| | **309 L3** | **80.6** | 12.4 | 15700 | 22 | 13.2 | 71-80-90-100-112-132-160 | — | — | 52600 | 67800 | 15500 | 29000 |
| | **309 L3** | **93.0** | 10.8 | 16800 | 21 | 13.2 | 71-80-90-100-112-132-160 | — | — | 54900 | 70800 | 16300 | 29000 |
| | **309 L3** | **100** | 10.0 | 18600 | 21 | 13.2 | 71-80-90-100-112-132-160 | — | — | 56200 | 72400 | 16700 | 29000 |
| | **309 L3** | **113** | 8.8 | 16300 | 16.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 58300 | 75100 | 17400 | 29000 |
| | **309 L3** | **126** | 7.9 | 17300 | 15.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 60100 | 77600 | 18000 | 29000 |
| | **309 L3** | **139** | 7.2 | 16500 | 13.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 61900 | 79900 | 18600 | 29000 |
| | **309 L3** | **162** | 6.2 | 16700 | 11.9 | 13.2 | 71-80-90-100-112-132-160 | — | — | 64800 | 83600 | 19600 | 29000 |
| | **309 L3** | **183** | 5.5 | 14300 | 9.0 | 13.2 | 71-80-90-100-112-132-160 | — | — | 67200 | 86700 | 20400 | 29000 |
| | **309 L3** | **202** | 5.0 | 17000 | 9.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 69300 | 89300 | 21100 | 29000 |
| | **309 L3** | **223** | 4.5 | 13200 | 6.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 71400 | 92100 | 21800 | 29000 |
| | **309 L3** | **239** | 4.2 | 13300 | 6.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 72900 | 94000 | 22300 | 29000 |
| | **309 L3** | **284** | 3.5 | 15800 | 6.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 76700 | 98900 | 23600 | 29000 |
| | **309 L3** | **336** | 3.0 | 14000 | 4.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 80800 | 104200 | 25000 | 29000 |
| | **309 L4** | **349** | 2.9 | 21300 | 7.2 | 9.0 | 71-80-90-100-112-132-160 | — | — | 81700 | 105300 | 25300 | 29000 |
| | **309 L4** | **406** | 2.5 | 19100 | 5.6 | 9.0 | 71-80-90-100-112-132-160 | — | — | 85400 | 110200 | 26600 | 29000 |
| | **309 L4** | **465** | 2.2 | 19500 | 5.0 | 9.0 | 71-80-90-100-112-132-160 | — | — | 89000 | 114800 | 27900 | 29000 |
| | **309 L4** | **509** | 2.0 | 14400 | 3.3 | 9.0 | 71-80-90-100-112-132-160 | — | — | 91500 | 117900 | 28700 | 29000 |
| | **309 L4** | **579** | 1.7 | 21400 | 4.4 | 9.0 | 71-80-90-100-112-132-160 | — | — | 95000 | 122600 | 30000 | 29000 |
| | **309 L4** | **654** | 1.5 | 18200 | 3.3 | 9.0 | 71-80-90-100-112-132-160 | — | — | 98600 | 127100 | 31200 | 29000 |
| | **309 L4** | **722** | 1.4 | 21500 | 3.5 | 9.0 | 71-80-90-100-112-132-160 | — | — | 101600 | 131000 | 32300 | 29000 |
| | **309 L4** | **801** | 1.2 | 18300 | 2.7 | 9.0 | 71-80-90-100-112-132-160 | — | — | 104700 | 135100 | 33400 | 29000 |
| | **309 L4** | **906** | 1.1 | 18400 | 2.4 | 9.0 | 71-80-90-100-112-132-160 | — | — | 108700 | 140200 | 34800 | 29000 |
| | **309 L4** | **999** | 1.0 | 18300 | 2.2 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 144400 | 36000 | 29000 |
| | **309 L4** | **1149** | 0.87 | 17000 | 1.7 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1286** | 0.78 | 17000 | 1.6 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1380** | 0.72 | 17000 | 1.5 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1605** | 0.62 | 17000 | 1.3 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1723** | 0.58 | 17000 | 1.2 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2003** | 0.50 | 17000 | 1.0 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2423** | 0.41 | 17000 | 0.83 | 9.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| **500** | **309 L1** | **3.43** | 146 | 9750 | 150 | 50 | 180-200-225-250 | — | — | 25100 | 32400 | 6840 | 27900 |
| | **309 L1** | **4.09** | 122 | 10000 | 132 | 50 | 180-200-225-250 | — | — | 26500 | 34200 | 7250 | 29000 |
| | **309 L1** | **5.25** | 95 | 10600 | 109 | 50 | 180-200-225-250 | — | — | 28500 | 36800 | 7880 | 29000 |
| | **309 L1** | **6.23** | 80 | 10900 | 94 | 50 | 180-200-225-250 | — | — | 30000 | 38800 | 8350 | 29000 |
| | **309 L2** | **12.3** | 41 | 10600 | 48 | 36 | 132-160-180-200 | — | — | 36900 | 47600 | 10500 | 27900 |
| | **309 L2** | **14.7** | 34 | 12900 | 49 | 36 | 132-160-180-200 | — | — | 38900 | 50200 | 11100 | 29000 |
| | **309 L2** | **17.4** | 28.8 | 13500 | 43 | 36 | 132-160-180-200 | — | — | 40900 | 52700 | 11800 | 29000 |
| | **309 L2** | **21.8** | 22.9 | 13700 | 35 | 36 | 132-160-180-200 | — | — | 43800 | 56400 | 12700 | 29000 |
| | **309 L2** | **25.4** | 19.7 | 12800 | 28 | 36 | 132-160-180-200 | — | — | 45800 | 59000 | 13300 | 29000 |
| | **309 L2** | **28.0** | 17.9 | 14900 | 30 | 36 | 132-160-180-200 | — | — | 47200 | 60800 | 13800 | 29000 |
| | **309 L2** | **32.6** | 15.4 | 15200 | 26 | 36 | 132-160-180-200 | — | — | 49300 | 63600 | 14500 | 29000 |
| | **309 L2** | **38.6** | 12.9 | 12900 | 18.6 | 36 | 132-160-180-200 | — | — | 51900 | 67000 | 15300 | 29000 |
| | **309 L2** | **46.7** | 10.7 | 13000 | 15.4 | 36 | 132-160-180-200 | — | — | 55000 | 70900 | 16300 | 29000 |
| | **309 L3** | **51.3** | 9.8 | 17700 | 19.8 | 22 | 71-80-90-100-112-132-160 | — | — | 56500 | 72900 | 16800 | 29000 |
| | **309 L3** | **60.5** | 8.3 | 19300 | 18.3 | 22 | 71-80-90-100-112-132-160 | — | — | 59400 | 76600 | 17800 | 29000 |
| | **309 L3** | **74.1** | 6.7 | 20100 | 15.5 | 22 | 71-80-90-100-112-132-160 | — | — | 63200 | 81500 | 19100 | 29000 |
| | **309 L3** | **80.6** | 6.2 | 16700 | 11.9 | 22 | 71-80-90-100-112-132-160 | — | — | 64800 | 83500 | 19600 | 29000 |
| | **309 L3** | **93.0** | 5.4 | 17500 | 10.8 | 22 | 71-80-90-100-112-132-160 | — | — | 67600 | 87200 | 20600 | 29000 |
| | **309 L3** | **100** | 5.0 | 21300 | 12.2 | 22 | 71-80-90-100-112-132-160 | — | — | 69200 | 89200 | 21100 | 29000 |
| | **309 L3** | **113** | 4.4 | 17100 | 8.7 | 22 | 71-80-90-100-112-132-160 | — | — | 71700 | 92500 | 21900 | 29000 |
| | **309 L3** | **126** | 4.0 | 17500 | 8.0 | 22 | 71-80-90-100-112-132-160 | — | — | 74000 | 95500 | 22700 | 29000 |
| | **309 L3** | **139** | 3.6 | 17500 | 7.2 | 22 | 71-80-90-100-112-132-160 | — | — | 76200 | 98300 | 23500 | 29000 |
| | **309 L3** | **162** | 3.1 | 18400 | 6.5 | 22 | 71-80-90-100-112-132-160 | — | — | 79800 | 102900 | 24700 | 29000 |
| | **309 L3** | **183** | 2.7 | 14300 | 4.5 | 22 | 71-80-90-100-112-132-160 | — | — | 82800 | 106800 | 25700 | 29000 |
| | **309 L3** | **202** | 2.5 | 19100 | 5.4 | 22 | 71-80-90-100-112-132-160 | — | — | 85300 | 110000 | 26600 | 29000 |
| | **309 L3** | **223** | 2.2 | 14700 | 3.8 | 22 | 71-80-90-100-112-132-160 | — | — | 87900 | 113300 | 27500 | 29000 |
| | **309 L3** | **239** | 2.1 | 14900 | 3.6 | 22 | 71-80-90-100-112-132-160 | — | — | 89800 | 115800 | 28200 | 29000 |
| | **309 L3** | **284** | 1.8 | 15800 | 3.2 | 22 | 71-80-90-100-112-132-160 | — | — | 94500 | 121800 | 29800 | 29000 |

B



## 309 L

324

## 23240 Nm

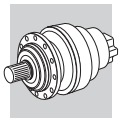
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **309 L3** | **336** | 1.5 | 15800 | 2.7 | 22 | 71-80-90-100-112-132-160 | — | — | 99400 | 128200 | 31500 | 29000 |
| | **309 L4** | **349** | 1.4 | 21500 | 3.6 | 15.0 | 71-80-90-100-112-132-160 | — | — | 100500 | 129700 | 31900 | 29000 |
| | **309 L4** | **406** | 1.2 | 21300 | 3.1 | 15.0 | 71-80-90-100-112-132-160 | — | — | 105200 | 135600 | 33600 | 29000 |
| | **309 L4** | **465** | 1.1 | 21700 | 2.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 109600 | 141300 | 35100 | 29000 |
| | **309 L4** | **509** | 0.98 | 14700 | 1.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **579** | 0.86 | 21600 | 2.2 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **654** | 0.77 | 18300 | 1.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **722** | 0.69 | 21600 | 1.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **801** | 0.62 | 18300 | 1.4 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **906** | 0.55 | 18500 | 1.2 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **999** | 0.50 | 18300 | 1.1 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1149** | 0.44 | 17000 | 0.87 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1286** | 0.39 | 17000 | 0.78 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1380** | 0.36 | 17000 | 0.73 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1605** | 0.31 | 17000 | 0.63 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **1723** | 0.29 | 17000 | 0.58 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2003** | 0.25 | 17000 | 0.50 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 L4** | **2423** | 0.21 | 17000 | 0.42 | 15.0 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |

## 310 L

336

## 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **310 L1** | **4.09** | 367 | 7330 | 175 | 35 | 200-225-250 | — | — | 22600 | 28400 | 9080 | 47600 |
| | **310 L1** | **5.25** | 286 | 7710 | 175 | 35 | 200-225-250 | — | — | 24300 | 30600 | 9870 | 47600 |
| | **310 L1** | **6.23** | 241 | 8020 | 175 | 35 | 200-225-250 | — | — | 25600 | 32200 | 10400 | 47600 |
| | **310 L2** | **14.7** | 102 | 10800 | 75 | 22 | 160-180-200-225-250 | — | — | 33100 | 41700 | 13900 | 47600 |
| | **310 L2** | **17.4** | 86 | 11300 | 75 | 22 | 160-180-200-225-250 | — | — | 34800 | 43800 | 14700 | 47600 |
| | **310 L2** | **21.8** | 69 | 12100 | 75 | 22 | 160-180-200-225-250 | — | — | 37300 | 46900 | 15900 | 47600 |
| | **310 L2** | **25.4** | 59 | 12700 | 75 | 22 | 160-180-200-225-250 | — | — | 39000 | 49100 | 16700 | 47600 |
| | **310 L2** | **28.0** | 54 | 12800 | 75 | 22 | 160-180-200-225-250 | — | — | 40200 | 50500 | 17200 | 47600 |
| | **310 L2** | **30.7** | 49 | 13400 | 73 | 22 | 160-180-200-225-250 | — | — | 41300 | 51900 | 17800 | 47600 |
| | **310 L2** | **32.6** | 46 | 13300 | 68 | 22 | 160-180-200-225-250 | — | — | 42000 | 52900 | 18100 | 47600 |
| | **310 L2** | **38.6** | 39 | 13600 | 59 | 22 | 160-180-200-225-250 | — | — | 44300 | 55700 | 19200 | 47600 |
| | **310 L2** | **46.7** | 32 | 14200 | 51 | 22 | 160-180-200-225-250 | — | — | 46900 | 58900 | 20500 | 47600 |
| | **310 L3** | **53.0** | 28.3 | 15800 | 40 | 18.0 | 132-160-180-200 | — | — | 48700 | 61200 | 21300 | 47600 |
| | **310 L3** | **62.6** | 24.0 | 16600 | 40 | 18.0 | 132-160-180-200 | — | — | 51200 | 64300 | 22500 | 47600 |
| | **310 L3** | **73.9** | 20.3 | 17500 | 40 | 18.0 | 132-160-180-200 | — | — | 53800 | 67600 | 23800 | 47600 |
| | **310 L3** | **80.3** | 18.7 | 17500 | 37 | 18.0 | 132-160-180-200 | — | — | 55100 | 69300 | 24500 | 47600 |
| | **310 L3** | **91.3** | 16.4 | 18600 | 35 | 18.0 | 132-160-180-200 | — | — | 57300 | 72100 | 25600 | 47600 |
| | **310 L3** | **101** | 14.9 | 18700 | 32 | 18.0 | 132-160-180-200 | — | — | 59000 | 74200 | 26400 | 47600 |
| | **310 L3** | **110** | 13.6 | 19700 | 31 | 18.0 | 132-160-180-200 | — | — | 60700 | 76300 | 27200 | 47600 |
| | **310 L3** | **119** | 12.6 | 19700 | 28 | 18.0 | 132-160-180-200 | — | — | 62000 | 78000 | 27900 | 47600 |
| | **310 L3** | **130** | 11.5 | 20700 | 27 | 18.0 | 132-160-180-200 | — | — | 63800 | 80200 | 28800 | 47600 |
| | **310 L3** | **142** | 10.6 | 20700 | 25 | 18.0 | 132-160-180-200 | — | — | 65400 | 82200 | 29600 | 47600 |
| | **310 L3** | **164** | 9.2 | 22200 | 23 | 18.0 | 132-160-180-200 | — | — | 68300 | 85800 | 31100 | 47600 |
| | **310 L3** | **177** | 8.5 | 18300 | 17.7 | 18.0 | 132-160-180-200 | — | — | 69900 | 87900 | 31900 | 47600 |
| | **310 L3** | **202** | 7.4 | 22000 | 18.8 | 18.0 | 132-160-180-200 | — | — | 72700 | 91400 | 33300 | 47600 |
| | **310 L3** | **230** | 6.5 | 21200 | 15.8 | 18.0 | 132-160-180-200 | — | — | 75600 | 95100 | 34800 | 47600 |
| | **310 L3** | **249** | 6.0 | 18400 | 12.7 | 18.0 | 132-160-180-200 | — | — | 77400 | 97400 | 35700 | 47600 |
| | **310 L3** | **295** | 5.1 | 23300 | 13.6 | 18.0 | 132-160-180-200 | — | — | 81500 | 102500 | 37800 | 47600 |
| | **310 L3** | **350** | 4.3 | 19000 | 9.3 | 18.0 | 132-160-180-200 | — | — | 85800 | 107900 | 40000 | 47600 |
| | **310 L4** | **392** | 3.8 | 19400 | 8.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 88700 | 111500 | 41500 | 47600 |
| | **310 L4** | **451** | 3.3 | 29800 | 11.7 | 11.0 | 71-80-90-100-112-132-160 | — | — | 92500 | 116300 | 43500 | 47600 |
| | **310 L4** | **507** | 3.0 | 25500 | 8.9 | 11.0 | 71-80-90-100-112-132-160 | — | — | 95800 | 120500 | 45300 | 47600 |
| | **310 L4** | **556** | 2.7 | 31600 | 10.1 | 11.0 | 71-80-90-100-112-132-160 | — | — | 98500 | 123900 | 46700 | 47600 |
| | **310 L4** | **637** | 2.4 | 26500 | 7.4 | 11.0 | 71-80-90-100-112-132-160 | — | — | 102600 | 129000 | 48800 | 47600 |
| | **310 L4** | **726** | 2.1 | 27100 | 6.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 106700 | 134200 | 51000 | 47600 |



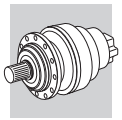
# 310 L

336

# 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **310 L4** | **818** | 1.8 | 27600 | 6.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 110600 | 139100 | 53100 | 47600 |
| | **310 L4** | **939** | 1.6 | 33200 | 6.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 115300 | 145000 | 55600 | 47600 |
| | **310 L4** | **1021** | 1.5 | 28700 | 5.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 118200 | 148600 | 57200 | 47600 |
| | **310 L4** | **1164** | 1.3 | 29300 | 4.5 | 11.0 | 71-80-90-100-112-132-160 | — | — | 123000 | 154600 | 59700 | 47600 |
| | **310 L4** | **1259** | 1.2 | 27600 | 3.9 | 11.0 | 71-80-90-100-112-132-160 | — | — | 125900 | 158300 | 61300 | 47600 |
| | **310 L4** | **1438** | 1.0 | 25800 | 3.2 | 11.0 | 71-80-90-100-112-132-160 | — | — | 131000 | 164700 | 64100 | 47600 |
| | **310 L4** | **1672** | 0.90 | 26000 | 2.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1794** | 0.84 | 26000 | 2.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2022** | 0.74 | 26000 | 2.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2523** | 0.59 | 26000 | 1.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| **1000** | **310 L1** | **4.09** | 244 | 8280 | 175 | 42 | 200-225-250 | — | — | 25500 | 32100 | 10400 | 47600 |
| | **310 L1** | **5.25** | 190 | 8710 | 175 | 42 | 200-225-250 | — | — | 27500 | 34500 | 11300 | 47600 |
| | **310 L1** | **6.23** | 160 | 9060 | 157 | 42 | 200-225-250 | — | — | 28900 | 36400 | 12000 | 47600 |
| | **310 L2** | **14.7** | 68 | 12200 | 75 | 26 | 160-180-200-225-250 | — | — | 37400 | 47100 | 15900 | 47600 |
| | **310 L2** | **17.4** | 58 | 12800 | 75 | 26 | 160-180-200-225-250 | — | — | 39300 | 49500 | 16800 | 47600 |
| | **310 L2** | **21.8** | 46 | 13700 | 70 | 26 | 160-180-200-225-250 | — | — | 42100 | 53000 | 18200 | 47600 |
| | **310 L2** | **25.4** | 39 | 14300 | 63 | 26 | 160-180-200-225-250 | — | — | 44100 | 55400 | 19100 | 47600 |
| | **310 L2** | **28.0** | 36 | 14400 | 57 | 26 | 160-180-200-225-250 | — | — | 45400 | 57100 | 19700 | 47600 |
| | **310 L2** | **30.7** | 33 | 14900 | 54 | 26 | 160-180-200-225-250 | — | — | 46700 | 58700 | 20300 | 47600 |
| | **310 L2** | **32.6** | 31 | 15100 | 52 | 26 | 160-180-200-225-250 | — | — | 47500 | 59700 | 20800 | 47600 |
| | **310 L2** | **38.6** | 25.9 | 14800 | 43 | 26 | 160-180-200-225-250 | — | — | 50000 | 62900 | 22000 | 47600 |
| | **310 L2** | **46.7** | 21.4 | 15500 | 37 | 26 | 160-180-200-225-250 | — | — | 52900 | 66600 | 23400 | 47600 |
| | **310 L3** | **53.0** | 18.9 | 17800 | 39 | 22 | 132-160-180-200 | — | — | 55000 | 69100 | 24400 | 47600 |
| | **310 L3** | **62.6** | 16.0 | 18800 | 34 | 22 | 132-160-180-200 | — | — | 57800 | 72700 | 25800 | 47600 |
| | **310 L3** | **73.9** | 13.5 | 19700 | 31 | 22 | 132-160-180-200 | — | — | 60700 | 76400 | 27300 | 47600 |
| | **310 L3** | **80.3** | 12.4 | 19800 | 28 | 22 | 132-160-180-200 | — | — | 62300 | 78300 | 28000 | 47600 |
| | **310 L3** | **91.3** | 11.0 | 21000 | 26 | 22 | 132-160-180-200 | — | — | 64700 | 81400 | 29300 | 47600 |
| | **310 L3** | **101** | 9.9 | 21100 | 24 | 22 | 132-160-180-200 | — | — | 66700 | 83800 | 30300 | 47600 |
| | **310 L3** | **110** | 9.1 | 22200 | 23 | 22 | 132-160-180-200 | — | — | 68500 | 86200 | 31200 | 47600 |
| | **310 L3** | **119** | 8.4 | 21600 | 21 | 22 | 132-160-180-200 | — | — | 70100 | 88100 | 32000 | 47600 |
| | **310 L3** | **130** | 7.7 | 23400 | 21 | 22 | 132-160-180-200 | — | — | 72000 | 90600 | 33000 | 47600 |
| | **310 L3** | **142** | 7.1 | 22200 | 18.0 | 22 | 132-160-180-200 | — | — | 73800 | 92800 | 33900 | 47600 |
| | **310 L3** | **164** | 6.1 | 25000 | 17.5 | 22 | 132-160-180-200 | — | — | 77100 | 96900 | 35600 | 47600 |
| | **310 L3** | **177** | 5.6 | 18400 | 11.9 | 22 | 132-160-180-200 | — | — | 79000 | 99300 | 36500 | 47600 |
| | **310 L3** | **202** | 5.0 | 23400 | 13.3 | 22 | 132-160-180-200 | — | — | 82100 | 103200 | 38100 | 47600 |
| | **310 L3** | **230** | 4.3 | 21800 | 10.9 | 22 | 132-160-180-200 | — | — | 85400 | 107400 | 39800 | 47600 |
| | **310 L3** | **249** | 4.0 | 19300 | 8.9 | 22 | 132-160-180-200 | — | — | 87500 | 110000 | 40900 | 47600 |
| | **310 L3** | **295** | 3.4 | 24700 | 9.6 | 22 | 132-160-180-200 | — | — | 92000 | 115700 | 43300 | 47600 |
| | **310 L3** | **350** | 2.9 | 20600 | 6.8 | 22 | 132-160-180-200 | — | — | 96900 | 121800 | 45800 | 47600 |
| | **310 L4** | **392** | 2.6 | 21100 | 6.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 100200 | 125900 | 47600 | 47600 |
| | **310 L4** | **451** | 2.2 | 32600 | 8.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 104500 | 131400 | 49800 | 47600 |
| | **310 L4** | **507** | 2.0 | 27300 | 6.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 108200 | 136100 | 51800 | 47600 |
| | **310 L4** | **556** | 1.8 | 33000 | 7.0 | 13.2 | 71-80-90-100-112-132-160 | — | — | 111300 | 139900 | 53400 | 47600 |
| | **310 L4** | **637** | 1.6 | 28400 | 5.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 115900 | 145700 | 55900 | 47600 |
| | **310 L4** | **726** | 1.4 | 29000 | 4.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 120500 | 151500 | 58400 | 47600 |
| | **310 L4** | **818** | 1.2 | 29600 | 4.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 124900 | 157100 | 60800 | 47600 |
| | **310 L4** | **939** | 1.1 | 34000 | 4.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 130200 | 163700 | 63600 | 47600 |
| | **310 L4** | **1021** | 0.98 | 30600 | 3.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1164** | 0.86 | 30600 | 3.1 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1259** | 0.79 | 28000 | 2.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1438** | 0.70 | 26000 | 2.1 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1672** | 0.60 | 26000 | 1.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1794** | 0.56 | 26000 | 1.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2022** | 0.49 | 26000 | 1.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2523** | 0.40 | 26000 | 1.2 | 13.2 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| **500** | **310 L1** | **4.09** | 122 | 10200 | 134 | 70 | 200-225-250 | — | — | 31400 | 39500 | 13100 | 47600 |
| | **310 L1** | **5.25** | 95 | 10700 | 110 | 70 | 200-225-250 | — | — | 33800 | 42500 | 14200 | 47600 |
| | **310 L1** | **6.23** | 80 | 11200 | 97 | 70 | 200-225-250 | — | — | 35600 | 44800 | 15100 | 47600 |
| | **310 L2** | **14.7** | 34 | 15000 | 57 | 44 | 160-180-200-225-250 | — | — | 46100 | 58000 | 20100 | 47600 |

B



## 310 L

336

## 34120 Nm

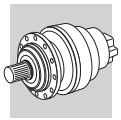
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **310 L2** | **17.4** | 28.8 | 15700 | 50 | 44 | 160-180-200-225-250 | — | — | 48400 | 60900 | 21200 | 47600 |
| | **310 L2** | **21.8** | 22.9 | 16800 | 43 | 44 | 160-180-200-225-250 | — | — | 51900 | 65200 | 22900 | 47600 |
| | **310 L2** | **25.4** | 19.7 | 17600 | 39 | 44 | 160-180-200-225-250 | — | — | 54200 | 68200 | 24100 | 47600 |
| | **310 L2** | **28.0** | 17.9 | 17700 | 35 | 44 | 160-180-200-225-250 | — | — | 55900 | 70300 | 24900 | 47600 |
| | **310 L2** | **30.7** | 16.3 | 17800 | 32 | 44 | 160-180-200-225-250 | — | — | 57400 | 72200 | 25600 | 47600 |
| | **310 L2** | **32.6** | 15.4 | 18600 | 32 | 44 | 160-180-200-225-250 | — | — | 58500 | 73500 | 26100 | 47600 |
| | **310 L2** | **38.6** | 12.9 | 17200 | 25 | 44 | 160-180-200-225-250 | — | — | 61500 | 77400 | 27700 | 47600 |
| | **310 L2** | **46.7** | 10.7 | 18000 | 21 | 44 | 160-180-200-225-250 | — | — | 65200 | 81900 | 29500 | 47600 |
| | **310 L3** | **53.0** | 9.4 | 22000 | 24 | 36 | 132-160-180-200 | — | — | 67700 | 85100 | 30800 | 47600 |
| | **310 L3** | **62.6** | 8.0 | 23100 | 21 | 36 | 132-160-180-200 | — | — | 71100 | 89400 | 32500 | 47600 |
| | **310 L3** | **73.9** | 6.8 | 24300 | 18.8 | 36 | 132-160-180-200 | — | — | 74800 | 94000 | 34400 | 47600 |
| | **310 L3** | **80.3** | 6.2 | 22600 | 16.2 | 36 | 132-160-180-200 | — | — | 76700 | 96400 | 35300 | 47600 |
| | **310 L3** | **91.3** | 5.5 | 25900 | 16.2 | 36 | 132-160-180-200 | — | — | 79700 | 100200 | 36900 | 47600 |
| | **310 L3** | **101** | 5.0 | 23400 | 13.3 | 36 | 132-160-180-200 | — | — | 82100 | 103200 | 38100 | 47600 |
| | **310 L3** | **110** | 4.5 | 27300 | 14.2 | 36 | 132-160-180-200 | — | — | 84400 | 106100 | 39300 | 47600 |
| | **310 L3** | **119** | 4.2 | 24000 | 11.6 | 36 | 132-160-180-200 | — | — | 86300 | 108500 | 40300 | 47600 |
| | **310 L3** | **130** | 3.8 | 28700 | 12.6 | 36 | 132-160-180-200 | — | — | 88700 | 111500 | 41500 | 47600 |
| | **310 L3** | **142** | 3.5 | 24800 | 10.0 | 36 | 132-160-180-200 | — | — | 90900 | 114300 | 42700 | 47600 |
| | **310 L3** | **164** | 3.1 | 30300 | 10.6 | 36 | 132-160-180-200 | — | — | 94900 | 119300 | 44800 | 47600 |
| | **310 L3** | **177** | 2.8 | 20700 | 6.7 | 36 | 132-160-180-200 | — | — | 97200 | 122200 | 46000 | 47600 |
| | **310 L3** | **202** | 2.5 | 26300 | 7.5 | 36 | 132-160-180-200 | — | — | 101100 | 127100 | 48000 | 47600 |
| | **310 L3** | **230** | 2.2 | 21800 | 5.4 | 36 | 132-160-180-200 | — | — | 105100 | 132200 | 50200 | 47600 |
| | **310 L3** | **249** | 2.0 | 22300 | 5.1 | 36 | 132-160-180-200 | — | — | 107700 | 135400 | 51500 | 47600 |
| | **310 L3** | **295** | 1.7 | 26800 | 5.2 | 36 | 132-160-180-200 | — | — | 113300 | 142500 | 54500 | 47600 |
| | **310 L3** | **350** | 1.4 | 24000 | 3.9 | 36 | 132-160-180-200 | — | — | 119300 | 150000 | 57700 | 47600 |
| | **310 L4** | **392** | 1.3 | 24600 | 3.7 | 22 | 71-80-90-100-112-132-160 | — | — | 123300 | 155100 | 59900 | 47600 |
| | **310 L4** | **451** | 1.1 | 33900 | 4.5 | 22 | 71-80-90-100-112-132-160 | — | — | 128600 | 161700 | 62800 | 47600 |
| | **310 L4** | **507** | 0.99 | 30600 | 3.6 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **556** | 0.90 | 34100 | 3.6 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **637** | 0.79 | 30600 | 2.8 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **726** | 0.69 | 30600 | 2.5 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **818** | 0.61 | 30600 | 2.2 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **939** | 0.53 | 34100 | 2.1 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1021** | 0.49 | 30600 | 1.8 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1164** | 0.43 | 30600 | 1.6 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1259** | 0.40 | 28000 | 1.3 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1438** | 0.35 | 26000 | 1.1 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1672** | 0.30 | 26000 | 0.92 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **1794** | 0.28 | 26000 | 0.86 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2022** | 0.25 | 26000 | 0.76 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 L4** | **2523** | 0.20 | 26000 | 0.61 | 22 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |

## 311 L

348

## 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **311 L1** | **4.09** | 367 | 10600 | 200 | 35 | — | — | — | 26700 | 33200 | 9080 | 58300 |
| | **311 L1** | **5.25** | 286 | 11700 | 200 | 35 | — | — | — | 28700 | 35800 | 9870 | 58300 |
| | **311 L1** | **6.23** | 241 | 11600 | 200 | 35 | — | — | — | 30300 | 37700 | 10400 | 58300 |
| | **311 L2** | **14.0** | 107 | 15300 | 115 | 26 | 180-200-225-250 | — | — | 38600 | 48100 | 13700 | 58300 |
| | **311 L2** | **16.7** | 90 | 16100 | 115 | 26 | 180-200-225-250 | — | — | 40700 | 50700 | 14500 | 58300 |
| | **311 L2** | **18.0** | 83 | 16900 | 115 | 26 | 180-200-225-250 | — | — | 41600 | 51800 | 14900 | 58300 |
| | **311 L2** | **21.5** | 70 | 17400 | 115 | 26 | 180-200-225-250 | — | — | 43900 | 54600 | 15800 | 58300 |
| | **311 L2** | **25.5** | 59 | 18300 | 115 | 26 | 180-200-225-250 | — | — | 46200 | 57500 | 16700 | 58300 |
| | **311 L2** | **27.6** | 54 | 19200 | 115 | 26 | 180-200-225-250 | — | — | 47300 | 58900 | 17200 | 58300 |
| | **311 L2** | **32.7** | 46 | 20200 | 103 | 26 | 180-200-225-250 | — | — | 49800 | 62000 | 18200 | 58300 |
| | **311 L2** | **38.8** | 39 | 19700 | 85 | 26 | 180-200-225-250 | — | — | 52400 | 65300 | 19200 | 58300 |
| | **311 L3** | **50.5** | 29.7 | 22400 | 60 | 18.0 | 132-160-180-200 | — | — | 56700 | 70600 | 21000 | 58300 |



# 311 L

348

# 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **311 L3** | **60.2** | 24.9 | 23700 | 60 | 18.0 | 132-160-180-200 | — | — | 59800 | 74500 | 22300 | 58300 |
| | **311 L3** | **71.1** | 21.1 | 24900 | 60 | 18.0 | 132-160-180-200 | — | — | 62800 | 78300 | 23500 | 58300 |
| | **311 L3** | **77.3** | 19.4 | 25500 | 57 | 18.0 | 132-160-180-200 | — | — | 64400 | 80200 | 24200 | 58300 |
| | **311 L3** | **89.3** | 16.8 | 26600 | 51 | 18.0 | 132-160-180-200 | — | — | 67300 | 83800 | 25400 | 58300 |
| | **311 L3** | **104** | 14.5 | 27800 | 46 | 18.0 | 132-160-180-200 | — | — | 70400 | 87600 | 26700 | 58300 |
| | **311 L3** | **115** | 13.1 | 28700 | 43 | 18.0 | 132-160-180-200 | — | — | 72500 | 90300 | 27600 | 58300 |
| | **311 L3** | **126** | 12.0 | 29500 | 40 | 18.0 | 132-160-180-200 | — | — | 74500 | 92800 | 28400 | 58300 |
| | **311 L3** | **133** | 11.3 | 30000 | 39 | 18.0 | 132-160-180-200 | — | — | 75800 | 94500 | 29000 | 58300 |
| | **311 L3** | **147** | 10.2 | 31800 | 37 | 18.0 | 132-160-180-200 | — | — | 78100 | 97300 | 30000 | 58300 |
| | **311 L3** | **161** | 9.3 | 31800 | 34 | 18.0 | 132-160-180-200 | — | — | 80300 | 100000 | 30900 | 58300 |
| | **311 L3** | **171** | 8.8 | 32600 | 33 | 18.0 | 132-160-180-200 | — | — | 81700 | 101800 | 31500 | 58300 |
| | **311 L3** | **191** | 7.8 | 32200 | 29 | 18.0 | 132-160-180-200 | — | — | 84500 | 105300 | 32700 | 58300 |
| | **311 L3** | **203** | 7.4 | 33400 | 28 | 18.0 | 132-160-180-200 | — | — | 86000 | 107200 | 33400 | 58300 |
| | **311 L3** | **245** | 6.1 | 34300 | 24 | 18.0 | 132-160-180-200 | — | — | 91100 | 113500 | 35500 | 58300 |
| | **311 L3** | **291** | 5.2 | 27000 | 16.0 | 18.0 | 132-160-180-200 | — | — | 95900 | 119400 | 37600 | 58300 |
| | **311 L4** | **348** | 4.3 | 39800 | 20 | 11.0 | 71-80-90-100-112-132-160 | — | — | 101100 | 126000 | 39900 | 58300 |
| | **311 L4** | **410** | 3.7 | 41500 | 18.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 106300 | 132400 | 42200 | 58300 |
| | **311 L4** | **512** | 2.9 | 44000 | 15.2 | 11.0 | 71-80-90-100-112-132-160 | — | — | 113600 | 141500 | 45400 | 58300 |
| | **311 L4** | **568** | 2.6 | 43000 | 13.4 | 11.0 | 71-80-90-100-112-132-160 | — | — | 117200 | 145900 | 47000 | 58300 |
| | **311 L4** | **627** | 2.4 | 39800 | 11.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 120700 | 150300 | 48600 | 58300 |
| | **311 L4** | **724** | 2.1 | 46300 | 11.4 | 11.0 | 71-80-90-100-112-132-160 | — | — | 126000 | 157000 | 51000 | 58300 |
| | **311 L4** | **825** | 1.8 | 44600 | 9.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 131000 | 163200 | 53300 | 58300 |
| | **311 L4** | **904** | 1.7 | 46900 | 9.2 | 11.0 | 71-80-90-100-112-132-160 | — | — | 134700 | 167800 | 54900 | 58300 |
| | **311 L4** | **986** | 1.5 | 42500 | 7.7 | 11.0 | 71-80-90-100-112-132-160 | — | — | 138300 | 172200 | 56500 | 58300 |
| | **311 L4** | **1058** | 1.4 | 43000 | 7.2 | 11.0 | 71-80-90-100-112-132-160 | — | — | 141200 | 175900 | 57900 | 58300 |
| | **311 L4** | **1230** | 1.2 | 43900 | 6.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 147800 | 184000 | 60800 | 58300 |
| | **311 L4** | **1415** | 1.1 | 42800 | 5.4 | 11.0 | 71-80-90-100-112-132-160 | — | — | 154100 | 191900 | 63800 | 58300 |
| | **311 L4** | **1680** | 0.89 | 34000 | 3.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1766** | 0.85 | 43000 | 4.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **2096** | 0.72 | 34000 | 2.9 | 11.0 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| **1000** | **311 L1** | **4.09** | 244 | 11900 | 200 | 42 | — | — | — | 30100 | 37500 | 10400 | 58300 |
| | **311 L1** | **5.25** | 190 | 13200 | 200 | 42 | — | — | — | 32500 | 40400 | 11300 | 58300 |
| | **311 L1** | **6.23** | 160 | 13100 | 200 | 42 | — | — | — | 34200 | 42600 | 12000 | 58300 |
| | **311 L2** | **14.0** | 71 | 17300 | 115 | 31 | 180-200-225-250 | — | — | 43600 | 54300 | 15700 | 58300 |
| | **311 L2** | **16.7** | 60 | 18200 | 115 | 31 | 180-200-225-250 | — | — | 46000 | 57300 | 16600 | 58300 |
| | **311 L2** | **18.0** | 56 | 19100 | 115 | 31 | 180-200-225-250 | — | — | 47000 | 58500 | 17000 | 58300 |
| | **311 L2** | **21.5** | 47 | 19600 | 102 | 31 | 180-200-225-250 | — | — | 49500 | 61700 | 18100 | 58300 |
| | **311 L2** | **25.5** | 39 | 20600 | 90 | 31 | 180-200-225-250 | — | — | 52200 | 65000 | 19100 | 58300 |
| | **311 L2** | **27.6** | 36 | 21700 | 88 | 31 | 180-200-225-250 | — | — | 53400 | 66500 | 19600 | 58300 |
| | **311 L2** | **32.7** | 31 | 22800 | 78 | 31 | 180-200-225-250 | — | — | 56200 | 70000 | 20800 | 58300 |
| | **311 L2** | **38.8** | 25.8 | 21700 | 62 | 31 | 180-200-225-250 | — | — | 59200 | 73700 | 22000 | 58300 |
| | **311 L3** | **50.5** | 19.8 | 25300 | 58 | 22 | 132-160-180-200 | — | — | 64000 | 79700 | 24000 | 58300 |
| | **311 L3** | **60.2** | 16.6 | 26700 | 51 | 22 | 132-160-180-200 | — | — | 67500 | 84100 | 25500 | 58300 |
| | **311 L3** | **71.1** | 14.1 | 28100 | 45 | 22 | 132-160-180-200 | — | — | 71000 | 88400 | 26900 | 58300 |
| | **311 L3** | **77.3** | 12.9 | 28800 | 43 | 22 | 132-160-180-200 | — | — | 72800 | 90600 | 27700 | 58300 |
| | **311 L3** | **89.3** | 11.2 | 30100 | 39 | 22 | 132-160-180-200 | — | — | 76000 | 94600 | 29000 | 58300 |
| | **311 L3** | **104** | 9.6 | 31400 | 35 | 22 | 132-160-180-200 | — | — | 79500 | 99000 | 30500 | 58300 |
| | **311 L3** | **115** | 8.7 | 32400 | 32 | 22 | 132-160-180-200 | — | — | 81900 | 102000 | 31600 | 58300 |
| | **311 L3** | **126** | 8.0 | 33300 | 30 | 22 | 132-160-180-200 | — | — | 84100 | 104800 | 32500 | 58300 |
| | **311 L3** | **133** | 7.5 | 33900 | 29 | 22 | 132-160-180-200 | — | — | 85600 | 106700 | 33200 | 58300 |
| | **311 L3** | **147** | 6.8 | 33800 | 26 | 22 | 132-160-180-200 | — | — | 88200 | 109900 | 34300 | 58300 |
| | **311 L3** | **161** | 6.2 | 35900 | 26 | 22 | 132-160-180-200 | — | — | 90700 | 112900 | 35400 | 58300 |
| | **311 L3** | **171** | 5.9 | 34500 | 23 | 22 | 132-160-180-200 | — | — | 92300 | 115000 | 36100 | 58300 |
| | **311 L3** | **191** | 5.2 | 34300 | 21 | 22 | 132-160-180-200 | — | — | 95500 | 118900 | 37400 | 58300 |
| | **311 L3** | **203** | 4.9 | 35300 | 20.0 | 22 | 132-160-180-200 | — | — | 97200 | 121000 | 38200 | 58300 |
| | **311 L3** | **245** | 4.1 | 36400 | 17.0 | 22 | 132-160-180-200 | — | — | 102900 | 128100 | 40700 | 58300 |
| | **311 L3** | **291** | 3.4 | 28300 | 11.2 | 22 | 132-160-180-200 | — | — | 108300 | 134900 | 43100 | 58300 |
| | **311 L4** | **348** | 2.9 | 44200 | 15.0 | 13.2 | 71-80-90-100-112-132-160 | — | — | 114200 | 142300 | 45700 | 58300 |
| | **311 L4** | **410** | 2.4 | 45900 | 13.2 | 13.2 | 71-80-90-100-112-132-160 | — | — | 120000 | 149500 | 48300 | 58300 |
| | **311 L4** | **512** | 2.0 | 46500 | 10.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 128300 | 159800 | 52000 | 58300 |

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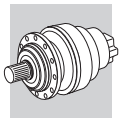

# 311 L

348

# 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **311 L4** | **568** | 1.8 | 44700 | 9.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 132300 | 164800 | 53800 | 58300 |
| | **311 L4** | **627** | 1.6 | 42200 | 8.0 | 13.2 | 71-80-90-100-112-132-160 | — | — | 136300 | 169800 | 55600 | 58300 |
| | **311 L4** | **724** | 1.4 | 47400 | 7.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 142300 | 177300 | 58400 | 58300 |
| | **311 L4** | **825** | 1.2 | 46200 | 6.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 148000 | 184300 | 61000 | 58300 |
| | **311 L4** | **904** | 1.1 | 48000 | 6.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 152100 | 189500 | 62800 | 58300 |
| | **311 L4** | **986** | 1.0 | 45100 | 5.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 156100 | 194500 | 64700 | 58300 |
| | **311 L4** | **1058** | 0.94 | 45200 | 5.1 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1230** | 0.81 | 45200 | 4.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1415** | 0.71 | 43000 | 3.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1680** | 0.60 | 34000 | 2.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1766** | 0.57 | 43000 | 2.9 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **2096** | 0.48 | 34000 | 1.9 | 13.2 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| **500** | **311 L1** | **4.09** | 122 | 14700 | 194 | 70 | — | — | — | 37100 | 46200 | 13100 | 58300 |
| | **311 L1** | **5.25** | 95 | 16200 | 167 | 70 | — | — | — | 40000 | 49800 | 14200 | 58300 |
| | **311 L1** | **6.23** | 80 | 16100 | 140 | 70 | — | — | — | 42100 | 52400 | 15100 | 58300 |
| | **311 L2** | **14.0** | 36 | 21200 | 84 | 52 | 180-200-225-250 | — | — | 53700 | 66900 | 19800 | 58300 |
| | **311 L2** | **16.7** | 29.9 | 22400 | 74 | 52 | 180-200-225-250 | — | — | 56600 | 70500 | 20900 | 58300 |
| | **311 L2** | **18.0** | 27.8 | 23500 | 73 | 52 | 180-200-225-250 | — | — | 57800 | 72100 | 21500 | 58300 |
| | **311 L2** | **21.5** | 23.3 | 24100 | 63 | 52 | 180-200-225-250 | — | — | 61000 | 76000 | 22800 | 58300 |
| | **311 L2** | **25.5** | 19.6 | 25400 | 55 | 52 | 180-200-225-250 | — | — | 64200 | 80000 | 24100 | 58300 |
| | **311 L2** | **27.6** | 18.1 | 26700 | 54 | 52 | 180-200-225-250 | — | — | 65700 | 81900 | 24700 | 58300 |
| | **311 L2** | **32.7** | 15.3 | 28200 | 48 | 52 | 180-200-225-250 | — | — | 69200 | 86200 | 26200 | 58300 |
| | **311 L2** | **38.8** | 12.9 | 25500 | 36 | 52 | 180-200-225-250 | — | — | 72800 | 90700 | 27700 | 58300 |
| | **311 L3** | **50.5** | 9.9 | 31200 | 35 | 36 | 132-160-180-200 | — | — | 78800 | 98200 | 30300 | 58300 |
| | **311 L3** | **60.2** | 8.3 | 32900 | 31 | 36 | 132-160-180-200 | — | — | 83100 | 103500 | 32100 | 58300 |
| | **311 L3** | **71.1** | 7.0 | 34600 | 28 | 36 | 132-160-180-200 | — | — | 87400 | 108800 | 33900 | 58300 |
| | **311 L3** | **77.3** | 6.5 | 35400 | 26 | 36 | 132-160-180-200 | — | — | 89600 | 111600 | 34900 | 58300 |
| | **311 L3** | **89.3** | 5.6 | 37000 | 24 | 36 | 132-160-180-200 | — | — | 93500 | 116500 | 36600 | 58300 |
| | **311 L3** | **104** | 4.8 | 38700 | 21 | 36 | 132-160-180-200 | — | — | 97800 | 121900 | 38500 | 58300 |
| | **311 L3** | **115** | 4.4 | 39200 | 19.7 | 36 | 132-160-180-200 | — | — | 100800 | 125500 | 39800 | 58300 |
| | **311 L3** | **126** | 4.0 | 40600 | 18.6 | 36 | 132-160-180-200 | — | — | 103600 | 129000 | 41000 | 58300 |
| | **311 L3** | **133** | 3.8 | 40300 | 17.4 | 36 | 132-160-180-200 | — | — | 105400 | 131300 | 41800 | 58300 |
| | **311 L3** | **147** | 3.4 | 37600 | 14.7 | 36 | 132-160-180-200 | — | — | 108600 | 135300 | 43200 | 58300 |
| | **311 L3** | **161** | 3.1 | 41700 | 14.9 | 36 | 132-160-180-200 | — | — | 111600 | 139000 | 44600 | 58300 |
| | **311 L3** | **171** | 2.9 | 38500 | 12.9 | 36 | 132-160-180-200 | — | — | 113600 | 141500 | 45400 | 58300 |
| | **311 L3** | **191** | 2.6 | 34500 | 10.4 | 36 | 132-160-180-200 | — | — | 117500 | 146400 | 47200 | 58300 |
| | **311 L3** | **203** | 2.5 | 39600 | 11.2 | 36 | 132-160-180-200 | — | — | 119600 | 149000 | 48100 | 58300 |
| | **311 L3** | **245** | 2.0 | 40300 | 9.4 | 36 | 132-160-180-200 | — | — | 126600 | 157800 | 51300 | 58300 |
| | **311 L3** | **291** | 1.7 | 31300 | 6.2 | 36 | 132-160-180-200 | — | — | 133300 | 166100 | 54300 | 58300 |
| | **311 L4** | **348** | 1.4 | 47300 | 8.1 | 22 | 71-80-90-100-112-132-160 | — | — | 140600 | 175100 | 57600 | 58300 |
| | **311 L4** | **410** | 1.2 | 47800 | 6.9 | 22 | 71-80-90-100-112-132-160 | — | — | 147800 | 184100 | 60900 | 58300 |
| | **311 L4** | **512** | 0.98 | 48300 | 5.6 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **568** | 0.88 | 46900 | 4.9 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **627** | 0.80 | 45200 | 4.3 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **724** | 0.69 | 48300 | 3.9 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **825** | 0.61 | 46900 | 3.4 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **904** | 0.55 | 48300 | 3.2 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **986** | 0.51 | 45200 | 2.7 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1058** | 0.47 | 45200 | 2.5 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1230** | 0.41 | 45200 | 2.2 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1415** | 0.35 | 43000 | 1.8 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1680** | 0.30 | 34000 | 1.2 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **1766** | 0.28 | 43000 | 1.4 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 L4** | **2096** | 0.24 | 34000 | 0.96 | 22 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |

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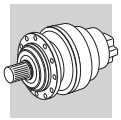


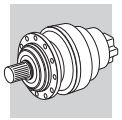
# 313 L

360

# 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **313 L2** | **14.2** | 106 | 22600 | 150 | 30 | 180-200-225-250 | — | — | 47900 | 56700 | 16900 | 105000 |
| | **313 L2** | **16.9** | 89 | 23500 | 150 | 30 | 180-200-225-250 | — | — | 50500 | 59700 | 18000 | 105000 |
| | **313 L2** | **18.5** | 81 | 24100 | 150 | 30 | 180-200-225-250 | — | — | 51800 | 61400 | 18500 | 105000 |
| | **313 L2** | **21.8** | 69 | 25500 | 150 | 30 | 180-200-225-250 | — | — | 54400 | 64400 | 19500 | 105000 |
| | **313 L2** | **25.8** | 58 | 26700 | 150 | 30 | 180-200-225-250 | — | — | 57300 | 67800 | 20700 | 105000 |
| | **313 L2** | **28.4** | 53 | 27300 | 150 | 30 | 180-200-225-250 | — | — | 58900 | 69700 | 21300 | 105000 |
| | **313 L2** | **33.6** | 45 | 28800 | 143 | 30 | 180-200-225-250 | — | — | 62000 | 73400 | 22600 | 105000 |
| | **313 L2** | **40.5** | 37 | 29500 | 122 | 30 | 180-200-225-250 | — | — | 65600 | 77600 | 24000 | 105000 |
| | **313 L3** | **51.1** | 29.3 | 32700 | 60 | 18.0 | 132-160-180-200 | — | — | 70300 | 83200 | 25900 | 105000 |
| | **313 L3** | **61.0** | 24.6 | 34500 | 60 | 18.0 | 132-160-180-200 | — | — | 74100 | 87700 | 27500 | 105000 |
| | **313 L3** | **72.0** | 20.8 | 36300 | 60 | 18.0 | 132-160-180-200 | — | — | 77900 | 92200 | 29100 | 105000 |
| | **313 L3** | **78.3** | 19.2 | 37300 | 60 | 18.0 | 132-160-180-200 | — | — | 79900 | 94600 | 29900 | 105000 |
| | **313 L3** | **92.4** | 16.2 | 39300 | 60 | 18.0 | 132-160-180-200 | — | — | 84000 | 99400 | 31600 | 105000 |
| | **313 L3** | **110** | 13.7 | 41200 | 60 | 18.0 | 132-160-180-200 | — | — | 88400 | 104600 | 33500 | 105000 |
| | **313 L3** | **120** | 12.4 | 42100 | 60 | 18.0 | 132-160-180-200 | — | — | 90900 | 107600 | 34500 | 105000 |
| | **313 L3** | **135** | 11.1 | 44000 | 56 | 18.0 | 132-160-180-200 | — | — | 94100 | 111300 | 35800 | 105000 |
| | **313 L3** | **143** | 10.5 | 44400 | 53 | 18.0 | 132-160-180-200 | — | — | 95700 | 113300 | 36500 | 105000 |
| | **313 L3** | **151** | 9.9 | 45000 | 51 | 18.0 | 132-160-180-200 | — | — | 97300 | 115200 | 37200 | 105000 |
| | **313 L3** | **163** | 9.2 | 46000 | 49 | 18.0 | 132-160-180-200 | — | — | 99600 | 117800 | 38200 | 105000 |
| | **313 L3** | **176** | 8.5 | 45000 | 44 | 18.0 | 132-160-180-200 | — | — | 101800 | 120500 | 39100 | 105000 |
| | **313 L3** | **182** | 8.2 | 39000 | 37 | 18.0 | 132-160-180-200 | — | — | 102900 | 121800 | 39600 | 105000 |
| | **313 L3** | **194** | 7.7 | 47600 | 42 | 18.0 | 132-160-180-200 | — | — | 104800 | 124100 | 40400 | 105000 |
| | **313 L3** | **209** | 7.2 | 45000 | 37 | 18.0 | 132-160-180-200 | — | — | 107200 | 126900 | 41400 | 105000 |
| | **313 L3** | **252** | 5.9 | 45000 | 31 | 18.0 | 132-160-180-200 | — | — | 113500 | 134300 | 44200 | 105000 |
| | **313 L3** | **304** | 4.9 | 39100 | 22 | 18.0 | 132-160-180-200 | — | — | 120000 | 142000 | 47000 | 105000 |
| | **313 L4** | **352** | 4.3 | 52500 | 26 | 11.0 | 71-80-90-100-112-132-160 | — | — | 125400 | 148400 | 49300 | 105000 |
| | **313 L4** | **394** | 3.8 | 55000 | 25 | 11.0 | 71-80-90-100-112-132-160 | — | — | 129700 | 153500 | 51200 | 105000 |
| | **313 L4** | **452** | 3.3 | 54000 | 21 | 11.0 | 71-80-90-100-112-132-160 | — | — | 135200 | 160000 | 53600 | 105000 |
| | **313 L4** | **514** | 2.9 | 48600 | 16.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 140500 | 166300 | 56000 | 105000 |
| | **313 L4** | **564** | 2.7 | 54800 | 17.2 | 11.0 | 71-80-90-100-112-132-160 | — | — | 144500 | 171000 | 57700 | 105000 |
| | **313 L4** | **633** | 2.4 | 52000 | 14.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 149600 | 177000 | 60000 | 105000 |
| | **313 L4** | **695** | 2.2 | 51000 | 13.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 153800 | 182100 | 61900 | 105000 |
| | **313 L4** | **790** | 1.9 | 52200 | 11.7 | 11.0 | 71-80-90-100-112-132-160 | — | — | 159800 | 189200 | 64600 | 105000 |
| | **313 L4** | **889** | 1.7 | 53100 | 10.6 | 11.0 | 71-80-90-100-112-132-160 | — | — | 165600 | 196000 | 67200 | 105000 |
| | **313 L4** | **1014** | 1.5 | 54300 | 9.5 | 11.0 | 71-80-90-100-112-132-160 | — | — | 172300 | 203900 | 70200 | 105000 |
| | **313 L4** | **1117** | 1.3 | 52500 | 8.3 | 11.0 | 71-80-90-100-112-132-160 | — | — | 177300 | 209900 | 72500 | 105000 |
| | **313 L4** | **1266** | 1.2 | 56300 | 7.9 | 11.0 | 71-80-90-100-112-132-160 | — | — | 184100 | 217900 | 75600 | 105000 |
| | **313 L4** | **1394** | 1.1 | 52700 | 6.7 | 11.0 | 71-80-90-100-112-132-160 | — | — | 189500 | 224300 | 78100 | 105000 |
| | **313 L4** | **1502** | 1.00 | 58000 | 6.8 | 11.0 | 71-80-90-100-112-132-160 | — | — | 192000 | 229400 | 80000 | 105000 |
| | **313 L4** | **1817** | 0.83 | 58000 | 5.7 | 11.0 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **2187** | 0.69 | 49000 | 4.0 | 11.0 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| **1000** | **313 L2** | **14.2** | 70 | 25600 | 150 | 36 | 180-200-225-250 | — | — | 54100 | 64000 | 19400 | 105000 |
| | **313 L2** | **16.9** | 59 | 26500 | 150 | 36 | 180-200-225-250 | — | — | 57000 | 67500 | 20500 | 105000 |
| | **313 L2** | **18.5** | 54 | 27200 | 150 | 36 | 180-200-225-250 | — | — | 58500 | 69300 | 21200 | 105000 |
| | **313 L2** | **21.8** | 46 | 28700 | 147 | 36 | 180-200-225-250 | — | — | 61400 | 72700 | 22300 | 105000 |
| | **313 L2** | **25.8** | 39 | 30100 | 130 | 36 | 180-200-225-250 | — | — | 64700 | 76600 | 23600 | 105000 |
| | **313 L2** | **28.4** | 35 | 30900 | 121 | 36 | 180-200-225-250 | — | — | 66500 | 78700 | 24400 | 105000 |
| | **313 L2** | **33.6** | 29.7 | 32500 | 107 | 36 | 180-200-225-250 | — | — | 70000 | 82900 | 25800 | 105000 |
| | **313 L2** | **40.5** | 24.7 | 32200 | 88 | 36 | 180-200-225-250 | — | — | 74000 | 87600 | 27500 | 105000 |
| | **313 L3** | **51.1** | 19.6 | 37000 | 60 | 22 | 132-160-180-200 | — | — | 79400 | 94000 | 29700 | 105000 |
| | **313 L3** | **61.0** | 16.4 | 39000 | 60 | 22 | 132-160-180-200 | — | — | 83700 | 99100 | 31500 | 105000 |
| | **313 L3** | **72.0** | 13.9 | 41000 | 60 | 22 | 132-160-180-200 | — | — | 88000 | 104100 | 33300 | 105000 |
| | **313 L3** | **78.3** | 12.8 | 42200 | 60 | 22 | 132-160-180-200 | — | — | 90200 | 106800 | 34200 | 105000 |
| | **313 L3** | **92.4** | 10.8 | 44300 | 55 | 22 | 132-160-180-200 | — | — | 94800 | 112200 | 36200 | 105000 |
| | **313 L3** | **110** | 9.1 | 46100 | 48 | 22 | 132-160-180-200 | — | — | 99800 | 118200 | 38300 | 105000 |
| | **313 L3** | **120** | 8.3 | 45000 | 43 | 22 | 132-160-180-200 | — | — | 102700 | 121500 | 39500 | 105000 |
| | **313 L3** | **135** | 7.4 | 49300 | 42 | 22 | 132-160-180-200 | — | — | 106200 | 125700 | 41000 | 105000 |
| | **313 L3** | **143** | 7.0 | 45000 | 36 | 22 | 132-160-180-200 | — | — | 108100 | 127900 | 41800 | 105000 |
| | **313 L3** | **151** | 6.6 | 45000 | 34 | 22 | 132-160-180-200 | — | — | 109900 | 130100 | 42600 | 105000 |
| | **313 L3** | **163** | 6.1 | 50200 | 35 | 22 | 132-160-180-200 | — | — | 112500 | 133100 | 43700 | 105000 |
| | **313 L3** | **176** | 5.7 | 45000 | 29 | 22 | 132-160-180-200 | — | — | 115000 | 136100 | 44800 | 105000 |

B

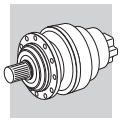


# 313 L

360

# 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **313 L3** | **182** | 5.5 | 39000 | 25 | 22 | 132-160-180-200 | — | — | 116200 | 137500 | 45300 | 105000 |
| | **313 L3** | **194** | 5.2 | 51700 | 31 | 22 | 132-160-180-200 | — | — | 118400 | 140100 | 46300 | 105000 |
| | **313 L3** | **209** | 4.8 | 45300 | 25 | 22 | 132-160-180-200 | — | — | 121100 | 143300 | 47400 | 105000 |
| | **313 L3** | **252** | 4.0 | 46500 | 21 | 22 | 132-160-180-200 | — | — | 128200 | 151700 | 50600 | 105000 |
| | **313 L3** | **304** | 3.3 | 41000 | 15.5 | 22 | 132-160-180-200 | — | — | 135500 | 160400 | 53800 | 105000 |
| | **313 L4** | **352** | 2.8 | 52500 | 17.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 141600 | 167600 | 56500 | 105000 |
| | **313 L4** | **394** | 2.5 | 55000 | 16.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 146500 | 173400 | 58700 | 105000 |
| | **313 L4** | **452** | 2.2 | 55100 | 14.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 152700 | 180700 | 61400 | 105000 |
| | **313 L4** | **514** | 1.9 | 51900 | 11.9 | 13.2 | 71-80-90-100-112-132-160 | — | — | 158700 | 187800 | 64100 | 105000 |
| | **313 L4** | **564** | 1.8 | 55200 | 11.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 163100 | 193100 | 66100 | 105000 |
| | **313 L4** | **633** | 1.6 | 52400 | 9.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 168900 | 199900 | 68700 | 105000 |
| | **313 L4** | **695** | 1.4 | 54500 | 9.3 | 13.2 | 71-80-90-100-112-132-160 | — | — | 173700 | 205600 | 70900 | 105000 |
| | **313 L4** | **790** | 1.3 | 52600 | 7.9 | 13.2 | 71-80-90-100-112-132-160 | — | — | 180500 | 213600 | 74000 | 105000 |
| | **313 L4** | **889** | 1.1 | 56800 | 7.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 187100 | 221400 | 76900 | 105000 |
| | **313 L4** | **1014** | 0.99 | 58000 | 6.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 230300 | 80000 | 105000 |
| | **313 L4** | **1117** | 0.90 | 52800 | 5.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1266** | 0.79 | 58000 | 5.4 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1394** | 0.72 | 52800 | 4.5 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1502** | 0.67 | 58000 | 4.6 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1817** | 0.55 | 58000 | 3.8 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **2187** | 0.46 | 49000 | 2.7 | 13.2 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| **500** | **313 L1** | **4.14** | 121 | 21700 | 250 | 95 | — | — | — | 46000 | 54400 | 16200 | 105000 |
| | **313 L1** | **5.40** | 93 | 23100 | 231 | 95 | — | — | — | 49800 | 58900 | 17700 | 105000 |
| | **313 L1** | **6.50** | 77 | 24400 | 202 | 95 | — | — | — | 52700 | 62300 | 18800 | 105000 |
| | **313 L2** | **14.2** | 35 | 31500 | 124 | 60 | 180-200-225-250 | — | — | 66600 | 78800 | 24400 | 105000 |
| | **313 L2** | **16.9** | 29.5 | 32700 | 107 | 60 | 180-200-225-250 | — | — | 70200 | 83100 | 25900 | 105000 |
| | **313 L2** | **18.5** | 27.0 | 33400 | 100 | 60 | 180-200-225-250 | — | — | 72100 | 85300 | 26700 | 105000 |
| | **313 L2** | **21.8** | 23.0 | 35400 | 90 | 60 | 180-200-225-250 | — | — | 75600 | 89500 | 28100 | 105000 |
| | **313 L2** | **25.8** | 19.4 | 37100 | 80 | 60 | 180-200-225-250 | — | — | 79600 | 94200 | 29800 | 105000 |
| | **313 L2** | **28.4** | 17.6 | 38000 | 75 | 60 | 180-200-225-250 | — | — | 81900 | 96900 | 30700 | 105000 |
| | **313 L2** | **33.6** | 14.9 | 40000 | 66 | 60 | 180-200-225-250 | — | — | 86200 | 102000 | 32500 | 105000 |
| | **313 L2** | **40.5** | 12.3 | 37300 | 51 | 60 | 180-200-225-250 | — | — | 91200 | 107900 | 34600 | 105000 |
| | **313 L3** | **51.1** | 9.8 | 45300 | 51 | 36 | 132-160-180-200 | — | — | 97800 | 115700 | 37400 | 105000 |
| | **313 L3** | **61.0** | 8.2 | 47200 | 44 | 36 | 132-160-180-200 | — | — | 103100 | 122000 | 39700 | 105000 |
| | **313 L3** | **72.0** | 6.9 | 48900 | 39 | 36 | 132-160-180-200 | — | — | 108300 | 128200 | 41900 | 105000 |
| | **313 L3** | **78.3** | 6.4 | 51400 | 38 | 36 | 132-160-180-200 | — | — | 111100 | 131500 | 43100 | 105000 |
| | **313 L3** | **92.4** | 5.4 | 53800 | 33 | 36 | 132-160-180-200 | — | — | 116800 | 138200 | 45600 | 105000 |
| | **313 L3** | **110** | 4.6 | 52000 | 27 | 36 | 132-160-180-200 | — | — | 122900 | 145500 | 48300 | 105000 |
| | **313 L3** | **120** | 4.1 | 46200 | 22 | 36 | 132-160-180-200 | — | — | 126400 | 149600 | 49800 | 105000 |
| | **313 L3** | **135** | 3.7 | 55000 | 23 | 36 | 132-160-180-200 | — | — | 130800 | 154800 | 51700 | 105000 |
| | **313 L3** | **143** | 3.5 | 47400 | 19.0 | 36 | 132-160-180-200 | — | — | 133100 | 157500 | 52700 | 105000 |
| | **313 L3** | **151** | 3.3 | 47800 | 18.1 | 36 | 132-160-180-200 | — | — | 135300 | 160200 | 53700 | 105000 |
| | **313 L3** | **163** | 3.1 | 54300 | 19.1 | 36 | 132-160-180-200 | — | — | 138500 | 163900 | 55100 | 105000 |
| | **313 L3** | **176** | 2.8 | 48800 | 15.9 | 36 | 132-160-180-200 | — | — | 141600 | 167600 | 56500 | 105000 |
| | **313 L3** | **182** | 2.7 | 41900 | 13.2 | 36 | 132-160-180-200 | — | — | 143100 | 169300 | 57100 | 105000 |
| | **313 L3** | **194** | 2.6 | 52000 | 15.4 | 36 | 132-160-180-200 | — | — | 145800 | 172500 | 58300 | 105000 |
| | **313 L3** | **209** | 2.4 | 50100 | 13.8 | 36 | 132-160-180-200 | — | — | 149100 | 176400 | 59800 | 105000 |
| | **313 L3** | **252** | 2.0 | 51700 | 11.8 | 36 | 132-160-180-200 | — | — | 157800 | 186800 | 63700 | 105000 |
| | **313 L3** | **304** | 1.6 | 45300 | 8.6 | 36 | 132-160-180-200 | — | — | 166800 | 197500 | 67800 | 105000 |
| | **313 L4** | **352** | 1.4 | 54300 | 9.1 | 22 | 71-80-90-100-112-132-160 | — | — | 174400 | 206400 | 71200 | 105000 |
| | **313 L4** | **394** | 1.3 | 55300 | 8.3 | 22 | 71-80-90-100-112-132-160 | — | — | 180400 | 213500 | 73900 | 105000 |
| | **313 L4** | **452** | 1.1 | 55400 | 7.2 | 22 | 71-80-90-100-112-132-160 | — | — | 187900 | 222400 | 77300 | 105000 |
| | **313 L4** | **514** | 0.97 | 58000 | 6.7 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **564** | 0.89 | 55400 | 5.8 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **633** | 0.79 | 52800 | 4.9 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **695** | 0.72 | 58000 | 4.9 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **790** | 0.63 | 52800 | 4.0 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **889** | 0.56 | 58000 | 3.9 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1014** | 0.49 | 58000 | 3.4 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1117** | 0.45 | 52800 | 2.8 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |

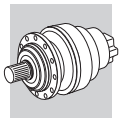


## 313 L — 360 — 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **313 L4** | **1266** | 0.40 | 58000 | 2.7 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1394** | 0.36 | 52800 | 2.2 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1502** | 0.33 | 58000 | 2.3 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **1817** | 0.28 | 58000 | 1.9 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 L4** | **2187** | 0.23 | 49000 | 1.3 | 22 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |

## 314 L — 372 — 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **314 L2** | **17.4** | 86 | 33100 | 175 | 40 | 200-225-250 | — | — | 54300 | 63800 | 20400 | 115000 |
| | **314 L2** | **22.3** | 67 | 37400 | 175 | 40 | 200-225-250 | — | — | 58500 | 68700 | 22100 | 115000 |
| | **314 L2** | **26.5** | 57 | 37300 | 175 | 40 | 200-225-250 | — | — | 61600 | 72300 | 23400 | 115000 |
| | **314 L2** | **28.0** | 54 | 38200 | 175 | 40 | 200-225-250 | — | — | 62700 | 73600 | 23900 | 115000 |
| | **314 L2** | **33.2** | 45 | 40200 | 175 | 40 | 200-225-250 | — | — | 66000 | 77400 | 25300 | 115000 |
| | **314 L2** | **38.6** | 39 | 35300 | 152 | 40 | 200-225-250 | — | — | 69000 | 81000 | 26600 | 115000 |
| | **314 L3** | **62.6** | 24.0 | 48600 | 75 | 25 | 160-180-200-225-250 | — | — | 79800 | 93600 | 31200 | 115000 |
| | **314 L3** | **73.9** | 20.3 | 51100 | 75 | 25 | 160-180-200-225-250 | — | — | 83800 | 98400 | 33000 | 115000 |
| | **314 L3** | **92.7** | 16.2 | 54700 | 75 | 25 | 160-180-200-225-250 | — | — | 89700 | 105400 | 35600 | 115000 |
| | **314 L3** | **108** | 13.9 | 57200 | 75 | 25 | 160-180-200-225-250 | — | — | 93900 | 110200 | 37400 | 115000 |
| | **314 L3** | **138** | 10.8 | 64800 | 75 | 25 | 160-180-200-225-250 | — | — | 101200 | 118800 | 40700 | 115000 |
| | **314 L3** | **164** | 9.1 | 64200 | 67 | 25 | 160-180-200-225-250 | — | — | 106500 | 125100 | 43100 | 115000 |
| | **314 L3** | **174** | 8.6 | 63000 | 62 | 25 | 160-180-200-225-250 | — | — | 108300 | 127200 | 43900 | 115000 |
| | **314 L3** | **206** | 7.3 | 63800 | 53 | 25 | 160-180-200-225-250 | — | — | 114000 | 133900 | 46400 | 115000 |
| | **314 L3** | **240** | 6.3 | 52000 | 37 | 25 | 160-180-200-225-250 | — | — | 119300 | 140100 | 48800 | 115000 |
| | **314 L4** | **314** | 4.8 | 77800 | 40 | 15.0 | 132-160-180-200 | — | — | 129400 | 151900 | 53400 | 115000 |
| | **314 L4** | **388** | 3.9 | 78500 | 36 | 15.0 | 132-160-180-200 | — | — | 137900 | 161900 | 57300 | 115000 |
| | **314 L4** | **458** | 3.3 | 79100 | 31 | 15.0 | 132-160-180-200 | — | — | 144900 | 170100 | 60600 | 115000 |
| | **314 L4** | **495** | 3.0 | 79300 | 28 | 15.0 | 132-160-180-200 | — | — | 148300 | 174100 | 62200 | 115000 |
| | **314 L4** | **554** | 2.7 | 79700 | 26 | 15.0 | 132-160-180-200 | — | — | 153400 | 180100 | 64600 | 115000 |
| | **314 L4** | **588** | 2.6 | 79900 | 24 | 15.0 | 132-160-180-200 | — | — | 156200 | 183400 | 65900 | 115000 |
| | **314 L4** | **668** | 2.2 | 80500 | 21 | 15.0 | 132-160-180-200 | — | — | 162300 | 190600 | 68700 | 115000 |
| | **314 L4** | **738** | 2.0 | 80900 | 19.5 | 15.0 | 132-160-180-200 | — | — | 167200 | 196300 | 71000 | 115000 |
| | **314 L4** | **858** | 1.7 | 81500 | 16.9 | 15.0 | 132-160-180-200 | — | — | 174900 | 205400 | 74700 | 115000 |
| | **314 L4** | **926** | 1.6 | 74000 | 14.2 | 15.0 | 132-160-180-200 | — | — | 179000 | 210100 | 76600 | 115000 |
| | **314 L4** | **1038** | 1.4 | 82400 | 14.1 | 15.0 | 132-160-180-200 | — | — | 185200 | 217400 | 79600 | 115000 |
| | **314 L4** | **1099** | 1.4 | 75800 | 12.2 | 15.0 | 132-160-180-200 | — | — | 188400 | 221200 | 81100 | 115000 |
| | **314 L4** | **1277** | 1.2 | 77400 | 10.8 | 15.0 | 132-160-180-200 | — | — | 197100 | 231400 | 85300 | 115000 |
| | **314 L4** | **1485** | 1.0 | 66700 | 8.0 | 15.0 | 132-160-180-200 | — | — | 206000 | 242100 | 89700 | 115000 |
| | **314 L4** | **1796** | 0.84 | 66800 | 6.6 | 15.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| **1000** | **314 L2** | **17.4** | 58 | 37400 | 175 | 48 | 200-225-250 | — | — | 61300 | 72000 | 23300 | 115000 |
| | **314 L2** | **22.3** | 45 | 42200 | 175 | 48 | 200-225-250 | — | — | 66100 | 77600 | 25300 | 115000 |
| | **314 L2** | **26.5** | 38 | 42100 | 175 | 48 | 200-225-250 | — | — | 69600 | 81700 | 26800 | 115000 |
| | **314 L2** | **28.0** | 36 | 43100 | 171 | 48 | 200-225-250 | — | — | 70800 | 83100 | 27300 | 115000 |
| | **314 L2** | **33.2** | 30 | 45300 | 152 | 48 | 200-225-250 | — | — | 74500 | 87500 | 28900 | 115000 |
| | **314 L2** | **38.6** | 25.9 | 39600 | 114 | 48 | 200-225-250 | — | — | 77900 | 91500 | 30400 | 115000 |
| | **314 L3** | **62.6** | 16.0 | 54900 | 75 | 30 | 160-180-200-225-250 | — | — | 90100 | 105800 | 35700 | 115000 |
| | **314 L3** | **73.9** | 13.5 | 57700 | 75 | 30 | 160-180-200-225-250 | — | — | 94700 | 111200 | 37800 | 115000 |
| | **314 L3** | **92.7** | 10.8 | 61800 | 75 | 30 | 160-180-200-225-250 | — | — | 101400 | 119000 | 40700 | 115000 |
| | **314 L3** | **108** | 9.3 | 64600 | 69 | 30 | 160-180-200-225-250 | — | — | 106000 | 124500 | 42800 | 115000 |
| | **314 L3** | **138** | 7.2 | 71400 | 59 | 30 | 160-180-200-225-250 | — | — | 114300 | 134200 | 46500 | 115000 |
| | **314 L3** | **164** | 6.1 | 72900 | 51 | 30 | 160-180-200-225-250 | — | — | 120300 | 141200 | 49300 | 115000 |
| | **314 L3** | **174** | 5.8 | 64800 | 43 | 30 | 160-180-200-225-250 | — | — | 122300 | 143600 | 50200 | 115000 |
| | **314 L3** | **206** | 4.9 | 65600 | 37 | 30 | 160-180-200-225-250 | — | — | 128800 | 151200 | 53200 | 115000 |
| | **314 L3** | **240** | 4.2 | 53400 | 26 | 30 | 160-180-200-225-250 | — | — | 134700 | 158200 | 55900 | 115000 |

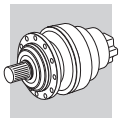


## 314 L — 372 — 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **314 L4** | **314** | 3.2 | 79200 | 30 | 18.0 | 132-160-180-200 | — | — | 146100 | 171600 | 61200 | 115000 |
| | **314 L4** | **388** | 2.6 | 79900 | 24 | 18.0 | 132-160-180-200 | — | — | 155700 | 182800 | 65600 | 115000 |
| | **314 L4** | **458** | 2.2 | 80600 | 21 | 18.0 | 132-160-180-200 | — | — | 163700 | 192200 | 69400 | 115000 |
| | **314 L4** | **495** | 2.0 | 80900 | 19.4 | 18.0 | 132-160-180-200 | — | — | 167500 | 196600 | 71200 | 115000 |
| | **314 L4** | **554** | 1.8 | 81400 | 17.4 | 18.0 | 132-160-180-200 | — | — | 173300 | 203500 | 73900 | 115000 |
| | **314 L4** | **588** | 1.7 | 81700 | 16.4 | 18.0 | 132-160-180-200 | — | — | 176400 | 207100 | 75400 | 115000 |
| | **314 L4** | **668** | 1.5 | 82200 | 14.6 | 18.0 | 132-160-180-200 | — | — | 183300 | 215200 | 78700 | 115000 |
| | **314 L4** | **738** | 1.4 | 82700 | 13.3 | 18.0 | 132-160-180-200 | — | — | 188800 | 221700 | 81300 | 115000 |
| | **314 L4** | **858** | 1.2 | 83300 | 11.5 | 18.0 | 132-160-180-200 | — | — | 197500 | 231900 | 85500 | 115000 |
| | **314 L4** | **926** | 1.1 | 78300 | 10.0 | 18.0 | 132-160-180-200 | — | — | 202100 | 237300 | 87700 | 115000 |
| | **314 L4** | **1038** | 0.96 | 84000 | 9.6 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1099** | 0.91 | 79200 | 8.5 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1277** | 0.78 | 79200 | 7.3 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1485** | 0.67 | 66800 | 5.3 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1796** | 0.56 | 66800 | 4.4 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| **500** | **314 L2** | **17.4** | 28.8 | 46000 | 147 | 80 | 200-225-250 | — | — | 75500 | 88700 | 29400 | 115000 |
| | **314 L2** | **22.3** | 22.4 | 52000 | 130 | 80 | 200-225-250 | — | — | 81400 | 95600 | 31900 | 115000 |
| | **314 L2** | **26.5** | 18.9 | 51700 | 109 | 80 | 200-225-250 | — | — | 85700 | 100600 | 33800 | 115000 |
| | **314 L2** | **28.0** | 17.9 | 52700 | 105 | 80 | 200-225-250 | — | — | 87100 | 102300 | 34400 | 115000 |
| | **314 L2** | **33.2** | 15.0 | 55400 | 93 | 80 | 200-225-250 | — | — | 91700 | 107700 | 36500 | 115000 |
| | **314 L2** | **38.6** | 12.9 | 48300 | 70 | 80 | 200-225-250 | — | — | 96000 | 112700 | 38300 | 115000 |
| | **314 L3** | **62.6** | 8.0 | 67500 | 62 | 50 | 160-180-200-225-250 | — | — | 110900 | 130200 | 45000 | 115000 |
| | **314 L3** | **73.9** | 6.8 | 70900 | 55 | 50 | 160-180-200-225-250 | — | — | 116600 | 136900 | 47600 | 115000 |
| | **314 L3** | **92.7** | 5.4 | 75900 | 47 | 50 | 160-180-200-225-250 | — | — | 124800 | 146500 | 51300 | 115000 |
| | **314 L3** | **108** | 4.6 | 77900 | 41 | 50 | 160-180-200-225-250 | — | — | 130500 | 153300 | 54000 | 115000 |
| | **314 L3** | **138** | 3.6 | 78700 | 33 | 50 | 160-180-200-225-250 | — | — | 140700 | 165200 | 58600 | 115000 |
| | **314 L3** | **164** | 3.0 | 79300 | 28 | 50 | 160-180-200-225-250 | — | — | 148100 | 173900 | 62100 | 115000 |
| | **314 L3** | **174** | 2.9 | 68700 | 23 | 50 | 160-180-200-225-250 | — | — | 150600 | 176800 | 63300 | 115000 |
| | **314 L3** | **206** | 2.4 | 69900 | 19.5 | 50 | 160-180-200-225-250 | — | — | 158500 | 186100 | 67000 | 115000 |
| | **314 L3** | **240** | 2.1 | 59200 | 14.2 | 50 | 160-180-200-225-250 | — | — | 165900 | 194700 | 70400 | 115000 |
| | **314 L4** | **314** | 1.6 | 81900 | 15.4 | 30 | 132-160-180-200 | — | — | 179900 | 211200 | 77100 | 115000 |
| | **314 L4** | **388** | 1.3 | 82900 | 12.6 | 30 | 132-160-180-200 | — | — | 191700 | 225100 | 82700 | 115000 |
| | **314 L4** | **458** | 1.1 | 83600 | 10.8 | 30 | 132-160-180-200 | — | — | 201500 | 236600 | 87400 | 115000 |
| | **314 L4** | **495** | 1.0 | 84000 | 10.0 | 30 | 132-160-180-200 | — | — | 206000 | 242100 | 89700 | 115000 |
| | **314 L4** | **554** | 0.90 | 84000 | 9.0 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **588** | 0.85 | 84000 | 8.4 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **668** | 0.75 | 84000 | 7.4 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **738** | 0.68 | 84000 | 6.7 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **858** | 0.58 | 84000 | 5.8 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **926** | 0.54 | 79200 | 5.1 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1038** | 0.48 | 84000 | 4.8 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1099** | 0.46 | 79200 | 4.3 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1277** | 0.39 | 79200 | 3.7 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1485** | 0.34 | 66800 | 2.7 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 L4** | **1796** | 0.28 | 66800 | 2.2 | 30 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 115000 |

## 315 L — 384 — 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **315 L2** | **17.4** | 86 | 41400 | 200 | 42 | — | — | — | 54300 | 63800 | 20400 | 135000 |
| | **315 L2** | **22.3** | 67 | 46800 | 200 | 42 | — | — | — | 58500 | 68700 | 22100 | 135000 |
| | **315 L2** | **26.5** | 57 | 46600 | 200 | 42 | — | — | — | 61600 | 72300 | 23400 | 135000 |
| | **315 L2** | **28.0** | 54 | 47800 | 200 | 42 | — | — | — | 62700 | 73600 | 23900 | 135000 |
| | **315 L2** | **33.2** | 45 | 50300 | 200 | 42 | — | — | — | 66000 | 77400 | 25300 | 135000 |
| | **315 L2** | **38.6** | 39 | 44100 | 190 | 42 | — | — | — | 69000 | 81000 | 26600 | 135000 |



# 315 L

384

# 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **315 L3** | **59.6** | 25.2 | 59900 | 115 | 30 | 180-200-225-250 | — | — | 78600 | 92300 | 30700 | 135000 |
| | **315 L3** | **71.1** | 21.1 | 63100 | 115 | 30 | 180-200-225-250 | — | — | 82900 | 97300 | 32600 | 135000 |
| | **315 L3** | **91.3** | 16.4 | 68000 | 115 | 30 | 180-200-225-250 | — | — | 89300 | 104900 | 35400 | 135000 |
| | **315 L3** | **108** | 13.8 | 71600 | 114 | 30 | 180-200-225-250 | — | — | 94000 | 110400 | 37500 | 135000 |
| | **315 L3** | **139** | 10.8 | 81100 | 100 | 30 | 180-200-225-250 | — | — | 101300 | 119000 | 40700 | 135000 |
| | **315 L3** | **165** | 9.1 | 80400 | 84 | 30 | 180-200-225-250 | — | — | 106700 | 125200 | 43100 | 135000 |
| | **315 L3** | **174** | 8.6 | 78800 | 78 | 30 | 180-200-225-250 | — | — | 108500 | 127400 | 43900 | 135000 |
| | **315 L3** | **207** | 7.2 | 79800 | 66 | 30 | 180-200-225-250 | — | — | 114200 | 134100 | 46500 | 135000 |
| | **315 L3** | **241** | 6.2 | 65000 | 46 | 30 | 180-200-225-250 | — | — | 119500 | 140300 | 48900 | 135000 |
| | **315 L4** | **302** | 5.0 | 97000 | 57 | 18.0 | 132-160-180-200 | — | — | 127900 | 150200 | 52800 | 135000 |
| | **315 L4** | **370** | 4.1 | 97900 | 47 | 18.0 | 132-160-180-200 | — | — | 135900 | 159500 | 56400 | 135000 |
| | **315 L4** | **441** | 3.4 | 98700 | 40 | 18.0 | 132-160-180-200 | — | — | 143300 | 168200 | 59800 | 135000 |
| | **315 L4** | **487** | 3.1 | 99100 | 36 | 18.0 | 132-160-180-200 | — | — | 147600 | 173300 | 61800 | 135000 |
| | **315 L4** | **533** | 2.8 | 99500 | 33 | 18.0 | 132-160-180-200 | — | — | 151700 | 178100 | 63800 | 135000 |
| | **315 L4** | **591** | 2.5 | 99900 | 30 | 18.0 | 132-160-180-200 | — | — | 156400 | 183600 | 66000 | 135000 |
| | **315 L4** | **672** | 2.2 | 100600 | 27 | 18.0 | 132-160-180-200 | — | — | 162500 | 190800 | 68900 | 135000 |
| | **315 L4** | **741** | 2.0 | 101100 | 24 | 18.0 | 132-160-180-200 | — | — | 167400 | 196600 | 71200 | 135000 |
| | **315 L4** | **862** | 1.7 | 101900 | 21 | 18.0 | 132-160-180-200 | — | — | 175200 | 205700 | 74800 | 135000 |
| | **315 L4** | **930** | 1.6 | 92600 | 17.6 | 18.0 | 132-160-180-200 | — | — | 179200 | 210400 | 76800 | 135000 |
| | **315 L4** | **1043** | 1.4 | 103000 | 17.5 | 18.0 | 132-160-180-200 | — | — | 185500 | 217800 | 79700 | 135000 |
| | **315 L4** | **1104** | 1.4 | 94800 | 15.2 | 18.0 | 132-160-180-200 | — | — | 188700 | 221500 | 81300 | 135000 |
| | **315 L4** | **1284** | 1.2 | 96900 | 13.4 | 18.0 | 132-160-180-200 | — | — | 197400 | 231800 | 85400 | 135000 |
| | **315 L4** | **1492** | 1.0 | 83400 | 9.9 | 18.0 | 132-160-180-200 | — | — | 206000 | 242500 | 89800 | 135000 |
| | **315 L4** | **1805** | 0.83 | 83500 | 8.2 | 18.0 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| **1000** | **315 L2** | **17.4** | 58 | 46700 | 200 | 50 | — | — | — | 61300 | 72000 | 23300 | 135000 |
| | **315 L2** | **22.3** | 45 | 52700 | 200 | 50 | — | — | — | 66100 | 77600 | 25300 | 135000 |
| | **315 L2** | **26.5** | 38 | 52600 | 200 | 50 | — | — | — | 69600 | 81700 | 26800 | 135000 |
| | **315 L2** | **28.0** | 36 | 53800 | 200 | 50 | — | — | — | 70800 | 83100 | 27300 | 135000 |
| | **315 L2** | **33.2** | 30 | 56600 | 189 | 50 | — | — | — | 74500 | 87500 | 28900 | 135000 |
| | **315 L2** | **38.6** | 25.9 | 49500 | 143 | 50 | — | — | — | 77900 | 91500 | 30400 | 135000 |
| | **315 L3** | **59.6** | 16.8 | 67600 | 115 | 36 | 180-200-225-250 | — | — | 88800 | 104200 | 35200 | 135000 |
| | **315 L3** | **71.1** | 14.1 | 71300 | 115 | 36 | 180-200-225-250 | — | — | 93600 | 109900 | 37300 | 135000 |
| | **315 L3** | **91.3** | 11.0 | 76900 | 97 | 36 | 180-200-225-250 | — | — | 100900 | 118400 | 40500 | 135000 |
| | **315 L3** | **108** | 9.2 | 80900 | 86 | 36 | 180-200-225-250 | — | — | 106200 | 124700 | 42900 | 135000 |
| | **315 L3** | **139** | 7.2 | 89400 | 74 | 36 | 180-200-225-250 | — | — | 114400 | 134400 | 46600 | 135000 |
| | **315 L3** | **165** | 6.1 | 91300 | 63 | 36 | 180-200-225-250 | — | — | 120500 | 141500 | 49400 | 135000 |
| | **315 L3** | **174** | 5.7 | 81100 | 53 | 36 | 180-200-225-250 | — | — | 122500 | 143800 | 50300 | 135000 |
| | **315 L3** | **207** | 4.8 | 82100 | 45 | 36 | 180-200-225-250 | — | — | 129000 | 151400 | 53200 | 135000 |
| | **315 L3** | **241** | 4.2 | 66700 | 32 | 36 | 180-200-225-250 | — | — | 134900 | 158400 | 56000 | 135000 |
| | **315 L4** | **302** | 3.3 | 98800 | 39 | 22 | 132-160-180-200 | — | — | 144500 | 169600 | 60400 | 135000 |
| | **315 L4** | **370** | 2.7 | 99700 | 32 | 22 | 132-160-180-200 | — | — | 153500 | 180200 | 64600 | 135000 |
| | **315 L4** | **441** | 2.3 | 100500 | 27 | 22 | 132-160-180-200 | — | — | 161800 | 190000 | 68500 | 135000 |
| | **315 L4** | **487** | 2.1 | 101100 | 25 | 22 | 132-160-180-200 | — | — | 166700 | 195700 | 70800 | 135000 |
| | **315 L4** | **533** | 1.9 | 101500 | 23 | 22 | 132-160-180-200 | — | — | 171300 | 201100 | 73000 | 135000 |
| | **315 L4** | **591** | 1.7 | 102100 | 20 | 22 | 132-160-180-200 | — | — | 176600 | 207400 | 75500 | 135000 |
| | **315 L4** | **672** | 1.5 | 102800 | 18.1 | 22 | 132-160-180-200 | — | — | 183600 | 215500 | 78800 | 135000 |
| | **315 L4** | **741** | 1.3 | 103300 | 16.5 | 22 | 132-160-180-200 | — | — | 189100 | 222000 | 81500 | 135000 |
| | **315 L4** | **862** | 1.2 | 104200 | 14.3 | 22 | 132-160-180-200 | — | — | 197800 | 232300 | 85700 | 135000 |
| | **315 L4** | **930** | 1.1 | 98000 | 12.5 | 22 | 132-160-180-200 | — | — | 202400 | 237700 | 87900 | 135000 |
| | **315 L4** | **1043** | 0.96 | 105000 | 11.9 | 22 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1104** | 0.91 | 99000 | 10.6 | 22 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1284** | 0.78 | 99000 | 9.1 | 22 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1492** | 0.67 | 83500 | 6.6 | 22 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1805** | 0.55 | 83500 | 5.5 | 22 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| **500** | **315 L1** | **4.25** | 118 | 40800 | 260 | 60 | — | — | — | 49500 | 58100 | 18400 | 135000 |
| | **315 L1** | **5.33** | 94 | 40500 | 260 | 60 | — | — | — | 53000 | 62200 | 19800 | 135000 |
| | **315 L1** | **6.20** | 81 | 35500 | 260 | 60 | — | — | — | 55400 | 65100 | 20800 | 135000 |

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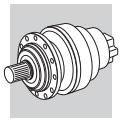
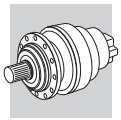


## 315 L — 384 — 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **315 L2** | **17.4** | 28.8 | 57500 | 184 | 84 | — | — | — | 75500 | 88700 | 29400 | 135000 |
| | **315 L2** | **22.3** | 22.4 | 65000 | 162 | 84 | — | — | — | 81400 | 95600 | 31900 | 135000 |
| | **315 L2** | **26.5** | 18.9 | 64600 | 136 | 84 | — | — | — | 85700 | 100600 | 33800 | 135000 |
| | **315 L2** | **28.0** | 17.9 | 65900 | 131 | 84 | — | — | — | 87100 | 102300 | 34400 | 135000 |
| | **315 L2** | **33.2** | 15.0 | 69200 | 116 | 84 | — | — | — | 91700 | 107700 | 36500 | 135000 |
| | **315 L2** | **38.6** | 12.9 | 60400 | 87 | 84 | — | — | — | 96000 | 112700 | 38300 | 135000 |
| | **315 L3** | **59.6** | 8.4 | 83200 | 80 | 60 | 180-200-225-250 | — | — | 109300 | 128300 | 44300 | 135000 |
| | **315 L3** | **71.1** | 7.0 | 87700 | 71 | 60 | 180-200-225-250 | — | — | 115200 | 135300 | 47000 | 135000 |
| | **315 L3** | **91.3** | 5.5 | 94400 | 59 | 60 | 180-200-225-250 | — | — | 124200 | 145800 | 51100 | 135000 |
| | **315 L3** | **108** | 4.6 | 97300 | 52 | 60 | 180-200-225-250 | — | — | 130700 | 153500 | 54100 | 135000 |
| | **315 L3** | **139** | 3.6 | 98400 | 41 | 60 | 180-200-225-250 | — | — | 140900 | 165400 | 58700 | 135000 |
| | **315 L3** | **165** | 3.0 | 99200 | 34 | 60 | 180-200-225-250 | — | — | 148300 | 174100 | 62200 | 135000 |
| | **315 L3** | **174** | 2.9 | 86000 | 28 | 60 | 180-200-225-250 | — | — | 150800 | 177100 | 63400 | 135000 |
| | **315 L3** | **207** | 2.4 | 87400 | 24 | 60 | 180-200-225-250 | — | — | 158800 | 186400 | 67100 | 135000 |
| | **315 L3** | **241** | 2.1 | 74000 | 17.6 | 60 | 180-200-225-250 | — | — | 166100 | 195000 | 70500 | 135000 |
| | **315 L4** | **302** | 1.7 | 102200 | 20.0 | 36 | 132-160-180-200 | — | — | 177900 | 208800 | 76100 | 135000 |
| | **315 L4** | **370** | 1.4 | 103300 | 16.5 | 36 | 132-160-180-200 | — | — | 188900 | 221800 | 81400 | 135000 |
| | **315 L4** | **441** | 1.1 | 104300 | 14.0 | 36 | 132-160-180-200 | — | — | 199200 | 233900 | 86300 | 135000 |
| | **315 L4** | **487** | 1.0 | 104900 | 12.7 | 36 | 132-160-180-200 | — | — | 205200 | 240900 | 89200 | 135000 |
| | **315 L4** | **533** | 0.94 | 105000 | 11.6 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **591** | 0.85 | 105000 | 10.5 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **672** | 0.74 | 105000 | 9.2 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **741** | 0.67 | 105000 | 8.4 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **862** | 0.58 | 105000 | 7.2 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **930** | 0.54 | 99000 | 6.3 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1043** | 0.48 | 105000 | 6.0 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1104** | 0.45 | 99000 | 5.3 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1284** | 0.39 | 99000 | 4.6 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1492** | 0.34 | 83500 | 3.3 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 L4** | **1805** | 0.28 | 83500 | 2.7 | 36 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |

## 316 L — 396 — 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **316 L2** | **17.4** | 86 | 43900 | 200 | 50 | — | — | — | 90300 | 100400 | 33900 | 192000 |
| | **316 L2** | **22.3** | 67 | 48500 | 200 | 50 | — | — | — | 97300 | 108200 | 36900 | 192000 |
| | **316 L2** | **26.5** | 57 | 47700 | 200 | 50 | — | — | — | 102500 | 113900 | 39100 | 192000 |
| | **316 L3** | **59.6** | 25.2 | 63400 | 115 | 35 | 180-200-225-250 | — | — | 130700 | 145300 | 51200 | 192000 |
| | **316 L3** | **71.1** | 21.1 | 66900 | 115 | 35 | 180-200-225-250 | — | — | 137800 | 153300 | 54300 | 192000 |
| | **316 L3** | **76.5** | 19.6 | 70100 | 115 | 35 | 180-200-225-250 | — | — | 140800 | 156600 | 55600 | 192000 |
| | **316 L3** | **91.3** | 16.4 | 72100 | 115 | 35 | 180-200-225-250 | — | — | 148500 | 165200 | 59000 | 192000 |
| | **316 L3** | **108** | 13.8 | 75900 | 115 | 35 | 180-200-225-250 | — | — | 156300 | 173900 | 62500 | 192000 |
| | **316 L3** | **117** | 12.8 | 79400 | 115 | 35 | 180-200-225-250 | — | — | 160000 | 178000 | 64100 | 192000 |
| | **316 L3** | **139** | 10.8 | 81800 | 101 | 35 | 180-200-225-250 | — | — | 168500 | 187400 | 67900 | 192000 |
| | **316 L3** | **165** | 9.1 | 82500 | 86 | 35 | 180-200-225-250 | — | — | 177400 | 197300 | 71900 | 192000 |
| | **316 L4** | **215** | 7.0 | 93200 | 60 | 18.0 | 132-160-180-200 | — | — | 191900 | 213500 | 78500 | 192000 |
| | **316 L4** | **256** | 5.9 | 98200 | 60 | 18.0 | 132-160-180-200 | — | — | 202400 | 225100 | 83200 | 192000 |
| | **316 L4** | **302** | 5.0 | 103200 | 60 | 18.0 | 132-160-180-200 | — | — | 212700 | 236600 | 87900 | 192000 |
| | **316 L4** | **329** | 4.6 | 105800 | 57 | 18.0 | 132-160-180-200 | — | — | 218100 | 242600 | 90400 | 192000 |
| | **316 L4** | **370** | 4.1 | 109400 | 53 | 18.0 | 132-160-180-200 | — | — | 225900 | 251300 | 94000 | 192000 |
| | **316 L4** | **441** | 3.4 | 115200 | 46 | 18.0 | 132-160-180-200 | — | — | 238200 | 264900 | 99700 | 192000 |
| | **316 L4** | **487** | 3.1 | 118600 | 43 | 18.0 | 132-160-180-200 | — | — | 245400 | 272900 | 103100 | 192000 |
| | **316 L4** | **533** | 2.8 | 121800 | 40 | 18.0 | 132-160-180-200 | — | — | 252200 | 280500 | 106300 | 192000 |
| | **316 L4** | **566** | 2.7 | 123900 | 39 | 18.0 | 132-160-180-200 | — | — | 256700 | 285500 | 108400 | 192000 |
| | **316 L4** | **591** | 2.5 | 122500 | 37 | 18.0 | 132-160-180-200 | — | — | 260100 | 289200 | 110000 | 192000 |



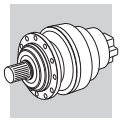
# 316 L

396

# 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **316 L4** | **625** | 2.4 | 126500 | 36 | 18.0 | 132-160-180-200 | — | — | 264500 | 294100 | 112000 | 192000 |
| | **316 L4** | **685** | 2.2 | 127800 | 33 | 18.0 | 132-160-180-200 | — | — | 271800 | 302300 | 115500 | 192000 |
| | **316 L4** | **726** | 2.1 | 128600 | 31 | 18.0 | 132-160-180-200 | — | — | 276700 | 307700 | 117800 | 192000 |
| | **316 L4** | **741** | 2.0 | 126500 | 30 | 18.0 | 132-160-180-200 | — | — | 278400 | 309600 | 118600 | 192000 |
| | **316 L4** | **812** | 1.8 | 130000 | 28 | 18.0 | 132-160-180-200 | — | — | 286100 | 318200 | 122300 | 192000 |
| | **316 L4** | **862** | 1.7 | 129000 | 27 | 18.0 | 132-160-180-200 | — | — | 291300 | 323900 | 124700 | 192000 |
| | **316 L4** | **1043** | 1.4 | 132300 | 23 | 18.0 | 132-160-180-200 | — | — | 308400 | 343000 | 132900 | 192000 |
| | **316 L4** | **1237** | 1.2 | 122100 | 17.5 | 18.0 | 132-160-180-200 | — | — | 324600 | 361100 | 140700 | 192000 |
| **1000** | **316 L2** | **17.4** | 58 | 49500 | 200 | 60 | — | — | — | 102000 | 113400 | 38900 | 192000 |
| | **316 L2** | **22.3** | 45 | 55000 | 200 | 60 | — | — | — | 109900 | 122200 | 42200 | 192000 |
| | **316 L2** | **26.5** | 38 | 53800 | 200 | 60 | — | — | — | 115700 | 128700 | 44700 | 192000 |
| | **316 L3** | **59.6** | 16.8 | 71600 | 115 | 42 | 180-200-225-250 | — | — | 147600 | 164100 | 58600 | 192000 |
| | **316 L3** | **71.1** | 14.1 | 75600 | 115 | 42 | 180-200-225-250 | — | — | 155600 | 173100 | 62100 | 192000 |
| | **316 L3** | **76.5** | 13.1 | 78900 | 115 | 42 | 180-200-225-250 | — | — | 159100 | 176900 | 63700 | 192000 |
| | **316 L3** | **91.3** | 11.0 | 81400 | 102 | 42 | 180-200-225-250 | — | — | 167700 | 186500 | 67500 | 192000 |
| | **316 L3** | **108** | 9.2 | 85700 | 91 | 42 | 180-200-225-250 | — | — | 176600 | 196400 | 71500 | 192000 |
| | **316 L3** | **117** | 8.5 | 89800 | 88 | 42 | 180-200-225-250 | — | — | 180800 | 201000 | 73400 | 192000 |
| | **316 L3** | **139** | 7.2 | 92400 | 76 | 42 | 180-200-225-250 | — | — | 190300 | 211600 | 77700 | 192000 |
| | **316 L3** | **165** | 6.1 | 93100 | 65 | 42 | 180-200-225-250 | — | — | 200300 | 222800 | 82300 | 192000 |
| | **316 L4** | **215** | 4.7 | 105100 | 58 | 22 | 132-160-180-200 | — | — | 216700 | 241100 | 89800 | 192000 |
| | **316 L4** | **256** | 3.9 | 110700 | 51 | 22 | 132-160-180-200 | — | — | 228500 | 254200 | 95300 | 192000 |
| | **316 L4** | **302** | 3.3 | 116100 | 45 | 22 | 132-160-180-200 | — | — | 240200 | 267200 | 100700 | 192000 |
| | **316 L4** | **329** | 3.0 | 119000 | 43 | 22 | 132-160-180-200 | — | — | 246300 | 273900 | 103500 | 192000 |
| | **316 L4** | **370** | 2.7 | 123100 | 39 | 22 | 132-160-180-200 | — | — | 255100 | 283800 | 107600 | 192000 |
| | **316 L4** | **441** | 2.3 | 127300 | 34 | 22 | 132-160-180-200 | — | — | 269000 | 299200 | 114200 | 192000 |
| | **316 L4** | **487** | 2.1 | 128600 | 31 | 22 | 132-160-180-200 | — | — | 277100 | 308200 | 118000 | 192000 |
| | **316 L4** | **533** | 1.9 | 129900 | 29 | 22 | 132-160-180-200 | — | — | 284800 | 316800 | 121700 | 192000 |
| | **316 L4** | **566** | 1.8 | 130700 | 27 | 22 | 132-160-180-200 | — | — | 289900 | 322500 | 124100 | 192000 |
| | **316 L4** | **591** | 1.7 | 129500 | 26 | 22 | 132-160-180-200 | — | — | 293700 | 326600 | 125900 | 192000 |
| | **316 L4** | **625** | 1.6 | 132100 | 25 | 22 | 132-160-180-200 | — | — | 298700 | 332200 | 128200 | 192000 |
| | **316 L4** | **685** | 1.5 | 133400 | 23 | 22 | 132-160-180-200 | — | — | 307000 | 341400 | 132200 | 192000 |
| | **316 L4** | **726** | 1.4 | 134200 | 22 | 22 | 132-160-180-200 | — | — | 312500 | 347500 | 134800 | 192000 |
| | **316 L4** | **741** | 1.3 | 133400 | 21 | 22 | 132-160-180-200 | — | — | 314400 | 349700 | 135800 | 192000 |
| | **316 L4** | **812** | 1.2 | 135800 | 19.8 | 22 | 132-160-180-200 | — | — | 323200 | 359400 | 140000 | 192000 |
| | **316 L4** | **862** | 1.2 | 136100 | 18.7 | 22 | 132-160-180-200 | — | — | 328900 | 365800 | 142800 | 192000 |
| | **316 L4** | **1043** | 0.96 | 138800 | 15.7 | 22 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **1237** | 0.81 | 124000 | 11.9 | 22 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| **500** | **316 L2** | **17.4** | 28.8 | 60900 | 195 | 100 | — | — | — | 125600 | 139600 | 49000 | 192000 |
| | **316 L2** | **22.3** | 22.4 | 67400 | 168 | 100 | — | — | — | 135300 | 150500 | 53200 | 192000 |
| | **316 L2** | **26.5** | 18.9 | 66200 | 139 | 100 | — | — | — | 142400 | 158400 | 56300 | 192000 |
| | **316 L3** | **59.6** | 8.4 | 88200 | 85 | 70 | 180-200-225-250 | — | — | 181700 | 202100 | 73800 | 192000 |
| | **316 L3** | **71.1** | 7.0 | 93000 | 75 | 70 | 180-200-225-250 | — | — | 191600 | 213100 | 78300 | 192000 |
| | **316 L3** | **76.5** | 6.5 | 98000 | 74 | 70 | 180-200-225-250 | — | — | 195800 | 217800 | 80200 | 192000 |
| | **316 L3** | **91.3** | 5.5 | 100200 | 63 | 70 | 180-200-225-250 | — | — | 206500 | 229600 | 85100 | 192000 |
| | **316 L3** | **108** | 4.6 | 105400 | 56 | 70 | 180-200-225-250 | — | — | 217400 | 241800 | 90100 | 192000 |
| | **316 L3** | **117** | 4.3 | 111100 | 54 | 70 | 180-200-225-250 | — | — | 222500 | 247500 | 92500 | 192000 |
| | **316 L3** | **139** | 3.6 | 112100 | 46 | 70 | 180-200-225-250 | — | — | 234300 | 260500 | 97900 | 192000 |
| | **316 L3** | **165** | 3.0 | 110200 | 38 | 70 | 180-200-225-250 | — | — | 246600 | 274300 | 103700 | 192000 |
| | **316 L4** | **215** | 2.3 | 126900 | 35 | 36 | 132-160-180-200 | — | — | 266800 | 296800 | 113100 | 192000 |
| | **316 L4** | **256** | 2.0 | 129300 | 30 | 36 | 132-160-180-200 | — | — | 281400 | 312900 | 120000 | 192000 |
| | **316 L4** | **302** | 1.7 | 131600 | 26 | 36 | 132-160-180-200 | — | — | 295700 | 328900 | 126800 | 192000 |
| | **316 L4** | **329** | 1.5 | 132800 | 24 | 36 | 132-160-180-200 | — | — | 303200 | 337200 | 130400 | 192000 |
| | **316 L4** | **370** | 1.4 | 134500 | 22 | 36 | 132-160-180-200 | — | — | 314100 | 349300 | 135600 | 192000 |
| | **316 L4** | **441** | 1.1 | 137000 | 18.4 | 36 | 132-160-180-200 | — | — | 331200 | 368400 | 143800 | 192000 |
| | **316 L4** | **487** | 1.0 | 138400 | 16.8 | 36 | 132-160-180-200 | — | — | 341200 | 379500 | 148700 | 192000 |
| | **316 L4** | **533** | 0.94 | 138800 | 15.4 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **566** | 0.88 | 138800 | 14.5 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |

B



## 316 L

396

## 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **316 L4** | **591** | 0.85 | 138800 | 13.9 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **625** | 0.80 | 138800 | 13.1 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **685** | 0.73 | 138800 | 12.0 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **726** | 0.69 | 138800 | 11.3 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **741** | 0.67 | 138800 | 11.1 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **812** | 0.62 | 138800 | 10.1 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **862** | 0.58 | 138800 | 9.5 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **1043** | 0.48 | 138800 | 7.9 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 L4** | **1237** | 0.40 | 124000 | 5.9 | 36 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |

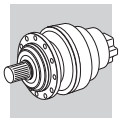
B

## 317 L

406

## 208110 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **317 L3** | **58.1** | 25.8 | 90300 | 150 | 35 | 180-200-225-250 | — | — | 166800 | 177500 | 50800 | 393000 |
| | **317 L3** | **69.3** | 21.6 | 93300 | 150 | 35 | 180-200-225-250 | — | — | 175800 | 187200 | 53800 | 393000 |
| | **317 L3** | **89.0** | 16.9 | 101000 | 150 | 35 | 180-200-225-250 | — | — | 189500 | 201800 | 58500 | 393000 |
| | **317 L3** | **106** | 14.2 | 105800 | 150 | 35 | 180-200-225-250 | — | — | 199500 | 212400 | 61900 | 393000 |
| | **317 L3** | **116** | 12.9 | 108300 | 150 | 35 | 180-200-225-250 | — | — | 205200 | 218400 | 63900 | 393000 |
| | **317 L3** | **138** | 10.9 | 114000 | 143 | 35 | 180-200-225-250 | — | — | 216000 | 230000 | 67700 | 393000 |
| | **317 L3** | **166** | 9.1 | 120500 | 125 | 35 | 180-200-225-250 | — | — | 228300 | 243100 | 72000 | 393000 |
| | **317 L3** | **179** | 8.4 | 136600 | 131 | 35 | 180-200-225-250 | — | — | 233800 | 248900 | 73900 | 393000 |
| | **317 L3** | **213** | 7.1 | 142200 | 115 | 35 | 180-200-225-250 | — | — | 246100 | 262000 | 78200 | 393000 |
| | **317 L3** | **252** | 5.9 | 119700 | 82 | 35 | 180-200-225-250 | — | — | 259100 | 275800 | 82800 | 393000 |
| | **317 L4** | **310** | 4.8 | 146200 | 60 | 18.0 | 132-160-180-200 | — | — | 275500 | 293400 | 88700 | 393000 |
| | **317 L4** | **360** | 4.2 | 152900 | 60 | 18.0 | 132-160-180-200 | — | — | 288300 | 306900 | 93200 | 393000 |
| | **317 L4** | **449** | 3.3 | 163300 | 60 | 18.0 | 132-160-180-200 | — | — | 307900 | 327800 | 100300 | 393000 |
| | **317 L4** | **493** | 3.0 | 166900 | 60 | 18.0 | 132-160-180-200 | — | — | 316700 | 337200 | 103500 | 393000 |
| | **317 L4** | **552** | 2.7 | 174500 | 56 | 18.0 | 132-160-180-200 | — | — | 327600 | 348800 | 107500 | 393000 |
| | **317 L4** | **619** | 2.4 | 177200 | 51 | 18.0 | 132-160-180-200 | — | — | 339000 | 361000 | 111600 | 393000 |
| | **317 L4** | **719** | 2.1 | 178400 | 44 | 18.0 | 132-160-180-200 | — | — | 354700 | 377600 | 117400 | 393000 |
| | **317 L4** | **792** | 1.9 | 186500 | 42 | 18.0 | 132-160-180-200 | — | — | 365100 | 388700 | 121200 | 393000 |
| | **317 L4** | **904** | 1.7 | 166600 | 33 | 18.0 | 132-160-180-200 | — | — | 379800 | 404400 | 126700 | 393000 |
| | **317 L4** | **1032** | 1.5 | 181300 | 31 | 18.0 | 132-160-180-200 | — | — | 395300 | 420900 | 132400 | 393000 |
| | **317 L4** | **1134** | 1.3 | 168100 | 26 | 18.0 | 132-160-180-200 | — | — | 406600 | 432900 | 136600 | 393000 |
| | **317 L4** | **1318** | 1.1 | 169100 | 23 | 18.0 | 132-160-180-200 | — | — | 425400 | 452900 | 143700 | 393000 |
| | **317 L4** | **1595** | 0.94 | 170000 | 18.9 | 18.0 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1893** | 0.79 | 156200 | 14.6 | 18.0 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| **1000** | **317 L3** | **58.1** | 17.2 | 101900 | 150 | 42 | 180-200-225-250 | — | — | 188300 | 200500 | 58100 | 393000 |
| | **317 L3** | **69.3** | 14.4 | 105300 | 150 | 42 | 180-200-225-250 | — | — | 198600 | 211400 | 61600 | 393000 |
| | **317 L3** | **89.0** | 11.2 | 114000 | 147 | 42 | 180-200-225-250 | — | — | 214000 | 227800 | 67000 | 393000 |
| | **317 L3** | **106** | 9.5 | 119500 | 130 | 42 | 180-200-225-250 | — | — | 225300 | 239900 | 70900 | 393000 |
| | **317 L3** | **116** | 8.6 | 122300 | 121 | 42 | 180-200-225-250 | — | — | 231700 | 246700 | 73200 | 393000 |
| | **317 L3** | **138** | 7.3 | 128800 | 107 | 42 | 180-200-225-250 | — | — | 243900 | 259700 | 77400 | 393000 |
| | **317 L3** | **166** | 6.0 | 136100 | 94 | 42 | 180-200-225-250 | — | — | 257900 | 274600 | 82400 | 393000 |
| | **317 L3** | **179** | 5.6 | 150100 | 96 | 42 | 180-200-225-250 | — | — | 264000 | 281100 | 84600 | 393000 |
| | **317 L3** | **213** | 4.7 | 154900 | 84 | 42 | 180-200-225-250 | — | — | 277900 | 295900 | 89500 | 393000 |
| | **317 L3** | **252** | 4.0 | 124600 | 57 | 42 | 180-200-225-250 | — | — | 292600 | 311500 | 94800 | 393000 |
| | **317 L4** | **310** | 3.2 | 165100 | 60 | 22 | 132-160-180-200 | — | — | 311200 | 331300 | 101500 | 393000 |
| | **317 L4** | **360** | 2.8 | 172700 | 57 | 22 | 132-160-180-200 | — | — | 325600 | 346600 | 106700 | 393000 |
| | **317 L4** | **449** | 2.2 | 181600 | 48 | 22 | 132-160-180-200 | — | — | 347700 | 370200 | 114800 | 393000 |
| | **317 L4** | **493** | 2.0 | 178600 | 43 | 22 | 132-160-180-200 | — | — | 357700 | 380800 | 118500 | 393000 |
| | **317 L4** | **552** | 1.8 | 188400 | 40 | 22 | 132-160-180-200 | — | — | 369900 | 393900 | 123000 | 393000 |
| | **317 L4** | **619** | 1.6 | 180400 | 35 | 22 | 132-160-180-200 | — | — | 382900 | 407600 | 127800 | 393000 |
| | **317 L4** | **719** | 1.4 | 181600 | 30 | 22 | 132-160-180-200 | — | — | 400600 | 426500 | 134400 | 393000 |
| | **317 L4** | **792** | 1.3 | 199300 | 30 | 22 | 132-160-180-200 | — | — | 412300 | 439000 | 138800 | 393000 |
| | **317 L4** | **904** | 1.1 | 169300 | 22 | 22 | 132-160-180-200 | — | — | 429000 | 456700 | 145000 | 393000 |
| | **317 L4** | **1032** | 0.97 | 184300 | 21 | 22 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |



## 317 L

406

## 208110 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **317 L4** | **1134** | 0.88 | 170000 | 17.7 | 22 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1318** | 0.76 | 170000 | 15.3 | 22 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1595** | 0.63 | 170000 | 12.6 | 22 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1893** | 0.53 | 156200 | 9.8 | 22 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| **500** | **317 L2** | **16.9** | 29.5 | 86700 | 250 | 116 | — | — | — | 160200 | 170600 | 48500 | 393000 |
| | **317 L2** | **22.1** | 22.6 | 91400 | 230 | 116 | — | — | — | 173500 | 184700 | 53000 | 393000 |
| | **317 L2** | **26.6** | 18.8 | 96700 | 202 | 116 | — | — | — | 183400 | 195300 | 56400 | 393000 |
| | **317 L2** | **28.4** | 17.6 | 110500 | 217 | 116 | — | — | — | 186900 | 199000 | 57600 | 393000 |
| | **317 L2** | **34.1** | 14.7 | 116800 | 191 | 116 | — | — | — | 197600 | 210400 | 61300 | 393000 |
| | **317 L2** | **40.5** | 12.3 | 112800 | 155 | 116 | — | — | — | 208100 | 221500 | 64900 | 393000 |
| | **317 L3** | **58.1** | 8.6 | 125400 | 124 | 70 | 180-200-225-250 | — | — | 231900 | 246900 | 73200 | 393000 |
| | **317 L3** | **69.3** | 7.2 | 129700 | 107 | 70 | 180-200-225-250 | — | — | 244500 | 260300 | 77600 | 393000 |
| | **317 L3** | **89.0** | 5.6 | 140100 | 90 | 70 | 180-200-225-250 | — | — | 263500 | 280500 | 84400 | 393000 |
| | **317 L3** | **106** | 4.7 | 147100 | 80 | 70 | 180-200-225-250 | — | — | 277400 | 295300 | 89300 | 393000 |
| | **317 L3** | **116** | 4.3 | 150500 | 74 | 70 | 180-200-225-250 | — | — | 285300 | 303700 | 92200 | 393000 |
| | **317 L3** | **138** | 3.6 | 158400 | 66 | 70 | 180-200-225-250 | — | — | 300300 | 319700 | 97600 | 393000 |
| | **317 L3** | **166** | 3.0 | 151900 | 53 | 70 | 180-200-225-250 | — | — | 317500 | 338000 | 103800 | 393000 |
| | **317 L3** | **179** | 2.8 | 162300 | 52 | 70 | 180-200-225-250 | — | — | 325000 | 346100 | 106500 | 393000 |
| | **317 L3** | **213** | 2.4 | 164400 | 44 | 70 | 180-200-225-250 | — | — | 342200 | 364300 | 112800 | 393000 |
| | **317 L3** | **252** | 2.0 | 139600 | 32 | 70 | 180-200-225-250 | — | — | 360200 | 383500 | 119400 | 393000 |
| | **317 L4** | **310** | 1.6 | 191500 | 37 | 36 | 132-160-180-200 | — | — | 383100 | 407900 | 127900 | 393000 |
| | **317 L4** | **360** | 1.4 | 196200 | 32 | 36 | 132-160-180-200 | — | — | 400800 | 426700 | 134500 | 393000 |
| | **317 L4** | **449** | 1.1 | 203400 | 27 | 36 | 132-160-180-200 | — | — | 428100 | 455800 | 144700 | 393000 |
| | **317 L4** | **493** | 1.0 | 184200 | 22 | 36 | 132-160-180-200 | — | — | 440300 | 468800 | 149300 | 393000 |
| | **317 L4** | **552** | 0.91 | 207100 | 22 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **619** | 0.81 | 184300 | 17.6 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **719** | 0.70 | 184300 | 15.2 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **792** | 0.63 | 207100 | 15.5 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **904** | 0.55 | 170000 | 11.1 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1032** | 0.48 | 184300 | 10.6 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1134** | 0.44 | 170000 | 8.9 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1318** | 0.38 | 170000 | 7.6 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1595** | 0.31 | 170000 | 6.3 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 L4** | **1893** | 0.26 | 156200 | 4.9 | 36 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |

## 318 L

416

## 280580 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **318 L3** | **76.5** | 19.6 | 144900 | 200 | 40 | — | — | — | 227200 | 231900 | 74200 | 500000 |
| | **318 L3** | **98.2** | 15.3 | 156100 | 200 | 40 | — | — | — | 244900 | 249900 | 80600 | 500000 |
| | **318 L3** | **117** | 12.9 | 164400 | 200 | 40 | — | — | — | 257800 | 263100 | 85300 | 500000 |
| | **318 L3** | **123** | 12.2 | 167200 | 200 | 40 | — | — | — | 262100 | 267500 | 86900 | 500000 |
| | **318 L3** | **146** | 10.3 | 176000 | 200 | 40 | — | — | — | 275900 | 281600 | 92000 | 500000 |
| | **318 L3** | **170** | 8.8 | 184100 | 186 | 40 | — | — | — | 288700 | 294600 | 96800 | 500000 |
| | **318 L4** | **262** | 5.7 | 209700 | 115 | 22 | 180-200-225-250 | — | — | 328800 | 335600 | 111800 | 500000 |
| | **318 L4** | **313** | 4.8 | 220800 | 115 | 22 | 180-200-225-250 | — | — | 346700 | 353800 | 118600 | 500000 |
| | **318 L4** | **337** | 4.5 | 225200 | 115 | 22 | 180-200-225-250 | — | — | 354400 | 361600 | 121500 | 500000 |
| | **318 L4** | **402** | 3.7 | 236100 | 104 | 22 | 180-200-225-250 | — | — | 373600 | 381300 | 128900 | 500000 |
| | **318 L4** | **422** | 3.6 | 239300 | 101 | 22 | 180-200-225-250 | — | — | 379300 | 387100 | 131100 | 500000 |
| | **318 L4** | **477** | 3.1 | 247200 | 92 | 22 | 180-200-225-250 | — | — | 393300 | 401400 | 136500 | 500000 |
| | **318 L4** | **515** | 2.9 | 252500 | 87 | 22 | 180-200-225-250 | — | — | 402700 | 410900 | 140100 | 500000 |
| | **318 L4** | **612** | 2.5 | 263300 | 76 | 22 | 180-200-225-250 | — | — | 423900 | 432600 | 148300 | 500000 |
| | **318 L4** | **647** | 2.3 | 264400 | 73 | 22 | 180-200-225-250 | — | — | 431100 | 439900 | 151100 | 500000 |
| | **318 L4** | **726** | 2.1 | 266600 | 65 | 22 | 180-200-225-250 | — | — | 446300 | 455400 | 157000 | 500000 |
| | **318 L4** | **768** | 2.0 | 267600 | 62 | 22 | 180-200-225-250 | — | — | 453800 | 463100 | 160000 | 500000 |
| | **318 L4** | **911** | 1.6 | 270900 | 53 | 22 | 180-200-225-250 | — | — | 477700 | 487500 | 169400 | 500000 |
| | **318 L4** | **1059** | 1.4 | 273800 | 46 | 22 | 180-200-225-250 | — | — | 499800 | 510000 | 178100 | 500000 |

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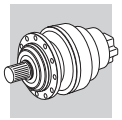


## 318 L

416

## 280580 Nm

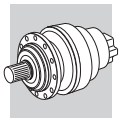
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **318 L3** | **76.5** | 13.1 | 163600 | 200 | 48 | — | — | — | 256600 | 261900 | 84900 | 500000 |
| | **318 L3** | **98.2** | 10.2 | 176300 | 200 | 48 | — | — | — | 276500 | 282200 | 92300 | 500000 |
| | **318 L3** | **117** | 8.6 | 185600 | 183 | 48 | — | — | — | 291100 | 297100 | 97700 | 500000 |
| | **318 L3** | **123** | 8.1 | 188800 | 176 | 48 | — | — | — | 296000 | 302100 | 99500 | 500000 |
| | **318 L3** | **146** | 6.8 | 198700 | 156 | 48 | — | — | — | 311600 | 318000 | 105400 | 500000 |
| | **318 L3** | **170** | 5.9 | 207900 | 140 | 48 | — | — | — | 326000 | 332700 | 110800 | 500000 |
| | **318 L4** | **262** | 3.8 | 234800 | 106 | 26 | 180-200-225-250 | — | — | 371300 | 379000 | 128000 | 500000 |
| | **318 L4** | **313** | 3.2 | 246200 | 93 | 26 | 180-200-225-250 | — | — | 391500 | 399600 | 135800 | 500000 |
| | **318 L4** | **337** | 3.0 | 251100 | 88 | 26 | 180-200-225-250 | — | — | 400200 | 408400 | 139100 | 500000 |
| | **318 L4** | **402** | 2.5 | 263100 | 77 | 26 | 180-200-225-250 | — | — | 422000 | 430600 | 147600 | 500000 |
| | **318 L4** | **422** | 2.4 | 264000 | 74 | 26 | 180-200-225-250 | — | — | 428400 | 437200 | 150100 | 500000 |
| | **318 L4** | **477** | 2.1 | 266300 | 66 | 26 | 180-200-225-250 | — | — | 444200 | 453300 | 156200 | 500000 |
| | **318 L4** | **515** | 1.9 | 267700 | 61 | 26 | 180-200-225-250 | — | — | 454800 | 464100 | 160400 | 500000 |
| | **318 L4** | **612** | 1.6 | 271000 | 52 | 26 | 180-200-225-250 | — | — | 478700 | 488600 | 169800 | 500000 |
| | **318 L4** | **647** | 1.5 | 272100 | 50 | 26 | 180-200-225-250 | — | — | 486800 | 496800 | 173000 | 500000 |
| | **318 L4** | **726** | 1.4 | 274300 | 45 | 26 | 180-200-225-250 | — | — | 503000 | 514300 | 179800 | 500000 |
| | **318 L4** | **768** | 1.3 | 275400 | 42 | 26 | 180-200-225-250 | — | — | 503000 | 523000 | 183100 | 500000 |
| | **318 L4** | **911** | 1.1 | 278700 | 36 | 26 | 180-200-225-250 | — | — | 503000 | 550600 | 193900 | 500000 |
| | **318 L4** | **1059** | 0.94 | 280600 | 31 | 26 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| **500** | **318 L2** | **18.7** | 26.7 | 132000 | 260 | 63 | — | — | — | 207000 | 211300 | 66900 | 500000 |
| | **318 L2** | **23.5** | 21.3 | 141300 | 260 | 63 | — | — | — | 221600 | 226200 | 72100 | 500000 |
| | **318 L2** | **27.3** | 18.3 | 147800 | 260 | 63 | — | — | — | 231800 | 236600 | 75900 | 500000 |
| | **318 L3** | **76.5** | 6.5 | 201500 | 151 | 80 | — | — | — | 315900 | 322400 | 107000 | 500000 |
| | **318 L3** | **98.2** | 5.1 | 217100 | 127 | 80 | — | — | — | 340400 | 347400 | 116200 | 500000 |
| | **318 L3** | **117** | 4.3 | 227500 | 112 | 80 | — | — | — | 358400 | 365700 | 123100 | 500000 |
| | **318 L3** | **123** | 4.1 | 230900 | 108 | 80 | — | — | — | 364400 | 371900 | 125400 | 500000 |
| | **318 L3** | **146** | 3.4 | 241800 | 95 | 80 | — | — | — | 383700 | 391500 | 132800 | 500000 |
| | **318 L3** | **170** | 2.9 | 251700 | 85 | 80 | — | — | — | 401400 | 409600 | 139600 | 500000 |
| | **318 L4** | **262** | 1.9 | 268100 | 60 | 44 | 180-200-225-250 | — | — | 457200 | 466600 | 161300 | 500000 |
| | **318 L4** | **313** | 1.6 | 271400 | 51 | 44 | 180-200-225-250 | — | — | 482000 | 491900 | 171100 | 500000 |
| | **318 L4** | **337** | 1.5 | 272800 | 48 | 44 | 180-200-225-250 | — | — | 492700 | 502800 | 175300 | 500000 |
| | **318 L4** | **402** | 1.2 | 276300 | 41 | 44 | 180-200-225-250 | — | — | 503000 | 530200 | 185900 | 500000 |
| | **318 L4** | **422** | 1.2 | 277300 | 39 | 44 | 180-200-225-250 | — | — | 503000 | 538200 | 189100 | 500000 |
| | **318 L4** | **477** | 1.0 | 279600 | 35 | 44 | 180-200-225-250 | — | — | 503000 | 558100 | 196800 | 500000 |
| | **318 L4** | **515** | 0.97 | 280600 | 32 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **612** | 0.82 | 280600 | 27 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **647** | 0.77 | 280600 | 26 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **726** | 0.69 | 280600 | 23 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **768** | 0.65 | 280600 | 22 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **911** | 0.55 | 280600 | 18.2 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 L4** | **1059** | 0.47 | 280600 | 15.7 | 44 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |

## 319 L

426

## 476410 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **319 L3** | **84.8** | 17.7 | 195400 | 200 | 50 | — | — | — | 269300 | 296700 | 76700 | 680000 |
| | **319 L3** | **109** | 13.8 | 222400 | 200 | 50 | — | — | — | 290200 | 319800 | 83400 | 680000 |
| | **319 L3** | **129** | 11.6 | 220800 | 200 | 50 | — | — | — | 305500 | 336600 | 88300 | 680000 |
| | **319 L3** | **137** | 11.0 | 226500 | 200 | 50 | — | — | — | 310700 | 342300 | 90000 | 680000 |
| | **319 L3** | **162** | 9.3 | 250300 | 200 | 50 | — | — | — | 326800 | 360000 | 95200 | 680000 |
| | **319 L3** | **188** | 8.0 | 209800 | 192 | 50 | — | — | — | 342200 | 377000 | 100100 | 680000 |
| | **319 L3** | **223** | 6.7 | 246100 | 190 | 50 | — | — | — | 359900 | 396500 | 105900 | 680000 |



# 319 L

426

# 476410 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **319 L4** | **347** | 4.3 | 298000 | 115 | 30 | 180-200-225-250 | — | — | 410900 | 452700 | 122700 | 680000 |
| | **319 L4** | **445** | 3.4 | 319800 | 115 | 30 | 180-200-225-250 | — | — | 442900 | 487900 | 133400 | 680000 |
| | **319 L4** | **528** | 2.8 | 335700 | 113 | 30 | 180-200-225-250 | — | — | 466200 | 513700 | 141200 | 680000 |
| | **319 L4** | **571** | 2.6 | 344400 | 107 | 30 | 180-200-225-250 | — | — | 477300 | 525800 | 145000 | 680000 |
| | **319 L4** | **678** | 2.2 | 354900 | 93 | 30 | 180-200-225-250 | — | — | 502400 | 553600 | 153500 | 680000 |
| | **319 L4** | **717** | 2.1 | 355800 | 88 | 30 | 180-200-225-250 | — | — | 510900 | 562900 | 156300 | 680000 |
| | **319 L4** | **850** | 1.8 | 363400 | 76 | 30 | 180-200-225-250 | — | — | 537900 | 592600 | 165500 | 680000 |
| | **319 L4** | **912** | 1.6 | 336100 | 65 | 30 | 180-200-225-250 | — | — | 549200 | 605100 | 169400 | 680000 |
| | **319 L4** | **1007** | 1.5 | 344900 | 61 | 30 | 180-200-225-250 | — | — | 565700 | 623300 | 175100 | 680000 |
| | **319 L4** | **1195** | 1.3 | 354500 | 53 | 30 | 180-200-225-250 | — | — | 595600 | 656200 | 185400 | 680000 |
| | **319 L4** | **1389** | 1.1 | 355900 | 45 | 30 | 180-200-225-250 | — | — | 623100 | 686500 | 194900 | 680000 |
| **1000** | **319 L3** | **84.8** | 11.8 | 220700 | 200 | 60 | — | — | — | 304100 | 335100 | 87900 | 680000 |
| | **319 L3** | **109** | 9.2 | 251200 | 200 | 60 | — | — | — | 327800 | 361100 | 95500 | 680000 |
| | **319 L3** | **129** | 7.7 | 249300 | 200 | 60 | — | — | — | 345000 | 380100 | 101100 | 680000 |
| | **319 L3** | **137** | 7.3 | 255500 | 200 | 60 | — | — | — | 350900 | 386600 | 103000 | 680000 |
| | **319 L3** | **162** | 6.2 | 263500 | 187 | 60 | — | — | — | 369000 | 406600 | 108900 | 680000 |
| | **319 L3** | **188** | 5.3 | 236700 | 144 | 60 | — | — | — | 386400 | 425800 | 114600 | 680000 |
| | **319 L3** | **223** | 4.5 | 274900 | 141 | 60 | — | — | — | 406500 | 447800 | 121300 | 680000 |
| | **319 L4** | **347** | 2.9 | 334200 | 114 | 36 | 180-200-225-250 | — | — | 464100 | 511300 | 140500 | 680000 |
| | **319 L4** | **445** | 2.2 | 354100 | 94 | 36 | 180-200-225-250 | — | — | 500200 | 551000 | 152700 | 680000 |
| | **319 L4** | **528** | 1.9 | 364000 | 82 | 36 | 180-200-225-250 | — | — | 526500 | 580100 | 161700 | 680000 |
| | **319 L4** | **571** | 1.8 | 368700 | 76 | 36 | 180-200-225-250 | — | — | 539000 | 593900 | 165900 | 680000 |
| | **319 L4** | **678** | 1.5 | 379100 | 66 | 36 | 180-200-225-250 | — | — | 567400 | 625200 | 175700 | 680000 |
| | **319 L4** | **717** | 1.4 | 374100 | 62 | 36 | 180-200-225-250 | — | — | 577000 | 635700 | 179000 | 680000 |
| | **319 L4** | **850** | 1.2 | 382200 | 53 | 36 | 180-200-225-250 | — | — | 607400 | 669200 | 189500 | 680000 |
| | **319 L4** | **912** | 1.1 | 355200 | 46 | 36 | 180-200-225-250 | — | — | 620200 | 683400 | 193900 | 680000 |
| | **319 L4** | **1007** | 0.99 | 367600 | 43 | 36 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **1195** | 0.84 | 367600 | 36 | 36 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **1389** | 0.72 | 359700 | 31 | 36 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| **500** | **319 L2** | **20.7** | 24.1 | 191800 | 260 | 70 | — | — | — | 245400 | 270300 | 69200 | 680000 |
| | **319 L2** | **24.5** | 20.4 | 200300 | 260 | 70 | — | — | — | 258100 | 284300 | 73200 | 680000 |
| | **319 L2** | **26.0** | 19.2 | 191600 | 260 | 70 | — | — | — | 262700 | 289400 | 74700 | 680000 |
| | **319 L2** | **30.2** | 16.5 | 168600 | 260 | 70 | — | — | — | 274800 | 302800 | 78500 | 680000 |
| | **319 L2** | **35.8** | 14.0 | 199000 | 260 | 70 | — | — | — | 289000 | 318500 | 83000 | 680000 |
| | **319 L3** | **84.8** | 5.9 | 272100 | 184 | 100 | — | — | — | 374400 | 412500 | 110700 | 680000 |
| | **319 L3** | **109** | 4.6 | 306300 | 162 | 100 | — | — | — | 403500 | 444600 | 120300 | 680000 |
| | **319 L3** | **129** | 3.9 | 306100 | 136 | 100 | — | — | — | 424800 | 468000 | 127400 | 680000 |
| | **319 L3** | **137** | 3.7 | 312300 | 131 | 100 | — | — | — | 432000 | 475900 | 129700 | 680000 |
| | **319 L3** | **162** | 3.1 | 302300 | 107 | 100 | — | — | — | 454400 | 500600 | 137200 | 680000 |
| | **319 L3** | **188** | 2.7 | 290800 | 89 | 100 | — | — | — | 475800 | 524200 | 144400 | 680000 |
| | **319 L3** | **223** | 2.2 | 322300 | 83 | 100 | — | — | — | 500400 | 551300 | 152800 | 680000 |
| | **319 L4** | **347** | 1.4 | 380500 | 65 | 60 | 180-200-225-250 | — | — | 571400 | 629500 | 177000 | 680000 |
| | **319 L4** | **445** | 1.1 | 396200 | 53 | 60 | 180-200-225-250 | — | — | 615800 | 678400 | 192400 | 680000 |
| | **319 L4** | **528** | 0.95 | 403700 | 45 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **571** | 0.88 | 403700 | 42 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **678** | 0.74 | 403700 | 35 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **717** | 0.70 | 389900 | 32 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **850** | 0.59 | 389900 | 27 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **912** | 0.55 | 359700 | 23 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **1007** | 0.50 | 367600 | 22 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **1195** | 0.42 | 367600 | 18.2 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 L4** | **1389** | 0.36 | 359700 | 15.3 | 60 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |

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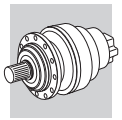


## 321 L

436

## 655740 Nm

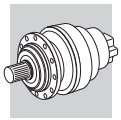
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **321 L4** | **258** | 5.8 | 401700 | 150 | 35 | 180-200-225-250 | — | — | 461500 | 547200 | 667600 | 934000 |
| | **321 L4** | **308** | 4.9 | 423600 | 150 | 35 | 180-200-225-250 | — | — | 486600 | 577000 | 708100 | 934000 |
| | **321 L4** | **395** | 3.8 | 456500 | 150 | 35 | 180-200-225-250 | — | — | 524400 | 621900 | 769500 | 934000 |
| | **321 L4** | **469** | 3.2 | 480500 | 150 | 35 | 180-200-225-250 | — | — | 552000 | 654600 | 814700 | 934000 |
| | **321 L4** | **515** | 2.9 | 494200 | 150 | 35 | 180-200-225-250 | — | — | 567800 | 673300 | 840500 | 934000 |
| | **321 L4** | **612** | 2.5 | 519900 | 150 | 35 | 180-200-225-250 | — | — | 597700 | 708800 | 889900 | 934000 |
| | **321 L4** | **736** | 2.0 | 545400 | 131 | 35 | 180-200-225-250 | — | — | 631900 | 749400 | 946600 | 934000 |
| | **321 L4** | **796** | 1.9 | 556600 | 124 | 35 | 180-200-225-250 | — | — | 646900 | 767100 | 971600 | 934000 |
| | **321 L4** | **945** | 1.6 | 581800 | 109 | 35 | 180-200-225-250 | — | — | 681000 | 807600 | 1028700 | 934000 |
| | **321 L4** | **1122** | 1.3 | 530200 | 84 | 35 | 180-200-225-250 | — | — | 716900 | 850200 | 1089200 | 934000 |
| **1000** | **321 L3** | **75.3** | 13.3 | 313500 | 250 | 60 | — | — | — | 360100 | 427000 | 506800 | 934000 |
| | **321 L3** | **98.2** | 10.2 | 339400 | 250 | 60 | — | — | — | 389900 | 462400 | 553600 | 934000 |
| | **321 L3** | **118** | 8.5 | 358800 | 250 | 60 | — | — | — | 412200 | 488800 | 588900 | 934000 |
| | **321 L3** | **126** | 7.9 | 365800 | 250 | 60 | — | — | — | 420200 | 498300 | 601600 | 934000 |
| | **321 L3** | **152** | 6.6 | 386700 | 250 | 60 | — | — | — | 444200 | 526800 | 639900 | 934000 |
| | **321 L3** | **180** | 5.6 | 407100 | 250 | 60 | — | — | — | 467700 | 554600 | 677500 | 934000 |
| | **321 L4** | **258** | 3.9 | 453700 | 150 | 42 | 180-200-225-250 | — | — | 521200 | 618000 | 764200 | 934000 |
| | **321 L4** | **308** | 3.2 | 478300 | 150 | 42 | 180-200-225-250 | — | — | 549500 | 651700 | 810500 | 934000 |
| | **321 L4** | **395** | 2.5 | 515500 | 150 | 42 | 180-200-225-250 | — | — | 592200 | 702300 | 880800 | 934000 |
| | **321 L4** | **469** | 2.1 | 539100 | 136 | 42 | 180-200-225-250 | — | — | 623400 | 739300 | 932600 | 934000 |
| | **321 L4** | **515** | 1.9 | 552400 | 127 | 42 | 180-200-225-250 | — | — | 641200 | 760400 | 962200 | 934000 |
| | **321 L4** | **612** | 1.6 | 577400 | 112 | 42 | 180-200-225-250 | — | — | 675000 | 800500 | 1018700 | 934000 |
| | **321 L4** | **736** | 1.4 | 605800 | 97 | 42 | 180-200-225-250 | — | — | 713600 | 846300 | 1083600 | 934000 |
| | **321 L4** | **796** | 1.3 | 618200 | 92 | 42 | 180-200-225-250 | — | — | 730600 | 866400 | 1112200 | 934000 |
| | **321 L4** | **945** | 1.1 | 646200 | 81 | 42 | 180-200-225-250 | — | — | 769100 | 912000 | 1177600 | 934000 |
| | **321 L4** | **1122** | 0.89 | 536400 | 57 | 42 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| **500** | **321 L3** | **75.3** | 6.6 | 385900 | 250 | 127 | — | — | — | 443300 | 525700 | 638500 | 934000 |
| | **321 L3** | **98.2** | 5.1 | 417900 | 244 | 127 | — | — | — | 480000 | 569300 | 697500 | 934000 |
| | **321 L3** | **118** | 4.2 | 441800 | 214 | 127 | — | — | — | 507500 | 601800 | 742000 | 934000 |
| | **321 L3** | **126** | 4.0 | 450300 | 205 | 127 | — | — | — | 517300 | 613500 | 758000 | 934000 |
| | **321 L3** | **152** | 3.3 | 476100 | 180 | 127 | — | — | — | 546900 | 648600 | 806300 | 934000 |
| | **321 L3** | **180** | 2.8 | 501200 | 160 | 127 | — | — | — | 575800 | 682800 | 853700 | 934000 |
| | **321 L4** | **258** | 1.9 | 552700 | 127 | 70 | 180-200-225-250 | — | — | 641600 | 760900 | 962800 | 934000 |
| | **321 L4** | **308** | 1.6 | 578500 | 111 | 70 | 180-200-225-250 | — | — | 676500 | 802300 | 1021200 | 934000 |
| | **321 L4** | **395** | 1.3 | 617100 | 92 | 70 | 180-200-225-250 | — | — | 729100 | 864600 | 1109700 | 934000 |
| | **321 L4** | **469** | 1.1 | 645100 | 81 | 70 | 180-200-225-250 | — | — | 767500 | 910200 | 1174900 | 934000 |
| | **321 L4** | **515** | 0.97 | 655700 | 75 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 L4** | **612** | 0.82 | 655700 | 63 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 L4** | **736** | 0.68 | 655700 | 53 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 L4** | **796** | 0.63 | 655700 | 49 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 L4** | **945** | 0.53 | 655700 | 41 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 L4** | **1122** | 0.45 | 536400 | 28 | 70 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |

## 323 L

446

## 890310 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **323 L4** | **341** | 4.4 | 757500 | 200 | 50 | — | — | — | — | — | 671300 | 1580000 |
| | **323 L4** | **390** | 3.8 | 774100 | 200 | 50 | — | — | — | — | — | 702000 | 1580000 |
| | **323 L4** | **438** | 3.4 | 788700 | 200 | 50 | — | — | — | — | — | 729500 | 1580000 |
| | **323 L4** | **500** | 3.0 | 806000 | 200 | 50 | — | — | — | — | — | 762900 | 1580000 |
| | **323 L4** | **569** | 2.6 | 822800 | 200 | 50 | — | — | — | — | — | 796200 | 1580000 |
| | **323 L4** | **628** | 2.4 | 832800 | 200 | 50 | — | — | — | — | — | 822900 | 1580000 |
| | **323 L4** | **703** | 2.1 | 840100 | 200 | 50 | — | — | — | — | — | 854300 | 1580000 |
| | **323 L4** | **758** | 2.0 | 844900 | 198 | 50 | — | — | — | — | — | 876000 | 1580000 |
| | **323 L4** | **882** | 1.7 | 854800 | 172 | 50 | — | — | — | — | — | 921500 | 1580000 |
| | **323 L4** | **1025** | 1.5 | 864700 | 150 | 50 | — | — | — | — | — | 968900 | 1580000 |
| | **323 L4** | **1101** | 1.4 | 869400 | 140 | 50 | — | — | — | — | — | 992100 | 1580000 |



## 323 L

446

## 890310 Nm

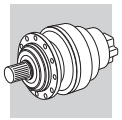
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **323 L4** | **1279** | 1.2 | 879500 | 122 | 50 | — | — | — | — | — | 1043200 | 1580000 |
| | **323 L4** | **341** | 2.9 | 808800 | 200 | 60 | — | — | — | — | — | 768500 | 1580000 |
| | **323 L4** | **390** | 2.6 | 826500 | 200 | 60 | — | — | — | — | — | 803600 | 1580000 |
| | **323 L4** | **438** | 2.3 | 835700 | 200 | 60 | — | — | — | — | — | 835100 | 1580000 |
| | **323 L4** | **500** | 2.0 | 844300 | 200 | 60 | — | — | — | — | — | 873300 | 1580000 |
| | **323 L4** | **569** | 1.8 | 852600 | 177 | 60 | — | — | — | — | — | 911400 | 1580000 |
| | **323 L4** | **628** | 1.6 | 859100 | 162 | 60 | — | — | — | — | — | 941900 | 1580000 |
| | **323 L4** | **703** | 1.4 | 866600 | 146 | 60 | — | — | — | — | — | 978000 | 1580000 |
| | **323 L4** | **758** | 1.3 | 871600 | 136 | 60 | — | — | — | — | — | 1002800 | 1580000 |
| | **323 L4** | **882** | 1.1 | 881800 | 118 | 60 | — | — | — | — | — | 1054900 | 1580000 |
| | **323 L4** | **1025** | 0.98 | 890300 | 103 | 60 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **1101** | 0.91 | 890300 | 96 | 60 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **1279** | 0.78 | 890300 | 82 | 60 | — | — | — | — | — | 1100000 | 1580000 |
| **500** | **323 L3** | **83.3** | 6.0 | 702600 | 260 | 90 | — | — | — | — | — | 605400 | 1580000 |
| | **323 L3** | **105** | 4.8 | 747400 | 260 | 90 | — | — | — | — | — | 653000 | 1580000 |
| | **323 L3** | **113** | 4.4 | 756600 | 260 | 90 | — | — | — | — | — | 669600 | 1580000 |
| | **323 L3** | **120** | 4.2 | 763800 | 260 | 90 | — | — | — | — | — | 682800 | 1580000 |
| | **323 L3** | **142** | 3.5 | 784900 | 260 | 90 | — | — | — | — | — | 722300 | 1580000 |
| | **323 L3** | **165** | 3.0 | 804200 | 260 | 90 | — | — | — | — | — | 759400 | 1580000 |
| | **323 L3** | **205** | 2.4 | 831600 | 232 | 90 | — | — | — | — | — | 817600 | 1580000 |
| | **323 L4** | **390** | 1.3 | 873500 | 132 | 100 | — | — | — | — | — | 1012500 | 1580000 |
| | **323 L4** | **341** | 1.5 | 864600 | 150 | 100 | — | — | — | — | — | 968200 | 1580000 |
| | **323 L4** | **390** | 1.3 | 873500 | 132 | 100 | — | — | — | — | — | 1012500 | 1580000 |
| | **323 L4** | **438** | 1.1 | 881300 | 119 | 100 | — | — | — | — | — | 1052200 | 1580000 |
| | **323 L4** | **500** | 1.00 | 890300 | 105 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **569** | 0.88 | 890300 | 93 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **628** | 0.80 | 890300 | 84 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **703** | 0.71 | 890300 | 75 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **758** | 0.66 | 890300 | 70 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **882** | 0.57 | 890300 | 60 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **1025** | 0.49 | 890300 | 51 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **1101** | 0.45 | 890300 | 48 | 100 | — | — | — | — | — | 1100000 | 1580000 |
| | **323 L4** | **1279** | 0.39 | 890300 | 41 | 100 | — | — | — | — | — | 1100000 | 1580000 |

## 325 L

450

## 1286700 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **325 L4** | **341** | 4.4 | 931900 | 200 | 65 | — | — | — | — | — | 854400 | 2000000 |
| | **325 L4** | **390** | 3.8 | 952300 | 200 | 65 | — | — | — | — | — | 893500 | 2000000 |
| | **325 L4** | **438** | 3.4 | 1004300 | 200 | 65 | — | — | — | — | — | 928500 | 2000000 |
| | **325 L4** | **500** | 3.0 | 1026300 | 200 | 65 | — | — | — | — | — | 970900 | 2000000 |
| | **325 L4** | **569** | 2.6 | 1066500 | 200 | 65 | — | — | — | — | — | 1013300 | 2000000 |
| | **325 L4** | **628** | 2.4 | 1093000 | 200 | 65 | — | — | — | — | — | 1047300 | 2000000 |
| | **325 L4** | **703** | 2.1 | 1101500 | 200 | 65 | — | — | — | — | — | 1087300 | 2000000 |
| | **325 L4** | **758** | 2.0 | 1147900 | 200 | 65 | — | — | — | — | — | 1114900 | 2000000 |
| | **325 L4** | **882** | 1.7 | 1154000 | 200 | 65 | — | — | — | — | — | 1172800 | 2000000 |
| | **325 L4** | **1025** | 1.5 | 1190200 | 200 | 65 | — | — | — | — | — | 1233200 | 2000000 |
| | **325 L4** | **1101** | 1.4 | 963200 | 155 | 65 | — | — | — | — | — | 1262700 | 2000000 |
| | **325 L4** | **1279** | 1.2 | 963200 | 134 | 65 | — | — | — | — | — | 1327700 | 2000000 |
| **1000** | **325 L4** | **341** | 2.9 | 1052400 | 200 | 78 | — | — | — | — | — | 978000 | 2000000 |
| | **325 L4** | **390** | 2.6 | 1075400 | 200 | 78 | — | — | — | — | — | 1022800 | 2000000 |
| | **325 L4** | **438** | 2.3 | 1120700 | 200 | 78 | — | — | — | — | — | 1062900 | 2000000 |
| | **325 L4** | **500** | 2.0 | 1130200 | 200 | 78 | — | — | — | — | — | 1111400 | 2000000 |
| | **325 L4** | **569** | 1.8 | 1157600 | 200 | 78 | — | — | — | — | — | 1160000 | 2000000 |
| | **325 L4** | **628** | 1.6 | 1179300 | 200 | 78 | — | — | — | — | — | 1198800 | 2000000 |
| | **325 L4** | **703** | 1.4 | 1197000 | 200 | 78 | — | — | — | — | — | 1244700 | 2000000 |
| | **325 L4** | **758** | 1.3 | 1228300 | 192 | 78 | — | — | — | — | — | 1276200 | 2000000 |
| | **325 L4** | **882** | 1.1 | 1254000 | 168 | 78 | — | — | — | — | — | 1342600 | 2000000 |



## 325 L

450

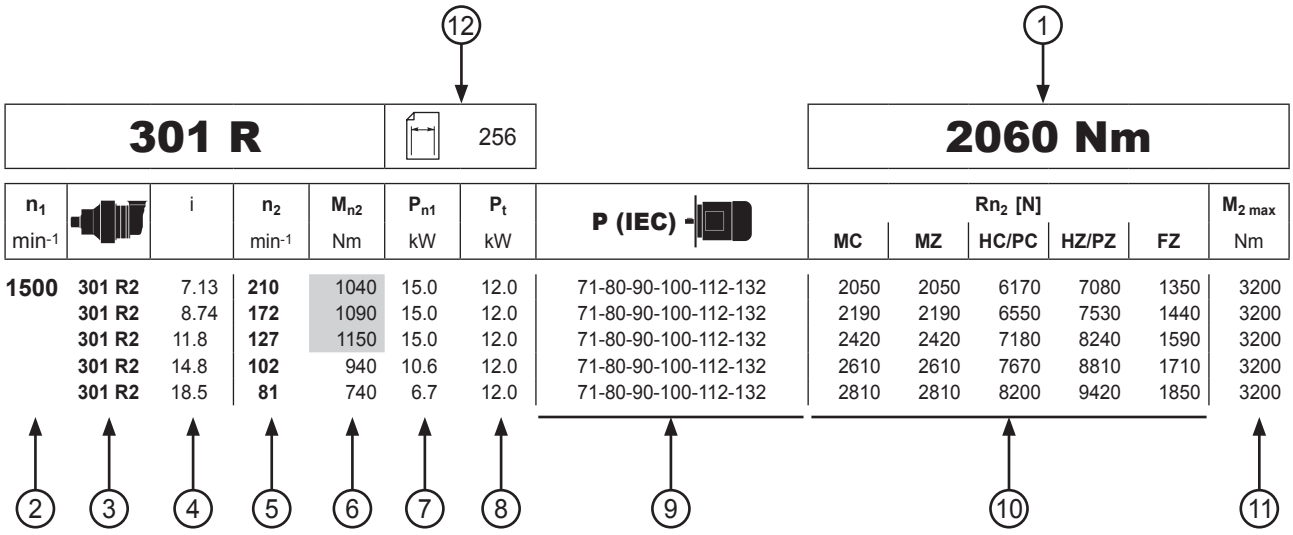
## 1286700 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **325 L4** | **1025** | 0.98 | 1286700 | 148 | 78 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **1101** | 0.91 | 963200 | 104 | 78 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **1279** | 0.78 | 963200 | 89 | 78 | — | — | — | — | — | 1400000 | 2000000 |
| **500** | **325 L3** | **83.3** | 6.0 | 849100 | 260 | 115 | — | — | — | — | — | 770500 | 2000000 |
| | **325 L3** | **105** | 4.8 | 908900 | 260 | 115 | — | — | — | — | — | 831100 | 2000000 |
| | **325 L3** | **113** | 4.4 | 898100 | 260 | 115 | — | — | — | — | — | 852200 | 2000000 |
| | **325 L3** | **120** | 4.2 | 928800 | 260 | 115 | — | — | — | — | — | 869100 | 2000000 |
| | **325 L3** | **142** | 3.5 | 961400 | 260 | 115 | — | — | — | — | — | 919200 | 2000000 |
| | **325 L3** | **165** | 3.0 | 1005800 | 260 | 115 | — | — | — | — | — | 966600 | 2000000 |
| | **325 L3** | **205** | 2.4 | 963200 | 260 | 115 | — | — | — | — | — | 1040600 | 2000000 |
| | **325 L4** | **390** | 1.3 | 1228100 | 186 | 130 | — | — | — | — | — | 1288600 | 2000000 |
| | **325 L4** | **341** | 1.5 | 1206900 | 200 | 130 | — | — | — | — | — | 1232300 | 2000000 |
| | **325 L4** | **390** | 1.3 | 1228100 | 186 | 130 | — | — | — | — | — | 1288600 | 2000000 |
| | **325 L4** | **438** | 1.1 | 1258300 | 170 | 130 | — | — | — | — | — | 1339100 | 2000000 |
| | **325 L4** | **500** | 1.00 | 1286700 | 152 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **569** | 0.88 | 1286700 | 134 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **628** | 0.80 | 1286700 | 121 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **703** | 0.71 | 1286700 | 108 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **758** | 0.66 | 1286600 | 100 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **882** | 0.57 | 1286700 | 86 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **1025** | 0.49 | 1286700 | 74 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **1101** | 0.45 | 963200 | 52 | 130 | — | — | — | — | — | 1400000 | 2000000 |
| | **325 L4** | **1279** | 0.39 | 963200 | 45 | 130 | — | — | — | — | — | 1400000 | 2000000 |

B

## 25.4 DATOS TÉCNICOS REDUCTOR ANGULAR 300 R

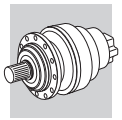
Guía para consultar las tablas.




| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | $P_t$ kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 R2** | 7.13 | **210** | 1040 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2050 | 2050 | 6170 | 7080 | 1350 | 3200 |
| | **301 R2** | 8.74 | **172** | 1090 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2190 | 2190 | 6550 | 7530 | 1440 | 3200 |
| | **301 R2** | 11.8 | **127** | 1150 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2420 | 2420 | 7180 | 8240 | 1590 | 3200 |
| | **301 R2** | 14.8 | **102** | 940 | 10.6 | 12.0 | 71-80-90-100-112-132 | 2610 | 2610 | 7670 | 8810 | 1710 | 3200 |
| | **301 R2** | 18.5 | **81** | 740 | 6.7 | 12.0 | 71-80-90-100-112-132 | 2810 | 2810 | 8200 | 9420 | 1850 | 3200 |
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | | 11 |

Valor de par nominal del reductor independiente de la potencia mecánica instalada

| | |
|---|---|
| **1** | Par de referencia |
| **2** | Velocidad de comando del reductor |
| **3** | Tamaño reductor en ejecución angular.<br>NOTA: Los sufijos (B) (C) sobre el mismo tamaño indican reducción angular de dimensiones diferentes: ver las páginas dimensionales |
| **4** | Relación de reducción |
| **5** | Velocidad angular del eje lento |
| **6** | Par nominal del eje lento del reductor, basado en:<br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **7** | Potencia nominal aplicable al reductor, para:<br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **8** | Potencia térmica del reductor |
| **9** | Tamaño motor eléctrico IEC instalable |
| **10** | Carga radial aplicada al eje lento, calculado para:<br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br>Para fuerzas no aplicadas en el centro del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **11** | Par máximo |
| **12** | Pagina de las dimensiones |

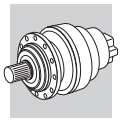


# 300 R

246

# 1250 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **300 R2** | **7.13** | 210 | 580 | 13.7 | 12.0 | 71-80-90-100-112-132 | 2050 | 2050 | 6170 | 7080 | 1350 | 2000 |
| | **300 R2** | **8.74** | 172 | 610 | 11.7 | 12.0 | 71-80-90-100-112-132 | 2190 | 2190 | 6550 | 7530 | 1440 | 2400 |
| | **300 R2** | **11.8** | 127 | 590 | 8.3 | 12.0 | 71-80-90-100-112-132 | 2420 | 2420 | 7180 | 8240 | 1590 | 2400 |
| | **300 R2** | **14.8** | 102 | 510 | 5.7 | 12.0 | 71-80-90-100-112-132 | 2610 | 2610 | 7670 | 8810 | 1710 | 2400 |
| | **300 R2** | **18.5** | 81 | 370 | 3.3 | 12.0 | 71-80-90-100-112-132 | 2810 | 2810 | 8200 | 9420 | 1850 | 2400 |
| | **300 R3** | **24.8** | 60 | 730 | 5.1 | 12.0 | 71-80-90-100-112-132 | 3100 | 3100 | 8960 | 10300 | 2040 | 2000 |
| | **300 R3** | **30.4** | 49 | 840 | 4.8 | 12.0 | 71-80-90-100-112-132 | 3320 | 3320 | 9530 | 10900 | 2180 | 2400 |
| | **300 R3** | **37.3** | 40 | 840 | 3.9 | 12.0 | 71-80-90-100-112-132 | 3550 | 3550 | 10100 | 11600 | 2330 | 2400 |
| | **300 R3** | **41.2** | 36 | 650 | 2.7 | 12.0 | 71-80-90-100-112-132 | 3670 | 3670 | 10400 | 12000 | 2410 | 2400 |
| | **300 R3** | **50.4** | 29.8 | 850 | 2.9 | 12.0 | 71-80-90-100-112-132 | 3930 | 3930 | 11100 | 12700 | 2580 | 2400 |
| | **300 R3** | **62.9** | 23.8 | 850 | 2.3 | 12.0 | 71-80-90-100-112-132 | 4230 | 4230 | 11800 | 13600 | 2780 | 2400 |
| | **300 R3** | **68.2** | 22.0 | 650 | 1.6 | 12.0 | 71-80-90-100-112-132 | 4340 | 4340 | 12100 | 13900 | 2860 | 2400 |
| | **300 R3** | **78.7** | 19.1 | 850 | 1.9 | 12.0 | 71-80-90-100-112-132 | 4550 | 4550 | 12700 | 14600 | 2990 | 2400 |
| | **300 R3** | **85.2** | 17.6 | 650 | 1.3 | 12.0 | 71-80-90-100-112-132 | 4680 | 4680 | 13000 | 14900 | 3070 | 2400 |
| | **300 R3** | **106** | 14.1 | 650 | 1.1 | 12.0 | 71-80-90-100-112-132 | 5040 | 5040 | 13900 | 15900 | 3310 | 2400 |
| | **300 R3** | **133** | 11.3 | 550 | 0.71 | 12.0 | 71-80-90-100-112-132 | 5420 | 5420 | 14800 | 17000 | 3570 | 2400 |
| | **300 R4** | **106** | 14.2 | 860 | 1.4 | 10.0 | 71-80-90-100-112-132 | 5030 | 5030 | 13800 | 15900 | 3310 | 2400 |
| | **300 R4** | **130** | 11.6 | 860 | 1.2 | 10.0 | 71-80-90-100-112-132 | 5380 | 5380 | 14700 | 16900 | 3540 | 2400 |
| | **300 R4** | **143** | 10.5 | 650 | 0.81 | 10.0 | 71-80-90-100-112-132 | 5560 | 5560 | 15200 | 17400 | 3660 | 2400 |
| | **300 R4** | **159** | 9.4 | 870 | 0.97 | 10.0 | 71-80-90-100-112-132 | 5760 | 5760 | 15600 | 18000 | 3780 | 2400 |
| | **300 R4** | **175** | 8.5 | 880 | 0.89 | 10.0 | 71-80-90-100-112-132 | 5950 | 5950 | 16100 | 18500 | 3910 | 2400 |
| | **300 R4** | **215** | 7.0 | 910 | 0.75 | 10.0 | 71-80-90-100-112-132 | 6370 | 6370 | 17100 | 19700 | 4190 | 2400 |
| | **300 R4** | **237** | 6.3 | 650 | 0.49 | 10.0 | 71-80-90-100-112-132 | 6580 | 6580 | 17600 | 20300 | 4330 | 2400 |
| | **300 R4** | **268** | 5.6 | 930 | 0.62 | 10.0 | 71-80-90-100-112-132 | 6860 | 6860 | 18300 | 21000 | 4510 | 2400 |
| | **300 R4** | **291** | 5.2 | 950 | 0.58 | 10.0 | 71-80-90-100-112-132 | 7040 | 7040 | 18800 | 21500 | 4630 | 2400 |
| | **300 R4** | **363** | 4.1 | 980 | 0.48 | 10.0 | 71-80-90-100-112-132 | 7580 | 7580 | 20000 | 23000 | 4990 | 2400 |
| | **300 R4** | **394** | 3.8 | 680 | 0.31 | 10.0 | 71-80-90-100-112-132 | 7790 | 7790 | 20500 | 23600 | 5120 | 2400 |
| | **300 R4** | **453** | 3.3 | 1020 | 0.40 | 10.0 | 71-80-90-100-112-132 | 8160 | 8160 | 21400 | 24600 | 5370 | 2400 |
| | **300 R4** | **491** | 3.1 | 710 | 0.25 | 10.0 | 71-80-90-100-112-132 | 8390 | 8390 | 21900 | 25200 | 5510 | 2400 |
| | **300 R4** | **613** | 2.4 | 730 | 0.21 | 10.0 | 71-80-90-100-112-132 | 9030 | 9030 | 23500 | 27000 | 5940 | 2400 |
| | **300 R4** | **766** | 2.0 | 760 | 0.18 | 10.0 | 71-80-90-100-112-132 | 9730 | 9730 | 25100 | 28800 | 6400 | 2400 |
| **1000** | **300 R2** | **7.13** | 140 | 660 | 10.3 | 14.4 | 71-80-90-100-112-132 | 2340 | 2340 | 6960 | 8000 | 1540 | 2000 |
| | **300 R2** | **8.74** | 114 | 690 | 8.8 | 14.4 | 71-80-90-100-112-132 | 2510 | 2510 | 7400 | 8500 | 1650 | 2400 |
| | **300 R2** | **11.8** | 85 | 630 | 6.0 | 14.4 | 71-80-90-100-112-132 | 2770 | 2770 | 8100 | 9310 | 1820 | 2400 |
| | **300 R2** | **14.8** | 68 | 530 | 4.0 | 14.4 | 71-80-90-100-112-132 | 2980 | 2980 | 8660 | 9950 | 1960 | 2400 |
| | **300 R2** | **18.5** | 54 | 370 | 2.2 | 14.4 | 71-80-90-100-112-132 | 3220 | 3220 | 9260 | 10600 | 2110 | 2400 |
| | **300 R3** | **24.8** | 40 | 730 | 3.4 | 14.4 | 71-80-90-100-112-132 | 3550 | 3550 | 10100 | 11600 | 2330 | 2000 |
| | **300 R3** | **30.4** | 33 | 850 | 3.2 | 14.4 | 71-80-90-100-112-132 | 3800 | 3800 | 10800 | 12400 | 2500 | 2400 |
| | **300 R3** | **37.3** | 26.8 | 850 | 2.6 | 14.4 | 71-80-90-100-112-132 | 4060 | 4060 | 11400 | 13100 | 2670 | 2400 |
| | **300 R3** | **41.2** | 24.3 | 650 | 1.8 | 14.4 | 71-80-90-100-112-132 | 4200 | 4200 | 11800 | 13500 | 2760 | 2400 |
| | **300 R3** | **50.4** | 19.8 | 850 | 1.9 | 14.4 | 71-80-90-100-112-132 | 4500 | 4500 | 12500 | 14400 | 2960 | 2400 |
| | **300 R3** | **62.9** | 15.9 | 850 | 1.6 | 14.4 | 71-80-90-100-112-132 | 4840 | 4840 | 13400 | 15400 | 3180 | 2400 |
| | **300 R3** | **68.2** | 14.7 | 650 | 1.1 | 14.4 | 71-80-90-100-112-132 | 4970 | 4970 | 13700 | 15800 | 3270 | 2400 |
| | **300 R3** | **78.7** | 12.7 | 860 | 1.3 | 14.4 | 71-80-90-100-112-132 | 5210 | 5210 | 14300 | 16400 | 3430 | 2400 |
| | **300 R3** | **85.2** | 11.7 | 650 | 0.88 | 14.4 | 71-80-90-100-112-132 | 5350 | 5350 | 14700 | 16800 | 3520 | 2400 |
| | **300 R3** | **106** | 9.4 | 650 | 0.70 | 14.4 | 71-80-90-100-112-132 | 5770 | 5770 | 15700 | 18000 | 3790 | 2400 |
| | **300 R3** | **133** | 7.5 | 550 | 0.48 | 14.4 | 71-80-90-100-112-132 | 6210 | 6210 | 16700 | 19200 | 4080 | 2400 |
| | **300 R4** | **106** | 9.4 | 870 | 0.97 | 12.0 | 71-80-90-100-112-132 | 5760 | 5760 | 15600 | 18000 | 3780 | 2400 |
| | **300 R4** | **130** | 7.7 | 890 | 0.81 | 12.0 | 71-80-90-100-112-132 | 6160 | 6160 | 16600 | 19100 | 4050 | 2400 |
| | **300 R4** | **143** | 7.0 | 650 | 0.54 | 12.0 | 71-80-90-100-112-132 | 6370 | 6370 | 17100 | 19700 | 4190 | 2400 |
| | **300 R4** | **159** | 6.3 | 920 | 0.68 | 12.0 | 71-80-90-100-112-132 | 6590 | 6590 | 17700 | 20300 | 4330 | 2400 |
| | **300 R4** | **175** | 5.7 | 930 | 0.63 | 12.0 | 71-80-90-100-112-132 | 6810 | 6810 | 18200 | 20900 | 4480 | 2400 |
| | **300 R4** | **215** | 4.7 | 960 | 0.53 | 12.0 | 71-80-90-100-112-132 | 7290 | 7290 | 19300 | 22200 | 4790 | 2400 |
| | **300 R4** | **237** | 4.2 | 670 | 0.33 | 12.0 | 71-80-90-100-112-132 | 7540 | 7540 | 19900 | 22900 | 4950 | 2400 |
| | **300 R4** | **268** | 3.7 | 1000 | 0.44 | 12.0 | 71-80-90-100-112-132 | 7850 | 7850 | 20700 | 23800 | 5160 | 2400 |
| | **300 R4** | **291** | 3.4 | 1010 | 0.41 | 12.0 | 71-80-90-100-112-132 | 8060 | 8060 | 21200 | 24300 | 5300 | 2400 |
| | **300 R4** | **363** | 2.8 | 1050 | 0.34 | 12.0 | 71-80-90-100-112-132 | 8680 | 8680 | 22600 | 26000 | 5710 | 2400 |
| | **300 R4** | **394** | 2.5 | 730 | 0.22 | 12.0 | 71-80-90-100-112-132 | 8920 | 8920 | 23200 | 26600 | 5860 | 2400 |
| | **300 R4** | **453** | 2.2 | 1090 | 0.29 | 12.0 | 71-80-90-100-112-132 | 9350 | 9350 | 24200 | 27800 | 6140 | 2400 |
| | **300 R4** | **491** | 2.0 | 760 | 0.18 | 12.0 | 71-80-90-100-112-132 | 9600 | 9600 | 24800 | 28500 | 6310 | 2400 |
| | **300 R4** | **613** | 1.6 | 790 | 0.15 | 12.0 | 71-80-90-100-112-132 | 10300 | 10300 | 26500 | 30400 | 6800 | 2400 |

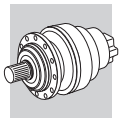


## 300 R — 246 — 1250 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **300 R4** | **766** | 1.3 | 820 | 0.13 | 12.0 | 71-80-90-100-112-132 | 11100 | 11100 | 28300 | 32500 | 7320 | 2400 |
| **500** | **300 R2** | **7.13** | 70 | 730 | 5.7 | 24 | 71-80-90-100-112-132 | 2950 | 2950 | 8570 | 9850 | 1940 | 2000 |
| | **300 R2** | **8.74** | 57 | 820 | 5.2 | 24 | 71-80-90-100-112-132 | 3160 | 3160 | 9110 | 10500 | 2080 | 2400 |
| | **300 R2** | **11.8** | 42 | 650 | 3.1 | 24 | 71-80-90-100-112-132 | 3490 | 3490 | 9980 | 11500 | 2300 | 2400 |
| | **300 R2** | **14.8** | 34 | 550 | 2.1 | 24 | 71-80-90-100-112-132 | 3760 | 3760 | 10700 | 12300 | 2470 | 2400 |
| | **300 R2** | **18.5** | 27.1 | 370 | 1.1 | 24 | 71-80-90-100-112-132 | 4050 | 4050 | 11400 | 13100 | 2660 | 2400 |
| | **300 R3** | **24.8** | 20.1 | 730 | 1.7 | 24 | 71-80-90-100-112-132 | 4470 | 4470 | 12500 | 14300 | 2940 | 2000 |
| | **300 R3** | **30.4** | 16.4 | 850 | 1.6 | 24 | 71-80-90-100-112-132 | 4790 | 4790 | 13200 | 15200 | 3150 | 2400 |
| | **300 R3** | **37.3** | 13.4 | 860 | 1.3 | 24 | 71-80-90-100-112-132 | 5120 | 5120 | 14100 | 16200 | 3370 | 2400 |
| | **300 R3** | **41.2** | 12.1 | 650 | 0.91 | 24 | 71-80-90-100-112-132 | 5290 | 5290 | 14500 | 16700 | 3480 | 2400 |
| | **300 R3** | **50.4** | 9.9 | 860 | 0.98 | 24 | 71-80-90-100-112-132 | 5660 | 5660 | 15400 | 17700 | 3720 | 2400 |
| | **300 R3** | **62.9** | 7.9 | 890 | 0.81 | 24 | 71-80-90-100-112-132 | 6100 | 6100 | 16500 | 18900 | 4010 | 2400 |
| | **300 R3** | **68.2** | 7.3 | 650 | 0.55 | 24 | 71-80-90-100-112-132 | 6260 | 6260 | 16900 | 19400 | 4120 | 2400 |
| | **300 R3** | **78.7** | 6.4 | 920 | 0.67 | 24 | 71-80-90-100-112-132 | 6570 | 6570 | 17600 | 20200 | 4320 | 2400 |
| | **300 R3** | **85.2** | 5.9 | 650 | 0.44 | 24 | 71-80-90-100-112-132 | 6750 | 6750 | 18000 | 20700 | 4430 | 2400 |
| | **300 R3** | **106** | 4.7 | 660 | 0.35 | 24 | 71-80-90-100-112-132 | 7270 | 7270 | 19300 | 22200 | 4780 | 2400 |
| | **300 R3** | **133** | 3.8 | 570 | 0.25 | 24 | 71-80-90-100-112-132 | 7820 | 7820 | 20600 | 23700 | 5140 | 2400 |
| | **300 R4** | **106** | 4.7 | 960 | 0.54 | 20 | 71-80-90-100-112-132 | 7250 | 7250 | 19300 | 22100 | 4770 | 2400 |
| | **300 R4** | **130** | 3.9 | 990 | 0.45 | 20 | 71-80-90-100-112-132 | 7760 | 7760 | 20500 | 23500 | 5100 | 2400 |
| | **300 R4** | **143** | 3.5 | 690 | 0.29 | 20 | 71-80-90-100-112-132 | 8020 | 8020 | 21100 | 24200 | 5270 | 2400 |
| | **300 R4** | **159** | 3.1 | 1030 | 0.38 | 20 | 71-80-90-100-112-132 | 8300 | 8300 | 21700 | 25000 | 5460 | 2400 |
| | **300 R4** | **175** | 2.8 | 1050 | 0.35 | 20 | 71-80-90-100-112-132 | 8580 | 8580 | 22400 | 25700 | 5640 | 2400 |
| | **300 R4** | **215** | 2.3 | 1080 | 0.30 | 20 | 71-80-90-100-112-132 | 9180 | 9180 | 23800 | 27400 | 6040 | 2400 |
| | **300 R4** | **237** | 2.1 | 750 | 0.19 | 20 | 71-80-90-100-112-132 | 9490 | 9490 | 24500 | 28200 | 6240 | 2400 |
| | **300 R4** | **268** | 1.9 | 1120 | 0.25 | 20 | 71-80-90-100-112-132 | 9890 | 9890 | 25500 | 29200 | 6500 | 2400 |
| | **300 R4** | **291** | 1.7 | 1140 | 0.23 | 20 | 71-80-90-100-112-132 | 10200 | 10200 | 26100 | 30000 | 6680 | 2400 |
| | **300 R4** | **363** | 1.4 | 1180 | 0.19 | 20 | 71-80-90-100-112-132 | 10900 | 10900 | 27900 | 32000 | 7190 | 2400 |
| | **300 R4** | **394** | 1.3 | 820 | 0.12 | 20 | 71-80-90-100-112-132 | 11200 | 11200 | 28600 | 32800 | 7390 | 2400 |
| | **300 R4** | **453** | 1.1 | 1230 | 0.16 | 20 | 71-80-90-100-112-132 | 11800 | 11800 | 29800 | 34000 | 7740 | 2400 |
| | **300 R4** | **491** | 1.0 | 860 | 0.10 | 20 | 71-80-90-100-112-132 | 12000 | 12100 | 30500 | 34000 | 7950 | 2400 |
| | **300 R4** | **613** | 0.82 | 860 | 0.08 | 20 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |
| | **300 R4** | **766** | 0.65 | 860 | 0.07 | 20 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 2400 |

## 301 R — 256 — 2060 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 R2** | **7.13** | 210 | 1040 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2050 | 2050 | 6170 | 7080 | 1350 | 3200 |
| | **301 R2** | **8.74** | 172 | 1090 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2190 | 2190 | 6550 | 7530 | 1440 | 3200 |
| | **301 R2** | **11.8** | 127 | 1150 | 15.0 | 12.0 | 71-80-90-100-112-132 | 2420 | 2420 | 7180 | 8240 | 1590 | 3200 |
| | **301 R2** | **14.8** | 102 | 940 | 10.6 | 12.0 | 71-80-90-100-112-132 | 2610 | 2610 | 7670 | 8810 | 1710 | 3200 |
| | **301 R2** | **18.5** | 81 | 740 | 6.7 | 12.0 | 71-80-90-100-112-132 | 2810 | 2810 | 8200 | 9420 | 1850 | 3200 |
| | **301 R3** | **24.8** | 60 | 1390 | 9.7 | 12.0 | 71-80-90-100-112-132 | 3100 | 3100 | 8960 | 10300 | 2040 | 3400 |
| | **301 R3** | **30.4** | 49 | 1580 | 8.9 | 12.0 | 71-80-90-100-112-132 | 3320 | 3320 | 9530 | 10900 | 2180 | 3400 |
| | **301 R3** | **37.3** | 40 | 1600 | 7.4 | 12.0 | 71-80-90-100-112-132 | 3550 | 3550 | 10100 | 11600 | 2330 | 3400 |
| | **301 R3** | **41.2** | 36 | 1300 | 5.4 | 12.0 | 71-80-90-100-112-132 | 3670 | 3670 | 10400 | 12000 | 2410 | 3400 |
| | **301 R3** | **50.4** | 29.8 | 1630 | 5.6 | 12.0 | 71-80-90-100-112-132 | 3930 | 3930 | 11100 | 12700 | 2580 | 3400 |
| | **301 R3** | **62.9** | 23.8 | 1650 | 4.5 | 12.0 | 71-80-90-100-112-132 | 4230 | 4230 | 11800 | 13600 | 2780 | 3400 |
| | **301 R3** | **68.2** | 22.0 | 1300 | 3.3 | 12.0 | 71-80-90-100-112-132 | 4340 | 4340 | 12100 | 13900 | 2860 | 3400 |
| | **301 R3** | **78.7** | 19.1 | 1570 | 3.4 | 12.0 | 71-80-90-100-112-132 | 4550 | 4550 | 12700 | 14600 | 2990 | 3400 |
| | **301 R3** | **85.2** | 17.6 | 1300 | 2.6 | 12.0 | 71-80-90-100-112-132 | 4680 | 4680 | 13000 | 14900 | 3070 | 3400 |
| | **301 R3** | **106** | 14.1 | 1300 | 2.1 | 12.0 | 71-80-90-100-112-132 | 5040 | 5040 | 13900 | 15900 | 3310 | 3400 |
| | **301 R3** | **133** | 11.3 | 1150 | 1.5 | 12.0 | 71-80-90-100-112-132 | 5420 | 5420 | 14800 | 17000 | 3570 | 3400 |
| | **301 R4** | **106** | 14.2 | 1700 | 2.8 | 10.0 | 71-80-90-100-112-132 | 5030 | 5030 | 13800 | 15900 | 3310 | 3400 |
| | **301 R4** | **130** | 11.6 | 1720 | 2.3 | 10.0 | 71-80-90-100-112-132 | 5380 | 5380 | 14700 | 16900 | 3540 | 3400 |
| | **301 R4** | **143** | 10.5 | 1300 | 1.6 | 10.0 | 71-80-90-100-112-132 | 5560 | 5560 | 15200 | 17400 | 3660 | 3400 |
| | **301 R4** | **159** | 9.4 | 1740 | 1.9 | 10.0 | 71-80-90-100-112-132 | 5760 | 5760 | 15600 | 18000 | 3780 | 3400 |

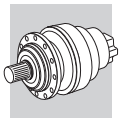


# 301 R

256

# 2060 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **301 R4** | **175** | 8.5 | 1770 | 1.8 | 10.0 | 71-80-90-100-112-132 | 5950 | 5950 | 16100 | 18500 | 3910 | 3400 |
| | **301 R4** | **215** | 7.0 | 1820 | 1.5 | 10.0 | 71-80-90-100-112-132 | 6370 | 6370 | 17100 | 19700 | 4190 | 3400 |
| | **301 R4** | **237** | 6.3 | 1300 | 0.97 | 10.0 | 71-80-90-100-112-132 | 6580 | 6580 | 17600 | 20300 | 4330 | 3400 |
| | **301 R4** | **268** | 5.6 | 1870 | 1.2 | 10.0 | 71-80-90-100-112-132 | 6860 | 6860 | 18300 | 21000 | 4510 | 3400 |
| | **301 R4** | **291** | 5.2 | 1890 | 1.2 | 10.0 | 71-80-90-100-112-132 | 7040 | 7040 | 18800 | 21500 | 4630 | 3400 |
| | **301 R4** | **363** | 4.1 | 1960 | 0.96 | 10.0 | 71-80-90-100-112-132 | 7580 | 7580 | 20000 | 23000 | 4990 | 3400 |
| | **301 R4** | **394** | 3.8 | 1360 | 0.61 | 10.0 | 71-80-90-100-112-132 | 7790 | 7790 | 20500 | 23600 | 5120 | 3400 |
| | **301 R4** | **453** | 3.3 | 1930 | 0.76 | 10.0 | 71-80-90-100-112-132 | 8160 | 8160 | 21400 | 24600 | 5370 | 3400 |
| | **301 R4** | **491** | 3.1 | 1410 | 0.51 | 10.0 | 71-80-90-100-112-132 | 8390 | 8390 | 21900 | 25200 | 5510 | 3400 |
| | **301 R4** | **613** | 2.4 | 1470 | 0.42 | 10.0 | 71-80-90-100-112-132 | 9030 | 9030 | 23500 | 27000 | 5940 | 3400 |
| | **301 R4** | **766** | 2.0 | 1530 | 0.35 | 10.0 | 71-80-90-100-112-132 | 9730 | 9730 | 25100 | 28800 | 6400 | 3400 |
| **1000** | **301 R2** | **7.13** | 140 | 1170 | 15.0 | 14.4 | 71-80-90-100-112-132 | 2340 | 2340 | 6960 | 8000 | 1540 | 3200 |
| | **301 R2** | **8.74** | 114 | 1230 | 15.0 | 14.4 | 71-80-90-100-112-132 | 2510 | 2510 | 7400 | 8500 | 1650 | 3200 |
| | **301 R2** | **11.8** | 85 | 1250 | 11.8 | 14.4 | 71-80-90-100-112-132 | 2770 | 2770 | 8100 | 9310 | 1820 | 3200 |
| | **301 R2** | **14.8** | 68 | 1050 | 7.9 | 14.4 | 71-80-90-100-112-132 | 2980 | 2980 | 8660 | 9950 | 1960 | 3200 |
| | **301 R2** | **18.5** | 54 | 740 | 4.5 | 14.4 | 71-80-90-100-112-132 | 3220 | 3220 | 9260 | 10600 | 2110 | 3200 |
| | **301 R3** | **24.8** | 40 | 1430 | 6.6 | 14.4 | 71-80-90-100-112-132 | 3550 | 3550 | 10100 | 11600 | 2330 | 3400 |
| | **301 R3** | **30.4** | 33 | 1620 | 6.1 | 14.4 | 71-80-90-100-112-132 | 3800 | 3800 | 10800 | 12400 | 2500 | 3400 |
| | **301 R3** | **37.3** | 26.8 | 1640 | 5.0 | 14.4 | 71-80-90-100-112-132 | 4060 | 4060 | 11400 | 13100 | 2670 | 3400 |
| | **301 R3** | **41.2** | 24.3 | 1300 | 3.6 | 14.4 | 71-80-90-100-112-132 | 4200 | 4200 | 11800 | 13500 | 2760 | 3400 |
| | **301 R3** | **50.4** | 19.8 | 1660 | 3.8 | 14.4 | 71-80-90-100-112-132 | 4500 | 4500 | 12500 | 14400 | 2960 | 3400 |
| | **301 R3** | **62.9** | 15.9 | 1690 | 3.1 | 14.4 | 71-80-90-100-112-132 | 4840 | 4840 | 13400 | 15400 | 3180 | 3400 |
| | **301 R3** | **68.2** | 14.7 | 1300 | 2.2 | 14.4 | 71-80-90-100-112-132 | 4970 | 4970 | 13700 | 15800 | 3270 | 3400 |
| | **301 R3** | **78.7** | 12.7 | 1590 | 2.3 | 14.4 | 71-80-90-100-112-132 | 5210 | 5210 | 14300 | 16400 | 3430 | 3400 |
| | **301 R3** | **85.2** | 11.7 | 1300 | 1.8 | 14.4 | 71-80-90-100-112-132 | 5350 | 5350 | 14700 | 16800 | 3520 | 3400 |
| | **301 R3** | **106** | 9.4 | 1300 | 1.4 | 14.4 | 71-80-90-100-112-132 | 5770 | 5770 | 15700 | 18000 | 3790 | 3400 |
| | **301 R3** | **133** | 7.5 | 1150 | 0.99 | 14.4 | 71-80-90-100-112-132 | 6210 | 6210 | 16700 | 19200 | 4080 | 3400 |
| | **301 R4** | **106** | 9.4 | 1740 | 1.9 | 12.0 | 71-80-90-100-112-132 | 5760 | 5760 | 15600 | 18000 | 3780 | 3400 |
| | **301 R4** | **130** | 7.7 | 1790 | 1.6 | 12.0 | 71-80-90-100-112-132 | 6160 | 6160 | 16600 | 19100 | 4050 | 3400 |
| | **301 R4** | **143** | 7.0 | 1300 | 1.1 | 12.0 | 71-80-90-100-112-132 | 6370 | 6370 | 17100 | 19700 | 4190 | 3400 |
| | **301 R4** | **159** | 6.3 | 1840 | 1.4 | 12.0 | 71-80-90-100-112-132 | 6590 | 6590 | 17700 | 20300 | 4330 | 3400 |
| | **301 R4** | **175** | 5.7 | 1870 | 1.3 | 12.0 | 71-80-90-100-112-132 | 6810 | 6810 | 18200 | 20900 | 4480 | 3400 |
| | **301 R4** | **215** | 4.7 | 1920 | 1.1 | 12.0 | 71-80-90-100-112-132 | 7290 | 7290 | 19300 | 22200 | 4790 | 3400 |
| | **301 R4** | **237** | 4.2 | 1340 | 0.67 | 12.0 | 71-80-90-100-112-132 | 7540 | 7540 | 19900 | 22900 | 4950 | 3400 |
| | **301 R4** | **268** | 3.7 | 2000 | 0.88 | 12.0 | 71-80-90-100-112-132 | 7850 | 7850 | 20700 | 23800 | 5160 | 3400 |
| | **301 R4** | **291** | 3.4 | 2030 | 0.82 | 12.0 | 71-80-90-100-112-132 | 8060 | 8060 | 21200 | 24300 | 5300 | 3400 |
| | **301 R4** | **363** | 2.8 | 2100 | 0.69 | 12.0 | 71-80-90-100-112-132 | 8680 | 8680 | 22600 | 26000 | 5710 | 3400 |
| | **301 R4** | **394** | 2.5 | 1460 | 0.44 | 12.0 | 71-80-90-100-112-132 | 8920 | 8920 | 23200 | 26600 | 5860 | 3400 |
| | **301 R4** | **453** | 2.2 | 2000 | 0.52 | 12.0 | 71-80-90-100-112-132 | 9350 | 9350 | 24200 | 27800 | 6140 | 3400 |
| | **301 R4** | **491** | 2.0 | 1510 | 0.36 | 12.0 | 71-80-90-100-112-132 | 9600 | 9600 | 24800 | 28500 | 6310 | 3400 |
| | **301 R4** | **613** | 1.6 | 1580 | 0.30 | 12.0 | 71-80-90-100-112-132 | 10300 | 10300 | 26500 | 30400 | 6800 | 3400 |
| | **301 R4** | **766** | 1.3 | 1640 | 0.25 | 12.0 | 71-80-90-100-112-132 | 11100 | 11100 | 28300 | 32500 | 7320 | 3400 |
| **500** | **301 R2** | **7.13** | 70 | 1370 | 10.6 | 24 | 71-80-90-100-112-132 | 2950 | 2950 | 8570 | 9850 | 1940 | 3200 |
| | **301 R2** | **8.74** | 57 | 1520 | 9.7 | 24 | 71-80-90-100-112-132 | 3160 | 3160 | 9110 | 10500 | 2080 | 3200 |
| | **301 R2** | **11.8** | 42 | 1300 | 6.1 | 24 | 71-80-90-100-112-132 | 3490 | 3490 | 9980 | 11500 | 2300 | 3200 |
| | **301 R2** | **14.8** | 34 | 1150 | 4.3 | 24 | 71-80-90-100-112-132 | 3760 | 3760 | 10700 | 12300 | 2470 | 3200 |
| | **301 R2** | **18.5** | 27.1 | 740 | 2.2 | 24 | 71-80-90-100-112-132 | 4050 | 4050 | 11400 | 13100 | 2660 | 3200 |
| | **301 R3** | **24.8** | 20.1 | 1430 | 3.3 | 24 | 71-80-90-100-112-132 | 4470 | 4470 | 12500 | 14300 | 2940 | 3400 |
| | **301 R3** | **30.4** | 16.4 | 1680 | 3.2 | 24 | 71-80-90-100-112-132 | 4790 | 4790 | 13200 | 15200 | 3150 | 3400 |
| | **301 R3** | **37.3** | 13.4 | 1700 | 2.6 | 24 | 71-80-90-100-112-132 | 5120 | 5120 | 14100 | 16200 | 3370 | 3400 |
| | **301 R3** | **41.2** | 12.1 | 1300 | 1.8 | 24 | 71-80-90-100-112-132 | 5290 | 5290 | 14500 | 16700 | 3480 | 3400 |
| | **301 R3** | **50.4** | 9.9 | 1730 | 2.0 | 24 | 71-80-90-100-112-132 | 5660 | 5660 | 15400 | 17700 | 3720 | 3400 |
| | **301 R3** | **62.9** | 7.9 | 1760 | 1.6 | 24 | 71-80-90-100-112-132 | 6100 | 6100 | 16500 | 18900 | 4010 | 3400 |
| | **301 R3** | **68.2** | 7.3 | 1300 | 1.1 | 24 | 71-80-90-100-112-132 | 6260 | 6260 | 16900 | 19400 | 4120 | 3400 |
| | **301 R3** | **78.7** | 6.4 | 1600 | 1.2 | 24 | 71-80-90-100-112-132 | 6570 | 6570 | 17600 | 20200 | 4320 | 3400 |
| | **301 R3** | **85.2** | 5.9 | 1300 | 0.88 | 24 | 71-80-90-100-112-132 | 6750 | 6750 | 18000 | 20700 | 4430 | 3400 |
| | **301 R3** | **106** | 4.7 | 1310 | 0.71 | 24 | 71-80-90-100-112-132 | 7270 | 7270 | 19300 | 22200 | 4780 | 3400 |
| | **301 R3** | **133** | 3.8 | 1150 | 0.50 | 24 | 71-80-90-100-112-132 | 7820 | 7820 | 20600 | 23700 | 5140 | 3400 |
| | **301 R4** | **106** | 4.7 | 1920 | 1.1 | 20 | 71-80-90-100-112-132 | 7250 | 7250 | 19300 | 22100 | 4770 | 3400 |



## 301 R — 256 — 2060 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **301 R4** | **130** | 3.9 | 1990 | 0.91 | 20 | 71-80-90-100-112-132 | 7760 | 7760 | 20500 | 23500 | 5100 | 3400 |
| | **301 R4** | **143** | 3.5 | 1380 | 0.57 | 20 | 71-80-90-100-112-132 | 8020 | 8020 | 21100 | 24200 | 5270 | 3400 |
| | **301 R4** | **159** | 3.1 | 2060 | 0.77 | 20 | 71-80-90-100-112-132 | 8300 | 8300 | 21700 | 25000 | 5460 | 3400 |
| | **301 R4** | **175** | 2.8 | 2090 | 0.71 | 20 | 71-80-90-100-112-132 | 8580 | 8580 | 22400 | 25700 | 5640 | 3400 |
| | **301 R4** | **215** | 2.3 | 2160 | 0.60 | 20 | 71-80-90-100-112-132 | 9180 | 9180 | 23800 | 27400 | 6040 | 3400 |
| | **301 R4** | **237** | 2.1 | 1510 | 0.37 | 20 | 71-80-90-100-112-132 | 9490 | 9490 | 24500 | 28200 | 6240 | 3400 |
| | **301 R4** | **268** | 1.9 | 2240 | 0.49 | 20 | 71-80-90-100-112-132 | 9890 | 9890 | 25500 | 29200 | 6500 | 3400 |
| | **301 R4** | **291** | 1.7 | 2270 | 0.46 | 20 | 71-80-90-100-112-132 | 10200 | 10200 | 26100 | 30000 | 6680 | 3400 |
| | **301 R4** | **363** | 1.4 | 2340 | 0.38 | 20 | 71-80-90-100-112-132 | 10900 | 10900 | 27900 | 32000 | 7190 | 3400 |
| | **301 R4** | **394** | 1.3 | 1650 | 0.25 | 20 | 71-80-90-100-112-132 | 11200 | 11200 | 28600 | 32800 | 7390 | 3400 |
| | **301 R4** | **453** | 1.1 | 2000 | 0.26 | 20 | 71-80-90-100-112-132 | 11800 | 11800 | 29800 | 34000 | 7740 | 3400 |
| | **301 R4** | **491** | 1.0 | 1710 | 0.21 | 20 | 71-80-90-100-112-132 | 12000 | 12100 | 30500 | 34000 | 7950 | 3400 |
| | **301 R4** | **613** | 0.82 | 1720 | 0.17 | 20 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |
| | **301 R4** | **766** | 0.65 | 1720 | 0.13 | 20 | 71-80-90-100-112-132 | 12000 | 12500 | 31000 | 34000 | 8000 | 3400 |

## 303 R — 266 — 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **303 R2** | **9.23** | 163 | 1680 | 30 | 18.0 | 71-80-90-100-112-132 | 6850 | 7910 | 13600 | 16400 | 4400 | 5200 |
| | **303 R2** | **10.9** | 138 | 1900 | 29 | 18.0 | 71-80-90-100-112-132 | 7240 | 8360 | 14300 | 17200 | 4650 | 5200 |
| | **303 R2** | **13.7** | 110 | 1970 | 24 | 18.0 | 71-80-90-100-112-132 | 7810 | 9020 | 15300 | 18400 | 5010 | 5200 |
| | **303 R2** | **15.9** | 94 | 1820 | 19.1 | 18.0 | 71-80-90-100-112-132 | 8220 | 9480 | 16000 | 19300 | 5270 | 5200 |
| | **303 R2** | **19.2** | 78 | 1550 | 13.5 | 18.0 | 71-80-90-100-112-132 | 8750 | 10100 | 16900 | 20400 | 5620 | 5200 |
| | **303 R2** | **24.8** | 61 | 860 | 5.8 | 18.0 | 71-80-90-100-112-132 | 9530 | 11000 | 18300 | 22000 | 6110 | 5200 |
| | **303 R3** | **25.7** | 58 | 2030 | 13.6 | 14.0 | 71-80-90-100-112-132 | 9640 | 11100 | 18500 | 22200 | 6190 | 5200 |
| | **303 R3** | **31.5** | 48 | 2110 | 11.5 | 14.0 | 71-80-90-100-112-132 | 10300 | 11900 | 19600 | 23600 | 6620 | 5200 |
| | **303 R3** | **37.1** | 40 | 2390 | 11.1 | 14.0 | 71-80-90-100-112-132 | 10900 | 12600 | 20600 | 24800 | 7000 | 5200 |
| | **303 R3** | **42.6** | 35 | 2070 | 8.4 | 14.0 | 71-80-90-100-112-132 | 11400 | 13200 | 21500 | 25900 | 7320 | 5200 |
| | **303 R3** | **46.6** | 32 | 2160 | 8.0 | 14.0 | 71-80-90-100-112-132 | 11800 | 13600 | 22100 | 26600 | 7550 | 5200 |
| | **303 R3** | **50.3** | 29.8 | 2380 | 8.2 | 14.0 | 71-80-90-100-112-132 | 12100 | 13900 | 22600 | 27200 | 7740 | 5200 |
| | **303 R3** | **54.2** | 27.7 | 1820 | 5.8 | 14.0 | 71-80-90-100-112-132 | 12400 | 14300 | 23100 | 27800 | 7930 | 5200 |
| | **303 R3** | **63.1** | 23.8 | 2170 | 5.9 | 14.0 | 71-80-90-100-112-132 | 13000 | 15000 | 24200 | 29100 | 8350 | 5200 |
| | **303 R3** | **73.3** | 20.5 | 1820 | 4.3 | 14.0 | 71-80-90-100-112-132 | 13700 | 15800 | 25300 | 30500 | 8780 | 5200 |
| | **303 R3** | **78.7** | 19.1 | 2180 | 4.8 | 14.0 | 71-80-90-100-112-132 | 14000 | 16200 | 25900 | 31100 | 8990 | 5200 |
| | **303 R3** | **91.5** | 16.4 | 1820 | 3.4 | 14.0 | 71-80-90-100-112-132 | 14700 | 17000 | 27100 | 32600 | 9450 | 5200 |
| | **303 R3** | **114** | 13.1 | 1820 | 2.7 | 14.0 | 71-80-90-100-112-132 | 15900 | 18300 | 28900 | 34800 | 10200 | 5200 |
| | **303 R4** | **129** | 11.6 | 2620 | 3.6 | 12.0 | 71-80-90-100-112-132 | 16500 | 19100 | 30000 | 36100 | 10600 | 5200 |
| | **303 R4** | **148** | 10.1 | 2310 | 2.8 | 12.0 | 71-80-90-100-112-132 | 17300 | 20000 | 31300 | 37600 | 11100 | 5200 |
| | **303 R4** | **158** | 9.5 | 2660 | 3.0 | 12.0 | 71-80-90-100-112-132 | 17700 | 20400 | 31900 | 38400 | 11300 | 5200 |
| | **303 R4** | **185** | 8.1 | 2310 | 2.2 | 12.0 | 71-80-90-100-112-132 | 18600 | 21500 | 33400 | 40200 | 11900 | 5200 |
| | **303 R4** | **214** | 7.0 | 2730 | 2.3 | 12.0 | 71-80-90-100-112-132 | 19600 | 22600 | 34900 | 42000 | 12500 | 5200 |
| | **303 R4** | **231** | 6.5 | 1830 | 1.4 | 12.0 | 71-80-90-100-112-132 | 20100 | 23100 | 35700 | 43000 | 12900 | 5200 |
| | **303 R4** | **255** | 5.9 | 1840 | 1.3 | 12.0 | 71-80-90-100-112-132 | 20700 | 23900 | 36800 | 44300 | 13300 | 5200 |
| | **303 R4** | **290** | 5.2 | 2650 | 1.6 | 12.0 | 71-80-90-100-112-132 | 21600 | 25000 | 38300 | 46000 | 13900 | 5200 |
| | **303 R4** | **313** | 4.8 | 1850 | 1.1 | 12.0 | 71-80-90-100-112-132 | 22200 | 25600 | 39100 | 47100 | 14200 | 5200 |
| | **303 R4** | **336** | 4.5 | 2270 | 1.2 | 12.0 | 71-80-90-100-112-132 | 22700 | 26200 | 40000 | 48100 | 14600 | 5200 |
| | **303 R4** | **364** | 4.1 | 2310 | 1.1 | 12.0 | 71-80-90-100-112-132 | 23300 | 26900 | 40900 | 49300 | 15000 | 5200 |
| | **303 R4** | **390** | 3.8 | 1930 | 0.88 | 12.0 | 71-80-90-100-112-132 | 23900 | 27600 | 41800 | 50300 | 15300 | 5200 |
| | **303 R4** | **452** | 3.3 | 2250 | 0.88 | 12.0 | 71-80-90-100-112-132 | 25100 | 28900 | 43700 | 52600 | 16100 | 5200 |
| | **303 R4** | **528** | 2.8 | 2030 | 0.68 | 12.0 | 71-80-90-100-112-132 | 26400 | 30500 | 45800 | 55100 | 16900 | 5200 |
| | **303 R4** | **567** | 2.6 | 2430 | 0.76 | 12.0 | 71-80-90-100-112-132 | 27000 | 31200 | 46800 | 56300 | 17400 | 5200 |
| | **303 R4** | **659** | 2.3 | 2110 | 0.57 | 12.0 | 71-80-90-100-112-132 | 28400 | 32800 | 48900 | 58900 | 18200 | 5200 |
| | **303 R4** | **797** | 1.9 | 1820 | 0.41 | 12.0 | 71-80-90-100-112-132 | 30300 | 35000 | 51800 | 62300 | 19400 | 5200 |
| | **303 R4** | **824** | 1.8 | 2200 | 0.47 | 12.0 | 71-80-90-100-112-132 | 30600 | 35400 | 52300 | 62900 | 19700 | 5200 |
| **1000** | **303 R2** | **9.23** | 108 | 1890 | 23 | 22 | 71-80-90-100-112-132 | 7850 | 9060 | 15400 | 18500 | 5030 | 5200 |
| | **303 R2** | **10.9** | 92 | 2140 | 22 | 22 | 71-80-90-100-112-132 | 8290 | 9570 | 16100 | 19400 | 5320 | 5200 |
| | **303 R2** | **13.7** | 73 | 2080 | 16.9 | 22 | 71-80-90-100-112-132 | 8940 | 10300 | 17300 | 20800 | 5740 | 5200 |
| | **303 R2** | **15.9** | 63 | 1820 | 12.7 | 22 | 71-80-90-100-112-132 | 9400 | 10900 | 18100 | 21700 | 6030 | 5200 |

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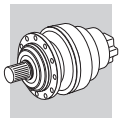
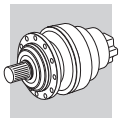


# 303 R

266

# 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **303 R2** | **19.2** | 52 | 1640 | 9.5 | 22 | 71-80-90-100-112-132 | 10000 | 11600 | 19100 | 23000 | 6430 | 5200 |
| | **303 R2** | **24.8** | 40 | 860 | 3.9 | 22 | 71-80-90-100-112-132 | 10900 | 12600 | 20700 | 24800 | 7000 | 5200 |
| | **303 R3** | **25.7** | 39 | 2160 | 9.6 | 16.8 | 71-80-90-100-112-132 | 11000 | 12700 | 20900 | 25100 | 7080 | 5200 |
| | **303 R3** | **31.5** | 32 | 2160 | 7.9 | 16.8 | 71-80-90-100-112-132 | 11800 | 13600 | 22200 | 26700 | 7580 | 5200 |
| | **303 R3** | **37.1** | 26.9 | 2460 | 7.6 | 16.8 | 71-80-90-100-112-132 | 12500 | 14400 | 23300 | 28100 | 8010 | 5200 |
| | **303 R3** | **42.6** | 23.5 | 2110 | 5.7 | 16.8 | 71-80-90-100-112-132 | 13100 | 15100 | 24300 | 29200 | 8380 | 5200 |
| | **303 R3** | **46.6** | 21.5 | 2170 | 5.3 | 16.8 | 71-80-90-100-112-132 | 13500 | 15500 | 25000 | 30000 | 8640 | 5200 |
| | **303 R3** | **50.3** | 19.9 | 2470 | 5.6 | 16.8 | 71-80-90-100-112-132 | 13800 | 15900 | 25500 | 30700 | 8860 | 5200 |
| | **303 R3** | **54.2** | 18.5 | 1820 | 3.9 | 16.8 | 71-80-90-100-112-132 | 14200 | 16300 | 26100 | 31400 | 9080 | 5200 |
| | **303 R3** | **63.1** | 15.9 | 2180 | 4.0 | 16.8 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 5200 |
| | **303 R3** | **73.3** | 13.6 | 1820 | 2.8 | 16.8 | 71-80-90-100-112-132 | 15700 | 18100 | 28600 | 34400 | 10000 | 5200 |
| | **303 R3** | **78.7** | 12.7 | 2190 | 3.2 | 16.8 | 71-80-90-100-112-132 | 16000 | 18500 | 29200 | 35100 | 10300 | 5200 |
| | **303 R3** | **91.5** | 10.9 | 1820 | 2.3 | 16.8 | 71-80-90-100-112-132 | 16900 | 19500 | 30600 | 36800 | 10800 | 5200 |
| | **303 R3** | **114** | 8.7 | 1820 | 1.8 | 16.8 | 71-80-90-100-112-132 | 18200 | 21000 | 32700 | 39300 | 11700 | 5200 |
| | **303 R4** | **129** | 7.7 | 2710 | 2.5 | 14.4 | 71-80-90-100-112-132 | 18900 | 21800 | 33900 | 40800 | 12100 | 5200 |
| | **303 R4** | **148** | 6.7 | 2310 | 1.8 | 14.4 | 71-80-90-100-112-132 | 19800 | 22900 | 35300 | 42500 | 12700 | 5200 |
| | **303 R4** | **158** | 6.3 | 2760 | 2.1 | 14.4 | 71-80-90-100-112-132 | 20200 | 23400 | 36000 | 43300 | 13000 | 5200 |
| | **303 R4** | **185** | 5.4 | 2310 | 1.5 | 14.4 | 71-80-90-100-112-132 | 21300 | 24600 | 37700 | 45400 | 13700 | 5200 |
| | **303 R4** | **214** | 4.7 | 2810 | 1.6 | 14.4 | 71-80-90-100-112-132 | 22400 | 25800 | 39500 | 47500 | 14400 | 5200 |
| | **303 R4** | **231** | 4.3 | 1890 | 0.97 | 14.4 | 71-80-90-100-112-132 | 23000 | 26500 | 40300 | 48500 | 14700 | 5200 |
| | **303 R4** | **255** | 3.9 | 1920 | 0.89 | 14.4 | 71-80-90-100-112-132 | 23700 | 27400 | 41600 | 50000 | 15200 | 5200 |
| | **303 R4** | **290** | 3.4 | 2680 | 1.1 | 14.4 | 71-80-90-100-112-132 | 24800 | 28600 | 43200 | 52000 | 15900 | 5200 |
| | **303 R4** | **313** | 3.2 | 1990 | 0.75 | 14.4 | 71-80-90-100-112-132 | 25400 | 29300 | 44200 | 53200 | 16300 | 5200 |
| | **303 R4** | **336** | 3.0 | 2440 | 0.86 | 14.4 | 71-80-90-100-112-132 | 26000 | 30000 | 45100 | 54300 | 16700 | 5200 |
| | **303 R4** | **364** | 2.7 | 2480 | 0.81 | 14.4 | 71-80-90-100-112-132 | 26700 | 30800 | 46200 | 55600 | 17100 | 5200 |
| | **303 R4** | **390** | 2.6 | 2070 | 0.63 | 14.4 | 71-80-90-100-112-132 | 27300 | 31600 | 47200 | 56800 | 17500 | 5200 |
| | **303 R4** | **452** | 2.2 | 2250 | 0.59 | 14.4 | 71-80-90-100-112-132 | 28700 | 33100 | 49300 | 59400 | 18400 | 5200 |
| | **303 R4** | **528** | 1.9 | 2180 | 0.49 | 14.4 | 71-80-90-100-112-132 | 30200 | 34900 | 51700 | 62200 | 19400 | 5200 |
| | **303 R4** | **567** | 1.8 | 2600 | 0.54 | 14.4 | 71-80-90-100-112-132 | 31000 | 35700 | 52800 | 63500 | 19900 | 5200 |
| | **303 R4** | **659** | 1.5 | 2270 | 0.41 | 14.4 | 71-80-90-100-112-132 | 32600 | 37600 | 55300 | 66500 | 20900 | 5200 |
| | **303 R4** | **797** | 1.3 | 1930 | 0.29 | 14.4 | 71-80-90-100-112-132 | 34700 | 40000 | 58500 | 70400 | 22300 | 5200 |
| | **303 R4** | **824** | 1.2 | 2360 | 0.34 | 14.4 | 71-80-90-100-112-132 | 35100 | 40500 | 59100 | 71100 | 22500 | 5200 |
| **500** | **303 R2** | **9.23** | 54 | 2260 | 13.7 | 36 | 71-80-90-100-112-132 | 9890 | 11400 | 18900 | 22700 | 6340 | 5200 |
| | **303 R2** | **10.9** | 46 | 2570 | 13.2 | 36 | 71-80-90-100-112-132 | 10400 | 12100 | 19900 | 23900 | 6700 | 5200 |
| | **303 R2** | **13.7** | 37 | 2150 | 8.8 | 36 | 71-80-90-100-112-132 | 11300 | 13000 | 21300 | 25600 | 7230 | 5200 |
| | **303 R2** | **15.9** | 31 | 1820 | 6.4 | 36 | 71-80-90-100-112-132 | 11800 | 13700 | 22300 | 26800 | 7600 | 5200 |
| | **303 R2** | **19.2** | 26.0 | 1650 | 4.8 | 36 | 71-80-90-100-112-132 | 12600 | 14600 | 23600 | 28300 | 8100 | 5200 |
| | **303 R2** | **24.8** | 20.2 | 860 | 1.9 | 36 | 71-80-90-100-112-132 | 13700 | 15900 | 25400 | 30600 | 8810 | 5200 |
| | **303 R3** | **25.7** | 19.5 | 2230 | 5.0 | 28 | 71-80-90-100-112-132 | 13900 | 16100 | 25700 | 30900 | 8920 | 5200 |
| | **303 R3** | **31.5** | 15.9 | 2250 | 4.1 | 28 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 5200 |
| | **303 R3** | **37.1** | 13.5 | 2590 | 4.0 | 28 | 71-80-90-100-112-132 | 15700 | 18200 | 28700 | 34500 | 10100 | 5200 |
| | **303 R3** | **42.6** | 11.7 | 2190 | 3.0 | 28 | 71-80-90-100-112-132 | 16500 | 19000 | 29900 | 36000 | 10600 | 5200 |
| | **303 R3** | **46.6** | 10.7 | 2200 | 2.7 | 28 | 71-80-90-100-112-132 | 17000 | 19600 | 30700 | 37000 | 10900 | 5200 |
| | **303 R3** | **50.3** | 9.9 | 2620 | 3.0 | 28 | 71-80-90-100-112-132 | 17400 | 20100 | 31400 | 37800 | 11200 | 5200 |
| | **303 R3** | **54.2** | 9.2 | 1820 | 1.9 | 28 | 71-80-90-100-112-132 | 17800 | 20600 | 32200 | 38700 | 11400 | 5200 |
| | **303 R3** | **63.1** | 7.9 | 2210 | 2.0 | 28 | 71-80-90-100-112-132 | 18800 | 21700 | 33700 | 40500 | 12000 | 5200 |
| | **303 R3** | **73.3** | 6.8 | 1830 | 1.4 | 28 | 71-80-90-100-112-132 | 19700 | 22800 | 35200 | 42400 | 12700 | 5200 |
| | **303 R3** | **78.7** | 6.4 | 2220 | 1.6 | 28 | 71-80-90-100-112-132 | 20200 | 23300 | 36000 | 43300 | 13000 | 5200 |
| | **303 R3** | **91.5** | 5.5 | 1840 | 1.2 | 28 | 71-80-90-100-112-132 | 21200 | 24500 | 37600 | 45300 | 13600 | 5200 |
| | **303 R3** | **114** | 4.4 | 1880 | 0.94 | 28 | 71-80-90-100-112-132 | 22900 | 26400 | 40200 | 48400 | 14700 | 5200 |
| | **303 R4** | **129** | 3.9 | 2810 | 1.3 | 24 | 71-80-90-100-112-132 | 23800 | 27500 | 41700 | 50200 | 15300 | 5200 |
| | **303 R4** | **148** | 3.4 | 2310 | 0.92 | 24 | 71-80-90-100-112-132 | 24900 | 28800 | 43500 | 52300 | 16000 | 5200 |
| | **303 R4** | **158** | 3.2 | 2810 | 1.0 | 24 | 71-80-90-100-112-132 | 25500 | 29400 | 44400 | 53400 | 16400 | 5200 |
| | **303 R4** | **185** | 2.7 | 2310 | 0.74 | 24 | 71-80-90-100-112-132 | 26900 | 31000 | 46500 | 55900 | 17200 | 5200 |
| | **303 R4** | **214** | 2.3 | 2820 | 0.78 | 24 | 71-80-90-100-112-132 | 28200 | 32600 | 48600 | 58400 | 18100 | 5200 |
| | **303 R4** | **231** | 2.2 | 2130 | 0.55 | 24 | 71-80-90-100-112-132 | 28900 | 33400 | 49700 | 59800 | 18600 | 5200 |
| | **303 R4** | **255** | 2.0 | 2170 | 0.50 | 24 | 71-80-90-100-112-132 | 29900 | 34500 | 51200 | 61600 | 19200 | 5200 |
| | **303 R4** | **290** | 1.7 | 2730 | 0.56 | 24 | 71-80-90-100-112-132 | 31200 | 36000 | 53200 | 64000 | 20000 | 5200 |
| | **303 R4** | **313** | 1.6 | 2250 | 0.43 | 24 | 71-80-90-100-112-132 | 32000 | 36900 | 54400 | 65400 | 20500 | 5200 |
| | **303 R4** | **336** | 1.5 | 2700 | 0.48 | 24 | 71-80-90-100-112-132 | 32800 | 37800 | 55600 | 66900 | 21000 | 5200 |



## 303 R

266

## 2970 Nm

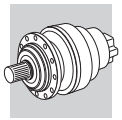
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) - | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **303 R4** | **364** | 1.4 | 2730 | 0.44 | 24 | 71-80-90-100-112-132 | 33700 | 38800 | 56900 | 68500 | 21600 | 5200 |
| | **303 R4** | **390** | 1.3 | 2340 | 0.35 | 24 | 71-80-90-100-112-132 | 34400 | 39800 | 58100 | 69900 | 22100 | 5200 |
| | **303 R4** | **452** | 1.1 | 2250 | 0.29 | 24 | 71-80-90-100-112-132 | 36000 | 41700 | 60700 | 73100 | 23200 | 5200 |
| | **303 R4** | **528** | 0.95 | 2440 | 0.27 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 63700 | 74000 | 24000 | 5200 |
| | **303 R4** | **567** | 0.88 | 2850 | 0.30 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 R4** | **659** | 0.76 | 2440 | 0.22 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 R4** | **797** | 0.63 | 2000 | 0.15 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |
| | **303 R4** | **824** | 0.61 | 2440 | 0.18 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 5200 |

## 304 R

278

## 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) - | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **304 R2** | **9.23** | 163 | 1680 | 30 | 18.0 | 71-80-90-100-112-132 | 6850 | 7910 | 13600 | 16400 | 4400 | 6600 |
| | **304 R2** | **10.9** | 138 | 1980 | 30 | 18.0 | 71-80-90-100-112-132 | 7240 | 8360 | 14300 | 17200 | 4650 | 6600 |
| | **304 R2** | **13.7** | 110 | 2490 | 30 | 18.0 | 71-80-90-100-112-132 | 7810 | 9020 | 15300 | 18400 | 5010 | 6600 |
| | **304 R2** | **16.8** | 89 | 2390 | 24 | 18.0 | 71-80-90-100-112-132 | 8380 | 9670 | 16300 | 19600 | 5370 | 6600 |
| | **304 R3** | **25.7** | 58 | 3020 | 15.0 | 14.0 | 71-80-90-100-112-132 | 9640 | 11100 | 18500 | 22200 | 6190 | 7300 |
| | **304 R3** | **31.5** | 48 | 3090 | 15.0 | 14.0 | 71-80-90-100-112-132 | 10300 | 11900 | 19600 | 23600 | 6620 | 7300 |
| | **304 R3** | **37.1** | 40 | 3440 | 15.0 | 14.0 | 71-80-90-100-112-132 | 10900 | 12600 | 20600 | 24800 | 7000 | 7300 |
| | **304 R3** | **42.6** | 35 | 3190 | 12.9 | 14.0 | 71-80-90-100-112-132 | 11400 | 13200 | 21500 | 25900 | 7320 | 7300 |
| | **304 R3** | **46.6** | 32 | 2850 | 10.5 | 14.0 | 71-80-90-100-112-132 | 11800 | 13600 | 22100 | 26600 | 7550 | 7300 |
| | **304 R3** | **50.3** | 29.8 | 3460 | 11.9 | 14.0 | 71-80-90-100-112-132 | 12100 | 13900 | 22600 | 27200 | 7740 | 7300 |
| | **304 R3** | **63.1** | 23.8 | 2850 | 7.8 | 14.0 | 71-80-90-100-112-132 | 13000 | 15000 | 24200 | 29100 | 8350 | 7300 |
| | **304 R3** | **78.7** | 19.1 | 2850 | 6.2 | 14.0 | 71-80-90-100-112-132 | 14000 | 16200 | 25900 | 31100 | 8990 | 7300 |
| | **304 R3** | **97.0** | 15.5 | 2390 | 4.2 | 14.0 | 71-80-90-100-112-132 | 15000 | 17300 | 27500 | 33100 | 9630 | 7300 |
| | **304 R3** | **121** | 12.4 | 2390 | 3.4 | 14.0 | 71-80-90-100-112-132 | 16200 | 18700 | 29400 | 35400 | 10400 | 7300 |
| | **304 R4** | **89.4** | 16.8 | 3330 | 6.6 | 12.0 | 71-80-90-100-112-132 | 14600 | 16900 | 26900 | 32300 | 9370 | 7300 |
| | **304 R4** | **109** | 13.7 | 3370 | 5.5 | 12.0 | 71-80-90-100-112-132 | 15600 | 18000 | 28600 | 34400 | 10000 | 7300 |
| | **304 R4** | **129** | 11.6 | 3530 | 4.8 | 12.0 | 71-80-90-100-112-132 | 16500 | 19100 | 30000 | 36100 | 10600 | 7300 |
| | **304 R4** | **148** | 10.1 | 3440 | 4.1 | 12.0 | 71-80-90-100-112-132 | 17300 | 20000 | 31300 | 37600 | 11100 | 7300 |
| | **304 R4** | **158** | 9.5 | 3550 | 4.0 | 12.0 | 71-80-90-100-112-132 | 17700 | 20400 | 31900 | 38400 | 11300 | 7300 |
| | **304 R4** | **185** | 8.1 | 3460 | 3.3 | 12.0 | 71-80-90-100-112-132 | 18600 | 21500 | 33400 | 40200 | 11900 | 7300 |
| | **304 R4** | **214** | 7.0 | 3620 | 3.0 | 12.0 | 71-80-90-100-112-132 | 19600 | 22600 | 34900 | 42000 | 12500 | 7300 |
| | **304 R4** | **227** | 6.6 | 3480 | 2.7 | 12.0 | 71-80-90-100-112-132 | 19900 | 23000 | 35500 | 42700 | 12800 | 7300 |
| | **304 R4** | **267** | 5.6 | 3660 | 2.4 | 12.0 | 71-80-90-100-112-132 | 21100 | 24300 | 37300 | 44900 | 13500 | 7300 |
| | **304 R4** | **290** | 5.2 | 3680 | 2.3 | 12.0 | 71-80-90-100-112-132 | 21600 | 25000 | 38300 | 46000 | 13900 | 7300 |
| | **304 R4** | **307** | 4.9 | 3500 | 2.0 | 12.0 | 71-80-90-100-112-132 | 22000 | 25400 | 38900 | 46800 | 14100 | 7300 |
| | **304 R4** | **338** | 4.4 | 2420 | 1.3 | 12.0 | 71-80-90-100-112-132 | 22800 | 26300 | 40000 | 48200 | 14600 | 7300 |
| | **304 R4** | **364** | 4.1 | 2940 | 1.4 | 12.0 | 71-80-90-100-112-132 | 23300 | 26900 | 40900 | 49300 | 15000 | 7300 |
| | **304 R4** | **414** | 3.6 | 2470 | 1.1 | 12.0 | 71-80-90-100-112-132 | 24300 | 28100 | 42500 | 51200 | 15600 | 7300 |
| | **304 R4** | **452** | 3.3 | 3690 | 1.4 | 12.0 | 71-80-90-100-112-132 | 25100 | 28900 | 43700 | 52600 | 16100 | 7300 |
| | **304 R4** | **560** | 2.7 | 2540 | 0.81 | 12.0 | 71-80-90-100-112-132 | 26900 | 31100 | 46600 | 56100 | 17300 | 7300 |
| | **304 R4** | **699** | 2.1 | 2630 | 0.67 | 12.0 | 71-80-90-100-112-132 | 29000 | 33500 | 49800 | 59900 | 18600 | 7300 |
| **1000** | **304 R2** | **9.23** | 108 | 1890 | 23 | 21.6 | 71-80-90-100-112-132 | 7850 | 9060 | 15400 | 18500 | 5030 | 6600 |
| | **304 R2** | **10.9** | 92 | 2240 | 23 | 21.6 | 71-80-90-100-112-132 | 8290 | 9570 | 16100 | 19400 | 5320 | 6600 |
| | **304 R2** | **13.7** | 73 | 2690 | 22 | 21.6 | 71-80-90-100-112-132 | 8940 | 10300 | 17300 | 20800 | 5740 | 6600 |
| | **304 R2** | **16.8** | 59 | 2390 | 15.8 | 21.6 | 71-80-90-100-112-132 | 9590 | 11100 | 18400 | 22100 | 6150 | 6600 |
| | **304 R3** | **25.7** | 39 | 3130 | 14.0 | 16.8 | 71-80-90-100-112-132 | 11000 | 12700 | 20900 | 25100 | 7080 | 7300 |
| | **304 R3** | **31.5** | 32 | 3180 | 11.6 | 16.8 | 71-80-90-100-112-132 | 11800 | 13600 | 22200 | 26700 | 7580 | 7300 |
| | **304 R3** | **37.1** | 26.9 | 3470 | 10.7 | 16.8 | 71-80-90-100-112-132 | 12500 | 14400 | 23300 | 28100 | 8010 | 7300 |
| | **304 R3** | **42.6** | 23.5 | 3270 | 8.8 | 16.8 | 71-80-90-100-112-132 | 13100 | 15100 | 24300 | 29200 | 8380 | 7300 |
| | **304 R3** | **46.6** | 21.5 | 2850 | 7.0 | 16.8 | 71-80-90-100-112-132 | 13500 | 15500 | 25000 | 30000 | 8640 | 7300 |
| | **304 R3** | **50.3** | 19.9 | 3490 | 8.0 | 16.8 | 71-80-90-100-112-132 | 13800 | 15900 | 25500 | 30700 | 8860 | 7300 |
| | **304 R3** | **63.1** | 15.9 | 2850 | 5.2 | 16.8 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 7300 |
| | **304 R3** | **78.7** | 12.7 | 2850 | 4.2 | 16.8 | 71-80-90-100-112-132 | 16000 | 18500 | 29200 | 35100 | 10300 | 7300 |
| | **304 R3** | **97.0** | 10.3 | 2390 | 2.8 | 16.8 | 71-80-90-100-112-132 | 17200 | 19800 | 31100 | 37400 | 11000 | 7300 |
| | **304 R3** | **121** | 8.2 | 2390 | 2.3 | 16.8 | 71-80-90-100-112-132 | 18500 | 21400 | 33300 | 40000 | 11900 | 7300 |

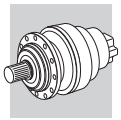


## 304 R — 278 — 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **304 R4** | **89.4** | 11.2 | 3420 | 4.5 | 14.4 | 71-80-90-100-112-132 | 16700 | 19300 | 30300 | 36500 | 10700 | 7300 |
| | **304 R4** | **109** | 9.1 | 3450 | 3.7 | 14.4 | 71-80-90-100-112-132 | 17900 | 20700 | 32300 | 38800 | 11500 | 7300 |
| | **304 R4** | **129** | 7.7 | 3590 | 3.3 | 14.4 | 71-80-90-100-112-132 | 18900 | 21800 | 33900 | 40800 | 12100 | 7300 |
| | **304 R4** | **148** | 6.7 | 3470 | 2.8 | 14.4 | 71-80-90-100-112-132 | 19800 | 22900 | 35300 | 42500 | 12700 | 7300 |
| | **304 R4** | **158** | 6.3 | 3640 | 2.7 | 14.4 | 71-80-90-100-112-132 | 20200 | 23400 | 36000 | 43300 | 13000 | 7300 |
| | **304 R4** | **185** | 5.4 | 3490 | 2.2 | 14.4 | 71-80-90-100-112-132 | 21300 | 24600 | 37700 | 45400 | 13700 | 7300 |
| | **304 R4** | **214** | 4.7 | 3700 | 2.0 | 14.4 | 71-80-90-100-112-132 | 22400 | 25800 | 39500 | 47500 | 14400 | 7300 |
| | **304 R4** | **227** | 4.4 | 3500 | 1.8 | 14.4 | 71-80-90-100-112-132 | 22800 | 26300 | 40100 | 48300 | 14600 | 7300 |
| | **304 R4** | **267** | 3.7 | 3720 | 1.6 | 14.4 | 71-80-90-100-112-132 | 24100 | 27800 | 42200 | 50700 | 15500 | 7300 |
| | **304 R4** | **290** | 3.4 | 3720 | 1.5 | 14.4 | 71-80-90-100-112-132 | 24800 | 28600 | 43200 | 52000 | 15900 | 7300 |
| | **304 R4** | **307** | 3.3 | 3510 | 1.4 | 14.4 | 71-80-90-100-112-132 | 25200 | 29100 | 43900 | 52800 | 16200 | 7300 |
| | **304 R4** | **338** | 3.0 | 2520 | 0.88 | 14.4 | 71-80-90-100-112-132 | 26000 | 30100 | 45200 | 54400 | 16700 | 7300 |
| | **304 R4** | **364** | 2.7 | 3140 | 1.0 | 14.4 | 71-80-90-100-112-132 | 26700 | 30800 | 46200 | 55600 | 17100 | 7300 |
| | **304 R4** | **414** | 2.4 | 2580 | 0.74 | 14.4 | 71-80-90-100-112-132 | 27900 | 32200 | 48100 | 57800 | 17900 | 7300 |
| | **304 R4** | **452** | 2.2 | 3740 | 0.98 | 14.4 | 71-80-90-100-112-132 | 28700 | 33100 | 49300 | 59400 | 18400 | 7300 |
| | **304 R4** | **560** | 1.8 | 2720 | 0.57 | 14.4 | 71-80-90-100-112-132 | 30800 | 35600 | 52600 | 63300 | 19800 | 7300 |
| | **304 R4** | **699** | 1.4 | 2830 | 0.48 | 14.4 | 71-80-90-100-112-132 | 33200 | 38300 | 56300 | 67700 | 21300 | 7300 |
| **500** | **304 R2** | **9.23** | 54 | 2330 | 14.1 | 36 | 71-80-90-100-112-132 | 9890 | 11400 | 18900 | 22700 | 6340 | 6600 |
| | **304 R2** | **10.9** | 46 | 2720 | 13.9 | 36 | 71-80-90-100-112-132 | 10400 | 12100 | 19900 | 23900 | 6700 | 6600 |
| | **304 R2** | **13.7** | 37 | 2850 | 11.6 | 36 | 71-80-90-100-112-132 | 11300 | 13000 | 21300 | 25600 | 7230 | 6600 |
| | **304 R2** | **16.8** | 29.7 | 2390 | 7.9 | 36 | 71-80-90-100-112-132 | 12100 | 13900 | 22600 | 27200 | 7750 | 6600 |
| | **304 R3** | **25.7** | 19.5 | 3290 | 7.3 | 28 | 71-80-90-100-112-132 | 13900 | 16100 | 25700 | 30900 | 8920 | 7300 |
| | **304 R3** | **31.5** | 15.9 | 3330 | 6.1 | 28 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 7300 |
| | **304 R3** | **37.1** | 13.5 | 3520 | 5.4 | 28 | 71-80-90-100-112-132 | 15700 | 18200 | 28700 | 34500 | 10100 | 7300 |
| | **304 R3** | **42.6** | 11.7 | 3410 | 4.6 | 28 | 71-80-90-100-112-132 | 16500 | 19000 | 29900 | 36000 | 10600 | 7300 |
| | **304 R3** | **46.6** | 10.7 | 2850 | 3.5 | 28 | 71-80-90-100-112-132 | 17000 | 19600 | 30700 | 37000 | 10900 | 7300 |
| | **304 R3** | **50.3** | 9.9 | 3540 | 4.0 | 28 | 71-80-90-100-112-132 | 17400 | 20100 | 31400 | 37800 | 11200 | 7300 |
| | **304 R3** | **63.1** | 7.9 | 2850 | 2.6 | 28 | 71-80-90-100-112-132 | 18800 | 21700 | 33700 | 40500 | 12000 | 7300 |
| | **304 R3** | **78.7** | 6.4 | 2850 | 2.1 | 28 | 71-80-90-100-112-132 | 20200 | 23300 | 36000 | 43300 | 13000 | 7300 |
| | **304 R3** | **97.0** | 5.2 | 2390 | 1.4 | 28 | 71-80-90-100-112-132 | 21700 | 25000 | 38300 | 46100 | 13900 | 7300 |
| | **304 R3** | **121** | 4.1 | 2440 | 1.2 | 28 | 71-80-90-100-112-132 | 23300 | 26900 | 40900 | 49300 | 15000 | 7300 |
| | **304 R4** | **89.4** | 5.6 | 3490 | 2.3 | 24 | 71-80-90-100-112-132 | 21100 | 24300 | 37400 | 45000 | 13500 | 7300 |
| | **304 R4** | **109** | 4.6 | 3500 | 1.9 | 24 | 71-80-90-100-112-132 | 22500 | 26000 | 39700 | 47800 | 14500 | 7300 |
| | **304 R4** | **129** | 3.9 | 3710 | 1.7 | 24 | 71-80-90-100-112-132 | 23800 | 27500 | 41700 | 50200 | 15300 | 7300 |
| | **304 R4** | **148** | 3.4 | 3510 | 1.4 | 24 | 71-80-90-100-112-132 | 24900 | 28800 | 43500 | 52300 | 16000 | 7300 |
| | **304 R4** | **158** | 3.2 | 3730 | 1.4 | 24 | 71-80-90-100-112-132 | 25500 | 29400 | 44400 | 53400 | 16400 | 7300 |
| | **304 R4** | **185** | 2.7 | 3520 | 1.1 | 24 | 71-80-90-100-112-132 | 26900 | 31000 | 46500 | 55900 | 17200 | 7300 |
| | **304 R4** | **214** | 2.3 | 3770 | 1.0 | 24 | 71-80-90-100-112-132 | 28200 | 32600 | 48600 | 58400 | 18100 | 7300 |
| | **304 R4** | **227** | 2.2 | 3550 | 0.93 | 24 | 71-80-90-100-112-132 | 28700 | 33200 | 49400 | 59400 | 18400 | 7300 |
| | **304 R4** | **267** | 1.9 | 3820 | 0.84 | 24 | 71-80-90-100-112-132 | 30400 | 35100 | 51900 | 62500 | 19500 | 7300 |
| | **304 R4** | **290** | 1.7 | 3830 | 0.78 | 24 | 71-80-90-100-112-132 | 31200 | 36000 | 53200 | 64000 | 20000 | 7300 |
| | **304 R4** | **307** | 1.6 | 3610 | 0.70 | 24 | 71-80-90-100-112-132 | 31800 | 36700 | 54100 | 65100 | 20400 | 7300 |
| | **304 R4** | **338** | 1.5 | 2810 | 0.49 | 24 | 71-80-90-100-112-132 | 32800 | 37900 | 55700 | 67000 | 21100 | 7300 |
| | **304 R4** | **364** | 1.4 | 3540 | 0.58 | 24 | 71-80-90-100-112-132 | 33700 | 38800 | 56900 | 68500 | 21600 | 7300 |
| | **304 R4** | **414** | 1.2 | 2910 | 0.42 | 24 | 71-80-90-100-112-132 | 35100 | 40500 | 59200 | 71200 | 22500 | 7300 |
| | **304 R4** | **452** | 1.1 | 3930 | 0.51 | 24 | 71-80-90-100-112-132 | 36000 | 41700 | 60700 | 73100 | 23200 | 7300 |
| | **304 R4** | **560** | 0.89 | 3010 | 0.32 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |
| | **304 R4** | **699** | 0.71 | 3010 | 0.25 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 7300 |

## 305 R — 290 — 5600 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **305 R2** | **9.23** | 163 | 1680 | 30 | 18.0 | 71-80-90-100-112-132 | 6850 | 7910 | 13600 | 16400 | 4400 | 7700 |
| | **305 R2** | **10.9** | 138 | 1980 | 30 | 18.0 | 71-80-90-100-112-132 | 7240 | 8360 | 14300 | 17200 | 4650 | 7700 |
| | **305 R2** | **13.7** | 110 | 2490 | 30 | 18.0 | 71-80-90-100-112-132 | 7810 | 9020 | 15300 | 18400 | 5010 | 7700 |
| | **305 R2** | **15.9** | 94 | 2890 | 30 | 18.0 | 71-80-90-100-112-132 | 8220 | 9480 | 16000 | 19300 | 5270 | 7700 |
| | **305 R2** | **19.2** | 78 | 2860 | 25 | 18.0 | 71-80-90-100-112-132 | 8750 | 10100 | 16900 | 20400 | 5620 | 7700 |



# 305 R

290

# 5600 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **305 R3** | **25.7** | 58 | 3630 | 15.0 | 14.0 | 71-80-90-100-112-132 | 9640 | 11100 | 18500 | 22200 | 6190 | 8800 |
| | **305 R3** | **31.5** | 48 | 3770 | 15.0 | 14.0 | 71-80-90-100-112-132 | 10300 | 11900 | 19600 | 23600 | 6620 | 8800 |
| | **305 R3** | **37.1** | 40 | 4340 | 15.0 | 14.0 | 71-80-90-100-112-132 | 10900 | 12600 | 20600 | 24800 | 7000 | 8800 |
| | **305 R3** | **42.6** | 35 | 3790 | 15.0 | 14.0 | 71-80-90-100-112-132 | 11400 | 13200 | 21500 | 25900 | 7320 | 8800 |
| | **305 R3** | **46.6** | 32 | 4310 | 15.0 | 14.0 | 71-80-90-100-112-132 | 11800 | 13600 | 22100 | 26600 | 7550 | 8800 |
| | **305 R3** | **50.3** | 29.8 | 4410 | 15.0 | 14.0 | 71-80-90-100-112-132 | 12100 | 13900 | 22600 | 27200 | 7740 | 8800 |
| | **305 R3** | **54.2** | 27.7 | 3570 | 11.3 | 14.0 | 71-80-90-100-112-132 | 12400 | 14300 | 23100 | 27800 | 7930 | 8800 |
| | **305 R3** | **63.1** | 23.8 | 4330 | 11.8 | 14.0 | 71-80-90-100-112-132 | 13000 | 15000 | 24200 | 29100 | 8350 | 8800 |
| | **305 R3** | **73.3** | 20.5 | 3580 | 8.4 | 14.0 | 71-80-90-100-112-132 | 13700 | 15800 | 25300 | 30500 | 8780 | 8800 |
| | **305 R3** | **78.7** | 19.1 | 4350 | 9.5 | 14.0 | 71-80-90-100-112-132 | 14000 | 16200 | 25900 | 31100 | 8990 | 8800 |
| | **305 R3** | **91.5** | 16.4 | 3580 | 6.7 | 14.0 | 71-80-90-100-112-132 | 14700 | 17000 | 27100 | 32600 | 9450 | 8800 |
| | **305 R3** | **114** | 13.1 | 3580 | 5.4 | 14.0 | 71-80-90-100-112-132 | 15900 | 18300 | 28900 | 34800 | 10200 | 8800 |
| | **305 R4** | **129** | 11.6 | 5200 | 7.1 | 12.0 | 71-80-90-100-112-132 | 16500 | 19100 | 30000 | 36100 | 10600 | 8800 |
| | **305 R4** | **148** | 10.1 | 4480 | 5.4 | 12.0 | 71-80-90-100-112-132 | 17300 | 20000 | 31300 | 37600 | 11100 | 8800 |
| | **305 R4** | **158** | 9.5 | 5310 | 6.0 | 12.0 | 71-80-90-100-112-132 | 17700 | 20400 | 31900 | 38400 | 11300 | 8800 |
| | **305 R4** | **185** | 8.1 | 4490 | 4.3 | 12.0 | 71-80-90-100-112-132 | 18600 | 21500 | 33400 | 40200 | 11900 | 8800 |
| | **305 R4** | **214** | 7.0 | 5390 | 4.5 | 12.0 | 71-80-90-100-112-132 | 19600 | 22600 | 34900 | 42000 | 12500 | 8800 |
| | **305 R4** | **231** | 6.5 | 3600 | 2.8 | 12.0 | 71-80-90-100-112-132 | 20100 | 23100 | 35700 | 43000 | 12900 | 8800 |
| | **305 R4** | **255** | 5.9 | 3600 | 2.5 | 12.0 | 71-80-90-100-112-132 | 20700 | 23900 | 36800 | 44300 | 13300 | 8800 |
| | **305 R4** | **290** | 5.2 | 5300 | 3.2 | 12.0 | 71-80-90-100-112-132 | 21600 | 25000 | 38300 | 46000 | 13900 | 8800 |
| | **305 R4** | **313** | 4.8 | 3620 | 2.1 | 12.0 | 71-80-90-100-112-132 | 22200 | 25600 | 39100 | 47100 | 14200 | 8800 |
| | **305 R4** | **336** | 4.5 | 4560 | 2.4 | 12.0 | 71-80-90-100-112-132 | 22700 | 26200 | 40000 | 48100 | 14600 | 8800 |
| | **305 R4** | **364** | 4.1 | 4620 | 2.3 | 12.0 | 71-80-90-100-112-132 | 23300 | 26900 | 40900 | 49300 | 15000 | 8800 |
| | **305 R4** | **390** | 3.8 | 3750 | 1.7 | 12.0 | 71-80-90-100-112-132 | 23900 | 27600 | 41800 | 50300 | 15300 | 8800 |
| | **305 R4** | **452** | 3.3 | 4750 | 1.9 | 12.0 | 71-80-90-100-112-132 | 25100 | 28900 | 43700 | 52600 | 16100 | 8800 |
| | **305 R4** | **528** | 2.8 | 3920 | 1.3 | 12.0 | 71-80-90-100-112-132 | 26400 | 30500 | 45800 | 55100 | 16900 | 8800 |
| | **305 R4** | **567** | 2.6 | 4860 | 1.5 | 12.0 | 71-80-90-100-112-132 | 27000 | 31200 | 46800 | 56300 | 17400 | 8800 |
| | **305 R4** | **659** | 2.3 | 4070 | 1.1 | 12.0 | 71-80-90-100-112-132 | 28400 | 32800 | 48900 | 58900 | 18200 | 8800 |
| | **305 R4** | **797** | 1.9 | 3450 | 0.77 | 12.0 | 71-80-90-100-112-132 | 30300 | 35000 | 51800 | 62300 | 19400 | 8800 |
| | **305 R4** | **824** | 1.8 | 4230 | 0.91 | 12.0 | 71-80-90-100-112-132 | 30600 | 35400 | 52300 | 62900 | 19700 | 8800 |
| **1000** | **305 R2** | **9.23** | 108 | 1890 | 23 | 22 | 71-80-90-100-112-132 | 7850 | 9060 | 15400 | 18500 | 5030 | 7700 |
| | **305 R2** | **10.9** | 92 | 2240 | 23 | 22 | 71-80-90-100-112-132 | 8290 | 9570 | 16100 | 19400 | 5320 | 7700 |
| | **305 R2** | **13.7** | 73 | 2810 | 23 | 22 | 71-80-90-100-112-132 | 8940 | 10300 | 17300 | 20800 | 5740 | 7700 |
| | **305 R2** | **15.9** | 63 | 3270 | 23 | 22 | 71-80-90-100-112-132 | 9400 | 10900 | 18100 | 21700 | 6030 | 7700 |
| | **305 R2** | **19.2** | 52 | 2990 | 17.3 | 22 | 71-80-90-100-112-132 | 10000 | 11600 | 19100 | 23000 | 6430 | 7700 |
| | **305 R3** | **25.7** | 39 | 3900 | 15.0 | 16.8 | 71-80-90-100-112-132 | 11000 | 12700 | 20900 | 25100 | 7080 | 8800 |
| | **305 R3** | **31.5** | 32 | 3950 | 14.4 | 16.8 | 71-80-90-100-112-132 | 11800 | 13600 | 22200 | 26700 | 7580 | 8800 |
| | **305 R3** | **37.1** | 26.9 | 4600 | 14.2 | 16.8 | 71-80-90-100-112-132 | 12500 | 14400 | 23300 | 28100 | 8010 | 8800 |
| | **305 R3** | **42.6** | 23.5 | 3990 | 10.7 | 16.8 | 71-80-90-100-112-132 | 13100 | 15100 | 24300 | 29200 | 8380 | 8800 |
| | **305 R3** | **46.6** | 21.5 | 4340 | 10.7 | 16.8 | 71-80-90-100-112-132 | 13500 | 15500 | 25000 | 30000 | 8640 | 8800 |
| | **305 R3** | **50.3** | 19.9 | 4700 | 10.7 | 16.8 | 71-80-90-100-112-132 | 13800 | 15900 | 25500 | 30700 | 8860 | 8800 |
| | **305 R3** | **54.2** | 18.5 | 3580 | 7.6 | 16.8 | 71-80-90-100-112-132 | 14200 | 16300 | 26100 | 31400 | 9080 | 8800 |
| | **305 R3** | **63.1** | 15.9 | 4370 | 7.9 | 16.8 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 8800 |
| | **305 R3** | **73.3** | 13.6 | 3590 | 5.6 | 16.8 | 71-80-90-100-112-132 | 15700 | 18100 | 28600 | 34400 | 10000 | 8800 |
| | **305 R3** | **78.7** | 12.7 | 4380 | 6.4 | 16.8 | 71-80-90-100-112-132 | 16000 | 18500 | 29200 | 35100 | 10300 | 8800 |
| | **305 R3** | **91.5** | 10.9 | 3600 | 4.5 | 16.8 | 71-80-90-100-112-132 | 16900 | 19500 | 30600 | 36800 | 10800 | 8800 |
| | **305 R3** | **114** | 8.7 | 3600 | 3.6 | 16.8 | 71-80-90-100-112-132 | 18200 | 21000 | 32700 | 39300 | 11700 | 8800 |
| | **305 R4** | **129** | 7.7 | 5370 | 4.9 | 14.4 | 71-80-90-100-112-132 | 18900 | 21800 | 33900 | 40800 | 12100 | 8800 |
| | **305 R4** | **148** | 6.7 | 4490 | 3.6 | 14.4 | 71-80-90-100-112-132 | 19800 | 22900 | 35300 | 42500 | 12700 | 8800 |
| | **305 R4** | **158** | 6.3 | 5420 | 4.0 | 14.4 | 71-80-90-100-112-132 | 20200 | 23400 | 36000 | 43300 | 13000 | 8800 |
| | **305 R4** | **185** | 5.4 | 4490 | 2.9 | 14.4 | 71-80-90-100-112-132 | 21300 | 24600 | 37700 | 45400 | 13700 | 8800 |
| | **305 R4** | **214** | 4.7 | 5480 | 3.0 | 14.4 | 71-80-90-100-112-132 | 22400 | 25800 | 39500 | 47500 | 14400 | 8800 |
| | **305 R4** | **231** | 4.3 | 3680 | 1.9 | 14.4 | 71-80-90-100-112-132 | 23000 | 26500 | 40300 | 48500 | 14700 | 8800 |
| | **305 R4** | **255** | 3.9 | 3740 | 1.7 | 14.4 | 71-80-90-100-112-132 | 23700 | 27400 | 41600 | 50000 | 15200 | 8800 |
| | **305 R4** | **290** | 3.4 | 5350 | 2.2 | 14.4 | 71-80-90-100-112-132 | 24800 | 28600 | 43200 | 52000 | 15900 | 8800 |
| | **305 R4** | **313** | 3.2 | 3850 | 1.5 | 14.4 | 71-80-90-100-112-132 | 25400 | 29300 | 44200 | 53200 | 16300 | 8800 |
| | **305 R4** | **336** | 3.0 | 4890 | 1.7 | 14.4 | 71-80-90-100-112-132 | 26000 | 30000 | 45100 | 54300 | 16700 | 8800 |
| | **305 R4** | **364** | 2.7 | 4960 | 1.6 | 14.4 | 71-80-90-100-112-132 | 26700 | 30800 | 46200 | 55600 | 17100 | 8800 |
| | **305 R4** | **390** | 2.6 | 3980 | 1.2 | 14.4 | 71-80-90-100-112-132 | 27300 | 31600 | 47200 | 56800 | 17500 | 8800 |
| | **305 R4** | **452** | 2.2 | 4750 | 1.2 | 14.4 | 71-80-90-100-112-132 | 28700 | 33100 | 49300 | 59400 | 18400 | 8800 |
| | **305 R4** | **528** | 1.9 | 4200 | 0.94 | 14.4 | 71-80-90-100-112-132 | 30200 | 34900 | 51700 | 62200 | 19400 | 8800 |

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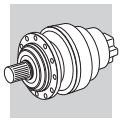
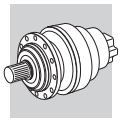


## 305 R — 290 — 5600 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **305 R4** | **567** | 1.8 | 5160 | 1.1 | 14.4 | 71-80-90-100-112-132 | 31000 | 35700 | 52800 | 63500 | 19900 | 8800 |
| | **305 R4** | **659** | 1.5 | 4360 | 0.78 | 14.4 | 71-80-90-100-112-132 | 32600 | 37600 | 55300 | 66500 | 20900 | 8800 |
| | **305 R4** | **797** | 1.3 | 3670 | 0.54 | 14.4 | 71-80-90-100-112-132 | 34700 | 40000 | 58500 | 70400 | 22300 | 8800 |
| | **305 R4** | **824** | 1.2 | 4530 | 0.65 | 14.4 | 71-80-90-100-112-132 | 35100 | 40500 | 59100 | 71100 | 22500 | 8800 |
| **500** | **305 R2** | **9.23** | 54 | 2330 | 14.1 | 36 | 71-80-90-100-112-132 | 9890 | 11400 | 18900 | 22700 | 6340 | 7700 |
| | **305 R2** | **10.9** | 46 | 2750 | 14.0 | 36 | 71-80-90-100-112-132 | 10400 | 12100 | 19900 | 23900 | 6700 | 7700 |
| | **305 R2** | **13.7** | 37 | 3340 | 13.6 | 36 | 71-80-90-100-112-132 | 11300 | 13000 | 21300 | 25600 | 7230 | 7700 |
| | **305 R2** | **15.9** | 31 | 3530 | 12.4 | 36 | 71-80-90-100-112-132 | 11800 | 13700 | 22300 | 26800 | 7600 | 7700 |
| | **305 R2** | **19.2** | 26.0 | 3040 | 8.8 | 36 | 71-80-90-100-112-132 | 12600 | 14600 | 23600 | 28300 | 8100 | 7700 |
| | **305 R3** | **25.7** | 19.5 | 4190 | 9.4 | 28 | 71-80-90-100-112-132 | 13900 | 16100 | 25700 | 30900 | 8920 | 8800 |
| | **305 R3** | **31.5** | 15.9 | 4260 | 7.8 | 28 | 71-80-90-100-112-132 | 14900 | 17200 | 27300 | 32900 | 9550 | 8800 |
| | **305 R3** | **37.1** | 13.5 | 5080 | 7.8 | 28 | 71-80-90-100-112-132 | 15700 | 18200 | 28700 | 34500 | 10100 | 8800 |
| | **305 R3** | **42.6** | 11.7 | 4340 | 5.9 | 28 | 71-80-90-100-112-132 | 16500 | 19000 | 29900 | 36000 | 10600 | 8800 |
| | **305 R3** | **46.6** | 10.7 | 4390 | 5.4 | 28 | 71-80-90-100-112-132 | 17000 | 19600 | 30700 | 37000 | 10900 | 8800 |
| | **305 R3** | **50.3** | 9.9 | 5230 | 6.0 | 28 | 71-80-90-100-112-132 | 17400 | 20100 | 31400 | 37800 | 11200 | 8800 |
| | **305 R3** | **54.2** | 9.2 | 3600 | 3.8 | 28 | 71-80-90-100-112-132 | 17800 | 20600 | 32200 | 38700 | 11400 | 8800 |
| | **305 R3** | **63.1** | 7.9 | 4420 | 4.0 | 28 | 71-80-90-100-112-132 | 18800 | 21700 | 33700 | 40500 | 12000 | 8800 |
| | **305 R3** | **73.3** | 6.8 | 3600 | 2.8 | 28 | 71-80-90-100-112-132 | 19700 | 22800 | 35200 | 42400 | 12700 | 8800 |
| | **305 R3** | **78.7** | 6.4 | 4450 | 3.2 | 28 | 71-80-90-100-112-132 | 20200 | 23300 | 36000 | 43300 | 13000 | 8800 |
| | **305 R3** | **91.5** | 5.5 | 3600 | 2.3 | 28 | 71-80-90-100-112-132 | 21200 | 24500 | 37600 | 45300 | 13600 | 8800 |
| | **305 R3** | **114** | 4.4 | 3670 | 1.8 | 28 | 71-80-90-100-112-132 | 22900 | 26400 | 40200 | 48400 | 14700 | 8800 |
| | **305 R4** | **129** | 3.9 | 5480 | 2.5 | 24 | 71-80-90-100-112-132 | 23800 | 27500 | 41700 | 50200 | 15300 | 8800 |
| | **305 R4** | **148** | 3.4 | 4490 | 1.8 | 24 | 71-80-90-100-112-132 | 24900 | 28800 | 43500 | 52300 | 16000 | 8800 |
| | **305 R4** | **158** | 3.2 | 5490 | 2.1 | 24 | 71-80-90-100-112-132 | 25500 | 29400 | 44400 | 53400 | 16400 | 8800 |
| | **305 R4** | **185** | 2.7 | 4490 | 1.4 | 24 | 71-80-90-100-112-132 | 26900 | 31000 | 46500 | 55900 | 17200 | 8800 |
| | **305 R4** | **214** | 2.3 | 5520 | 1.5 | 24 | 71-80-90-100-112-132 | 28200 | 32600 | 48600 | 58400 | 18100 | 8800 |
| | **305 R4** | **231** | 2.2 | 4100 | 1.1 | 24 | 71-80-90-100-112-132 | 28900 | 33400 | 49700 | 59800 | 18600 | 8800 |
| | **305 R4** | **255** | 2.0 | 4170 | 0.97 | 24 | 71-80-90-100-112-132 | 29900 | 34500 | 51200 | 61600 | 19200 | 8800 |
| | **305 R4** | **290** | 1.7 | 5450 | 1.1 | 24 | 71-80-90-100-112-132 | 31200 | 36000 | 53200 | 64000 | 20000 | 8800 |
| | **305 R4** | **313** | 1.6 | 4320 | 0.82 | 24 | 71-80-90-100-112-132 | 32000 | 36900 | 54400 | 65400 | 20500 | 8800 |
| | **305 R4** | **336** | 1.5 | 5350 | 0.94 | 24 | 71-80-90-100-112-132 | 32800 | 37800 | 55600 | 66900 | 21000 | 8800 |
| | **305 R4** | **364** | 1.4 | 5400 | 0.88 | 24 | 71-80-90-100-112-132 | 33700 | 38800 | 56900 | 68500 | 21600 | 8800 |
| | **305 R4** | **390** | 1.3 | 4490 | 0.68 | 24 | 71-80-90-100-112-132 | 34400 | 39800 | 58100 | 69900 | 22100 | 8800 |
| | **305 R4** | **452** | 1.1 | 4750 | 0.62 | 24 | 71-80-90-100-112-132 | 36000 | 41700 | 60700 | 73100 | 23200 | 8800 |
| | **305 R4** | **528** | 0.95 | 4690 | 0.53 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 63700 | 74000 | 24000 | 8800 |
| | **305 R4** | **567** | 0.88 | 5600 | 0.58 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 R4** | **659** | 0.76 | 4690 | 0.42 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 R4** | **797** | 0.63 | 3800 | 0.28 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |
| | **305 R4** | **824** | 0.61 | 4690 | 0.34 | 24 | 71-80-90-100-112-132 | 36000 | 42000 | 64000 | 74000 | 24000 | 8800 |

## 306 R — 302 — 7300 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **306 R2** | **9.23** | 163 | 1680 | 30 | 18.0 | 71-80-90-100-112-132-160 | 8540 | 9670 | 22200 | 25900 | 6410 | 12000 |
| | **306 R2** | **10.9** | 138 | 1980 | 30 | 18.0 | 71-80-90-100-112-132-160 | 9020 | 10200 | 23400 | 27200 | 6780 | 12000 |
| | **306 R2** | **13.7** | 110 | 2490 | 30 | 18.0 | 71-80-90-100-112-132-160 | 9730 | 11000 | 25000 | 29100 | 7310 | 12000 |
| | **306 R2** | **15.9** | 94 | 2890 | 30 | 18.0 | 71-80-90-100-112-132-160 | 10200 | 11600 | 26200 | 30500 | 7690 | 12000 |
| | **306 R2** | **19.2** | 78 | 3490 | 30 | 18.0 | 71-80-90-100-112-132-160 | 10900 | 12400 | 27700 | 32300 | 8190 | 12000 |
| | **306 R3** | **33.2** | 45 | 5810 | 30 | 14.0 | 71-80-90-100-112-132-160 | 13100 | 14800 | 32700 | 38000 | 9830 | 14900 |
| | **306 R3** | **39.2** | 38 | 6550 | 29 | 14.0 | 71-80-90-100-112-132-160 | 13800 | 15700 | 34300 | 40000 | 10400 | 14900 |
| | **306 R3** | **46.3** | 32 | 7510 | 28 | 14.0 | 71-80-90-100-112-132-160 | 14600 | 16600 | 36100 | 42000 | 11000 | 14900 |
| | **306 R3** | **58.1** | 25.8 | 7580 | 22 | 14.0 | 71-80-90-100-112-132-160 | 15800 | 17900 | 38600 | 45000 | 11800 | 14900 |
| | **306 R3** | **67.5** | 22.2 | 7090 | 18.1 | 14.0 | 71-80-90-100-112-132-160 | 16600 | 18800 | 40400 | 47100 | 12500 | 14900 |
| | **306 R3** | **72.9** | 20.6 | 7420 | 17.5 | 14.0 | 71-80-90-100-112-132-160 | 17000 | 19300 | 41300 | 48100 | 12800 | 14900 |
| | **306 R3** | **84.7** | 17.7 | 7530 | 15.3 | 14.0 | 71-80-90-100-112-132-160 | 17900 | 20300 | 43300 | 50400 | 13400 | 14900 |
| | **306 R3** | **98.5** | 15.2 | 6490 | 11.3 | 14.0 | 71-80-90-100-112-132-160 | 18800 | 21300 | 45300 | 52700 | 14100 | 14900 |
| | **306 R3** | **119** | 12.6 | 6490 | 9.4 | 14.0 | 71-80-90-100-112-132-160 | 20000 | 22700 | 47900 | 55800 | 15000 | 14900 |



# 306 R

302

# 7300 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **306 R3** | **144** | 10.4 | 5490 | 6.6 | 14.0 | 71-80-90-100-112-132-160 | 21300 | 24200 | 50700 | 59100 | 16000 | 14900 |
| | **306 R4** | **158** | 9.5 | 9620 | 10.8 | 12.0 | 71-80-90-100-112-132-160 | 22000 | 24900 | 52100 | 60700 | 16500 | 14900 |
| | **306 R4** | **168** | 8.9 | 7560 | 8.0 | 12.0 | 71-80-90-100-112-132-160 | 22400 | 25400 | 53100 | 61800 | 16900 | 14900 |
| | **306 R4** | **181** | 8.3 | 9450 | 9.3 | 12.0 | 71-80-90-100-112-132-160 | 23000 | 26100 | 54300 | 63200 | 17300 | 14900 |
| | **306 R4** | **214** | 7.0 | 9730 | 8.1 | 12.0 | 71-80-90-100-112-132-160 | 24300 | 27600 | 57100 | 66500 | 18300 | 14900 |
| | **306 R4** | **230** | 6.5 | 7590 | 5.8 | 12.0 | 71-80-90-100-112-132-160 | 24900 | 28300 | 58400 | 68000 | 18700 | 14900 |
| | **306 R4** | **249** | 6.0 | 8200 | 5.9 | 12.0 | 71-80-90-100-112-132-160 | 25600 | 29000 | 59700 | 69600 | 19200 | 14900 |
| | **306 R4** | **289** | 5.2 | 8280 | 5.1 | 12.0 | 71-80-90-100-112-132-160 | 26900 | 30500 | 62500 | 72800 | 20200 | 14900 |
| | **306 R4** | **312** | 4.8 | 7590 | 4.3 | 12.0 | 71-80-90-100-112-132-160 | 27600 | 31300 | 63900 | 74500 | 20700 | 14900 |
| | **306 R4** | **389** | 3.9 | 7590 | 3.5 | 12.0 | 71-80-90-100-112-132-160 | 29700 | 33700 | 68300 | 79600 | 22300 | 14900 |
| | **306 R4** | **420** | 3.6 | 8790 | 3.7 | 12.0 | 71-80-90-100-112-132-160 | 30500 | 34500 | 69900 | 81400 | 22900 | 14900 |
| | **306 R4** | **455** | 3.3 | 7020 | 2.7 | 12.0 | 71-80-90-100-112-132-160 | 31300 | 35500 | 71600 | 83400 | 23500 | 14900 |
| | **306 R4** | **488** | 3.1 | 9020 | 3.3 | 12.0 | 71-80-90-100-112-132-160 | 32000 | 36300 | 73200 | 85200 | 24100 | 14900 |
| | **306 R4** | **550** | 2.7 | 7260 | 2.3 | 12.0 | 71-80-90-100-112-132-160 | 33300 | 37800 | 75800 | 88300 | 25100 | 14900 |
| | **306 R4** | **590** | 2.5 | 8480 | 2.5 | 12.0 | 71-80-90-100-112-132-160 | 34100 | 38700 | 77400 | 90200 | 25600 | 14900 |
| | **306 R4** | **665** | 2.3 | 6010 | 1.6 | 12.0 | 71-80-90-100-112-132-160 | 35500 | 40300 | 80300 | 93500 | 26700 | 14900 |
| | **306 R4** | **830** | 1.8 | 6270 | 1.3 | 12.0 | 71-80-90-100-112-132-160 | 38300 | 43300 | 85800 | 99900 | 28700 | 14900 |
| **1000** | **306 R2** | **9.23** | 108 | 1890 | 23 | 22 | 71-80-90-100-112-132-160 | 9770 | 11100 | 25100 | 29200 | 7340 | 12000 |
| | **306 R2** | **10.9** | 92 | 2240 | 23 | 22 | 71-80-90-100-112-132-160 | 10300 | 11700 | 26400 | 30700 | 7760 | 12000 |
| | **306 R2** | **13.7** | 73 | 2810 | 23 | 22 | 71-80-90-100-112-132-160 | 11100 | 12600 | 28300 | 32900 | 8370 | 12000 |
| | **306 R2** | **15.9** | 63 | 3270 | 23 | 22 | 71-80-90-100-112-132-160 | 11700 | 13300 | 29600 | 34400 | 8800 | 12000 |
| | **306 R2** | **19.2** | 52 | 3940 | 23 | 22 | 71-80-90-100-112-132-160 | 12500 | 14100 | 31300 | 36500 | 9380 | 12000 |
| | **306 R3** | **33.2** | 30 | 6330 | 22 | 16.8 | 71-80-90-100-112-132-160 | 15000 | 17000 | 36900 | 43000 | 11300 | 14900 |
| | **306 R3** | **39.2** | 25.5 | 7280 | 21 | 16.8 | 71-80-90-100-112-132-160 | 15800 | 17900 | 38800 | 45100 | 11900 | 14900 |
| | **306 R3** | **46.3** | 21.6 | 8170 | 20 | 16.8 | 71-80-90-100-112-132-160 | 16700 | 19000 | 40800 | 47500 | 12600 | 14900 |
| | **306 R3** | **58.1** | 17.2 | 8200 | 16.2 | 16.8 | 71-80-90-100-112-132-160 | 18000 | 20400 | 43600 | 50800 | 13600 | 14900 |
| | **306 R3** | **67.5** | 14.8 | 7340 | 12.5 | 16.8 | 71-80-90-100-112-132-160 | 19000 | 21500 | 45600 | 53100 | 14300 | 14900 |
| | **306 R3** | **72.9** | 13.7 | 7710 | 12.1 | 16.8 | 71-80-90-100-112-132-160 | 19500 | 22000 | 46700 | 54400 | 14600 | 14900 |
| | **306 R3** | **84.7** | 11.8 | 7820 | 10.6 | 16.8 | 71-80-90-100-112-132-160 | 20500 | 23200 | 48900 | 56900 | 15400 | 14900 |
| | **306 R3** | **98.5** | 10.2 | 6500 | 7.6 | 16.8 | 71-80-90-100-112-132-160 | 21500 | 24400 | 51100 | 59500 | 16200 | 14900 |
| | **306 R3** | **119** | 8.4 | 6510 | 6.3 | 16.8 | 71-80-90-100-112-132-160 | 22900 | 26000 | 54100 | 63000 | 17200 | 14900 |
| | **306 R3** | **144** | 6.9 | 5500 | 4.4 | 16.8 | 71-80-90-100-112-132-160 | 24400 | 27700 | 57300 | 66700 | 18400 | 14900 |
| | **306 R4** | **158** | 6.3 | 9760 | 7.3 | 14.4 | 71-80-90-100-112-132-160 | 25200 | 28500 | 58900 | 68600 | 18900 | 14900 |
| | **306 R4** | **168** | 6.0 | 7660 | 5.4 | 14.4 | 71-80-90-100-112-132-160 | 25700 | 29100 | 60000 | 69800 | 19300 | 14900 |
| | **306 R4** | **181** | 5.5 | 9450 | 6.2 | 14.4 | 71-80-90-100-112-132-160 | 26400 | 29900 | 61300 | 71400 | 19800 | 14900 |
| | **306 R4** | **214** | 4.7 | 9850 | 5.5 | 14.4 | 71-80-90-100-112-132-160 | 27800 | 31600 | 64500 | 75100 | 20900 | 14900 |
| | **306 R4** | **230** | 4.3 | 7590 | 3.9 | 14.4 | 71-80-90-100-112-132-160 | 28600 | 32400 | 65900 | 76800 | 21500 | 14900 |
| | **306 R4** | **249** | 4.0 | 8620 | 4.1 | 14.4 | 71-80-90-100-112-132-160 | 29300 | 33200 | 67500 | 78600 | 22000 | 14900 |
| | **306 R4** | **289** | 3.5 | 8840 | 3.6 | 14.4 | 71-80-90-100-112-132-160 | 30800 | 34900 | 70600 | 82200 | 23100 | 14900 |
| | **306 R4** | **312** | 3.2 | 7590 | 2.9 | 14.4 | 71-80-90-100-112-132-160 | 31600 | 35800 | 72200 | 84100 | 23700 | 14900 |
| | **306 R4** | **389** | 2.6 | 7590 | 2.3 | 14.4 | 71-80-90-100-112-132-160 | 34000 | 38500 | 77200 | 89900 | 25500 | 14900 |
| | **306 R4** | **420** | 2.4 | 9390 | 2.6 | 14.4 | 71-80-90-100-112-132-160 | 34900 | 39500 | 79000 | 91900 | 26200 | 14900 |
| | **306 R4** | **455** | 2.2 | 7530 | 2.0 | 14.4 | 71-80-90-100-112-132-160 | 35800 | 40600 | 80900 | 94200 | 26900 | 14900 |
| | **306 R4** | **488** | 2.0 | 9390 | 2.3 | 14.4 | 71-80-90-100-112-132-160 | 36700 | 41600 | 82600 | 96200 | 27600 | 14900 |
| | **306 R4** | **550** | 1.8 | 7740 | 1.7 | 14.4 | 71-80-90-100-112-132-160 | 38200 | 43200 | 85600 | 99700 | 28700 | 14900 |
| | **306 R4** | **590** | 1.7 | 8910 | 1.8 | 14.4 | 71-80-90-100-112-132-160 | 39100 | 44300 | 87500 | 101800 | 29400 | 14900 |
| | **306 R4** | **665** | 1.5 | 6490 | 1.2 | 14.4 | 71-80-90-100-112-132-160 | 40700 | 46100 | 90700 | 105600 | 30600 | 14900 |
| | **306 R4** | **830** | 1.2 | 6760 | 0.96 | 14.4 | 71-80-90-100-112-132-160 | 43800 | 49600 | 96900 | 112800 | 32900 | 14900 |
| **500** | **306 R2** | **9.23** | 54 | 2330 | 14.1 | 36 | 71-80-90-100-112-132-160 | 12300 | 13900 | 30900 | 36000 | 9250 | 12000 |
| | **306 R2** | **10.9** | 46 | 2750 | 14.0 | 36 | 71-80-90-100-112-132-160 | 13000 | 14700 | 32500 | 37800 | 9770 | 12000 |
| | **306 R2** | **13.7** | 37 | 3460 | 14.1 | 36 | 71-80-90-100-112-132-160 | 14000 | 15900 | 34800 | 40500 | 10500 | 12000 |
| | **306 R2** | **15.9** | 31 | 4020 | 14.1 | 36 | 71-80-90-100-112-132-160 | 14800 | 16700 | 36400 | 42400 | 11100 | 12000 |
| | **306 R2** | **19.2** | 26.0 | 4510 | 13.1 | 36 | 71-80-90-100-112-132-160 | 15700 | 17800 | 38500 | 44900 | 11800 | 12000 |
| | **306 R3** | **33.2** | 15.1 | 7350 | 12.7 | 28 | 71-80-90-100-112-132-160 | 18900 | 21400 | 45400 | 52900 | 14200 | 14900 |
| | **306 R3** | **39.2** | 12.8 | 8730 | 12.8 | 28 | 71-80-90-100-112-132-160 | 19900 | 22600 | 47700 | 55600 | 15000 | 14900 |
| | **306 R3** | **46.3** | 10.8 | 9450 | 11.7 | 28 | 71-80-90-100-112-132-160 | 21100 | 23900 | 50200 | 58400 | 15800 | 14900 |
| | **306 R3** | **58.1** | 8.6 | 9100 | 9.0 | 28 | 71-80-90-100-112-132-160 | 22700 | 25800 | 53700 | 62500 | 17100 | 14900 |
| | **306 R3** | **67.5** | 7.4 | 7590 | 6.4 | 28 | 71-80-90-100-112-132-160 | 23900 | 27100 | 56200 | 65400 | 18000 | 14900 |
| | **306 R3** | **72.9** | 6.9 | 8140 | 6.4 | 28 | 71-80-90-100-112-132-160 | 24500 | 27800 | 57500 | 66900 | 18400 | 14900 |
| | **306 R3** | **84.7** | 5.9 | 8210 | 5.6 | 28 | 71-80-90-100-112-132-160 | 25800 | 29200 | 60100 | 70000 | 19400 | 14900 |

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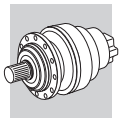

## 306 R

302

## 7300 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **306 R3** | **98.5** | 5.1 | 6530 | 3.8 | 28 | 71-80-90-100-112-132-160 | 27100 | 30700 | 62900 | 73300 | 20400 | 14900 |
| | **306 R3** | **119** | 4.2 | 6730 | 3.2 | 28 | 71-80-90-100-112-132-160 | 28900 | 32700 | 66600 | 77600 | 21700 | 14900 |
| | **306 R3** | **144** | 3.5 | 5710 | 2.3 | 28 | 71-80-90-100-112-132-160 | 30800 | 34900 | 70500 | 82100 | 23100 | 14900 |
| | **306 R4** | **158** | 3.2 | 9850 | 3.7 | 24 | 71-80-90-100-112-132-160 | 31700 | 35900 | 72500 | 84400 | 23800 | 14900 |
| | **306 R4** | **168** | 3.0 | 7700 | 2.7 | 24 | 71-80-90-100-112-132-160 | 32400 | 36700 | 73800 | 86000 | 24300 | 14900 |
| | **306 R4** | **181** | 2.8 | 9450 | 3.1 | 24 | 71-80-90-100-112-132-160 | 33200 | 37600 | 75500 | 87900 | 24900 | 14900 |
| | **306 R4** | **214** | 2.3 | 9890 | 2.7 | 24 | 71-80-90-100-112-132-160 | 35100 | 39800 | 79400 | 92400 | 26400 | 14900 |
| | **306 R4** | **230** | 2.2 | 7640 | 2.0 | 24 | 71-80-90-100-112-132-160 | 36000 | 40800 | 81200 | 94500 | 27000 | 14900 |
| | **306 R4** | **249** | 2.0 | 9520 | 2.3 | 24 | 71-80-90-100-112-132-160 | 36900 | 41800 | 83100 | 96700 | 27700 | 14900 |
| | **306 R4** | **289** | 1.7 | 9430 | 1.9 | 24 | 71-80-90-100-112-132-160 | 38800 | 44000 | 86900 | 101200 | 29200 | 14900 |
| | **306 R4** | **312** | 1.6 | 7730 | 1.5 | 24 | 71-80-90-100-112-132-160 | 39800 | 45100 | 88900 | 103500 | 29900 | 14900 |
| | **306 R4** | **389** | 1.3 | 8240 | 1.3 | 24 | 71-80-90-100-112-132-160 | 42800 | 48500 | 95000 | 110600 | 32200 | 14900 |
| | **306 R4** | **420** | 1.2 | 9940 | 1.4 | 24 | 71-80-90-100-112-132-160 | 44000 | 49800 | 97200 | 113200 | 33000 | 14900 |
| | **306 R4** | **455** | 1.1 | 8490 | 1.1 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 99600 | 115900 | 33900 | 14900 |
| | **306 R4** | **488** | 1.0 | 9530 | 1.2 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 118400 | 34700 | 14900 |
| | **306 R4** | **550** | 0.91 | 8500 | 0.91 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 R4** | **590** | 0.85 | 9500 | 0.95 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 R4** | **665** | 0.75 | 7000 | 0.62 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |
| | **306 R4** | **830** | 0.60 | 7000 | 0.50 | 24 | 71-80-90-100-112-132-160 | 45000 | 51000 | 101000 | 119000 | 35000 | 14900 |

## 307 R

314

## 14000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **307 R2** | **13.0** | 116 | 5110 | 66 | 35 | 132-160-180-200 | 10600 | 13300 | 26500 | 34700 | 9230 | 18600 |
| | **307 R2** | **15.5** | 97 | 6090 | 66 | 35 | 132-160-180-200 | 11300 | 14100 | 27900 | 36600 | 9790 | 21000 |
| | **307 R2** | **19.8** | 76 | 7820 | 66 | 35 | 132-160-180-200 | 12200 | 15400 | 30100 | 39400 | 10600 | 21000 |
| | **307 R2** | **23.5** | 64 | 7970 | 57 | 35 | 132-160-180-200 | 13000 | 16300 | 31700 | 41500 | 11300 | 21000 |
| | **307 R3** | **31.6** | 47 | 5570 | 30 | 22 | 71-80-90-100-112-132-160 | 14300 | 17900 | 34600 | 45400 | 12400 | 18600 |
| | **307 R3** | **37.7** | 40 | 6650 | 30 | 22 | 71-80-90-100-112-132-160 | 15200 | 19000 | 36500 | 47800 | 13200 | 21000 |
| | **307 R3** | **44.6** | 34 | 7860 | 30 | 22 | 71-80-90-100-112-132-160 | 16000 | 20100 | 38400 | 50300 | 13900 | 21000 |
| | **307 R3** | **55.9** | 26.8 | 9860 | 30 | 22 | 71-80-90-100-112-132-160 | 17300 | 21700 | 41100 | 53800 | 15000 | 21000 |
| | **307 R3** | **65.0** | 23.1 | 11000 | 29 | 22 | 71-80-90-100-112-132-160 | 18200 | 22800 | 43000 | 56300 | 15800 | 21000 |
| | **307 R3** | **71.8** | 20.9 | 10100 | 24 | 22 | 71-80-90-100-112-132-160 | 18800 | 23600 | 44300 | 58000 | 16300 | 21000 |
| | **307 R3** | **78.6** | 19.1 | 11100 | 24 | 22 | 71-80-90-100-112-132-160 | 19400 | 24300 | 45500 | 59600 | 16800 | 21000 |
| | **307 R3** | **83.4** | 18.0 | 10200 | 21 | 22 | 71-80-90-100-112-132-160 | 19800 | 24800 | 46300 | 60700 | 17200 | 21000 |
| | **307 R3** | **99.0** | 15.2 | 8580 | 14.9 | 22 | 71-80-90-100-112-132-160 | 20900 | 26200 | 48800 | 63900 | 18200 | 21000 |
| | **307 R3** | **120** | 12.5 | 8630 | 12.4 | 22 | 71-80-90-100-112-132-160 | 22300 | 28000 | 51600 | 67600 | 19400 | 21000 |
| | **307 R4** | **152** | 9.9 | 13500 | 15.0 | 15.0 | 71-80-90-100-112-132-160 | 24100 | 30300 | 55400 | 72700 | 21000 | 21000 |
| | **307 R4** | **165** | 9.1 | 10900 | 11.7 | 15.0 | 71-80-90-100-112-132-160 | 24800 | 31100 | 56900 | 74500 | 21600 | 21000 |
| | **307 R4** | **191** | 7.9 | 14000 | 13.0 | 15.0 | 71-80-90-100-112-132-160 | 26000 | 32700 | 59400 | 77800 | 22600 | 21000 |
| | **307 R4** | **206** | 7.3 | 14100 | 12.2 | 15.0 | 71-80-90-100-112-132-160 | 26700 | 33500 | 60700 | 79600 | 23200 | 21000 |
| | **307 R4** | **232** | 6.5 | 11100 | 8.5 | 15.0 | 71-80-90-100-112-132-160 | 27800 | 34900 | 63000 | 82500 | 24200 | 21000 |
| | **307 R4** | **258** | 5.8 | 14600 | 10.0 | 15.0 | 71-80-90-100-112-132-160 | 28800 | 36100 | 65000 | 85200 | 25000 | 21000 |
| | **307 R4** | **284** | 5.3 | 11300 | 7.0 | 15.0 | 71-80-90-100-112-132-160 | 29700 | 37300 | 66900 | 87700 | 25900 | 21000 |
| | **307 R4** | **300** | 5.0 | 14000 | 8.3 | 15.0 | 71-80-90-100-112-132-160 | 30300 | 38000 | 68000 | 89100 | 26300 | 21000 |
| | **307 R4** | **331** | 4.5 | 11500 | 6.2 | 15.0 | 71-80-90-100-112-132-160 | 31300 | 39300 | 70000 | 91800 | 27200 | 21000 |
| | **307 R4** | **363** | 4.1 | 12300 | 6.0 | 15.0 | 71-80-90-100-112-132-160 | 32300 | 40500 | 72000 | 94300 | 28000 | 21000 |
| | **307 R4** | **413** | 3.6 | 11900 | 5.1 | 15.0 | 71-80-90-100-112-132-160 | 33700 | 42300 | 74900 | 98100 | 29300 | 21000 |
| | **307 R4** | **453** | 3.3 | 13400 | 5.3 | 15.0 | 71-80-90-100-112-132-160 | 34700 | 43600 | 76900 | 100800 | 30200 | 21000 |
| | **307 R4** | **490** | 3.1 | 9330 | 3.4 | 15.0 | 71-80-90-100-112-132-160 | 35700 | 44700 | 78800 | 103300 | 31000 | 21000 |
| | **307 R4** | **581** | 2.6 | 12600 | 3.9 | 15.0 | 71-80-90-100-112-132-160 | 37700 | 47400 | 82900 | 108700 | 32800 | 21000 |
| | **307 R4** | **690** | 2.2 | 9800 | 2.5 | 15.0 | 71-80-90-100-112-132-160 | 40000 | 50100 | 87300 | 114400 | 34700 | 21000 |
| **1000** | **307 R2** | **13.0** | 77 | 5770 | 50 | 42 | 132-160-180-200 | 12200 | 15300 | 29900 | 39200 | 10600 | 18600 |
| | **307 R2** | **15.5** | 65 | 6880 | 50 | 42 | 132-160-180-200 | 12900 | 16200 | 31500 | 41300 | 11200 | 21000 |
| | **307 R2** | **19.8** | 50 | 8830 | 50 | 42 | 132-160-180-200 | 14000 | 17600 | 34000 | 44500 | 12200 | 21000 |
| | **307 R2** | **23.5** | 42 | 8290 | 39 | 42 | 132-160-180-200 | 14800 | 18600 | 35800 | 46900 | 12900 | 21000 |

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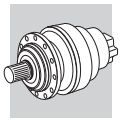
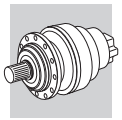


# 307 R

314

# 14000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **307 R3** | **31.6** | 32 | 6180 | 22 | 26 | 71-80-90-100-112-132-160 | 16400 | 20500 | 39100 | 51200 | 14200 | 18600 |
| | **307 R3** | **37.7** | 26.5 | 7510 | 23 | 26 | 71-80-90-100-112-132-160 | 17400 | 21800 | 41200 | 54000 | 15100 | 21000 |
| | **307 R3** | **44.6** | 22.4 | 8870 | 23 | 26 | 71-80-90-100-112-132-160 | 18400 | 23000 | 43300 | 56800 | 16000 | 21000 |
| | **307 R3** | **55.9** | 17.9 | 11100 | 23 | 26 | 71-80-90-100-112-132-160 | 19800 | 24800 | 46400 | 60800 | 17200 | 21000 |
| | **307 R3** | **65.0** | 15.4 | 12200 | 21 | 26 | 71-80-90-100-112-132-160 | 20800 | 26100 | 48500 | 63600 | 18100 | 21000 |
| | **307 R3** | **71.8** | 13.9 | 10500 | 16.7 | 26 | 71-80-90-100-112-132-160 | 21500 | 27000 | 50000 | 65500 | 18700 | 21000 |
| | **307 R3** | **78.6** | 12.7 | 11800 | 17.3 | 26 | 71-80-90-100-112-132-160 | 22200 | 27800 | 51400 | 67300 | 19300 | 21000 |
| | **307 R3** | **83.4** | 12.0 | 10600 | 14.6 | 26 | 71-80-90-100-112-132-160 | 22600 | 28400 | 52300 | 68500 | 19700 | 21000 |
| | **307 R3** | **99.0** | 10.1 | 8700 | 10.1 | 26 | 71-80-90-100-112-132-160 | 23900 | 30000 | 55100 | 72200 | 20800 | 21000 |
| | **307 R3** | **120** | 8.4 | 8700 | 8.3 | 26 | 71-80-90-100-112-132-160 | 25500 | 32000 | 58300 | 76400 | 22200 | 21000 |
| | **307 R4** | **152** | 6.6 | 14300 | 11.2 | 18.0 | 71-80-90-100-112-132-160 | 27600 | 34700 | 62600 | 82100 | 24000 | 21000 |
| | **307 R4** | **165** | 6.1 | 11200 | 8.0 | 18.0 | 71-80-90-100-112-132-160 | 28400 | 35600 | 64200 | 84100 | 24700 | 21000 |
| | **307 R4** | **191** | 5.2 | 14800 | 9.2 | 18.0 | 71-80-90-100-112-132-160 | 29800 | 37400 | 67000 | 87800 | 25900 | 21000 |
| | **307 R4** | **206** | 4.9 | 14900 | 8.6 | 18.0 | 71-80-90-100-112-132-160 | 30600 | 38300 | 68600 | 89900 | 26600 | 21000 |
| | **307 R4** | **232** | 4.3 | 11600 | 5.9 | 18.0 | 71-80-90-100-112-132-160 | 31800 | 39900 | 71100 | 93200 | 27700 | 21000 |
| | **307 R4** | **258** | 3.9 | 14900 | 6.8 | 18.0 | 71-80-90-100-112-132-160 | 33000 | 41400 | 73400 | 96200 | 28600 | 21000 |
| | **307 R4** | **284** | 3.5 | 12000 | 5.0 | 18.0 | 71-80-90-100-112-132-160 | 34000 | 42700 | 75600 | 99000 | 29600 | 21000 |
| | **307 R4** | **300** | 3.3 | 14000 | 5.5 | 18.0 | 71-80-90-100-112-132-160 | 34700 | 43500 | 76800 | 100600 | 30100 | 21000 |
| | **307 R4** | **331** | 3.0 | 12300 | 4.4 | 18.0 | 71-80-90-100-112-132-160 | 35800 | 44900 | 79100 | 103700 | 31100 | 21000 |
| | **307 R4** | **363** | 2.8 | 12300 | 4.0 | 18.0 | 71-80-90-100-112-132-160 | 36900 | 46300 | 81300 | 106500 | 32100 | 21000 |
| | **307 R4** | **413** | 2.4 | 12800 | 3.7 | 18.0 | 71-80-90-100-112-132-160 | 38600 | 48400 | 84500 | 110800 | 33500 | 21000 |
| | **307 R4** | **453** | 2.2 | 14000 | 3.6 | 18.0 | 71-80-90-100-112-132-160 | 39800 | 49900 | 86900 | 113900 | 34600 | 21000 |
| | **307 R4** | **490** | 2.0 | 9900 | 2.4 | 18.0 | 71-80-90-100-112-132-160 | 40800 | 51200 | 89000 | 116600 | 35500 | 21000 |
| | **307 R4** | **581** | 1.7 | 13300 | 2.7 | 18.0 | 71-80-90-100-112-132-160 | 43200 | 54200 | 93600 | 122700 | 37600 | 21000 |
| | **307 R4** | **690** | 1.4 | 10400 | 1.8 | 18.0 | 71-80-90-100-112-132-160 | 45700 | 57400 | 98600 | 129200 | 39800 | 21000 |
| **500** | **307 R2** | **13.0** | 39 | 6780 | 29 | 70 | 132-160-180-200 | 15300 | 19200 | 36800 | 48300 | 13300 | 18600 |
| | **307 R2** | **15.5** | 32 | 7950 | 29 | 70 | 132-160-180-200 | 16200 | 20400 | 38800 | 50900 | 14100 | 21000 |
| | **307 R2** | **19.8** | 25.2 | 9630 | 27 | 70 | 132-160-180-200 | 17700 | 22200 | 41900 | 54800 | 15300 | 21000 |
| | **307 R2** | **23.5** | 21.2 | 8480 | 20 | 70 | 132-160-180-200 | 18700 | 23500 | 44100 | 57700 | 16200 | 21000 |
| | **307 R3** | **31.6** | 15.8 | 7380 | 13.4 | 44 | 71-80-90-100-112-132-160 | 20600 | 25900 | 48100 | 63100 | 17900 | 18600 |
| | **307 R3** | **37.7** | 13.2 | 9250 | 14.1 | 44 | 71-80-90-100-112-132-160 | 21900 | 27400 | 50800 | 66500 | 19000 | 21000 |
| | **307 R3** | **44.6** | 11.2 | 10900 | 14.1 | 44 | 71-80-90-100-112-132-160 | 23100 | 29000 | 53400 | 69900 | 20100 | 21000 |
| | **307 R3** | **55.9** | 8.9 | 13500 | 13.9 | 44 | 71-80-90-100-112-132-160 | 24900 | 31300 | 57100 | 74800 | 21700 | 21000 |
| | **307 R3** | **65.0** | 7.7 | 13700 | 12.1 | 44 | 71-80-90-100-112-132-160 | 26200 | 32900 | 59800 | 78300 | 22800 | 21000 |
| | **307 R3** | **71.8** | 7.0 | 11100 | 8.8 | 44 | 71-80-90-100-112-132-160 | 27100 | 34000 | 61600 | 80700 | 23600 | 21000 |
| | **307 R3** | **78.6** | 6.4 | 12300 | 9.0 | 44 | 71-80-90-100-112-132-160 | 27900 | 35100 | 63300 | 82900 | 24300 | 21000 |
| | **307 R3** | **83.4** | 6.0 | 11200 | 7.7 | 44 | 71-80-90-100-112-132-160 | 28500 | 35800 | 64400 | 84400 | 24800 | 21000 |
| | **307 R3** | **99.0** | 5.1 | 8700 | 5.0 | 44 | 71-80-90-100-112-132-160 | 30200 | 37900 | 67800 | 88800 | 26200 | 21000 |
| | **307 R3** | **120** | 4.2 | 8930 | 4.3 | 44 | 71-80-90-100-112-132-160 | 32100 | 40300 | 71800 | 94100 | 27900 | 21000 |
| | **307 R4** | **152** | 3.3 | 14900 | 5.8 | 30 | 71-80-90-100-112-132-160 | 34800 | 43700 | 77100 | 101000 | 30300 | 21000 |
| | **307 R4** | **165** | 3.0 | 12300 | 4.4 | 30 | 71-80-90-100-112-132-160 | 35800 | 44900 | 79100 | 103600 | 31100 | 21000 |
| | **307 R4** | **191** | 2.6 | 14900 | 4.6 | 30 | 71-80-90-100-112-132-160 | 37500 | 47100 | 82500 | 108100 | 32600 | 21000 |
| | **307 R4** | **206** | 2.4 | 14900 | 4.3 | 30 | 71-80-90-100-112-132-160 | 38500 | 48300 | 84400 | 110600 | 33500 | 21000 |
| | **307 R4** | **232** | 2.2 | 13000 | 3.3 | 30 | 71-80-90-100-112-132-160 | 40100 | 50300 | 87600 | 114700 | 34800 | 21000 |
| | **307 R4** | **258** | 1.9 | 15100 | 3.5 | 30 | 71-80-90-100-112-132-160 | 41500 | 52100 | 90400 | 118400 | 36100 | 21000 |
| | **307 R4** | **284** | 1.8 | 13500 | 2.8 | 30 | 71-80-90-100-112-132-160 | 42900 | 53800 | 93100 | 121900 | 37300 | 21000 |
| | **307 R4** | **300** | 1.7 | 14400 | 2.8 | 30 | 71-80-90-100-112-132-160 | 43700 | 54800 | 94500 | 123900 | 38000 | 21000 |
| | **307 R4** | **331** | 1.5 | 13800 | 2.5 | 30 | 71-80-90-100-112-132-160 | 45100 | 56600 | 97400 | 127600 | 39200 | 21000 |
| | **307 R4** | **363** | 1.4 | 12300 | 2.0 | 30 | 71-80-90-100-112-132-160 | 46500 | 58400 | 100100 | 131200 | 40400 | 21000 |
| | **307 R4** | **413** | 1.2 | 14400 | 2.1 | 30 | 71-80-90-100-112-132-160 | 48600 | 61000 | 104100 | 136400 | 42200 | 21000 |
| | **307 R4** | **453** | 1.1 | 14900 | 1.9 | 30 | 71-80-90-100-112-132-160 | 50100 | 62800 | 107000 | 140200 | 43500 | 21000 |
| | **307 R4** | **490** | 1.0 | 11000 | 1.3 | 30 | 71-80-90-100-112-132-160 | 51400 | 64500 | 109000 | 143600 | 44700 | 21000 |
| | **307 R4** | **581** | 0.86 | 14300 | 1.5 | 30 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |
| | **307 R4** | **690** | 0.72 | 11000 | 0.94 | 30 | 71-80-90-100-112-132-160 | 52000 | 65000 | 109000 | 145000 | 45000 | 21000 |



# 309 R

326

# 16460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **309 R2** | **13.0** | 116 | 5110 | 66 | 35 | 132-160-180-200 | — | — | 26900 | 34700 | 7390 | 27400 |
| | **309 R2** | **15.5** | 97 | 6090 | 66 | 35 | 132-160-180-200 | — | — | 28400 | 36600 | 7830 | 27400 |
| | **309 R2** | **19.8** | 76 | 7820 | 66 | 35 | 132-160-180-200 | — | — | 30600 | 39400 | 8510 | 27400 |
| | **309 R2** | **23.5** | 64 | 9280 | 66 | 35 | 132-160-180-200 | — | — | 32200 | 41500 | 9010 | 27400 |
| | **309 R3** | **31.6** | 47 | 5580 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 35200 | 45400 | 9950 | 27900 |
| | **309 R3** | **37.7** | 40 | 6650 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 37100 | 47800 | 10500 | 29000 |
| | **309 R3** | **44.6** | 34 | 7860 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 39000 | 50300 | 11100 | 29000 |
| | **309 R3** | **55.9** | 26.8 | 9860 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 41700 | 53800 | 12000 | 29000 |
| | **309 R3** | **65.0** | 23.1 | 11200 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 43700 | 56300 | 12600 | 29000 |
| | **309 R3** | **71.8** | 20.9 | 12700 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 45000 | 58000 | 13100 | 29000 |
| | **309 R3** | **83.4** | 18.0 | 14000 | 29 | 22 | 71-80-90-100-112-132-160 | — | — | 47100 | 60700 | 13700 | 29000 |
| | **309 R3** | **99.0** | 15.2 | 12800 | 22 | 22 | 71-80-90-100-112-132-160 | — | — | 49500 | 63900 | 14500 | 29000 |
| | **309 R3** | **120** | 12.5 | 12900 | 18.6 | 22 | 71-80-90-100-112-132-160 | — | — | 52500 | 67600 | 15500 | 29000 |
| | **309 R4** | **152** | 9.9 | 18600 | 15.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 56300 | 72700 | 16800 | 29000 |
| | **309 R4** | **165** | 9.1 | 16300 | 15.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 57800 | 74500 | 17300 | 29000 |
| | **309 R4** | **191** | 7.9 | 17300 | 15.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 60300 | 77800 | 18100 | 29000 |
| | **309 R4** | **206** | 7.3 | 19800 | 15.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 61700 | 79600 | 18600 | 29000 |
| | **309 R4** | **232** | 6.5 | 16700 | 12.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 64000 | 82500 | 19300 | 29000 |
| | **309 R4** | **258** | 5.8 | 17400 | 12.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 66000 | 85200 | 20000 | 29000 |
| | **309 R4** | **284** | 5.3 | 16900 | 10.5 | 15.0 | 71-80-90-100-112-132-160 | — | — | 68000 | 87700 | 20700 | 29000 |
| | **309 R4** | **331** | 4.5 | 17200 | 9.2 | 15.0 | 71-80-90-100-112-132-160 | — | — | 71200 | 91800 | 21800 | 29000 |
| | **309 R4** | **374** | 4.0 | 14300 | 6.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 73800 | 95200 | 22700 | 29000 |
| | **309 R4** | **413** | 3.6 | 17900 | 7.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 76100 | 98100 | 23400 | 29000 |
| | **309 R4** | **457** | 3.3 | 13800 | 5.4 | 15.0 | 71-80-90-100-112-132-160 | — | — | 78400 | 101100 | 24200 | 29000 |
| | **309 R4** | **490** | 3.1 | 14000 | 5.1 | 15.0 | 71-80-90-100-112-132-160 | — | — | 80100 | 103300 | 24800 | 29000 |
| | **309 R4** | **581** | 2.6 | 15800 | 4.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 84300 | 108700 | 26200 | 29000 |
| | **309 R4** | **690** | 2.2 | 14800 | 3.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 88700 | 114400 | 27800 | 29000 |
| **1000** | **309 R2** | **13.0** | 77 | 5770 | 50 | 42 | 132-160-180-200 | — | — | 30400 | 39200 | 8450 | 27400 |
| | **309 R2** | **15.5** | 65 | 6880 | 50 | 42 | 132-160-180-200 | — | — | 32100 | 41300 | 8970 | 27400 |
| | **309 R2** | **19.8** | 50 | 8830 | 50 | 42 | 132-160-180-200 | — | — | 34500 | 44500 | 9740 | 27400 |
| | **309 R2** | **23.5** | 42 | 10200 | 48 | 42 | 132-160-180-200 | — | — | 36400 | 46900 | 10300 | 27400 |
| | **309 R3** | **31.6** | 32 | 6300 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 39700 | 51200 | 11400 | 27900 |
| | **309 R3** | **37.7** | 26.5 | 7510 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 41900 | 54000 | 12100 | 29000 |
| | **309 R3** | **44.6** | 22.4 | 8870 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 44000 | 56800 | 12800 | 29000 |
| | **309 R3** | **55.9** | 17.9 | 11100 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 47100 | 60800 | 13800 | 29000 |
| | **309 R3** | **65.0** | 15.4 | 12500 | 22 | 26 | 71-80-90-100-112-132-160 | — | — | 49300 | 63600 | 14500 | 29000 |
| | **309 R3** | **71.8** | 13.9 | 14300 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 50800 | 65500 | 15000 | 29000 |
| | **309 R3** | **83.4** | 12.0 | 15500 | 21 | 26 | 71-80-90-100-112-132-160 | — | — | 53100 | 68500 | 15700 | 29000 |
| | **309 R3** | **99.0** | 10.1 | 13000 | 15.1 | 26 | 71-80-90-100-112-132-160 | — | — | 56000 | 72200 | 16700 | 29000 |
| | **309 R3** | **120** | 8.4 | 13000 | 12.5 | 26 | 71-80-90-100-112-132-160 | — | — | 59200 | 76400 | 17700 | 29000 |
| | **309 R4** | **152** | 6.6 | 20200 | 15.0 | 18.0 | 71-80-90-100-112-132-160 | — | — | 63600 | 82100 | 19200 | 29000 |
| | **309 R4** | **165** | 6.1 | 16700 | 12.0 | 18.0 | 71-80-90-100-112-132-160 | — | — | 65200 | 84100 | 19800 | 29000 |
| | **309 R4** | **191** | 5.2 | 17500 | 10.8 | 18.0 | 71-80-90-100-112-132-160 | — | — | 68100 | 87800 | 20700 | 29000 |
| | **309 R4** | **206** | 4.9 | 21300 | 12.2 | 18.0 | 71-80-90-100-112-132-160 | — | — | 69700 | 89900 | 21200 | 29000 |
| | **309 R4** | **232** | 4.3 | 17200 | 8.8 | 18.0 | 71-80-90-100-112-132-160 | — | — | 72300 | 93200 | 22100 | 29000 |
| | **309 R4** | **258** | 3.9 | 17500 | 8.0 | 18.0 | 71-80-90-100-112-132-160 | — | — | 74600 | 96200 | 22900 | 29000 |
| | **309 R4** | **284** | 3.5 | 17500 | 7.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 76800 | 99000 | 23700 | 29000 |
| | **309 R4** | **331** | 3.0 | 18500 | 6.6 | 18.0 | 71-80-90-100-112-132-160 | — | — | 80400 | 103700 | 24900 | 29000 |
| | **309 R4** | **374** | 2.7 | 14300 | 4.5 | 18.0 | 71-80-90-100-112-132-160 | — | — | 83400 | 107500 | 25900 | 29000 |
| | **309 R4** | **413** | 2.4 | 19200 | 5.5 | 18.0 | 71-80-90-100-112-132-160 | — | — | 85900 | 110800 | 26800 | 29000 |
| | **309 R4** | **457** | 2.2 | 14800 | 3.8 | 18.0 | 71-80-90-100-112-132-160 | — | — | 88500 | 114200 | 27700 | 29000 |
| | **309 R4** | **490** | 2.0 | 14900 | 3.6 | 18.0 | 71-80-90-100-112-132-160 | — | — | 90400 | 116600 | 28400 | 29000 |
| | **309 R4** | **581** | 1.7 | 15800 | 3.2 | 18.0 | 71-80-90-100-112-132-160 | — | — | 95200 | 122700 | 30000 | 29000 |
| | **309 R4** | **690** | 1.4 | 15900 | 2.7 | 18.0 | 71-80-90-100-112-132-160 | — | — | 100200 | 129200 | 31800 | 29000 |
| **500** | **309 R2** | **13.0** | 39 | 6780 | 29 | 70 | 132-160-180-200 | — | — | 37400 | 48300 | 10700 | 27400 |
| | **309 R2** | **15.5** | 32 | 7950 | 29 | 70 | 132-160-180-200 | — | — | 39500 | 50900 | 11300 | 27400 |
| | **309 R2** | **19.8** | 25.2 | 10200 | 29 | 70 | 132-160-180-200 | — | — | 42500 | 54800 | 12300 | 27400 |
| | **309 R2** | **23.5** | 21.2 | 11200 | 26 | 70 | 132-160-180-200 | — | — | 44800 | 57700 | 13000 | 27400 |

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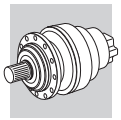


## 309 R

326

## 16460 Nm

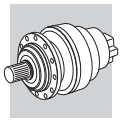
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **309 R3** | **31.6** | 15.8 | 7760 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 48900 | 63100 | 14300 | 27900 |
| | **309 R3** | **37.7** | 13.2 | 9250 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 51600 | 66500 | 15200 | 29000 |
| | **309 R3** | **44.6** | 11.2 | 10900 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 54200 | 69900 | 16100 | 29000 |
| | **309 R3** | **55.9** | 8.9 | 13700 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 58000 | 74800 | 17300 | 29000 |
| | **309 R3** | **65.0** | 7.7 | 14100 | 12.5 | 44 | 71-80-90-100-112-132-160 | — | — | 60700 | 78300 | 18200 | 29000 |
| | **309 R3** | **71.8** | 7.0 | 16400 | 13.1 | 44 | 71-80-90-100-112-132-160 | — | — | 62500 | 80700 | 18800 | 29000 |
| | **309 R3** | **83.4** | 6.0 | 16700 | 11.5 | 44 | 71-80-90-100-112-132-160 | — | — | 65400 | 84400 | 19800 | 29000 |
| | **309 R3** | **99.0** | 5.1 | 13000 | 7.5 | 44 | 71-80-90-100-112-132-160 | — | — | 68900 | 88800 | 21000 | 29000 |
| | **309 R3** | **120** | 4.2 | 13400 | 6.4 | 44 | 71-80-90-100-112-132-160 | — | — | 72900 | 94100 | 22400 | 29000 |
| | **309 R4** | **152** | 3.3 | 21300 | 8.3 | 30 | 71-80-90-100-112-132-160 | — | — | 78300 | 101000 | 24200 | 29000 |
| | **309 R4** | **165** | 3.0 | 18400 | 6.6 | 30 | 71-80-90-100-112-132-160 | — | — | 80300 | 103600 | 24900 | 29000 |
| | **309 R4** | **191** | 2.6 | 17500 | 5.4 | 30 | 71-80-90-100-112-132-160 | — | — | 83900 | 108100 | 26100 | 29000 |
| | **309 R4** | **206** | 2.4 | 21300 | 6.1 | 30 | 71-80-90-100-112-132-160 | — | — | 85800 | 110600 | 26800 | 29000 |
| | **309 R4** | **232** | 2.2 | 18100 | 4.6 | 30 | 71-80-90-100-112-132-160 | — | — | 89000 | 114700 | 27900 | 29000 |
| | **309 R4** | **258** | 1.9 | 17800 | 4.1 | 30 | 71-80-90-100-112-132-160 | — | — | 91800 | 118400 | 28900 | 29000 |
| | **309 R4** | **284** | 1.8 | 18200 | 3.8 | 30 | 71-80-90-100-112-132-160 | — | — | 94500 | 121900 | 29800 | 29000 |
| | **309 R4** | **331** | 1.5 | 20600 | 3.7 | 30 | 71-80-90-100-112-132-160 | — | — | 99000 | 127600 | 31400 | 29000 |
| | **309 R4** | **374** | 1.3 | 14600 | 2.3 | 30 | 71-80-90-100-112-132-160 | — | — | 102700 | 132400 | 32700 | 29000 |
| | **309 R4** | **413** | 1.2 | 21300 | 3.1 | 30 | 71-80-90-100-112-132-160 | — | — | 105800 | 136400 | 33800 | 29000 |
| | **309 R4** | **457** | 1.1 | 16700 | 2.2 | 30 | 71-80-90-100-112-132-160 | — | — | 109000 | 140600 | 34900 | 29000 |
| | **309 R4** | **490** | 1.0 | 16900 | 2.0 | 30 | 71-80-90-100-112-132-160 | — | — | 110000 | 143600 | 35800 | 29000 |
| | **309 R4** | **581** | 0.86 | 15800 | 1.6 | 30 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |
| | **309 R4** | **690** | 0.72 | 17000 | 1.5 | 30 | 71-80-90-100-112-132-160 | — | — | 110000 | 145000 | 36000 | 29000 |

## 310 R

338

## 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **310 R2 (B)** | **12.0** | 125 | 10100 | 130 | 55 | 160-180-200-225 | — | — | 31200 | 39200 | 13000 | 47600 |
| | **310 R2 (B)** | **15.4** | 97 | 10700 | 115 | 55 | 160-180-200-225 | — | — | 33600 | 42300 | 14100 | 47600 |
| | **310 R2 (B)** | **18.3** | 82 | 11100 | 101 | 55 | 160-180-200-225 | — | — | 35400 | 44500 | 15000 | 47600 |
| | **310 R2 (C)** | **16.6** | 90 | 11200 | 112 | 55 | 160-180-200-225-250 | — | — | 34400 | 43200 | 14500 | 47600 |
| | **310 R2 (C)** | **21.3** | 70 | 11800 | 92 | 55 | 160-180-200-225-250 | — | — | 37100 | 46600 | 15800 | 47600 |
| | **310 R2 (C)** | **25.3** | 59 | 12200 | 81 | 55 | 160-180-200-225-250 | — | — | 39000 | 49000 | 16700 | 47600 |
| | **310 R3** | **37.7** | 40 | 6650 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 44000 | 55300 | 19000 | 47600 |
| | **310 R3** | **44.6** | 34 | 7860 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 46200 | 58100 | 20100 | 47600 |
| | **310 R3** | **55.9** | 26.8 | 9860 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 49500 | 62200 | 21700 | 47600 |
| | **310 R3** | **65.0** | 23.1 | 11500 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 51700 | 65100 | 22800 | 47600 |
| | **310 R3** | **71.8** | 20.9 | 12700 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 53300 | 67000 | 23600 | 47600 |
| | **310 R3** | **78.6** | 19.1 | 13900 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 54800 | 68900 | 24300 | 47600 |
| | **310 R3** | **83.4** | 18.0 | 14700 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 55800 | 70100 | 24800 | 47600 |
| | **310 R3** | **99.0** | 15.2 | 16400 | 29 | 22 | 71-80-90-100-112-132-160 | — | — | 58700 | 73800 | 26300 | 47600 |
| | **310 R3** | **120** | 12.5 | 17400 | 25 | 22 | 71-80-90-100-112-132-160 | — | — | 62200 | 78200 | 28000 | 47600 |
| | **310 R4** | **136** | 11.0 | 21000 | 27 | 15.0 | 71-80-90-100-112-132-160 | — | — | 64600 | 81200 | 29200 | 47600 |
| | **310 R4** | **160** | 9.4 | 22000 | 24 | 15.0 | 71-80-90-100-112-132-160 | — | — | 67800 | 85300 | 30900 | 47600 |
| | **310 R4** | **189** | 7.9 | 23200 | 22 | 15.0 | 71-80-90-100-112-132-160 | — | — | 71300 | 89700 | 32600 | 47600 |
| | **310 R4** | **206** | 7.3 | 22100 | 19.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 73100 | 91900 | 33500 | 47600 |
| | **310 R4** | **234** | 6.4 | 24700 | 18.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 76000 | 95600 | 35000 | 47600 |
| | **310 R4** | **258** | 5.8 | 22800 | 15.7 | 15.0 | 71-80-90-100-112-132-160 | — | — | 78300 | 98400 | 36200 | 47600 |
| | **310 R4** | **283** | 5.3 | 26100 | 16.4 | 15.0 | 71-80-90-100-112-132-160 | — | — | 80500 | 101200 | 37300 | 47600 |
| | **310 R4** | **305** | 4.9 | 23400 | 13.6 | 15.0 | 71-80-90-100-112-132-160 | — | — | 82300 | 103500 | 38200 | 47600 |
| | **310 R4** | **334** | 4.5 | 27400 | 14.6 | 15.0 | 71-80-90-100-112-132-160 | — | — | 84600 | 106300 | 39400 | 47600 |
| | **310 R4** | **363** | 4.1 | 24100 | 11.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 86700 | 109000 | 40500 | 47600 |
| | **310 R4** | **419** | 3.6 | 29000 | 12.3 | 15.0 | 71-80-90-100-112-132-160 | — | — | 90500 | 113800 | 42500 | 47600 |
| | **310 R4** | **454** | 3.3 | 20000 | 7.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 92700 | 116600 | 43600 | 47600 |
| | **310 R4** | **517** | 2.9 | 25600 | 8.8 | 15.0 | 71-80-90-100-112-132-160 | — | — | 96400 | 121200 | 45600 | 47600 |
| | **310 R4** | **590** | 2.5 | 21800 | 6.6 | 15.0 | 71-80-90-100-112-132-160 | — | — | 100300 | 126100 | 47600 | 47600 |
| | **310 R4** | **639** | 2.3 | 21500 | 6.0 | 15.0 | 71-80-90-100-112-132-160 | — | — | 102700 | 129100 | 48900 | 47600 |
| | **310 R4** | **757** | 2.0 | 26400 | 6.2 | 15.0 | 71-80-90-100-112-132-160 | — | — | 108100 | 135900 | 51700 | 47600 |

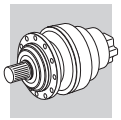


# 310 R

338

# 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **310 R4** | **898** | 1.7 | 23200 | 4.6 | 15.0 | 71-80-90-100-112-132-160 | — | — | 113800 | 143100 | 54800 | 47600 |
| **1000** | **310 R2 (B)** | **12.0** | 83 | 11400 | 106 | 66 | 160-180-200-225 | — | — | 35200 | 44300 | 14900 | 47600 |
| | **310 R2 (B)** | **15.4** | 65 | 12000 | 87 | 66 | 160-180-200-225 | — | — | 38000 | 47700 | 16200 | 47600 |
| | **310 R2 (B)** | **18.3** | 55 | 12500 | 76 | 66 | 160-180-200-225 | — | — | 40000 | 50200 | 17100 | 47600 |
| | **310 R2 (C)** | **16.6** | 60 | 12600 | 84 | 66 | 160-180-200-225-250 | — | — | 38800 | 48800 | 16600 | 47600 |
| | **310 R2 (C)** | **21.3** | 47 | 13300 | 69 | 66 | 160-180-200-225-250 | — | — | 41800 | 52600 | 18000 | 47600 |
| | **310 R2 (C)** | **25.3** | 39 | 13500 | 59 | 66 | 160-180-200-225-250 | — | — | 44100 | 55400 | 19100 | 47600 |
| | **310 R3** | **37.7** | 26.5 | 7510 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 49600 | 62400 | 21800 | 47600 |
| | **310 R3** | **44.6** | 22.4 | 8870 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 52200 | 65600 | 23000 | 47600 |
| | **310 R3** | **55.9** | 17.9 | 11100 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 55900 | 70200 | 24900 | 47600 |
| | **310 R3** | **65.0** | 15.4 | 12900 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 58400 | 73500 | 26100 | 47600 |
| | **310 R3** | **71.8** | 13.9 | 14300 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 60200 | 75700 | 27000 | 47600 |
| | **310 R3** | **78.6** | 12.7 | 15700 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 61900 | 77800 | 27800 | 47600 |
| | **310 R3** | **83.4** | 12.0 | 16600 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 63000 | 79200 | 28400 | 47600 |
| | **310 R3** | **99.0** | 10.1 | 18200 | 21 | 26 | 71-80-90-100-112-132-160 | — | — | 66300 | 83400 | 30100 | 47600 |
| | **310 R3** | **120** | 8.4 | 18300 | 17.5 | 26 | 71-80-90-100-112-132-160 | — | — | 70200 | 88300 | 32000 | 47600 |
| | **310 R4** | **136** | 7.4 | 23700 | 21 | 18.0 | 71-80-90-100-112-132-160 | — | — | 72900 | 91700 | 33400 | 47600 |
| | **310 R4** | **160** | 6.2 | 24900 | 18.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 76600 | 96400 | 35300 | 47600 |
| | **310 R4** | **189** | 5.3 | 26100 | 16.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 80500 | 101300 | 37300 | 47600 |
| | **310 R4** | **206** | 4.9 | 23500 | 13.5 | 18.0 | 71-80-90-100-112-132-160 | — | — | 82600 | 103800 | 38400 | 47600 |
| | **310 R4** | **234** | 4.3 | 27800 | 14.0 | 18.0 | 71-80-90-100-112-132-160 | — | — | 85800 | 107900 | 40100 | 47600 |
| | **310 R4** | **258** | 3.9 | 24400 | 11.2 | 18.0 | 71-80-90-100-112-132-160 | — | — | 88400 | 111200 | 41400 | 47600 |
| | **310 R4** | **283** | 3.5 | 29300 | 12.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 90900 | 114300 | 42700 | 47600 |
| | **310 R4** | **305** | 3.3 | 25100 | 9.7 | 18.0 | 71-80-90-100-112-132-160 | — | — | 92900 | 116800 | 43800 | 47600 |
| | **310 R4** | **334** | 3.0 | 30700 | 10.9 | 18.0 | 71-80-90-100-112-132-160 | — | — | 95500 | 120100 | 45100 | 47600 |
| | **310 R4** | **363** | 2.8 | 25800 | 8.4 | 18.0 | 71-80-90-100-112-132-160 | — | — | 97900 | 123100 | 46400 | 47600 |
| | **310 R4** | **419** | 2.4 | 32000 | 9.0 | 18.0 | 71-80-90-100-112-132-160 | — | — | 102200 | 128600 | 48700 | 47600 |
| | **310 R4** | **454** | 2.2 | 21800 | 5.7 | 18.0 | 71-80-90-100-112-132-160 | — | — | 104700 | 131700 | 50000 | 47600 |
| | **310 R4** | **517** | 1.9 | 27400 | 6.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 108900 | 136900 | 52200 | 47600 |
| | **310 R4** | **590** | 1.7 | 21800 | 4.4 | 18.0 | 71-80-90-100-112-132-160 | — | — | 113200 | 142400 | 54500 | 47600 |
| | **310 R4** | **639** | 1.6 | 23500 | 4.4 | 18.0 | 71-80-90-100-112-132-160 | — | — | 116000 | 145800 | 56000 | 47600 |
| | **310 R4** | **757** | 1.3 | 27300 | 4.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 122000 | 153500 | 59200 | 47600 |
| | **310 R4** | **898** | 1.1 | 25400 | 3.3 | 18.0 | 71-80-90-100-112-132-160 | — | — | 128500 | 161600 | 62700 | 47600 |
| **500** | **310 R2 (B)** | **12.0** | 42 | 14100 | 65 | 110 | 160-180-200-225 | — | — | 43400 | 54500 | 18800 | 47600 |
| | **310 R2 (B)** | **15.4** | 32 | 14800 | 53 | 110 | 160-180-200-225 | — | — | 46700 | 58800 | 20400 | 47600 |
| | **310 R2 (B)** | **18.3** | 27.3 | 14700 | 45 | 110 | 160-180-200-225 | — | — | 49200 | 61900 | 21600 | 47600 |
| | **310 R2 (C)** | **16.6** | 30 | 15500 | 52 | 110 | 160-180-200-225-250 | — | — | 47800 | 60100 | 20900 | 47600 |
| | **310 R2 (C)** | **21.3** | 23.4 | 16300 | 43 | 110 | 160-180-200-225-250 | — | — | 51500 | 64800 | 22700 | 47600 |
| | **310 R2 (C)** | **25.3** | 19.7 | 15700 | 35 | 110 | 160-180-200-225-250 | — | — | 54200 | 68200 | 24100 | 47600 |
| | **310 R3** | **37.7** | 13.2 | 9250 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 61100 | 76900 | 27500 | 47600 |
| | **310 R3** | **44.6** | 11.2 | 10900 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 64200 | 80800 | 29000 | 47600 |
| | **310 R3** | **55.9** | 8.9 | 13700 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 68800 | 86500 | 31300 | 47600 |
| | **310 R3** | **65.0** | 7.7 | 15900 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 71900 | 90500 | 32900 | 47600 |
| | **310 R3** | **71.8** | 7.0 | 17600 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 74100 | 93200 | 34000 | 47600 |
| | **310 R3** | **78.6** | 6.4 | 18900 | 13.8 | 44 | 71-80-90-100-112-132-160 | — | — | 76200 | 95800 | 35100 | 47600 |
| | **310 R3** | **83.4** | 6.0 | 20500 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 77500 | 97500 | 35800 | 47600 |
| | **310 R3** | **99.0** | 5.1 | 18400 | 10.7 | 44 | 71-80-90-100-112-132-160 | — | — | 81600 | 102600 | 37900 | 47600 |
| | **310 R3** | **120** | 4.2 | 19100 | 9.2 | 44 | 71-80-90-100-112-132-160 | — | — | 86400 | 108700 | 40400 | 47600 |
| | **310 R4** | **136** | 3.7 | 29000 | 12.6 | 30 | 71-80-90-100-112-132-160 | — | — | 89800 | 112900 | 42100 | 47600 |
| | **310 R4** | **160** | 3.1 | 30400 | 11.2 | 30 | 71-80-90-100-112-132-160 | — | — | 94300 | 118600 | 44500 | 47600 |
| | **310 R4** | **189** | 2.6 | 31800 | 9.9 | 30 | 71-80-90-100-112-132-160 | — | — | 99200 | 124700 | 47000 | 47600 |
| | **310 R4** | **206** | 2.4 | 26400 | 7.6 | 30 | 71-80-90-100-112-132-160 | — | — | 101700 | 127800 | 48400 | 47600 |
| | **310 R4** | **234** | 2.1 | 32600 | 8.2 | 30 | 71-80-90-100-112-132-160 | — | — | 105700 | 132900 | 50500 | 47600 |
| | **310 R4** | **258** | 1.9 | 27400 | 6.3 | 30 | 71-80-90-100-112-132-160 | — | — | 108800 | 136900 | 52200 | 47600 |
| | **310 R4** | **283** | 1.8 | 33000 | 6.9 | 30 | 71-80-90-100-112-132-160 | — | — | 111900 | 140700 | 53800 | 47600 |
| | **310 R4** | **305** | 1.6 | 28200 | 5.5 | 30 | 71-80-90-100-112-132-160 | — | — | 114400 | 143800 | 55100 | 47600 |
| | **310 R4** | **334** | 1.5 | 33300 | 5.9 | 30 | 71-80-90-100-112-132-160 | — | — | 117600 | 147800 | 56800 | 47600 |
| | **310 R4** | **363** | 1.4 | 29000 | 4.7 | 30 | 71-80-90-100-112-132-160 | — | — | 120600 | 151600 | 58400 | 47600 |
| | **310 R4** | **419** | 1.2 | 33700 | 4.8 | 30 | 71-80-90-100-112-132-160 | — | — | 125900 | 158300 | 61300 | 47600 |

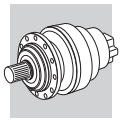


## 310 R — 338 — 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **310 R4** | **454** | 1.1 | 25400 | 3.3 | 30 | 71-80-90-100-112-132-160 | — | — | 128900 | 162100 | 62900 | 47600 |
| | **310 R4** | **517** | 0.97 | 30600 | 3.5 | 30 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 R4** | **590** | 0.85 | 21800 | 2.2 | 30 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 R4** | **639** | 0.78 | 26000 | 2.4 | 30 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 R4** | **757** | 0.66 | 28000 | 2.2 | 30 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |
| | **310 R4** | **898** | 0.56 | 26000 | 1.7 | 30 | 71-80-90-100-112-132-160 | — | — | 133000 | 166000 | 65000 | 47600 |

## 311 R — 350 — 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **311 R2 (B)** | **12.0** | 125 | 11900 | 150 | 75 | 180-200-225-250 | — | — | 36900 | 45900 | 13000 | 58300 |
| | **311 R2 (B)** | **15.4** | 97 | 15400 | 150 | 75 | 180-200-225-250 | — | — | 39700 | 49500 | 14100 | 58300 |
| | **311 R2 (B)** | **18.3** | 82 | 16000 | 146 | 75 | 180-200-225-250 | — | — | 41800 | 52100 | 15000 | 58300 |
| | **311 R2 (C)** | **16.6** | 90 | 14400 | 144 | 90 | 180-200-225-250 | — | — | 40600 | 50600 | 14500 | 58300 |
| | **311 R2 (C)** | **21.3** | 70 | 16900 | 132 | 90 | 180-200-225-250 | — | — | 43800 | 54500 | 15800 | 58300 |
| | **311 R2 (C)** | **25.3** | 59 | 17600 | 116 | 90 | 180-200-225-250 | — | — | 46100 | 57400 | 16700 | 58300 |
| | **311 R3** | **53.0** | 28.3 | 20300 | 66 | 40 | 132-160-180-200 | — | — | 57500 | 71600 | 21300 | 58300 |
| | **311 R3** | **63.2** | 23.7 | 24000 | 65 | 40 | 132-160-180-200 | — | — | 60600 | 75500 | 22600 | 58300 |
| | **311 R3** | **68.0** | 22.1 | 24000 | 61 | 40 | 132-160-180-200 | — | — | 62000 | 77200 | 23200 | 58300 |
| | **311 R3** | **81.1** | 18.5 | 25900 | 55 | 40 | 132-160-180-200 | — | — | 65400 | 81400 | 24600 | 58300 |
| | **311 R3** | **96.3** | 15.6 | 27200 | 49 | 40 | 132-160-180-200 | — | — | 68800 | 85700 | 26000 | 58300 |
| | **311 R3** | **104** | 14.4 | 28700 | 47 | 40 | 132-160-180-200 | — | — | 70400 | 87700 | 26700 | 58300 |
| | **311 R3** | **124** | 12.1 | 30200 | 42 | 40 | 132-160-180-200 | — | — | 74100 | 92400 | 28300 | 58300 |
| | **311 R3** | **147** | 10.2 | 26900 | 32 | 40 | 132-160-180-200 | — | — | 78100 | 97200 | 29900 | 58300 |
| | **311 R4** | **154** | 9.7 | 26400 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 79300 | 98700 | 30500 | 58300 |
| | **311 R4** | **182** | 8.2 | 31200 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 83300 | 103800 | 32200 | 58300 |
| | **311 R4** | **198** | 7.6 | 33800 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 85400 | 106400 | 33100 | 58300 |
| | **311 R4** | **229** | 6.6 | 35300 | 27 | 22 | 71-80-90-100-112-132-160 | — | — | 89200 | 111100 | 34700 | 58300 |
| | **311 R4** | **266** | 5.6 | 36900 | 25 | 22 | 71-80-90-100-112-132-160 | — | — | 93300 | 116200 | 36500 | 58300 |
| | **311 R4** | **294** | 5.1 | 38000 | 23 | 22 | 71-80-90-100-112-132-160 | — | — | 96100 | 119700 | 37700 | 58300 |
| | **311 R4** | **322** | 4.7 | 39000 | 22 | 22 | 71-80-90-100-112-132-160 | — | — | 98800 | 123100 | 38900 | 58300 |
| | **311 R4** | **341** | 4.4 | 39200 | 20 | 22 | 71-80-90-100-112-132-160 | — | — | 100600 | 125300 | 39700 | 58300 |
| | **311 R4** | **413** | 3.6 | 40600 | 17.4 | 22 | 71-80-90-100-112-132-160 | — | — | 106500 | 132600 | 42300 | 58300 |
| | **311 R4** | **438** | 3.4 | 37500 | 15.2 | 22 | 71-80-90-100-112-132-160 | — | — | 108400 | 135000 | 43100 | 58300 |
| | **311 R4** | **490** | 3.1 | 34500 | 12.5 | 22 | 71-80-90-100-112-132-160 | — | — | 112100 | 139600 | 44800 | 58300 |
| | **311 R4** | **520** | 2.9 | 38600 | 13.2 | 22 | 71-80-90-100-112-132-160 | — | — | 114100 | 142100 | 45700 | 58300 |
| | **311 R4** | **629** | 2.4 | 39700 | 11.2 | 22 | 71-80-90-100-112-132-160 | — | — | 120800 | 150500 | 48600 | 58300 |
| | **311 R4** | **746** | 2.0 | 30500 | 7.3 | 22 | 71-80-90-100-112-132-160 | — | — | 127200 | 158400 | 51500 | 58300 |
| **1000** | **311 R2 (B)** | **12.0** | 83 | 13500 | 125 | 90 | 180-200-225-250 | — | — | 41600 | 51800 | 14900 | 58300 |
| | **311 R2 (B)** | **15.4** | 65 | 17400 | 126 | 90 | 180-200-225-250 | — | — | 44900 | 55900 | 16200 | 58300 |
| | **311 R2 (B)** | **18.3** | 55 | 18100 | 110 | 90 | 180-200-225-250 | — | — | 47200 | 58800 | 17100 | 58300 |
| | **311 R2 (C)** | **16.6** | 60 | 16200 | 109 | 108 | 180-200-225-250 | — | — | 45900 | 57200 | 16600 | 58300 |
| | **311 R2 (C)** | **21.3** | 47 | 19100 | 100 | 108 | 180-200-225-250 | — | — | 49500 | 61600 | 18000 | 58300 |
| | **311 R2 (C)** | **25.3** | 39 | 19500 | 85 | 108 | 180-200-225-250 | — | — | 52100 | 64800 | 19100 | 58300 |
| | **311 R3** | **53.0** | 18.9 | 22900 | 50 | 48 | 132-160-180-200 | — | — | 65000 | 80900 | 24400 | 58300 |
| | **311 R3** | **63.2** | 15.8 | 27100 | 49 | 48 | 132-160-180-200 | — | — | 68500 | 85300 | 25900 | 58300 |
| | **311 R3** | **68.0** | 14.7 | 27100 | 46 | 48 | 132-160-180-200 | — | — | 70000 | 87200 | 26500 | 58300 |
| | **311 R3** | **81.1** | 12.3 | 29200 | 41 | 48 | 132-160-180-200 | — | — | 73800 | 91900 | 28100 | 58300 |
| | **311 R3** | **96.3** | 10.4 | 30700 | 37 | 48 | 132-160-180-200 | — | — | 77700 | 96800 | 29800 | 58300 |
| | **311 R3** | **104** | 9.6 | 32200 | 35 | 48 | 132-160-180-200 | — | — | 79500 | 99100 | 30600 | 58300 |
| | **311 R3** | **124** | 8.1 | 33000 | 31 | 48 | 132-160-180-200 | — | — | 83700 | 104300 | 32400 | 58300 |
| | **311 R3** | **147** | 6.8 | 27000 | 21 | 48 | 132-160-180-200 | — | — | 88200 | 109800 | 34300 | 58300 |
| | **311 R4** | **154** | 6.5 | 29800 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 89500 | 111500 | 34900 | 58300 |
| | **311 R4** | **182** | 5.5 | 35200 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 94100 | 117200 | 36900 | 58300 |
| | **311 R4** | **198** | 5.0 | 38200 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 96500 | 120200 | 37900 | 58300 |
| | **311 R4** | **229** | 4.4 | 39600 | 21 | 26 | 71-80-90-100-112-132-160 | — | — | 100700 | 125500 | 39800 | 58300 |

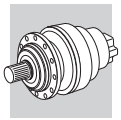


## 311 R — 350 — 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **311 R4** | **266** | 3.8 | 41200 | 18.3 | 26 | 71-80-90-100-112-132-160 | — | — | 105400 | 131300 | 41800 | 58300 |
| | **311 R4** | **294** | 3.4 | 41000 | 16.5 | 26 | 71-80-90-100-112-132-160 | — | — | 108600 | 135200 | 43200 | 58300 |
| | **311 R4** | **322** | 3.1 | 43300 | 15.9 | 26 | 71-80-90-100-112-132-160 | — | — | 111600 | 139000 | 44500 | 58300 |
| | **311 R4** | **341** | 2.9 | 42200 | 14.6 | 26 | 71-80-90-100-112-132-160 | — | — | 113600 | 141500 | 45400 | 58300 |
| | **311 R4** | **413** | 2.4 | 43500 | 12.5 | 26 | 71-80-90-100-112-132-160 | — | — | 120200 | 149800 | 48400 | 58300 |
| | **311 R4** | **438** | 2.3 | 40100 | 10.8 | 26 | 71-80-90-100-112-132-160 | — | — | 122400 | 152500 | 49400 | 58300 |
| | **311 R4** | **490** | 2.0 | 34700 | 8.4 | 26 | 71-80-90-100-112-132-160 | — | — | 126600 | 157700 | 51200 | 58300 |
| | **311 R4** | **520** | 1.9 | 40500 | 9.2 | 26 | 71-80-90-100-112-132-160 | — | — | 128800 | 160500 | 52300 | 58300 |
| | **311 R4** | **629** | 1.6 | 41200 | 7.8 | 26 | 71-80-90-100-112-132-160 | — | — | 136400 | 169900 | 55700 | 58300 |
| | **311 R4** | **746** | 1.3 | 32500 | 5.2 | 26 | 71-80-90-100-112-132-160 | — | — | 143600 | 178900 | 59000 | 58300 |
| **500** | **311 R2 (B)** | **12.0** | 42 | 16700 | 77 | 150 | 180-200-225-250 | — | — | 51200 | 63800 | 18800 | 58300 |
| | **311 R2 (B)** | **15.4** | 32 | 21400 | 77 | 150 | 180-200-225-250 | — | — | 55200 | 68800 | 20400 | 58300 |
| | **311 R2 (B)** | **18.3** | 27.3 | 21400 | 65 | 150 | 180-200-225-250 | — | — | 58100 | 72400 | 21600 | 58300 |
| | **311 R2 (C)** | **16.6** | 30 | 20000 | 67 | 180 | 180-200-225-250 | — | — | 56500 | 70400 | 20900 | 58300 |
| | **311 R2 (C)** | **21.3** | 23.4 | 23500 | 61 | 180 | 180-200-225-250 | — | — | 60900 | 75800 | 22700 | 58300 |
| | **311 R2 (C)** | **25.3** | 19.7 | 22500 | 49 | 180 | 180-200-225-250 | — | — | 64100 | 79800 | 24100 | 58300 |
| | **311 R3** | **53.0** | 9.4 | 28100 | 30 | 80 | 132-160-180-200 | — | — | 80000 | 99600 | 30800 | 58300 |
| | **311 R3** | **63.2** | 7.9 | 33400 | 30 | 80 | 132-160-180-200 | — | — | 84300 | 105000 | 32600 | 58300 |
| | **311 R3** | **68.0** | 7.4 | 32400 | 27 | 80 | 132-160-180-200 | — | — | 86200 | 107400 | 33400 | 58300 |
| | **311 R3** | **81.1** | 6.2 | 36000 | 25 | 80 | 132-160-180-200 | — | — | 90900 | 113200 | 35500 | 58300 |
| | **311 R3** | **96.3** | 5.2 | 34300 | 20 | 80 | 132-160-180-200 | — | — | 95700 | 119200 | 37500 | 58300 |
| | **311 R3** | **104** | 4.8 | 35500 | 19.5 | 80 | 132-160-180-200 | — | — | 97900 | 122000 | 38500 | 58300 |
| | **311 R3** | **124** | 4.0 | 36500 | 16.9 | 80 | 132-160-180-200 | — | — | 103100 | 128400 | 40800 | 58300 |
| | **311 R3** | **147** | 3.4 | 28400 | 11.1 | 80 | 132-160-180-200 | — | — | 108500 | 135200 | 43200 | 58300 |
| | **311 R4** | **154** | 3.2 | 36700 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 110200 | 137300 | 43900 | 58300 |
| | **311 R4** | **182** | 2.7 | 43400 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 115800 | 144300 | 46400 | 58300 |
| | **311 R4** | **198** | 2.5 | 43300 | 12.9 | 44 | 71-80-90-100-112-132-160 | — | — | 118800 | 148000 | 47700 | 58300 |
| | **311 R4** | **229** | 2.2 | 46200 | 11.9 | 44 | 71-80-90-100-112-132-160 | — | — | 124000 | 154500 | 50100 | 58300 |
| | **311 R4** | **266** | 1.9 | 46600 | 10.4 | 44 | 71-80-90-100-112-132-160 | — | — | 129700 | 161600 | 52700 | 58300 |
| | **311 R4** | **294** | 1.7 | 44800 | 9.0 | 44 | 71-80-90-100-112-132-160 | — | — | 133600 | 166500 | 54400 | 58300 |
| | **311 R4** | **322** | 1.6 | 47100 | 8.7 | 44 | 71-80-90-100-112-132-160 | — | — | 137400 | 171100 | 56100 | 58300 |
| | **311 R4** | **341** | 1.5 | 45400 | 7.9 | 44 | 71-80-90-100-112-132-160 | — | — | 139800 | 174200 | 57200 | 58300 |
| | **311 R4** | **413** | 1.2 | 46200 | 6.6 | 44 | 71-80-90-100-112-132-160 | — | — | 148000 | 184400 | 61000 | 58300 |
| | **311 R4** | **438** | 1.1 | 44300 | 6.0 | 44 | 71-80-90-100-112-132-160 | — | — | 150700 | 187700 | 62200 | 58300 |
| | **311 R4** | **490** | 1.0 | 35200 | 4.2 | 44 | 71-80-90-100-112-132-160 | — | — | 155800 | 194100 | 64600 | 58300 |
| | **311 R4** | **520** | 0.96 | 43000 | 4.9 | 44 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 R4** | **629** | 0.80 | 43000 | 4.0 | 44 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |
| | **311 R4** | **746** | 0.67 | 34000 | 2.7 | 44 | 71-80-90-100-112-132-160 | — | — | 157000 | 195000 | 65000 | 58300 |

## 313 R — 362 — 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **313 R2 (B)** | **12.2** | 123 | 12100 | 150 | 75 | 180-200-225-250 | — | — | 45700 | 54100 | 16100 | 86300 |
| | **313 R2 (B)** | **15.9** | 95 | 15700 | 150 | 75 | 180-200-225-250 | — | — | 49500 | 58600 | 17600 | 86300 |
| | **313 R2 (B)** | **19.1** | 79 | 19100 | 150 | 75 | 180-200-225-250 | — | — | 52300 | 61900 | 18700 | 86300 |
| | **313 R2 (C)** | **16.8** | 89 | 14600 | 144 | 90 | 180-200-225-250 | — | — | 50400 | 59600 | 17900 | 105000 |
| | **313 R2 (C)** | **22.0** | 68 | 19000 | 144 | 90 | 180-200-225-250 | — | — | 54600 | 64600 | 19600 | 105000 |
| | **313 R2 (C)** | **26.4** | 57 | 22800 | 144 | 90 | 180-200-225-250 | — | — | 57700 | 68300 | 20800 | 105000 |
| | **313 R3** | **53.7** | 28.0 | 20500 | 66 | 40 | 132-160-180-200 | — | — | 71300 | 84400 | 26400 | 105000 |
| | **313 R3** | **64.0** | 23.4 | 24500 | 66 | 40 | 132-160-180-200 | — | — | 75200 | 89000 | 28000 | 105000 |
| | **313 R3** | **69.9** | 21.4 | 26700 | 66 | 40 | 132-160-180-200 | — | — | 77200 | 91400 | 28800 | 105000 |
| | **313 R3** | **82.2** | 18.3 | 31400 | 66 | 40 | 132-160-180-200 | — | — | 81100 | 95900 | 30400 | 105000 |
| | **313 R3** | **97.5** | 15.4 | 37300 | 66 | 40 | 132-160-180-200 | — | — | 85300 | 101000 | 32200 | 105000 |
| | **313 R3** | **107** | 14.0 | 38800 | 62 | 40 | 132-160-180-200 | — | — | 87800 | 103900 | 33200 | 105000 |
| | **313 R3** | **127** | 11.8 | 40700 | 55 | 40 | 132-160-180-200 | — | — | 92400 | 109400 | 35100 | 105000 |
| | **313 R3** | **153** | 9.8 | 39000 | 44 | 40 | 132-160-180-200 | — | — | 97700 | 115600 | 37400 | 105000 |



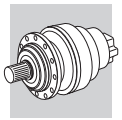
# 313 R

362

# 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **313 R4** | **185** | 8.1 | 31600 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 103300 | 122300 | 39800 | 105000 |
| | **313 R4** | **201** | 7.5 | 34300 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 106000 | 125400 | 40900 | 105000 |
| | **313 R4** | **237** | 6.3 | 40500 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 111400 | 131800 | 43200 | 105000 |
| | **313 R4** | **281** | 5.3 | 48100 | 30 | 22 | 71-80-90-100-112-132-160 | — | — | 117200 | 138800 | 45800 | 105000 |
| | **313 R4** | **309** | 4.9 | 44500 | 26 | 22 | 71-80-90-100-112-132-160 | — | — | 120600 | 142700 | 47200 | 105000 |
| | **313 R4** | **346** | 4.3 | 53000 | 27 | 22 | 71-80-90-100-112-132-160 | — | — | 124700 | 147600 | 49000 | 105000 |
| | **313 R4** | **387** | 3.9 | 46700 | 21 | 22 | 71-80-90-100-112-132-160 | — | — | 129100 | 152800 | 50900 | 105000 |
| | **313 R4** | **450** | 3.3 | 47700 | 18.8 | 22 | 71-80-90-100-112-132-160 | — | — | 135100 | 159800 | 53600 | 105000 |
| | **313 R4** | **496** | 3.0 | 52100 | 18.6 | 22 | 71-80-90-100-112-132-160 | — | — | 139000 | 164500 | 55300 | 105000 |
| | **313 R4** | **535** | 2.8 | 48900 | 16.2 | 22 | 71-80-90-100-112-132-160 | — | — | 142200 | 168300 | 56700 | 105000 |
| | **313 R4** | **647** | 2.3 | 50400 | 13.8 | 22 | 71-80-90-100-112-132-160 | — | — | 150500 | 178100 | 60400 | 105000 |
| | **313 R4** | **778** | 1.9 | 44200 | 10.1 | 22 | 71-80-90-100-112-132-160 | — | — | 159100 | 188300 | 64300 | 105000 |
| **1000** | **313 R2 (B)** | **12.2** | 82 | 13700 | 126 | 90 | 180-200-225-250 | — | — | 51600 | 61100 | 18400 | 86300 |
| | **313 R2 (B)** | **15.9** | 63 | 17700 | 124 | 90 | 180-200-225-250 | — | — | 55900 | 66100 | 20100 | 86300 |
| | **313 R2 (B)** | **19.1** | 52 | 21800 | 127 | 90 | 180-200-225-250 | — | — | 59100 | 69900 | 21400 | 86300 |
| | **313 R2 (C)** | **16.8** | 59 | 16400 | 109 | 108 | 180-200-225-250 | — | — | 56900 | 67400 | 20500 | 105000 |
| | **313 R2 (C)** | **22.0** | 46 | 21400 | 109 | 108 | 180-200-225-250 | — | — | 61600 | 72900 | 22400 | 105000 |
| | **313 R2 (C)** | **26.4** | 38 | 25000 | 105 | 108 | 180-200-225-250 | — | — | 65100 | 77100 | 23800 | 105000 |
| | **313 R3** | **53.7** | 18.6 | 23200 | 50 | 48 | 132-160-180-200 | — | — | 80600 | 95300 | 30200 | 105000 |
| | **313 R3** | **64.0** | 15.6 | 27700 | 50 | 48 | 132-160-180-200 | — | — | 84900 | 100500 | 32000 | 105000 |
| | **313 R3** | **69.9** | 14.3 | 30200 | 50 | 48 | 132-160-180-200 | — | — | 87200 | 103200 | 33000 | 105000 |
| | **313 R3** | **82.2** | 12.2 | 35500 | 50 | 48 | 132-160-180-200 | — | — | 91500 | 108300 | 34800 | 105000 |
| | **313 R3** | **97.5** | 10.3 | 42100 | 50 | 48 | 132-160-180-200 | — | — | 96400 | 114100 | 36800 | 105000 |
| | **313 R3** | **107** | 9.3 | 42800 | 46 | 48 | 132-160-180-200 | — | — | 99100 | 117300 | 38000 | 105000 |
| | **313 R3** | **127** | 7.9 | 43400 | 39 | 48 | 132-160-180-200 | — | — | 104400 | 123500 | 40200 | 105000 |
| | **313 R3** | **153** | 6.5 | 39000 | 29 | 48 | 132-160-180-200 | — | — | 110300 | 130600 | 42800 | 105000 |
| | **313 R4** | **185** | 5.4 | 35700 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 116700 | 138100 | 45500 | 105000 |
| | **313 R4** | **201** | 5.0 | 38800 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 119700 | 141600 | 46800 | 105000 |
| | **313 R4** | **237** | 4.2 | 45600 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 125800 | 148900 | 49500 | 105000 |
| | **313 R4** | **281** | 3.6 | 49700 | 21 | 26 | 71-80-90-100-112-132-160 | — | — | 132400 | 156700 | 52400 | 105000 |
| | **313 R4** | **309** | 3.2 | 47600 | 18.2 | 26 | 71-80-90-100-112-132-160 | — | — | 136200 | 161200 | 54100 | 105000 |
| | **313 R4** | **346** | 2.9 | 54500 | 18.6 | 26 | 71-80-90-100-112-132-160 | — | — | 140900 | 166700 | 56100 | 105000 |
| | **313 R4** | **387** | 2.6 | 49500 | 15.1 | 26 | 71-80-90-100-112-132-160 | — | — | 145800 | 172500 | 58300 | 105000 |
| | **313 R4** | **450** | 2.2 | 50700 | 13.3 | 26 | 71-80-90-100-112-132-160 | — | — | 152500 | 180500 | 61300 | 105000 |
| | **313 R4** | **496** | 2.0 | 52200 | 12.5 | 26 | 71-80-90-100-112-132-160 | — | — | 157000 | 185800 | 63300 | 105000 |
| | **313 R4** | **535** | 1.9 | 52200 | 11.6 | 26 | 71-80-90-100-112-132-160 | — | — | 160600 | 190000 | 64900 | 105000 |
| | **313 R4** | **647** | 1.5 | 53900 | 9.9 | 26 | 71-80-90-100-112-132-160 | — | — | 170000 | 201200 | 69200 | 105000 |
| | **313 R4** | **778** | 1.3 | 47100 | 7.2 | 26 | 71-80-90-100-112-132-160 | — | — | 179700 | 212700 | 73600 | 105000 |
| **500** | **313 R2 (B)** | **12.2** | 41 | 17000 | 78 | 150 | 180-200-225-250 | — | — | 63600 | 75200 | 23200 | 86300 |
| | **313 R2 (B)** | **15.9** | 32 | 21900 | 77 | 150 | 180-200-225-250 | — | — | 68800 | 81400 | 25300 | 86300 |
| | **313 R2 (B)** | **19.1** | 26.2 | 26900 | 78 | 150 | 180-200-225-250 | — | — | 72700 | 86100 | 26900 | 86300 |
| | **313 R2 (C)** | **16.8** | 29.7 | 20200 | 67 | 180 | 180-200-225-250 | — | — | 70100 | 82900 | 25800 | 105000 |
| | **313 R2 (C)** | **22.0** | 22.8 | 26400 | 67 | 180 | 180-200-225-250 | — | — | 75900 | 89800 | 28200 | 105000 |
| | **313 R2 (C)** | **26.4** | 18.9 | 28300 | 60 | 180 | 180-200-225-250 | — | — | 80200 | 94900 | 30000 | 105000 |
| | **313 R3** | **53.7** | 9.3 | 28400 | 30 | 80 | 132-160-180-200 | — | — | 99200 | 117400 | 38000 | 105000 |
| | **313 R3** | **64.0** | 7.8 | 34100 | 31 | 80 | 132-160-180-200 | — | — | 104600 | 123800 | 40300 | 105000 |
| | **313 R3** | **69.9** | 7.1 | 37200 | 31 | 80 | 132-160-180-200 | — | — | 107400 | 127100 | 41500 | 105000 |
| | **313 R3** | **82.2** | 6.1 | 43700 | 31 | 80 | 132-160-180-200 | — | — | 112700 | 133400 | 43800 | 105000 |
| | **313 R3** | **97.5** | 5.1 | 50000 | 29 | 80 | 132-160-180-200 | — | — | 118700 | 140400 | 46400 | 105000 |
| | **313 R3** | **107** | 4.7 | 45100 | 24 | 80 | 132-160-180-200 | — | — | 122000 | 144400 | 47900 | 105000 |
| | **313 R3** | **127** | 3.9 | 46600 | 21 | 80 | 132-160-180-200 | — | — | 128500 | 152000 | 50700 | 105000 |
| | **313 R3** | **153** | 3.3 | 41100 | 15.4 | 80 | 132-160-180-200 | — | — | 135800 | 160700 | 53900 | 105000 |
| | **313 R4** | **185** | 2.7 | 43900 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 143700 | 170000 | 57400 | 105000 |
| | **313 R4** | **201** | 2.5 | 47700 | 14.1 | 44 | 71-80-90-100-112-132-160 | — | — | 147300 | 174400 | 59000 | 105000 |
| | **313 R4** | **237** | 2.1 | 53000 | 13.2 | 44 | 71-80-90-100-112-132-160 | — | — | 154900 | 183300 | 62400 | 105000 |
| | **313 R4** | **281** | 1.8 | 51300 | 10.8 | 44 | 71-80-90-100-112-132-160 | — | — | 163000 | 192900 | 66000 | 105000 |
| | **313 R4** | **309** | 1.6 | 53500 | 10.2 | 44 | 71-80-90-100-112-132-160 | — | — | 167700 | 198400 | 68100 | 105000 |
| | **313 R4** | **346** | 1.4 | 55200 | 9.5 | 44 | 71-80-90-100-112-132-160 | — | — | 173400 | 205200 | 70700 | 105000 |
| | **313 R4** | **387** | 1.3 | 55500 | 8.5 | 44 | 71-80-90-100-112-132-160 | — | — | 179500 | 212400 | 73500 | 105000 |

B

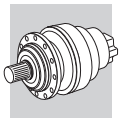


## 313 R — 362 — 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **313 R4** | **450** | 1.1 | 57000 | 7.5 | 44 | 71-80-90-100-112-132-160 | — | — | 187800 | 222200 | 77300 | 105000 |
| | **313 R4** | **496** | 1.0 | 53000 | 6.3 | 44 | 71-80-90-100-112-132-160 | — | — | 192000 | 228800 | 79800 | 105000 |
| | **313 R4** | **535** | 0.94 | 58000 | 6.4 | 44 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 R4** | **647** | 0.77 | 58000 | 5.3 | 44 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |
| | **313 R4** | **778** | 0.64 | 49000 | 3.7 | 44 | 71-80-90-100-112-132-160 | — | — | 192000 | 231000 | 80000 | 105000 |

## 314 R — 374 — 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **314 R3 (B)** | **51.1** | 29.4 | 38500 | 130 | 55 | 180-200-225 | — | — | 75000 | 88100 | 29200 | 115000 |
| | **314 R3 (B)** | **65.5** | 22.9 | 49700 | 130 | 55 | 180-200-225 | — | — | 80900 | 94900 | 31700 | 115000 |
| | **314 R3 (B)** | **77.8** | 19.3 | 51500 | 114 | 55 | 180-200-225 | — | — | 85100 | 100000 | 33600 | 115000 |
| | **314 R3 (B)** | **82.3** | 18.2 | 52400 | 110 | 55 | 180-200-225 | — | — | 86600 | 101600 | 34200 | 115000 |
| | **314 R3 (B)** | **97.6** | 15.4 | 55100 | 97 | 55 | 180-200-225 | — | — | 91100 | 107000 | 36200 | 115000 |
| | **314 R3 (B)** | **113** | 13.2 | 48000 | 73 | 55 | 180-200-225 | — | — | 95300 | 111900 | 38100 | 115000 |
| | **314 R3 (C)** | **70.7** | 21.2 | 43900 | 107 | 55 | 180-200-225-250 | — | — | 82700 | 97100 | 32500 | 115000 |
| | **314 R3 (C)** | **90.7** | 16.5 | 47300 | 90 | 55 | 180-200-225-250 | — | — | 89200 | 104700 | 35300 | 115000 |
| | **314 R3 (C)** | **108** | 13.9 | 49800 | 80 | 55 | 180-200-225-250 | — | — | 93900 | 110200 | 37400 | 115000 |
| | **314 R3 (C)** | **114** | 13.2 | 51700 | 78 | 55 | 180-200-225-250 | — | — | 95400 | 112100 | 38100 | 115000 |
| | **314 R3 (C)** | **135** | 11.1 | 60500 | 77 | 55 | 180-200-225-250 | — | — | 100500 | 118000 | 40300 | 115000 |
| | **314 R3 (C)** | **157** | 9.5 | 52000 | 57 | 55 | 180-200-225-250 | — | — | 105100 | 123400 | 42400 | 115000 |
| | **314 R4** | **160** | 9.4 | 56200 | 35 | 22 | 71-80-90-100-112-132-160 | — | — | 105800 | 124200 | 42700 | 115000 |
| | **314 R4** | **189** | 7.9 | 59000 | 35 | 22 | 71-80-90-100-112-132-160 | — | — | 111200 | 130500 | 45100 | 115000 |
| | **314 R4** | **238** | 6.3 | 71100 | 35 | 22 | 71-80-90-100-112-132-160 | — | — | 119000 | 139700 | 48700 | 115000 |
| | **314 R4** | **276** | 5.4 | 75700 | 35 | 22 | 71-80-90-100-112-132-160 | — | — | 124500 | 146200 | 51200 | 115000 |
| | **314 R4** | **354** | 4.2 | 78200 | 35 | 22 | 71-80-90-100-112-132-160 | — | — | 134200 | 157500 | 55600 | 115000 |
| | **314 R4** | **421** | 3.6 | 78800 | 33 | 22 | 71-80-90-100-112-132-160 | — | — | 141300 | 165900 | 58900 | 115000 |
| | **314 R4** | **445** | 3.4 | 67800 | 27 | 22 | 71-80-90-100-112-132-160 | — | — | 143600 | 168700 | 60000 | 115000 |
| | **314 R4** | **528** | 2.8 | 68800 | 23 | 22 | 71-80-90-100-112-132-160 | — | — | 151200 | 177500 | 63500 | 115000 |
| | **314 R4** | **614** | 2.4 | 57600 | 16.7 | 22 | 71-80-90-100-112-132-160 | — | — | 158200 | 185800 | 66800 | 115000 |
| **1000** | **314 R3 (B)** | **51.1** | 19.6 | 43500 | 98 | 66 | 180-200-225 | — | — | 84700 | 99500 | 33400 | 115000 |
| | **314 R3 (B)** | **65.5** | 15.3 | 56500 | 99 | 66 | 180-200-225 | — | — | 91300 | 107200 | 36300 | 115000 |
| | **314 R3 (B)** | **77.8** | 12.9 | 58000 | 86 | 66 | 180-200-225 | — | — | 96100 | 112900 | 38400 | 115000 |
| | **314 R3 (B)** | **82.3** | 12.2 | 58900 | 82 | 66 | 180-200-225 | — | — | 97800 | 114800 | 39100 | 115000 |
| | **314 R3 (B)** | **97.6** | 10.2 | 62000 | 73 | 66 | 180-200-225 | — | — | 102900 | 120800 | 41400 | 115000 |
| | **314 R3 (B)** | **113** | 8.8 | 52000 | 53 | 66 | 180-200-225 | — | — | 107700 | 126400 | 43600 | 115000 |
| | **314 R3 (C)** | **70.7** | 14.1 | 49600 | 81 | 66 | 180-200-225-250 | — | — | 93400 | 109700 | 37200 | 115000 |
| | **314 R3 (C)** | **90.7** | 11.0 | 53500 | 68 | 66 | 180-200-225-250 | — | — | 100700 | 118200 | 40400 | 115000 |
| | **314 R3 (C)** | **108** | 9.3 | 56300 | 60 | 66 | 180-200-225-250 | — | — | 106000 | 124500 | 42800 | 115000 |
| | **314 R3 (C)** | **114** | 8.8 | 57700 | 58 | 66 | 180-200-225-250 | — | — | 107800 | 126600 | 43600 | 115000 |
| | **314 R3 (C)** | **135** | 7.4 | 63700 | 54 | 66 | 180-200-225-250 | — | — | 113500 | 133200 | 46200 | 115000 |
| | **314 R3 (C)** | **157** | 6.4 | 52000 | 38 | 66 | 180-200-225-250 | — | — | 118700 | 139400 | 48600 | 115000 |
| | **314 R4** | **160** | 6.2 | 63400 | 35 | 26 | 71-80-90-100-112-132-160 | — | — | 119500 | 140300 | 48900 | 115000 |
| | **314 R4** | **189** | 5.3 | 66700 | 35 | 26 | 71-80-90-100-112-132-160 | — | — | 125600 | 147400 | 51700 | 115000 |
| | **314 R4** | **238** | 4.2 | 77000 | 35 | 26 | 71-80-90-100-112-132-160 | — | — | 134400 | 157800 | 55700 | 115000 |
| | **314 R4** | **276** | 3.6 | 78700 | 34 | 26 | 71-80-90-100-112-132-160 | — | — | 140600 | 165100 | 58600 | 115000 |
| | **314 R4** | **354** | 2.8 | 79600 | 27 | 26 | 71-80-90-100-112-132-160 | — | — | 151500 | 177900 | 63700 | 115000 |
| | **314 R4** | **421** | 2.4 | 80200 | 23 | 26 | 71-80-90-100-112-132-160 | — | — | 159500 | 187300 | 67400 | 115000 |
| | **314 R4** | **445** | 2.2 | 70700 | 18.8 | 26 | 71-80-90-100-112-132-160 | — | — | 162200 | 190500 | 68700 | 115000 |
| | **314 R4** | **528** | 1.9 | 72400 | 16.2 | 26 | 71-80-90-100-112-132-160 | — | — | 170800 | 200500 | 72700 | 115000 |
| | **314 R4** | **614** | 1.6 | 61600 | 11.9 | 26 | 71-80-90-100-112-132-160 | — | — | 178700 | 209800 | 76500 | 115000 |
| **500** | **314 R3 (B)** | **51.1** | 9.8 | 53600 | 60 | 110 | 180-200-225 | — | — | 104300 | 122500 | 42100 | 115000 |
| | **314 R3 (B)** | **65.5** | 7.6 | 69400 | 61 | 110 | 180-200-225 | — | — | 112400 | 132000 | 45700 | 115000 |
| | **314 R3 (B)** | **77.8** | 6.4 | 71700 | 53 | 110 | 180-200-225 | — | — | 118400 | 139000 | 48400 | 115000 |
| | **314 R3 (B)** | **82.3** | 6.1 | 64600 | 45 | 110 | 180-200-225 | — | — | 120400 | 141300 | 49300 | 115000 |
| | **314 R3 (B)** | **97.6** | 5.1 | 65400 | 38 | 110 | 180-200-225 | — | — | 126700 | 148800 | 52200 | 115000 |
| | **314 R3 (B)** | **113** | 4.4 | 52900 | 27 | 110 | 180-200-225 | — | — | 132600 | 155600 | 54900 | 115000 |

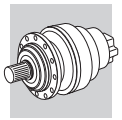


## 314 R — 374 — 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **314 R3 (C)** | **70.7** | 7.1 | 61100 | 50 | 110 | 180-200-225-250 | — | — | 115000 | 135100 | 46900 | 115000 |
| | **314 R3 (C)** | **90.7** | 5.5 | 65800 | 42 | 110 | 180-200-225-250 | — | — | 124000 | 145500 | 51000 | 115000 |
| | **314 R3 (C)** | **108** | 4.6 | 69000 | 37 | 110 | 180-200-225-250 | — | — | 130500 | 153200 | 53900 | 115000 |
| | **314 R3 (C)** | **114** | 4.4 | 66200 | 33 | 110 | 180-200-225-250 | — | — | 132700 | 155800 | 55000 | 115000 |
| | **314 R3 (C)** | **135** | 3.7 | 67200 | 29 | 110 | 180-200-225-250 | — | — | 139700 | 164000 | 58200 | 115000 |
| | **314 R3 (C)** | **157** | 3.2 | 55500 | 20 | 110 | 180-200-225-250 | — | — | 146200 | 171600 | 61200 | 115000 |
| | **314 R4** | **160** | 3.1 | 74700 | 28 | 44 | 71-80-90-100-112-132-160 | — | — | 147100 | 172700 | 61600 | 115000 |
| | **314 R4** | **189** | 2.6 | 78200 | 24 | 44 | 71-80-90-100-112-132-160 | — | — | 154600 | 181500 | 65100 | 115000 |
| | **314 R4** | **238** | 2.1 | 80700 | 20 | 44 | 71-80-90-100-112-132-160 | — | — | 165500 | 194300 | 70200 | 115000 |
| | **314 R4** | **276** | 1.8 | 81400 | 17.4 | 44 | 71-80-90-100-112-132-160 | — | — | 173100 | 203300 | 73800 | 115000 |
| | **314 R4** | **354** | 1.4 | 82500 | 13.8 | 44 | 71-80-90-100-112-132-160 | — | — | 186600 | 219100 | 80300 | 115000 |
| | **314 R4** | **421** | 1.2 | 83200 | 11.7 | 44 | 71-80-90-100-112-132-160 | — | — | 196400 | 230600 | 85000 | 115000 |
| | **314 R4** | **445** | 1.1 | 77900 | 10.4 | 44 | 71-80-90-100-112-132-160 | — | — | 199700 | 234500 | 86600 | 115000 |
| | **314 R4** | **528** | 0.95 | 79200 | 8.9 | 44 | 71-80-90-100-112-132-160 | — | — | 206000 | 243000 | 90000 | 115000 |
| | **314 R4** | **614** | 0.81 | 66800 | 6.4 | 44 | 71-80-90-100-112-132-160 | — | — | 206000 | 243000 | 90000 | 115000 |

## 315 R — 386 — 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **315 R3 (B)** | **51.1** | 29.4 | 48100 | 150 | 75 | 180-200-225-250 | — | — | 75000 | 88100 | 29200 | 135000 |
| | **315 R3 (B)** | **65.5** | 22.9 | 62100 | 150 | 75 | 180-200-225-250 | — | — | 80900 | 94900 | 31700 | 135000 |
| | **315 R3 (B)** | **77.8** | 19.3 | 64400 | 143 | 75 | 180-200-225-250 | — | — | 85100 | 100000 | 33600 | 135000 |
| | **315 R3 (B)** | **82.3** | 18.2 | 65500 | 137 | 75 | 180-200-225-250 | — | — | 86600 | 101600 | 34200 | 135000 |
| | **315 R3 (B)** | **97.6** | 15.4 | 68800 | 121 | 75 | 180-200-225-250 | — | — | 91100 | 107000 | 36200 | 135000 |
| | **315 R3 (B)** | **113** | 13.2 | 60000 | 91 | 75 | 180-200-225-250 | — | — | 95300 | 111900 | 38100 | 135000 |
| | **315 R3 (C)** | **70.7** | 21.2 | 54900 | 134 | 90 | 180-200-225-250 | — | — | 82700 | 97100 | 32500 | 135000 |
| | **315 R3 (C)** | **90.7** | 16.5 | 59200 | 112 | 90 | 180-200-225-250 | — | — | 89200 | 104700 | 35300 | 135000 |
| | **315 R3 (C)** | **108** | 13.9 | 62300 | 100 | 90 | 180-200-225-250 | — | — | 93900 | 110200 | 37400 | 135000 |
| | **315 R3 (C)** | **114** | 13.2 | 64700 | 98 | 90 | 180-200-225-250 | — | — | 95400 | 112100 | 38100 | 135000 |
| | **315 R3 (C)** | **135** | 11.1 | 75700 | 96 | 90 | 180-200-225-250 | — | — | 100500 | 118000 | 40300 | 135000 |
| | **315 R3 (C)** | **157** | 9.5 | 65000 | 71 | 90 | 180-200-225-250 | — | — | 105100 | 123400 | 42400 | 135000 |
| | **315 R4** | **225** | 6.7 | 77700 | 61 | 40 | 132-160-180-200 | — | — | 117100 | 137500 | 47800 | 135000 |
| | **315 R4** | **269** | 5.6 | 82000 | 54 | 40 | 132-160-180-200 | — | — | 123500 | 145000 | 50700 | 135000 |
| | **315 R4** | **345** | 4.3 | 96000 | 49 | 40 | 132-160-180-200 | — | — | 133100 | 156200 | 55100 | 135000 |
| | **315 R4** | **409** | 3.7 | 98300 | 43 | 40 | 132-160-180-200 | — | — | 140100 | 164500 | 58400 | 135000 |
| | **315 R4** | **525** | 2.9 | 99400 | 34 | 40 | 132-160-180-200 | — | — | 151000 | 177300 | 63400 | 135000 |
| | **315 R4** | **623** | 2.4 | 100200 | 29 | 40 | 132-160-180-200 | — | — | 158900 | 186600 | 67200 | 135000 |
| | **315 R4** | **659** | 2.3 | 88200 | 24 | 40 | 132-160-180-200 | — | — | 161600 | 189800 | 68400 | 135000 |
| | **315 R4** | **782** | 1.9 | 90300 | 20 | 40 | 132-160-180-200 | — | — | 170200 | 199800 | 72400 | 135000 |
| | **315 R4** | **909** | 1.6 | 76900 | 15.0 | 40 | 132-160-180-200 | — | — | 178000 | 209000 | 76200 | 135000 |
| **1000** | **315 R3 (B)** | **51.1** | 19.6 | 54400 | 122 | 90 | 180-200-225-250 | — | — | 84700 | 99500 | 33400 | 135000 |
| | **315 R3 (B)** | **65.5** | 15.3 | 70700 | 124 | 90 | 180-200-225-250 | — | — | 91300 | 107200 | 36300 | 135000 |
| | **315 R3 (B)** | **77.8** | 12.9 | 72500 | 107 | 90 | 180-200-225-250 | — | — | 96100 | 112900 | 38400 | 135000 |
| | **315 R3 (B)** | **82.3** | 12.2 | 73700 | 103 | 90 | 180-200-225-250 | — | — | 97800 | 114800 | 39100 | 135000 |
| | **315 R3 (B)** | **97.6** | 10.2 | 77500 | 91 | 90 | 180-200-225-250 | — | — | 102900 | 120800 | 41400 | 135000 |
| | **315 R3 (B)** | **113** | 8.8 | 65000 | 66 | 90 | 180-200-225-250 | — | — | 107700 | 126400 | 43600 | 135000 |
| | **315 R3 (C)** | **70.7** | 14.1 | 62000 | 101 | 108 | 180-200-225-250 | — | — | 93400 | 109700 | 37200 | 135000 |
| | **315 R3 (C)** | **90.7** | 11.0 | 66800 | 85 | 108 | 180-200-225-250 | — | — | 100700 | 118200 | 40400 | 135000 |
| | **315 R3 (C)** | **108** | 9.3 | 70400 | 75 | 108 | 180-200-225-250 | — | — | 106000 | 124500 | 42800 | 135000 |
| | **315 R3 (C)** | **114** | 8.8 | 72100 | 73 | 108 | 180-200-225-250 | — | — | 107800 | 126600 | 43600 | 135000 |
| | **315 R3 (C)** | **135** | 7.4 | 79600 | 68 | 108 | 180-200-225-250 | — | — | 113500 | 133200 | 46200 | 135000 |
| | **315 R3 (C)** | **157** | 6.4 | 65000 | 47 | 108 | 180-200-225-250 | — | — | 118700 | 139400 | 48600 | 135000 |
| | **315 R4** | **225** | 4.4 | 86800 | 46 | 48 | 132-160-180-200 | — | — | 132300 | 155300 | 54800 | 135000 |
| | **315 R4** | **269** | 3.7 | 90500 | 40 | 48 | 132-160-180-200 | — | — | 139500 | 163700 | 58100 | 135000 |
| | **315 R4** | **345** | 2.9 | 98900 | 34 | 48 | 132-160-180-200 | — | — | 150300 | 176500 | 63100 | 135000 |
| | **315 R4** | **409** | 2.4 | 100100 | 29 | 48 | 132-160-180-200 | — | — | 158200 | 185800 | 66800 | 135000 |
| | **315 R4** | **525** | 1.9 | 101500 | 23 | 48 | 132-160-180-200 | — | — | 170500 | 200200 | 72600 | 135000 |



## 315 R

386

## 105000 Nm

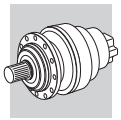
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **315 R4** | **623** | 1.6 | 102400 | 19.4 | 48 | 132-160-180-200 | — | — | 179500 | 210800 | 76900 | 135000 |
| | **315 R4** | **659** | 1.5 | 93300 | 16.8 | 48 | 132-160-180-200 | — | — | 182500 | 214300 | 78300 | 135000 |
| | **315 R4** | **782** | 1.3 | 95600 | 14.5 | 48 | 132-160-180-200 | — | — | 192200 | 225600 | 82900 | 135000 |
| | **315 R4** | **909** | 1.1 | 82200 | 10.7 | 48 | 132-160-180-200 | — | — | 201000 | 236000 | 87200 | 135000 |
| **500** | **315 R3 (B)** | **51.1** | 9.8 | 67000 | 75 | 150 | 180-200-225-250 | — | — | 104300 | 122500 | 42100 | 135000 |
| | **315 R3 (B)** | **65.5** | 7.6 | 86800 | 76 | 150 | 180-200-225-250 | — | — | 112400 | 132000 | 45700 | 135000 |
| | **315 R3 (B)** | **77.8** | 6.4 | 89600 | 66 | 150 | 180-200-225-250 | — | — | 118400 | 139000 | 48400 | 135000 |
| | **315 R3 (B)** | **82.3** | 6.1 | 80700 | 56 | 150 | 180-200-225-250 | — | — | 120400 | 141300 | 49300 | 135000 |
| | **315 R3 (B)** | **97.6** | 5.1 | 81700 | 48 | 150 | 180-200-225-250 | — | — | 126700 | 148800 | 52200 | 135000 |
| | **315 R3 (B)** | **113** | 4.4 | 66200 | 33 | 150 | 180-200-225-250 | — | — | 132600 | 155600 | 54900 | 135000 |
| | **315 R3 (C)** | **70.7** | 7.1 | 76400 | 62 | 180 | 180-200-225-250 | — | — | 115000 | 135100 | 46900 | 135000 |
| | **315 R3 (C)** | **90.7** | 5.5 | 82300 | 52 | 180 | 180-200-225-250 | — | — | 124000 | 145500 | 51000 | 135000 |
| | **315 R3 (C)** | **108** | 4.6 | 86200 | 46 | 180 | 180-200-225-250 | — | — | 130500 | 153200 | 53900 | 135000 |
| | **315 R3 (C)** | **114** | 4.4 | 82800 | 42 | 180 | 180-200-225-250 | — | — | 132700 | 155800 | 55000 | 135000 |
| | **315 R3 (C)** | **135** | 3.7 | 84000 | 36 | 180 | 180-200-225-250 | — | — | 139700 | 164000 | 58200 | 135000 |
| | **315 R3 (C)** | **157** | 3.2 | 69300 | 25 | 180 | 180-200-225-250 | — | — | 146200 | 171600 | 61200 | 135000 |
| | **315 R4** | **225** | 2.2 | 98500 | 26 | 80 | 132-160-180-200 | — | — | 162800 | 191200 | 69000 | 135000 |
| | **315 R4** | **269** | 1.9 | 100900 | 22 | 80 | 132-160-180-200 | — | — | 171700 | 201600 | 73200 | 135000 |
| | **315 R4** | **345** | 1.4 | 102900 | 17.7 | 80 | 132-160-180-200 | — | — | 185000 | 217200 | 79500 | 135000 |
| | **315 R4** | **409** | 1.2 | 103900 | 15.0 | 80 | 132-160-180-200 | — | — | 194800 | 228700 | 84200 | 135000 |
| | **315 R4** | **525** | 0.95 | 105000 | 11.8 | 80 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 R4** | **623** | 0.80 | 105000 | 10.0 | 80 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 R4** | **659** | 0.76 | 99000 | 8.9 | 80 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 R4** | **782** | 0.64 | 99000 | 7.5 | 80 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |
| | **315 R4** | **909** | 0.55 | 83500 | 5.4 | 80 | 132-160-180-200 | — | — | 206000 | 243000 | 90000 | 135000 |

## 316 R

398

## 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **316 R3 (B)** | **51.1** | 29.4 | 50000 | 150 | 75 | 180-200-225-250 | — | — | 124800 | 138800 | 48600 | 192000 |
| | **316 R3 (B)** | **65.5** | 22.9 | 63800 | 150 | 75 | 180-200-225-250 | — | — | 134500 | 149500 | 52800 | 192000 |
| | **316 R3 (B)** | **77.8** | 19.3 | 65800 | 146 | 75 | 180-200-225-250 | — | — | 141600 | 157400 | 55900 | 192000 |
| | **316 R3 (C)** | **70.7** | 21.2 | 59300 | 144 | 90 | 180-200-225-250 | — | — | 137600 | 153000 | 54200 | 192000 |
| | **316 R3 (C)** | **90.7** | 16.5 | 69800 | 132 | 90 | 180-200-225-250 | — | — | 148200 | 164900 | 58900 | 192000 |
| | **316 R3 (C)** | **108** | 13.9 | 72500 | 116 | 90 | 180-200-225-250 | — | — | 156100 | 173600 | 62300 | 192000 |
| | **316 R4** | **225** | 6.7 | 94500 | 74 | 45 | 132-160-180-200 | — | — | 194700 | 216600 | 79700 | 192000 |
| | **316 R4** | **269** | 5.6 | 99700 | 66 | 45 | 132-160-180-200 | — | — | 205300 | 228300 | 84600 | 192000 |
| | **316 R4** | **289** | 5.2 | 105700 | 65 | 45 | 132-160-180-200 | — | — | 209900 | 233400 | 86600 | 192000 |
| | **316 R4** | **345** | 4.3 | 107300 | 55 | 45 | 132-160-180-200 | — | — | 221300 | 246100 | 91900 | 192000 |
| | **316 R4** | **409** | 3.7 | 112700 | 49 | 45 | 132-160-180-200 | — | — | 232900 | 259100 | 97300 | 192000 |
| | **316 R4** | **443** | 3.4 | 117300 | 47 | 45 | 132-160-180-200 | — | — | 238500 | 265200 | 99900 | 192000 |
| | **316 R4** | **525** | 2.9 | 118900 | 40 | 45 | 132-160-180-200 | — | — | 251000 | 279200 | 105700 | 192000 |
| | **316 R4** | **623** | 2.4 | 115400 | 33 | 45 | 132-160-180-200 | — | — | 264300 | 293900 | 111900 | 192000 |
| **1000** | **316 R3 (B)** | **51.1** | 19.6 | 56900 | 128 | 90 | 180-200-225-250 | — | — | 140900 | 156700 | 55700 | 192000 |
| | **316 R3 (B)** | **65.5** | 15.3 | 72400 | 127 | 90 | 180-200-225-250 | — | — | 151900 | 168900 | 60500 | 192000 |
| | **316 R3 (B)** | **77.8** | 12.9 | 74300 | 110 | 90 | 180-200-225-250 | — | — | 159900 | 177800 | 64000 | 192000 |
| | **316 R3 (C)** | **70.7** | 14.1 | 66900 | 109 | 108 | 180-200-225-250 | — | — | 155300 | 172800 | 62000 | 192000 |
| | **316 R3 (C)** | **90.7** | 11.0 | 78800 | 100 | 108 | 180-200-225-250 | — | — | 167400 | 186200 | 67400 | 192000 |
| | **316 R3 (C)** | **108** | 9.3 | 81900 | 87 | 108 | 180-200-225-250 | — | — | 176200 | 196000 | 71400 | 192000 |
| | **316 R4** | **225** | 4.4 | 106600 | 56 | 54 | 132-160-180-200 | — | — | 219900 | 244600 | 91300 | 192000 |
| | **316 R4** | **269** | 3.7 | 112200 | 49 | 54 | 132-160-180-200 | — | — | 231900 | 257900 | 96800 | 192000 |
| | **316 R4** | **289** | 3.5 | 116700 | 48 | 54 | 132-160-180-200 | — | — | 237000 | 263600 | 99200 | 192000 |
| | **316 R4** | **345** | 2.9 | 120700 | 41 | 54 | 132-160-180-200 | — | — | 249900 | 277900 | 105200 | 192000 |
| | **316 R4** | **409** | 2.4 | 126200 | 36 | 54 | 132-160-180-200 | — | — | 263100 | 292600 | 111400 | 192000 |
| | **316 R4** | **443** | 2.3 | 127400 | 34 | 54 | 132-160-180-200 | — | — | 269300 | 299500 | 114300 | 192000 |
| | **316 R4** | **525** | 1.9 | 127500 | 29 | 54 | 132-160-180-200 | — | — | 283500 | 315300 | 121000 | 192000 |
| | **316 R4** | **623** | 1.6 | 119300 | 23 | 54 | 132-160-180-200 | — | — | 298500 | 331900 | 128100 | 192000 |



## 316 R

398

## 138820 Nm

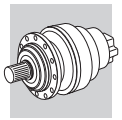
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **316 R3 (B)** | **51.1** | 9.8 | 70800 | 79 | 150 | 180-200-225-250 | — | — | 173500 | 192900 | 70100 | 192000 |
| | **316 R3 (B)** | **65.5** | 7.6 | 90400 | 79 | 150 | 180-200-225-250 | — | — | 187000 | 207900 | 76200 | 192000 |
| | **316 R3 (B)** | **77.8** | 6.4 | 91500 | 67 | 150 | 180-200-225-250 | — | — | 196800 | 218900 | 80700 | 192000 |
| | **316 R3 (C)** | **70.7** | 7.1 | 82400 | 67 | 180 | 180-200-225-250 | — | — | 191300 | 212700 | 78100 | 192000 |
| | **316 R3 (C)** | **90.7** | 5.5 | 97000 | 61 | 180 | 180-200-225-250 | — | — | 206100 | 229200 | 84900 | 192000 |
| | **316 R3 (C)** | **108** | 4.6 | 99600 | 53 | 180 | 180-200-225-250 | — | — | 217000 | 241300 | 89900 | 192000 |
| | **316 R4** | **225** | 2.2 | 127600 | 34 | 90 | 132-160-180-200 | — | — | 270700 | 301100 | 115000 | 192000 |
| | **316 R4** | **269** | 1.9 | 130000 | 29 | 90 | 132-160-180-200 | — | — | 285500 | 317500 | 122000 | 192000 |
| | **316 R4** | **289** | 1.7 | 131000 | 27 | 90 | 132-160-180-200 | — | — | 291800 | 324500 | 124900 | 192000 |
| | **316 R4** | **345** | 1.4 | 133500 | 23 | 90 | 132-160-180-200 | — | — | 307700 | 342200 | 132500 | 192000 |
| | **316 R4** | **409** | 1.2 | 135900 | 19.6 | 90 | 132-160-180-200 | — | — | 323900 | 360200 | 140300 | 192000 |
| | **316 R4** | **443** | 1.1 | 137000 | 18.3 | 90 | 132-160-180-200 | — | — | 331600 | 368700 | 144000 | 192000 |
| | **316 R4** | **525** | 0.95 | 138800 | 15.6 | 90 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |
| | **316 R4** | **623** | 0.80 | 124000 | 11.8 | 90 | 132-160-180-200 | — | — | 345000 | 385000 | 150000 | 192000 |

## 317 R

408

## 187860 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **317 R3 (B)** | **49.8** | 30 | 46900 | 150 | 90 | 180-200-225-250 | — | — | 159200 | 169500 | 48200 | 393000 |
| | **317 R3 (B)** | **64.9** | 23.1 | 61200 | 150 | 90 | 180-200-225-250 | — | — | 172400 | 183500 | 52700 | 393000 |
| | **317 R3 (B)** | **78.1** | 19.2 | 75100 | 150 | 90 | 180-200-225-250 | — | — | 182200 | 194000 | 56000 | 393000 |
| | **317 R3 (B)** | **83.3** | 18.0 | 80200 | 150 | 90 | 180-200-225-250 | — | — | 185800 | 197800 | 57200 | 393000 |
| | **317 R3 (B)** | **100** | 15.0 | 96200 | 150 | 90 | 180-200-225-250 | — | — | 196400 | 209100 | 60900 | 393000 |
| | **317 R3 (B)** | **119** | 12.6 | 111000 | 150 | 90 | 180-200-225-250 | — | — | 206700 | 220100 | 64400 | 393000 |
| | **317 R3 (C)** | **68.9** | 21.8 | 57800 | 144 | 100 | 180-200-225-250 | — | — | 175500 | 186900 | 53700 | 393000 |
| | **317 R3 (C)** | **89.8** | 16.7 | 75300 | 144 | 100 | 180-200-225-250 | — | — | 190000 | 202300 | 58700 | 393000 |
| | **317 R3 (C)** | **108** | 13.9 | 90600 | 144 | 100 | 180-200-225-250 | — | — | 200900 | 213900 | 62400 | 393000 |
| | **317 R3 (C)** | **115** | 13.0 | 96600 | 144 | 100 | 180-200-225-250 | — | — | 204800 | 218100 | 63800 | 393000 |
| | **317 R3 (C)** | **139** | 10.8 | 116300 | 144 | 100 | 180-200-225-250 | — | — | 216500 | 230500 | 67800 | 393000 |
| | **317 R3 (C)** | **165** | 9.1 | 118900 | 124 | 100 | 180-200-225-250 | — | — | 227900 | 242700 | 71800 | 393000 |
| | **317 R4** | **220** | 6.8 | 81400 | 66 | 50 | 132-160-180-200 | — | — | 248500 | 264500 | 79000 | 393000 |
| | **317 R4** | **262** | 5.7 | 97200 | 66 | 50 | 132-160-180-200 | — | — | 262000 | 278900 | 83800 | 393000 |
| | **317 R4** | **336** | 4.5 | 124700 | 66 | 50 | 132-160-180-200 | — | — | 282300 | 300600 | 91100 | 393000 |
| | **317 R4** | **399** | 3.8 | 148000 | 66 | 50 | 132-160-180-200 | — | — | 297200 | 316500 | 96500 | 393000 |
| | **317 R4** | **438** | 3.4 | 157000 | 64 | 50 | 132-160-180-200 | — | — | 305700 | 325500 | 99500 | 393000 |
| | **317 R4** | **520** | 2.9 | 164800 | 56 | 50 | 132-160-180-200 | — | — | 321800 | 342600 | 105400 | 393000 |
| | **317 R4** | **626** | 2.4 | 155000 | 44 | 50 | 132-160-180-200 | — | — | 340200 | 362200 | 112100 | 393000 |
| | **317 R4** | **677** | 2.2 | 164700 | 43 | 50 | 132-160-180-200 | — | — | 348300 | 370800 | 115000 | 393000 |
| | **317 R4** | **803** | 1.9 | 165900 | 37 | 50 | 132-160-180-200 | — | — | 366700 | 390400 | 121800 | 393000 |
| | **317 R4** | **953** | 1.6 | 145000 | 27 | 50 | 132-160-180-200 | — | — | 386000 | 411000 | 129000 | 393000 |
| **1000** | **317 R3 (B)** | **49.8** | 20.1 | 53000 | 122 | 108 | 180-200-225-250 | — | — | 179800 | 191400 | 55200 | 393000 |
| | **317 R3 (B)** | **64.9** | 15.4 | 69100 | 122 | 108 | 180-200-225-250 | — | — | 194700 | 207300 | 60300 | 393000 |
| | **317 R3 (B)** | **78.1** | 12.8 | 85500 | 126 | 108 | 180-200-225-250 | — | — | 205800 | 219100 | 64100 | 393000 |
| | **317 R3 (B)** | **83.3** | 12.0 | 90800 | 125 | 108 | 180-200-225-250 | — | — | 209800 | 223400 | 65500 | 393000 |
| | **317 R3 (B)** | **100** | 10.0 | 109300 | 125 | 108 | 180-200-225-250 | — | — | 221800 | 236100 | 69700 | 393000 |
| | **317 R3 (B)** | **119** | 8.4 | 119100 | 115 | 108 | 180-200-225-250 | — | — | 233500 | 248600 | 73800 | 393000 |
| | **317 R3 (C)** | **68.9** | 14.5 | 65200 | 109 | 120 | 180-200-225-250 | — | — | 198200 | 211000 | 61500 | 393000 |
| | **317 R3 (C)** | **89.8** | 11.1 | 85000 | 109 | 120 | 180-200-225-250 | — | — | 214600 | 228500 | 67200 | 393000 |
| | **317 R3 (C)** | **108** | 9.2 | 102400 | 109 | 120 | 180-200-225-250 | — | — | 226900 | 241600 | 71500 | 393000 |
| | **317 R3 (C)** | **115** | 8.7 | 109100 | 109 | 120 | 180-200-225-250 | — | — | 231300 | 246300 | 73000 | 393000 |
| | **317 R3 (C)** | **139** | 7.2 | 131400 | 109 | 120 | 180-200-225-250 | — | — | 244500 | 260300 | 77700 | 393000 |
| | **317 R3 (C)** | **165** | 6.1 | 119600 | 83 | 120 | 180-200-225-250 | — | — | 257400 | 274100 | 82200 | 393000 |
| | **317 R4** | **220** | 4.6 | 92000 | 50 | 60 | 132-160-180-200 | — | — | 280600 | 298700 | 90500 | 393000 |
| | **317 R4** | **262** | 3.8 | 109700 | 50 | 60 | 132-160-180-200 | — | — | 295900 | 315000 | 96000 | 393000 |
| | **317 R4** | **336** | 3.0 | 140800 | 50 | 60 | 132-160-180-200 | — | — | 318900 | 339500 | 104300 | 393000 |
| | **317 R4** | **399** | 2.5 | 167100 | 50 | 60 | 132-160-180-200 | — | — | 335700 | 357400 | 110400 | 393000 |
| | **317 R4** | **438** | 2.3 | 172800 | 47 | 60 | 132-160-180-200 | — | — | 345200 | 367600 | 113900 | 393000 |



## 317 R

408

## 187860 Nm

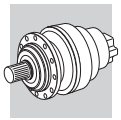
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1000** | **317 R4** | **520** | 1.9 | 175200 | 40 | 60 | 132-160-180-200 | — | — | 363400 | 387000 | 120600 | 393000 |
| | **317 R4** | **626** | 1.6 | 155000 | 29 | 60 | 132-160-180-200 | — | — | 384200 | 409100 | 128300 | 393000 |
| | **317 R4** | **677** | 1.5 | 167400 | 29 | 60 | 132-160-180-200 | — | — | 393300 | 418800 | 131700 | 393000 |
| | **317 R4** | **803** | 1.2 | 168500 | 25 | 60 | 132-160-180-200 | — | — | 414100 | 440900 | 139400 | 393000 |
| | **317 R4** | **953** | 1.0 | 154900 | 19.2 | 60 | 132-160-180-200 | — | — | 435900 | 464100 | 147600 | 393000 |
| **500** | **317 R3 (B)** | **49.8** | 10.0 | 65200 | 75 | 180 | 180-200-225-250 | — | — | 221300 | 235700 | 69500 | 393000 |
| | **317 R3 (B)** | **64.9** | 7.7 | 85000 | 75 | 180 | 180-200-225-250 | — | — | 239700 | 255200 | 75900 | 393000 |
| | **317 R3 (B)** | **78.1** | 6.4 | 106500 | 78 | 180 | 180-200-225-250 | — | — | 253400 | 269800 | 80800 | 393000 |
| | **317 R3 (B)** | **83.3** | 6.0 | 113100 | 78 | 180 | 180-200-225-250 | — | — | 258300 | 275000 | 82500 | 393000 |
| | **317 R3 (B)** | **100** | 5.0 | 134900 | 77 | 180 | 180-200-225-250 | — | — | 273100 | 290700 | 87800 | 393000 |
| | **317 R3 (B)** | **119** | 4.2 | 123400 | 60 | 180 | 180-200-225-250 | — | — | 287500 | 306100 | 92900 | 393000 |
| | **317 R3 (C)** | **68.9** | 7.3 | 80300 | 67 | 200 | 180-200-225-250 | — | — | 244000 | 259800 | 77500 | 393000 |
| | **317 R3 (C)** | **89.8** | 5.6 | 104700 | 67 | 200 | 180-200-225-250 | — | — | 264200 | 281300 | 84600 | 393000 |
| | **317 R3 (C)** | **108** | 4.6 | 123600 | 66 | 200 | 180-200-225-250 | — | — | 279300 | 297400 | 90000 | 393000 |
| | **317 R3 (C)** | **115** | 4.3 | 134400 | 67 | 200 | 180-200-225-250 | — | — | 284800 | 303200 | 92000 | 393000 |
| | **317 R3 (C)** | **139** | 3.6 | 154600 | 64 | 200 | 180-200-225-250 | — | — | 301000 | 320500 | 97800 | 393000 |
| | **317 R3 (C)** | **165** | 3.0 | 130200 | 45 | 200 | 180-200-225-250 | — | — | 316900 | 337400 | 103600 | 393000 |
| | **317 R4** | **220** | 2.3 | 112500 | 30 | 100 | 132-160-180-200 | — | — | 345400 | 367800 | 114000 | 393000 |
| | **317 R4** | **262** | 1.9 | 134900 | 30 | 100 | 132-160-180-200 | — | — | 364200 | 387800 | 120900 | 393000 |
| | **317 R4** | **336** | 1.5 | 173400 | 31 | 100 | 132-160-180-200 | — | — | 392600 | 418000 | 131400 | 393000 |
| | **317 R4** | **399** | 1.3 | 196500 | 29 | 100 | 132-160-180-200 | — | — | 413200 | 440000 | 139100 | 393000 |
| | **317 R4** | **438** | 1.1 | 182400 | 25 | 100 | 132-160-180-200 | — | — | 425000 | 452500 | 143500 | 393000 |
| | **317 R4** | **520** | 0.96 | 184300 | 21 | 100 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 R4** | **626** | 0.80 | 155000 | 14.6 | 100 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 R4** | **677** | 0.74 | 170000 | 14.9 | 100 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 R4** | **803** | 0.62 | 170000 | 12.5 | 100 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |
| | **317 R4** | **953** | 0.52 | 156200 | 9.7 | 100 | 132-160-180-200 | — | — | 442000 | 470000 | 150000 | 393000 |

## 318 R

418

## 280580 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **318 R4 (B)** | **225** | 6.7 | 200200 | 150 | 90 | 180-200-225-250 | — | — | 313900 | 320300 | 106200 | 500000 |
| | **318 R4 (B)** | **288** | 5.2 | 215700 | 133 | 90 | 180-200-225-250 | — | — | 338300 | 345200 | 115400 | 500000 |
| | **318 R4 (B)** | **342** | 4.4 | 226200 | 117 | 90 | 180-200-225-250 | — | — | 356100 | 363400 | 122200 | 500000 |
| | **318 R4 (B)** | **362** | 4.1 | 229600 | 113 | 90 | 180-200-225-250 | — | — | 362100 | 369600 | 124500 | 500000 |
| | **318 R4 (B)** | **430** | 3.5 | 240400 | 99 | 90 | 180-200-225-250 | — | — | 381200 | 389100 | 131800 | 500000 |
| | **318 R4 (B)** | **499** | 3.0 | 250300 | 89 | 90 | 180-200-225-250 | — | — | 398900 | 407000 | 138600 | 500000 |
| | **318 R4 (C)** | **311** | 4.8 | 220500 | 126 | 110 | 180-200-225-250 | — | — | 346100 | 353200 | 118400 | 500000 |
| | **318 R4 (C)** | **399** | 3.8 | 235700 | 105 | 110 | 180-200-225-250 | — | — | 373000 | 380600 | 128700 | 500000 |
| | **318 R4 (C)** | **474** | 3.2 | 246800 | 92 | 110 | 180-200-225-250 | — | — | 392600 | 400700 | 136200 | 500000 |
| | **318 R4 (C)** | **501** | 3.0 | 250600 | 89 | 110 | 180-200-225-250 | — | — | 399300 | 407500 | 138800 | 500000 |
| | **318 R4 (C)** | **595** | 2.5 | 262400 | 78 | 110 | 180-200-225-250 | — | — | 420300 | 428900 | 146900 | 500000 |
| | **318 R4 (C)** | **691** | 2.2 | 265600 | 68 | 110 | 180-200-225-250 | — | — | 439700 | 448800 | 154500 | 500000 |
| **1000** | **318 R4 (B)** | **225** | 4.5 | 225300 | 119 | 108 | 180-200-225-250 | — | — | 354500 | 361800 | 121600 | 500000 |
| | **318 R4 (B)** | **288** | 3.5 | 240900 | 99 | 108 | 180-200-225-250 | — | — | 382100 | 389900 | 132100 | 500000 |
| | **318 R4 (B)** | **342** | 2.9 | 252200 | 87 | 108 | 180-200-225-250 | — | — | 402200 | 410500 | 139900 | 500000 |
| | **318 R4 (B)** | **362** | 2.8 | 256000 | 84 | 108 | 180-200-225-250 | — | — | 409000 | 417400 | 142500 | 500000 |
| | **318 R4 (B)** | **430** | 2.3 | 264300 | 73 | 108 | 180-200-225-250 | — | — | 430600 | 439400 | 150900 | 500000 |
| | **318 R4 (B)** | **499** | 2.0 | 267100 | 63 | 108 | 180-200-225-250 | — | — | 450400 | 459700 | 158700 | 500000 |
| | **318 R4 (C)** | **311** | 3.2 | 245800 | 93 | 132 | 180-200-225-250 | — | — | 390800 | 398900 | 135500 | 500000 |
| | **318 R4 (C)** | **399** | 2.5 | 262900 | 78 | 132 | 180-200-225-250 | — | — | 421200 | 429900 | 147300 | 500000 |
| | **318 R4 (C)** | **474** | 2.1 | 266200 | 66 | 132 | 180-200-225-250 | — | — | 443400 | 452500 | 155900 | 500000 |
| | **318 R4 (C)** | **501** | 2.0 | 267200 | 63 | 132 | 180-200-225-250 | — | — | 450900 | 460200 | 158800 | 500000 |
| | **318 R4 (C)** | **595** | 1.7 | 270500 | 54 | 132 | 180-200-225-250 | — | — | 474700 | 484400 | 168200 | 500000 |
| | **318 R4 (C)** | **691** | 1.4 | 273400 | 47 | 132 | 180-200-225-250 | — | — | 496600 | 506800 | 176800 | 500000 |
| **500** | **318 R4 (B)** | **225** | 2.2 | 265200 | 70 | 180 | 180-200-225-250 | — | — | 436500 | 445400 | 153200 | 500000 |
| | **318 R4 (B)** | **288** | 1.7 | 269900 | 55 | 180 | 180-200-225-250 | — | — | 470400 | 480000 | 166500 | 500000 |



## 318 R

418

## 280580 Nm

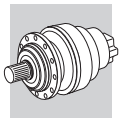
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | Rn$_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | **318 R4 (B)** | **342** | 1.5 | 273200 | 47 | 180 | 180-200-225-250 | — | — | 495200 | 505300 | 176300 | 500000 |
| | **318 R4 (B)** | **362** | 1.4 | 274200 | 45 | 180 | 180-200-225-250 | — | — | 503000 | 513900 | 179600 | 500000 |
| | **318 R4 (B)** | **430** | 1.2 | 277600 | 38 | 180 | 180-200-225-250 | — | — | 503000 | 541000 | 190100 | 500000 |
| | **318 R4 (B)** | **499** | 1.0 | 280600 | 33 | 180 | 180-200-225-250 | — | — | 503000 | 565000 | 199900 | 500000 |
| | **318 R4 (C)** | **311** | 1.6 | 271300 | 52 | 220 | 180-200-225-250 | — | — | 481200 | 491100 | 170700 | 500000 |
| | **318 R4 (C)** | **399** | 1.3 | 276200 | 41 | 220 | 180-200-225-250 | — | — | 503000 | 529200 | 185500 | 500000 |
| | **318 R4 (C)** | **474** | 1.1 | 279500 | 35 | 220 | 180-200-225-250 | — | — | 503000 | 557100 | 196400 | 500000 |
| | **318 R4 (C)** | **501** | 1.00 | 280600 | 33 | 220 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 R4 (C)** | **595** | 0.84 | 280600 | 28 | 220 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |
| | **318 R4 (C)** | **691** | 0.72 | 280600 | 24 | 220 | 180-200-225-250 | — | — | 503000 | 565000 | 200000 | 500000 |

## 319 R

428

## 403720 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | Rn$_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **319 R4 (B)** | **249** | 6.0 | 227700 | 150 | 95 | 180-200-225-250 | — | — | 372100 | 409900 | 109900 | 680000 |
| | **319 R4 (B)** | **320** | 4.7 | 289000 | 150 | 95 | 180-200-225-250 | — | — | 401000 | 441800 | 119400 | 680000 |
| | **319 R4 (B)** | **379** | 4.0 | 304200 | 142 | 95 | 180-200-225-250 | — | — | 422100 | 465100 | 126500 | 680000 |
| | **319 R4 (B)** | **401** | 3.7 | 310500 | 137 | 95 | 180-200-225-250 | — | — | 429200 | 472900 | 128800 | 680000 |
| | **319 R4 (B)** | **475** | 3.2 | 300900 | 112 | 95 | 180-200-225-250 | — | — | 451500 | 497400 | 136300 | 680000 |
| | **319 R4 (B)** | **563** | 2.7 | 313000 | 99 | 95 | 180-200-225-250 | — | — | 475300 | 523700 | 144300 | 680000 |
| | **319 R4 (B)** | **655** | 2.3 | 321300 | 87 | 95 | 180-200-225-250 | — | — | 497300 | 547900 | 151700 | 680000 |
| | **319 R4 (C)** | **345** | 4.4 | 259700 | 134 | 115 | 180-200-225-250 | — | — | 410200 | 451900 | 122500 | 680000 |
| | **319 R4 (C)** | **442** | 3.4 | 279900 | 112 | 115 | 180-200-225-250 | — | — | 442100 | 487100 | 133100 | 680000 |
| | **319 R4 (C)** | **525** | 2.9 | 294600 | 100 | 115 | 180-200-225-250 | — | — | 465400 | 512700 | 140900 | 680000 |
| | **319 R4 (C)** | **555** | 2.7 | 306300 | 98 | 115 | 180-200-225-250 | — | — | 473200 | 521400 | 143600 | 680000 |
| | **319 R4 (C)** | **657** | 2.3 | 322200 | 87 | 115 | 180-200-225-250 | — | — | 497800 | 548400 | 151900 | 680000 |
| | **319 R4 (C)** | **780** | 1.9 | 331100 | 75 | 115 | 180-200-225-250 | — | — | 524000 | 577300 | 160800 | 680000 |
| | **319 R4 (C)** | **906** | 1.7 | 335900 | 66 | 115 | 180-200-225-250 | — | — | 548200 | 604000 | 169100 | 680000 |
| **1000** | **319 R4 (B)** | **249** | 4.0 | 257100 | 122 | 114 | 180-200-225-250 | — | — | 420200 | 462900 | 125800 | 680000 |
| | **319 R4 (B)** | **320** | 3.1 | 323900 | 120 | 114 | 180-200-225-250 | — | — | 452800 | 498900 | 136700 | 680000 |
| | **319 R4 (B)** | **379** | 2.6 | 342600 | 107 | 114 | 180-200-225-250 | — | — | 476700 | 525200 | 144800 | 680000 |
| | **319 R4 (B)** | **401** | 2.5 | 348100 | 103 | 114 | 180-200-225-250 | — | — | 484800 | 534100 | 147500 | 680000 |
| | **319 R4 (B)** | **475** | 2.1 | 326400 | 81 | 114 | 180-200-225-250 | — | — | 509900 | 561800 | 156000 | 680000 |
| | **319 R4 (B)** | **563** | 1.8 | 335400 | 70 | 114 | 180-200-225-250 | — | — | 536800 | 591400 | 165200 | 680000 |
| | **319 R4 (B)** | **655** | 1.5 | 339600 | 61 | 114 | 180-200-225-250 | — | — | 561600 | 618700 | 173700 | 680000 |
| | **319 R4 (C)** | **345** | 2.9 | 293300 | 101 | 138 | 180-200-225-250 | — | — | 463300 | 510400 | 140200 | 680000 |
| | **319 R4 (C)** | **442** | 2.3 | 316100 | 85 | 138 | 180-200-225-250 | — | — | 499300 | 550100 | 152400 | 680000 |
| | **319 R4 (C)** | **525** | 1.9 | 332800 | 75 | 138 | 180-200-225-250 | — | — | 525600 | 579100 | 161300 | 680000 |
| | **319 R4 (C)** | **555** | 1.8 | 338600 | 72 | 138 | 180-200-225-250 | — | — | 534500 | 588800 | 164400 | 680000 |
| | **319 R4 (C)** | **657** | 1.5 | 343700 | 62 | 138 | 180-200-225-250 | — | — | 562200 | 619400 | 173900 | 680000 |
| | **319 R4 (C)** | **780** | 1.3 | 353300 | 54 | 138 | 180-200-225-250 | — | — | 591800 | 652000 | 184100 | 680000 |
| | **319 R4 (C)** | **906** | 1.1 | 354900 | 46 | 138 | 180-200-225-250 | — | — | 619100 | 682100 | 193600 | 680000 |
| **500** | **319 R4 (B)** | **249** | 2.0 | 316600 | 75 | 190 | 180-200-225-250 | — | — | 517300 | 570000 | 158500 | 680000 |
| | **319 R4 (B)** | **320** | 1.6 | 373900 | 69 | 190 | 180-200-225-250 | — | — | 557500 | 614200 | 172300 | 680000 |
| | **319 R4 (B)** | **379** | 1.3 | 386000 | 60 | 190 | 180-200-225-250 | — | — | 586900 | 646600 | 182400 | 680000 |
| | **319 R4 (B)** | **401** | 1.2 | 379400 | 56 | 190 | 180-200-225-250 | — | — | 596800 | 657500 | 185800 | 680000 |
| | **319 R4 (B)** | **475** | 1.1 | 364500 | 45 | 190 | 180-200-225-250 | — | — | 627700 | 691600 | 196500 | 680000 |
| | **319 R4 (B)** | **563** | 0.89 | 367600 | 39 | 190 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (B)** | **655** | 0.76 | 359700 | 32 | 190 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (C)** | **345** | 1.5 | 361100 | 62 | 230 | 180-200-225-250 | — | — | 570300 | 628400 | 176700 | 680000 |
| | **319 R4 (C)** | **442** | 1.1 | 389200 | 52 | 230 | 180-200-225-250 | — | — | 614700 | 677200 | 192000 | 680000 |
| | **319 R4 (C)** | **525** | 0.95 | 403700 | 45 | 230 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (C)** | **555** | 0.90 | 389900 | 42 | 230 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (C)** | **657** | 0.76 | 367600 | 33 | 230 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (C)** | **780** | 0.64 | 367600 | 28 | 230 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |
| | **319 R4 (C)** | **906** | 0.55 | 359700 | 23 | 230 | 180-200-225-250 | — | — | 638000 | 702000 | 200000 | 680000 |

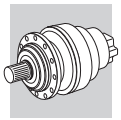


# 321 R

438

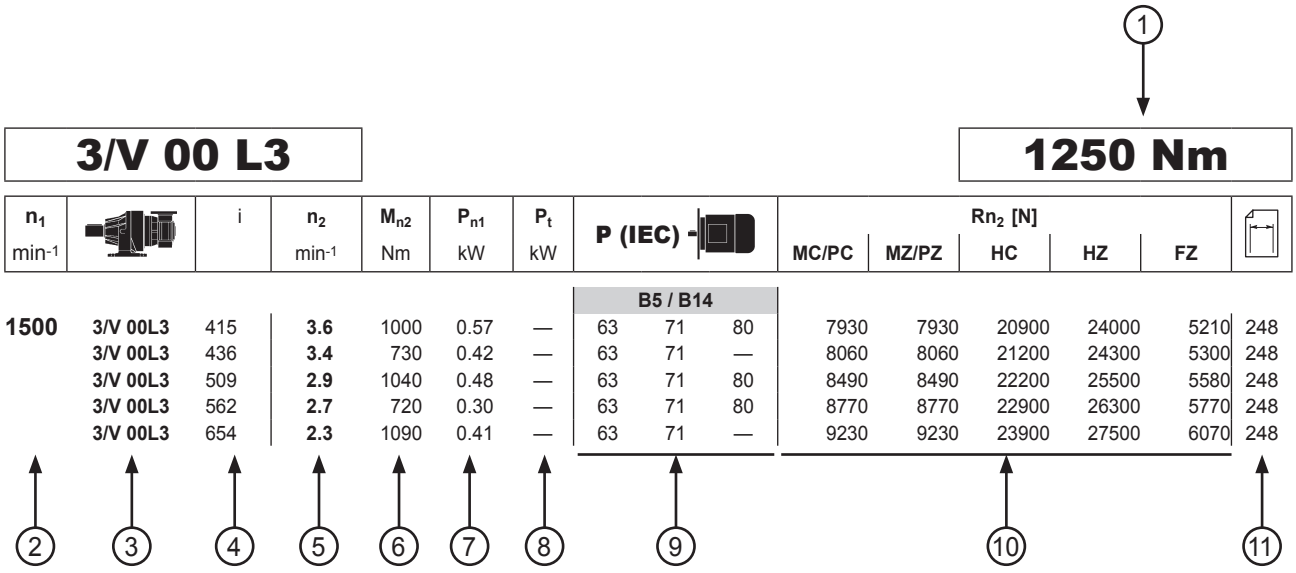
# 655200 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | $Rn_2$ [N] MC | MZ | HC/PC | HZ/PZ | FZ | $M_{2\,max}$ Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **321 R4 (B)** | **221** | 6.8 | 205600 | 150 | 105 | 180-200-225-250 | — | — | 440600 | 522400 | 634000 | 934000 |
| | **321 R4 (B)** | **288** | 5.2 | 265300 | 150 | 105 | 180-200-225-250 | — | — | 477000 | 565700 | 692600 | 934000 |
| | **321 R4 (B)** | **347** | 4.3 | 320600 | 150 | 105 | 180-200-225-250 | — | — | 504300 | 598000 | 736800 | 934000 |
| | **321 R4 (B)** | **370** | 4.1 | 341300 | 150 | 105 | 180-200-225-250 | — | — | 514100 | 609600 | 752700 | 934000 |
| | **321 R4 (B)** | **446** | 3.4 | 409600 | 150 | 105 | 180-200-225-250 | — | — | 543500 | 644500 | 800600 | 934000 |
| | **321 R4 (B)** | **529** | 2.8 | 484700 | 150 | 105 | 180-200-225-250 | — | — | 572100 | 678500 | 847700 | 934000 |
| | **321 R4 (C)** | **306** | 4.9 | 249000 | 144 | 125 | 180-200-225-250 | — | — | 485700 | 576000 | 706700 | 934000 |
| | **321 R4 (C)** | **399** | 3.8 | 324600 | 144 | 125 | 180-200-225-250 | — | — | 525900 | 623700 | 771900 | 934000 |
| | **321 R4 (C)** | **481** | 3.1 | 390700 | 144 | 125 | 180-200-225-250 | — | — | 556000 | 659300 | 821100 | 934000 |
| | **321 R4 (C)** | **512** | 2.9 | 416600 | 144 | 125 | 180-200-225-250 | — | — | 566800 | 672100 | 838900 | 934000 |
| | **321 R4 (C)** | **617** | 2.4 | 501400 | 144 | 125 | 180-200-225-250 | — | — | 599200 | 710600 | 892300 | 934000 |
| | **321 R4 (C)** | **732** | 2.0 | 521400 | 126 | 125 | 180-200-225-250 | — | — | 630800 | 748000 | 944800 | 934000 |
| **1000** | **321 R4 (B)** | **221** | 4.5 | 233700 | 125 | 126 | 180-200-225-250 | — | — | 497500 | 590000 | 725800 | 934000 |
| | **321 R4 (B)** | **288** | 3.5 | 304200 | 125 | 126 | 180-200-225-250 | — | — | 538700 | 638800 | 792800 | 934000 |
| | **321 R4 (B)** | **347** | 2.9 | 361600 | 123 | 126 | 180-200-225-250 | — | — | 569500 | 675400 | 843400 | 934000 |
| | **321 R4 (B)** | **370** | 2.7 | 391600 | 125 | 126 | 180-200-225-250 | — | — | 580600 | 688500 | 861600 | 934000 |
| | **321 R4 (B)** | **446** | 2.2 | 460100 | 122 | 126 | 180-200-225-250 | — | — | 613800 | 727900 | 916500 | 934000 |
| | **321 R4 (B)** | **529** | 1.9 | 513000 | 115 | 126 | 180-200-225-250 | — | — | 646100 | 766200 | 970400 | 934000 |
| | **321 R4 (C)** | **306** | 3.3 | 281200 | 109 | 150 | 180-200-225-250 | — | — | 548500 | 650500 | 808900 | 934000 |
| | **321 R4 (C)** | **399** | 2.5 | 366600 | 109 | 150 | 180-200-225-250 | — | — | 593900 | 704300 | 883600 | 934000 |
| | **321 R4 (C)** | **481** | 2.1 | 441300 | 109 | 150 | 180-200-225-250 | — | — | 627900 | 744600 | 940000 | 934000 |
| | **321 R4 (C)** | **512** | 2.0 | 470500 | 109 | 150 | 180-200-225-250 | — | — | 640100 | 759100 | 960200 | 934000 |
| | **321 R4 (C)** | **617** | 1.6 | 566500 | 109 | 150 | 180-200-225-250 | — | — | 676700 | 802500 | 1021500 | 934000 |
| | **321 R4 (C)** | **732** | 1.4 | 529800 | 86 | 150 | 180-200-225-250 | — | — | 712400 | 844800 | 1081500 | 934000 |
| **500** | **321 R4 (B)** | **221** | 2.3 | 290300 | 78 | 210 | 180-200-225-250 | — | — | 612500 | 726400 | 914500 | 934000 |
| | **321 R4 (B)** | **288** | 1.7 | 379500 | 78 | 210 | 180-200-225-250 | — | — | 663200 | 786500 | 998900 | 934000 |
| | **321 R4 (B)** | **347** | 1.4 | 450300 | 77 | 210 | 180-200-225-250 | — | — | 701200 | 831500 | 1062600 | 934000 |
| | **321 R4 (B)** | **370** | 1.4 | 483100 | 77 | 210 | 180-200-225-250 | — | — | 714800 | 847600 | 1085500 | 934000 |
| | **321 R4 (B)** | **446** | 1.1 | 567200 | 75 | 210 | 180-200-225-250 | — | — | 755600 | 896100 | 1154700 | 934000 |
| | **321 R4 (B)** | **529** | 0.95 | 536400 | 60 | 210 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 R4 (C)** | **306** | 1.6 | 346300 | 67 | 250 | 180-200-225-250 | — | — | 675300 | 800800 | 1019200 | 934000 |
| | **321 R4 (C)** | **399** | 1.3 | 451600 | 67 | 250 | 180-200-225-250 | — | — | 731200 | 867100 | 1113300 | 934000 |
| | **321 R4 (C)** | **481** | 1.0 | 543700 | 67 | 250 | 180-200-225-250 | — | — | 773000 | 916700 | 1184300 | 934000 |
| | **321 R4 (C)** | **512** | 0.98 | 575400 | 66 | 250 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 R4 (C)** | **617** | 0.81 | 655200 | 63 | 250 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |
| | **321 R4 (C)** | **732** | 0.68 | 536400 | 43 | 250 | 180-200-225-250 | — | — | 779000 | 923000 | 1200000 | 934000 |



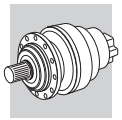
## 25.5 DATOS TÉCNICOS REDUCTOR COMBINADO VISINFIN-PLANETARIO - 3/V

Guía para consultar las tablas.




| | |
|---|---|
| **1** | Par de referencia |
| **2** | Velocidad angular en eje de entrada del reductor |
| **3** | Tamaño reductor en ejecución combinada tornillo sin fin + epicicloidal |
| **4** | Relación de reducción |
| **5** | Velocidad angular del eje de salida |
| **6** | Par nominal del eje de salida del reductor, basado en:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **7** | Potencia nominal aplicable al reductor, para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **8** | Potencia térmica del reductor |
| **9** | Tamaño motor eléctrico IEC instalable.<br>- La predisposición indicada con *están dotadas de una linguetta ribassata. |
| **10** | Carga radial aplicada al eje lento, calculado para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br><br>Para fuerzas no aplicadas en el centro del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **11** | Página de las dimensiones |

B



## 3/V 00 L3 — 1250 Nm

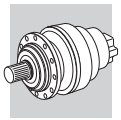
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | | | | | |
| 1500 | 3/V 00L3 | 415 | 3.6 | 1000 | 0.57 | — | 63 | 71 | 80 | 7930 | 7930 | 20900 | 24000 | 5210 | 248 |
| | 3/V 00L3 | 436 | 3.4 | 730 | 0.42 | — | 63 | 71 | — | 8060 | 8060 | 21200 | 24300 | 5300 | 248 |
| | 3/V 00L3 | 509 | 2.9 | 1040 | 0.48 | — | 63 | 71 | 80 | 8490 | 8490 | 22200 | 25500 | 5580 | 248 |
| | 3/V 00L3 | 562 | 2.7 | 720 | 0.30 | — | 63 | 71 | 80 | 8770 | 8770 | 22900 | 26300 | 5770 | 248 |
| | 3/V 00L3 | 654 | 2.3 | 1090 | 0.41 | — | 63 | 71 | — | 9230 | 9230 | 23900 | 27500 | 6070 | 248 |
| | 3/V 00L3 | 689 | 2.2 | 1100 | 0.37 | — | 63 | 71 | 80 | 9390 | 9390 | 24300 | 27900 | 6170 | 248 |
| | 3/V 00L3 | 818 | 1.8 | 1110 | 0.36 | — | 63 | 71 | — | 9940 | 9940 | 25600 | 29400 | 6540 | 248 |
| | 3/V 00L3 | 903 | 1.7 | 790 | 0.23 | — | 63 | 71 | — | 10300 | 10300 | 26400 | 30300 | 6760 | 248 |
| | 3/V 00L3 | 997 | 1.5 | 800 | 0.18 | — | 63 | 71 | 80 | 10600 | 10600 | 27100 | 31200 | 6980 | 248 |
| | 3/V 00L3 | 1107 | 1.4 | 1190 | 0.28 | — | 63 | 71 | — | 11000 | 11000 | 28000 | 32200 | 7230 | 248 |
| | 3/V 00L3 | 1198 | 1.3 | 830 | 0.17 | — | 63 | 71 | — | 11300 | 11300 | 28700 | 33000 | 7420 | 248 |
| | 3/V 00L3 | 1381 | 1.1 | 1230 | 0.24 | — | 63 | 71 | — | 11800 | 11800 | 29900 | 34000 | 7780 | 248 |
| | 3/V 00L3 | 1495 | 1.0 | 860 | 0.14 | — | 63 | 71 | — | 12000 | 12200 | 30700 | 34000 | 7990 | 248 |
| | 3/V 00L3 | 1869 | 0.80 | 860 | 0.12 | — | 63 | 71 | — | 12000 | 12500 | 31000 | 34000 | 8000 | 248 |
| | 3/V 00L3 | 2337 | 0.64 | 860 | 0.10 | — | 63 | 71 | — | 12000 | 12500 | 31000 | 34000 | 8000 | 248 |

## 3/V 01 L3 — 2460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | | | | | |
| 1500 | 3/V 01L3 | 430 | 3.5 | 1880 | 0.90 | — | 63 | 71 | 80 | 8020 | 8020 | 21100 | 24200 | 5270 | 258 |
| | 3/V 01L3 | 443 | 3.4 | 1370 | 0.66 | — | 63 | 71 | 80 | 8100 | 8100 | 21300 | 24400 | 5330 | 258 |
| | 3/V 01L3 | 509 | 2.9 | 1270 | 0.58 | — | 63 | 71 | 80 | 8490 | 8490 | 22200 | 25500 | 5580 | 258 |
| | 3/V 01L3 | 562 | 2.7 | 1400 | 0.58 | — | 63 | 71 | 80 | 8770 | 8770 | 22900 | 26300 | 5770 | 258 |
| | 3/V 01L3 | 654 | 2.3 | 1180 | 0.45 | — | 63 | 71 | — | 9230 | 9230 | 23900 | 27500 | 6070 | 258 |
| | 3/V 01L3 | 689 | 2.2 | 1710 | 0.58 | — | 63 | 71 | 80 | 9390 | 9390 | 24300 | 27900 | 6170 | 258 |
| | 3/V 01L3 | 799 | 1.9 | 1540 | 0.43 | — | 63 | 71 | 80 | 9860 | 9860 | 25400 | 29200 | 6480 | 258 |
| | 3/V 01L3 | 903 | 1.7 | 1230 | 0.36 | — | 63 | 71 | — | 10300 | 10300 | 26400 | 30300 | 6760 | 258 |
| | 3/V 01L3 | 997 | 1.5 | 1600 | 0.36 | — | 63 | 71 | 80 | 10600 | 10600 | 27100 | 31200 | 6980 | 258 |
| | 3/V 01L3 | 1105 | 1.4 | 1990 | 0.45 | — | 63 | 71 | — | 11000 | 11000 | 28000 | 32200 | 7230 | 258 |
| | 3/V 01L3 | 1198 | 1.3 | 1650 | 0.34 | — | 63 | 71 | — | 11300 | 11300 | 28700 | 33000 | 7420 | 258 |
| | 3/V 01L3 | 1381 | 1.1 | 1880 | 0.36 | — | 63 | 71 | — | 11800 | 11800 | 29900 | 34000 | 7780 | 258 |
| | 3/V 01L3 | 1495 | 1.0 | 1720 | 0.29 | — | 63 | 71 | — | 12000 | 12200 | 30700 | 34000 | 7990 | 258 |
| | 3/V 01L3 | 1869 | 0.80 | 1720 | 0.24 | — | 63 | 71 | — | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |
| | 3/V 01L3 | 2337 | 0.64 | 1720 | 0.20 | — | 63 | 71 | — | 12000 | 12500 | 31000 | 34000 | 8000 | 258 |

## 3/V 03 L3 — 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | | | | | |
| 1500 | 3/V 03L3 | 395 | 3.8 | 2210 | 1.2 | — | 71 | 80 | 90 | 24000 | 27700 | 42000 | 50500 | 15400 | 268 |
| | 3/V 03L3 | 460 | 3.3 | 2310 | 1.1 | — | 71 | 80 | 90 | 25200 | 29100 | 43900 | 52900 | 16200 | 268 |
| | 3/V 03L3 | 502 | 3.0 | 2020 | 0.83 | — | 71 | 80 | 90 | 26000 | 30000 | 45100 | 54300 | 16700 | 268 |
| | 3/V 03L3 | 544 | 2.8 | 2730 | 1.1 | — | 71 | 80 | 90 | 26700 | 30800 | 46200 | 55600 | 17100 | 268 |
| | 3/V 03L3 | 623 | 2.4 | 2220 | 0.80 | — | 71 | 80 | 90 | 27900 | 32200 | 48100 | 57900 | 17900 | 268 |
| | 3/V 03L3 | 736 | 2.0 | 2720 | 0.83 | — | 71 | 80 | 90 | 29500 | 34100 | 50600 | 60800 | 18900 | 268 |
| | 3/V 03L3 | 793 | 1.9 | 2180 | 0.62 | — | 71 | 80 | 90 | 30200 | 34900 | 51700 | 62200 | 19400 | 268 |
| | 3/V 03L3 | 923 | 1.6 | 2670 | 0.65 | — | 71 | 80 | 90 | 31800 | 36700 | 54100 | 65100 | 20400 | 268 |
| | 3/V 03L3 | 1023 | 1.5 | 2710 | 0.66 | — | 71 | 80 | — | 32900 | 38000 | 55800 | 67200 | 21100 | 268 |
| | 3/V 03L3 | 1189 | 1.3 | 2340 | 0.49 | — | 71 | 80 | — | 34600 | 40000 | 58400 | 70300 | 22200 | 268 |
| | 3/V 03L3 | 1385 | 1.1 | 2820 | 0.51 | — | 71 | 80 | — | 36000 | 42000 | 61100 | 73600 | 23400 | 268 |
| | 3/V 03L3 | 1610 | 0.93 | 2440 | 0.38 | — | 71 | 80 | — | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |
| | 3/V 03L3 | 1728 | 0.87 | 2850 | 0.41 | — | 71 | 80 | — | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |
| | 3/V 03L3 | 2009 | 0.75 | 2440 | 0.30 | — | 71 | 80 | — | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |
| | 3/V 03L3 | 2511 | 0.60 | 2300 | 0.23 | — | 71 | 80 | — | 36000 | 42000 | 64000 | 74000 | 24000 | 268 |



## 3/V 04 L3

## 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | B5 / B14 | | | | | | | | | |
| 1500 | 3/V 04L3 | 384 | 3.9 | 3510 | 1.9 | — | 71 | 80 | 90 | 100 | 112 | 23700 | 27400 | 41600 | 50100 | 15200 | 280 |
| | 3/V 04L3 | 453 | 3.3 | 3730 | 1.7 | — | 71 | 80 | 90 | 100 | 112 | 25100 | 29000 | 43700 | 52600 | 16100 | 280 |
| | 3/V 04L3 | 501 | 3.0 | 3010 | 1.4 | — | 71 | 80 | 90 | 100 | 112 | 26000 | 30000 | 45100 | 54200 | 16700 | 280 |
| | 3/V 04L3 | 568 | 2.6 | 3160 | 1.2 | — | 71 | 80 | 90 | 100 | 112 | 27100 | 31300 | 46800 | 56300 | 17400 | 280 |
| | 3/V 04L3 | 623 | 2.4 | 3530 | 1.2 | — | 71 | 80 | 90 | 100 | 112 | 27900 | 32200 | 48100 | 57900 | 17900 | 280 |
| | 3/V 04L3 | 710 | 2.1 | 2640 | 0.73 | — | 71 | 80 | 90 | 100 | 112 | 29200 | 33700 | 50000 | 60200 | 18700 | 280 |
| | 3/V 04L3 | 769 | 1.9 | 3330 | 0.90 | — | 71 | 80 | 90 | 100 | 112 | 29900 | 34600 | 51300 | 61700 | 19200 | 280 |
| | 3/V 04L3 | 887 | 1.7 | 2740 | 0.61 | — | 71 | 80 | 90 | 100 | 112 | 31400 | 36300 | 53500 | 64400 | 20100 | 280 |
| | 3/V 04L3 | 981 | 1.5 | 3860 | 0.91 | — | 71 | 80 | 90 | 100 | 112 | 32500 | 37500 | 55100 | 66300 | 20800 | 280 |
| | 3/V 04L3 | 1152 | 1.3 | 3570 | 0.67 | — | 71 | 80 | 90 | 100 | 112 | 34300 | 39600 | 57900 | 69600 | 22000 | 280 |
| | 3/V 04L3 | 1231 | 1.2 | 3610 | 0.68 | — | 71 | 80 | 90 | 100 | 112 | 35000 | 40400 | 59000 | 71000 | 22500 | 280 |
| | 3/V 04L3 | 1419 | 1.1 | 2970 | 0.45 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 61600 | 74000 | 23600 | 280 |
| | 3/V 04L3 | 1536 | 0.98 | 3740 | 0.56 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 63100 | 74000 | 24000 | 280 |
| | 3/V 04L3 | 1774 | 0.85 | 3000 | 0.37 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 280 |
| | 3/V 04L3 | 1893 | 0.79 | 3000 | 0.37 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 280 |
| | 3/V 04L3 | 2366 | 0.63 | 3000 | 0.29 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 280 |

B

## 3/V 05 L3

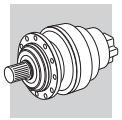
## 5800 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | B5 / B14 | | | | | | | | | |
| 1500 | 3/V 05L3 | 396 | 3.8 | 3760 | 1.9 | — | 71 | 80 | 90 | 100 | 112 | 24000 | 27700 | 42000 | 50500 | 15400 | 292 |
| | 3/V 05L3 | 462 | 3.3 | 4820 | 2.0 | — | 71 | 80 | 90 | 100 | 112 | 25300 | 29200 | 44000 | 52900 | 16200 | 292 |
| | 3/V 05L3 | 529 | 2.8 | 3920 | 1.5 | — | 71 | 80 | 90 | 100 | 112 | 26400 | 30500 | 45800 | 55100 | 17000 | 292 |
| | 3/V 05L3 | 576 | 2.6 | 4870 | 1.7 | — | 71 | 80 | 90 | 100 | 112 | 27200 | 31400 | 47000 | 56500 | 17400 | 292 |
| | 3/V 05L3 | 623 | 2.4 | 4460 | 1.6 | — | 71 | 80 | 90 | 100 | 112 | 27900 | 32200 | 48100 | 57900 | 17900 | 292 |
| | 3/V 05L3 | 715 | 2.1 | 4120 | 1.2 | — | 71 | 80 | 90 | 100 | 112 | 29200 | 33700 | 50200 | 60300 | 18800 | 292 |
| | 3/V 05L3 | 793 | 1.9 | 4200 | 1.1 | — | 71 | 80 | 90 | 100 | 112 | 30200 | 34900 | 51700 | 62200 | 19400 | 292 |
| | 3/V 05L3 | 894 | 1.7 | 4290 | 1.0 | — | 71 | 80 | 90 | 100 | 112 | 31500 | 36300 | 53600 | 64500 | 20200 | 292 |
| | 3/V 05L3 | 1057 | 1.4 | 4410 | 0.97 | — | 71 | 80 | 90 | 100 | 112 | 33300 | 38400 | 56400 | 67800 | 21400 | 292 |
| | 3/V 05L3 | 1116 | 1.3 | 4460 | 0.83 | — | 71 | 80 | 90 | 100 | 112 | 33900 | 39100 | 57300 | 69000 | 21700 | 292 |
| | 3/V 05L3 | 1231 | 1.2 | 5470 | 1.0 | — | 71 | 80 | 90 | 100 | 112 | 35000 | 40400 | 59000 | 71000 | 22500 | 292 |
| | 3/V 05L3 | 1431 | 1.0 | 4650 | 0.75 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 61700 | 74000 | 23600 | 292 |
| | 3/V 05L3 | 1674 | 0.90 | 4430 | 0.57 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| | 3/V 05L3 | 1786 | 0.84 | 4690 | 0.61 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |
| | 3/V 05L3 | 2232 | 0.67 | 4430 | 0.46 | — | 71 | 80 | 90 | 100 | 112 | 36000 | 42000 | 64000 | 74000 | 24000 | 292 |

## 3/V 06 L3

## 10840 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | B5 / B14 | | | | | | | | | |
| 1500 | 3/V 06L3 | 395 | 3.8 | 7590 | 3.8 | — | 71 | 80 | 90 | 100 | 112 | 29900 | 33800 | 68700 | 80000 | 22400 | 304 |
| | 3/V 06L3 | 427 | 3.5 | 8820 | 4.1 | — | 71 | 80 | 90 | 100 | 112 | 30600 | 34700 | 70300 | 81800 | 23000 | 304 |
| | 3/V 06L3 | 527 | 2.8 | 7590 | 2.9 | — | 71 | 80 | 90 | 100 | 112 | 32900 | 37200 | 74900 | 87200 | 24700 | 304 |
| | 3/V 06L3 | 569 | 2.6 | 8560 | 3.0 | — | 71 | 80 | 90 | 100 | 112 | 33700 | 38200 | 76600 | 89200 | 25300 | 304 |
| | 3/V 06L3 | 661 | 2.3 | 9370 | 2.8 | — | 71 | 80 | 90 | 100 | 112 | 35500 | 40200 | 80100 | 93300 | 26600 | 304 |
| | 3/V 06L3 | 698 | 2.2 | 7540 | 2.1 | — | 71 | 80 | 90 | 100 | 112 | 36100 | 40900 | 81400 | 94800 | 27100 | 304 |
| | 3/V 06L3 | 791 | 1.9 | 7680 | 2.1 | — | 71 | 80 | 90 | 100 | 112 | 37600 | 42600 | 84500 | 98400 | 28300 | 304 |
| | 3/V 06L3 | 930 | 1.6 | 7890 | 1.7 | — | 71 | 80 | 90 | 100 | 112 | 39700 | 45000 | 88800 | 103400 | 29800 | 304 |
| | 3/V 06L3 | 992 | 1.5 | 9450 | 2.1 | — | 71 | 80 | 90 | 100 | 112 | 40600 | 46000 | 90500 | 105400 | 30500 | 304 |
| | 3/V 06L3 | 1153 | 1.3 | 8250 | 1.6 | — | 71 | 80 | 90 | 100 | 112 | 42700 | 48400 | 94700 | 110200 | 32100 | 304 |
| | 3/V 06L3 | 1212 | 1.2 | 7820 | 1.5 | — | 71 | 80 | 90 | 100 | 112 | 43400 | 49200 | 96100 | 111900 | 32600 | 304 |
| | 3/V 06L3 | 1395 | 1.1 | 8400 | 1.3 | — | 71 | 80 | 90 | 100 | 112 | 45000 | 51000 | 100200 | 116700 | 34200 | 304 |
| | 3/V 06L3 | 1768 | 0.85 | 8630 | 1.1 | — | 71 | 80 | 90 | 100 | 112 | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| | 3/V 06L3 | 2139 | 0.70 | 8500 | 0.91 | — | 71 | 80 | 90 | 100 | 112 | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |
| | 3/V 06L3 | 2588 | 0.58 | 7000 | 0.62 | — | 71 | 80 | 90 | 100 | 112 | 45000 | 51000 | 101000 | 119000 | 35000 | 304 |



## 3/V 07 L3

## 15680 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | B5 | | | | | | |
| **1500** | **3/V 07L3** | **386** | 3.9 | 9020 | 4.5 | — | 80 | 90 | 100 | 112 | 132 | 32900 | 41300 | 73400 | 96100 | 28600 | 316 |
| | **3/V 07L3** | **460** | 3.3 | 12300 | 5.3 | — | 80 | 90 | 100 | 112 | 132 | 34900 | 43800 | 77300 | 101300 | 30400 | 316 |
| | **3/V 07L3** | **507** | 3.0 | 13600 | 5.3 | — | 80 | 90 | 100 | 112 | 132 | 36100 | 45300 | 79600 | 104300 | 31400 | 316 |
| | **3/V 07L3** | **655** | 2.3 | 14400 | 4.8 | — | 80 | 90 | 100 | 112 | 132 | 39300 | 49300 | 85900 | 112600 | 34100 | 316 |
| | **3/V 07L3** | **761** | 2.0 | 14200 | 4.0 | — | 80 | 90 | 100 | 112 | 132 | 41300 | 51800 | 89900 | 117800 | 35900 | 316 |
| | **3/V 07L3** | **773** | 1.9 | 9970 | 2.6 | — | 80 | 90 | 100 | 112 | 132 | 41500 | 52100 | 90300 | 118400 | 36100 | 316 |
| | **3/V 07L3** | **920** | 1.6 | 12300 | 2.9 | — | 80 | 90 | 100 | 112 | 132 | 44000 | 55200 | 95200 | 124700 | 38200 | 316 |
| | **3/V 07L3** | **1015** | 1.5 | 14400 | 3.1 | — | 80 | 90 | 100 | 112 | 132 | 45400 | 57000 | 98000 | 128400 | 39500 | 316 |
| | **3/V 07L3** | **1159** | 1.3 | 10600 | 2.0 | — | 80 | 90 | 100 | 112 | 132 | 47500 | 59600 | 102000 | 133700 | 41300 | 316 |
| | **3/V 07L3** | **1288** | 1.2 | 14500 | 2.5 | — | 80 | 90 | 100 | 112 | 132 | 49200 | 61700 | 105300 | 138000 | 42800 | 316 |
| | **3/V 07L3** | **1411** | 1.1 | 12300 | 2.0 | — | 80 | 90 | 100 | 112 | 132 | 50700 | 63600 | 108200 | 141800 | 44100 | 316 |
| | **3/V 07L3** | **1545** | 0.97 | 11000 | 1.6 | — | 80 | 90 | 100 | 112 | 132 | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| | **3/V 07L3** | **1964** | 0.76 | 12300 | 1.5 | — | 80 | 90 | 100 | 112 | 132 | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| | **3/V 07L3** | **2150** | 0.70 | 11000 | 1.2 | — | 80 | 90 | 100 | 112 | 132 | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |
| | **3/V 07L3** | **2472** | 0.61 | 11000 | 1.1 | — | 80 | 90 | 100 | 112 | 132 | 52000 | 65000 | 109000 | 145000 | 45000 | 316 |

## 3/V 09 L3

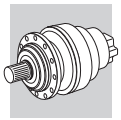
## 23240 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | |
| **1500** | **3/V 09L3** | **370** | 4.1 | 13000 | 7.3 | — | 100 | 112 | 132 | — | — | — | 73600 | 94900 | 22600 | 328 |
| | **3/V 09L3** | **442** | 3.4 | 17700 | 8.4 | — | 100 | 112 | 132 | — | — | — | 77600 | 100100 | 24000 | 328 |
| | **3/V 09L3** | **507** | 3.0 | 14300 | 5.6 | — | — | — | 132 | 160 | — | — | 80900 | 104300 | 25100 | 328 |
| | **3/V 09L3** | **655** | 2.3 | 17600 | 5.6 | — | 100 | 112 | 132 | — | — | — | 87300 | 112600 | 27300 | 328 |
| | **3/V 09L3** | **761** | 2.0 | 14400 | 3.9 | — | 100 | 112 | 132 | — | — | — | 91300 | 117800 | 28700 | 328 |
| | **3/V 09L3** | **800** | 1.9 | 21400 | 5.8 | — | 100 | 112 | 132 | — | — | — | 92700 | 119600 | 29200 | 328 |
| | **3/V 09L3** | **840** | 1.8 | 20100 | 5.0 | — | 100 | 112 | 132 | — | — | — | 94100 | 121400 | 29700 | 328 |
| | **3/V 09L3** | **1004** | 1.5 | 18100 | 3.9 | — | 100 | 112 | 132 | — | — | — | 99300 | 128000 | 31500 | 328 |
| | **3/V 09L3** | **1159** | 1.3 | 16200 | 2.9 | — | 100 | 112 | 132 | — | — | — | 103600 | 133700 | 33000 | 328 |
| | **3/V 09L3** | **1288** | 1.2 | 21500 | 3.6 | — | 100 | 112 | 132 | — | — | — | 107000 | 138000 | 34200 | 328 |
| | **3/V 09L3** | **1497** | 1.0 | 18300 | 2.6 | — | 100 | 112 | 132 | — | — | — | 110000 | 144300 | 36000 | 328 |
| | **3/V 09L3** | **1623** | 0.92 | 14700 | 2.1 | — | 100 | 112 | — | — | — | — | 110000 | 145000 | 36000 | 328 |
| | **3/V 09L3** | **1792** | 0.84 | 22000 | 2.8 | — | 100 | 112 | — | — | — | — | 110000 | 145000 | 36000 | 328 |
| | **3/V 09L3** | **2150** | 0.70 | 17000 | 1.7 | — | 100 | 112 | 132 | — | — | — | 110000 | 145000 | 36000 | 328 |
| | **3/V 09L3** | **2472** | 0.61 | 17000 | 1.6 | — | 100 | 112 | — | — | — | — | 110000 | 145000 | 36000 | 328 |

## 3/V 10 L3

## 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | |
| **1500** | **3/V 10L3** | **436** | 3.4 | 26700 | 12.2 | — | — | — | 132 | 160 (*) | — | — | 91600 | 115200 | 43100 | 340 |
| | **3/V 10L3** | **507** | 3.0 | 25900 | 10.2 | — | — | — | 132 | 160 (*) | — | — | 95800 | 120500 | 45300 | 340 |
| | **3/V 10L3** | **560** | 2.7 | 25900 | 9.2 | — | — | — | 132 | 160 (*) | — | — | 98700 | 124100 | 46800 | 340 |
| | **3/V 10L3** | **614** | 2.4 | 21800 | 7.1 | — | — | — | 132 | 160 (*) | — | — | 101500 | 127600 | 48300 | 340 |
| | **3/V 10L3** | **701** | 2.1 | 21900 | 6.0 | — | — | — | 132 | 160 (*) | — | — | 105600 | 132800 | 50400 | 340 |
| | **3/V 10L3** | **773** | 1.9 | 22400 | 5.8 | — | — | — | 132 | 160 (*) | — | — | 108700 | 136700 | 52100 | 340 |
| | **3/V 10L3** | **920** | 1.6 | 21800 | 4.9 | — | 100 | 112 | 132 | — | — | — | 114600 | 144100 | 55200 | 340 |
| | **3/V 10L3** | **1004** | 1.5 | 31800 | 6.9 | — | 100 | 112 | 132 | — | — | — | 117600 | 147900 | 56900 | 340 |
| | **3/V 10L3** | **1120** | 1.3 | 29100 | 5.6 | — | 100 | 112 | 132 | — | — | — | 121600 | 152800 | 59000 | 340 |
| | **3/V 10L3** | **1227** | 1.2 | 21800 | 3.9 | — | 100 | 112 | 132 | — | — | — | 124900 | 157100 | 60800 | 340 |
| | **3/V 10L3** | **1411** | 1.1 | 21800 | 3.3 | — | 100 | 112 | 132 | — | — | — | 130300 | 163800 | 63700 | 340 |



## 3/V 10 L4

## 34120 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | B5 / B14 | | | | | | | | | |
| **1500** | **3/V 10L4** | **1657** | 0.91 | 33300 | 4.1 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **1826** | 0.82 | 26700 | 3.0 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **2016** | 0.74 | 29400 | 3.0 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **2209** | 0.68 | 32300 | 3.0 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **2455** | 0.61 | 34100 | 2.8 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **2835** | 0.53 | 30600 | 2.2 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **3273** | 0.46 | 34100 | 2.1 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **3570** | 0.42 | 30600 | 1.9 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **4036** | 0.37 | 30600 | 1.6 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **4637** | 0.32 | 30600 | 1.6 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |
| | **3/V 10L4** | **5081** | 0.30 | 34100 | 1.6 | — | 71 | 80 | 90 | 100 | 112 | — | — | 133000 | 166000 | 65000 | 341 |

B

## 3/V 11 L3

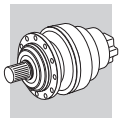
## 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 11L3** | **430** | 3.5 | 40900 | 18.7 | — | — | — | — | 160 | 180 (*) | — | — | 107800 | 134200 | 42800 | 352 |
| | **3/V 11L3** | **510** | 2.9 | 34500 | 13.3 | — | — | — | — | 160 | 180 (*) | — | — | 113400 | 141300 | 45400 | 352 |
| | **3/V 11L3** | **551** | 2.7 | 39000 | 13.9 | — | — | — | — | 160 | 180 (*) | — | — | 116100 | 144600 | 46600 | 352 |
| | **3/V 11L3** | **644** | 2.3 | 40000 | 12.5 | — | — | — | 132 | 160 | — | — | — | 121700 | 151600 | 49000 | 352 |
| | **3/V 11L3** | **720** | 2.1 | 40200 | 12.0 | — | — | — | 132 | 160 | — | — | — | 125800 | 156700 | 50900 | 352 |
| | **3/V 11L3** | **827** | 1.8 | 41400 | 10.1 | — | — | — | 132 | 160 | — | — | — | 131100 | 163400 | 53300 | 352 |
| | **3/V 11L3** | **900** | 1.7 | 41000 | 10.0 | — | 100 | 112 | 132 | — | — | — | — | 134500 | 167600 | 54800 | 352 |
| | **3/V 11L3** | **1004** | 1.5 | 35700 | 8.0 | — | 100 | 112 | 132 | — | — | — | — | 139000 | 173200 | 56900 | 352 |
| | **3/V 11L3** | **1103** | 1.4 | 43200 | 8.4 | — | — | — | 132 | 160 | — | — | — | 143000 | 178100 | 58700 | 352 |
| | **3/V 11L3** | **1274** | 1.2 | 35100 | 6.0 | — | 100 | 112 | 132 | — | — | — | — | 149300 | 186000 | 61600 | 352 |
| | **3/V 11L3** | **1378** | 1.1 | 44700 | 7.1 | — | 100 | 112 | 132 | — | — | — | — | 152900 | 190400 | 63200 | 352 |
| | **3/V 11L3** | **1636** | 0.92 | 43000 | 5.8 | — | 100 | 112 | 132 | — | — | — | — | 157000 | 195000 | 65000 | 352 |
| | **3/V 11L3** | **1963** | 0.76 | 43000 | 4.9 | — | 100 | 112 | 132 | — | — | — | — | 157000 | 195000 | 65000 | 352 |
| | **3/V 11L3** | **2329** | 0.64 | 34000 | 3.3 | — | 100 | 112 | 132 | — | — | — | — | 157000 | 195000 | 65000 | 352 |

## 3/V 11 L4

## 48330 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | B5 | | | | | | |
| **1500** | **3/V 11L4** | **2510** | 0.60 | 48300 | 3.9 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **2887** | 0.52 | 48300 | 3.5 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **3222** | 0.47 | 46900 | 3.0 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **3557** | 0.42 | 42300 | 2.8 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **4106** | 0.37 | 48300 | 2.7 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **4410** | 0.34 | 45200 | 2.3 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |
| | **3/V 11L4** | **5021** | 0.30 | 48300 | 2.2 | — | 80 | 90 | 100 | 112 | 132 | — | — | 157000 | 195000 | 65000 | 353 |



## 3/V 13 L3

## 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 13L3** | **370** | 4.1 | 39500 | 21 | — | — | — | — | 160 | 180 (*) | — | — | 127300 | 150700 | 50200 | 364 |
| | **3/V 13L3** | **425** | 3.5 | 47300 | 21 | — | — | — | — | 160 | 180 (*) | — | — | 132700 | 157100 | 52600 | 364 |
| | **3/V 13L3** | **516** | 2.9 | 52000 | 19.8 | — | — | — | — | 160 | 180 (*) | — | — | 140700 | 166500 | 56100 | 364 |
| | **3/V 13L3** | **567** | 2.6 | 49300 | 17.1 | — | — | — | — | 160 | 180 (*) | — | — | 144700 | 171300 | 57800 | 364 |
| | **3/V 13L3** | **673** | 2.2 | 50700 | 14.8 | — | — | — | — | 160 | 180 (*) | — | — | 152300 | 180300 | 61200 | 364 |
| | **3/V 13L3** | **741** | 2.0 | 45800 | 13.2 | — | — | — | 132 | 160 | — | — | — | 156800 | 185500 | 63200 | 364 |
| | **3/V 13L3** | **810** | 1.9 | 44500 | 10.8 | — | — | — | — | 160 | 180 (*) | — | — | 161100 | 190600 | 65100 | 364 |
| | **3/V 13L3** | **870** | 1.7 | 53800 | 13.2 | — | — | — | 132 | 160 | — | — | — | 164500 | 194700 | 66700 | 364 |
| | **3/V 13L3** | **1009** | 1.5 | 54300 | 10.8 | — | — | — | 132 | 160 | — | — | — | 172000 | 203600 | 70100 | 364 |
| | **3/V 13L3** | **1088** | 1.4 | 51200 | 10.3 | — | 100 | 112 | 132 | — | — | — | — | 175900 | 208200 | 71900 | 364 |
| | **3/V 13L3** | **1291** | 1.2 | 52800 | 9.0 | — | 100 | 112 | 132 | — | — | — | — | 185200 | 219200 | 76100 | 364 |
| | **3/V 13L3** | **1418** | 1.1 | 57400 | 8.9 | — | 100 | 112 | 132 | — | — | — | — | 190500 | 225400 | 78500 | 364 |
| | **3/V 13L3** | **1620** | 0.93 | 49000 | 6.5 | — | — | — | 132 | 160 | — | — | — | 192000 | 231000 | 80000 | 364 |
| | **3/V 13L3** | **1682** | 0.89 | 57970 | 7.6 | — | 100 | 112 | 132 | — | — | — | — | 192000 | 231000 | 80000 | 364 |
| | **3/V 13L3** | **2019** | 0.74 | 57970 | 6.5 | — | 100 | 112 | 132 | — | — | — | — | 192000 | 231000 | 80000 | 364 |
| | **3/V 13L3** | **2430** | 0.62 | 49000 | 4.5 | — | 100 | 112 | 132 | — | — | — | — | 192000 | 231000 | 80000 | 364 |

B

## 3/V 13 L4

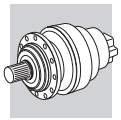
## 57970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 / B14 | | | | B5 | | | | | | |
| **1500** | **3/V 13L4** | **2773** | 0.54 | 55400 | 4.5 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |
| | **3/V 13L4** | **3263** | 0.46 | 55400 | 3.5 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |
| | **3/V 13L4** | **3515** | 0.43 | 57970 | 3.4 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |
| | **3/V 13L4** | **4046** | 0.37 | 55400 | 3.1 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |
| | **3/V 13L4** | **4536** | 0.33 | 57970 | 2.9 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |
| | **3/V 13L4** | **5046** | 0.30 | 53000 | 2.4 | — | 80 | 90 | 100 | 112 | 132 | — | — | 192000 | 231000 | 80000 | 365 |

## 3/V 14 L3

## 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 14L3** | **397** | 3.8 | 46100 | 22 | — | — | — | — | 160 | 180 (*) | — | — | 138800 | 163000 | 57800 | 376 |
| | **3/V 14L3** | **446** | 3.4 | 47700 | 21 | — | — | — | — | 160 | 180 (*) | — | — | 143800 | 168800 | 60100 | 376 |
| | **3/V 14L3** | **498** | 3.0 | 57800 | 22 | — | — | — | — | 160 | 180 (*) | — | — | 148600 | 174500 | 62300 | 376 |
| | **3/V 14L3** | **579** | 2.6 | 57100 | 18.7 | — | — | — | — | 160 | 180 (*) | — | — | 155500 | 182600 | 65500 | 376 |
| | **3/V 14L3** | **665** | 2.3 | 70200 | 21 | — | — | — | — | 160 | 180 (*) | — | — | 162000 | 190200 | 68600 | 376 |
| | **3/V 14L3** | **695** | 2.2 | 43000 | 13.2 | — | — | — | 132 | 160 | — | — | — | 164300 | 192800 | 69700 | 376 |
| | **3/V 14L3** | **794** | 1.9 | 49300 | 12.5 | — | — | — | 132 | 160 | — | — | — | 170900 | 200700 | 72800 | 376 |
| | **3/V 14L3** | **893** | 1.7 | 55200 | 13.2 | — | — | — | 132 | 160 | — | — | — | 177000 | 207800 | 75700 | 376 |
| | **3/V 14L3** | **997** | 1.5 | 61900 | 12.5 | — | — | — | 132 | 160 | — | — | — | 183000 | 214800 | 78500 | 376 |
| | **3/V 14L3** | **1116** | 1.3 | 52500 | 10.3 | — | 100 | 112 | 132 | — | — | — | — | 189300 | 222200 | 81500 | 376 |
| | **3/V 14L3** | **1324** | 1.1 | 62300 | 10.3 | — | 100 | 112 | 132 | — | — | — | — | 199300 | 233900 | 86300 | 376 |
| | **3/V 14L3** | **1339** | 1.1 | 47700 | 8.0 | — | 100 | 112 | 132 | — | — | — | — | 199900 | 234700 | 86700 | 376 |
| | **3/V 14L3** | **1589** | 0.94 | 56600 | 8.0 | — | 100 | 112 | 132 | — | — | — | — | 206000 | 243000 | 90000 | 376 |
| | **3/V 14L3** | **1662** | 0.90 | 75500 | 10.0 | — | 100 | 112 | 132 | — | — | — | — | 206000 | 243000 | 90000 | 376 |
| | **3/V 14L3** | **1994** | 0.75 | 71000 | 8.0 | — | 100 | 112 | 132 | — | — | — | — | 206000 | 243000 | 90000 | 376 |
| | **3/V 14L3** | **2318** | 0.65 | 66800 | 6.5 | — | 100 | 112 | 132 | — | — | — | — | 206000 | 243000 | 90000 | 376 |



## 3/V 14 L4

## 84000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | |
| **1500** | **3/V 14L4** | **2504** | 0.60 | 83200 | 7.4 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **2782** | 0.54 | 83200 | 6.4 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **3182** | 0.47 | 80100 | 5.2 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **3472** | 0.43 | 75500 | 4.5 | — | — | — | 132 | 160 | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **3993** | 0.38 | 75500 | 3.9 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **4312** | 0.35 | 83200 | 4.3 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |
| | **3/V 14L4** | **4959** | 0.30 | 83200 | 3.7 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 377 |

B

## 3/V 15 L3

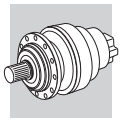
## 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | |
| **1500** | **3/V 15L3** | **386** | 3.9 | 67400 | 33 | — | 132 | 160 | 180 | 200 | 225 | — | — | 137700 | 161700 | 57300 | 388 |
| | **3/V 15L3** | **446** | 3.4 | 65100 | 29 | — | 132 | 160 | 180 | 200 | 225 | — | — | 143800 | 168800 | 60100 | 388 |
| | **3/V 15L3** | **498** | 3.0 | 85600 | 33 | — | 132 | 160 | 180 | 200 | 225 | — | — | 148600 | 174500 | 62300 | 388 |
| | **3/V 15L3** | **560** | 2.7 | 81700 | 29 | — | 132 | 160 | 180 | 200 | 225 | — | — | 153900 | 180700 | 64800 | 388 |
| | **3/V 15L3** | **665** | 2.3 | 88300 | 26 | — | 132 | 160 | 180 | 200 | 225 | — | — | 162000 | 190200 | 68600 | 388 |
| | **3/V 15L3** | **840** | 1.8 | 80400 | 19.2 | — | 132 | 160 | 180 | 200 | 225 | — | — | 173800 | 204100 | 74200 | 388 |
| | **3/V 15L3** | **997** | 1.5 | 93500 | 18.9 | — | 132 | 160 | 180 | 200 | 225 | — | — | 183000 | 214800 | 78500 | 388 |
| | **3/V 15L3** | **1120** | 1.3 | 92200 | 17.6 | — | 132 | 160 | 180 | 200 | 225 | — | — | 189500 | 222500 | 81600 | 388 |
| | **3/V 15L3** | **1329** | 1.1 | 97300 | 15.7 | — | 132 | 160 | 180 | 200 | 225 | — | — | 199500 | 234200 | 86400 | 388 |
| | **3/V 15L3** | **1400** | 1.1 | 86900 | 13.6 | — | 132 | 160 | 180 | 200 | 225 | — | — | 202600 | 237900 | 88000 | 388 |
| | **3/V 15L3** | **1662** | 0.90 | 99000 | 13.1 | — | 132 | 160 | 180 | 200 | 225 | — | — | 206000 | 243000 | 90000 | 388 |
| | **3/V 15L3** | **1994** | 0.75 | 94300 | 10.8 | — | 132 | 160 | 180 | 200 | 225 | — | — | 206000 | 243000 | 90000 | 388 |
| | **3/V 15L3** | **2318** | 0.65 | 83500 | 8.2 | — | 132 | 160 | 180 | 200 | 225 | — | — | 206000 | 243000 | 90000 | 388 |

## 3/V 15 L4

## 105000 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | |
| **1500** | **3/V 15L4** | **2780** | 0.54 | 105000 | 7.7 | — | — | — | 132 | 160 (*) | — | — | 206000 | 243000 | 90000 | 389 |
| | **3/V 15L4** | **3300** | 0.45 | 105000 | 6.5 | — | — | — | 132 | 160 (*) | — | — | 206000 | 243000 | 90000 | 389 |
| | **3/V 15L4** | **3489** | 0.43 | 99000 | 5.8 | — | — | — | 132 | 160 (*) | — | — | 206000 | 243000 | 90000 | 389 |
| | **3/V 15L4** | **4171** | 0.36 | 105000 | 5.4 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 389 |
| | **3/V 15L4** | **4950** | 0.30 | 105000 | 4.6 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 389 |
| | **3/V 15L4** | **5234** | 0.29 | 99000 | 4.1 | — | 100 | 112 | 132 | — | — | — | 206000 | 243000 | 90000 | 389 |



## 3/V 16 L3

## 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 16L3** | **397** | 3.8 | 99700 | 48 | — | 132 | 160 | 180 | 200 | 225 | — | — | 230900 | 256800 | 96300 | 400 |
| | **3/V 16L3** | **446** | 3.4 | 93400 | 41 | — | 132 | 160 | 180 | 200 | 225 | — | — | 239100 | 265900 | 100100 | 400 |
| | **3/V 16L3** | **530** | 2.8 | 110900 | 41 | — | 132 | 160 | 180 | 200 | 225 | — | — | 251700 | 279900 | 106000 | 400 |
| | **3/V 16L3** | **669** | 2.2 | 84000 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 270000 | 300300 | 114600 | 400 |
| | **3/V 16L3** | **794** | 1.9 | 99700 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 284200 | 316100 | 121400 | 400 |
| | **3/V 16L3** | **893** | 1.7 | 100800 | 24 | — | 132 | 160 | 180 | 200 | 225 | — | — | 294300 | 327300 | 126200 | 400 |
| | **3/V 16L3** | **1059** | 1.4 | 119600 | 24 | — | 132 | 160 | 180 | 200 | 225 | — | — | 309800 | 344600 | 133600 | 400 |
| | **3/V 16L3** | **1324** | 1.1 | 112100 | 18.6 | — | 132 | 160 | 180 | 200 | 225 | — | — | 331300 | 368500 | 143900 | 400 |
| | **3/V 16L3** | **1589** | 0.94 | 112100 | 15.5 | — | 132 | 160 | 180 | 200 | 225 | — | — | 345000 | 385000 | 150000 | 400 |

B

## 3/V 16 L4

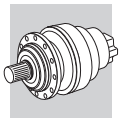
## 138820 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 16L4** | **1826** | 0.82 | 108300 | 12.2 | — | — | — | 132 | 160 (*) | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **2167** | 0.69 | 128500 | 12.2 | — | — | — | 132 | 160 (*) | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **2343** | 0.64 | 138800 | 12.1 | — | — | — | 132 | 160 (*) | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **2738** | 0.55 | 114100 | 9.0 | — | 100 | 112 | 132 | — | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **3250** | 0.46 | 135500 | 9.0 | — | 100 | 112 | 132 | — | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **3514** | 0.43 | 138800 | 8.5 | — | 100 | 112 | 132 | — | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **4171** | 0.36 | 138800 | 7.2 | — | 100 | 112 | 132 | — | | — | — | 345000 | 385000 | 150000 | 401 |
| | **3/V 16L4** | **4950** | 0.30 | 124000 | 5.4 | — | 100 | 112 | 132 | — | | — | — | 345000 | 385000 | 150000 | 401 |

## 3/V 17 L3

## 208110 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 17L3** | **405** | 3.7 | 126000 | 58 | — | 132 | 160 | 180 | 200 | 225 | — | — | 298600 | 317900 | 96900 | 410 |
| | **3/V 17L3** | **425** | 3.5 | 106700 | 48 | — | 132 | 160 | 180 | 200 | 225 | — | — | 303000 | 322600 | 98500 | 410 |
| | **3/V 17L3** | **512** | 2.9 | 128400 | 48 | — | 132 | 160 | 180 | 200 | 225 | — | — | 320300 | 341000 | 104800 | 410 |
| | **3/V 17L3** | **567** | 2.6 | 118700 | 41 | — | 132 | 160 | 180 | 200 | 225 | — | — | 330300 | 351700 | 108500 | 410 |
| | **3/V 17L3** | **608** | 2.5 | 134700 | 42 | — | 132 | 160 | 180 | 200 | 225 | — | — | 337200 | 359000 | 111000 | 410 |
| | **3/V 17L3** | **683** | 2.2 | 142900 | 41 | — | 132 | 160 | 180 | 200 | 225 | — | — | 349200 | 371800 | 115400 | 410 |
| | **3/V 17L3** | **810** | 1.9 | 141200 | 34 | — | 132 | 160 | 180 | 200 | 225 | — | — | 367600 | 391400 | 122100 | 410 |
| | **3/V 17L3** | **851** | 1.8 | 106700 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 373000 | 397100 | 124200 | 410 |
| | **3/V 17L3** | **1024** | 1.5 | 128400 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 394300 | 419900 | 132100 | 410 |
| | **3/V 17L3** | **1134** | 1.3 | 128000 | 24 | — | 132 | 160 | 180 | 200 | 225 | — | — | 406600 | 432900 | 136600 | 410 |
| | **3/V 17L3** | **1215** | 1.2 | 150900 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 415100 | 442000 | 139800 | 410 |
| | **3/V 17L3** | **1365** | 1.1 | 154100 | 24 | — | 132 | 160 | 180 | 200 | 225 | — | — | 429900 | 457700 | 145400 | 410 |



## 3/V 17 L4

## 208110 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 17L4** | **1780** | 0.84 | 184300 | 21 | — | — | — | — | 160 | 180 (*) | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **2065** | 0.73 | 184300 | 17.5 | — | — | — | — | 160 | 180 (*) | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **2485** | 0.60 | 155000 | 12.2 | — | — | — | — | 160 | 180 (*) | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **2773** | 0.54 | 166400 | 13.2 | — | — | — | 132 | 160 | — | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **3168** | 0.47 | 190800 | 12.5 | — | — | — | 132 | 160 | — | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **3583** | 0.42 | 170000 | 9.6 | — | — | — | — | 160 | 180 (*) | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **4129** | 0.36 | 184300 | 9.3 | — | — | — | 132 | 160 | — | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **4449** | 0.34 | 203000 | 10.3 | — | 100 | 112 | 132 | — | — | — | — | 442000 | 470000 | 150000 | 411 |
| | **3/V 17L4** | **4970** | 0.30 | 155000 | 6.5 | — | — | — | 132 | 160 | — | — | — | 442000 | 470000 | 150000 | 411 |

B

## 3/V 18 L4

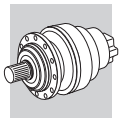
## 280580 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 18L4** | **765** | 2.0 | 185000 | 47 | — | 132 | 160 | 180 | 200 | 225 | — | — | 453300 | 462600 | 159800 | 420 |
| | **3/V 18L4** | **982** | 1.5 | 237400 | 47 | — | 132 | 160 | 180 | 200 | 225 | — | — | 488500 | 498600 | 173600 | 420 |
| | **3/V 18L4** | **1165** | 1.3 | 275600 | 46 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 524900 | 183800 | 420 |
| | **3/V 18L4** | **1232** | 1.2 | 276700 | 43 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 533700 | 187300 | 420 |
| | **3/V 18L4** | **1473** | 1.0 | 255400 | 34 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 563100 | 198800 | 420 |
| | **3/V 18L4** | **1748** | 0.86 | 280580 | 31 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **1848** | 0.81 | 280580 | 30 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **2295** | 0.65 | 212900 | 19.2 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **2464** | 0.61 | 280580 | 23 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **2945** | 0.51 | 273300 | 19.2 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **3495** | 0.43 | 280580 | 16.6 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **3696** | 0.41 | 280580 | 15.7 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **4386** | 0.34 | 280580 | 13.3 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |
| | **3/V 18L4** | **5099** | 0.29 | 280580 | 11.4 | — | 132 | 160 | 180 | 200 | 225 | — | — | 503000 | 565000 | 200000 | 420 |

## 3/V 19 L4

## 476410 Nm

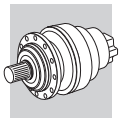
| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | Rn$_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 19L4** | **2582** | 0.58 | 365200 | 29 | — | 132 | 160 | 180 | 200 | 225 | — | — | 638000 | 702000 | 200000 | 430 |
| | **3/V 19L4** | **3231** | 0.46 | 367600 | 23 | — | 132 | 160 | 180 | 200 | 225 | — | — | 638000 | 702000 | 200000 | 430 |
| | **3/V 19L4** | **4095** | 0.37 | 380000 | 19.2 | — | 132 | 160 | 180 | 200 | 225 | — | — | 638000 | 702000 | 200000 | 430 |
| | **3/V 19L4** | **4457** | 0.34 | 359700 | 16.3 | — | 132 | 160 | 180 | 200 | 225 | — | — | 638000 | 702000 | 200000 | 430 |
| | **3/V 19L4** | **5164** | 0.29 | 403700 | 17.3 | — | 132 | 160 | 180 | 200 | 225 | — | — | 638000 | 702000 | 200000 | 430 |



# 3/V 21 L4

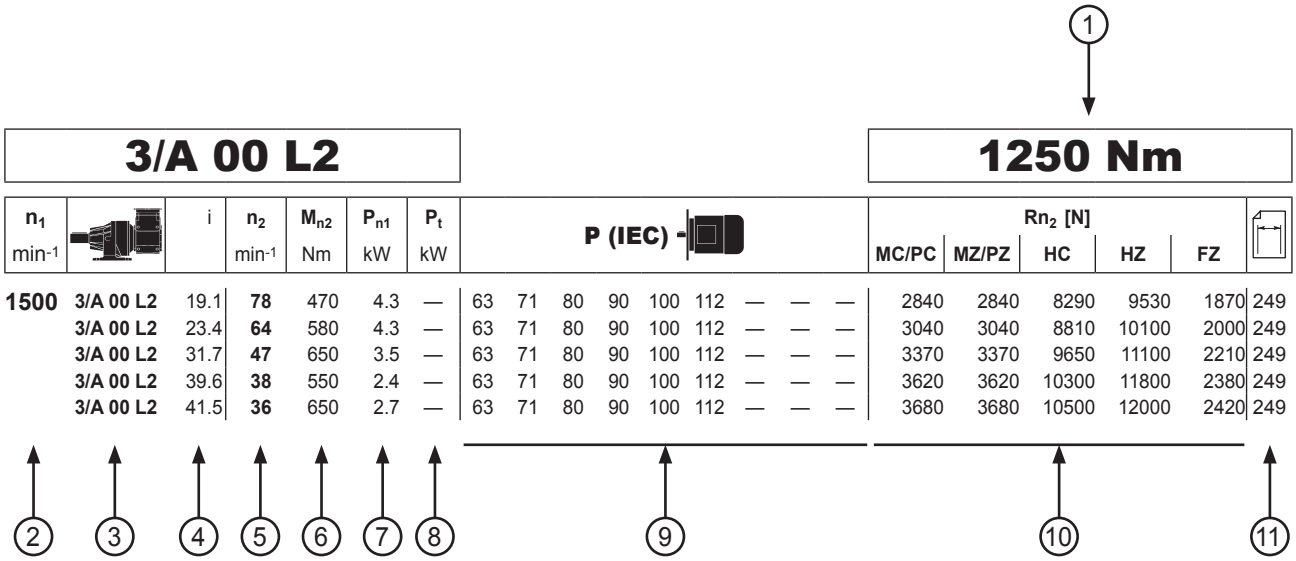
# 655740 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | B5 | | | | | | | | | | |
| **1500** | **3/V 21L4** | **1062** | 1.4 | 443000 | 79 | — | 132 | 160 | 180 | 200 | 225 | — | — | 705200 | 836300 | 1069400 | 440 |
| | **3/V 21L4** | **1260** | 1.2 | 425500 | 65 | — | 132 | 160 | 180 | 200 | 225 | — | — | 742400 | 880400 | 1132200 | 440 |
| | **3/V 21L4** | **1517** | 0.99 | 512200 | 65 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **1800** | 0.83 | 536400 | 57 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **1890** | 0.79 | 460000 | 48 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **2275** | 0.66 | 553700 | 48 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **2520** | 0.60 | 511700 | 41 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **2700** | 0.56 | 536400 | 39 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **3600** | 0.42 | 536400 | 30 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **3780** | 0.40 | 460000 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **4550** | 0.33 | 553700 | 25 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |
| | **3/V 21L4** | **5040** | 0.30 | 552000 | 24 | — | 132 | 160 | 180 | 200 | 225 | — | — | 779000 | 923000 | 1200000 | 440 |



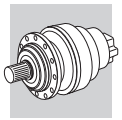
## 25.6 DATOS TÉCNICOS REDUCTOR COMBINADO - 3/A

Guía para consultar las tablas.




| | |
|---|---|
| **1** | Par de referencia |
| **2** | Velocidad angular en la entrada del reductor |
| **3** | Tamaño reductor en ejecución combinada epicicloidal-ortogonal |
| **4** | Relación de reducción |
| **5** | Velocidad angular del eje de salida |
| **6** | Par nominal del eje lento del reductor, basado en:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **7** | Potencia nominal del eje rápido del reductor, basado en:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h |
| **8** | Potencia térmica reductor |
| **9** | Tamaño motor eléctrico IEC instalable |
| **10** | Carga radial aplicable al eje lento, calculado para:<br><br>- factor de servicio $f_S$=1<br>- vida teórica de 10000 h<br>- velocidad de salida $n_2$<br><br>Para fuerzas no aplicadas en el centro del eje referirse a los diagramas que aparecen en las páginas dimensionales del reductor en concreto |
| **11** | Pagina de las dimensiones |

B

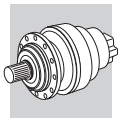


## 3/A 00 L2 — 1250 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 00 L2** | **19.1** | 78 | 470 | 4.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 2840 | 2840 | 8290 | 9530 | 1870 | 249 |
| | **3/A 00 L2** | **23.4** | 64 | 580 | 4.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3040 | 3040 | 8810 | 10100 | 2000 | 249 |
| | **3/A 00 L2** | **31.7** | 47 | 650 | 3.5 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3370 | 3370 | 9650 | 11100 | 2210 | 249 |
| | **3/A 00 L2** | **39.6** | 38 | 550 | 2.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3620 | 3620 | 10300 | 11800 | 2380 | 249 |
| | **3/A 00 L2** | **41.5** | 36 | 650 | 2.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3680 | 3680 | 10500 | 12000 | 2420 | 249 |
| | **3/A 00 L2** | **51.8** | 28.9 | 550 | 1.8 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3960 | 3960 | 11200 | 12800 | 2610 | 249 |
| | **3/A 00 L2** | **61.2** | 24.5 | 650 | 1.8 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4190 | 4190 | 11700 | 13500 | 2750 | 249 |
| | **3/A 00 L2** | **71.0** | 21.1 | 650 | 1.6 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4400 | 4400 | 12300 | 14100 | 2890 | 249 |
| | **3/A 00 L2** | **80.2** | 18.7 | 650 | 1.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4580 | 4580 | 12700 | 14600 | 3010 | 249 |
| | **3/A 00 L2** | **88.6** | 16.9 | 550 | 1.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4740 | 4740 | 13100 | 15100 | 3120 | 249 |
| | **3/A 00 L2** | **100** | 15.0 | 550 | 0.95 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4940 | 4940 | 13600 | 15600 | 3240 | 249 |
| | **3/A 00 L2** | **107** | 14.0 | 650 | 1.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 5050 | 5050 | 13900 | 16000 | 3320 | 249 |
| | **3/A 00 L2** | **134** | 11.2 | 550 | 0.71 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 5440 | 5440 | 14900 | 17100 | 3580 | 249 |
| | **3/A 00 L2** | **171** | 8.8 | 550 | 0.55 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 5900 | 5900 | 16000 | 18400 | 3880 | 249 |
| | **3/A 00 L2** | **203** | 7.4 | 650 | 0.55 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6240 | 6240 | 16800 | 19300 | 4100 | 249 |
| | **3/A 00 L2** | **219** | 6.9 | 620 | 0.49 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6400 | 6400 | 17200 | 19800 | 4210 | 249 |
| | **3/A 00 L2** | **253** | 5.9 | 550 | 0.37 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6720 | 6720 | 18000 | 20700 | 4420 | 249 |
| | **3/A 00 L2** | **296** | 5.1 | 650 | 0.38 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 7080 | 7080 | 18900 | 21700 | 4660 | 249 |
| | **3/A 00 L2** | **319** | 4.7 | 440 | 0.24 | — | 63 | 71 | — | — | — | — | — | — | — | 7260 | 7260 | 19300 | 22100 | 4770 | 249 |
| | **3/A 00 L2** | **369** | 4.1 | 560 | 0.26 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 7630 | 7630 | 20100 | 23100 | 5010 | 249 |
| | **3/A 00 L2** | **391** | 3.8 | 540 | 0.24 | — | 63 | 71 | — | — | — | — | — | — | — | 7770 | 7770 | 20500 | 23500 | 5110 | 249 |
| | **3/A 00 L2** | **441** | 3.4 | 690 | 0.27 | — | 63 | 71 | — | — | — | — | — | — | — | 8090 | 8090 | 21200 | 24400 | 5320 | 249 |
| | **3/A 00 L2** | **550** | 2.7 | 590 | 0.19 | — | 63 | 71 | — | — | — | — | — | — | — | 8710 | 8710 | 22700 | 26100 | 5730 | 249 |
| | **3/A 00 L2** | **660** | 2.3 | 610 | 0.16 | — | 63 | 71 | — | — | — | — | — | — | — | 9250 | 9250 | 24000 | 27500 | 6080 | 249 |

## 3/A 01 L2 — 2460 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 01 L2** | **18.8** | 80 | 710 | 6.5 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 2830 | 2830 | 8250 | 9470 | 1860 | 259 |
| | **3/A 01 L2** | **23.0** | 65 | 870 | 6.5 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 3020 | 3020 | 8760 | 10100 | 1990 | 259 |
| | **3/A 01 L2** | **31.2** | 48 | 1180 | 6.5 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 3340 | 3340 | 9600 | 11000 | 2200 | 259 |
| | **3/A 01 L2** | **35.8** | 42 | 760 | 3.7 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 3500 | 3500 | 10000 | 11500 | 2300 | 259 |
| | **3/A 01 L2** | **40.1** | 37 | 870 | 3.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3640 | 3640 | 10300 | 11900 | 2390 | 259 |
| | **3/A 01 L2** | **43.9** | 34 | 930 | 3.7 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 3750 | 3750 | 10600 | 12200 | 2470 | 259 |
| | **3/A 01 L2** | **49.1** | 31 | 830 | 2.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 3890 | 3890 | 11000 | 12600 | 2560 | 259 |
| | **3/A 01 L2** | **54.2** | 27.7 | 1180 | 3.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4020 | 4020 | 11300 | 13000 | 2650 | 259 |
| | **3/A 01 L2** | **59.4** | 25.2 | 1260 | 3.7 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 4150 | 4150 | 11600 | 13400 | 2730 | 259 |
| | **3/A 01 L2** | **74.2** | 20.2 | 1150 | 2.7 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 4470 | 4470 | 12400 | 14300 | 2940 | 259 |
| | **3/A 01 L2** | **81.3** | 18.4 | 1300 | 2.8 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4610 | 4610 | 12800 | 14700 | 3030 | 259 |
| | **3/A 01 L2** | **102** | 14.8 | 1150 | 2.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 4960 | 4960 | 13700 | 15700 | 3260 | 259 |
| | **3/A 01 L2** | **133** | 11.3 | 1300 | 1.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 5430 | 5430 | 14800 | 17100 | 3570 | 259 |
| | **3/A 01 L2** | **166** | 9.0 | 1150 | 1.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 5850 | 5850 | 15900 | 18200 | 3840 | 259 |
| | **3/A 01 L2** | **184** | 8.1 | 1030 | 0.97 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6050 | 6050 | 16400 | 18800 | 3980 | 259 |
| | **3/A 01 L2** | **204** | 7.3 | 1300 | 1.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6260 | 6260 | 16900 | 19400 | 4120 | 259 |
| | **3/A 01 L2** | **220** | 6.8 | 830 | 0.65 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6410 | 6410 | 17200 | 19800 | 4220 | 259 |
| | **3/A 01 L2** | **255** | 5.9 | 1150 | 0.78 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6740 | 6740 | 18000 | 20700 | 4430 | 259 |
| | **3/A 01 L2** | **269** | 5.6 | 1010 | 0.65 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 6860 | 6860 | 18300 | 21000 | 4510 | 259 |
| | **3/A 01 L2** | **311** | 4.8 | 1150 | 0.64 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 7200 | 7200 | 19100 | 22000 | 4740 | 259 |
| | **3/A 01 L2** | **364** | 4.1 | 1340 | 0.64 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 7590 | 7590 | 20100 | 23000 | 4990 | 259 |
| | **3/A 01 L2** | **393** | 3.8 | 830 | 0.36 | — | 63 | 71 | — | — | — | — | — | — | — | 7790 | 7790 | 20500 | 23600 | 5120 | 259 |
| | **3/A 01 L2** | **454** | 3.3 | 1150 | 0.44 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 8170 | 8170 | 21400 | 24600 | 5370 | 259 |
| | **3/A 01 L2** | **533** | 2.8 | 1120 | 0.36 | — | 63 | 71 | — | — | — | — | — | — | — | 8620 | 8620 | 22500 | 25800 | 5660 | 259 |
| | **3/A 01 L2** | **665** | 2.3 | 1150 | 0.30 | — | 63 | 71 | — | — | — | — | — | — | — | 9280 | 9280 | 24000 | 27600 | 6100 | 259 |

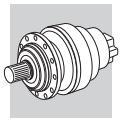


## 3/A 03 L2 — 2970 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 03 L2** | **19.4** | 77 | 1050 | 9.3 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 8790 | 10100 | 17000 | 20500 | 5640 | 269 |
| | **3/A 03 L2** | **23.0** | 65 | 1240 | 9.3 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 9290 | 10700 | 17900 | 21500 | 5960 | 269 |
| | **3/A 03 L2** | **28.8** | 52 | 1550 | 9.3 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 10000 | 11600 | 19100 | 23000 | 6430 | 269 |
| | **3/A 03 L2** | **33.5** | 45 | 1800 | 9.3 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 10500 | 12200 | 20000 | 24100 | 6760 | 269 |
| | **3/A 03 L2** | **40.5** | 37 | 1650 | 7.0 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 11200 | 13000 | 21200 | 25500 | 7200 | 269 |
| | **3/A 03 L2** | **43.4** | 35 | 1800 | 7.2 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 11500 | 13300 | 21600 | 26000 | 7370 | 269 |
| | **3/A 03 L2** | **52.5** | 28.6 | 1650 | 5.4 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| | **3/A 03 L2** | **52.5** | 28.6 | 1650 | 5.4 | — | — | — | 80 | 90 | 100 | 112 | — | — | — | 12200 | 14100 | 22900 | 27600 | 7850 | 269 |
| | **3/A 03 L2** | **62.9** | 23.8 | 1550 | 4.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 13000 | 15000 | 24200 | 29100 | 8340 | 269 |
| | **3/A 03 L2** | **73.2** | 20.5 | 1800 | 4.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 13700 | 15800 | 25300 | 30400 | 8770 | 269 |
| | **3/A 03 L2** | **88.5** | 16.9 | 1650 | 3.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 14600 | 16800 | 26800 | 32200 | 9340 | 269 |
| | **3/A 03 L2** | **96.9** | 15.5 | 1690 | 3.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 15000 | 17300 | 27500 | 33100 | 9630 | 269 |
| | **3/A 03 L2** | **182** | 8.3 | 1830 | 1.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 18500 | 21400 | 33200 | 40000 | 11900 | 269 |
| | **3/A 03 L2** | **220** | 6.8 | 1650 | 1.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 19700 | 22800 | 35200 | 42300 | 12700 | 269 |
| | **3/A 03 L2** | **269** | 5.6 | 1840 | 1.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| | **3/A 03 L2** | **269** | 5.6 | 1840 | 1.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 21100 | 24400 | 37400 | 45000 | 13500 | 269 |
| | **3/A 03 L2** | **326** | 4.6 | 1660 | 0.88 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 22500 | 26000 | 39600 | 47600 | 14400 | 269 |
| | **3/A 03 L2** | **352** | 4.3 | 2020 | 0.99 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 23100 | 26600 | 40500 | 48800 | 14800 | 269 |
| | **3/A 03 L2** | **409** | 3.7 | 1940 | 0.82 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 24300 | 28000 | 42400 | 51000 | 15600 | 269 |
| | **3/A 03 L2** | **495** | 3.0 | 1720 | 0.60 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 25900 | 29800 | 44900 | 54000 | 16600 | 269 |
| | **3/A 03 L2** | **574** | 2.6 | 1740 | 0.52 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 27200 | 31400 | 46900 | 56500 | 17400 | 269 |
| | **3/A 03 L2** | **605** | 2.5 | 1800 | 0.51 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 27600 | 31900 | 47700 | 57400 | 17700 | 269 |
| | **3/A 03 L2** | **731** | 2.1 | 1800 | 0.42 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 29400 | 34000 | 50500 | 60700 | 18900 | 269 |

## 3/A 04 L2 — 3960 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 04 L2** | **18.7** | 80 | 1920 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 8680 | 10000 | 16800 | 20200 | 5570 | 281 |
| | **3/A 04 L2** | **22.1** | 68 | 2270 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 9170 | 10600 | 17700 | 21300 | 5880 | 281 |
| | **3/A 04 L2** | **25.6** | 59 | 1920 | 12.9 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 9630 | 11100 | 18500 | 22200 | 6180 | 281 |
| | **3/A 04 L2** | **27.7** | 54 | 2830 | 17.6 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 9890 | 11400 | 18900 | 22800 | 6350 | 281 |
| | **3/A 04 L2** | **30.2** | 50 | 2270 | 12.9 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 10200 | 11700 | 19400 | 23300 | 6530 | 281 |
| | **3/A 04 L2** | **35.3** | 43 | 2270 | 11.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 10700 | 12400 | 20300 | 24500 | 6880 | 281 |
| | **3/A 04 L2** | **39.1** | 38 | 2270 | 10.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 11100 | 12800 | 21000 | 25200 | 7120 | 281 |
| | **3/A 04 L2** | **44.3** | 34 | 2850 | 11.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 11600 | 13300 | 21800 | 26200 | 7420 | 281 |
| | **3/A 04 L2** | **49.7** | 30 | 2270 | 7.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 12000 | 13900 | 22500 | 27100 | 7710 | 281 |
| | **3/A 04 L2** | **54.5** | 27.5 | 2390 | 7.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 12400 | 14300 | 23200 | 27900 | 7950 | 281 |
| | **3/A 04 L2** | **62.4** | 24.0 | 2850 | 7.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 13000 | 15000 | 24100 | 29000 | 8320 | 281 |
| | **3/A 04 L2** | **68.4** | 21.9 | 2510 | 6.3 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 13400 | 15400 | 24800 | 29800 | 8580 | 281 |
| | **3/A 04 L2** | **81.7** | 18.4 | 2370 | 5.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 14200 | 16400 | 26200 | 31500 | 9100 | 281 |
| | **3/A 04 L2** | **90.7** | 16.5 | 2390 | 4.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 14700 | 17000 | 27000 | 32500 | 9420 | 281 |
| | **3/A 04 L2** | **102** | 14.7 | 2550 | 4.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 15300 | 17600 | 27900 | 33600 | 9790 | 281 |
| | **3/A 04 L2** | **117** | 12.8 | 2390 | 3.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 16000 | 18500 | 29100 | 35000 | 10300 | 281 |
| | **3/A 04 L2** | **129** | 11.6 | 2720 | 3.6 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 16500 | 19100 | 30000 | 36100 | 10600 | 281 |
| | **3/A 04 L2** | **149** | 10.1 | 2390 | 2.8 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 17300 | 20000 | 31300 | 37700 | 11100 | 281 |
| | **3/A 04 L2** | **162** | 9.2 | 2900 | 3.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 17800 | 20600 | 32100 | 38700 | 11400 | 281 |
| | **3/A 04 L2** | **174** | 8.6 | 2970 | 2.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 18200 | 21100 | 32800 | 39500 | 11700 | 281 |
| | **3/A 04 L2** | **205** | 7.3 | 3500 | 2.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 19300 | 22300 | 34500 | 41500 | 12400 | 281 |
| | **3/A 04 L2** | **226** | 6.6 | 3500 | 2.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 19900 | 23000 | 35500 | 42700 | 12800 | 281 |
| | **3/A 04 L2** | **250** | 6.0 | 3500 | 2.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 20600 | 23800 | 36600 | 44000 | 13200 | 281 |
| | **3/A 04 L2** | **283** | 5.3 | 2850 | 1.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 21500 | 24800 | 38000 | 45700 | 13800 | 281 |
| | **3/A 04 L2** | **317** | 4.7 | 2400 | 1.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 22300 | 25700 | 39300 | 47300 | 14300 | 281 |
| | **3/A 04 L2** | **349** | 4.3 | 2430 | 1.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 23000 | 26600 | 40400 | 48600 | 14800 | 281 |
| | **3/A 04 L2** | **386** | 3.9 | 2450 | 1.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 23800 | 27500 | 41700 | 50200 | 15300 | 281 |
| | **3/A 04 L2** | **469** | 3.2 | 2500 | 0.92 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 25400 | 29300 | 44200 | 53100 | 16300 | 281 |
| | **3/A 04 L2** | **520** | 2.9 | 2520 | 0.84 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 26300 | 30300 | 45600 | 54800 | 16900 | 281 |



## 3/A 05 L2

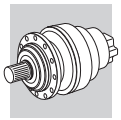
## 5800 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 05L2** | **18.7** | 80 | 1920 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 8680 | 10000 | 16800 | 20200 | 5570 | 293 |
| | **3/A 05L2** | **22.1** | 68 | 2270 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 9170 | 10600 | 17700 | 21300 | 5880 | 293 |
| | **3/A 05L2** | **27.7** | 54 | 2850 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 9890 | 11400 | 18900 | 22800 | 6350 | 293 |
| | **3/A 05L2** | **32.2** | 47 | 3310 | 17.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 10400 | 12000 | 19800 | 23800 | 6670 | 293 |
| | **3/A 05L2** | **39.0** | 38 | 3020 | 13.3 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 11100 | 12800 | 21000 | 25200 | 7110 | 293 |
| | **3/A 05L2** | **44.0** | 34 | 3310 | 12.9 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 11500 | 13300 | 21700 | 26100 | 7400 | 293 |
| | **3/A 05L2** | **53.3** | 28.2 | 3040 | 9.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 12300 | 14200 | 23000 | 27700 | 7890 | 293 |
| | **3/A 05L2** | **57.0** | 26.3 | 3310 | 10.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 12600 | 14500 | 23500 | 28300 | 8070 | 293 |
| | **3/A 05L2** | **62.6** | 24.0 | 3220 | 8.9 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 13000 | 15000 | 24200 | 29100 | 8330 | 293 |
| | **3/A 05L2** | **72.5** | 20.7 | 3310 | 7.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 13600 | 15700 | 25200 | 30400 | 8740 | 293 |
| | **3/A 05L2** | **75.8** | 19.8 | 3060 | 7.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 13800 | 16000 | 25600 | 30800 | 8870 | 293 |
| | **3/A 05L2** | **85.6** | 17.5 | 3520 | 7.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 14400 | 16600 | 26500 | 31900 | 9240 | 293 |
| | **3/A 05L2** | **104** | 14.5 | 3080 | 5.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | — | — | 15300 | 17700 | 28100 | 33800 | 9840 | 293 |
| | **3/A 05L2** | **121** | 12.4 | 3520 | 5.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 16200 | 18700 | 29400 | 35400 | 10400 | 293 |
| | **3/A 05L2** | **141** | 10.7 | 3600 | 4.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 17000 | 19600 | 30800 | 37000 | 10900 | 293 |
| | **3/A 05L2** | **162** | 9.2 | 2900 | 3.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | — | — | 17800 | 20600 | 32100 | 38700 | 11400 | 293 |
| | **3/A 05L2** | **175** | 8.5 | 3600 | 3.5 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 18300 | 21100 | 32900 | 39600 | 11700 | 293 |
| | **3/A 05L2** | **212** | 7.1 | 3100 | 2.5 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| | **3/A 05L2** | **212** | 7.1 | 3100 | 2.5 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 19500 | 22500 | 34800 | 41900 | 12500 | 293 |
| | **3/A 05L2** | **241** | 6.2 | 4290 | 3.1 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 20300 | 23500 | 36200 | 43500 | 13000 | 293 |
| | **3/A 05L2** | **280** | 5.4 | 3600 | 2.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 21400 | 24700 | 37800 | 45500 | 13700 | 293 |
| | **3/A 05L2** | **329** | 4.6 | 3650 | 1.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 22600 | 26100 | 39700 | 47800 | 14500 | 293 |
| | **3/A 05L2** | **398** | 3.8 | 3180 | 1.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 24000 | 27800 | 42100 | 50600 | 15400 | 293 |
| | **3/A 05L2** | **422** | 3.6 | 4400 | 1.8 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 24500 | 28300 | 42800 | 51500 | 15700 | 293 |
| | **3/A 05L2** | **491** | 3.1 | 3880 | 1.4 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 25800 | 29800 | 44800 | 53900 | 16500 | 293 |
| | **3/A 05L2** | **594** | 2.5 | 3300 | 0.96 | — | 63 | 71 | 80 | 90 | 100 | 112 | — | — | — | 27500 | 31700 | 47400 | 57100 | 17600 | 293 |

## 3/A 06 L2

## 10840 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 06L2** | **27.7** | 54 | 3320 | 21 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 12300 | 14000 | 30900 | 36000 | 9250 | 305 |
| | **3/A 06L2** | **32.7** | 46 | 3920 | 21 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 13000 | 14700 | 32500 | 37900 | 9780 | 305 |
| | **3/A 06L2** | **34.9** | 43 | 3490 | 17.2 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 13300 | 15100 | 33200 | 38600 | 9990 | 305 |
| | **3/A 06L2** | **41.1** | 37 | 4910 | 21 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 14000 | 15900 | 34800 | 40500 | 10500 | 305 |
| | **3/A 06L2** | **47.2** | 32 | 3840 | 14.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 14700 | 16700 | 36300 | 42300 | 11000 | 305 |
| | **3/A 06L2** | **51.7** | 29.0 | 5170 | 17.2 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 15200 | 17200 | 37300 | 43400 | 11400 | 305 |
| | **3/A 06L2** | **55.7** | 26.9 | 4530 | 14.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 15500 | 17600 | 38100 | 44400 | 11700 | 305 |
| | **3/A 06L2** | **60.1** | 24.9 | 6010 | 17.2 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 15900 | 18100 | 39000 | 45500 | 12000 | 305 |
| | **3/A 06L2** | **69.9** | 21.5 | 5690 | 14.0 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 16800 | 19000 | 40800 | 47500 | 12600 | 305 |
| | **3/A 06L2** | **81.2** | 18.5 | 6480 | 13.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 17600 | 20000 | 42700 | 49700 | 13200 | 305 |
| | **3/A 06L2** | **88.5** | 16.9 | 6210 | 12.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 18100 | 20600 | 43800 | 51000 | 13600 | 305 |
| | **3/A 06L2** | **98.3** | 15.3 | 5380 | 9.4 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 18800 | 21300 | 45200 | 52700 | 14100 | 305 |
| | **3/A 06L2** | **112** | 13.4 | 6180 | 9.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 19600 | 22200 | 47100 | 54800 | 14700 | 305 |
| | **3/A 06L2** | **125** | 12.0 | 5440 | 7.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 20300 | 23000 | 48600 | 56500 | 15300 | 305 |
| | **3/A 06L2** | **141** | 10.7 | 7760 | 9.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 21200 | 24000 | 50400 | 58700 | 15900 | 305 |
| | **3/A 06L2** | **164** | 9.2 | 6500 | 7.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 22300 | 25200 | 52700 | 61400 | 16700 | 305 |
| | **3/A 06L2** | **190** | 7.9 | 7760 | 7.3 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 23400 | 26500 | 55100 | 64200 | 17600 | 305 |
| | **3/A 06L2** | **198** | 7.6 | 5500 | 4.9 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 23700 | 26900 | 55800 | 65000 | 17800 | 305 |
| | **3/A 06L2** | **221** | 6.8 | 6520 | 5.3 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 24600 | 27900 | 57700 | 67100 | 18500 | 305 |
| | **3/A 06L2** | **267** | 5.6 | 5500 | 3.7 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 26200 | 29700 | 61000 | 71100 | 19700 | 305 |
| | **3/A 06L2** | **276** | 5.4 | 7760 | 5.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 26500 | 30000 | 61600 | 71800 | 19900 | 305 |
| | **3/A 06L2** | **321** | 4.7 | 6610 | 3.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 27900 | 31600 | 64500 | 75100 | 20900 | 305 |
| | **3/A 06L2** | **388** | 3.9 | 5640 | 2.6 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 29700 | 33600 | 68300 | 79500 | 22300 | 305 |
| | **3/A 06L2** | **380** | 3.9 | 6180 | 2.9 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 29500 | 33400 | 67900 | 79000 | 22200 | 305 |
| | **3/A 06L2** | **435** | 3.5 | 7760 | 3.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 30800 | 34900 | 70600 | 82300 | 23200 | 305 |
| | **3/A 06L2** | **505** | 3.0 | 7150 | 2.5 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 32400 | 36700 | 73900 | 86100 | 24400 | 305 |
| | **3/A 06L2** | **555** | 2.7 | 7270 | 2.3 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 33400 | 37900 | 76000 | 88500 | 25100 | 305 |
| | **3/A 06L2** | **611** | 2.5 | 5920 | 1.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 34500 | 39100 | 78300 | 91100 | 25900 | 305 |
| | **3/A 06L2** | **671** | 2.2 | 6020 | 1.6 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 35600 | 40400 | 80500 | 93700 | 26800 | 305 |

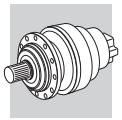


# 3/A 07 L2

# 15680 Nm

| $n_1$ min$^{-1}$ | | i | $n_2$ min$^{-1}$ | $M_{n2}$ Nm | $P_{n1}$ kW | Pt kW | P (IEC) | | | | | | | | | $Rn_2$ [N] MC/PC | MZ/PZ | HC | HZ | FZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1500** | **3/A 07L2** | **27.1** | 55 | 6650 | 42 | — | — | — | — | — | — | — | 132 | 160 | 180 | 13600 | 17000 | 33100 | 43300 | 11800 | 317 |
| | **3/A 07L2** | **32.3** | 46 | 7940 | 42 | — | — | — | — | — | — | — | 132 | 160 | 180 | 14400 | 18100 | 34900 | 45700 | 12500 | 317 |
| | **3/A 07L2** | **41.5** | 36 | 9620 | 40 | — | — | — | — | — | — | — | 132 | 160 | 180 | 15700 | 19600 | 37600 | 49200 | 13600 | 317 |
| | **3/A 07L2** | **49.2** | 30 | 8380 | 29 | — | — | — | — | — | — | — | 132 | 160 | 180 | 16600 | 20800 | 39500 | 51800 | 14400 | 317 |
| | **3/A 07L2** | **57.3** | 26.2 | 6650 | 20 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 17400 | 21900 | 41400 | 54200 | 15200 | 317 |
| | **3/A 07L2** | **68.3** | 22.0 | 7940 | 20 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 18500 | 23200 | 43600 | 57200 | 16100 | 317 |
| | **3/A 07L2** | **87.7** | 17.1 | 10200 | 20 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 20100 | 25200 | 47000 | 61600 | 17500 | 317 |
| | **3/A 07L2** | **109** | 13.8 | 8860 | 14.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 21600 | 27100 | 50100 | 65700 | 18800 | 317 |
| | **3/A 07L2** | **130** | 11.6 | 11100 | 15.2 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 22900 | 28700 | 52900 | 69300 | 19900 | 317 |
| | **3/A 07L2** | **140** | 10.7 | 11100 | 14.1 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 23500 | 29500 | 54100 | 70900 | 20400 | 317 |
| | **3/A 07L2** | **155** | 9.7 | 9000 | 10.3 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 24300 | 30500 | 55800 | 73100 | 21100 | 317 |
| | **3/A 07L2** | **180** | 8.3 | 10900 | 10.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 25500 | 32000 | 58300 | 76500 | 22200 | 317 |
| | **3/A 07L2** | **198** | 7.6 | 8700 | 7.8 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 26300 | 33000 | 60000 | 78600 | 22900 | 317 |
| | **3/A 07L2** | **223** | 6.7 | 9000 | 7.2 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 27400 | 34400 | 62200 | 81500 | 23800 | 317 |
| | **3/A 07L2** | **241** | 6.2 | 9000 | 6.6 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 28200 | 35300 | 63700 | 83500 | 24500 | 317 |
| | **3/A 07L2** | **282** | 5.3 | 8700 | 5.5 | — | — | — | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 29600 | 37200 | 66700 | 87400 | 25800 | 317 |
| | **3/A 07L2** | **341** | 4.4 | 11500 | 6.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 31600 | 39700 | 70700 | 92600 | 27500 | 317 |
| | **3/A 07L2** | **405** | 3.7 | 9080 | 4.0 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 33500 | 42000 | 74400 | 97500 | 29100 | 317 |
| | **3/A 07L2** | **439** | 3.4 | 9180 | 3.7 | — | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 | 34400 | 43100 | 76200 | 99900 | 29900 | 317 |

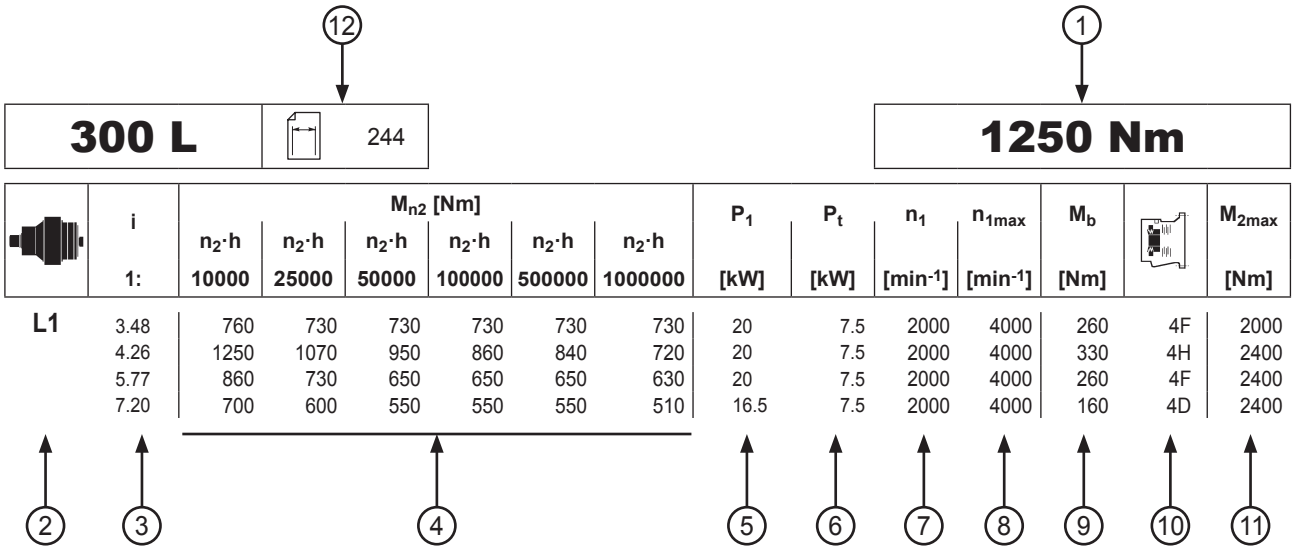
B



B

## 25.7 DATOSTÉCNICOS REDUCTOR EN LÍNEA 300 L

Guía para consultar las tablas




| | |
|---|---|
| **1** | Par de referencia |
| **2** | Número de etapas (reductor en ejecución lineal) |
| **3** | Relación de reducción |
| **4** | Par nominal en el eje de salida del reductor, basado en:<br>- factor de servicio $f_S$=1<br>- $n_2 \cdot h$ indicado |
| **5** | Potencia máxima transmisible en el eje de entrada |
| **6** | Potencia térmica del reductor |
| **7** | Velocidad angular en la entrada |
| **8** | Máxima velocidad angular en entrada |
| **9** | Par nominal del freno (freno hidráulico) |
| **10** | Freno hidráulico negativo a discos multiples |
| **11** | Par máximo en la salida del reductor |
| **12** | Página de las dimensiones |

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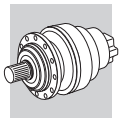

## 300 L

244

## 1250 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.48 | 760 | 730 | 730 | 730 | 730 | 730 | 20 | 7.5 | 2000 | 4000 | 260 | 4F | 2000 |
| | 4.26 | 1250 | 1070 | 950 | 860 | 840 | 720 | 20 | 7.5 | 2000 | 4000 | 330 | 4H | 2400 |
| | 5.77 | 860 | 730 | 650 | 650 | 650 | 630 | 20 | 7.5 | 2000 | 4000 | 260 | 4F | 2400 |
| | 7.20 | 700 | 600 | 550 | 550 | 550 | 510 | 16.5 | 7.5 | 2000 | 4000 | 160 | 4D | 2400 |
| | 9.00 | 460 | 390 | 370 | 370 | 370 | 370 | 8.9 | 7.5 | 2000 | 4000 | 160 | 4D | 2400 |
| L2 | 12.1 | 760 | 730 | 730 | 730 | 730 | 730 | 11.9 | 7.5 | 2000 | 4000 | 100 | 4B | 2000 |
| | 14.8 | 1250 | 1070 | 950 | 860 | 840 | 720 | 12.6 | 7.5 | 2000 | 4000 | 100 | 4B | 2000 |
| | 18.2 | 1250 | 1070 | 950 | 860 | 840 | 720 | 10.4 | 7.5 | 2000 | 4000 | 100 | 4B | 2400 |
| | 20.1 | 860 | 730 | 650 | 650 | 650 | 630 | 7.2 | 7.5 | 2000 | 4000 | 100 | 4B | 2000 |
| | 24.6 | 1250 | 1070 | 950 | 860 | 840 | 720 | 7.8 | 7.5 | 2000 | 4000 | 100 | 4B | 2400 |
| | 30.7 | 1250 | 1070 | 950 | 860 | 840 | 720 | 6.4 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 33.3 | 860 | 730 | 650 | 650 | 650 | 630 | 4.3 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 38.4 | 1250 | 1070 | 950 | 860 | 840 | 720 | 5.2 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 41.5 | 860 | 730 | 650 | 650 | 650 | 630 | 3.5 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 51.9 | 860 | 730 | 650 | 650 | 650 | 630 | 2.9 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 64.8 | 700 | 600 | 550 | 550 | 550 | 510 | 2.0 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| L3 | 51.6 | 1250 | 1070 | 950 | 860 | 840 | 720 | 4.2 | 7.5 | 2000 | 4000 | 50 | 4A | 2000 |
| | 63.2 | 1250 | 1070 | 950 | 860 | 840 | 720 | 3.5 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 69.9 | 860 | 730 | 650 | 650 | 650 | 630 | 2.4 | 7.5 | 2000 | 4000 | 50 | 4A | 2000 |
| | 77.5 | 1250 | 1070 | 950 | 860 | 840 | 720 | 3.0 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 85.6 | 1250 | 1070 | 950 | 860 | 840 | 720 | 2.7 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 105 | 1250 | 1070 | 950 | 860 | 840 | 720 | 2.2 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 116 | 860 | 730 | 650 | 650 | 650 | 630 | 1.6 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 131 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.8 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 142 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.6 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 177 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.3 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 192 | 860 | 730 | 650 | 650 | 650 | 630 | 1.0 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 221 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.0 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 240 | 860 | 730 | 650 | 650 | 650 | 630 | 0.82 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 299 | 860 | 730 | 650 | 650 | 650 | 630 | 0.66 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| | 374 | 860 | 730 | 650 | 650 | 650 | 630 | 0.53 | 7.5 | 2000 | 4000 | 50 | 4A | 2400 |
| L4 | 330 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.72 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 403 | 860 | 730 | 650 | 650 | 650 | 630 | 0.50 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 447 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.53 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 494 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.48 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 558 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.42 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 616 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.38 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 755 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.31 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 819 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.29 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 942 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.25 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1022 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.23 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1108 | 860 | 730 | 650 | 650 | 650 | 630 | 0.18 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1275 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.19 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1383 | 860 | 730 | 650 | 650 | 650 | 630 | 0.15 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1591 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.15 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 1725 | 860 | 730 | 650 | 650 | 650 | 630 | 0.12 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 2153 | 860 | 730 | 650 | 650 | 650 | 630 | 0.09 | 6 | 2000 | 4000 | 50 | 4A | 2400 |
| | 2692 | 1000 | 1000 | 890 | 850 | 760 | 630 | 0.09 | 6 | 2000 | 4000 | 50 | 4A | 2400 |

## 301 L

254

## 2460 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.48 | 1490 | 1430 | 1430 | 1430 | 1430 | 1300 | 30 | 7.5 | 2000 | 4000 | 440 | 4L | 3400 |
| | 4.26 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 30 | 7.5 | 2000 | 4000 | 440 | 4L | 3400 |
| | 5.77 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 30 | 7.5 | 2000 | 4000 | 400 | 4K | 3400 |
| | 7.20 | 1150 | 1150 | 1150 | 1150 | 1150 | 940 | 30 | 7.5 | 2000 | 4000 | 260 | 4F | 3400 |

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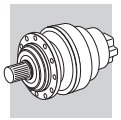

## 301 L

254

## 2460 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 9.00 | 920 | 780 | 730 | 730 | 730 | 730 | 15.8 | 7.5 | 2000 | 4000 | 260 | 4F | 3400 |
| L2 | 12.1 | 1490 | 1430 | 1430 | 1430 | 1430 | 1300 | 23.9 | 7.5 | 2000 | 4000 | 160 | 4D | 3400 |
| | 14.8 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 25.0 | 7.5 | 2000 | 4000 | 160 | 4D | 3400 |
| | 18.2 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 20.7 | 7.5 | 2000 | 4000 | 160 | 4D | 3400 |
| | 20.1 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 14.4 | 7.5 | 2000 | 4000 | 160 | 4D | 3400 |
| | 24.6 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 15.6 | 7.5 | 2000 | 4000 | 160 | 4D | 3400 |
| | 30.7 | 2000 | 2000 | 1830 | 1730 | 1580 | 1280 | 12.6 | 7.5 | 2000 | 4000 | 100 | 4B | 3400 |
| | 33.3 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 8.7 | 7.5 | 2000 | 4000 | 100 | 4B | 3400 |
| | 38.4 | 1600 | 1570 | 1570 | 1570 | 1530 | 1280 | 10.1 | 7.5 | 2000 | 4000 | 100 | 4B | 3400 |
| | 41.5 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 7.0 | 7.5 | 2000 | 4000 | 100 | 4B | 3400 |
| | 51.9 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 5.9 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 64.8 | 1150 | 1150 | 1150 | 1150 | 1150 | 940 | 4.0 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| L3 | 51.6 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 8.3 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 63.2 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 7.0 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 69.9 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 4.7 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 77.5 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 5.9 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 85.6 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 5.4 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 105 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 4.4 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 116 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 3.1 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 131 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 3.5 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 142 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 3.2 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 177 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 2.6 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 192 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 2.0 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 221 | 2000 | 2000 | 1830 | 1730 | 1580 | 1280 | 2.1 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 240 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.6 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 299 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.3 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| | 374 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.0 | 7.5 | 2000 | 4000 | 50 | 4A | 3400 |
| L4 | 330 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 1.4 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 403 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.00 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 447 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 1.06 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 494 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.96 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 558 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.85 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 616 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.77 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 755 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.63 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 819 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.58 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 942 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.50 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1022 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.46 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1108 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.36 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1275 | 2460 | 2140 | 1890 | 1730 | 1580 | 1280 | 0.37 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1383 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.29 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1591 | 2000 | 2000 | 1830 | 1730 | 1580 | 1280 | 0.30 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 1725 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.23 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 2153 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.19 | 6 | 2000 | 4000 | 50 | 4A | 3400 |
| | 2692 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.15 | 6 | 2000 | 4000 | 50 | 4A | 3400 |

## 303 L

264

## 2970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.60 | 2410 | 2310 | 2310 | 2310 | 2310 | 2120 | 40 | 11 | 1800 | 3800 | 800 | 5G | 5200 |
| | 4.25 | 2970 | 2810 | 2810 | 2650 | 2570 | 2090 | 40 | 11 | 1800 | 3800 | 800 | 5G | 5200 |
| | 5.33 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 40 | 11 | 1800 | 3800 | 630 | 5E | 5200 |
| | 6.20 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 40 | 11 | 1800 | 3800 | 500 | 5C | 5200 |
| | 7.50 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 40 | 11 | 1800 | 3800 | 400 | 5B | 5200 |
| | 9.67 | 1050 | 900 | 860 | 860 | 860 | 860 | 17.3 | 11 | 1800 | 3800 | 400 | 5B | 5200 |
| L2 | 12.5 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 20 | 9 | 2000 | 4000 | 260 | 4F | 5200 |

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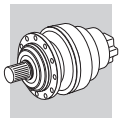

## 303 L

264

## 2970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L2 | 15.3 | 2410 | 2310 | 2310 | 2310 | 2100 | 1700 | 20 | 9 | 2000 | 4000 | 260 | 4F | 5200 |
| | 18.1 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 20 | 9 | 2000 | 4000 | 260 | 4F | 5200 |
| | 20.8 | 2410 | 2210 | 2210 | 2210 | 2030 | 1650 | 20 | 9 | 2000 | 4000 | 160 | 4D | 5200 |
| | 22.7 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 20 | 9 | 2000 | 4000 | 160 | 4D | 5200 |
| | 24.5 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 20 | 9 | 2000 | 4000 | 160 | 4D | 5200 |
| | 26.4 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 15.2 | 9 | 2000 | 4000 | 160 | 4D | 5200 |
| | 30.8 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 15.9 | 9 | 2000 | 4000 | 160 | 4D | 5200 |
| | 35.8 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 11.2 | 9 | 2000 | 4000 | 100 | 4B | 5200 |
| | 38.4 | 2850 | 2450 | 2230 | 2200 | 2140 | 2030 | 12.8 | 9 | 2000 | 4000 | 100 | 4B | 5200 |
| | 44.6 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 9.2 | 9 | 2000 | 4000 | 100 | 4B | 5200 |
| | 55.8 | 2300 | 2080 | 1840 | 1820 | 1820 | 1820 | 7.6 | 9 | 2000 | 4000 | 100 | 4B | 5200 |
| L3 | 53.4 | 2410 | 2310 | 2310 | 2310 | 2100 | 1700 | 9.3 | 7.5 | 2000 | 4000 | 100 | 4B | 5200 |
| | 63.1 | 2970 | 2810 | 2810 | 2650 | 2390 | 1940 | 9.8 | 7.5 | 2000 | 4000 | 100 | 4B | 5200 |
| | 72.3 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 7.0 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 77.2 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 8.2 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 90.2 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 5.6 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 105 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 6.2 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 113 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 4.4 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 124 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 4.0 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 141 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 4.4 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 152 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 3.4 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 164 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 3.9 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 178 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 3.6 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 190 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 2.8 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 220 | 2250 | 2200 | 2250 | 2250 | 1830 | 1800 | 2.3 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 258 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 2.0 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 276 | 2850 | 2450 | 2230 | 2200 | 2140 | 2030 | 2.4 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 321 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 1.6 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 389 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 1.2 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| | 402 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 1.3 | 7.5 | 2000 | 4000 | 50 | 4A | 5200 |
| L4 | 413 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 1.6 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 446 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 1.5 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 492 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 1.3 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 556 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 1.2 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 649 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 0.84 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 718 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.76 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 816 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 0.80 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 896 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.61 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1018 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 0.64 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1098 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.50 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1278 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 0.53 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1370 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.40 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1586 | 2250 | 2250 | 2250 | 2250 | 1830 | 1800 | 0.34 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1854 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.29 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 1991 | 2850 | 2450 | 2230 | 2200 | 2140 | 2030 | 0.34 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 2243 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 0.21 | 6 | 2000 | 4000 | 50 | 4A | 5200 |
| | 2799 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 0.17 | 6 | 2000 | 4000 | 50 | 4A | 5200 |

## 304 L

276

## 3960 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.60 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 50 | 12 | 1800 | 3800 | 800 | 5G | 7300 |
| | 4.25 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 50 | 12 | 1800 | 3800 | 800 | 5G | 7300 |
| | 5.33 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 50 | 12 | 1800 | 3800 | 630 | 5E | 7300 |
| | 6.57 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 50 | 12 | 1800 | 3800 | 500 | 5C | 7300 |
| L2 | 12.5 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 30 | 9 | 2000 | 4000 | 260 | 4F | 7300 |

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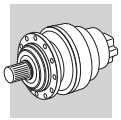

## 304 L

276

## 3960 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L2** | 15.3 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 30 | 9 | 2000 | 4000 | 260 | 4F | 7300 |
| | 18.1 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 30 | 9 | 2000 | 4000 | 260 | 4F | 7300 |
| | 20.8 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 30 | 9 | 2000 | 4000 | 160 | 4D | 7300 |
| | 22.7 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 28 | 9 | 2000 | 4000 | 160 | 4D | 7300 |
| | 24.5 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 30 | 9 | 2000 | 4000 | 160 | 4D | 7300 |
| | 30.8 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 20 | 9 | 2000 | 4000 | 160 | 4D | 7300 |
| | 38.4 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 16.2 | 9 | 2000 | 4000 | 160 | 4D | 7300 |
| | 47.3 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 10.9 | 9 | 2000 | 4000 | 100 | 4B | 7300 |
| | 59.1 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 8.9 | 9 | 2000 | 4000 | 100 | 4B | 7300 |
| **L3** | 43.6 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 18.4 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 53.4 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 15.1 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 63.1 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 13.4 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 72.3 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 11.2 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 77.2 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 11.0 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 90.2 | 3710 | 3520 | 3500 | 3440 | 3080 | 2830 | 9.0 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 105 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 8.4 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 111 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 7.5 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 130 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 6.8 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 141 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 6.3 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 150 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 5.6 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 165 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 3.8 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 178 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 4.5 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 202 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 3.1 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 220 | 3960 | 3710 | 3660 | 3540 | 3430 | 2780 | 4.1 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 273 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 2.3 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 341 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 1.8 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| | 426 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 1.5 | 7.5 | 2000 | 4000 | 50 | 4A | 7300 |
| **L4** | 413 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 2.0 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 446 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 2.1 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 492 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 1.9 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 556 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 1.7 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 649 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 1.4 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 702 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.93 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 816 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 1.1 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1018 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 0.92 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1164 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.56 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1271 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 0.74 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1344 | 3710 | 3520 | 3500 | 3440 | 3080 | 2830 | 0.65 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1586 | 3960 | 3710 | 3660 | 3540 | 3430 | 2780 | 0.59 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1815 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.36 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 1991 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 0.42 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 2269 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.29 | 6 | 2000 | 4000 | 50 | 4A | 7300 |
| | 2453 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.27 | 6 | 2000 | 4000 | 50 | 4A | 7300 |

## 305 L

288

## 5800 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L1** | 3.60 | 4700 | 4490 | 4490 | 4490 | 4480 | 3640 | 60 | 13 | 1800 | 3800 | 1000 | 5K | 8800 |
| | 4.25 | 5800 | 5500 | 5480 | 5300 | 4410 | 3580 | 60 | 13 | 1800 | 3800 | 1000 | 5K | 8800 |
| | 5.33 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 60 | 13 | 1800 | 3800 | 1000 | 5K | 8800 |
| | 6.20 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 60 | 13 | 1800 | 3800 | 800 | 5G | 8800 |
| | 7.50 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 60 | 13 | 1800 | 3800 | 630 | 5E | 8800 |
| **L2** | 12.5 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 30 | 9 | 2000 | 4000 | 400 | 4K | 8800 |
| | 15.3 | 4700 | 4490 | 4490 | 4490 | 3750 | 3040 | 30 | 9 | 2000 | 4000 | 330 | 4H | 8800 |
| | 18.1 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 30 | 9 | 2000 | 4000 | 400 | 4K | 8800 |
| | 20.8 | 4700 | 4450 | 4430 | 4430 | 3630 | 2950 | 30 | 9 | 2000 | 4000 | 260 | 4F | 8800 |

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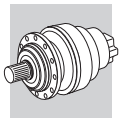


## 305 L

288

## 5800 Nm

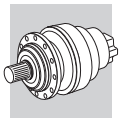
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L2 | 22.7 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 30 | 9 | 2000 | 4000 | 330 | 4H | 8800 |
| | 24.5 | 5530 | 5400 | 5300 | 5230 | 4070 | 3310 | 30 | 9 | 2000 | 4000 | 330 | 4H | 8800 |
| | 26.4 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 30 | 9 | 2000 | 4000 | 260 | 4F | 8800 |
| | 30.8 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 30 | 9 | 2000 | 4000 | 260 | 4F | 8800 |
| | 35.8 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 22.4 | 9 | 2000 | 4000 | 160 | 4D | 8800 |
| | 38.4 | 5600 | 4900 | 4470 | 4400 | 4280 | 3490 | 25.5 | 9 | 2000 | 4000 | 160 | 4D | 8800 |
| | 44.6 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 18.3 | 9 | 2000 | 4000 | 160 | 4D | 8800 |
| | 55.8 | 4430 | 4000 | 3600 | 3600 | 3500 | 3460 | 15.2 | 9 | 2000 | 4000 | 160 | 4D | 8800 |
| L3 | 53.4 | 4700 | 4490 | 4490 | 4490 | 3750 | 3040 | 18.8 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 63.1 | 5800 | 5480 | 5480 | 5300 | 4270 | 3470 | 19.4 | 7.5 | 2000 | 4000 | 160 | 4D | 8800 |
| | 72.3 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 14.1 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 77.2 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 16.3 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 90.2 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 11.4 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 105 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 12.3 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 113 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 8.7 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 124 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 8.0 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 141 | 5530 | 5350 | 5300 | 5230 | 4070 | 3310 | 8.9 | 7.5 | 2000 | 4000 | 100 | 4B | 8800 |
| | 152 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 6.7 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 164 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 7.7 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 178 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 7.2 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 190 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 5.5 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 220 | 4750 | 4750 | 4750 | 4750 | 3660 | 3210 | 4.9 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 258 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 4.1 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 276 | 5600 | 4900 | 4470 | 4400 | 4280 | 3490 | 4.6 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 321 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 3.3 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 389 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 2.2 | 7.5 | 2000 | 4000 | 50 | 4A | 8800 |
| | 402 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 2.6 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| L4 | 413 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 3.2 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 446 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 3.1 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 492 | 5530 | 5350 | 5300 | 5230 | 4070 | 3310 | 2.6 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 556 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 2.5 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 649 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 1.7 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 718 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 1.5 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 816 | 5530 | 5350 | 5300 | 5230 | 4070 | 3310 | 1.6 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 896 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 1.2 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1018 | 5530 | 5350 | 5300 | 5230 | 4070 | 3310 | 1.3 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1098 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 0.99 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1278 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 1.0 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1370 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 0.79 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1586 | 4750 | 4750 | 4750 | 4750 | 3660 | 3210 | 0.71 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1854 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 0.59 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 1991 | 5600 | 4900 | 4470 | 4400 | 4280 | 3490 | 0.67 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 2243 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 0.40 | 6 | 2000 | 4000 | 50 | 4A | 8800 |
| | 2799 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 0.32 | 6 | 2000 | 4000 | 50 | 4A | 8800 |

## 306 L

300

## 10840 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.60 | 10840 | 10380 | 10380 | 10380 | 7100 | 5770 | 75 | 18 | 1600 | 3000 | 2600 | 6K | 14900 |
| | 4.25 | 10420 | 9850 | 9850 | 9600 | 6990 | 5680 | 75 | 18 | 1600 | 3000 | 2600 | 6K | 14900 |
| | 5.33 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 75 | 18 | 1600 | 3000 | 2100 | 6G | 14900 |
| | 6.20 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 75 | 18 | 1600 | 3000 | 1500 | 6E | 14900 |
| | 7.50 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 75 | 18 | 1600 | 3000 | 1100 | 6C | 14900 |
| L2 | 13.0 | 8020 | 8020 | 8020 | 8020 | 6210 | 5040 | 40 | 13 | 1800 | 3800 | 800 | 5G | 14900 |
| | 15.3 | 9770 | 9340 | 9340 | 9300 | 6110 | 4960 | 40 | 13 | 1800 | 3800 | 800 | 5G | 14900 |
| | 18.1 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 40 | 13 | 1800 | 3800 | 630 | 5E | 14900 |



## 306 L

300

## 10840 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L2** | 22.7 | 9560 | 9100 | 9100 | 9100 | 6680 | 5430 | 40 | 13 | 1800 | 3800 | 500 | 5C | 14900 |
| | 26.4 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 40 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 28.4 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 40 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 33.1 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 40 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 38.4 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 34 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 46.5 | 8500 | 7370 | 6530 | 6500 | 6460 | 5480 | 29 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 56.3 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 21 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| | 72.5 | 6400 | 5900 | 5500 | 5500 | 5040 | 5040 | 16.3 | 13 | 1800 | 3800 | 400 | 5B | 14900 |
| **L3** | 53.2 | 9770 | 9340 | 9340 | 9300 | 6110 | 4960 | 20 | 7.5 | 2000 | 4000 | 260 | 4F | 14900 |
| | 65.2 | 9770 | 9340 | 9340 | 9300 | 6110 | 4960 | 20 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 77.0 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 20 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 81.9 | 8320 | 7700 | 7700 | 7530 | 5950 | 4830 | 20 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 88.3 | 9450 | 9450 | 9450 | 9450 | 6970 | 5660 | 20 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 104 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 20 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 112 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 15.2 | 7.5 | 2000 | 4000 | 160 | 4D | 14900 |
| | 121 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 17.2 | 7.5 | 2000 | 4000 | 100 | 4B | 14900 |
| | 141 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 14.8 | 7.5 | 2000 | 4000 | 100 | 4B | 14900 |
| | 152 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 11.3 | 7.5 | 2000 | 4000 | 100 | 4B | 14900 |
| | 190 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 10.2 | 7.5 | 2000 | 4000 | 100 | 4B | 14900 |
| | 205 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 10.6 | 7.5 | 2000 | 4000 | 100 | 4B | 14900 |
| | 222 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 8.8 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| | 238 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 9.0 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| | 268 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 6.0 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| | 288 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 5.6 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| | 325 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 4.9 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| | 405 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 4.0 | 7.5 | 2000 | 4000 | 50 | 4A | 14900 |
| **L4** | 391 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 5.1 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 444 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 5.3 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 509 | 9450 | 9450 | 9450 | 9450 | 6970 | 5660 | 4.1 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 589 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 3.8 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 636 | 9450 | 9450 | 9450 | 9450 | 6970 | 5660 | 3.3 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 700 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 3.2 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 809 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 2.2 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 877 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 2.0 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1015 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 2.2 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1095 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 1.6 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1279 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 1.6 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1475 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 1.5 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1597 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 1.3 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 1843 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 1.2 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 2074 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 0.80 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 2337 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 0.71 | 6 | 2000 | 4000 | 50 | 4A | 14900 |
| | 2916 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 0.57 | 6 | 2000 | 4000 | 50 | 4A | 14900 |

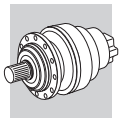
## 307 L

312

## 15680 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L1** | 3.43 | 9000 | 9000 | 9000 | 9000 | 8300 | 7960 | 115 | 22 | 1500 | 2500 | 3200 | 6L | 18600 |
| | 4.09 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 115 | 22 | 1500 | 2500 | 3200 | 6L | 21000 |
| | 5.25 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 115 | 22 | 1500 | 2500 | 3200 | 6L | 21000 |
| | 6.23 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 115 | 22 | 1500 | 2500 | 2100 | 6G | 21000 |
| **L2** | 12.3 | 9000 | 9000 | 9000 | 9000 | 8300 | 7960 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 18600 |
| | 14.7 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 60 | 18 | 1800 | 3800 | 800 | 5G | 21000 |
| | 17.4 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 21000 |
| | 21.8 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 60 | 18 | 1800 | 3800 | 800 | 5G | 21000 |
| | 25.4 | 14670 | 14010 | 14010 | 13510 | 9560 | 7770 | 60 | 18 | 1800 | 3800 | 630 | 5E | 21000 |

C



## 307 L

312

## 15680 Nm

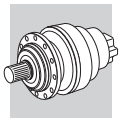
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L2 | 28.0 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 60 | 18 | 1800 | 3800 | 500 | 5C | 21000 |
| | 30.7 | 12300 | 12300 | 12300 | 12300 | 9560 | 7770 | 60 | 18 | 1800 | 3800 | 500 | 5C | 21000 |
| | 32.6 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 60 | 18 | 1800 | 3800 | 500 | 5C | 21000 |
| | 38.6 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 46 | 18 | 1800 | 3800 | 400 | 5B | 21000 |
| | 46.7 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 39 | 18 | 1800 | 3800 | 400 | 5B | 21000 |
| L3 | 51.3 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 30 | 11 | 2000 | 4000 | 330 | 4H | 21000 |
| | 60.5 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 30 | 11 | 2000 | 4000 | 330 | 4H | 21000 |
| | 74.1 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 30 | 11 | 2000 | 4000 | 260 | 4F | 21000 |
| | 80.6 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 30 | 11 | 2000 | 4000 | 260 | 4F | 21000 |
| | 93.0 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 30 | 11 | 2000 | 4000 | 260 | 4F | 21000 |
| | 100 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 30 | 11 | 2000 | 4000 | 260 | 4F | 21000 |
| | 113 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 26 | 11 | 2000 | 4000 | 160 | 4D | 21000 |
| | 126 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 26 | 11 | 2000 | 4000 | 160 | 4D | 21000 |
| | 139 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 22 | 11 | 2000 | 4000 | 160 | 4D | 21000 |
| | 146 | 15000 | 14010 | 14010 | 13510 | 9560 | 7770 | 23 | 11 | 2000 | 4000 | 160 | 4D | 21000 |
| | 162 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 19.4 | 11 | 2000 | 4000 | 100 | 4B | 21000 |
| | 177 | 12300 | 12300 | 12300 | 12300 | 9560 | 7770 | 15.9 | 11 | 2000 | 4000 | 100 | 4B | 21000 |
| | 202 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 15.9 | 11 | 2000 | 4000 | 100 | 4B | 21000 |
| | 221 | 15000 | 13800 | 12900 | 12500 | 9560 | 7770 | 15.6 | 11 | 2000 | 4000 | 100 | 4B | 21000 |
| | 239 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 10.5 | 11 | 2000 | 4000 | 50 | 4A | 21000 |
| | 284 | 14330 | 12700 | 11300 | 10790 | 9340 | 7590 | 11.3 | 11 | 2000 | 4000 | 50 | 4A | 21000 |
| | 336 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 7.5 | 11 | 2000 | 4000 | 50 | 4A | 21000 |
| L4 | 349 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 10.2 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 406 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 8.2 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 465 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 7.1 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 509 | 15000 | 14010 | 14010 | 13510 | 9560 | 7770 | 7.0 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 579 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 6.1 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 654 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 5.1 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 722 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 4.9 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 801 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 4.1 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 906 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 3.9 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 999 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 3.3 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 1157 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 2.9 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 1274 | 12300 | 12300 | 12300 | 12300 | 9560 | 7770 | 2.3 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 1408 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 2.5 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 1591 | 15000 | 13800 | 12900 | 12500 | 9560 | 7770 | 2.2 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 1767 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 2.0 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 2041 | 14330 | 12700 | 11300 | 10790 | 9340 | 7590 | 1.6 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |
| | 2423 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 1.1 | 7.5 | 2000 | 4000 | 50 | 4A | 21000 |

## 309 L

324

## 23240 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 3.43 | 13000 | 13000 | 13000 | 13000 | 12310 | 10920 | 150 | 25 | 1500 | 2000 | 3200 | 6L | 27900 |
| | 4.09 | 23240 | 22070 | 22070 | 20260 | 13120 | 10660 | 150 | 25 | 1500 | 2000 | 3200 | 6L | 29000 |
| | 5.25 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 150 | 25 | 1500 | 2000 | 3200 | 6L | 29000 |
| | 6.23 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 150 | 25 | 1500 | 2000 | 3200 | 6L | 29000 |
| L2 | 12.3 | 13000 | 13000 | 13000 | 13000 | 10290 | 8360 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 27900 |
| | 14.7 | 17730 | 17730 | 17730 | 17730 | 11650 | 9460 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 29000 |
| | 17.4 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 29000 |
| | 21.8 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 29000 |
| | 25.4 | 14670 | 14300 | 14300 | 14300 | 11060 | 8990 | 60 | 18 | 1800 | 3800 | 800 | 5G | 29000 |
| | 28.0 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 60 | 18 | 1800 | 3800 | 800 | 5G | 29000 |
| | 32.6 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 60 | 18 | 1800 | 3800 | 630 | 5E | 29000 |
| | 38.6 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 60 | 18 | 1800 | 3800 | 500 | 5C | 29000 |
| | 46.7 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 58 | 18 | 1800 | 3800 | 400 | 5B | 29000 |



## 309 L

324

## 23240 Nm

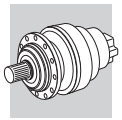
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| L3 | 51.3 | 17730 | 17730 | 17730 | 17730 | 11650 | 9460 | 30 | 11 | 2000 | 4000 | 400 | 4K | 29000 |
| | 60.5 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 30 | 11 | 2000 | 4000 | 400 | 4K | 29000 |
| | 74.1 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 80.6 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 93.0 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 100 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 113 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 126 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 30 | 11 | 2000 | 4000 | 260 | 4F | 29000 |
| | 139 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 30 | 11 | 2000 | 4000 | 160 | 4D | 29000 |
| | 162 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 29 | 11 | 2000 | 4000 | 160 | 4D | 29000 |
| | 183 | 14670 | 14300 | 14300 | 14300 | 11060 | 8990 | 18.2 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| | 202 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 23.9 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| | 223 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 17.5 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| | 239 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 16.3 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| | 284 | 15800 | 15800 | 15800 | 15000 | 12810 | 10410 | 12.8 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| | 336 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 11.6 | 11 | 2000 | 4000 | 100 | 4B | 29000 |
| L4 | 349 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 14.4 | 7.5 | 2000 | 4000 | 100 | 4B | 29000 |
| | 406 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 12.3 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 465 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 10.7 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 509 | 14670 | 14300 | 14300 | 14300 | 11060 | 8990 | 6.7 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 579 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 8.7 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 654 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 6.6 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 722 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 7.0 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 801 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 5.4 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 906 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 4.7 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 999 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 4.3 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 1149 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 3.5 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 1286 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 3.1 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 1380 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 2.9 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 1605 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 2.5 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 1723 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 2.3 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 2003 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 1.9 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |
| | 2423 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 1.7 | 7.5 | 2000 | 4000 | 50 | 4A | 29000 |

## 310 L

336

## 34120 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| L1 | 4.09 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 175 | 35 | 1500 | 1800 | — | — | 47600 |
| | 5.25 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 175 | 35 | 1500 | 1800 | — | — | 47600 |
| | 6.23 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 175 | 35 | 1500 | 1800 | — | — | 47600 |
| L2 | 14.7 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 75 | 22 | 1600 | 3000 | 2100 | 6G | 47600 |
| | 17.4 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 75 | 22 | 1600 | 3000 | 2100 | 6G | 47600 |
| | 21.8 | 34120 | 31930 | 26580 | 21590 | 13320 | 10820 | 75 | 22 | 1600 | 3000 | 1500 | 6E | 47600 |
| | 25.4 | 27110 | 25910 | 25910 | 21590 | 13320 | 10820 | 75 | 22 | 1600 | 3000 | 1500 | 6E | 47600 |
| | 28.0 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 75 | 22 | 1600 | 3000 | 1500 | 6E | 47600 |
| | 30.7 | 21800 | 21800 | 21800 | 20150 | 13320 | 10820 | 75 | 22 | 1600 | 3000 | 1050 | 6C | 47600 |
| | 32.6 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 75 | 22 | 1600 | 3000 | 1050 | 6C | 47600 |
| | 38.6 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 75 | 22 | 1600 | 3000 | 850 | 6B | 47600 |
| | 46.7 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 75 | 22 | 1600 | 3000 | 850 | 6B | 47600 |
| L3 | 53.0 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 630 | 5E | 47600 |
| | 62.6 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 630 | 5E | 47600 |
| | 73.9 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 500 | 5C | 47600 |
| | 80.3 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 91.3 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 101 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 110 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |



## 310 L

336

## 34120 Nm

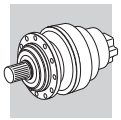
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L3 | 119 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 130 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 142 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 40 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 164 | 34120 | 31930 | 26580 | 21590 | 13320 | 10820 | 38 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 177 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 30 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 202 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 30 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 230 | 21800 | 21800 | 21800 | 20150 | 13320 | 10820 | 19.6 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 249 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 22 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 295 | 28000 | 25880 | 23350 | 21100 | 13020 | 10570 | 19.6 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| | 350 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 15.3 | 18 | 1800 | 3800 | 400 | 5B | 47600 |
| L4 | 392 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 15.7 | 11 | 2000 | 4000 | 100 | 4B | 47600 |
| | 451 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 15.7 | 11 | 2000 | 4000 | 100 | 4B | 47600 |
| | 507 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 13.8 | 11 | 2000 | 4000 | 100 | 4B | 47600 |
| | 556 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 11.5 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 637 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 11.0 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 726 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 9.6 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 818 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 8.5 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 939 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 6.8 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1021 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 6.8 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1164 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 6.0 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1259 | 28000 | 25880 | 23350 | 21100 | 13020 | 10570 | 5.3 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1438 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 4.3 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1672 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 3.7 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 1794 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 3.4 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 2022 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 3.0 | 11 | 2000 | 4000 | 50 | 4A | 47600 |
| | 2523 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 2.4 | 11 | 2000 | 4000 | 50 | 4A | 47600 |

## 311 L

348

## 48330 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.09 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 200 | 35 | 1500 | 1800 | — | — | 58300 |
| | 5.25 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 200 | 35 | 1500 | 1800 | — | — | 58300 |
| | 6.23 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 200 | 35 | 1500 | 1800 | — | — | 58300 |
| L2 | 14.0 | 35700 | 35700 | 35700 | 31100 | 19190 | 15590 | 115 | 26 | 1500 | 2500 | 3200 | 6L | 58300 |
| | 16.7 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 115 | 26 | 1500 | 2500 | 3200 | 6L | 58300 |
| | 18.0 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 115 | 26 | 1500 | 2500 | 2600 | 6K | 58300 |
| | 21.5 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 115 | 26 | 1500 | 2500 | 2100 | 6G | 58300 |
| | 25.5 | 35200 | 34500 | 34500 | 31100 | 19190 | 15590 | 115 | 26 | 1500 | 2500 | 1500 | 6E | 58300 |
| | 27.6 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 115 | 26 | 1500 | 2500 | 2100 | 6G | 58300 |
| | 32.7 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 115 | 26 | 1500 | 2500 | 1500 | 6E | 58300 |
| | 38.8 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 115 | 26 | 1500 | 2500 | 850 | 6B | 58300 |
| L3 | 50.5 | 35700 | 35700 | 35700 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 800 | 5G | 58300 |
| | 60.2 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 800 | 5G | 58300 |
| | 71.1 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 800 | 5G | 58300 |
| | 77.3 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 800 | 5G | 58300 |
| | 89.3 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 500 | 5C | 58300 |
| | 104 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 500 | 5C | 58300 |
| | 115 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 126 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 133 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 60 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 147 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 59 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 161 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 56 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 171 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 52 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 191 | 35200 | 34500 | 34500 | 31100 | 19190 | 15590 | 38 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 203 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 44 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| | 245 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 36 | 18 | 1800 | 3800 | 400 | 5B | 58300 |



## 311 L

348

## 48330 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L3 | 291 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 24 | 18 | 1800 | 3800 | 400 | 5B | 58300 |
| L4 | 348 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 30 | 11 | 2000 | 4000 | 160 | 4D | 58300 |
| | 410 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 26 | 11 | 2000 | 4000 | 160 | 4D | 58300 |
| | 512 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 21 | 11 | 2000 | 4000 | 100 | 4B | 58300 |
| | 568 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 18.4 | 11 | 2000 | 4000 | 100 | 4B | 58300 |
| | 627 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 16.2 | 11 | 2000 | 4000 | 100 | 4B | 58300 |
| | 724 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 14.7 | 11 | 2000 | 4000 | 100 | 4B | 58300 |
| | 825 | 46920 | 43390 | 38290 | 31100 | 19190 | 15590 | 12.6 | 11 | 2000 | 4000 | 100 | 4B | 58300 |
| | 904 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 11.8 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 986 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 10.3 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 1058 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 9.6 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 1230 | 45210 | 39550 | 35220 | 32000 | 19700 | 16000 | 8.3 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 1415 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 7.2 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 1680 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 4.8 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 1766 | 43000 | 39550 | 35220 | 32000 | 19700 | 16000 | 5.8 | 11 | 2000 | 4000 | 50 | 4A | 58300 |
| | 2096 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 3.8 | 11 | 2000 | 4000 | 50 | 4A | 58300 |

## 313 L

360

## 57970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.14 | 55410 | 55000 | 55000 | 46000 | 28400 | 23000 | 250 | 45 | 900 | 1200 | — | — | 105000 |
| | 5.40 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 250 | 45 | 900 | 1200 | — | — | 105000 |
| | 6.50 | 49000 | 42400 | 39000 | 39000 | 27800 | 22500 | 250 | 45 | 900 | 1200 | — | — | 105000 |
| L2 | 14.2 | 52000 | 52000 | 52000 | 46000 | 28400 | 23000 | 150 | 30 | 1500 | 2000 | 3200 | 6L | 105000 |
| | 16.9 | 55410 | 55000 | 54000 | 45210 | 27900 | 22660 | 150 | 30 | 1500 | 2000 | 3200 | 6L | 105000 |
| | 18.5 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 150 | 30 | 1500 | 2000 | 3200 | 6L | 105000 |
| | 21.8 | 55410 | 55000 | 55000 | 45400 | 28000 | 22800 | 150 | 30 | 1500 | 2000 | 2600 | 6K | 105000 |
| | 25.8 | 53000 | 52000 | 52000 | 45210 | 27900 | 22660 | 150 | 30 | 1500 | 2000 | 2100 | 6G | 105000 |
| | 28.4 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 150 | 30 | 1500 | 2000 | 2100 | 6G | 105000 |
| | 33.6 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 150 | 30 | 1500 | 2000 | 2100 | 6G | 105000 |
| | 40.5 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 150 | 30 | 1500 | 2000 | 1500 | 6E | 105000 |
| L3 | 51.1 | 52000 | 52000 | 49140 | 45210 | 27900 | 22660 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 105000 |
| | 61.0 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 105000 |
| | 72.0 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 105000 |
| | 78.3 | 55410 | 55000 | 55000 | 45400 | 28000 | 22800 | 60 | 18 | 1800 | 3800 | 1000 | 5K | 105000 |
| | 92.4 | 55410 | 55000 | 55000 | 45400 | 28000 | 22800 | 60 | 18 | 1800 | 3800 | 800 | 5G | 105000 |
| | 110 | 53000 | 52000 | 52000 | 45210 | 27900 | 22660 | 60 | 18 | 1800 | 3800 | 500 | 5C | 105000 |
| | 120 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 60 | 18 | 1800 | 3800 | 500 | 5C | 105000 |
| | 135 | 55410 | 55000 | 55000 | 45400 | 28000 | 22800 | 60 | 18 | 1800 | 3800 | 500 | 5C | 105000 |
| | 143 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 60 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 151 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 60 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 163 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 60 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 176 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 60 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 182 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 56 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 194 | 53000 | 52000 | 52000 | 45210 | 27900 | 22660 | 57 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 209 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 54 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 252 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 45 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| | 304 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 33 | 18 | 1800 | 3800 | 400 | 5B | 105000 |
| L4 | 352 | 55410 | 52510 | 52510 | 45210 | 27900 | 22660 | 30 | 11 | 2000 | 4000 | 160 | 4D | 105000 |
| | 394 | 55410 | 55000 | 55000 | 45400 | 28000 | 22800 | 30 | 11 | 2000 | 4000 | 160 | 4D | 105000 |
| | 452 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 29 | 11 | 2000 | 4000 | 160 | 4D | 105000 |
| | 514 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 25 | 11 | 2000 | 4000 | 160 | 4D | 105000 |
| | 564 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 23 | 11 | 2000 | 4000 | 160 | 4D | 105000 |
| | 633 | 52800 | 52000 | 52000 | 45210 | 27900 | 22660 | 19.7 | 11 | 2000 | 4000 | 100 | 4B | 105000 |
| | 695 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 18.7 | 11 | 2000 | 4000 | 100 | 4B | 105000 |

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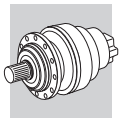

## 313 L

360

## 57970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L4** | 790 | 52800 | 52000 | 52000 | 45210 | 27900 | 22660 | 15.8 | 11 | 2000 | 4000 | 100 | 4B | 105000 |
| | 889 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 14.6 | 11 | 2000 | 4000 | 100 | 4B | 105000 |
| | 1014 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 12.8 | 11 | 2000 | 4000 | 100 | 4B | 105000 |
| | 1117 | 52800 | 52000 | 52000 | 45210 | 27900 | 22660 | 11.2 | 11 | 2000 | 4000 | 50 | 4A | 105000 |
| | 1266 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 10.3 | 11 | 2000 | 4000 | 50 | 4A | 105000 |
| | 1394 | 52800 | 52000 | 52000 | 45210 | 27900 | 22660 | 9.0 | 11 | 2000 | 4000 | 50 | 4A | 105000 |
| | 1502 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 8.7 | 11 | 2000 | 4000 | 50 | 4A | 105000 |
| | 1817 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 7.2 | 11 | 2000 | 4000 | 50 | 4A | 105000 |
| | 2187 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 5.3 | 11 | 2000 | 4000 | 50 | 4A | 105000 |

## 314 L

372

## 84000 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L1** | 4.25 | 84000 | 80000 | 77600 | 68000 | 42400 | 34240 | 260 | 55 | 450 | 800 | — | — | 115000 |
| | 5.33 | 79200 | 69600 | 65464 | 62400 | 39200 | 31760 | 260 | 55 | 450 | 800 | — | — | 115000 |
| | 6.20 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 260 | 55 | 450 | 800 | — | — | 115000 |
| **L2** | 17.4 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| | 22.3 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| | 26.5 | 84000 | 80000 | 77600 | 62400 | 38720 | 31520 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| | 28.0 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| | 33.2 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| | 38.6 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 175 | 40 | 1500 | 1800 | — | — | 115000 |
| **L3** | 62.6 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 75 | 25 | 1600 | 3000 | 2100 | 6G | 115000 |
| | 73.9 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 75 | 25 | 1600 | 3000 | 2100 | 6G | 115000 |
| | 92.7 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 75 | 25 | 1600 | 3000 | 1500 | 6E | 115000 |
| | 108 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 75 | 25 | 1600 | 3000 | 1500 | 6E | 115000 |
| | 138 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 75 | 25 | 1600 | 3000 | 1500 | 6E | 115000 |
| | 164 | 84000 | 80000 | 77600 | 62400 | 38720 | 31520 | 75 | 25 | 1600 | 3000 | 1050 | 6C | 115000 |
| | 174 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 75 | 25 | 1600 | 3000 | 1050 | 6C | 115000 |
| | 206 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 71 | 25 | 1600 | 3000 | 850 | 6B | 115000 |
| | 240 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 49 | 25 | 1600 | 3000 | 850 | 6B | 115000 |
| **L4** | 314 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 40 | 15 | 1800 | 3800 | 630 | 5E | 115000 |
| | 388 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 40 | 15 | 1800 | 3800 | 630 | 5E | 115000 |
| | 458 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 39 | 15 | 1800 | 3800 | 500 | 5C | 115000 |
| | 495 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 36 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 554 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 32 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 588 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 30 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 668 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 27 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 738 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 24 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 858 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 21 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 926 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 18.2 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 1038 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 17.2 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 1099 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 15.3 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 1277 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 13.2 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 1485 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 9.2 | 15 | 1800 | 3800 | 400 | 5B | 115000 |
| | 1796 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 7.6 | 15 | 1800 | 3800 | 400 | 5B | 115000 |

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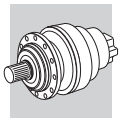


## 315 L

384

## 105000 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.25 | 105000 | 100000 | 97000 | 85000 | 53000 | 42800 | 260 | 60 | 500 | 800 | — | — | 135000 |
| | 5.33 | 99000 | 87000 | 81830 | 78000 | 49000 | 39700 | 260 | 60 | 500 | 800 | — | — | 135000 |
| | 6.20 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 260 | 60 | 500 | 800 | — | — | 135000 |
| L2 | 17.4 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| | 22.3 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| | 26.5 | 105000 | 100000 | 97000 | 78000 | 48400 | 39400 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| | 28.0 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| | 33.2 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| | 38.6 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 200 | 45 | 1500 | 1800 | — | — | 135000 |
| L3 | 59.6 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 115 | 30 | 1500 | 2500 | 2600 | 6K | 135000 |
| | 71.1 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 115 | 30 | 1500 | 2500 | 2100 | 6G | 135000 |
| | 91.3 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 115 | 30 | 1500 | 2500 | 1500 | 6E | 135000 |
| | 108 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 115 | 30 | 1500 | 2500 | 1100 | 6C | 135000 |
| | 139 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 115 | 30 | 1500 | 2500 | 850 | 6B | 135000 |
| | 165 | 105000 | 100000 | 97000 | 78000 | 48400 | 39400 | 110 | 30 | 1500 | 2500 | 850 | 6B | 135000 |
| | 174 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 98 | 30 | 1500 | 2500 | 850 | 6B | 135000 |
| | 207 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 82 | 30 | 1500 | 2500 | 850 | 6B | 135000 |
| | 241 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 57 | 30 | 1500 | 2500 | 850 | 6B | 135000 |
| L4 | 302 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 60 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 370 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 60 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 441 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 51 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 487 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 46 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 533 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 42 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 591 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 38 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 672 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 33 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 741 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 30 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 862 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 26 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 930 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 23 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 1043 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 21 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 1104 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 19.1 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 1284 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 16.4 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 1492 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 11.4 | 18 | 1800 | 3800 | 400 | 5B | 135000 |
| | 1805 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 9.4 | 18 | 1800 | 3800 | 400 | 5B | 135000 |

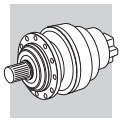
## 316 L

396

## 138820 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.25 | 138820 | 130420 | 113000 | 100000 | 66000 | 54000 | 280 | 68 | 350 | 500 | — | — | 192000 |
| L2 | 17.4 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 200 | 50 | 1500 | 1800 | — | — | 192000 |
| | 22.3 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 200 | 50 | 1500 | 1800 | — | — | 192000 |
| | 26.5 | 124000 | 115000 | 98650 | 80130 | 49440 | 40500 | 200 | 50 | 1500 | 1800 | — | — | 192000 |
| L3 | 59.6 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 115 | 35 | 1500 | 2500 | 3200 | 6L | 192000 |
| | 71.1 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 115 | 35 | 1500 | 2500 | 2600 | 6K | 192000 |
| | 76.5 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 115 | 35 | 1500 | 2500 | 2600 | 6K | 192000 |
| | 91.3 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 115 | 35 | 1500 | 2500 | 2100 | 6G | 192000 |
| | 108 | 138820 | 125920 | 103000 | 83700 | 51600 | 42000 | 115 | 35 | 1500 | 2500 | 2100 | 6G | 192000 |
| | 117 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 115 | 35 | 1500 | 2500 | 1500 | 6E | 192000 |
| | 139 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 115 | 35 | 1500 | 2500 | 1500 | 6E | 192000 |
| | 165 | 124000 | 115000 | 98650 | 80130 | 49440 | 40500 | 115 | 35 | 1500 | 2500 | 1100 | 6C | 192000 |
| L4 | 215 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 800 | 5G | 192000 |
| | 256 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 800 | 5G | 192000 |
| | 302 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 630 | 5E | 192000 |
| | 329 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 630 | 5E | 192000 |

C



## 316 L

396

## 138820 Nm

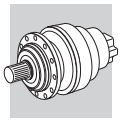
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L4 | 370 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 500 | 5C | 192000 |
| | 441 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 60 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 487 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 59 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 533 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 54 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 566 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 51 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 591 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 48 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 625 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 46 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 685 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 42 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 726 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 40 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 741 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 38 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 812 | 138820 | 125920 | 103000 | 83700 | 51600 | 42000 | 35 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 862 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 33 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 1043 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 27 | 18 | 1800 | 3800 | 400 | 5B | 192000 |
| | 1237 | 124000 | 115000 | 98650 | 80130 | 49440 | 40500 | 21 | 18 | 1800 | 3800 | 400 | 5B | 192000 |

## 317 L

406

## 208110 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.09 | 208110 | 196530 | 166000 | 135000 | 83000 | 67240 | 300 | 85 | 200 | 300 | — | — | 393000 |
| | 5.25 | 187860 | 172400 | 154050 | 131030 | 80850 | 65670 | 300 | 85 | 200 | 300 | — | — | 393000 |
| | 6.23 | 156150 | 134380 | 119950 | 118770 | 79850 | 64860 | 300 | 85 | 200 | 300 | — | — | 393000 |
| L2 | 16.9 | 207080 | 180000 | 147000 | 120000 | 74000 | 60000 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| | 22.1 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| | 26.6 | 155000 | 155000 | 144000 | 117000 | 72000 | 59000 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| | 28.4 | 187860 | 172400 | 154050 | 131030 | 80850 | 65670 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| | 34.1 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| | 40.5 | 156150 | 134380 | 119950 | 118770 | 79850 | 64860 | 250 | 55 | 900 | 1200 | — | — | 393000 |
| L3 | 58.1 | 207080 | 180000 | 147000 | 120000 | 74000 | 60000 | 150 | 35 | 1500 | 2000 | 3200 | 6L | 393000 |
| | 69.3 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 150 | 35 | 1500 | 2000 | 3200 | 6L | 393000 |
| | 89.0 | 207080 | 179000 | 145000 | 118000 | 73000 | 59000 | 150 | 35 | 1500 | 2000 | 2600 | 6K | 393000 |
| | 106 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 150 | 35 | 1500 | 2000 | 2100 | 6G | 393000 |
| | 116 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 150 | 35 | 1500 | 2000 | 1500 | 6E | 393000 |
| | 138 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 150 | 35 | 1500 | 2000 | 1500 | 6E | 393000 |
| | 166 | 155000 | 155000 | 144000 | 117000 | 72000 | 59000 | 150 | 35 | 1500 | 2000 | 1100 | 6C | 393000 |
| | 179 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 150 | 35 | 1500 | 2000 | 1100 | 6C | 393000 |
| | 213 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 138 | 35 | 1500 | 2000 | 850 | 6B | 393000 |
| | 252 | 156150 | 134380 | 119950 | 118770 | 79850 | 64860 | 99 | 35 | 1500 | 2000 | 850 | 6B | 393000 |
| L4 | 310 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 60 | 18 | 1800 | 3800 | 630 | 5E | 393000 |
| | 360 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 60 | 18 | 1800 | 3800 | 500 | 5C | 393000 |
| | 449 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 60 | 18 | 1800 | 3800 | 500 | 5C | 393000 |
| | 493 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 60 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 552 | 207080 | 179000 | 145000 | 118000 | 73000 | 59000 | 60 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 619 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 60 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 719 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 53 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 792 | 207080 | 178190 | 144740 | 117560 | 72540 | 58920 | 48 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 904 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 40 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 1032 | 184310 | 177000 | 144000 | 117000 | 72000 | 59000 | 37 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 1134 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 32 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 1318 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 27 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 1595 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 23 | 18 | 1800 | 3800 | 400 | 5B | 393000 |
| | 1893 | 156150 | 134380 | 119950 | 118770 | 79850 | 64860 | 16.3 | 18 | 1800 | 3800 | 400 | 5B | 393000 |



## 318 L

416

## 280580 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.40 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 340 | 95 | 200 | 300 | — | — | 500000 |
| L2 | 18.7 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 260 | 63 | 500 | 800 | — | — | 500000 |
| | 23.5 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 260 | 63 | 500 | 800 | — | — | 500000 |
| | 27.3 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 260 | 63 | 500 | 800 | — | — | 500000 |
| L3 | 76.5 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | — | — | 500000 |
| | 98.2 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | 3200 | 6L | 500000 |
| | 117 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | 3200 | 6L | 500000 |
| | 123 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | 2600 | 6K | 500000 |
| | 146 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | 2100 | 6G | 500000 |
| | 170 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 200 | 40 | 1500 | 1800 | 2100 | 6G | 500000 |
| L4 | 262 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 115 | 22 | 1500 | 2500 | 1500 | 6E | 500000 |
| | 313 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 115 | 22 | 1500 | 2500 | 1100 | 6C | 500000 |
| | 337 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 115 | 22 | 1500 | 2500 | 1100 | 6C | 500000 |
| | 402 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 110 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 422 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 105 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 477 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 93 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 515 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 86 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 612 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 73 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 647 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 69 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 726 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 61 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 768 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 58 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 911 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 49 | 22 | 1500 | 2500 | 850 | 6B | 500000 |
| | 1059 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 41 | 22 | 1500 | 2500 | 850 | 6B | 500000 |

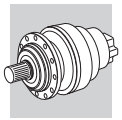
C

## 319 L

426

## 476410 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| L1 | 4.88 | 476410 | 383900 | 311830 | 253280 | 156280 | 126940 | 380 | 115 | 200 | 300 | — | — | 680000 |
| | 5.77 | 367580 | 317550 | 284270 | 249240 | 153790 | 124910 | 380 | 115 | 200 | 300 | — | — | 680000 |
| L2 | 20.7 | 403720 | 348000 | 308000 | 250000 | 154000 | 125000 | 260 | 70 | 500 | 800 | — | — | 680000 |
| | 24.5 | 367580 | 317550 | 280280 | 248000 | 153000 | 124000 | 260 | 70 | 500 | 800 | — | — | 680000 |
| | 26.0 | 389910 | 348000 | 286000 | 233000 | 144000 | 117000 | 260 | 70 | 500 | 800 | — | — | 680000 |
| | 30.2 | 308140 | 296000 | 241000 | 196000 | 121000 | 98000 | 260 | 70 | 500 | 800 | — | — | 680000 |
| | 35.8 | 359680 | 317550 | 267610 | 220000 | 136000 | 110000 | 260 | 70 | 500 | 800 | — | — | 680000 |
| L3 | 84.8 | 403720 | 348000 | 286000 | 232000 | 143000 | 116000 | 200 | 50 | 1500 | 1800 | — | — | 680000 |
| | 109 | 403720 | 348000 | 301000 | 245000 | 151000 | 123000 | 200 | 50 | 1500 | 1800 | — | — | 680000 |
| | 129 | 403720 | 348000 | 284000 | 231000 | 142000 | 116000 | 200 | 50 | 1500 | 1800 | 3200 | 6L | 680000 |
| | 137 | 389910 | 348000 | 286000 | 233000 | 144000 | 117000 | 200 | 50 | 1500 | 1800 | 2600 | 6K | 680000 |
| | 162 | 367580 | 317550 | 270690 | 248000 | 153000 | 124000 | 200 | 50 | 1500 | 1800 | 2600 | 6K | 680000 |
| | 188 | 308140 | 296000 | 241000 | 196000 | 121000 | 98000 | 200 | 50 | 1500 | 1800 | 2100 | 6G | 680000 |
| | 223 | 359680 | 317550 | 267610 | 220000 | 136000 | 110000 | 200 | 50 | 1500 | 1800 | 2100 | 6G | 680000 |
| L4 | 347 | 403720 | 348000 | 286000 | 232000 | 143000 | 116000 | 115 | 30 | 1500 | 2500 | 1100 | 6C | 680000 |
| | 445 | 403720 | 348000 | 286000 | 232000 | 143000 | 116000 | 115 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 528 | 403720 | 348000 | 286000 | 232000 | 143000 | 116000 | 115 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 571 | 403720 | 348000 | 301000 | 245000 | 151000 | 123000 | 109 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 678 | 403720 | 348000 | 301000 | 245000 | 151000 | 123000 | 92 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 717 | 389910 | 348000 | 286000 | 233000 | 144000 | 117000 | 87 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 850 | 389910 | 348000 | 286000 | 233000 | 144000 | 117000 | 73 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 912 | 359680 | 317550 | 267610 | 220000 | 136000 | 110000 | 66 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 1007 | 367580 | 317550 | 270690 | 248000 | 153000 | 124000 | 60 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 1195 | 367580 | 317550 | 270690 | 248000 | 153000 | 124000 | 50 | 30 | 1500 | 2500 | 850 | 6B | 680000 |
| | 1389 | 359680 | 317550 | 267610 | 220000 | 136000 | 110000 | 43 | 30 | 1500 | 2500 | 850 | 6B | 680000 |



## 321 L

436

## 655740 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| L1 | 4.44 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 540 | 115 | 200 | 300 | — | — | 934000 |
| L2 | 18.2 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 300 | 95 | 200 | 300 | — | — | 934000 |
| | 23.3 | 655740 | 517290 | 420170 | 341290 | 210580 | 172000 | 300 | 95 | 200 | 300 | — | — | 934000 |
| | 27.7 | 536350 | 517290 | 420170 | 341290 | 210580 | 171050 | 300 | 95 | 200 | 300 | — | — | 934000 |
| L3 | 75.3 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| | 98.2 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| | 118 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| | 126 | 655740 | 517290 | 420170 | 341290 | 210580 | 172000 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| | 152 | 655740 | 517290 | 420170 | 341290 | 210580 | 172000 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| | 180 | 536350 | 517290 | 420170 | 341290 | 210580 | 171050 | 250 | 60 | 1000 | 1200 | — | — | 934000 |
| L4 | 258 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 2100 | 6G | 934000 |
| | 308 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 2100 | 6G | 934000 |
| | 395 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 2100 | 6G | 934000 |
| | 469 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 1500 | 6E | 934000 |
| | 515 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 1500 | 6E | 934000 |
| | 612 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 150 | 35 | 1500 | 2000 | 1100 | 6C | 934000 |
| | 736 | 655740 | 517290 | 420170 | 341290 | 210580 | 171050 | 130 | 35 | 1500 | 2000 | 850 | 6B | 934000 |
| | 796 | 655740 | 517290 | 420170 | 341290 | 210580 | 172000 | 120 | 35 | 1500 | 2000 | 850 | 6B | 934000 |
| | 945 | 655740 | 517290 | 420170 | 341290 | 210580 | 172000 | 101 | 35 | 1500 | 2000 | 850 | 6B | 934000 |
| | 1122 | 536350 | 517290 | 420170 | 341290 | 210580 | 171050 | 79 | 35 | 1500 | 2000 | 850 | 6B | 934000 |

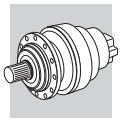
C

## 323 L

446

## 890310 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| L1 | 4.60 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 850 | 150 | 150 | 250 | — | — | 1580000 |
| L2 | 19.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 380 | 130 | 200 | 300 | — | — | 1580000 |
| | 22.4 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 380 | 130 | 200 | 300 | — | — | 1580000 |
| | 26.5 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 380 | 130 | 200 | 300 | — | — | 1580000 |
| | 33.1 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 380 | 130 | 200 | 300 | — | — | 1580000 |
| L3 | 83.3 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 104.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 112.8 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 119.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 141.5 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 164.5 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 260 | 90 | 500 | 800 | — | — | 1580000 |
| | 205.3 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 210 | 90 | 500 | 800 | — | — | 1580000 |
| L4 | 341.0 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 3200 | 6L | 1580000 |
| | 389.9 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 3200 | 6L | 1580000 |
| | 437.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 3200 | 6L | 1580000 |
| | 500.4 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 3200 | 6L | 1580000 |
| | 568.8 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 627.9 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 200 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 702.8 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 197 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 757.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 182 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 881.9 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 157 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 1025.2 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 135 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 1100.6 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 126 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |
| | 1279.5 | 890310 | 829940 | 742050 | 602740 | 371910 | 302080 | 108 | 50 | 1500 | 1800 | 2600 | 6K | 1580000 |



| 325 L | 450 | 1286700 Nm |
|---|---|---|

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | $P_t$ | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **L1** | 4.60 | 1286700 | 1166950 | 947860 | 769900 | 475050 | 385860 | 1050 | 190 | 120 | 250 | — | — | 2000000 |
| **L2** | 19.6 | 1286600 | 1104050 | 896760 | 729000 | 449450 | 365060 | 380 | 160 | 200 | 300 | — | — | 2000000 |
| | 22.4 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 380 | 160 | 200 | 300 | — | — | 2000000 |
| | 26.5 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 380 | 160 | 200 | 300 | — | — | 2000000 |
| | 33.1 | 963170 | 963170 | 845000 | 686160 | 423380 | 343890 | 380 | 160 | 200 | 300 | — | — | 2000000 |
| **L3** | 83.3 | 1286600 | 1104050 | 896760 | 728400 | 449450 | 365060 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 104.6 | 1286600 | 1104050 | 896760 | 728400 | 449450 | 365060 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 112.8 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 119.6 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 141.5 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 164.5 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 260 | 115 | 500 | 800 | — | — | 2000000 |
| | 205.3 | 963170 | 963170 | 845000 | 686160 | 423380 | 343890 | 226 | 115 | 500 | 800 | — | — | 2000000 |
| **L4** | 341.0 | 1286600 | 1104050 | 896760 | 728400 | 449450 | 365060 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 389.9 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 437.6 | 1286600 | 1104050 | 896760 | 728400 | 449450 | 365060 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 500.4 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 568.8 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 627.9 | 1286700 | 1083740 | 880270 | 715000 | 441180 | 358350 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 702.8 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 200 | 65 | 1500 | 1800 | 3200 | 6L | 2000000 |
| | 757.6 | 1286600 | 1104050 | 896760 | 728400 | 449450 | 365060 | 200 | 65 | 1500 | 1800 | 2600 | 6K | 2000000 |
| | 881.9 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 200 | 65 | 1500 | 1800 | 2600 | 6K | 2000000 |
| | 1025.2 | 1286700 | 1066430 | 866210 | 703580 | 434130 | 352630 | 193 | 65 | 1500 | 1800 | 2600 | 6K | 2000000 |
| | 1100.6 | 963170 | 963170 | 845120 | 686350 | 423550 | 343890 | 135 | 65 | 1500 | 1800 | 2600 | 6K | 2000000 |
| | 1279.5 | 963170 | 963170 | 845120 | 686350 | 423550 | 343890 | 116 | 65 | 1500 | 1800 | 2600 | 6K | 2000000 |

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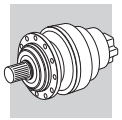

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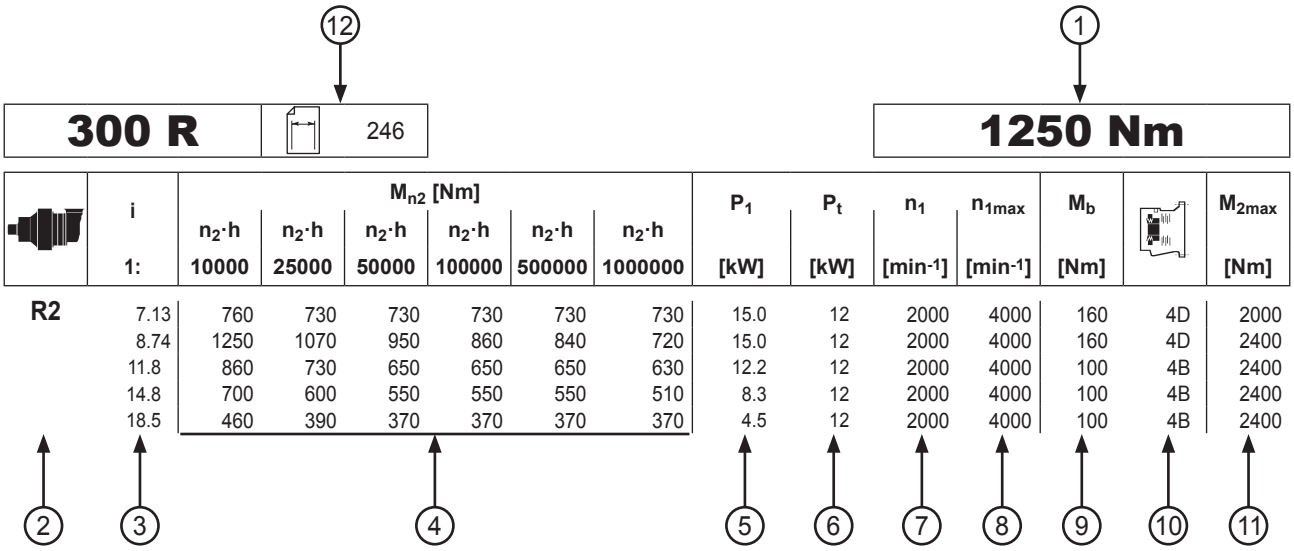
## 25.8 DATOS TÉCNICOS REDUCTOR ANGULAR 300 R

Guía para consultar las tablas




| | |
|---|---|
| **1** | Par de referencia |
| **2** | Número de etapas (reductor en ejecución angular) |
| **3** | Relación de reducción |
| **4** | Par nominal del eje de salida del reductor, basado en:<br>- factor de servicio $f_S$=1<br>- $n_2$·h indicado |
| **5** | Potencia máxima transmisible en el eje de entrada |
| **6** | Potencia térmica del reductor |
| **7** | Velocidad angular en la entrada |
| **8** | Máxima velocidad angular en la entrada |
| **9** | Par nominal del freno (freno hidráulico) |
| **10** | Freno hidráulico negativo en la salida del reductor |
| **11** | Par máximo en salida reductor |
| **12** | Página de las dimensiones |

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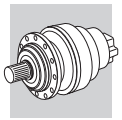


## 300 R

246

## 1250 Nm

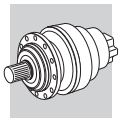
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **R2** | 7.13 | 760 | 730 | 730 | 730 | 730 | 730 | 15.0 | 12 | 2000 | 4000 | 160 | 4D | 2000 |
| | 8.74 | 1250 | 1070 | 950 | 860 | 840 | 720 | 15.0 | 12 | 2000 | 4000 | 160 | 4D | 2400 |
| | 11.8 | 860 | 730 | 650 | 650 | 650 | 630 | 12.2 | 12 | 2000 | 4000 | 100 | 4B | 2400 |
| | 14.8 | 700 | 600 | 550 | 550 | 550 | 510 | 8.3 | 12 | 2000 | 4000 | 100 | 4B | 2400 |
| | 18.5 | 460 | 390 | 370 | 370 | 370 | 370 | 4.5 | 12 | 2000 | 4000 | 100 | 4B | 2400 |
| **R3** | 24.8 | 760 | 730 | 730 | 730 | 730 | 730 | 6.2 | 12 | 2000 | 4000 | 50 | 4A | 2000 |
| | 30.4 | 1250 | 1070 | 950 | 860 | 840 | 720 | 6.6 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 37.3 | 1250 | 1070 | 950 | 860 | 840 | 720 | 5.5 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 41.2 | 860 | 730 | 650 | 650 | 650 | 630 | 3.6 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 50.4 | 1250 | 1070 | 950 | 860 | 840 | 720 | 4.3 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 62.9 | 1250 | 1070 | 950 | 860 | 840 | 720 | 3.5 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 68.2 | 860 | 730 | 650 | 650 | 650 | 630 | 2.4 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 78.7 | 1250 | 1070 | 950 | 860 | 840 | 720 | 2.9 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 85.2 | 860 | 730 | 650 | 650 | 650 | 630 | 2.0 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 106 | 860 | 730 | 650 | 650 | 650 | 630 | 1.7 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| | 133 | 700 | 600 | 550 | 550 | 550 | 510 | 1.2 | 12 | 2000 | 4000 | 50 | 4A | 2400 |
| **R4** | 106 | 1250 | 1070 | 950 | 860 | 840 | 720 | 2.2 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 130 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.8 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 143 | 860 | 730 | 650 | 650 | 650 | 630 | 1.4 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 159 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.5 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 175 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.3 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 215 | 1250 | 1070 | 950 | 860 | 840 | 720 | 1.1 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 237 | 860 | 730 | 650 | 650 | 650 | 630 | 0.86 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 268 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.88 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 291 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.81 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 363 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.65 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 394 | 860 | 730 | 650 | 650 | 650 | 630 | 0.52 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 453 | 1250 | 1070 | 950 | 860 | 840 | 720 | 0.52 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 491 | 860 | 730 | 650 | 650 | 650 | 630 | 0.41 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 613 | 860 | 730 | 650 | 650 | 650 | 630 | 0.33 | 10 | 2000 | 4000 | 50 | 4A | 2400 |
| | 766 | 860 | 730 | 650 | 650 | 650 | 630 | 0.27 | 10 | 2000 | 4000 | 50 | 4A | 2400 |

## 301 R

256

## 2060 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **R2** | 7.13 | 1490 | 1430 | 1430 | 1430 | 1430 | 1300 | 15.0 | 12 | 2000 | 4000 | 260 | 4F | 3200 |
| | 8.74 | 2060 | 2060 | 1890 | 1730 | 1580 | 1280 | 15.0 | 12 | 2000 | 4000 | 330 | 4H | 3200 |
| | 11.8 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 15.0 | 12 | 2000 | 4000 | 260 | 4F | 3200 |
| | 14.8 | 1150 | 1150 | 1150 | 1150 | 1150 | 940 | 15.0 | 12 | 2000 | 4000 | 160 | 4D | 3200 |
| | 18.5 | 920 | 780 | 740 | 740 | 740 | 740 | 8.0 | 12 | 2000 | 4000 | 160 | 4D | 3200 |
| **R3** | 24.8 | 1490 | 1430 | 1430 | 1430 | 1430 | 1300 | 12.4 | 12 | 2000 | 4000 | 100 | 4B | 3400 |
| | 30.4 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 13.1 | 12 | 2000 | 4000 | 100 | 4B | 3400 |
| | 37.3 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 10.8 | 12 | 2000 | 4000 | 100 | 4B | 3400 |
| | 41.2 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 7.3 | 12 | 2000 | 4000 | 100 | 4B | 3400 |
| | 50.4 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 8.4 | 12 | 2000 | 4000 | 100 | 4B | 3400 |
| | 62.9 | 2000 | 2000 | 1830 | 1730 | 1580 | 1280 | 7.0 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| | 68.2 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 4.8 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| | 78.7 | 1600 | 1600 | 1600 | 1600 | 1530 | 1280 | 5.8 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| | 85.2 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 4.0 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| | 106 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 3.3 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| | 133 | 1150 | 1150 | 1150 | 1150 | 1150 | 940 | 2.0 | 12 | 2000 | 4000 | 50 | 4A | 3400 |
| **R4** | 106 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 4.5 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 130 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 3.6 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 143 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 2.7 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 159 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 3.0 | 10 | 2000 | 4000 | 50 | 4A | 3400 |



## 301 R

256

## 2060 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R4 | 175 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 2.7 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 215 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 2.2 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 237 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.7 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 268 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 1.8 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 291 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 1.6 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 363 | 2460 | 2140 | 1900 | 1730 | 1580 | 1280 | 1.3 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 394 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 1.0 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 453 | 2000 | 2000 | 1830 | 1730 | 1580 | 1280 | 1.0 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 491 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.82 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 613 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.66 | 10 | 2000 | 4000 | 50 | 4A | 3400 |
| | 766 | 1720 | 1460 | 1300 | 1300 | 1300 | 1240 | 0.52 | 10 | 2000 | 4000 | 50 | 4A | 3400 |

## 303 R

266

## 2970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R2 | 9.23 | 2410 | 2310 | 2310 | 2310 | 2310 | 1940 | 35 | 18 | 1800 | 3800 | 330 | 4H | 5200 |
| | 10.9 | 2970 | 2810 | 2810 | 2650 | 2570 | 2090 | 35 | 18 | 1800 | 3800 | 330 | 4H | 5200 |
| | 13.7 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 32 | 18 | 1800 | 3800 | 260 | 4F | 5200 |
| | 15.9 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 23 | 18 | 1800 | 3800 | 260 | 4F | 5200 |
| | 19.2 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 17.2 | 18 | 1800 | 3800 | 160 | 4D | 5200 |
| | 24.8 | 1050 | 900 | 860 | 860 | 860 | 860 | 7.0 | 18 | 1800 | 3800 | 160 | 4D | 5200 |
| R3 | 25.7 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 15.0 | 14 | 2.000 | 4.000 | 160 | 4D | 5200 |
| | 31.5 | 2410 | 2310 | 2310 | 2310 | 2100 | 1700 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 37.1 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 42.6 | 2410 | 2210 | 2210 | 2210 | 2030 | 1650 | 11.6 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 46.6 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 11.2 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 50.3 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 12.2 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 54.2 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 8.1 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 63.1 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 8.7 | 14 | 2.000 | 4.000 | 100 | 4B | 5200 |
| | 73.3 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 6.2 | 14 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 78.7 | 2850 | 2450 | 2230 | 2200 | 2140 | 2030 | 7.1 | 14 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 91.5 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 5.2 | 14 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 114 | 2300 | 2080 | 1840 | 1820 | 1820 | 1820 | 4.3 | 14 | 2.000 | 4.000 | 50 | 4A | 5200 |
| R4 | 129 | 2970 | 2810 | 2810 | 2650 | 2390 | 1940 | 5.1 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 148 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 3.6 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 158 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 4.3 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 185 | 2410 | 2310 | 2310 | 2310 | 2130 | 1730 | 2.9 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 214 | 2970 | 2810 | 2810 | 2650 | 2350 | 1910 | 3.2 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 231 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 2.4 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 255 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 2.1 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 290 | 2770 | 2700 | 2650 | 2620 | 2280 | 1850 | 2.2 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 313 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 1.7 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 336 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 2.0 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 364 | 2850 | 2520 | 2230 | 2200 | 2140 | 2030 | 1.9 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 390 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 1.4 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 452 | 2250 | 2250 | 2250 | 2250 | 1830 | 1800 | 1.2 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 528 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 1.0 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 567 | 2850 | 2450 | 2230 | 2200 | 2140 | 2030 | 1.2 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 659 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.83 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 797 | 2000 | 1750 | 1650 | 1650 | 1650 | 1500 | 0.59 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |
| | 824 | 2440 | 2080 | 1840 | 1820 | 1820 | 1820 | 0.66 | 12 | 2.000 | 4.000 | 50 | 4A | 5200 |

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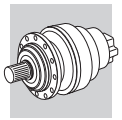

## 304 R

278

## 3960 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **R2** | 9.23 | 3710 | 3520 | 3500 | 3220 | 2390 | 1940 | 35 | 18 | 1800 | 3800 | 330 | 4H | 6600 |
| | 10.9 | 3960 | 3750 | 3690 | 3540 | 2680 | 2180 | 35 | 18 | 1800 | 3800 | 330 | 4H | 6600 |
| | 13.7 | 3740 | 3190 | 2850 | 2850 | 2850 | 2560 | 35 | 18 | 1800 | 3800 | 260 | 4F | 6600 |
| | 16.8 | 3000 | 2560 | 2390 | 2390 | 2390 | 2390 | 28 | 18 | 1800 | 3800 | 260 | 4F | 6600 |
| **R3** | 25.7 | 3710 | 3520 | 3500 | 3440 | 3080 | 2830 | 15.0 | 14 | 2.000 | 4.000 | 160 | 4D | 7300 |
| | 31.5 | 3710 | 3520 | 3500 | 3440 | 3080 | 2830 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 37.1 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 42.6 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 46.6 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 14.2 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 50.3 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 15.0 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 63.1 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 10.9 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 78.7 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 9.0 | 14 | 2.000 | 4.000 | 100 | 4B | 7300 |
| | 97.0 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 5.9 | 14 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 121 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 4.9 | 14 | 2.000 | 4.000 | 50 | 4A | 7300 |
| **R4** | 89.4 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 9.4 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 109 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 7.8 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 129 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 7.1 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 148 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 5.9 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 158 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 5.9 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 185 | 3710 | 3520 | 3500 | 3440 | 3080 | 2830 | 4.7 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 214 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 4.4 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 227 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 3.9 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 267 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 3.5 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 290 | 3960 | 3750 | 3690 | 3540 | 3430 | 2780 | 3.2 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 307 | 3710 | 3520 | 3500 | 3440 | 3120 | 2830 | 2.9 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 338 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 1.9 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 364 | 3740 | 3190 | 2850 | 2850 | 2850 | 2710 | 2.3 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 414 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 1.6 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 452 | 3960 | 3710 | 3660 | 3540 | 3430 | 2780 | 2.1 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 560 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 1.2 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |
| | 699 | 3010 | 2560 | 2390 | 2390 | 2390 | 2390 | 0.93 | 12 | 2.000 | 4.000 | 50 | 4A | 7300 |

## 305 R

290

## 5600 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| **R2** | 9.23 | 4650 | 4050 | 4000 | 3870 | 2390 | 1940 | 35 | 18 | 1800 | 3800 | 440 | 4L | 7700 |
| | 10.9 | 5300 | 4720 | 4720 | 4350 | 2680 | 2180 | 35 | 18 | 1800 | 3800 | 440 | 4L | 7700 |
| | 13.7 | 5600 | 5040 | 4470 | 4280 | 3150 | 2560 | 35 | 18 | 1800 | 3800 | 440 | 4L | 7700 |
| | 15.9 | 4690 | 4000 | 3600 | 3600 | 3500 | 2840 | 35 | 18 | 1800 | 3800 | 330 | 4H | 7700 |
| | 19.2 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 32 | 18 | 1800 | 3800 | 260 | 4F | 7700 |
| **R3** | 25.7 | 4680 | 4490 | 4490 | 4490 | 3800 | 3090 | 15.0 | 14 | 2000 | 4000 | 260 | 4F | 8800 |
| | 31.5 | 4700 | 4490 | 4490 | 4490 | 3750 | 3040 | 15.0 | 14 | 2000 | 4000 | 260 | 4F | 8800 |
| | 37.1 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 15.0 | 14 | 2000 | 4000 | 260 | 4F | 8800 |
| | 42.6 | 4700 | 4450 | 4430 | 4430 | 3630 | 2950 | 15.0 | 14 | 2000 | 4000 | 160 | 4D | 8800 |
| | 46.6 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 15.0 | 14 | 2000 | 4000 | 160 | 4D | 8800 |
| | 50.3 | 5530 | 5350 | 5300 | 5230 | 4070 | 3310 | 15.0 | 14 | 2000 | 4000 | 160 | 4D | 8800 |
| | 54.2 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 15.0 | 14 | 2000 | 4000 | 100 | 4B | 8800 |
| | 63.1 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 15.0 | 14 | 2000 | 4000 | 100 | 4B | 8800 |
| | 73.3 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 12.3 | 14 | 2000 | 4000 | 100 | 4B | 8800 |
| | 78.7 | 5600 | 4900 | 4470 | 4400 | 4280 | 3490 | 14.3 | 14 | 2000 | 4000 | 100 | 4B | 8800 |
| | 91.5 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 10.2 | 14 | 2000 | 4000 | 100 | 4B | 8800 |
| | 114 | 4430 | 4000 | 3600 | 3600 | 3500 | 3460 | 8.6 | 14 | 2000 | 4000 | 50 | 4A | 8800 |
| **R4** | 129 | 5800 | 5480 | 5480 | 5300 | 4270 | 3470 | 10.3 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 148 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 7.4 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 158 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 8.6 | 12 | 2000 | 4000 | 50 | 4A | 8800 |

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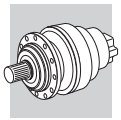

## 305 R

290

## 5600 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R4 | 185 | 4700 | 4490 | 4490 | 4490 | 3800 | 3090 | 6.0 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 214 | 5800 | 5500 | 5480 | 5300 | 4210 | 3420 | 6.4 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 231 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 4.7 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 255 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 4.3 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 290 | 5530 | 5400 | 5300 | 5230 | 4070 | 3310 | 4.5 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 313 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 3.5 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 336 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 3.9 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 364 | 5600 | 5040 | 4470 | 4400 | 4280 | 3490 | 3.6 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 390 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 2.8 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 452 | 4750 | 4750 | 4750 | 4750 | 3660 | 3210 | 2.5 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 528 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 2.1 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 567 | 5600 | 4900 | 4470 | 4400 | 4280 | 3490 | 2.3 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 659 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 1.7 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 797 | 3800 | 3300 | 3100 | 3100 | 3000 | 2790 | 1.1 | 12 | 2000 | 4000 | 50 | 4A | 8800 |
| | 824 | 4690 | 4000 | 3600 | 3600 | 3550 | 3460 | 1.3 | 12 | 2000 | 4000 | 50 | 4A | 8800 |

## 306 R

302

## 7300 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R2 | 9.23 | 4650 | 4050 | 4000 | 3870 | 2390 | 1940 | 35 | 18 | 1800 | 3800 | 440 | 4L | 12000 |
| | 10.9 | 5300 | 4720 | 4720 | 4350 | 2680 | 2180 | 35 | 18 | 1800 | 3800 | 440 | 4L | 12000 |
| | 13.7 | 6500 | 5920 | 5920 | 5100 | 3150 | 2560 | 35 | 18 | 1800 | 3800 | 440 | 4L | 12000 |
| | 15.9 | 7300 | 6890 | 6530 | 5670 | 3500 | 2840 | 35 | 18 | 1800 | 3800 | 440 | 4L | 12000 |
| | 19.2 | 7000 | 5900 | 5500 | 5400 | 3990 | 3240 | 35 | 18 | 1800 | 3800 | 400 | 4K | 12000 |
| R3 | 33.2 | 8020 | 8020 | 8020 | 8020 | 5680 | 4620 | 35 | 14 | 2000 | 4000 | 260 | 4F | 14900 |
| | 39.2 | 9770 | 9340 | 9340 | 9300 | 6110 | 4960 | 35 | 14 | 2000 | 4000 | 260 | 4F | 14900 |
| | 46.3 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 35 | 14 | 2000 | 4000 | 260 | 4F | 14900 |
| | 58.1 | 9560 | 9100 | 9100 | 9100 | 6680 | 5430 | 35 | 14 | 2000 | 4000 | 260 | 4F | 14900 |
| | 67.5 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 25 | 14 | 2000 | 4000 | 260 | 4F | 14900 |
| | 72.9 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 27 | 14 | 2000 | 4000 | 160 | 4D | 14900 |
| | 84.7 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 23 | 14 | 2000 | 4000 | 160 | 4D | 14900 |
| | 98.5 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 17.7 | 14 | 2000 | 4000 | 100 | 4B | 14900 |
| | 119 | 8500 | 7370 | 6530 | 6500 | 6460 | 5480 | 15.2 | 14 | 2000 | 4000 | 100 | 4B | 14900 |
| | 144 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 10.7 | 14 | 2000 | 4000 | 100 | 4B | 14900 |
| R4 | 158 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 14.9 | 12 | 2000 | 4000 | 100 | 4B | 14900 |
| | 168 | 8320 | 7700 | 7700 | 7530 | 5950 | 4830 | 11.3 | 12 | 2000 | 4000 | 100 | 4B | 14900 |
| | 181 | 9450 | 9450 | 9450 | 9450 | 6970 | 5660 | 11.6 | 12 | 2000 | 4000 | 100 | 4B | 14900 |
| | 214 | 10420 | 9850 | 9850 | 9600 | 6860 | 5570 | 11.1 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 230 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 7.7 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 249 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 9.0 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 289 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 7.6 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 312 | 7890 | 7590 | 7590 | 7590 | 6620 | 5380 | 5.7 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 389 | 8500 | 7590 | 7590 | 7590 | 6620 | 5380 | 5.2 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 420 | 10080 | 9350 | 8300 | 7950 | 6810 | 5530 | 5.4 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 455 | 8630 | 7370 | 6530 | 6500 | 6460 | 5480 | 4.4 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 488 | 9540 | 9350 | 8300 | 7950 | 6810 | 5530 | 4.5 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 550 | 8500 | 7370 | 6530 | 6500 | 6460 | 5480 | 3.7 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 590 | 9500 | 8500 | 7800 | 7800 | 6810 | 5530 | 3.8 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 665 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 2.5 | 12 | 2000 | 4000 | 50 | 4A | 14900 |
| | 830 | 7000 | 5900 | 5500 | 5500 | 5040 | 5040 | 2.0 | 12 | 2000 | 4000 | 50 | 4A | 14900 |

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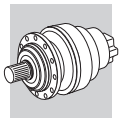

## 307 R

314

## 14000 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| **R2** | 13.0 | 9000 | 8500 | 8270 | 7960 | 6570 | 5340 | 85 | 35 | 1800 | 3800 | 1000 | 5K | 18600 |
| | 15.5 | 11400 | 10690 | 9630 | 9520 | 7440 | 6040 | 85 | 35 | 1800 | 3800 | 1000 | 5K | 21000 |
| | 19.8 | 14000 | 12700 | 11300 | 10790 | 8850 | 7190 | 85 | 35 | 1800 | 3800 | 800 | 5G | 21000 |
| | 23.5 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 74 | 35 | 1800 | 3800 | 500 | 5C | 21000 |
| **R3** | 31.6 | 9000 | 9000 | 9000 | 8300 | 5490 | 4460 | 35 | 22 | 2000 | 4000 | 400 | 4K | 18600 |
| | 37.7 | 15680 | 14890 | 12400 | 10070 | 6210 | 5050 | 35 | 22 | 2000 | 4000 | 440 | 4L | 21000 |
| | 44.6 | 15680 | 14890 | 13930 | 11310 | 6980 | 5670 | 35 | 22 | 2000 | 4000 | 400 | 4K | 21000 |
| | 55.9 | 15680 | 14890 | 14890 | 13260 | 8180 | 6650 | 35 | 22 | 2000 | 4000 | 330 | 4H | 21000 |
| | 65.0 | 14670 | 14010 | 14010 | 13510 | 9090 | 7380 | 35 | 22 | 2000 | 4000 | 260 | 4F | 21000 |
| | 71.8 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 35 | 22 | 2000 | 4000 | 260 | 4F | 21000 |
| | 78.6 | 12300 | 12300 | 12300 | 12300 | 9560 | 7770 | 35 | 22 | 2000 | 4000 | 260 | 4F | 21000 |
| | 83.4 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 33 | 22 | 2000 | 4000 | 260 | 4F | 21000 |
| | 99.0 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 23 | 22 | 2000 | 4000 | 160 | 4D | 21000 |
| | 120 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 19.9 | 22 | 2000 | 4000 | 160 | 4D | 21000 |
| **R4** | 152 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 165 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 191 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 206 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 232 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 14.3 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 258 | 15680 | 14890 | 14890 | 13510 | 9560 | 7770 | 13.8 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 284 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 11.6 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 300 | 15000 | 14010 | 14010 | 13510 | 9560 | 7770 | 11.8 | 15 | 2000 | 4000 | 100 | 4B | 21000 |
| | 331 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 10.0 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 363 | 12300 | 12300 | 12300 | 12300 | 9560 | 7770 | 8.0 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 413 | 14840 | 12700 | 11300 | 10790 | 9340 | 7590 | 8.0 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 453 | 15000 | 13800 | 12900 | 12500 | 9560 | 7770 | 7.8 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 490 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 5.3 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 581 | 14330 | 12710 | 11300 | 10790 | 9340 | 7590 | 5.7 | 15 | 2000 | 4000 | 50 | 4A | 21000 |
| | 690 | 11000 | 9600 | 8700 | 8700 | 8240 | 7490 | 3.8 | 15 | 2000 | 4000 | 50 | 4A | 21000 |

## 309 R

326

## 16460 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| **R2** | 13.0 | 9800 | 9120 | 8270 | 7960 | 6570 | 5340 | 85 | 35 | 1800 | 3800 | 1000 | 5K | 27400 |
| | 15.5 | 11400 | 10690 | 9630 | 9520 | 7440 | 6040 | 85 | 35 | 1800 | 3800 | 1000 | 5K | 27400 |
| | 19.8 | 14000 | 13270 | 12270 | 12270 | 8850 | 7190 | 85 | 35 | 1800 | 3800 | 1000 | 5K | 27400 |
| | 23.5 | 16460 | 14070 | 12500 | 12370 | 9980 | 8110 | 85 | 35 | 1800 | 3800 | 800 | 5G | 27400 |
| **R3** | 31.6 | 12800 | 12310 | 10960 | 8900 | 5490 | 4460 | 35 | 22 | 2000 | 4000 | 440 | 4L | 27900 |
| | 37.7 | 15830 | 15260 | 12400 | 10070 | 6210 | 5050 | 35 | 22 | 2000 | 4000 | 440 | 4L | 29000 |
| | 44.6 | 18670 | 17150 | 13930 | 11310 | 6980 | 5670 | 35 | 22 | 2000 | 4000 | 400 | 4K | 29000 |
| | 55.9 | 18510 | 17140 | 16330 | 13260 | 8180 | 6650 | 35 | 22 | 2000 | 4000 | 400 | 4K | 29000 |
| | 65.0 | 14670 | 14300 | 14300 | 14010 | 9090 | 7380 | 35 | 22 | 2000 | 4000 | 260 | 4F | 29000 |
| | 71.8 | 21980 | 19060 | 16940 | 15790 | 9740 | 7910 | 35 | 22 | 2000 | 4000 | 330 | 4H | 29000 |
| | 83.4 | 18300 | 18100 | 16940 | 16190 | 10830 | 8790 | 35 | 22 | 2000 | 4000 | 260 | 4F | 29000 |
| | 99.0 | 17000 | 14400 | 13000 | 13000 | 12210 | 9910 | 35 | 22 | 2000 | 4000 | 260 | 4F | 29000 |
| | 120 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 30 | 22 | 2000 | 4000 | 160 | 4D | 29000 |
| **R4** | 152 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 15.0 | 15 | 2000 | 4000 | 160 | 4D | 29000 |
| | 165 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 15.0 | 15 | 2000 | 4000 | 160 | 4D | 29000 |
| | 191 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 15.0 | 15 | 2000 | 4000 | 160 | 4D | 29000 |
| | 206 | 21620 | 21260 | 21260 | 18580 | 11460 | 9310 | 15.0 | 15 | 2000 | 4000 | 160 | 4D | 29000 |
| | 232 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 29000 |
| | 258 | 18510 | 17500 | 17500 | 17140 | 11160 | 9070 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 29000 |
| | 284 | 18300 | 18100 | 16940 | 16190 | 12810 | 10410 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 29000 |
| | 331 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 15.0 | 15 | 2000 | 4000 | 100 | 4B | 29000 |
| | 374 | 14670 | 14300 | 14300 | 14010 | 11060 | 8990 | 9.2 | 15 | 2000 | 4000 | 100 | 4B | 29000 |

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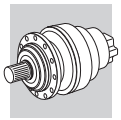

## 309 R

326

## 16460 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R4 | 413 | 21980 | 19060 | 16940 | 16190 | 12810 | 10410 | 12.0 | 15 | 2000 | 4000 | 100 | 4B | 29000 |
| | 457 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 8.8 | 15 | 2000 | 4000 | 50 | 4A | 29000 |
| | 490 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 8.2 | 15 | 2000 | 4000 | 50 | 4A | 29000 |
| | 581 | 15800 | 15800 | 15800 | 15000 | 12810 | 10410 | 6.4 | 15 | 2000 | 4000 | 50 | 4A | 29000 |
| | 690 | 17000 | 14400 | 13000 | 13000 | 12370 | 10280 | 5.8 | 15 | 2000 | 4000 | 50 | 4A | 29000 |

## 310 R

338

## 34120 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R2 | 12.0 | 28200 | 27800 | 25000 | 21590 | 13320 | 10820 | 130 | 55 | 1500 | 2500 | 3200 | 6L | 47600 |
| | 15.4 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 130 | 55 | 1500 | 2500 | 2600 | 6K | 47600 |
| | 18.3 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 130 | 55 | 1500 | 2500 | 2100 | 6G | 47600 |
| | 16.6 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 130 | 55 | 1500 | 2500 | 2600 | 6K | 47600 |
| | 21.3 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 130 | 55 | 1500 | 2500 | 2600 | 6K | 47600 |
| | 25.3 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 119 | 55 | 1500 | 2500 | 2100 | 6G | 47600 |
| R3 | 37.7 | 15830 | 15260 | 12400 | 10070 | 6210 | 5050 | 35 | 22 | 1800 | 3800 | 440 | 4L | 47600 |
| | 44.6 | 18670 | 17150 | 13930 | 11310 | 6980 | 5670 | 35 | 22 | 1800 | 3800 | 440 | 4L | 47600 |
| | 55.9 | 23410 | 20100 | 16320 | 13260 | 8180 | 6650 | 35 | 22 | 1800 | 3800 | 400 | 4K | 47600 |
| | 65.0 | 27110 | 22330 | 18140 | 14730 | 9090 | 7380 | 35 | 22 | 1800 | 3800 | 400 | 4K | 47600 |
| | 71.8 | 29990 | 23930 | 19440 | 15790 | 9740 | 7910 | 35 | 22 | 1800 | 3800 | 400 | 4K | 47600 |
| | 78.6 | 21800 | 21100 | 20150 | 16840 | 10390 | 8440 | 35 | 22 | 1800 | 3800 | 330 | 4H | 47600 |
| | 83.4 | 30600 | 26240 | 21600 | 17550 | 10830 | 8790 | 35 | 22 | 1800 | 3800 | 400 | 4K | 47600 |
| | 99.0 | 26000 | 21200 | 18420 | 18230 | 12210 | 9910 | 35 | 22 | 1800 | 3800 | 330 | 4H | 47600 |
| | 120 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 35 | 22 | 1800 | 3800 | 260 | 4F | 47600 |
| R4 | 136 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 35 | 15 | 2000 | 4000 | 260 | 4F | 47600 |
| | 160 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 35 | 15 | 2000 | 4000 | 260 | 4F | 47600 |
| | 189 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 35 | 15 | 2000 | 4000 | 260 | 4F | 47600 |
| | 206 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 34 | 15 | 2000 | 4000 | 160 | 4D | 47600 |
| | 234 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 25 | 15 | 2000 | 4000 | 160 | 4D | 47600 |
| | 258 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 27 | 15 | 2000 | 4000 | 160 | 4D | 47600 |
| | 283 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 19.1 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 305 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 23 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 334 | 34120 | 32340 | 26580 | 21590 | 13320 | 10820 | 19.1 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 363 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 19.1 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 419 | 34120 | 31930 | 26580 | 21590 | 13320 | 10820 | 16.9 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 454 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 13.5 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 517 | 30600 | 26240 | 23350 | 21100 | 13020 | 10570 | 13.5 | 15 | 2000 | 4000 | 100 | 4B | 47600 |
| | 590 | 21800 | 21800 | 21800 | 20150 | 13320 | 10820 | 8.7 | 15 | 2000 | 4000 | 50 | 4A | 47600 |
| | 639 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 9.6 | 15 | 2000 | 4000 | 50 | 4A | 47600 |
| | 757 | 28000 | 25880 | 23350 | 21100 | 13020 | 10570 | 8.8 | 15 | 2000 | 4000 | 50 | 4A | 47600 |
| | 898 | 26000 | 21200 | 18420 | 18230 | 12860 | 10440 | 6.8 | 15 | 2000 | 4000 | 50 | 4A | 47600 |

## 311 R

350

## 48330 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R2 | 12.0 | 28200 | 27800 | 25000 | 24910 | 15900 | 12700 | 150 | 75 | 1500 | 2500 | 3200 | 6L | 58300 |
| | 15.4 | 35600 | 33600 | 31960 | 30600 | 18800 | 15300 | 150 | 75 | 1500 | 2500 | 3200 | 6L | 58300 |
| | 18.3 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 150 | 75 | 1500 | 2500 | 2600 | 6K | 58300 |
| | 16.6 | 48330 | 42150 | 34220 | 27800 | 17150 | 13940 | 150 | 90 | 1500 | 2500 | 3200 | 6L | 58300 |
| | 21.3 | 45210 | 39560 | 35220 | 30380 | 18740 | 15230 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 58300 |
| | 25.3 | 34000 | 29500 | 27000 | 26000 | 18510 | 15040 | 150 | 90 | 1500 | 2500 | 2100 | 6G | 58300 |

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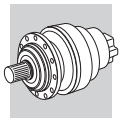

## 311 R

350

## 48330 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R3 | 53.0 | 32500 | 32430 | 32440 | 27690 | 17090 | 13880 | 85 | 40 | 2000 | 4000 | 800 | 5G | 58300 |
| | 63.2 | 40540 | 38880 | 38290 | 31100 | 19190 | 15590 | 85 | 40 | 2000 | 4000 | 800 | 5G | 58300 |
| | 68.0 | 41900 | 39560 | 35220 | 30380 | 18740 | 15230 | 85 | 40 | 2000 | 4000 | 630 | 5E | 58300 |
| | 81.1 | 46930 | 43390 | 38290 | 31100 | 19190 | 15590 | 85 | 40 | 2000 | 4000 | 630 | 5E | 58300 |
| | 96.3 | 35200 | 34500 | 34500 | 31100 | 19190 | 15590 | 83 | 40 | 2000 | 4000 | 500 | 5C | 58300 |
| | 104 | 45210 | 39560 | 35220 | 32000 | 19700 | 16000 | 85 | 40 | 2000 | 4000 | 500 | 5C | 58300 |
| | 124 | 43000 | 39560 | 35220 | 32000 | 19700 | 16000 | 75 | 40 | 2000 | 4000 | 400 | 5B | 58300 |
| | 147 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 51 | 40 | 2000 | 4000 | 400 | 5B | 58300 |
| R4 | 154 | 48330 | 39700 | 32240 | 26190 | 16160 | 13130 | 35 | 22 | 2000 | 4000 | 330 | 4H | 58300 |
| | 182 | 48330 | 44590 | 36210 | 29420 | 18150 | 14740 | 35 | 22 | 2000 | 4000 | 330 | 4H | 58300 |
| | 198 | 46930 | 43390 | 38290 | 31100 | 19190 | 15590 | 35 | 22 | 2000 | 4000 | 260 | 4F | 58300 |
| | 229 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 35 | 22 | 2000 | 4000 | 260 | 4F | 58300 |
| | 266 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 35 | 22 | 2000 | 4000 | 260 | 4F | 58300 |
| | 294 | 46930 | 43390 | 38290 | 31100 | 19190 | 15590 | 35 | 22 | 2000 | 4000 | 160 | 4D | 58300 |
| | 322 | 48330 | 45840 | 38290 | 31100 | 19190 | 15590 | 33 | 22 | 2000 | 4000 | 160 | 4D | 58300 |
| | 341 | 46930 | 43390 | 38290 | 31100 | 19190 | 15590 | 31 | 22 | 2000 | 4000 | 160 | 4D | 58300 |
| | 413 | 46930 | 43390 | 38290 | 31100 | 19190 | 15590 | 25 | 22 | 2000 | 4000 | 160 | 4D | 58300 |
| | 438 | 45210 | 39560 | 35220 | 32000 | 19700 | 16000 | 23 | 22 | 2000 | 4000 | 100 | 4D | 58300 |
| | 490 | 35200 | 34500 | 34500 | 31100 | 19190 | 15590 | 17.0 | 22 | 2000 | 4000 | 100 | 4B | 58300 |
| | 520 | 43000 | 39560 | 35220 | 32000 | 19700 | 16000 | 19.6 | 22 | 2000 | 4000 | 100 | 4B | 58300 |
| | 629 | 43000 | 39560 | 35220 | 32000 | 19700 | 16000 | 16.2 | 22 | 2000 | 4000 | 100 | 4B | 58300 |
| | 746 | 34000 | 29500 | 27000 | 27000 | 18600 | 15100 | 10.8 | 22 | 2000 | 4000 | 100 | 4B | 58300 |

## 313 R

362

## 57970 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R2 | 12.2 | 28500 | 28100 | 25300 | 25130 | 16100 | 12900 | 150 | 75 | 1500 | 2500 | 3200 | 6L | 86300 |
| | 15.9 | 36700 | 35600 | 32870 | 31400 | 18900 | 15500 | 150 | 75 | 1500 | 2500 | 3200 | 6L | 86300 |
| | 19.1 | 44100 | 41000 | 37800 | 36000 | 22100 | 17700 | 150 | 75 | 1500 | 2500 | 3200 | 6L | 86300 |
| | 16.8 | 53340 | 42520 | 34530 | 28050 | 17310 | 14060 | 150 | 90 | 1500 | 2500 | 3200 | 6L | 105000 |
| | 22.0 | 57970 | 49730 | 41580 | 33760 | 20830 | 16920 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 105000 |
| | 26.4 | 49000 | 41000 | 33100 | 31730 | 23730 | 19270 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 105000 |
| R3 | 53.7 | 35120 | 32860 | 32860 | 27940 | 17240 | 14000 | 85 | 40 | 1800 | 3800 | 800 | 5G | 105000 |
| | 64.0 | 40990 | 39380 | 38920 | 31620 | 19510 | 15850 | 85 | 40 | 1800 | 3800 | 800 | 5G | 105000 |
| | 69.9 | 44280 | 43120 | 41410 | 33630 | 20750 | 16860 | 85 | 40 | 1800 | 3800 | 800 | 5G | 105000 |
| | 82.2 | 51000 | 50890 | 46350 | 37650 | 23230 | 18870 | 85 | 40 | 1800 | 3800 | 630 | 5E | 105000 |
| | 97.5 | 52430 | 50280 | 50280 | 42440 | 26190 | 21270 | 85 | 40 | 1800 | 3800 | 630 | 5E | 105000 |
| | 107 | 57970 | 49730 | 44600 | 42590 | 27200 | 22090 | 85 | 40 | 1800 | 3800 | 630 | 5E | 105000 |
| | 127 | 57970 | 49730 | 45000 | 42590 | 27200 | 22090 | 85 | 40 | 1800 | 3800 | 500 | 5C | 105000 |
| | 153 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 65 | 40 | 1800 | 3800 | 400 | 5B | 105000 |
| R4 | 185 | 55410 | 44980 | 36540 | 29680 | 18310 | 14870 | 35 | 22 | 2000 | 4000 | 330 | 4H | 105000 |
| | 201 | 55410 | 47690 | 38730 | 31460 | 19410 | 15770 | 35 | 22 | 2000 | 4000 | 330 | 4H | 105000 |
| | 237 | 55410 | 52510 | 43510 | 35340 | 21810 | 17710 | 35 | 22 | 2000 | 4000 | 260 | 4F | 105000 |
| | 281 | 53000 | 50280 | 49050 | 39840 | 24580 | 19970 | 35 | 22 | 2000 | 4000 | 260 | 4F | 105000 |
| | 309 | 57970 | 49730 | 44290 | 42550 | 26250 | 21320 | 35 | 22 | 2000 | 4000 | 260 | 4F | 105000 |
| | 346 | 55410 | 55000 | 52510 | 45210 | 27900 | 22660 | 35 | 22 | 2000 | 4000 | 260 | 4F | 105000 |
| | 387 | 57970 | 49730 | 45000 | 42590 | 27200 | 22090 | 34 | 22 | 2000 | 4000 | 160 | 4D | 105000 |
| | 450 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 29 | 22 | 2000 | 4000 | 160 | 4D | 105000 |
| | 496 | 53000 | 52000 | 52200 | 45210 | 27900 | 22660 | 25 | 22 | 2000 | 4000 | 160 | 4D | 105000 |
| | 535 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 24 | 22 | 2000 | 4000 | 160 | 4D | 105000 |
| | 647 | 57970 | 49730 | 45000 | 45000 | 27800 | 22600 | 20 | 22 | 2000 | 4000 | 100 | 4B | 105000 |
| | 778 | 49000 | 42400 | 39000 | 39000 | 27700 | 22500 | 14.9 | 22 | 2000 | 4000 | 100 | 4B | 105000 |

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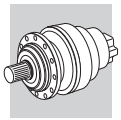


## 314 R

374

## 84000 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R3 | 51.1 | 81840 | 78152 | 66080 | 53208 | 32832 | 26680 | 130 | 55 | 1500 | 2500 | 3200 | 6L | 115000 |
| | 65.5 | 84000 | 80000 | 77600 | 64640 | 38800 | 30720 | 130 | 55 | 1500 | 2500 | 3200 | 6L | 115000 |
| | 77.8 | 84000 | 80000 | 77600 | 62400 | 39040 | 31520 | 130 | 55 | 1500 | 2500 | 2600 | 6K | 115000 |
| | 82.3 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 130 | 55 | 1500 | 2500 | 2600 | 6K | 115000 |
| | 97.6 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 130 | 55 | 1500 | 2500 | 2100 | 6G | 115000 |
| | 113 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 94 | 55 | 1500 | 2500 | 2100 | 6G | 115000 |
| | 70.7 | 83176 | 78144 | 67784 | 55056 | 33968 | 27592 | 130 | 55 | 1500 | 2500 | 3200 | 6L | 115000 |
| | 90.7 | 84000 | 78144 | 67784 | 55056 | 33968 | 27592 | 130 | 55 | 1500 | 2500 | 3200 | 6L | 115000 |
| | 108 | 84000 | 80000 | 67784 | 55056 | 33968 | 27592 | 100 | 55 | 1500 | 2500 | 2600 | 6K | 115000 |
| | 114 | 79200 | 69600 | 65464 | 56000 | 35280 | 29040 | 117 | 55 | 1500 | 2500 | 2600 | 6K | 115000 |
| | 135 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 98 | 55 | 1500 | 2500 | 2100 | 6G | 115000 |
| | 157 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 70 | 55 | 1500 | 2500 | 2100 | 6G | 115000 |
| R4 | 160 | 83176 | 78144 | 67784 | 55056 | 33968 | 27592 | 35 | 22 | 1800 | 3800 | 440 | 4L | 115000 |
| | 189 | 84000 | 79200 | 67784 | 55056 | 33968 | 27592 | 35 | 22 | 1800 | 3800 | 440 | 4L | 115000 |
| | 238 | 84000 | 80000 | 76000 | 62400 | 38320 | 31120 | 35 | 22 | 1800 | 3800 | 400 | 4K | 115000 |
| | 276 | 84000 | 80000 | 77600 | 63200 | 38960 | 31680 | 35 | 22 | 1800 | 3800 | 400 | 4K | 115000 |
| | 354 | 84000 | 80000 | 77600 | 66400 | 40800 | 33360 | 35 | 22 | 1800 | 3800 | 400 | 4K | 115000 |
| | 421 | 84000 | 80000 | 77600 | 62400 | 38720 | 31440 | 35 | 22 | 1800 | 3800 | 330 | 4H | 115000 |
| | 445 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 35 | 22 | 1800 | 3800 | 400 | 4K | 115000 |
| | 528 | 79200 | 69600 | 65464 | 62400 | 39040 | 31760 | 32 | 22 | 1800 | 3800 | 330 | 4H | 115000 |
| | 614 | 66792 | 57416 | 52000 | 52000 | 32800 | 26640 | 22 | 22 | 1800 | 3800 | 260 | 4F | 115000 |

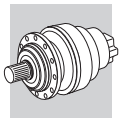
C

## 315 R

386

## 105000 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R3 | 51.1 | 102300 | 97690 | 82600 | 66510 | 41040 | 33350 | 150 | 75 | 1500 | 2500 | 2600 | 6K | 135000 |
| | 65.5 | 105000 | 100000 | 97000 | 80800 | 48500 | 38400 | 150 | 75 | 1500 | 2500 | 2100 | 6G | 135000 |
| | 77.8 | 105000 | 100000 | 97000 | 78000 | 48800 | 39400 | 150 | 75 | 1500 | 2500 | 2100 | 6G | 135000 |
| | 82.3 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 150 | 75 | 1500 | 2500 | 1500 | 6E | 135000 |
| | 97.6 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 150 | 75 | 1500 | 2500 | 1500 | 6E | 135000 |
| | 113 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 118 | 75 | 1500 | 2500 | 850 | 6B | 135000 |
| | 70.7 | 103970 | 97680 | 84730 | 68820 | 42460 | 34490 | 150 | 90 | 1500 | 2500 | 2100 | 6G | 135000 |
| | 90.7 | 105000 | 97680 | 84730 | 68820 | 42460 | 34490 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 135000 |
| | 108 | 105000 | 100000 | 84730 | 68820 | 42460 | 34490 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 135000 |
| | 114 | 99000 | 87000 | 81830 | 70000 | 44100 | 36300 | 146 | 90 | 1500 | 2500 | 1100 | 6C | 135000 |
| | 135 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 125 | 90 | 1500 | 2500 | 1100 | 6C | 135000 |
| | 157 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 88 | 90 | 1500 | 2500 | 850 | 6B | 135000 |
| R4 | 225 | 103970 | 97680 | 84730 | 68820 | 42460 | 34490 | 90 | 40 | 1800 | 3800 | 500 | 5C | 135000 |
| | 269 | 105000 | 99000 | 84730 | 68820 | 42460 | 34490 | 83 | 40 | 1800 | 3800 | 500 | 5C | 135000 |
| | 345 | 105000 | 100000 | 95000 | 78000 | 47900 | 38900 | 65 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 409 | 105000 | 100000 | 97000 | 79000 | 48700 | 39600 | 55 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 525 | 105000 | 100000 | 97000 | 83000 | 51000 | 41700 | 43 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 623 | 105000 | 100000 | 97000 | 78000 | 48400 | 39300 | 36 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 659 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 32 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 782 | 99000 | 87000 | 81830 | 78000 | 48800 | 39700 | 27 | 40 | 1800 | 3800 | 400 | 5B | 135000 |
| | 909 | 83490 | 71770 | 65000 | 65000 | 41000 | 33300 | 18.7 | 40 | 1800 | 3800 | 400 | 5B | 135000 |



## 316 R

398

## 138820 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R3 | 51.1 | 108000 | 101000 | 87200 | 70300 | 42300 | 33900 | 150 | 75 | 1500 | 2500 | 2600 | 6K | 192000 |
| | 65.5 | 134000 | 126000 | 104000 | 82600 | 50000 | 40200 | 150 | 75 | 1500 | 2500 | 2600 | 6K | 192000 |
| | 77.8 | 124000 | 115000 | 98650 | 80130 | 49440 | 40500 | 150 | 75 | 1500 | 2500 | 2100 | 6G | 192000 |
| | 70.7 | 138810 | 112590 | 91410 | 74250 | 45820 | 37220 | 150 | 90 | 1500 | 2500 | 2100 | 6G | 192000 |
| | 90.7 | 138820 | 122980 | 99890 | 81130 | 50060 | 40660 | 150 | 90 | 1500 | 2500 | 2100 | 6G | 192000 |
| | 108 | 124000 | 108000 | 98650 | 80130 | 49440 | 40160 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 192000 |
| R4 | 225 | 138810 | 126000 | 103000 | 83700 | 51600 | 42000 | 85 | 45 | 1800 | 3800 | 800 | 5G | 192000 |
| | 269 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 85 | 45 | 1800 | 3800 | 630 | 5E | 192000 |
| | 289 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 85 | 45 | 1800 | 3800 | 630 | 5E | 192000 |
| | 345 | 138820 | 126000 | 103000 | 83700 | 51600 | 42000 | 83 | 45 | 1800 | 3800 | 500 | 5C | 192000 |
| | 409 | 138820 | 125920 | 103000 | 83700 | 51600 | 42000 | 69 | 45 | 1800 | 3800 | 400 | 5B | 192000 |
| | 443 | 138820 | 126000 | 107000 | 85300 | 53300 | 42700 | 65 | 45 | 1800 | 3800 | 400 | 5B | 192000 |
| | 525 | 138820 | 122980 | 103000 | 83700 | 51600 | 42000 | 54 | 45 | 1800 | 3800 | 400 | 5B | 192000 |
| | 623 | 124000 | 115000 | 98650 | 80130 | 49440 | 40500 | 42 | 45 | 1800 | 3800 | 400 | 5B | 192000 |

C

## 317 R

408

## 187860 Nm

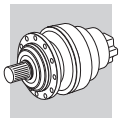
| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R3 | 49.8 | 108300 | 99090 | 80420 | 65330 | 40310 | 32760 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 64.9 | 134800 | 119290 | 96820 | 78650 | 48530 | 39440 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 78.1 | 151300 | 138800 | 115100 | 92600 | 55260 | 45000 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 83.3 | 165870 | 148000 | 120000 | 96000 | 58700 | 46960 | 150 | 90 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 100 | 170000 | 161770 | 134800 | 109200 | 65810 | 53480 | 150 | 90 | 1500 | 2500 | 2100 | 6G | 393000 |
| | 119 | 156150 | 134380 | 119950 | 118760 | 74300 | 60290 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 393000 |
| | 68.9 | 145590 | 110540 | 89790 | 72940 | 45010 | 36570 | 150 | 100 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 89.8 | 175270 | 133080 | 108100 | 87810 | 54180 | 44020 | 150 | 100 | 1500 | 2500 | 2600 | 6K | 393000 |
| | 108 | 137600 | 127510 | 123140 | 99980 | 61690 | 50120 | 150 | 100 | 1500 | 2500 | 2100 | 6G | 393000 |
| | 115 | 187860 | 158560 | 128730 | 104560 | 64520 | 52420 | 150 | 100 | 1500 | 2500 | 2100 | 6G | 393000 |
| | 139 | 167000 | 163960 | 146640 | 119060 | 73470 | 59690 | 150 | 100 | 1500 | 2500 | 1500 | 6E | 393000 |
| | 165 | 156150 | 134380 | 119950 | 118760 | 79850 | 64860 | 141 | 100 | 1500 | 2500 | 1100 | 6C | 393000 |
| R4 | 220 | 136030 | 110120 | 89450 | 72650 | 44830 | 36410 | 90 | 50 | 1800 | 3800 | 500 | 5C | 393000 |
| | 262 | 163270 | 124610 | 101220 | 82210 | 50730 | 41200 | 90 | 50 | 1800 | 3800 | 500 | 5C | 393000 |
| | 336 | 195330 | 148390 | 120530 | 97900 | 60410 | 49060 | 90 | 50 | 1800 | 3800 | 500 | 5C | 393000 |
| | 399 | 207070 | 167280 | 135880 | 110370 | 68100 | 55310 | 90 | 50 | 1800 | 3800 | 500 | 5C | 393000 |
| | 438 | 184310 | 171620 | 141110 | 114620 | 70720 | 57440 | 87 | 50 | 1800 | 3800 | 500 | 5C | 393000 |
| | 520 | 184310 | 171620 | 141110 | 114620 | 70720 | 57440 | 73 | 50 | 1800 | 3800 | 400 | 5B | 393000 |
| | 626 | 155000 | 155000 | 144000 | 117000 | 72000 | 59000 | 53 | 50 | 1800 | 3800 | 400 | 5B | 393000 |
| | 677 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 53 | 50 | 1800 | 3800 | 400 | 5B | 393000 |
| | 803 | 170000 | 163960 | 154050 | 131030 | 80850 | 65670 | 45 | 50 | 1800 | 3800 | 400 | 5B | 393000 |
| | 953 | 156150 | 134380 | 119950 | 118760 | 79850 | 64860 | 32 | 50 | 1800 | 3800 | 400 | 5B | 393000 |

## 318 R

418

## 280580 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min$^{-1}$] | [min$^{-1}$] | [Nm] | | [Nm] |
| R4 | 225 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 500000 |
| | 288 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 150 | 90 | 1500 | 2500 | 1500 | 6E | 500000 |
| | 342 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 130 | 90 | 1500 | 2500 | 1100 | 6C | 500000 |
| | 362 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 123 | 90 | 1500 | 2500 | 1100 | 6C | 500000 |
| | 430 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 103 | 90 | 1500 | 2500 | 850 | 6B | 500000 |
| | 499 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 87 | 90 | 1500 | 2500 | 850 | 6B | 500000 |
| | 311 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 143 | 110 | 1500 | 2500 | 1100 | 6C | 500000 |



## 318 R

418

## 280580 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R4 | 399 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 111 | 110 | 1500 | 2500 | 850 | 6B | 500000 |
| | 474 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 94 | 110 | 1500 | 2500 | 850 | 6B | 500000 |
| | 501 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 89 | 110 | 1500 | 2500 | 850 | 6B | 500000 |
| | 595 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 75 | 110 | 1500 | 2500 | 850 | 6B | 500000 |
| | 691 | 280580 | 262990 | 218310 | 177320 | 109410 | 88870 | 63 | 110 | 1500 | 2500 | 850 | 6B | 500000 |

## 319 R

428

## 403720 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R4 | 249 | 390680 | 296370 | 240760 | 195590 | 120710 | 98100 | 150 | 95 | 1500 | 2500 | 2100 | 6G | 680000 |
| | 320 | 403720 | 345000 | 283900 | 226500 | 136700 | 112800 | 150 | 95 | 1500 | 2500 | 1500 | 6E | 680000 |
| | 379 | 403720 | 348000 | 284000 | 231000 | 142000 | 116000 | 150 | 95 | 1500 | 2500 | 1500 | 6E | 680000 |
| | 401 | 389910 | 348000 | 286000 | 233000 | 144000 | 117000 | 150 | 95 | 1500 | 2500 | 1500 | 6E | 680000 |
| | 475 | 367580 | 317580 | 270690 | 248000 | 153000 | 124000 | 127 | 95 | 1500 | 2500 | 1100 | 6C | 680000 |
| | 563 | 367580 | 317580 | 270690 | 248000 | 153000 | 124000 | 107 | 95 | 1500 | 2500 | 850 | 6B | 680000 |
| | 655 | 359690 | 317560 | 267610 | 220000 | 136000 | 110000 | 92 | 95 | 1500 | 2500 | 850 | 6B | 680000 |
| | 345 | 403720 | 306690 | 249110 | 202340 | 124850 | 101410 | 150 | 115 | 1500 | 2500 | 1100 | 6C | 680000 |
| | 442 | 403720 | 306690 | 249110 | 202340 | 124850 | 101410 | 140 | 115 | 1500 | 2500 | 1100 | 6C | 680000 |
| | 525 | 403720 | 306690 | 249110 | 202340 | 124850 | 101410 | 118 | 115 | 1500 | 2500 | 1100 | 6C | 680000 |
| | 555 | 389910 | 313000 | 257800 | 208700 | 128900 | 105600 | 112 | 115 | 1500 | 2500 | 850 | 6B | 680000 |
| | 657 | 367580 | 317580 | 270690 | 232200 | 145100 | 119000 | 92 | 115 | 1500 | 2500 | 850 | 6B | 680000 |
| | 780 | 367580 | 317580 | 270690 | 248000 | 153000 | 124000 | 77 | 115 | 1500 | 2500 | 850 | 6B | 680000 |
| | 906 | 359690 | 317560 | 267610 | 220000 | 136000 | 110000 | 67 | 115 | 1500 | 2500 | 850 | 6B | 680000 |

## 321 R

438

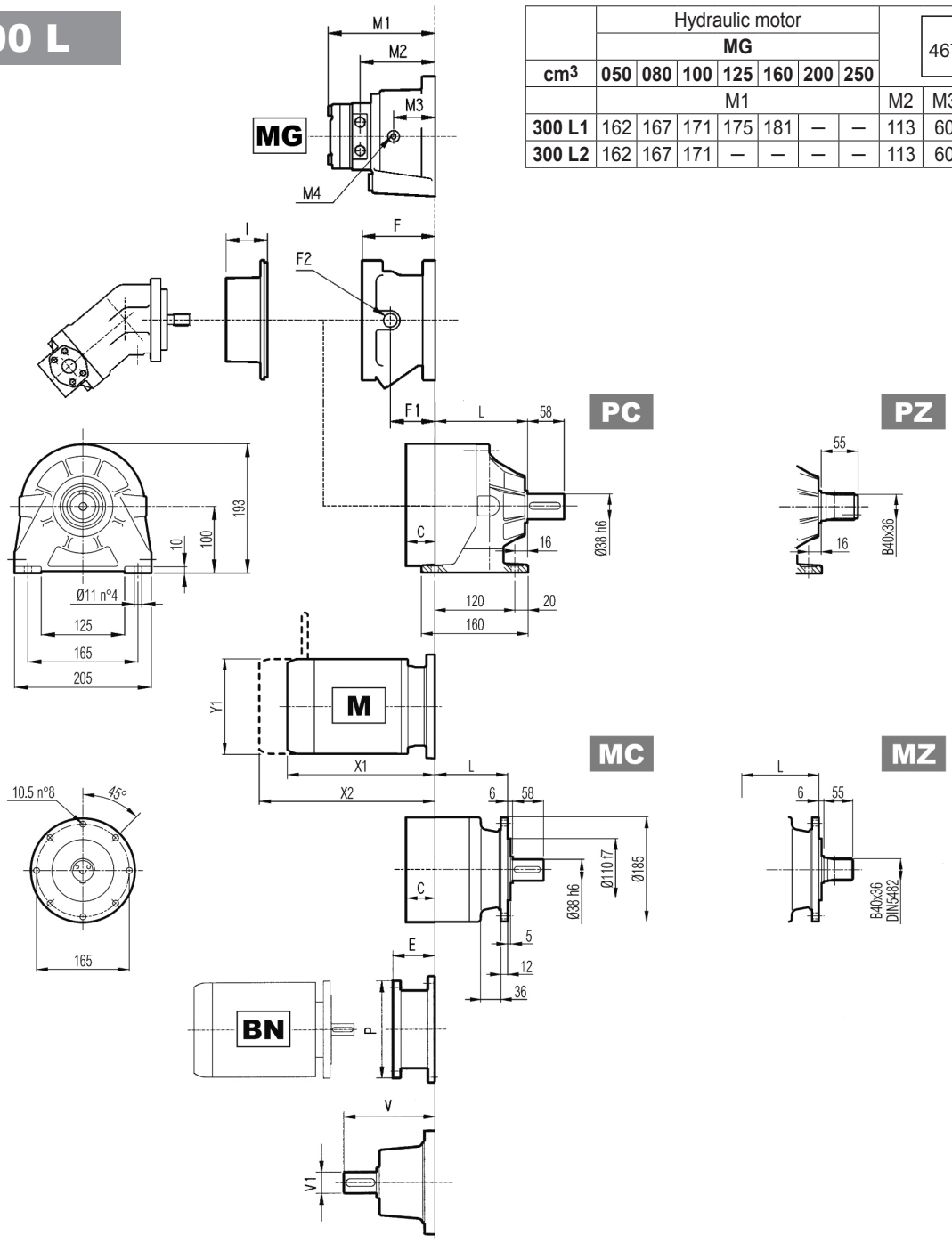
## 655200 Nm

| | i | $M_{n2}$ [Nm] | | | | | | $P_1$ | Pt | $n_1$ | $n_{1max}$ | $M_b$ | | $M_{2max}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | $n_2 \cdot h$ | | | | | | | |
| | 1: | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 | [kW] | [kW] | [min-1] | [min-1] | [Nm] | | [Nm] |
| R4 | 221 | 374000 | 281300 | 226400 | 181800 | 111130 | 90320 | 150 | 105 | 1500 | 2500 | 2600 | 6K | 934000 |
| | 288 | 447500 | 340100 | 268500 | 216800 | 133790 | 108740 | 150 | 105 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 347 | 506300 | 377100 | 307000 | 247800 | 152340 | 123900 | 150 | 105 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 370 | 528500 | 402100 | 317800 | 264200 | 159330 | 129500 | 150 | 105 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 446 | 587310 | 445420 | 366500 | 293970 | 181430 | 147460 | 150 | 105 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 529 | 536350 | 503040 | 410200 | 331430 | 204550 | 166260 | 150 | 105 | 1500 | 2500 | 1500 | 6E | 934000 |
| | 306 | 401340 | 304660 | 247480 | 201030 | 124050 | 100790 | 150 | 125 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 399 | 483180 | 366770 | 297930 | 242020 | 149350 | 121350 | 150 | 125 | 1500 | 2500 | 2100 | 6G | 934000 |
| | 481 | 550170 | 417600 | 339230 | 275560 | 170050 | 138170 | 132 | 125 | 1500 | 2500 | 1100 | 6C | 934000 |
| | 512 | 575410 | 436760 | 354790 | 288200 | 177850 | 144510 | 125 | 125 | 1500 | 2500 | 1100 | 6C | 934000 |
| | 617 | 655200 | 497290 | 403960 | 328150 | 202500 | 164540 | 120 | 125 | 1500 | 2500 | 1100 | 6C | 934000 |
| | 732 | 536360 | 517290 | 420170 | 341290 | 210580 | 171050 | 113 | 125 | 1500 | 2500 | 850 | 6B | 934000 |

C

## 26 DIMENSIONES

# 300 L

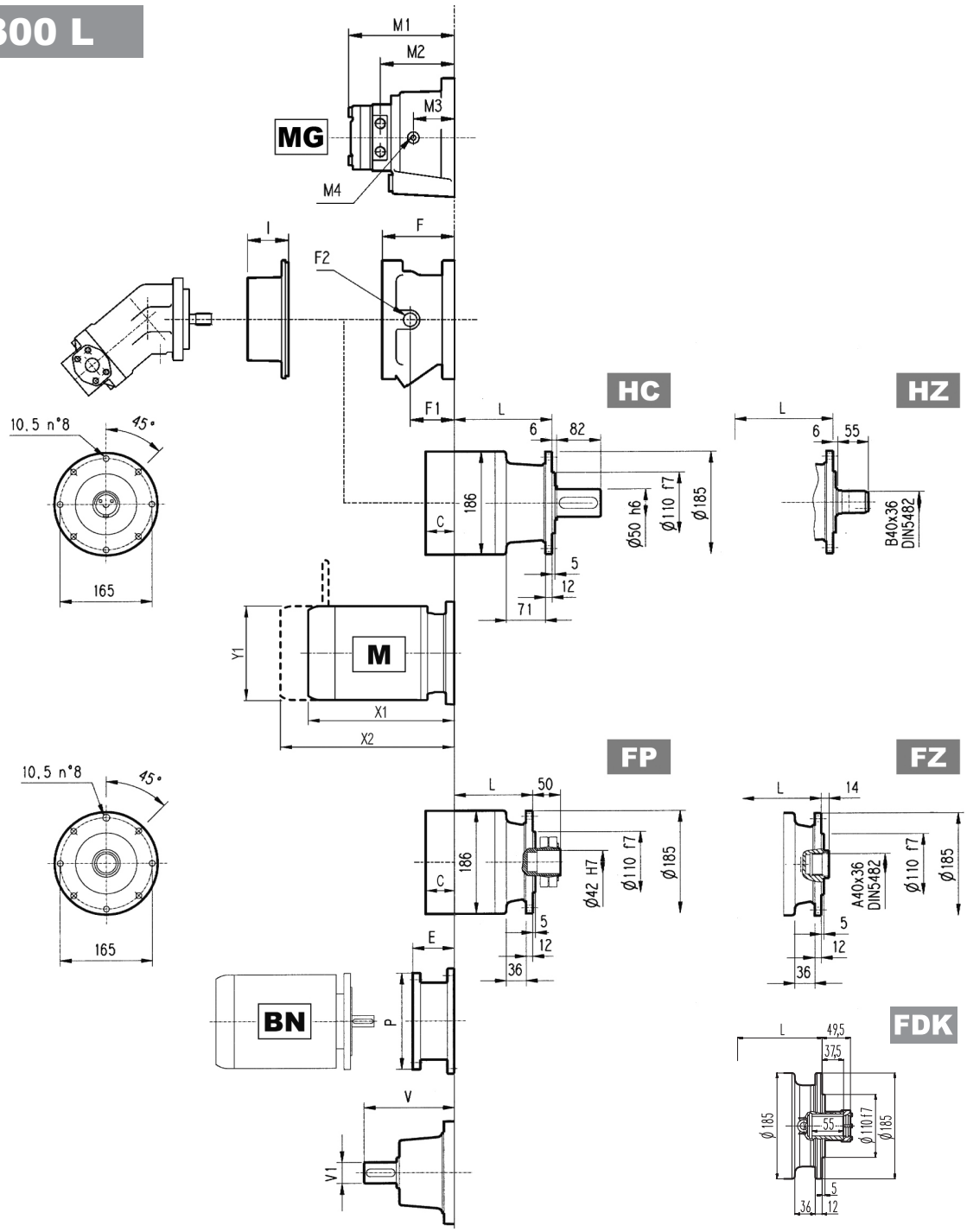



| | Hydraulic motor MG | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 300 L1 | 162 | 167 | 171 | 175 | 181 | – | – | 113 | 60 | 1/4G | 14 |
| 300 L2 | 162 | 167 | 171 | – | – | – | – | 113 | 60 | 1/4G | 14 |

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 300 L1 | 80 | 86 | 115 | 80 | 18 | 23 | 20 | 16 |
| 300 L2 | 133 | 139 | 168 | 133 | 22 | 27 | 24 | 20 |
| 300 L3 | 186 | 192 | 221 | 186 | 26 | 31 | 28 | 24 |
| 300 L4 | 239 | 245 | 274 | 239 | 30 | 35 | 32 | 28 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 300 L1 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |
| 300 L2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 300 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 300 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 300 L



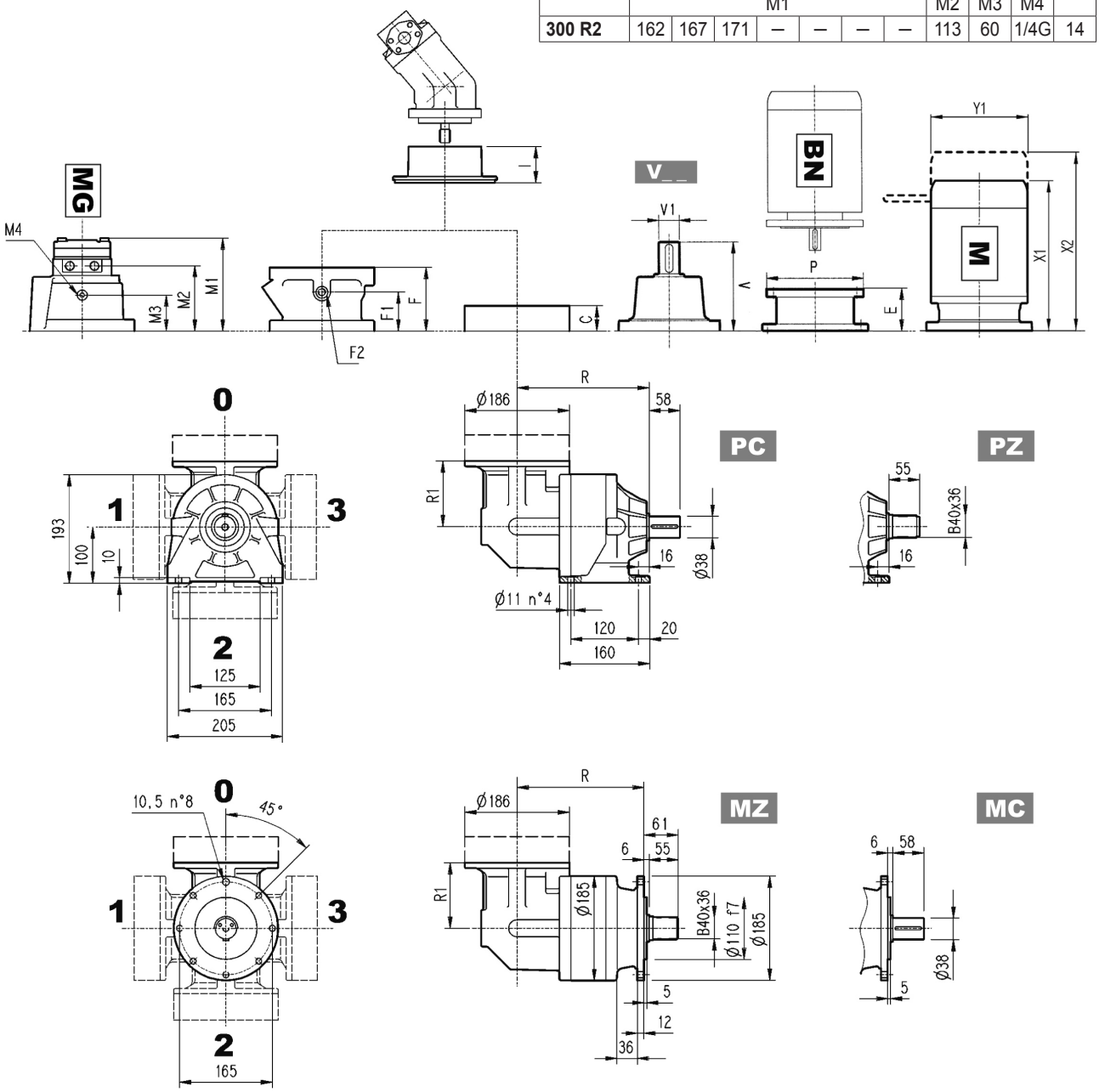

**FP** $M_{2max}$ = 1300 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **300 L1** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **300 L2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **300 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **300 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **300 L1** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **300 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **300 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **300 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |

# 300 R

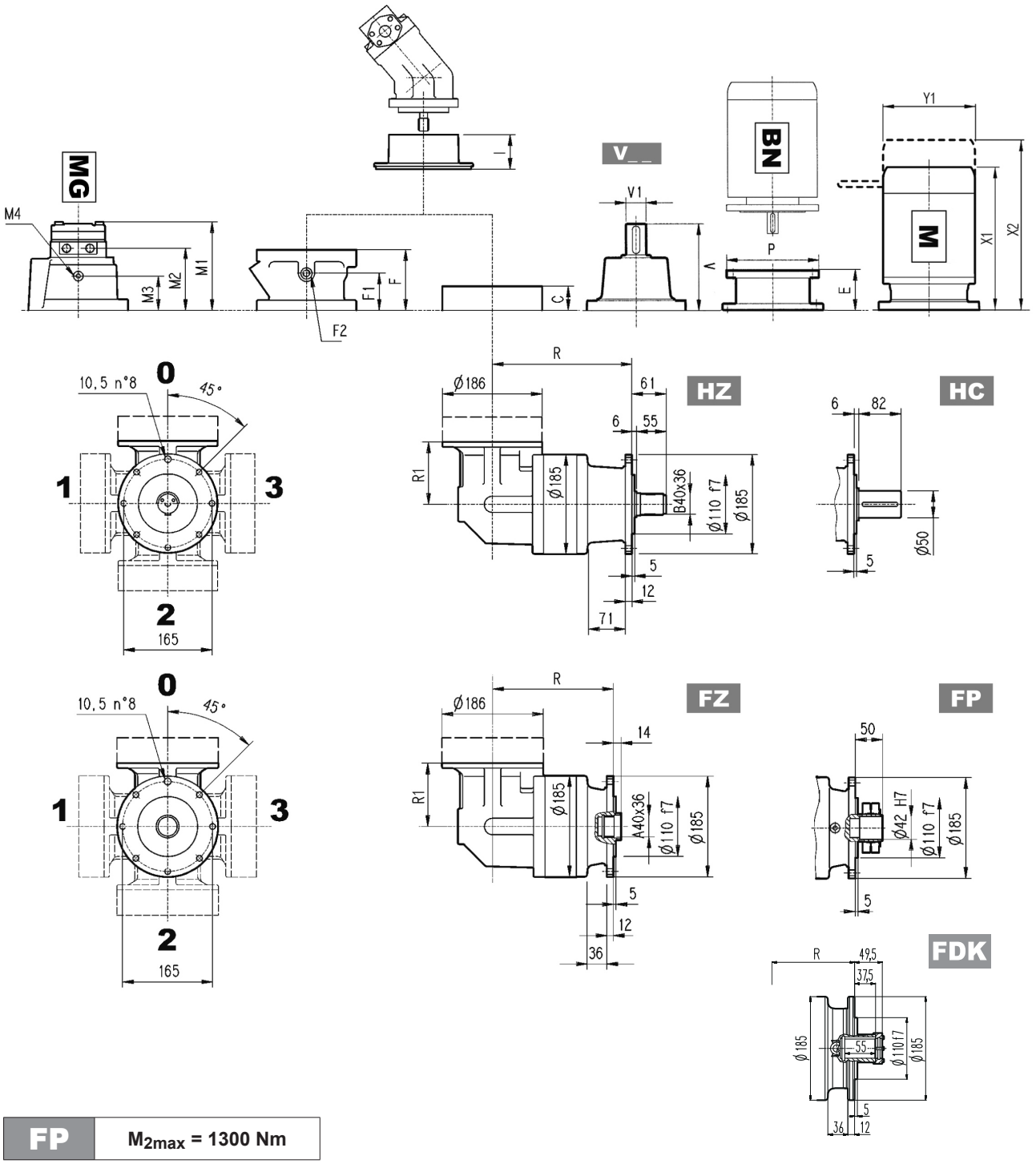
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 300 R2 | 162 | 167 | 171 | – | – | – | – | 113 | 60 | 1/4G | 14 |




| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 300 R2 | 172 | 178 | 207 | 172 | 122 | 32 | 37 | 34 | 30 |
| 300 R3 | 225 | 231 | 260 | 225 | 122 | 36 | 41 | 38 | 34 |
| 300 R4 | 278 | 284 | 313 | 278 | 122 | 40 | 45 | 42 | 38 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 300 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 300 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 300 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

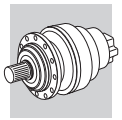
# 300 R



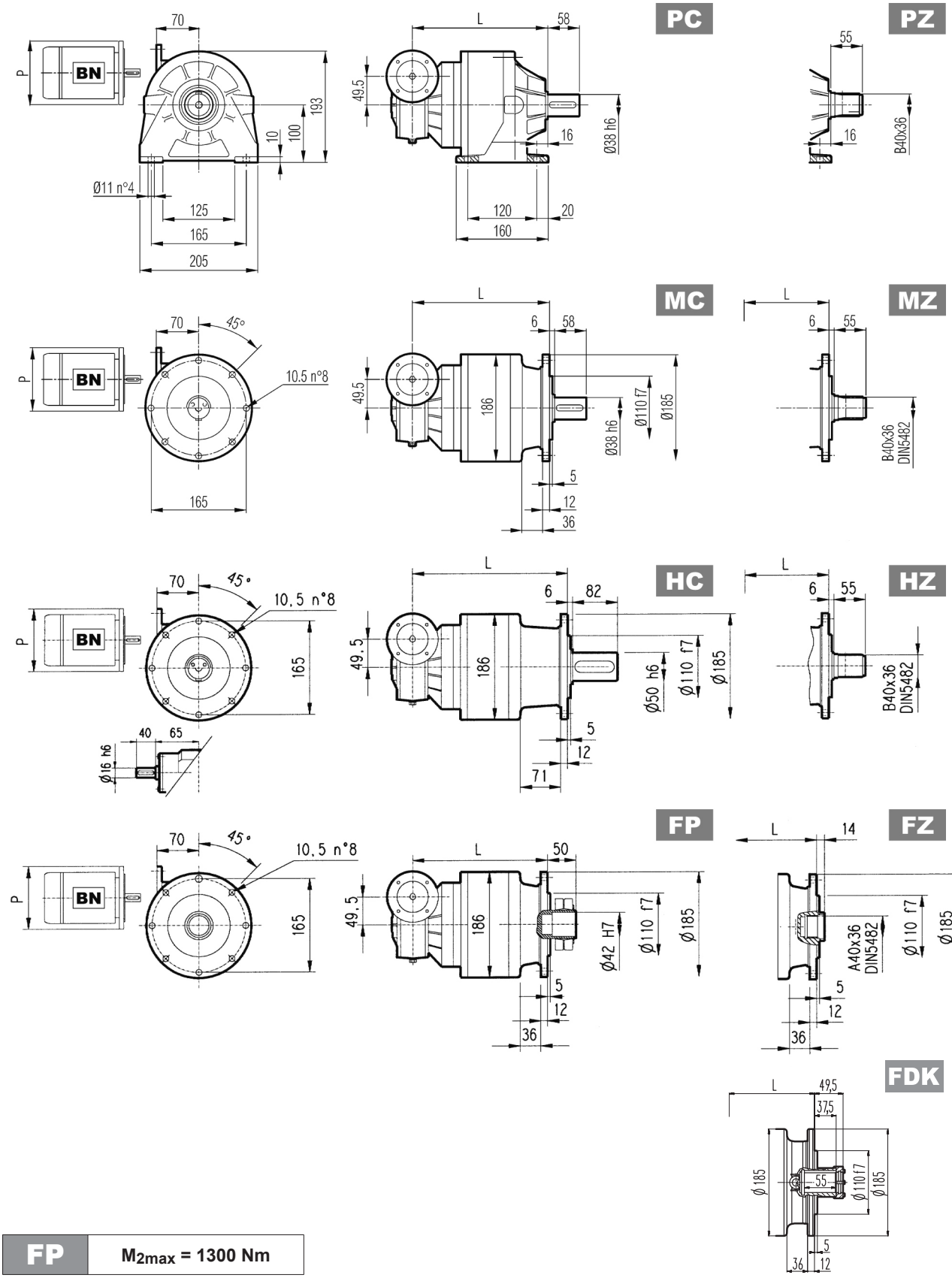

**FP** $M_{2max}$ = 1300 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **300 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **300 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **300 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **300 R2** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **300 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | – | – | – |
| **300 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | – | – | – | – | – | – |



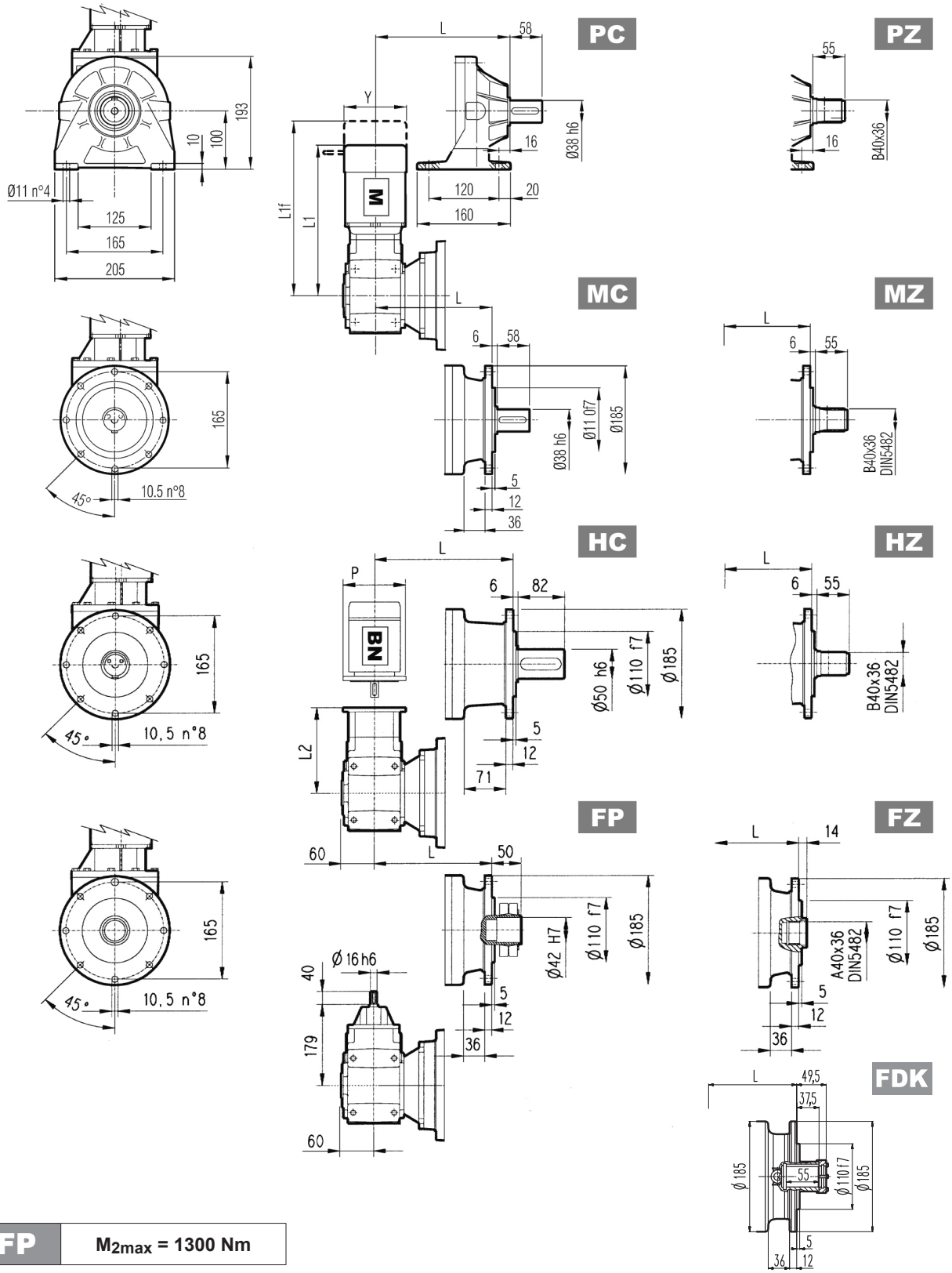
# 3/V 00 L3




**FP** $M_{2max}$ = 1300 Nm

| | L | | | | Kg | | | | P63 | P71 | P80 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P |
| 3/V 00 L3 | 255 | 261 | 290 | 255 | 25 | 30 | 27 | 23 | 140 | 160 | 200 |

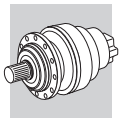
# 3/A 00 L2




| FP | $M_{2max}$ = 1300 Nm |
|---|---|

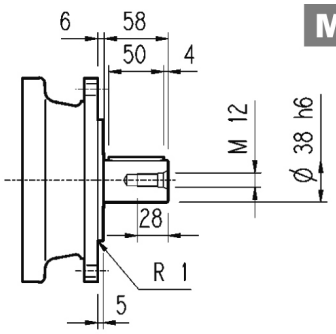
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 00 L2 | 193 | 199 | 228 | 193 | 38 | 43 | 40 | 36 |

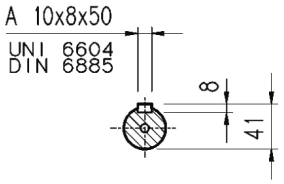
| | P63 | | P71 | | P80 | | P90 | | P100 | | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 00 L2 | 212.5 | 140 | 212.5 | 160 | 232 | 200 | 232 | 200 | 242 | 250 | 368 | 428 | 138 | 394 | 466 | 156 | 439 | 535 | 195 | 470 | 563 | 195 |



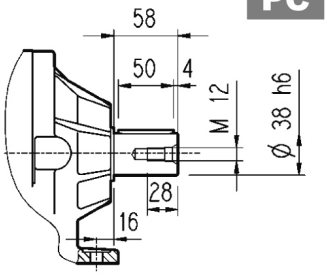
# 300 L | 300 R | 3/V 00 L3 | 3/A 00 L2

## MC

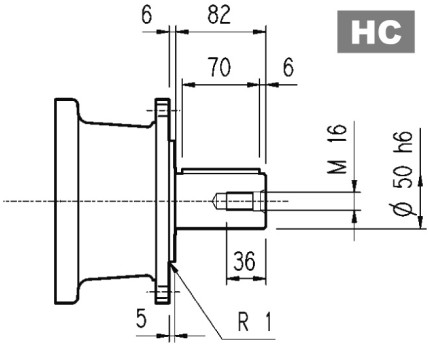


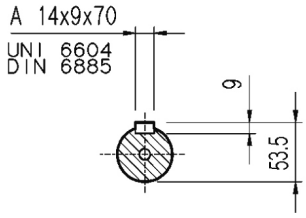




## PC

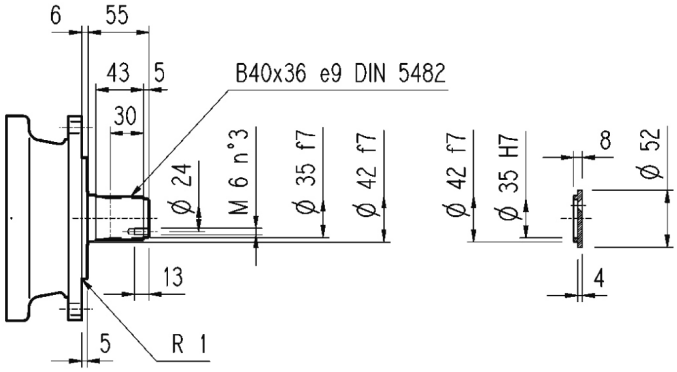



## HC

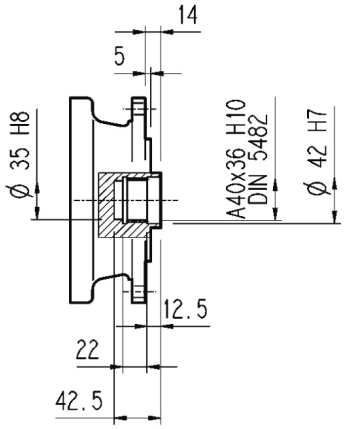


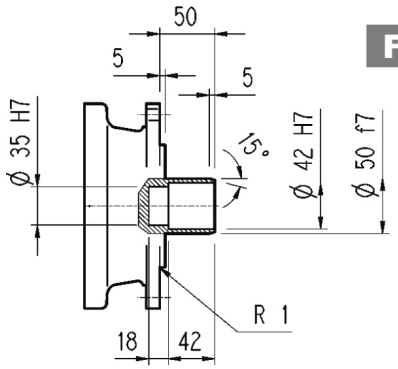

## MZ | HZ

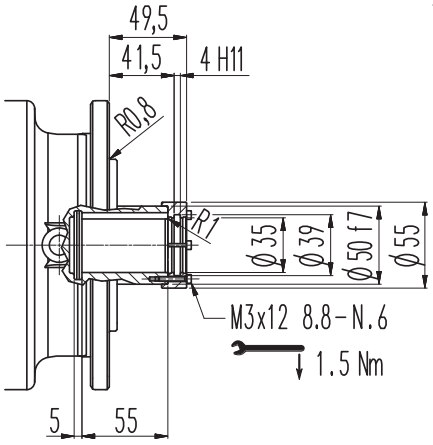



## FZ

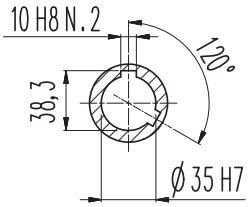



## FP



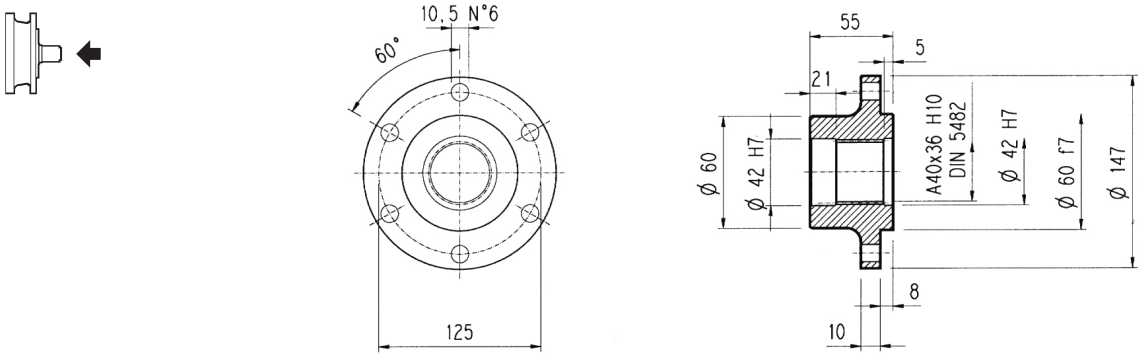

## FDK




| FP | $M_{2max}$ = 1300 Nm |
|---|---|

## Brida

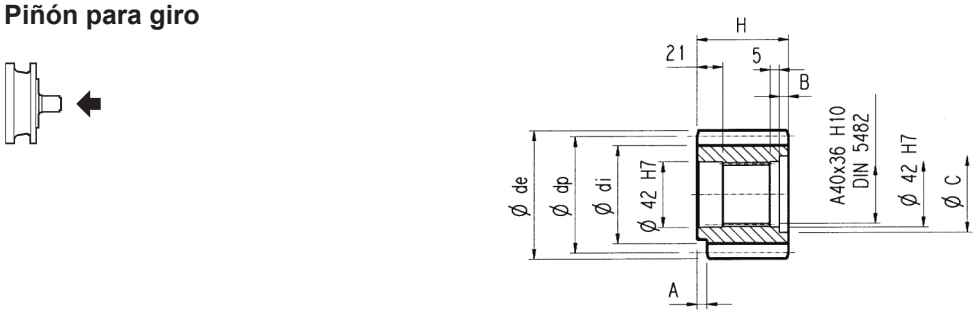
W0A




Material: Acero C40

## Piñón para giro

P...

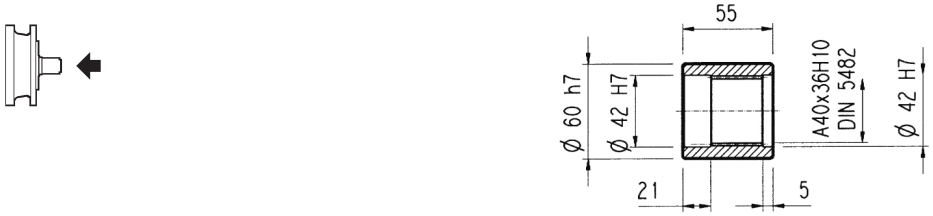



$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PBE** | 4.5 | 14 | 0.507 | 63 | 56 | 75.5 | 55 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PCE** | 5 | 14 | 0.500 | 70 | 62.5 | 84.8 | 65 | — | 10 | 53 | |
| **PDC** | 6 | 12 | 0.250 | 72 | 61 | 84.8 | 59 | 14 | 4 | 54 | |
| **PDE** | 6 | 14 | 0.500 | 84 | 73 | 99.6 | 65 | — | 10 | 54 | |

## Manguito cilíndrico

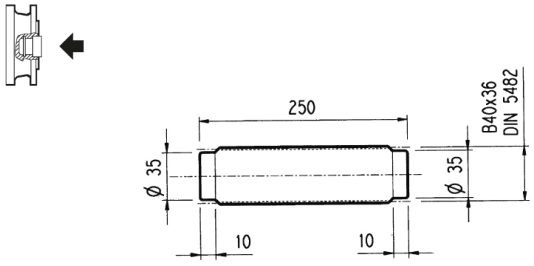
M0A




Material: Acero 16CrNi4

## Barra estriada

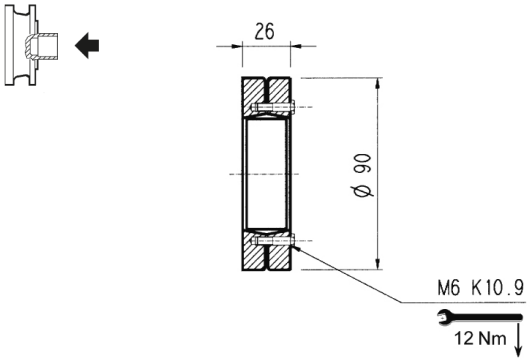
B0A

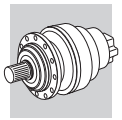



Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

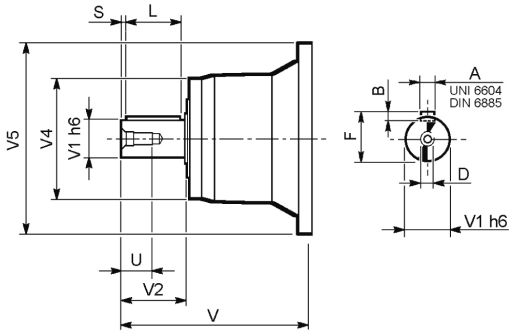
## Aro cónico de apriete

G0A



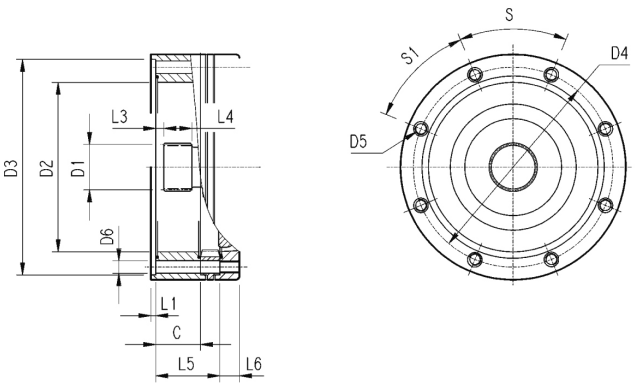


## 300 L 300 R



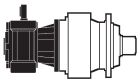

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **300 L1** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **300 L2** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **300 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **300 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **300 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

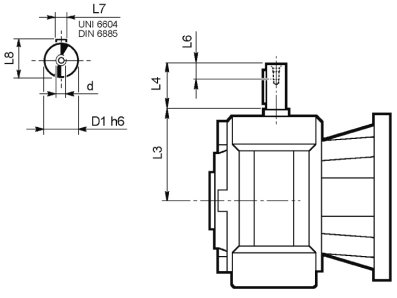
## 300 L 300 R




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **300 L1** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 53 | 18 | 45° | 45° | A |
| **300 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 106 | 18 | 45° | 45° | A |
| **300 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 159 | 18 | 45° | 45° | A |
| **300 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 212 | 18 | 45° | 45° | A |
| **300 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

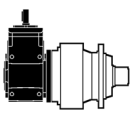
## 3/V 00 L3

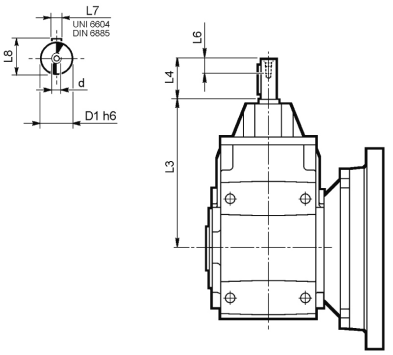





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 00 L3_HS** | 16 | 65 | 40 | 16 | 5 | 18 | M6 |

## 3/A 00 L2

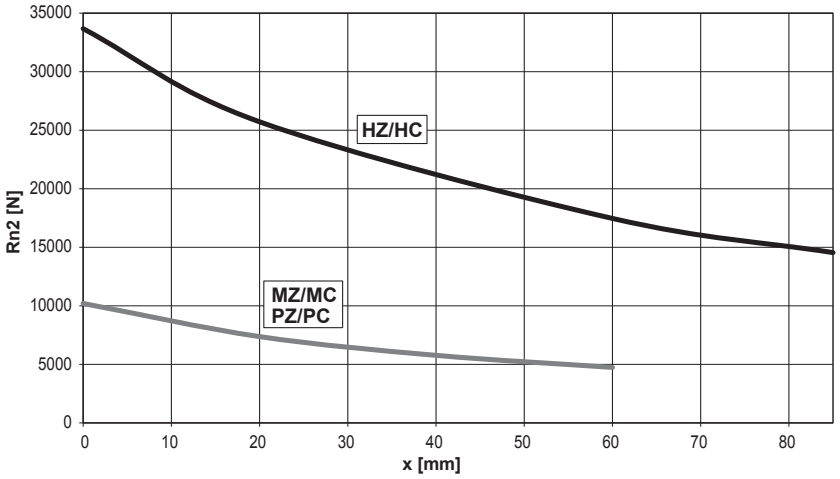


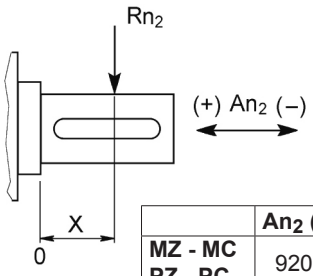



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 00 L2_HS** | 16 | 179 | 40 | 16 | 5 | 18 | M6 |

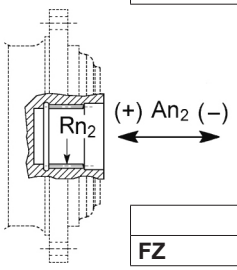
# 300 L | 300 R | 3/V 00 L3 | 3/A 00 L2

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



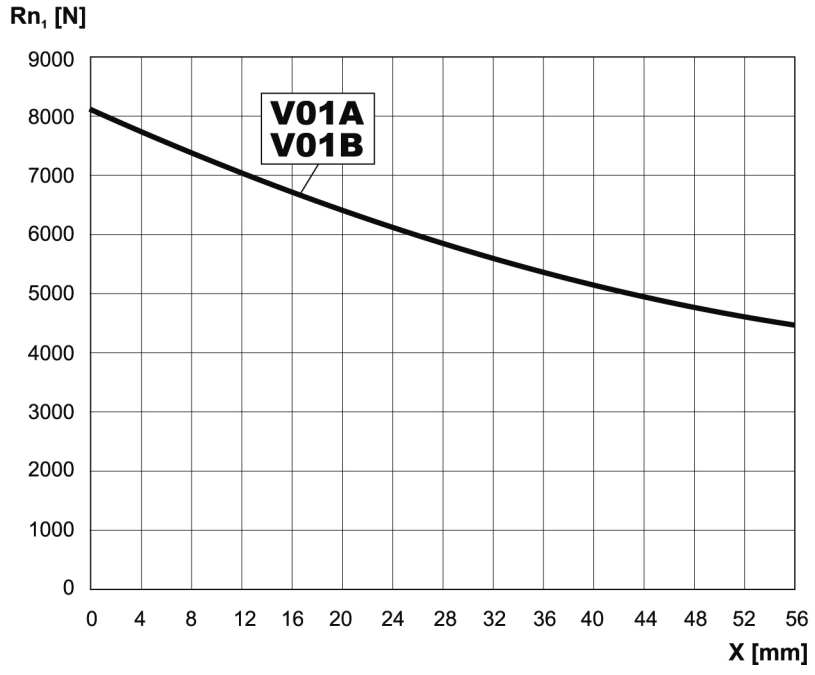

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC<br>PZ - PC | 9200 | 6900 |
| HZ - HC | 20000 | 20000 |

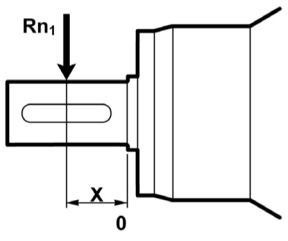



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 3713 | 3713 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC - PZ - PC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC | **1.27** | **1.27** | **1.26** | **1.00** | **0.62** | **0.50** |

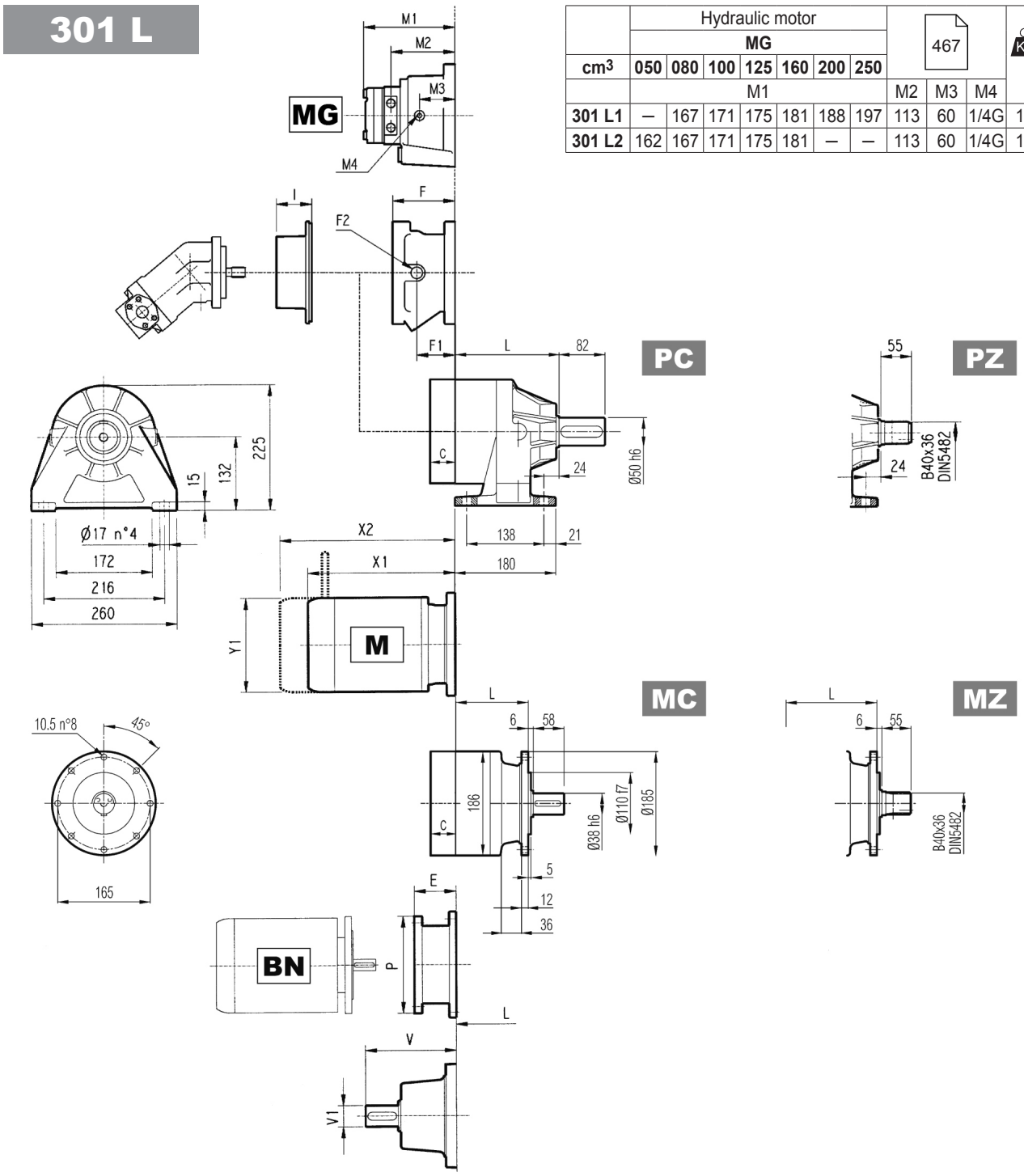
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 301 L

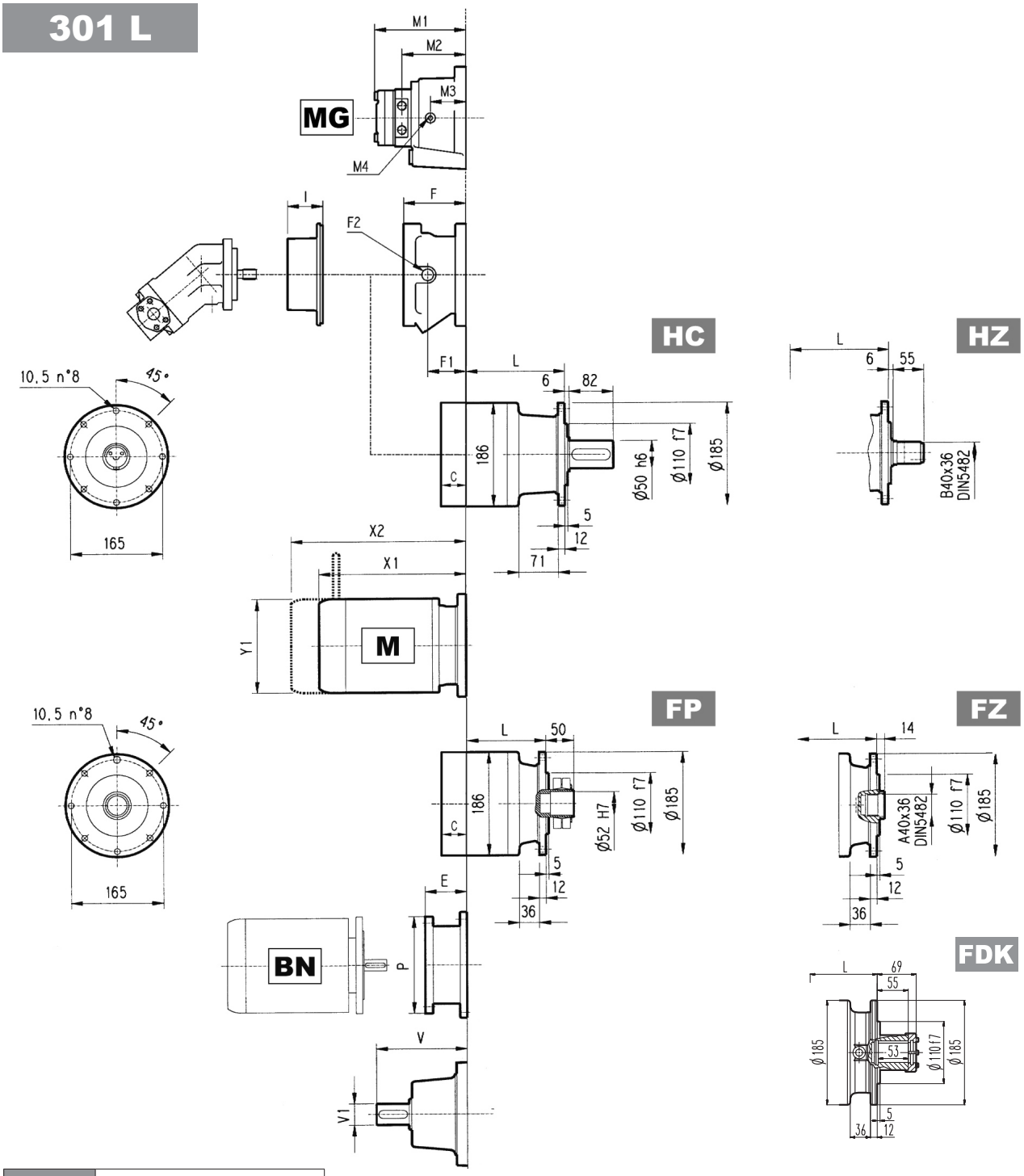



| | Hydraulic motor MG | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 301 L1 | – | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 1/4G | 14 |
| 301 L2 | 162 | 167 | 171 | 175 | 181 | – | – | 113 | 60 | 1/4G | 14 |

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 301 L1 | 92 | 132 | 126 | 92 | 21 | 26 | 23 | 19 |
| 301 L2 | 145 | 185 | 176 | 145 | 25 | 30 | 27 | 23 |
| 301 L3 | 198 | 238 | 232 | 198 | 29 | 34 | 31 | 27 |
| 301 L4 | 251 | 291 | 285 | 251 | 33 | 38 | 35 | 31 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 301 L1 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |
| 301 L2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 301 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 301 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 301 L



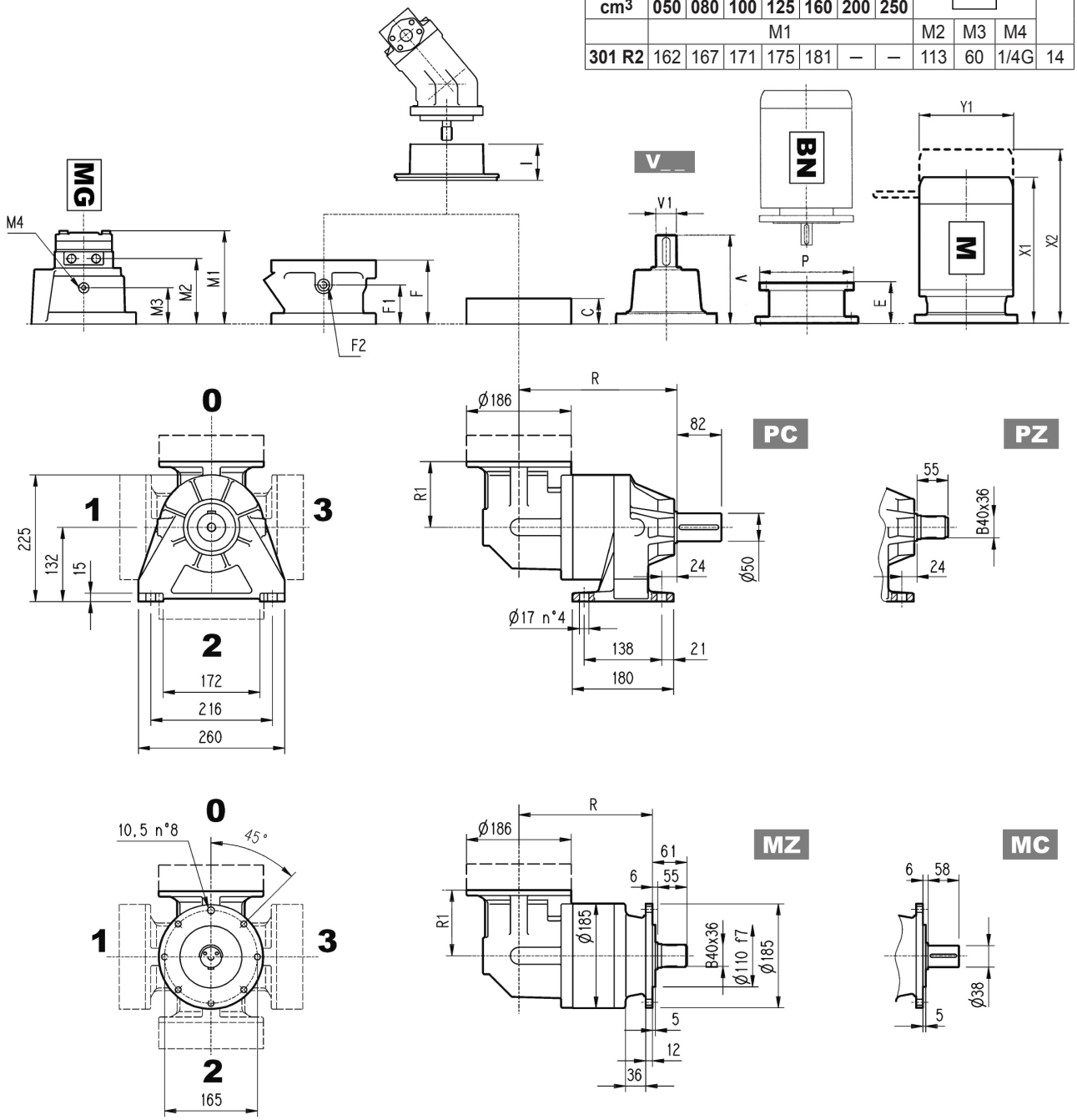

**FP** $M_{2max}$ = 2400 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **301 L1** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **301 L2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **301 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **301 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **301 L1** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **301 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **301 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |
| **301 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 |

# 301 R

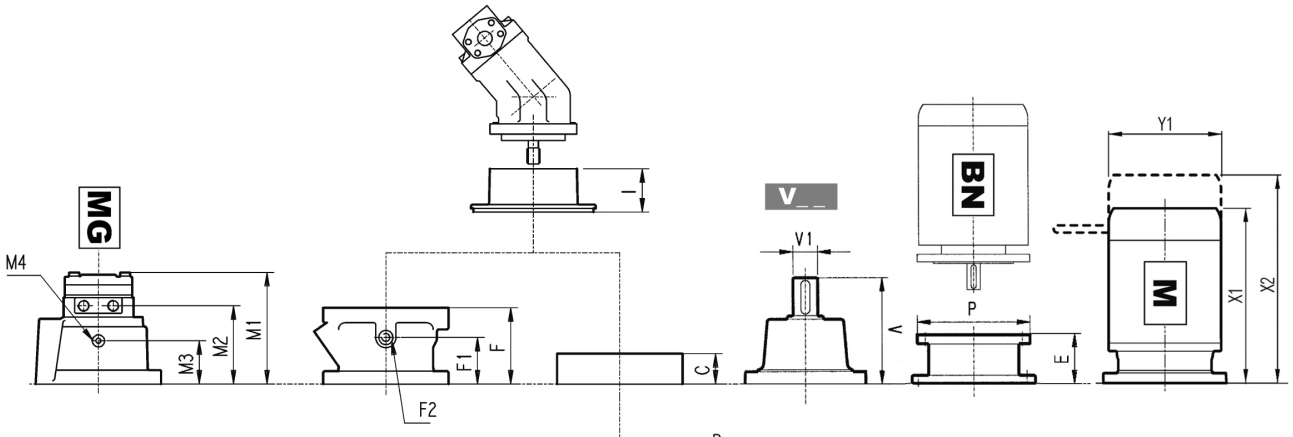
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 301 R2 | 162 | 167 | 171 | 175 | 181 | – | – | 113 | 60 | 1/4G | 14 |

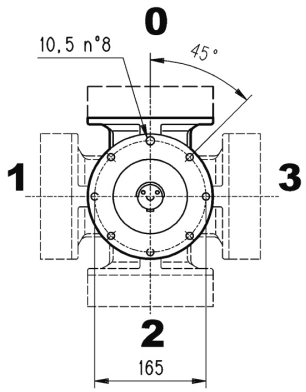


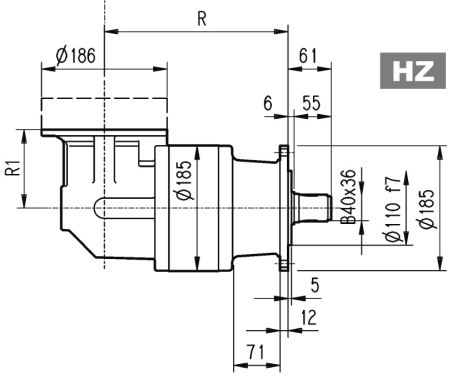

| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 301 R2 | 184 | 225 | 219 | 184 | 122 | 35 | 42 | 37 | 33 |
| 301 R3 | 237 | 278 | 272 | 237 | 122 | 39 | 46 | 41 | 37 |
| 301 R4 | 290 | 331 | 325 | 290 | 122 | 43 | 50 | 45 | 41 |

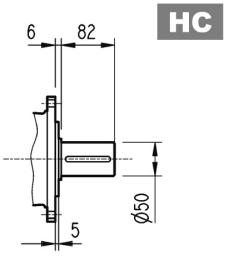
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 301 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 301 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 301 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

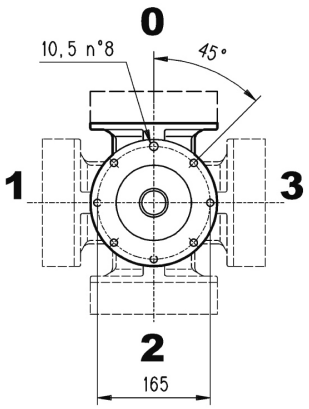
# 301 R

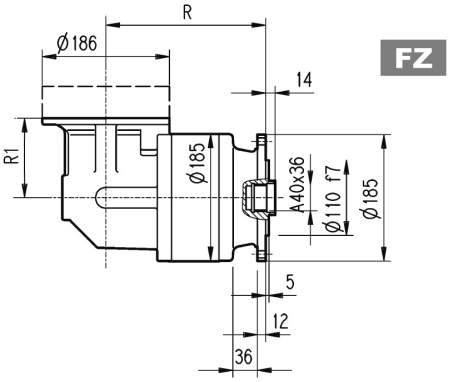


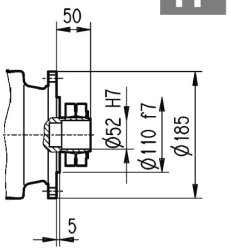



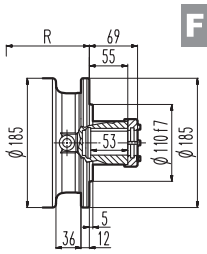



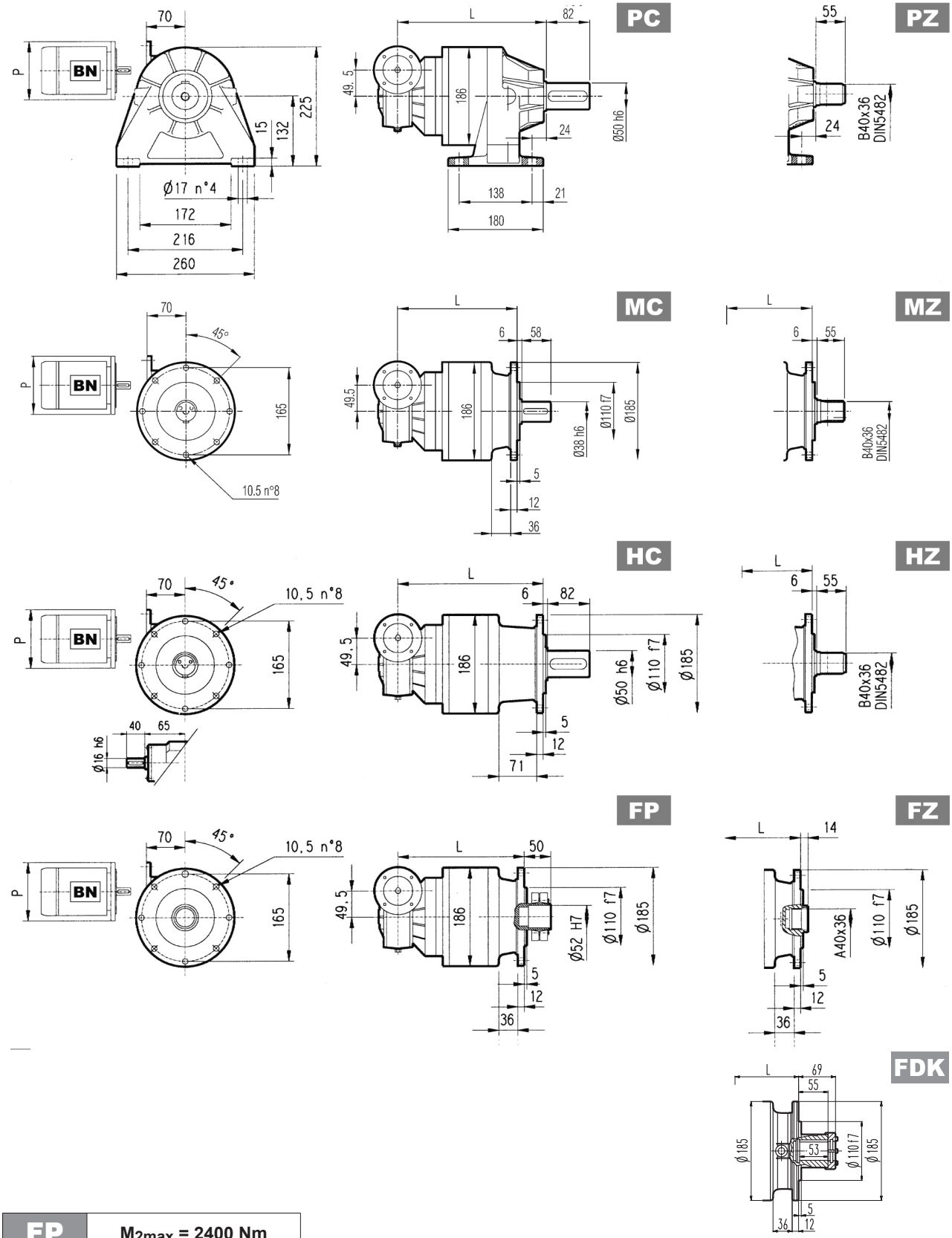




**FP** $M_{2max}$ = 2400 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **301 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **301 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **301 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **301 R2** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **301 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |
| **301 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | — | — | — | — | — | — |

# 3/V 01 L3




**FP** $M_{2max}$ = 2400 Nm

| | L | | | | Kg | | | | P63 | P71 | P80 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P |
| 3/V 01 L3 | 267 | 308 | 302 | 267 | 28 | 35 | 30 | 26 | 140 | 160 | 200 |



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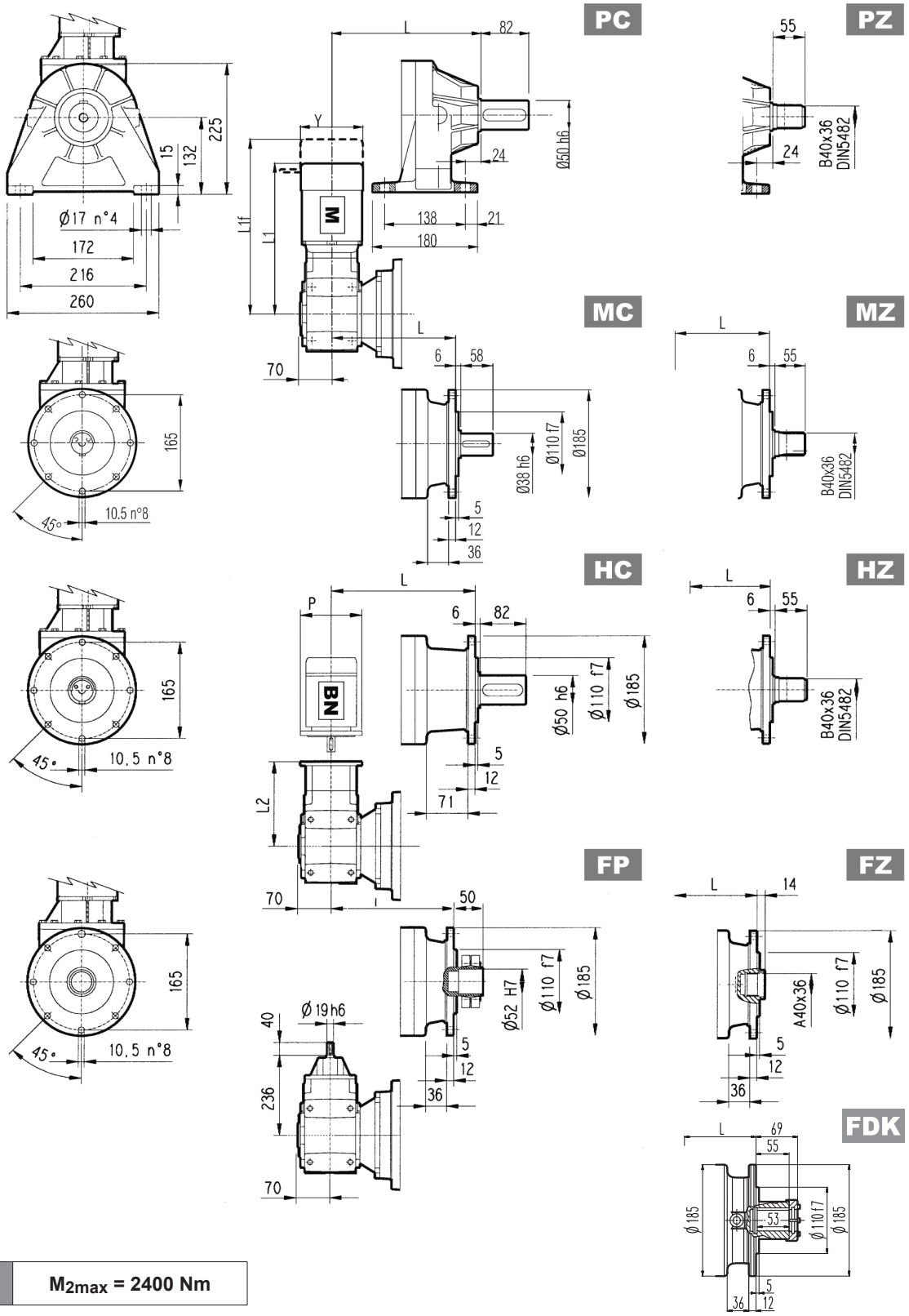
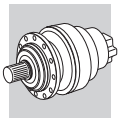
# 3/A 01 L2




**FP** $M_{2max}$ = 2400 Nm

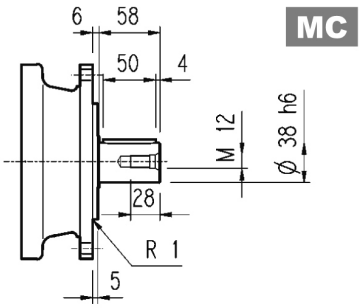
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 01 L2 | 202 | 208 | 237 | 202 | 40 | 46 | 43 | 40 |

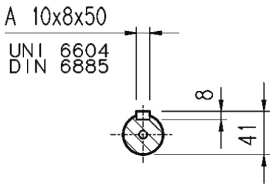
| | P63 | | P71 | | P80 | | P90 | | P100 | | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 01 L2 | 226 | 140 | 226 | 160 | 245.5 | 200 | 245.5 | 200 | 255.5 | 250 | 382 | 442 | 138 | 408 | 480 | 156 | 453 | 549 | 195 | 484 | 577 | 195 |



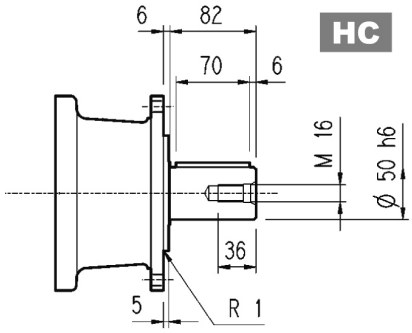
# 301 L | 301 R | 3/V 01 L3 | 3/A 01 L2

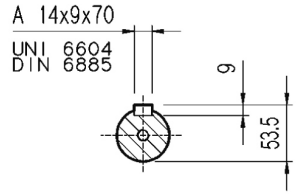
## MC



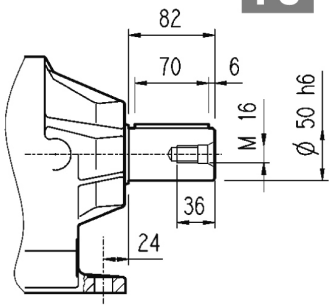




## HC

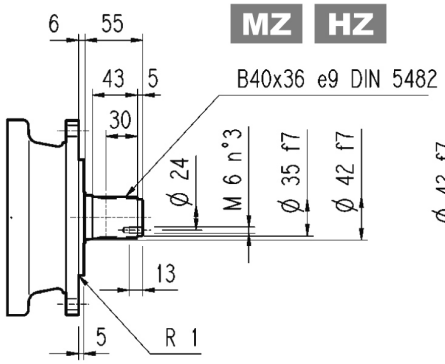


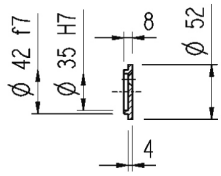




## PC

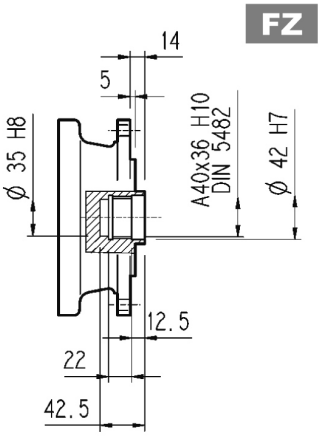



## MZ | HZ

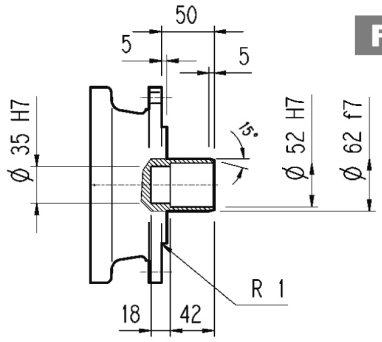


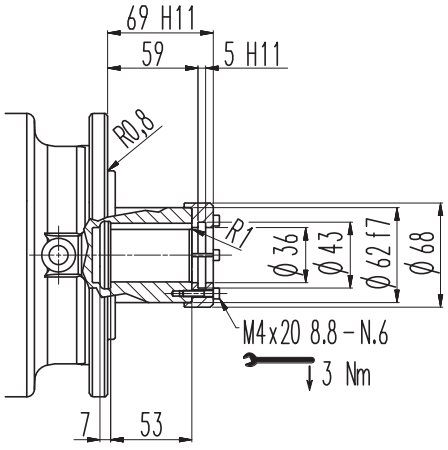




## FZ

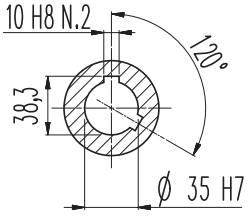



## FP



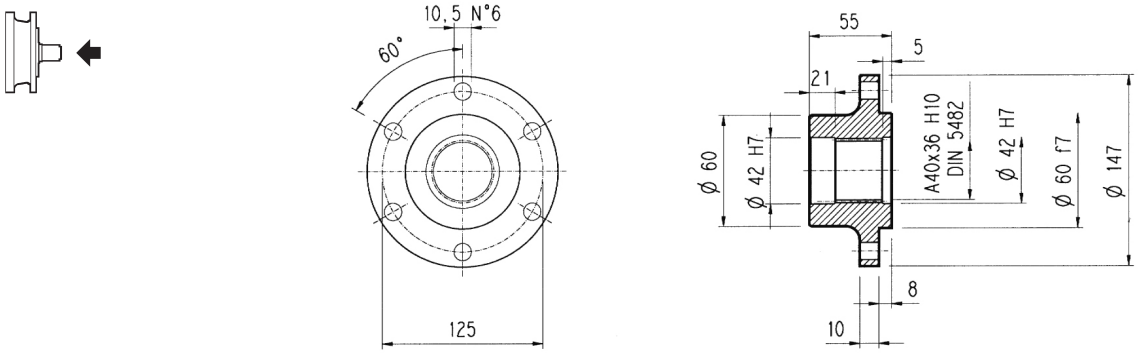

## FDK




| FP | $M_{2max}$ = 2400 Nm |
|---|---|

## Brida

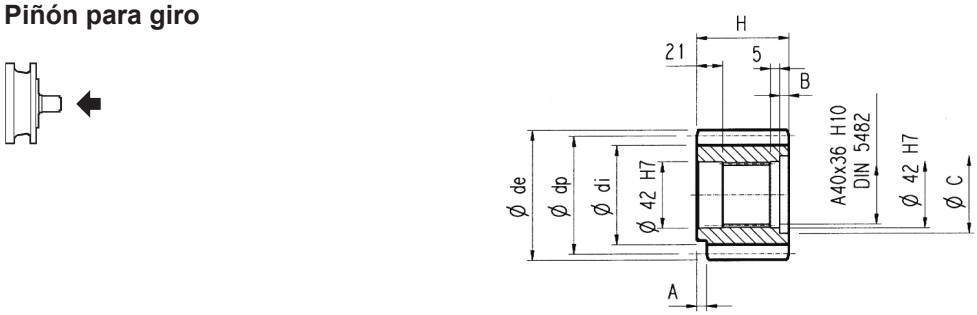
W0A




Material: Acero C40

## Piñón para giro

P...

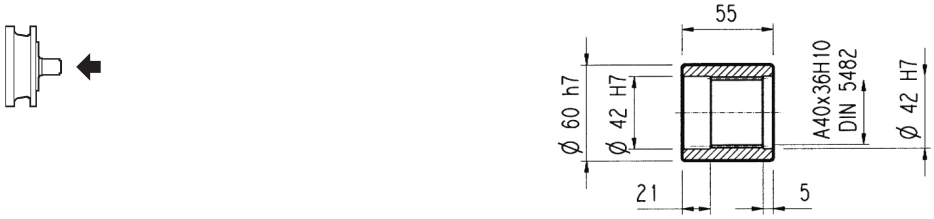



$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PBE** | 4.5 | 14 | 0.507 | 63 | 56 | 75.5 | 55 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PCE** | 5 | 14 | 0.500 | 70 | 62.5 | 84.8 | 65 | — | 10 | 53 | |
| **PDC** | 6 | 12 | 0.250 | 72 | 61 | 84.8 | 59 | 14 | 4 | 54 | |
| **PDE** | 6 | 14 | 0.500 | 84 | 73 | 99.6 | 65 | — | 10 | 54 | |

## Manguito cilíndrico

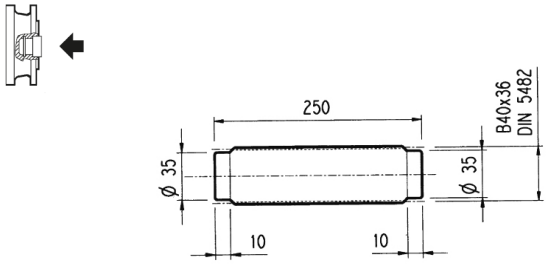
M0A




Material: Acero 16CrNi4

## Barra estriada

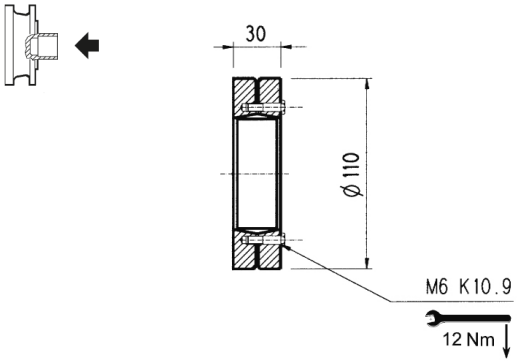
B0A

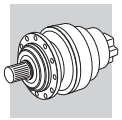



Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

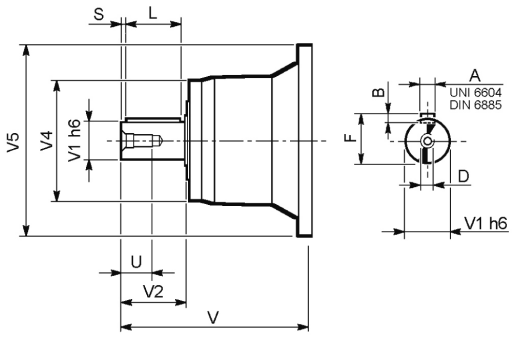
## Aro cónico de apriete

G0A



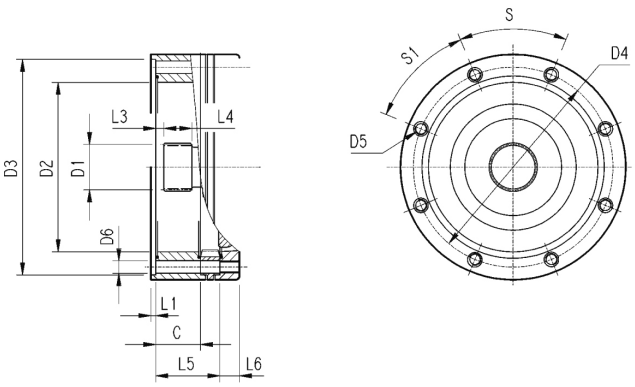


## 301 L 301 R



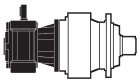

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **301 L1** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **301 L2** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **301 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **301 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **301 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

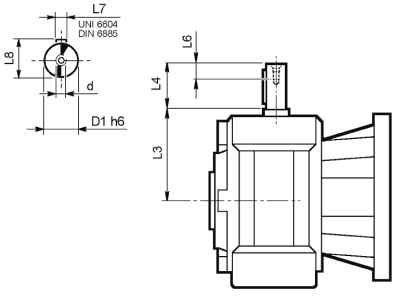
## 301 L 301 R




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **301 L1** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| **301 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 118 | 18 | 45° | 45° | A |
| **301 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 171 | 18 | 45° | 45° | A |
| **301 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 224 | 18 | 45° | 45° | A |
| **301 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

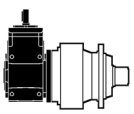
## 3/V 01 L3

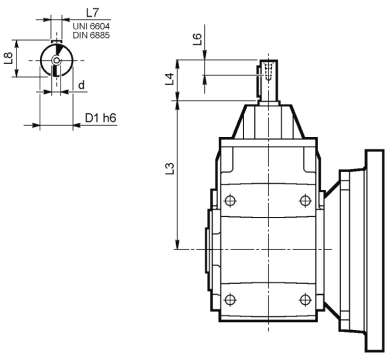





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 01 L3_HS** | 16 | 65 | 40 | 16 | 5 | 18 | M6 |

## 3/A 01 L2






| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 01 L2_HS** | 19 | 235.5 | 40 | 16 | 6 | 21.5 | M6 |



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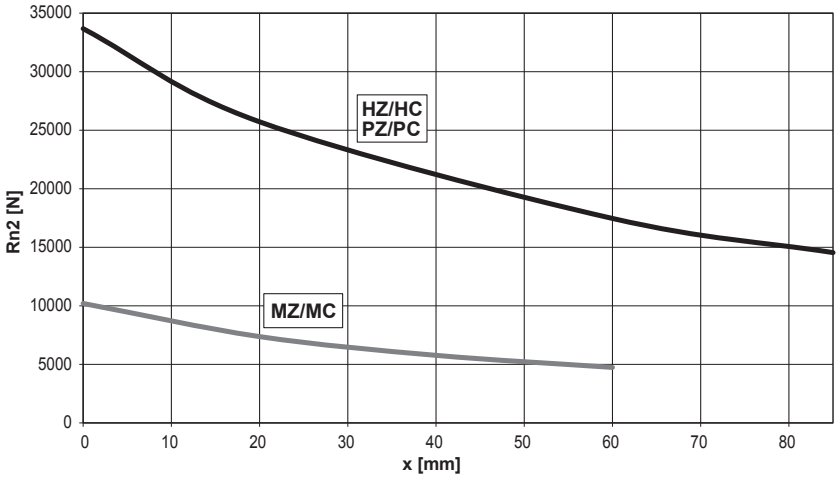
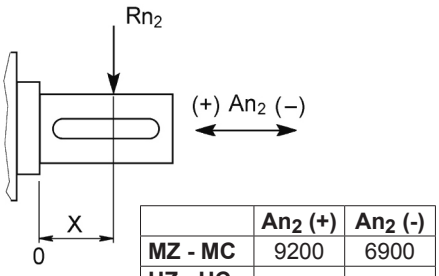
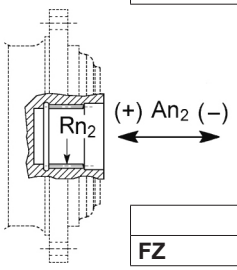
Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



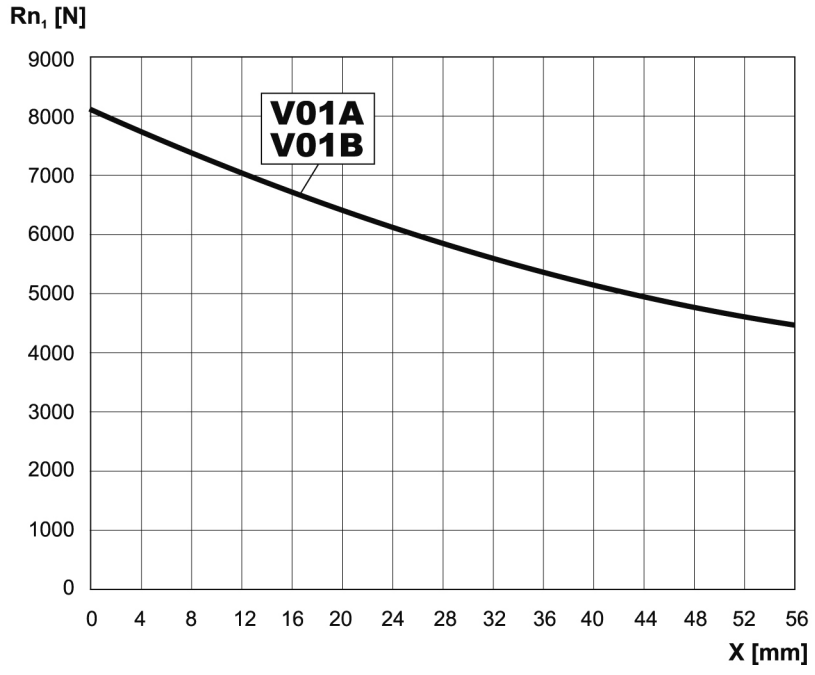

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 9200 | 6900 |
| HZ - HC PZ - PC | 20000 | 20000 |

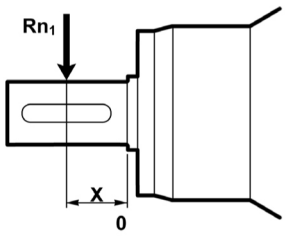



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 3713 | 3713 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.27** | **1.27** | **1.26** | **1.00** | **0.62** | **0.50** |

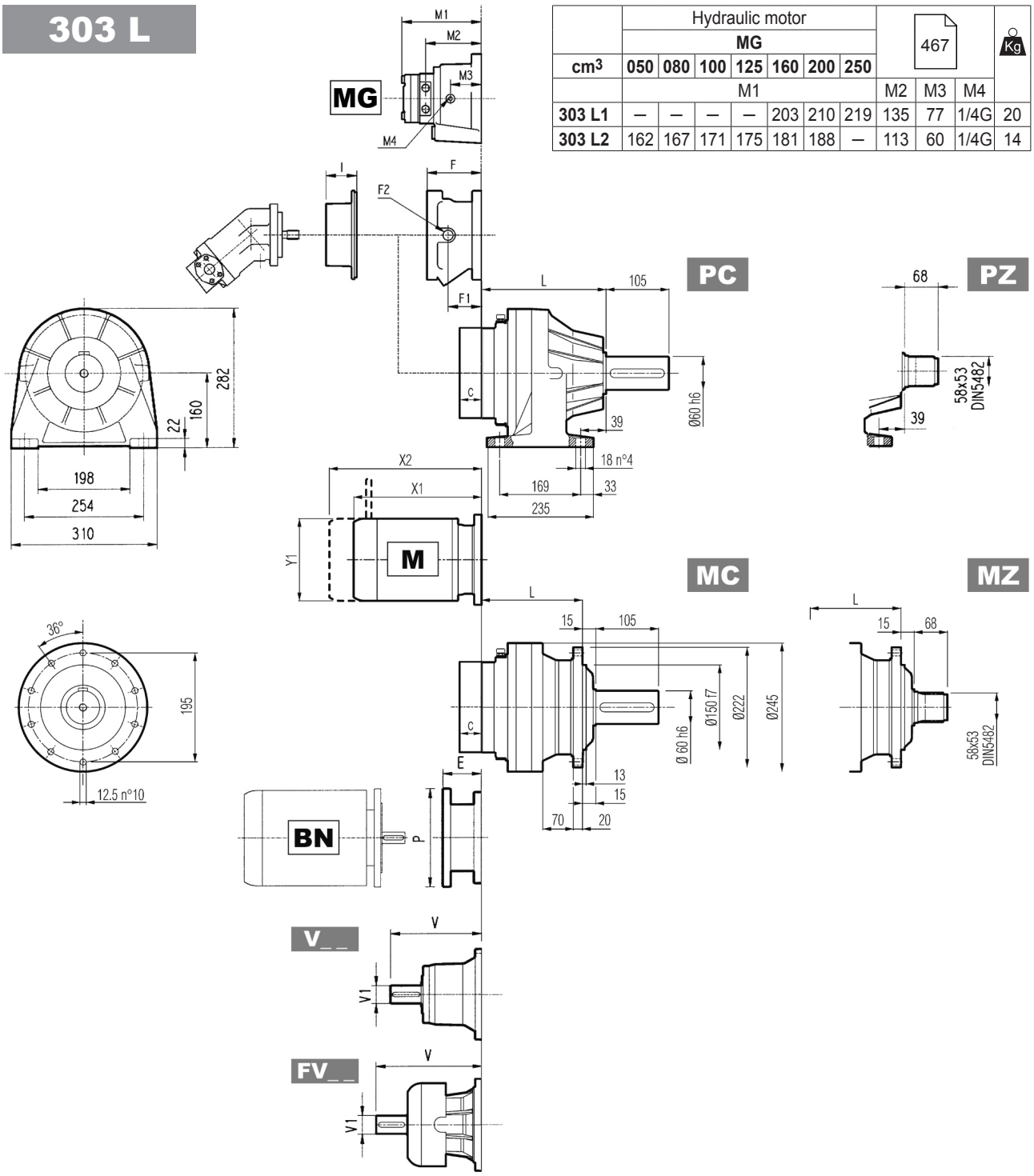
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 303 L

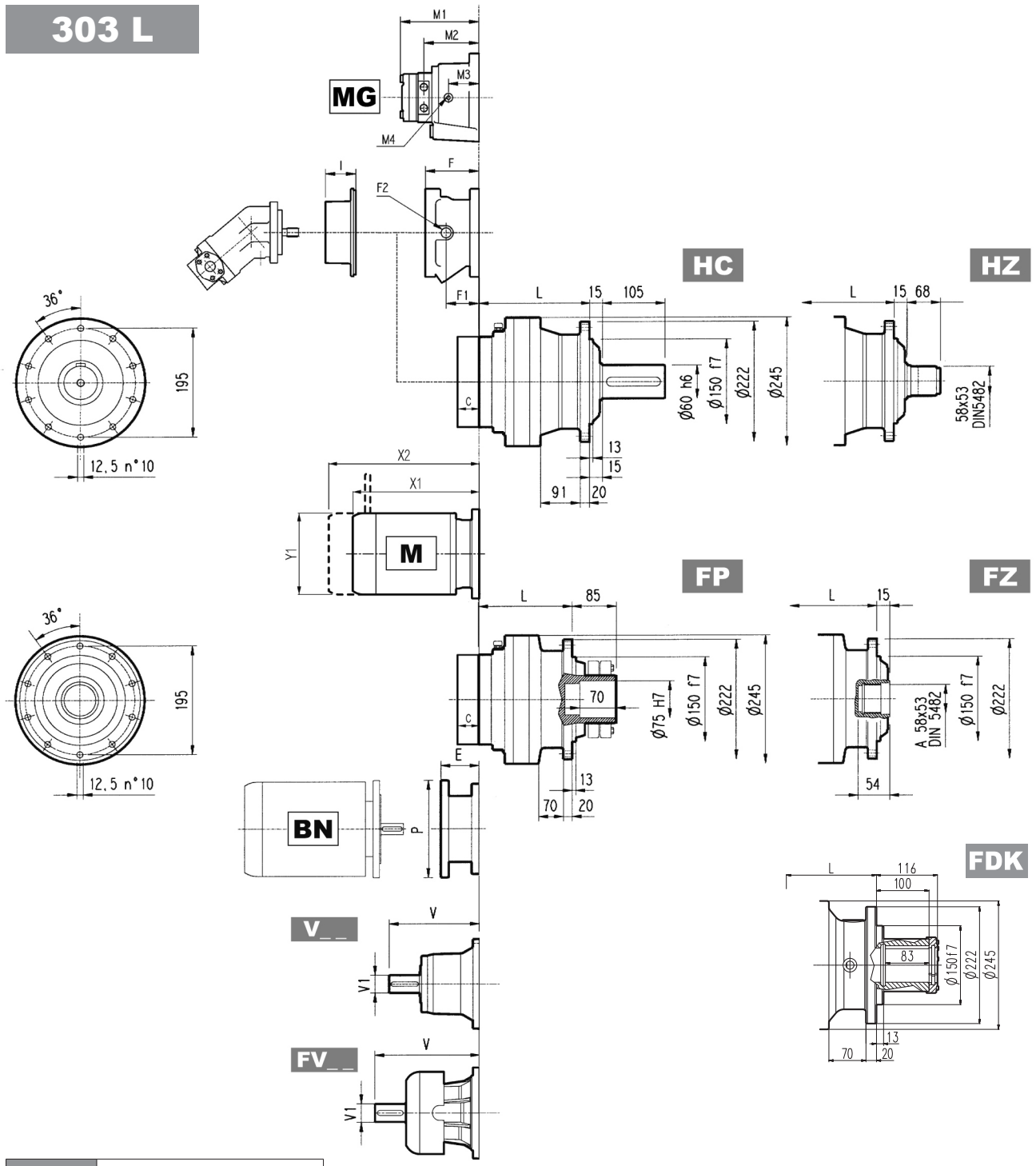



| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 303 L1 | — | — | — | — | 203 | 210 | 219 | 135 | 77 | 1/4G | 20 |
| 303 L2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 303 L1 | 125 | 165 | 150 | 125 | 31 | 40 | 35 | 31 |
| 303 L2 | 178 | 218 | 203 | 178 | 35 | 44 | 39 | 35 |
| 303 L3 | 231 | 271 | 256 | 231 | 39 | 48 | 43 | 39 |
| 303 L4 | 284 | 324 | 309 | 284 | 43 | 52 | 47 | 43 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 303 L1 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| 303 L2 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 303 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |
| 303 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 303 L



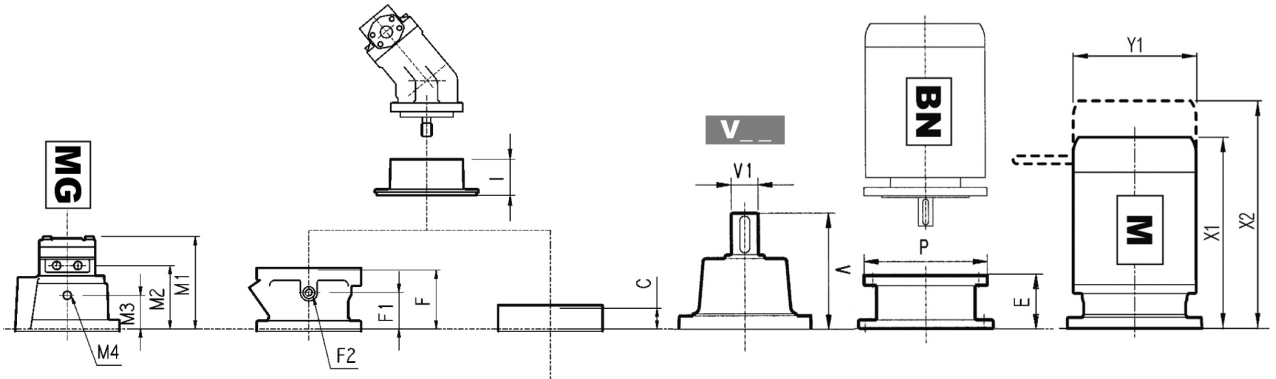

**FP** $M_{2max}$ = 5200 Nm

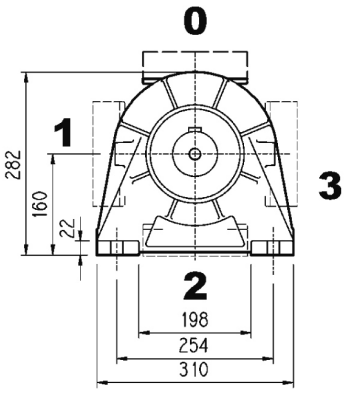
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **303 L1** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **303 L2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **303 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **303 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **303 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **303 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **303 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **303 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

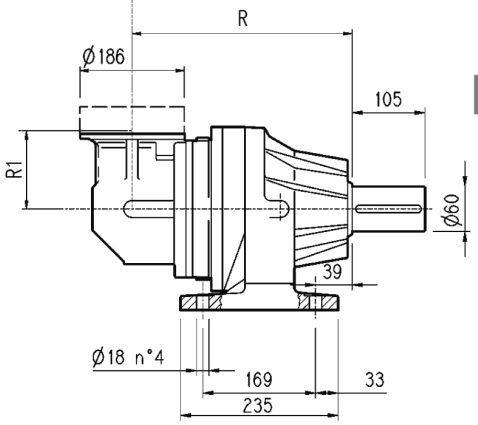
# 303 R

| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 303 R2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |

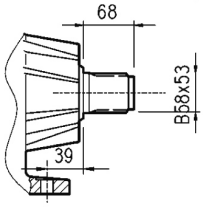


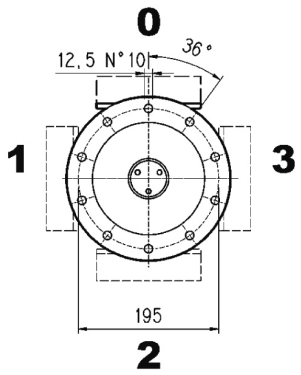




PC

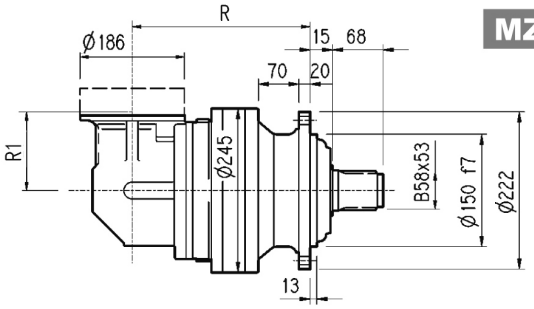



PZ

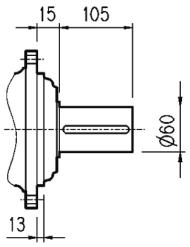



MZ



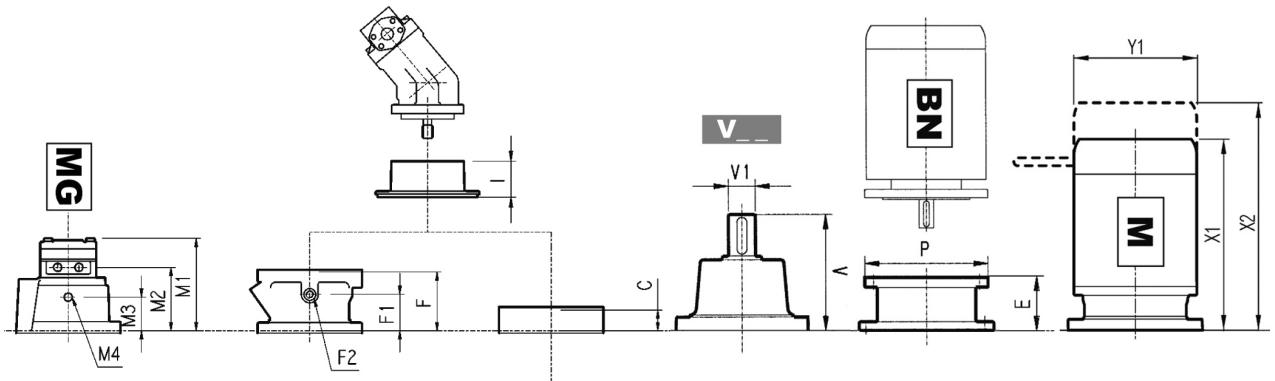

MC

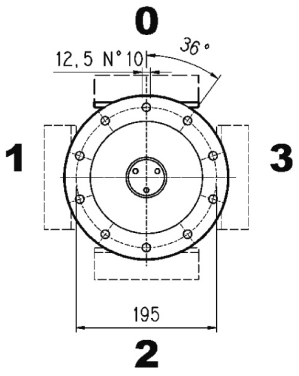


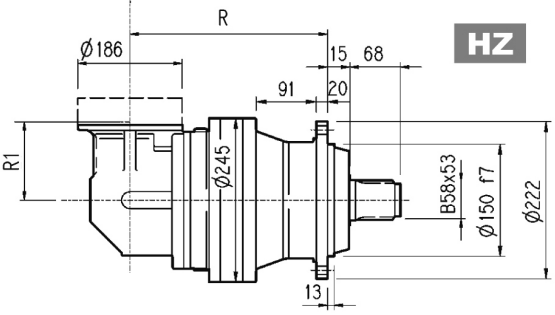

| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 303 R2 | 217 | 257 | 242 | 217 | 140 | 51 | 60 | 55 | 51 |
| 303 R3 | 270 | 310 | 295 | 270 | 122 | 49 | 58 | 53 | 49 |
| 303 R4 | 323 | 363 | 348 | 323 | 122 | 53 | 62 | 57 | 53 |

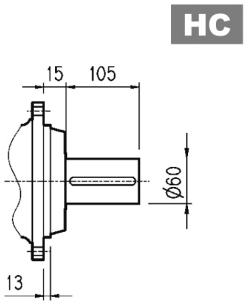
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 303 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 303 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 303 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

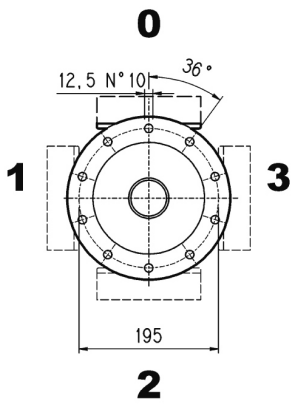
# 303 R

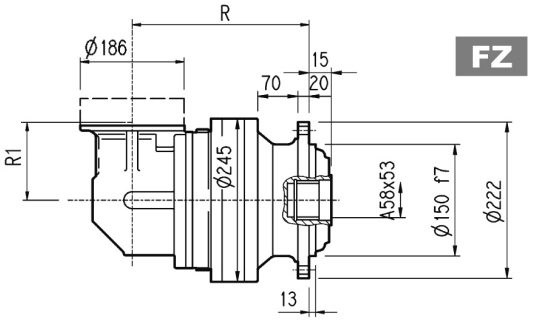


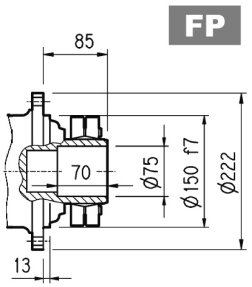



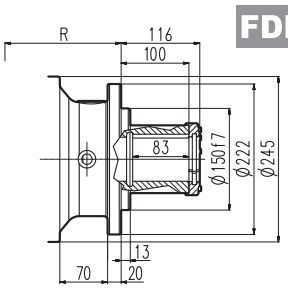



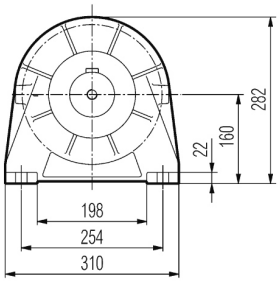




**FP** | $M_{2max}$ = 5200 Nm

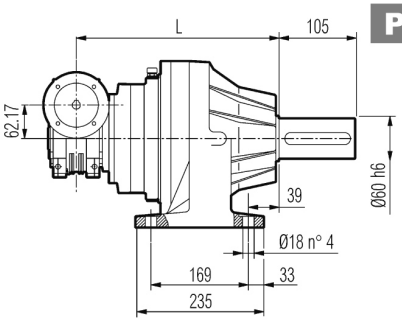
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **303 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **303 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **303 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **303 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **303 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |
| **303 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |

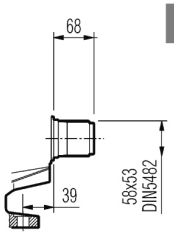
# 3/V 03 L3

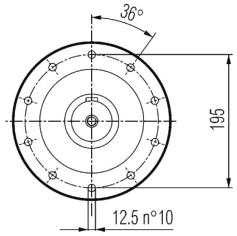



**PC**

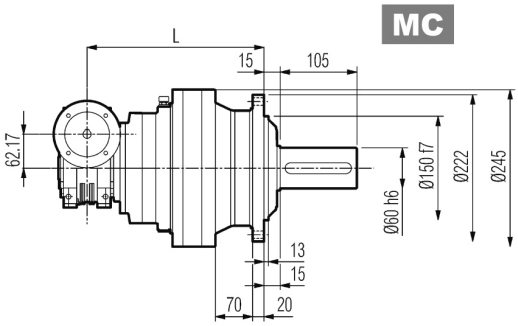



**PZ**

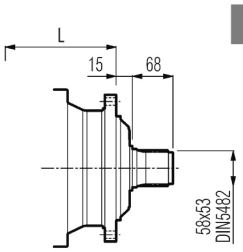


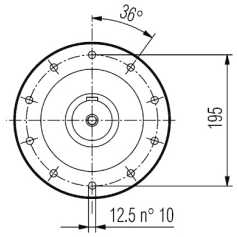




**MC**

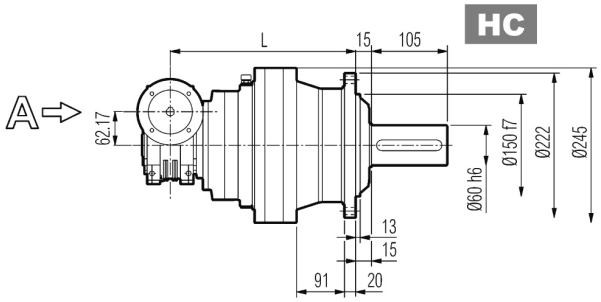



**MZ**

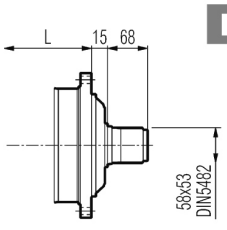


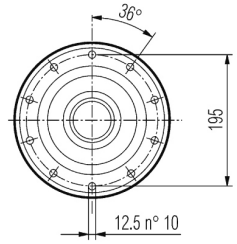




**HC**

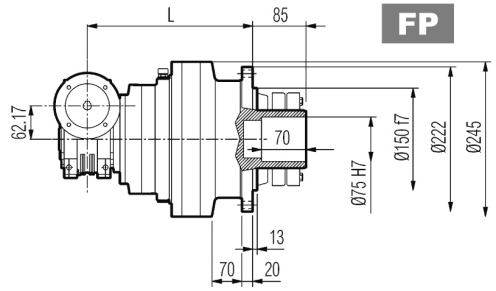



**HZ**

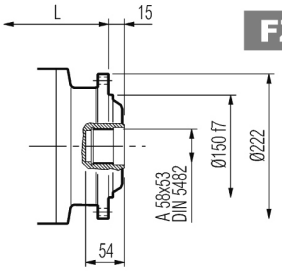


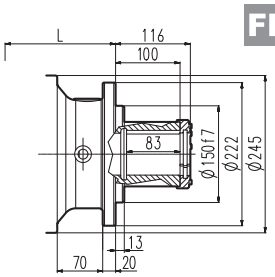

**FP**

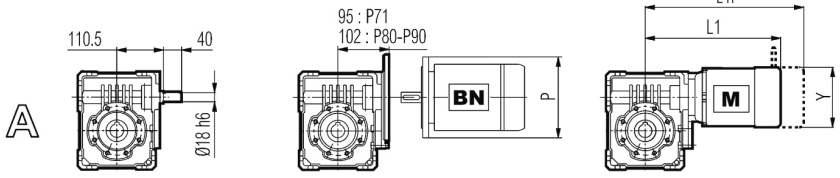



**FZ**




**FDK**



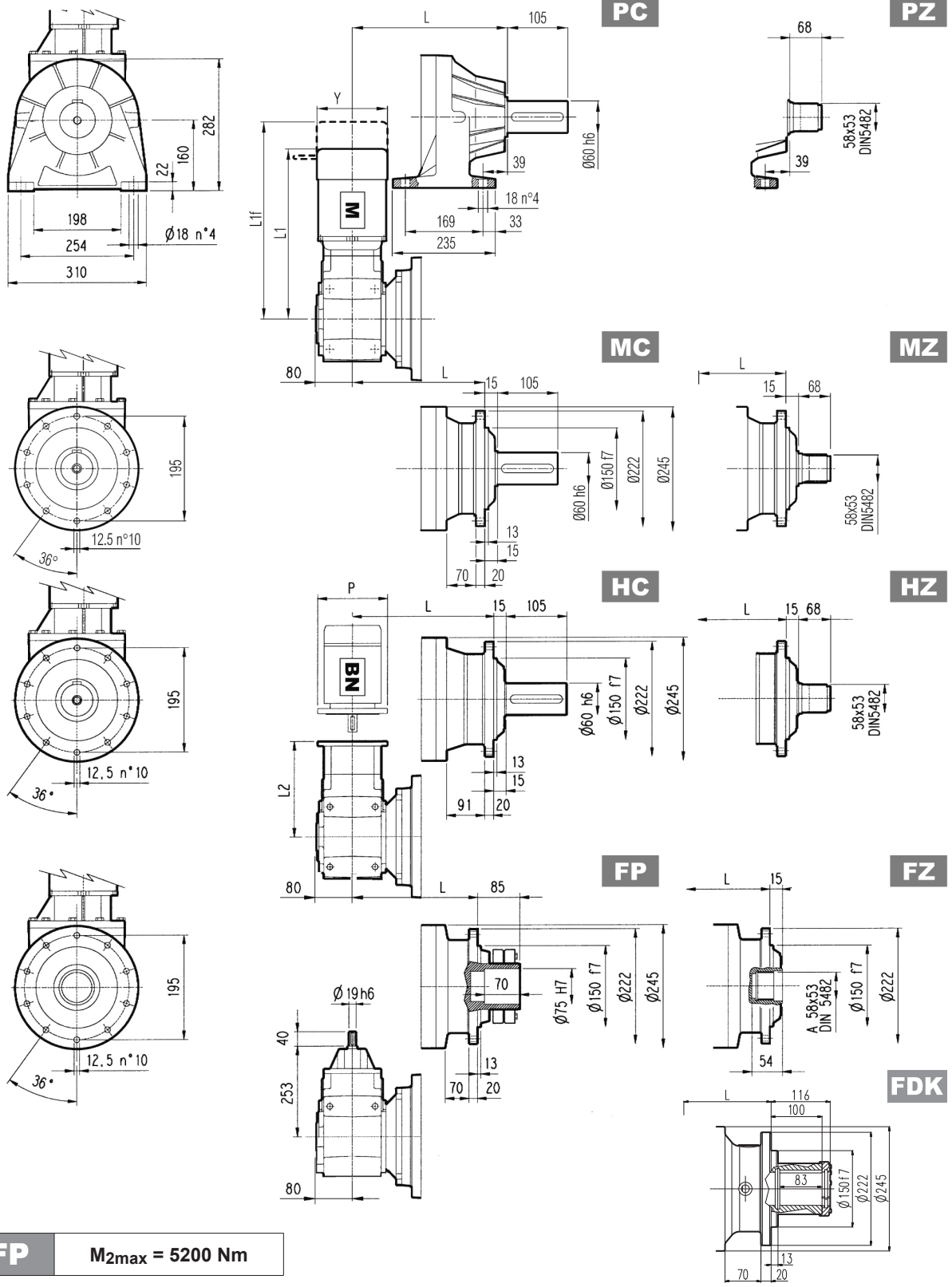




**FP** $M_{2max}$ = 5200 Nm

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/V 03 L3 | 270 | 330 | 315 | 270 | 43 | 51 | 45 | 41 |

| | P71 | P80 | P90 | S1 + M1 | | | S2 + M2S | | |
|---|---|---|---|---|---|---|---|---|---|
| | P | P | P | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 03 L3 | 160 | 200 | 200 | 289 | 350 | 138 | 317 | 393 | 156 |

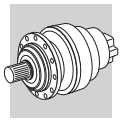
# 3/A 03 L2




**FP** $M_{2max}$ = 5200 Nm

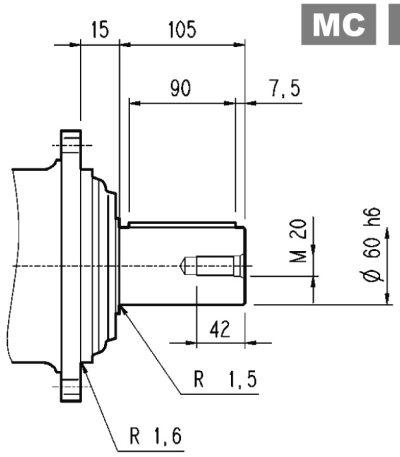
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 03 L2 | 225 | 285 | 270 | 225 | 63 | 71 | 65 | 60 |

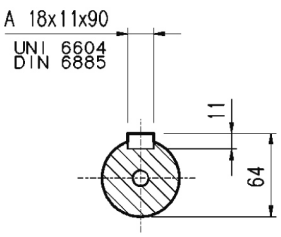
| | P63 | | P71 | | P80 | | P90 | | P100 | | P112 | | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 03 L2 | 243 | 140 | 243 | 160 | 262 | 200 | 262 | 200 | 272 | 250 | 272 | 250 | 399 | 416 | 138 | 425 | 497 | 156 | 470 | 467 | 195 | 501 | 518 | 195 |



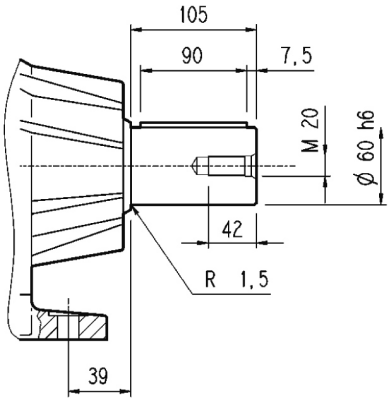
# 303 L | 303 R | 3/V 03 L3 | 3/A 03 L2

## MC HC

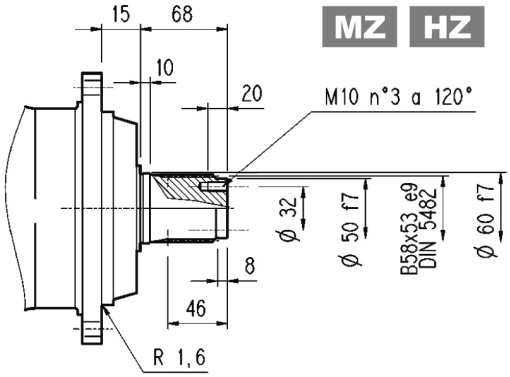


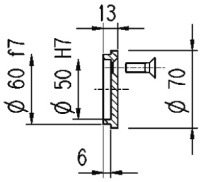




## PC

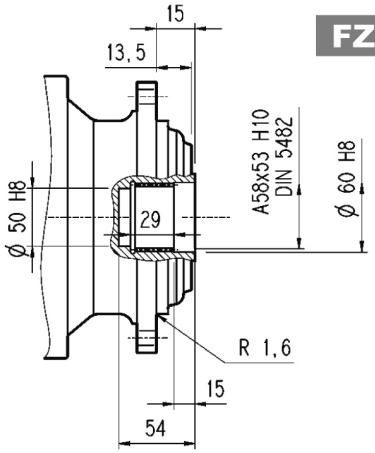



## MZ HZ

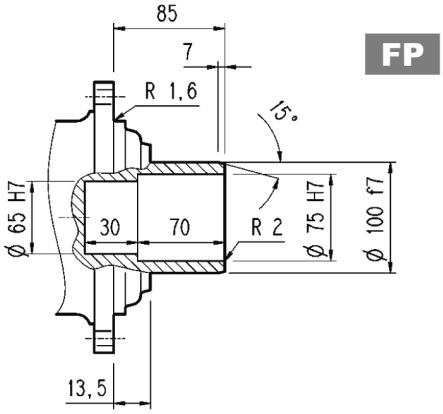


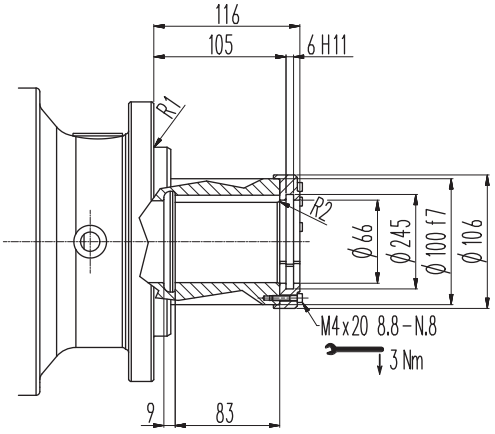




## FZ

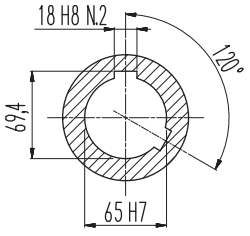



## FP



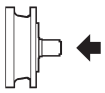

## FDK

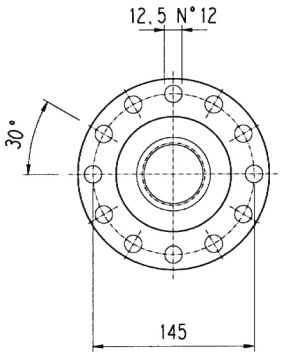


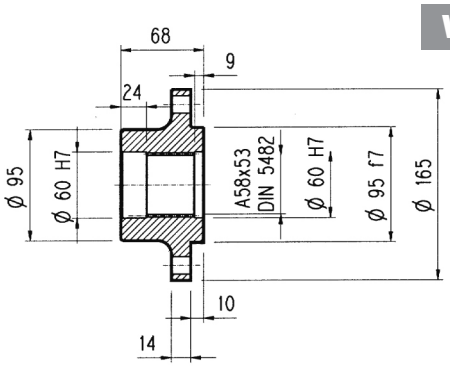

| FP | $M_{2max}$ = 5200 Nm |
|---|---|

## Brida

W0A



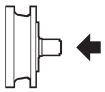


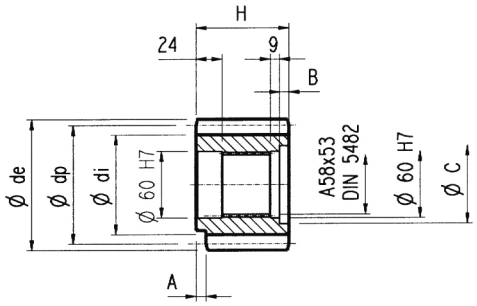




Material: Acero C40

## Piñón para giro

P...



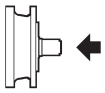


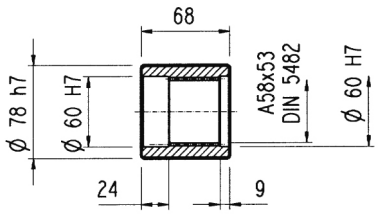

$\alpha$ = 20°

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PCL1** | 5 | 19 | — | 95 | 82 | 104 | 77 | 12 | 9 | 72 | Acero 39NiCr Mo3 Bonificado |
| **PCL2** | 5 | 19 | — | 95 | 82 | 104 | 68 | — | — | — | |
| **PCM** | 5 | 20 | — | 100 | 87.5 | 110 | 68 | 18 | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PCP** | 5 | 22 | — | 110 | 97.5 | 120 | 68 | 18 | — | — | |
| **PDE** | 6 | 14 | 0.500 | 84 | 75 | 99.6 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PDI** | 6 | 18 | 0.500 | 108 | 99 | 123.6 | 68 | — | — | — | |
| **PDM** | 6 | 20 | 0.833 | 120 | 115 | 140 | 68 | — | — | — | |
| **PFD** | 8 | 13 | 0.675 | 104 | 95 | 127.6 | 68 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PFE1** | 8 | 14 | — | 112 | 92 | 126 | 68 | — | — | — | |
| **PFE2** | 8 | 14 | — | 112 | 92 | 126 | 80 | — | 12 | 72 | |
| **PFF** | 8 | 15 | — | 120 | 100 | 136 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PFP** | 8 | 22 | — | 176 | 156 | 190 | 77 | 12 | 10 | 71 | |
| **PHG** | 10 | 16 | 0.500 | 160 | 145 | 188 | 75 | — | 7 | 72 | |

## Manguito cilíndrico

M0A

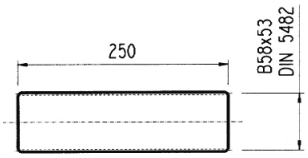





Material: Acero 16CrNi4

## Barra estriada

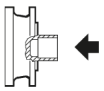
B0A

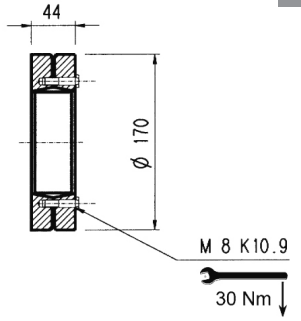


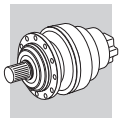

Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

## Aro cónico de apriete

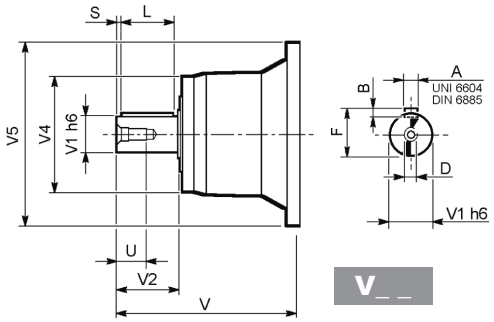
G0A



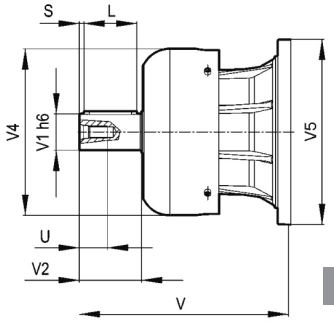


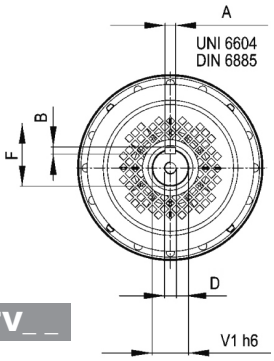


## 303 L 303 R




V_ _

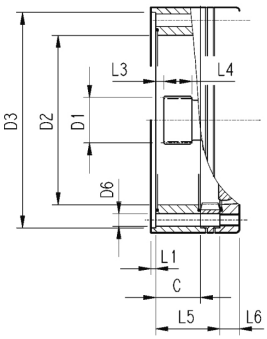


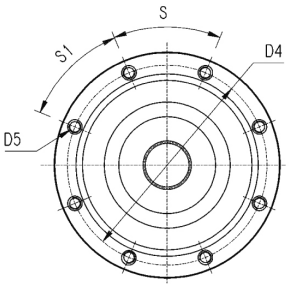




FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **303 L1** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **303 L2** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **303 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **303 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **303 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

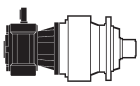
## 303 L 303 R

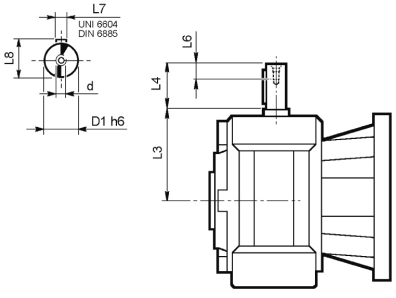



| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **303 L1** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | — | 18 | 45° | 45° | A |
| **303 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 53 | 18 | 45° | 45° | A |
| **303 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 106 | 18 | 45° | 45° | A |
| **303 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 159 | 18 | 45° | 45° | A |
| **303 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

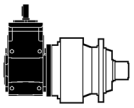
## 3/V 03 L3

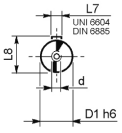


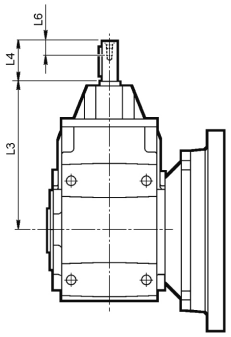



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 03 L3_HS** | 18 | 110.5 | 40 | 16 | 6 | 20.5 | M6 |

## 3/A 03 L2





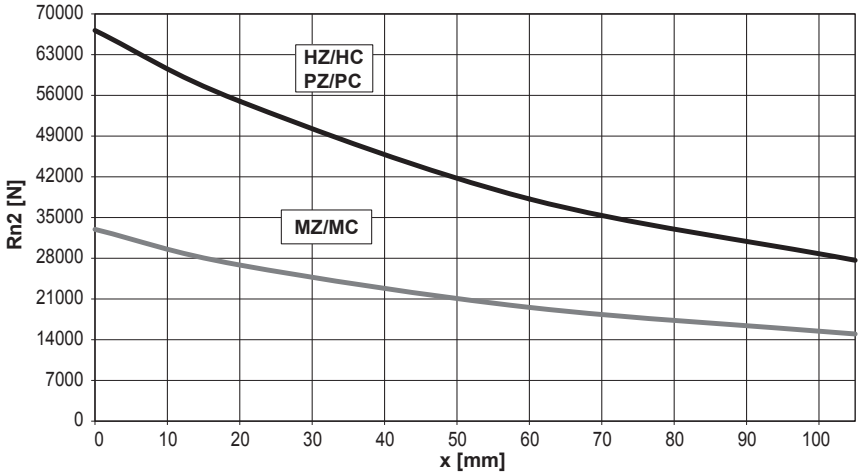

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 03 L2_HS** | 19 | 252.5 | 40 | 16 | 6 | 21.5 | M6 |

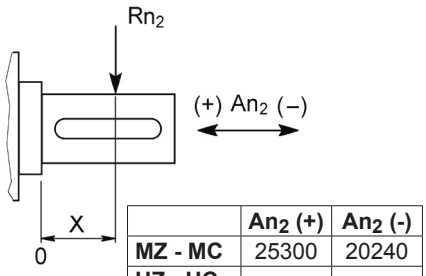


Bonfiglioli Riduttori

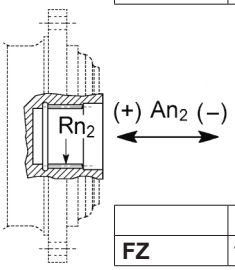
# 303 L | 303 R | 3/V 03 L3 | 3/A 03 L2

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



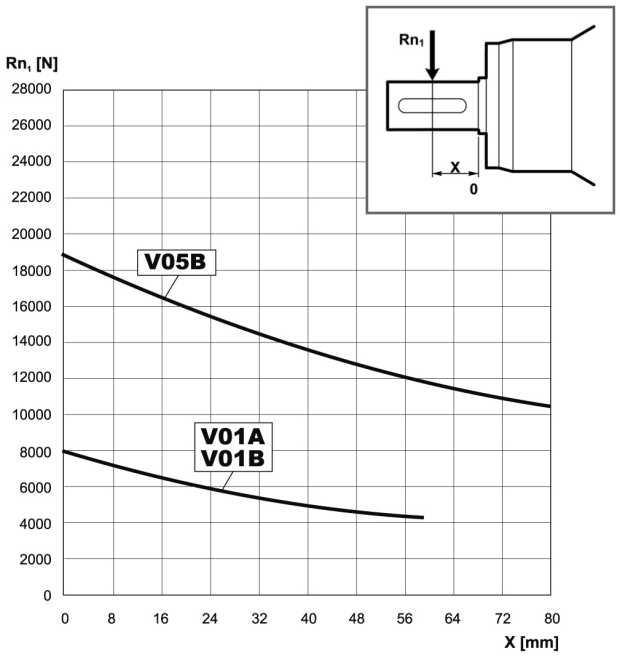

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 25300 | 20240 |
| HZ - HC PZ - PC | 27500 | 22000 |

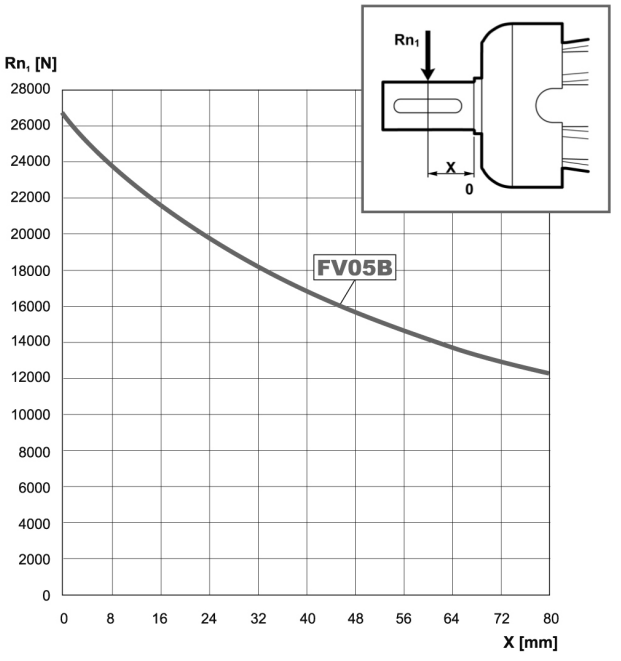



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 11140 | 11604 |

| | $Fh_2 = n_2 \cdot h$ | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_2$ para cargas sobre los ejes | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | $fh_2$ MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | HZ - HC - PZ - PC | **1.48** | **1.48** | **1.23** | **1.00** | **0.62** | **0.50** |

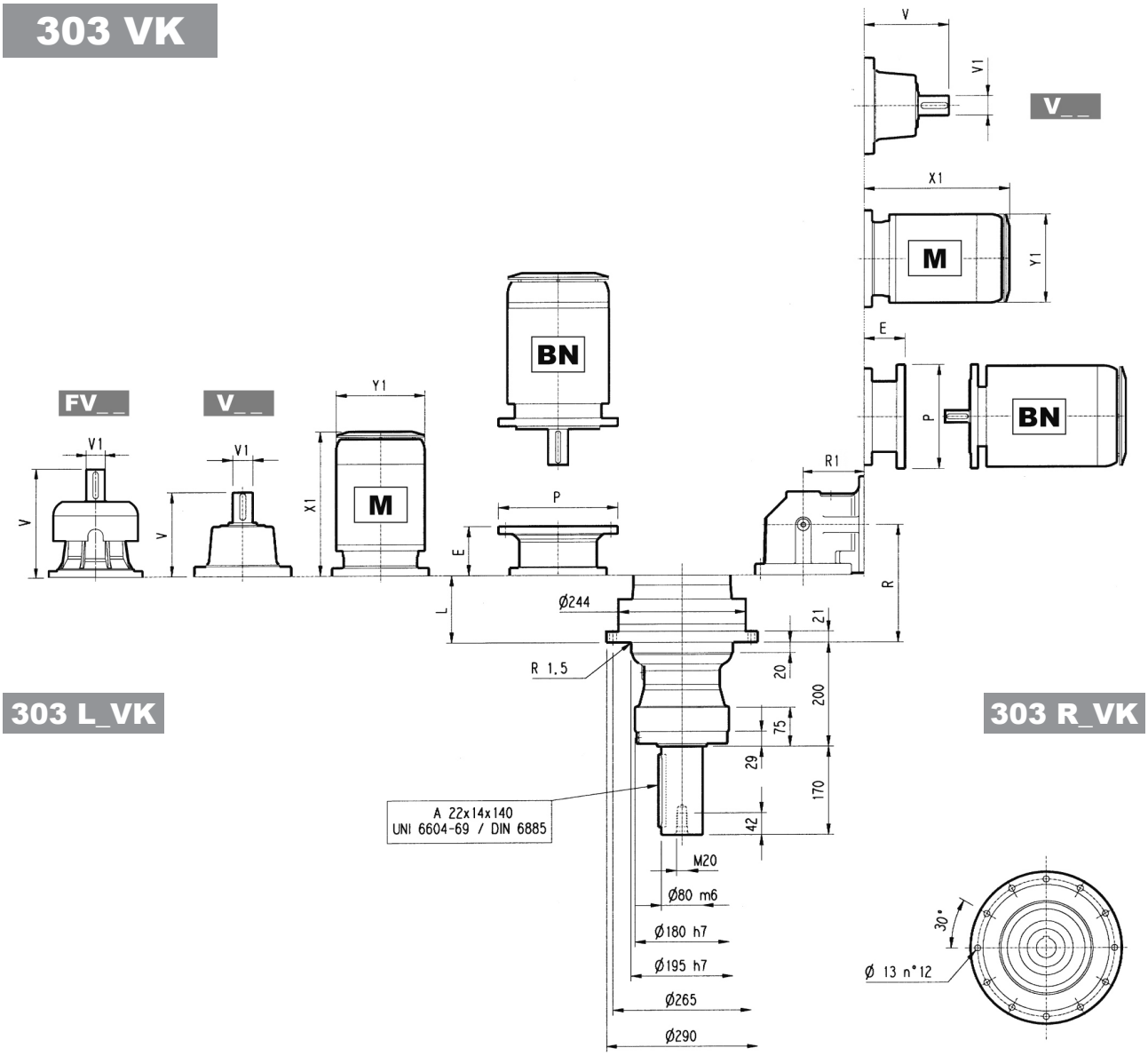
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 303 VK




303 L_VK

303 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **303 L1** | 51 | 65 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **303 L2** | 104 | 70 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **303 L3** | 157 | 73 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **303 L4** | 210 | 77 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

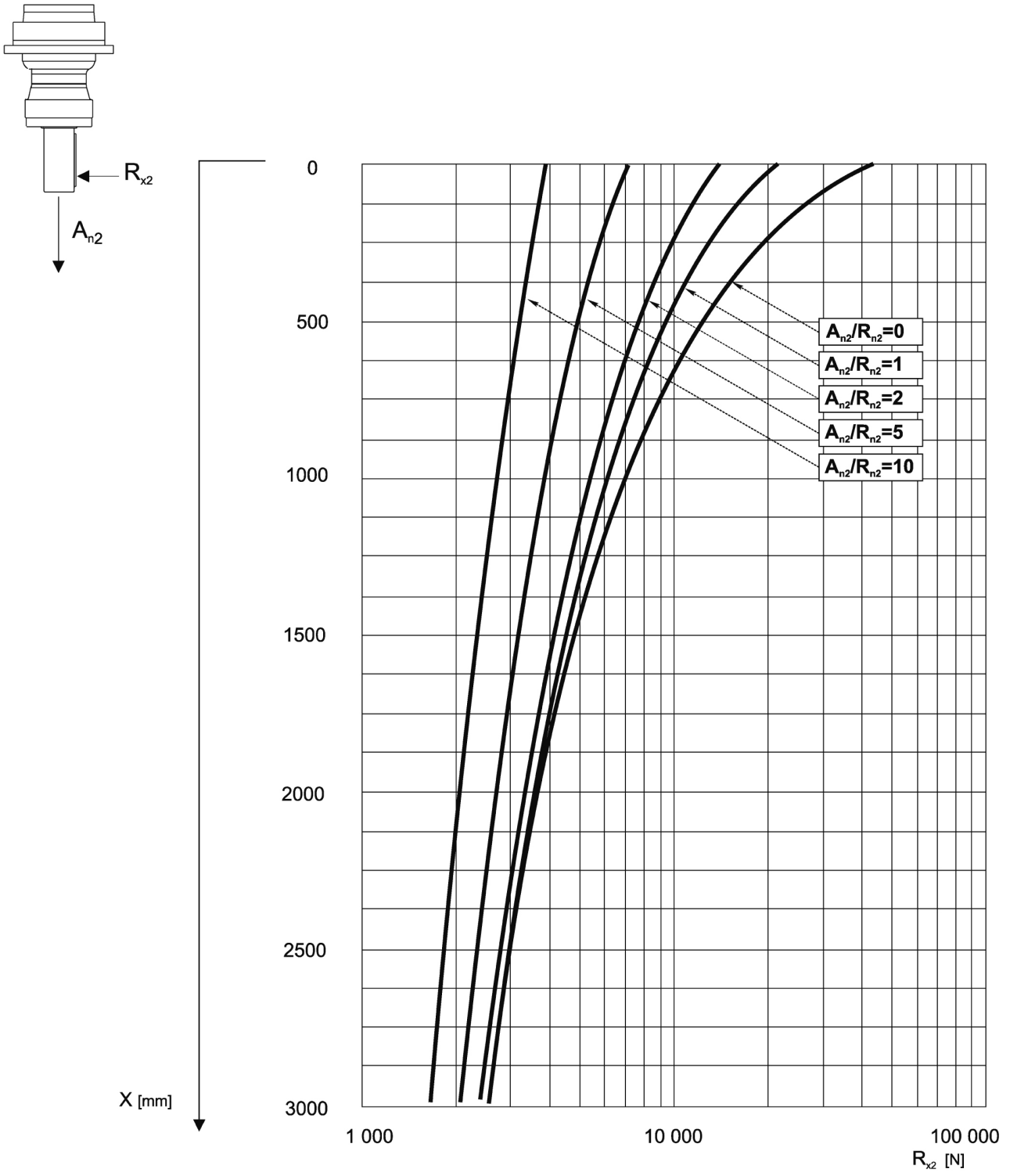
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **303 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **303 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **303 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **303 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P |
| **303 R2** | 143 | 140 | 85 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **303 R3** | 196 | 122 | 83 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **303 R4** | 249 | 122 | 87 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **303 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **303 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |
| **303 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |

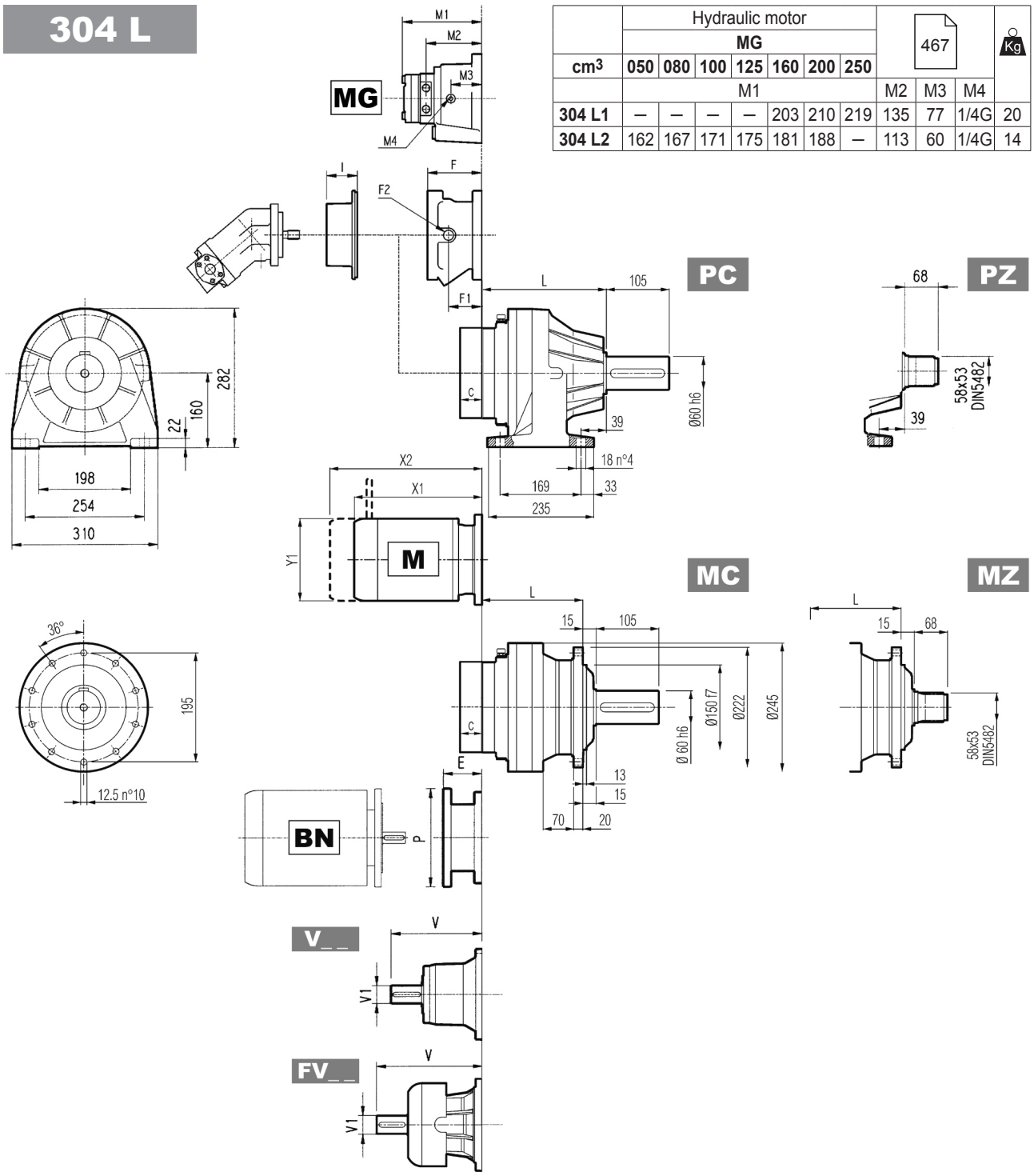
# 303 VK

El diagrama siguiente consiste en calcular la carga radial admisible $Rx_2$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $An_2$ y la carga radial $Rn_2$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



# 304 L

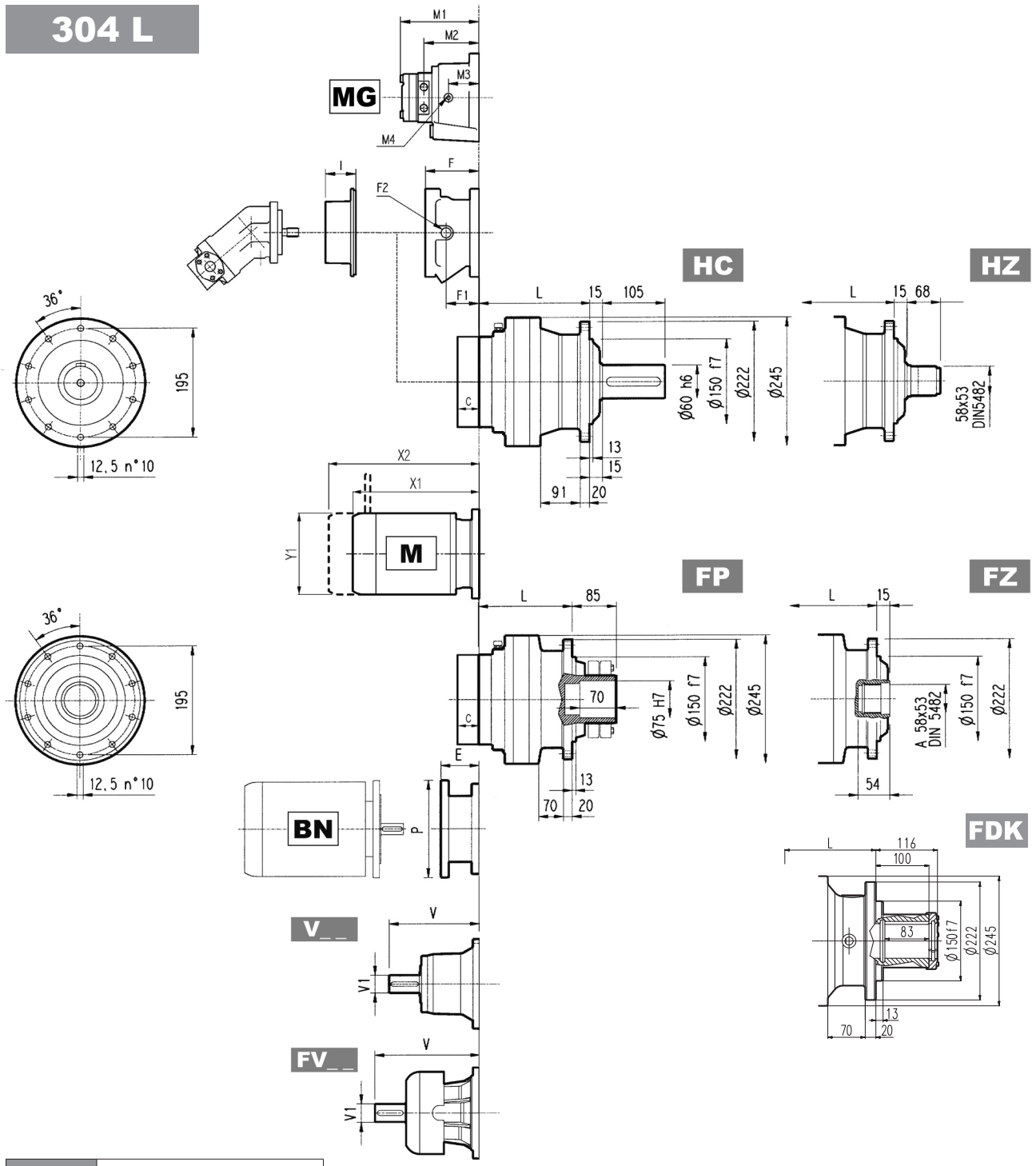
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 304 L1 | — | — | — | — | 203 | 210 | 219 | 135 | 77 | 1/4G | 20 |
| 304 L2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 304 L1 | 125 | 165 | 150 | 125 | 31 | 40 | 35 | 31 |
| 304 L2 | 190 | 230 | 215 | 190 | 38 | 47 | 42 | 38 |
| 304 L3 | 243 | 283 | 268 | 243 | 42 | 51 | 46 | 42 |
| 304 L4 | 296 | 336 | 321 | 296 | 46 | 55 | 50 | 46 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 304 L1 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| 304 L2 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 304 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |
| 304 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 304 L



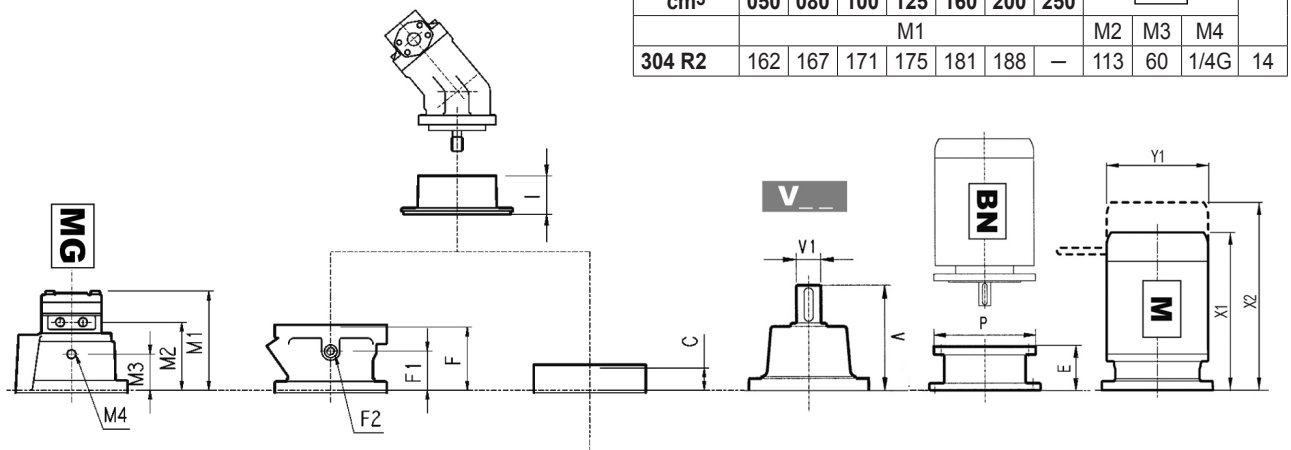

**FP** $M_{2max}$ = 7300 Nm

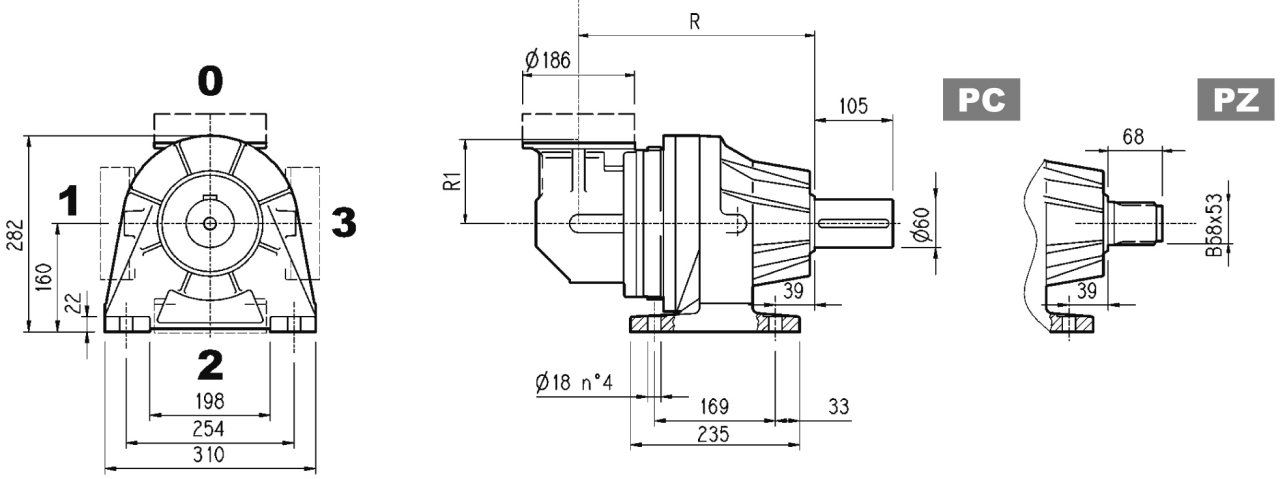
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **304 L1** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **304 L2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **304 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **304 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

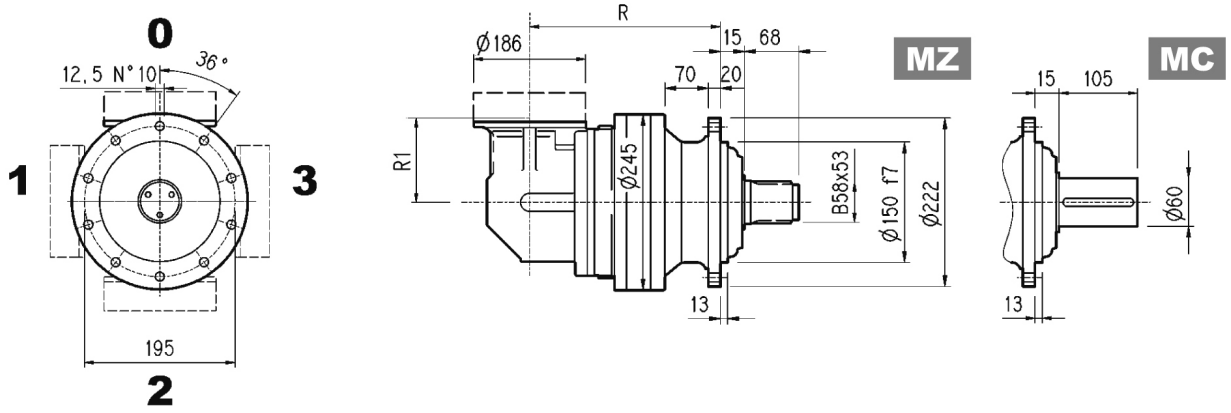
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **304 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **304 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **304 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **304 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

# 304 R

| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 304 R2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |



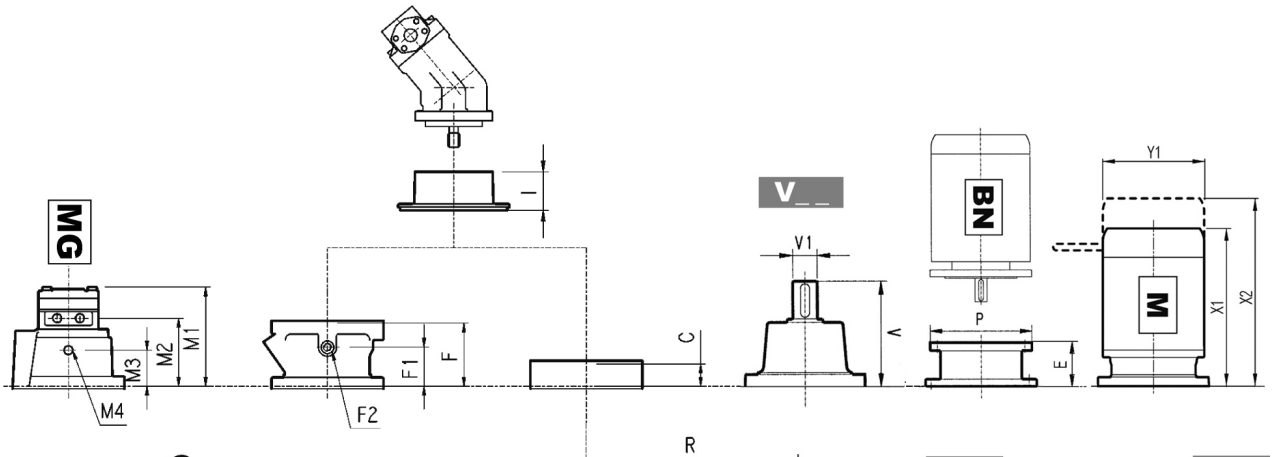



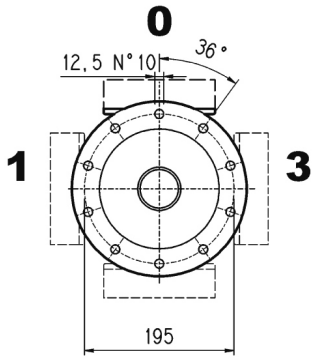



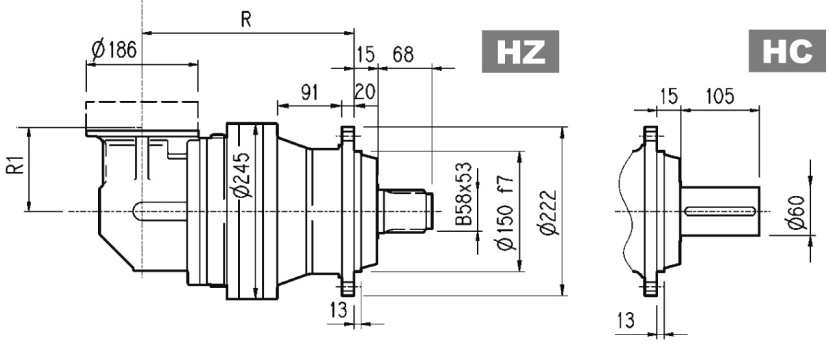

| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 304 R2 | 217 | 257 | 242 | 217 | 140 | 51 | 60 | 55 | 51 |
| 304 R3 | 282 | 322 | 307 | 282 | 122 | 52 | 61 | 56 | 52 |
| 304 R4 | 335 | 375 | 360 | 335 | 122 | 56 | 65 | 60 | 56 |

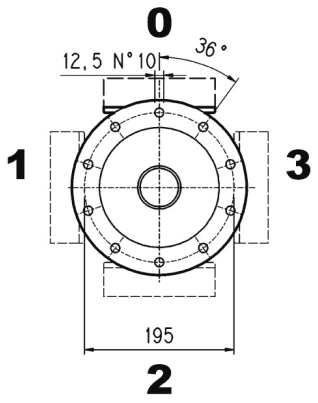
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 304 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 304 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 304 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

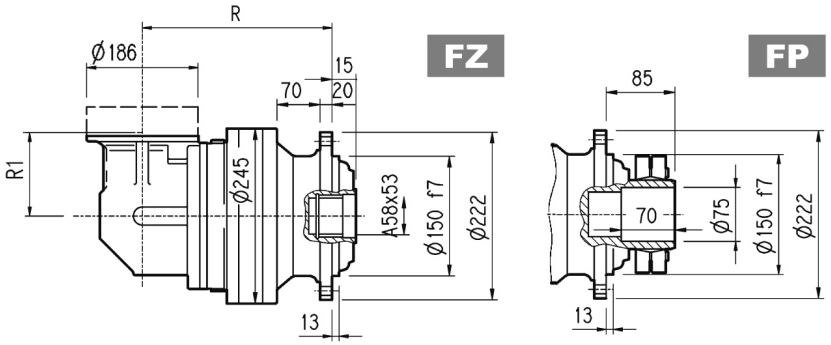
# 304 R

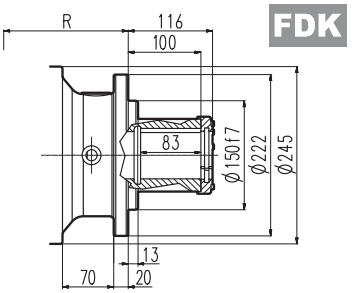


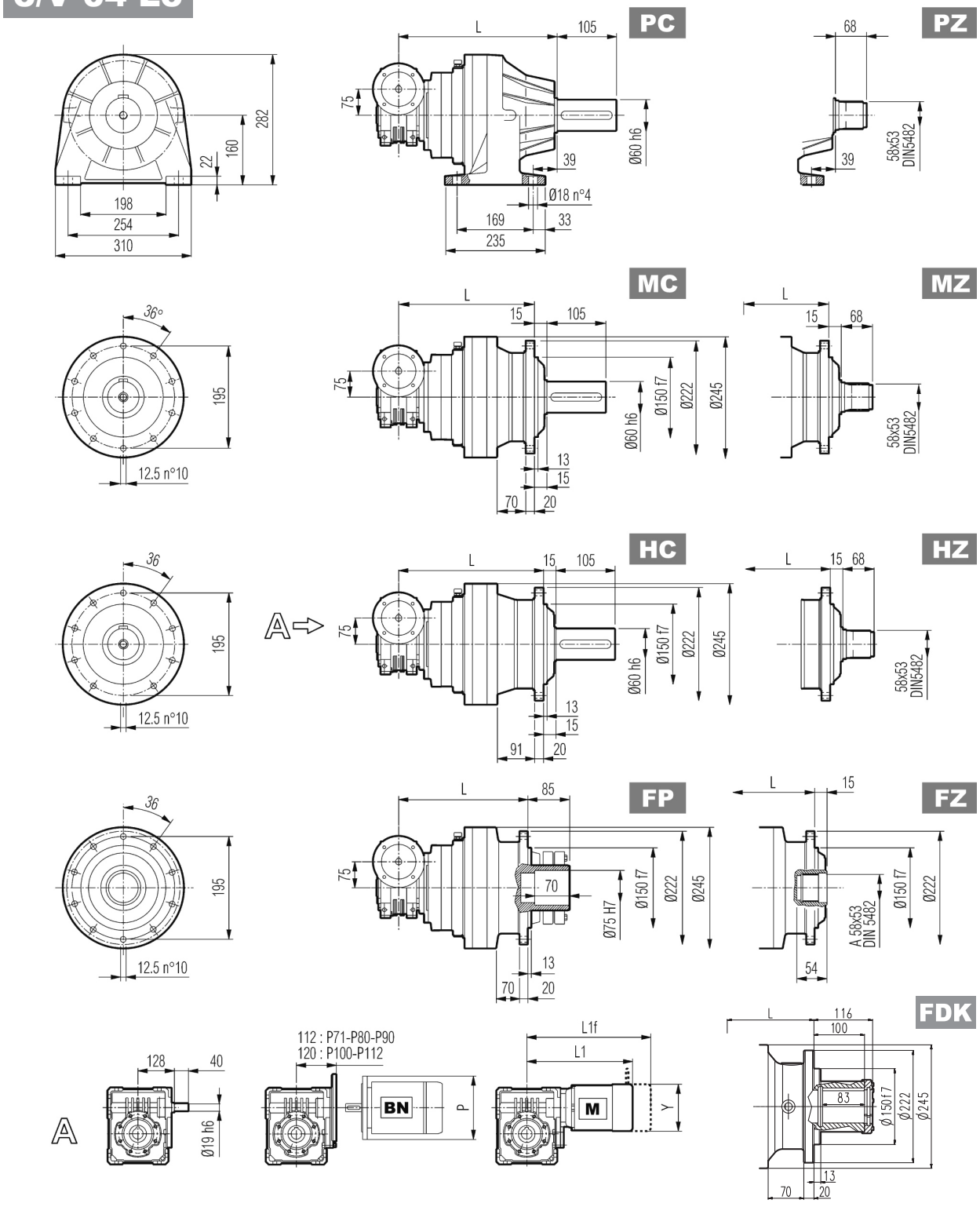




**FP** $M_{2max}$ = 7300 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **304 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **304 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **304 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **304 R2** | - | - | - | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **304 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |
| **304 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |

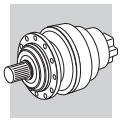
# 3/V 04 L3



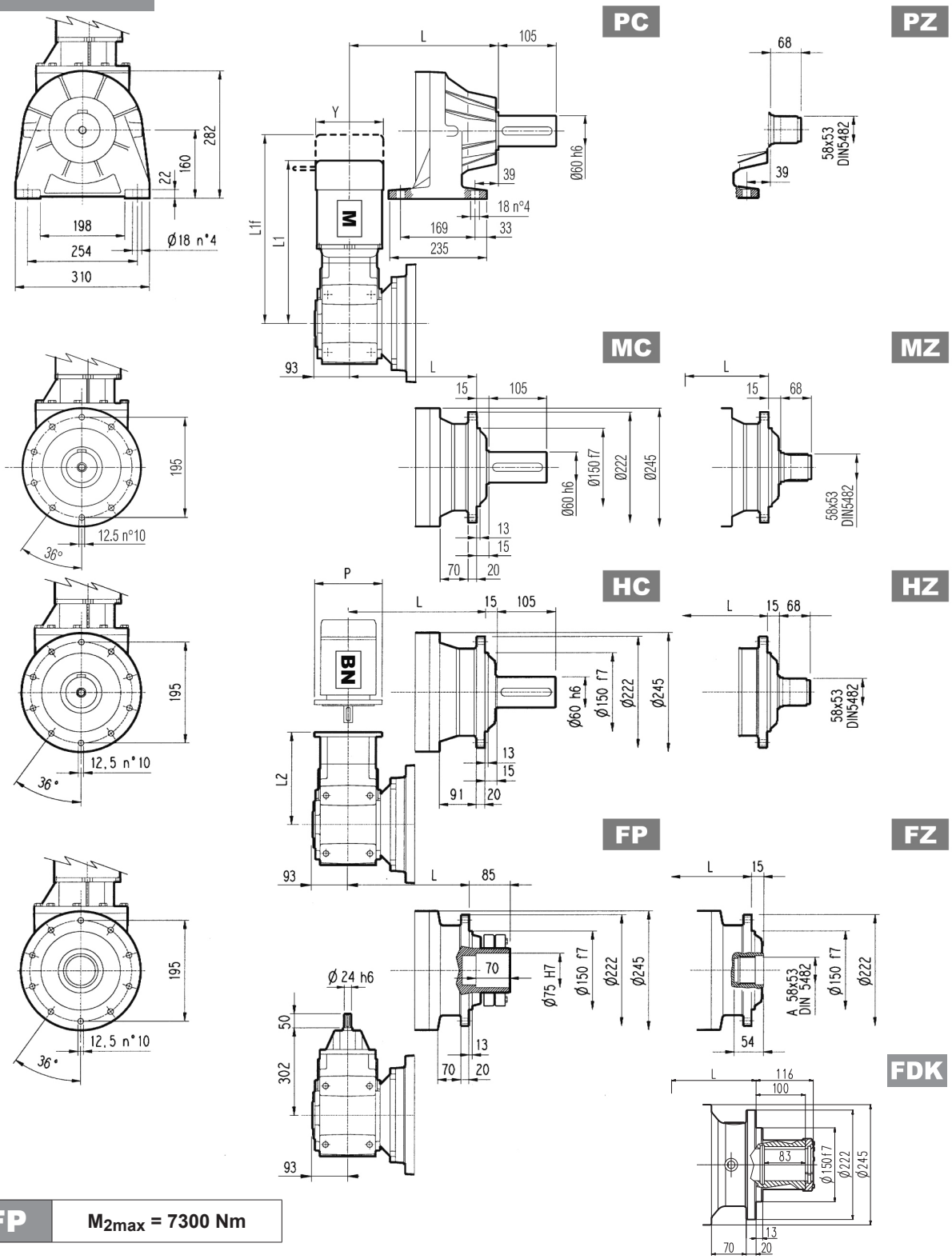

**FP** $M_{2max}$ = 7300 Nm

| | L | | | | Kg | | | | P71 | P80 | P90 | P100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P | P |
| 3/V 04 L3 | 305 | 345 | 330 | 305 | 47 | 56 | 51 | 47 | 160 | 200 | 200 | 250 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 04 L3 | 308 | 369 | 138 | 333 | 409 | 156 | 376 | 472 | 193 | 408 | 499 | 193 |



# 3/A 04 L2

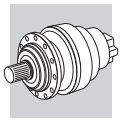



**FP** $M_{2max}$ = 7300 Nm

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 04 L2 | 258 | 298 | 283 | 258 | 80 | 95 | 90 | 80 |

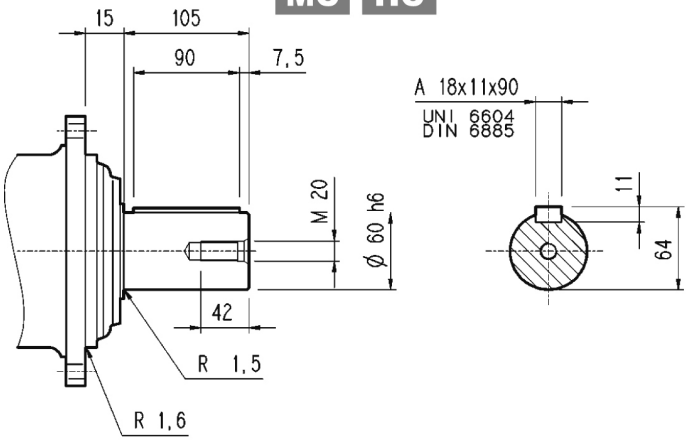
| | P63 | | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/A 04 L2 | 263 | 140 | 263 | 160 | 282.5 | 200 | 282.5 | 200 | 292.5 | 250 | 292.5 | 250 | 329 | 457 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 04 L2 | 418 | 439 | 138 | 447 | 517 | 156 | 490 | 487 | 195 | 522 | 538 | 195 | 630 | 738 | 258 |

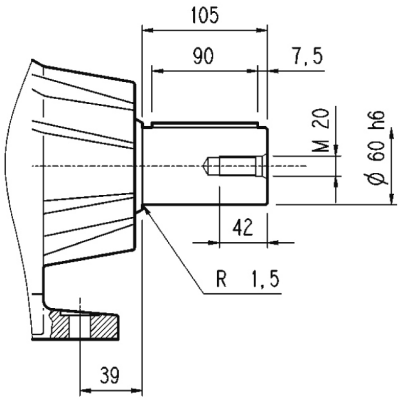


# 304 L | 304 R | 3/V 04 L3 | 3/A 04 L2

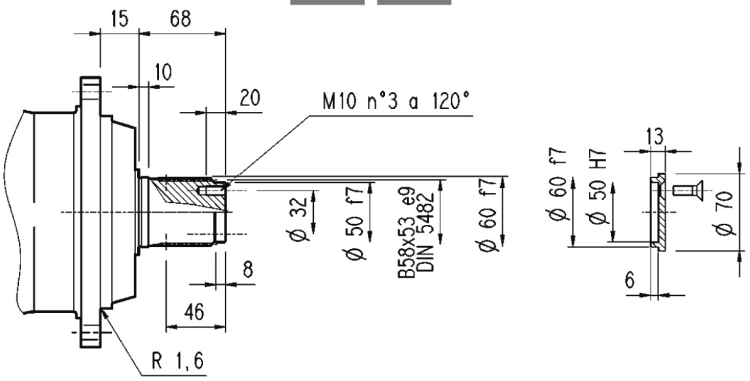
## MC HC



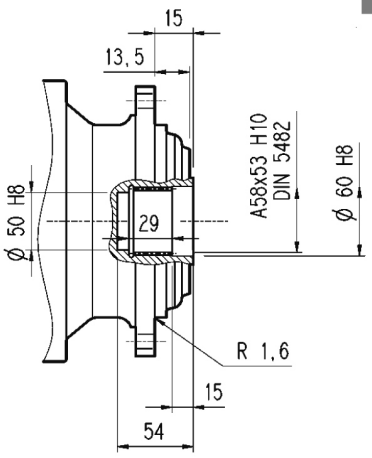

## PC



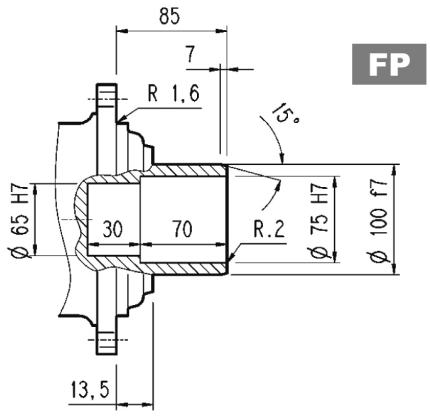

## MZ HZ

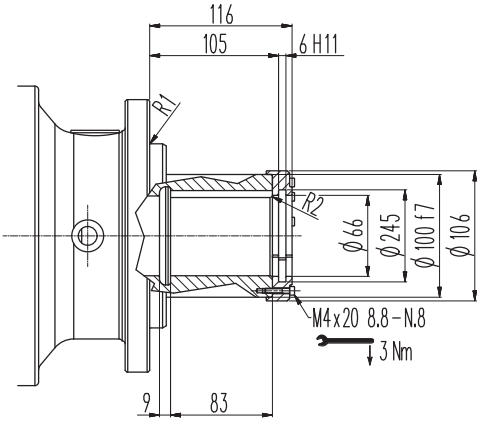



## FZ

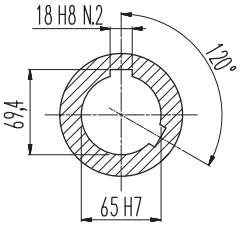



## FP

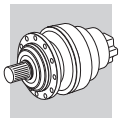



## FDK



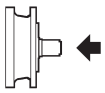

| FP | $M_{2max}$ = 7300 Nm |
|---|---|

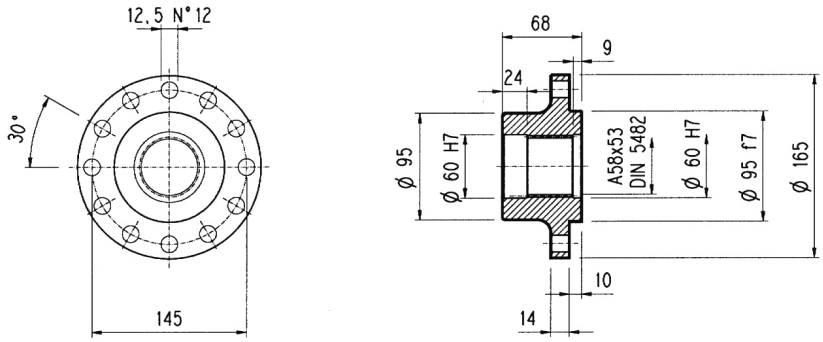


# 304 L | 304 R | 3/V 04 L3 | 3/A 04 L2

## Brida

W0A

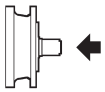


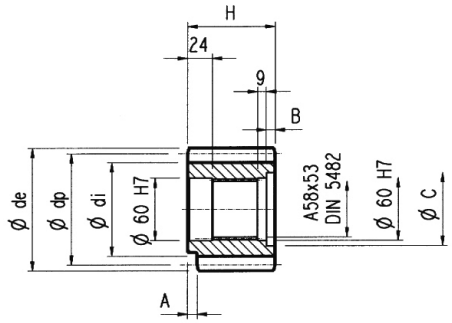



Material: Acero C40

## Piñón para giro

P...



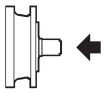


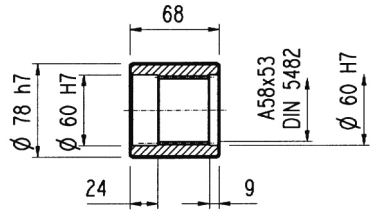

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PCL1** | 5 | 19 | — | 95 | 82 | 104 | 77 | 12 | 9 | 72 | Acero 39NiCr Mo3 Bonificado |
| **PCL2** | 5 | 19 | — | 95 | 82 | 104 | 68 | — | — | — | |
| **PCM** | 5 | 20 | — | 100 | 87.5 | 110 | 68 | 18 | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PCP** | 5 | 22 | — | 110 | 97.5 | 120 | 68 | 18 | — | — | |
| **PDE** | 6 | 14 | 0.500 | 84 | 75 | 99.6 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PDI** | 6 | 18 | 0.500 | 108 | 99 | 123.6 | 68 | — | — | — | |
| **PDM** | 6 | 20 | 0.833 | 120 | 115 | 140 | 68 | — | — | — | |
| **PFD** | 8 | 13 | 0.675 | 104 | 95 | 127.6 | 68 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PFE1** | 8 | 14 | — | 112 | 92 | 126 | 68 | — | — | — | |
| **PFE2** | 8 | 14 | — | 112 | 92 | 126 | 80 | — | 12 | 72 | |
| **PFF** | 8 | 15 | — | 120 | 100 | 136 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PFP** | 8 | 22 | — | 176 | 156 | 190 | 77 | 12 | 10 | 71 | |
| **PHG** | 10 | 16 | 0.500 | 160 | 145 | 188 | 75 | — | 7 | 72 | |

## Manguito cilíndrico

M0A

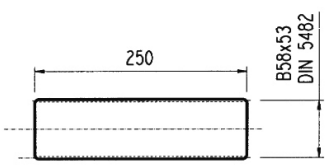





Material: Acero 16CrNi4

## Barra estriada

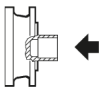
B0A

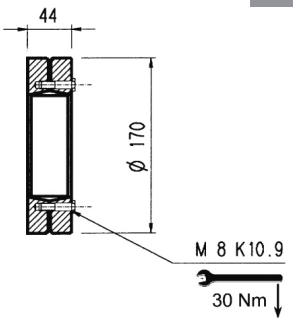


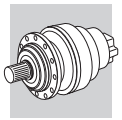

Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

## Aro cónico de apriete

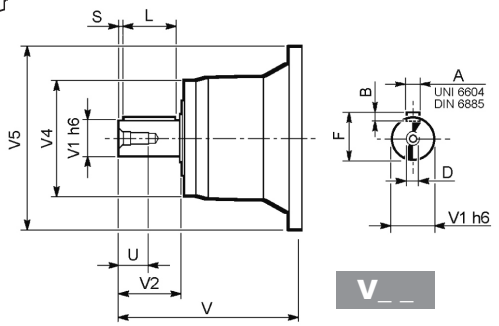
G0A



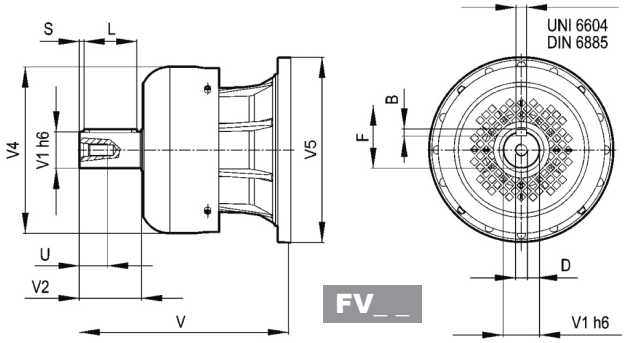




## 304 L 304 R



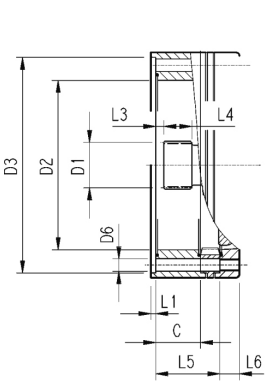

V_ _

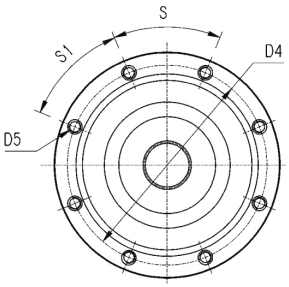



FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **304 L1** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **304 L2** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **304 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **304 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **304 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

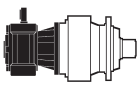
## 304 L 304 R

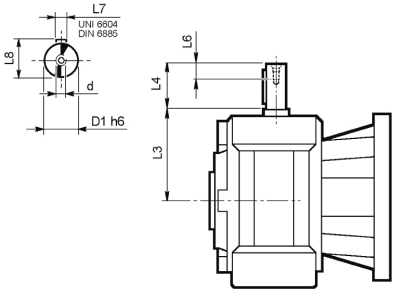



| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **304 L1** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | — | 18 | 45° | 45° | A |
| **304 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| **304 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 118 | 18 | 45° | 45° | A |
| **304 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 171 | 18 | 45° | 45° | A |
| **304 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

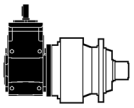
## 3/V 04 L3

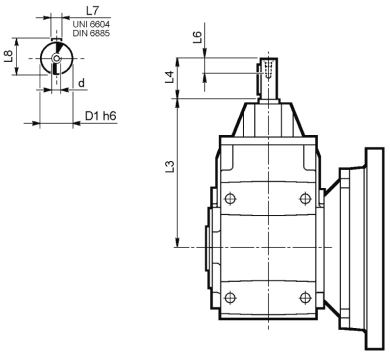





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 04 L3_HS** | 19 | 128 | 40 | 16 | 6 | 21.5 | M6 |

## 3/A 04 L2





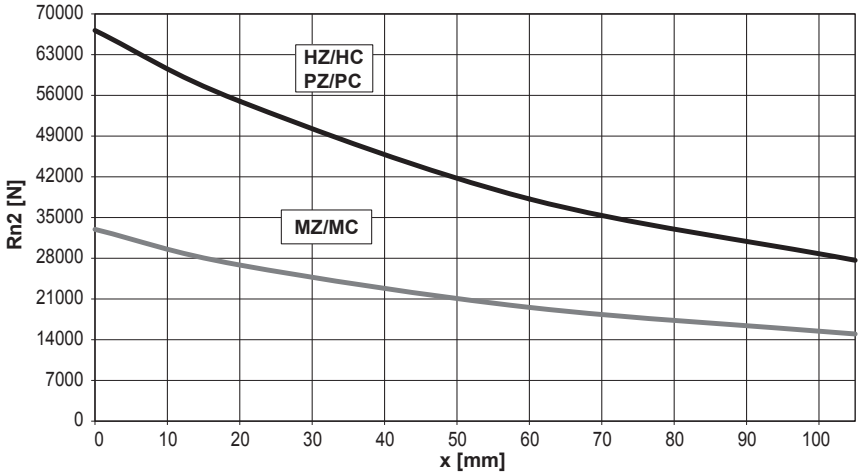

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 04 L2_HS** | 24 | 302 | 50 | 19 | 8 | 27 | M8 |

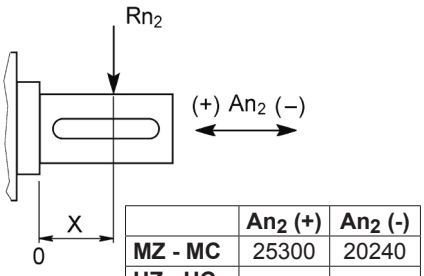


Bonfiglioli Riduttori

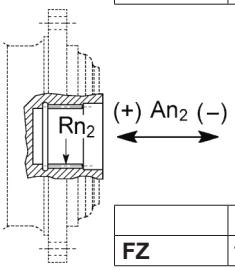
# 304 L | 304 R | 3/V 04 L3 | 3/A 04 L2

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



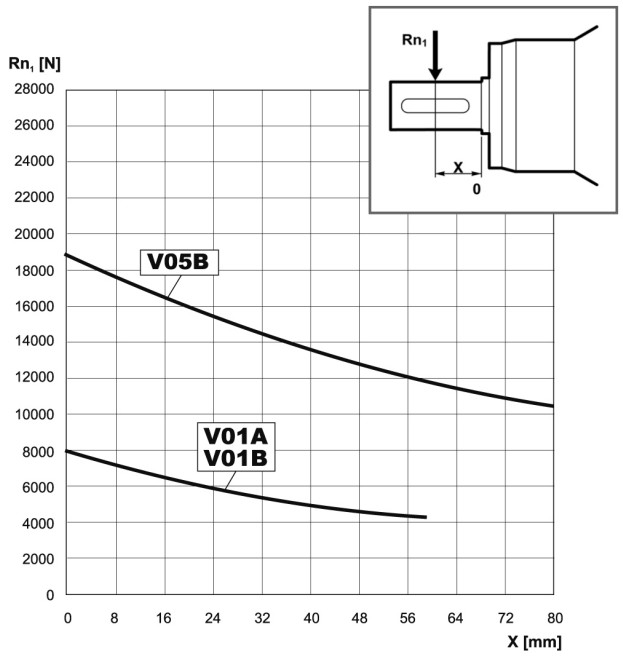

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 25300 | 20240 |
| HZ - HC PZ - PC | 27500 | 22000 |

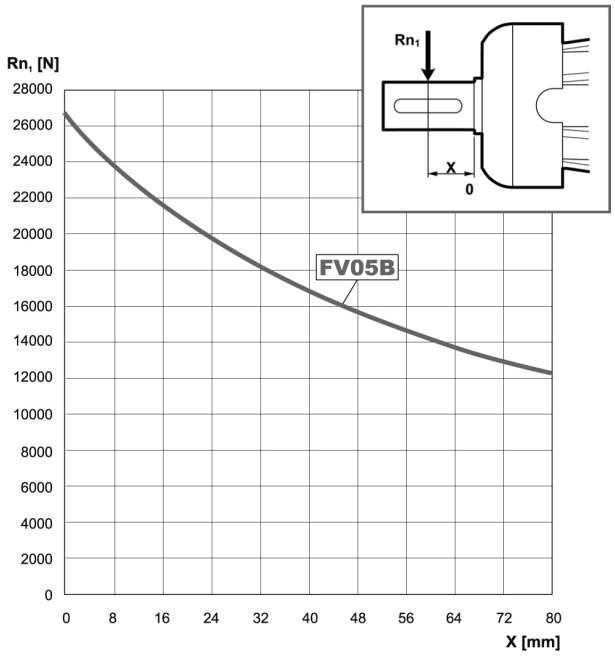



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 11140 | 11604 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.48** | **1.48** | **1.23** | **1.00** | **0.62** | **0.50** |

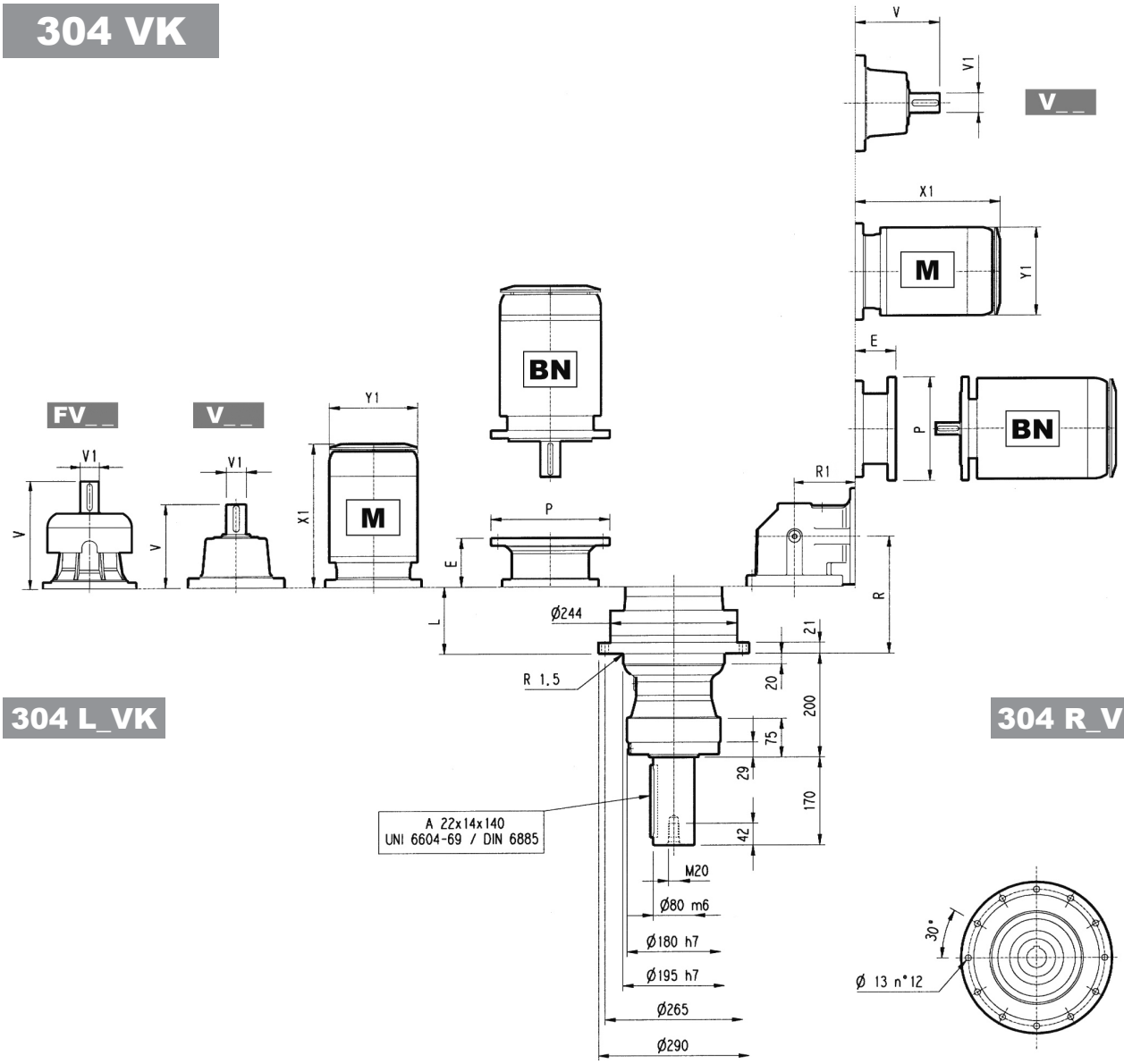
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 304 VK




| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **304 L1** | 51 | 65 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **304 L2** | 116 | 73 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **304 L3** | 169 | 76 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **304 L4** | 222 | 80 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

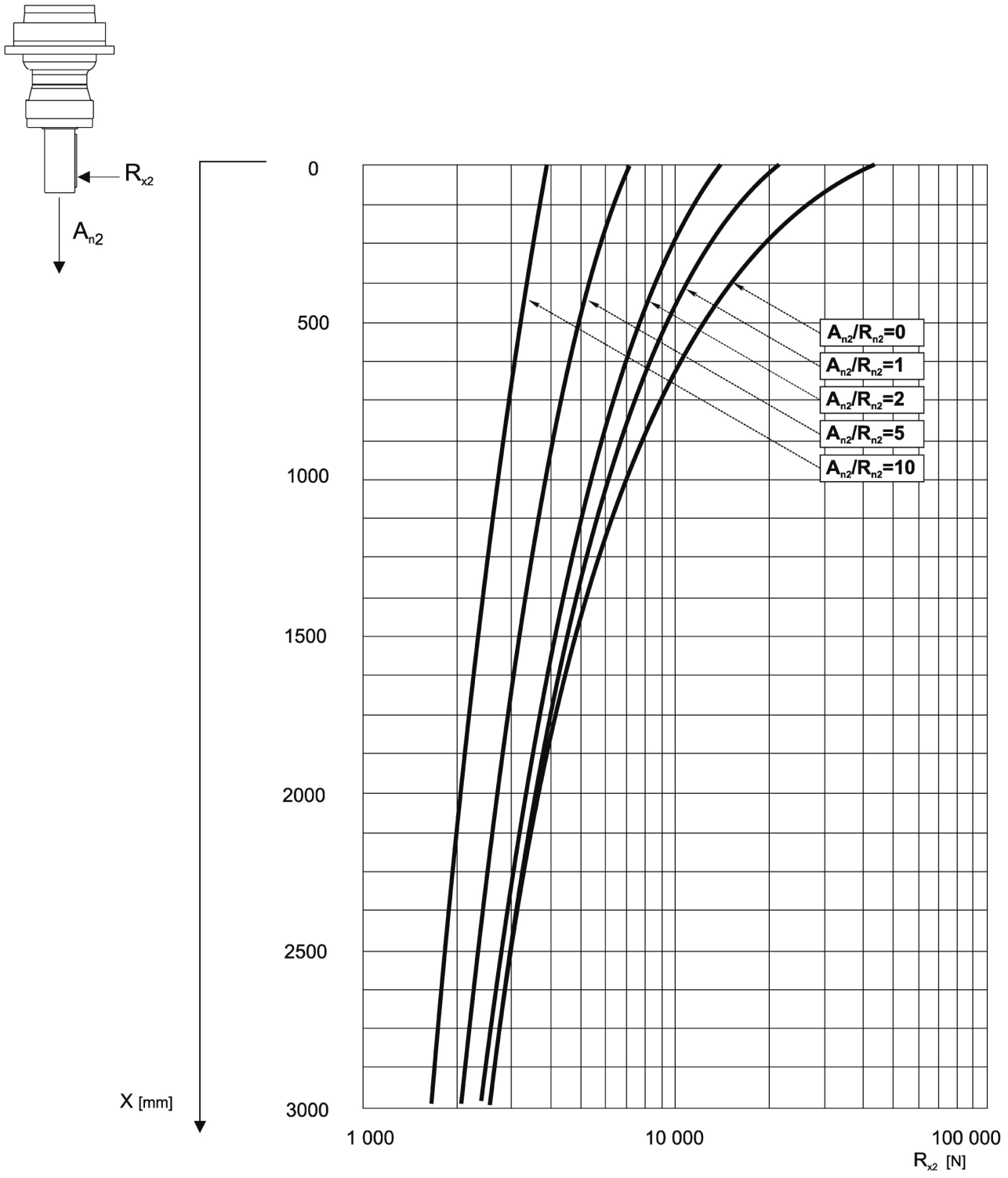
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **304 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **304 L2** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **304 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **304 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P |
| **304 R2** | 143 | 140 | 85 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **304 R3** | 208 | 122 | 86 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **304 R4** | 261 | 122 | 90 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **304 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **304 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |
| **304 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | — | — | — |

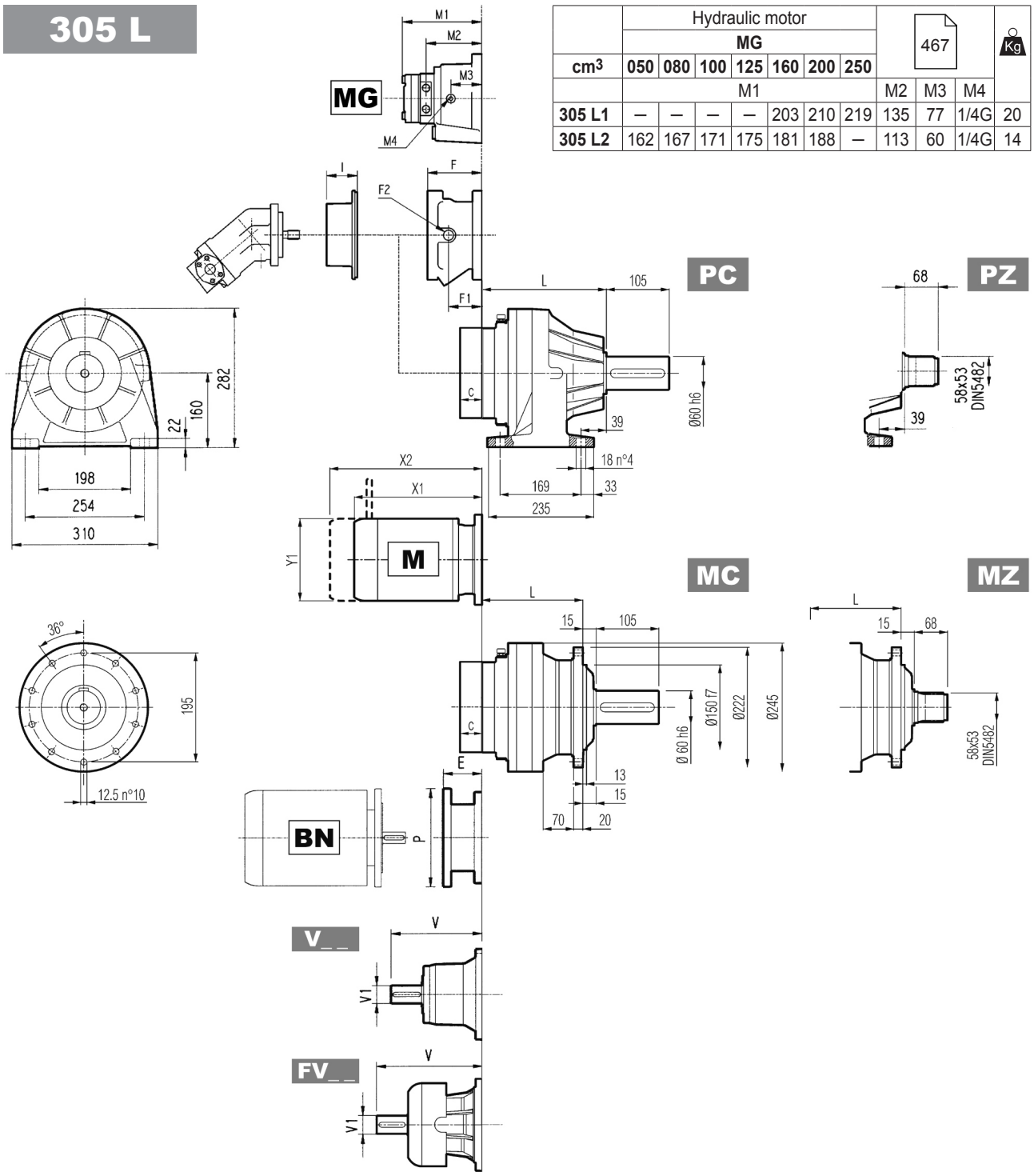
# 304 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



# 305 L

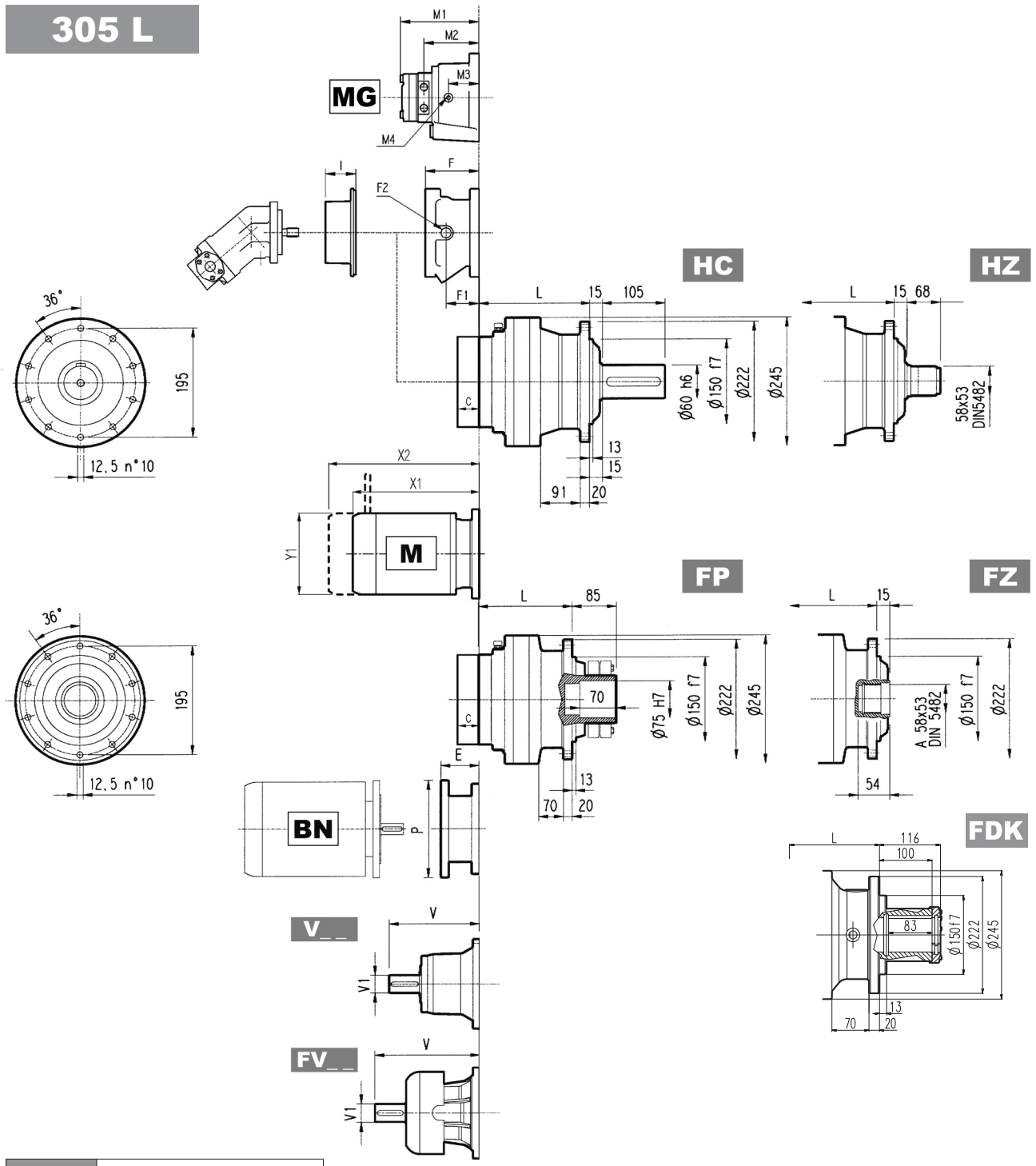
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 305 L1 | — | — | — | — | 203 | 210 | 219 | 135 | 77 | 1/4G | 20 |
| 305 L2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 305 L1 | 143 | 183 | 168 | 143 | 36 | 45 | 40 | 36 |
| 305 L2 | 208 | 248 | 233 | 208 | 43 | 52 | 47 | 43 |
| 305 L3 | 261 | 301 | 286 | 261 | 47 | 56 | 51 | 47 |
| 305 L4 | 314 | 354 | 339 | 314 | 51 | 60 | 55 | 51 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 305 L1 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | 457 | 145 | 95 | 1/4 G | 5 | A | 16 |
| 305 L2 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 305 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 305 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 305 L



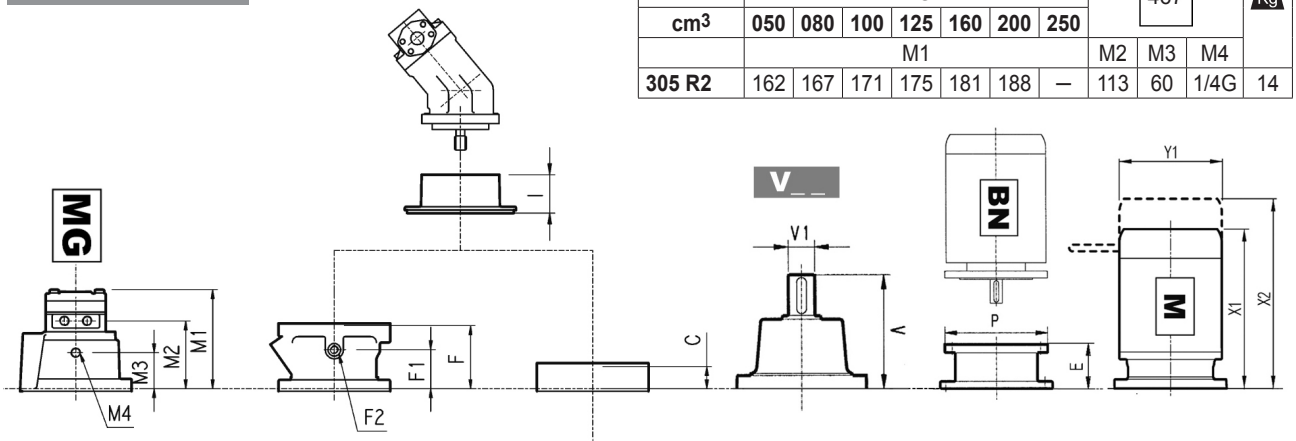

**FP** $M_{2max}$ = 7500 Nm

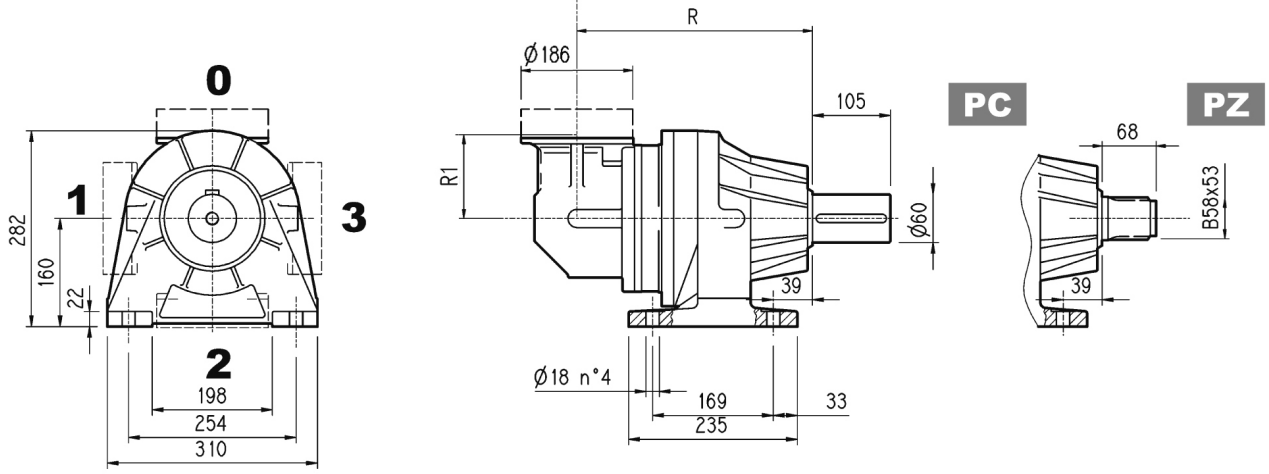
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **305 L1** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **305 L2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **305 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **305 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

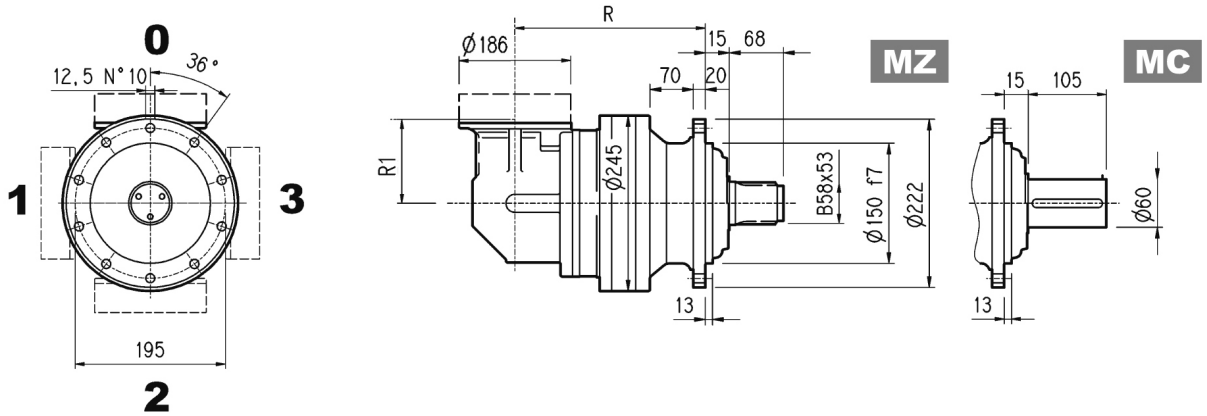
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **305 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **305 L2** | — | — | — | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **305 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **305 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

# 305 R

| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 305 R2 | 162 | 167 | 171 | 175 | 181 | 188 | — | 113 | 60 | 1/4G | 14 |



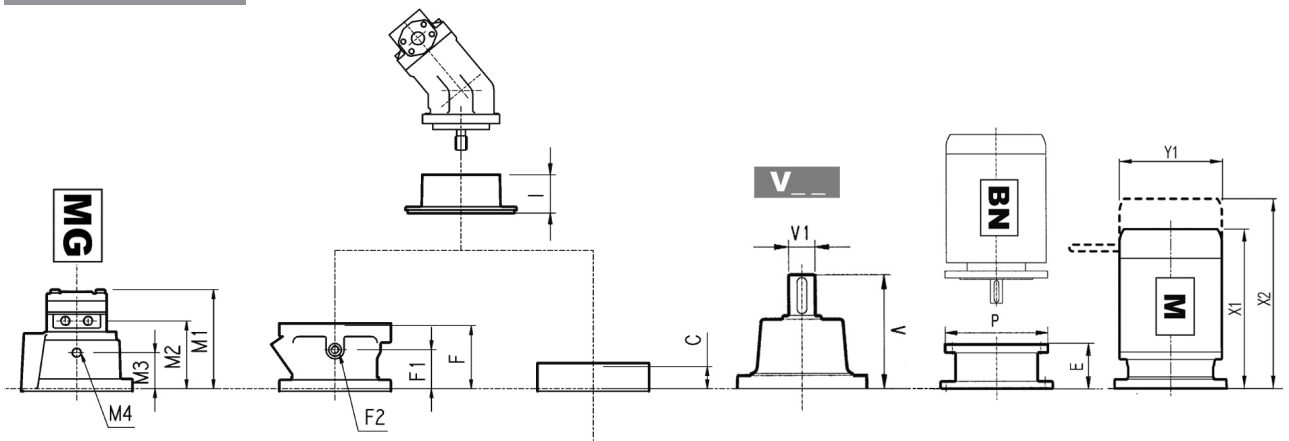



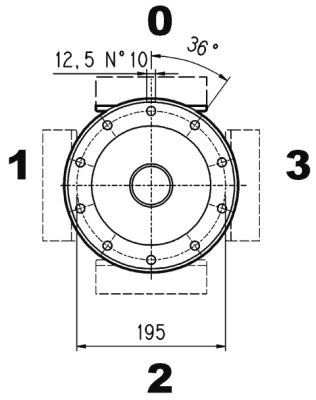



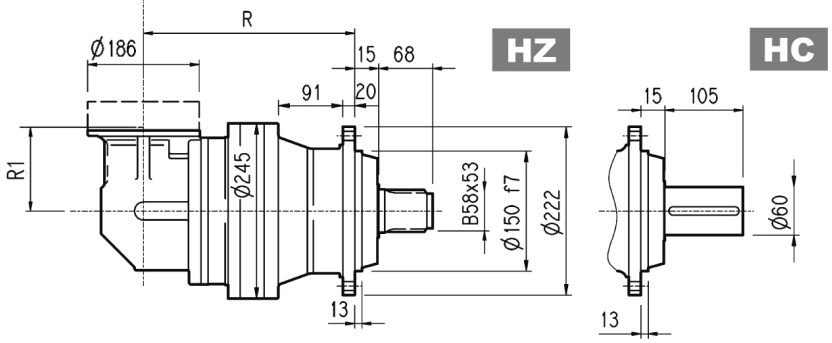

| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 305 R2 | 235 | 375 | 260 | 235 | 140 | 56 | 65 | 60 | 56 |
| 305 R3 | 300 | 340 | 325 | 300 | 122 | 57 | 66 | 61 | 57 |
| 305 R4 | 353 | 393 | 378 | 353 | 122 | 61 | 70 | 65 | 61 |

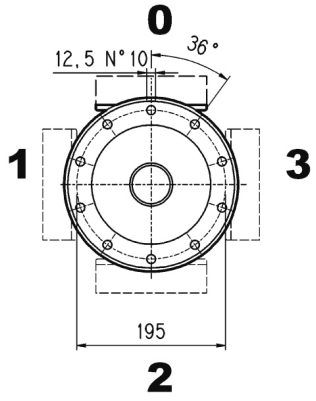
| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 305 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 305 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 305 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

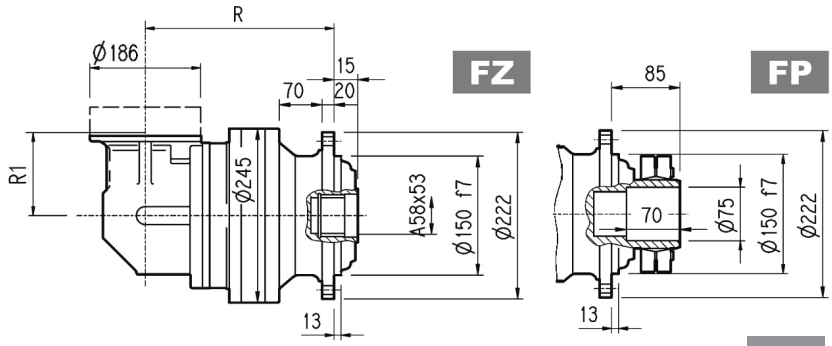
# 305 R

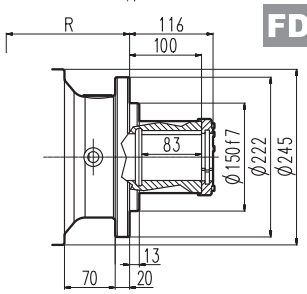


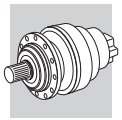



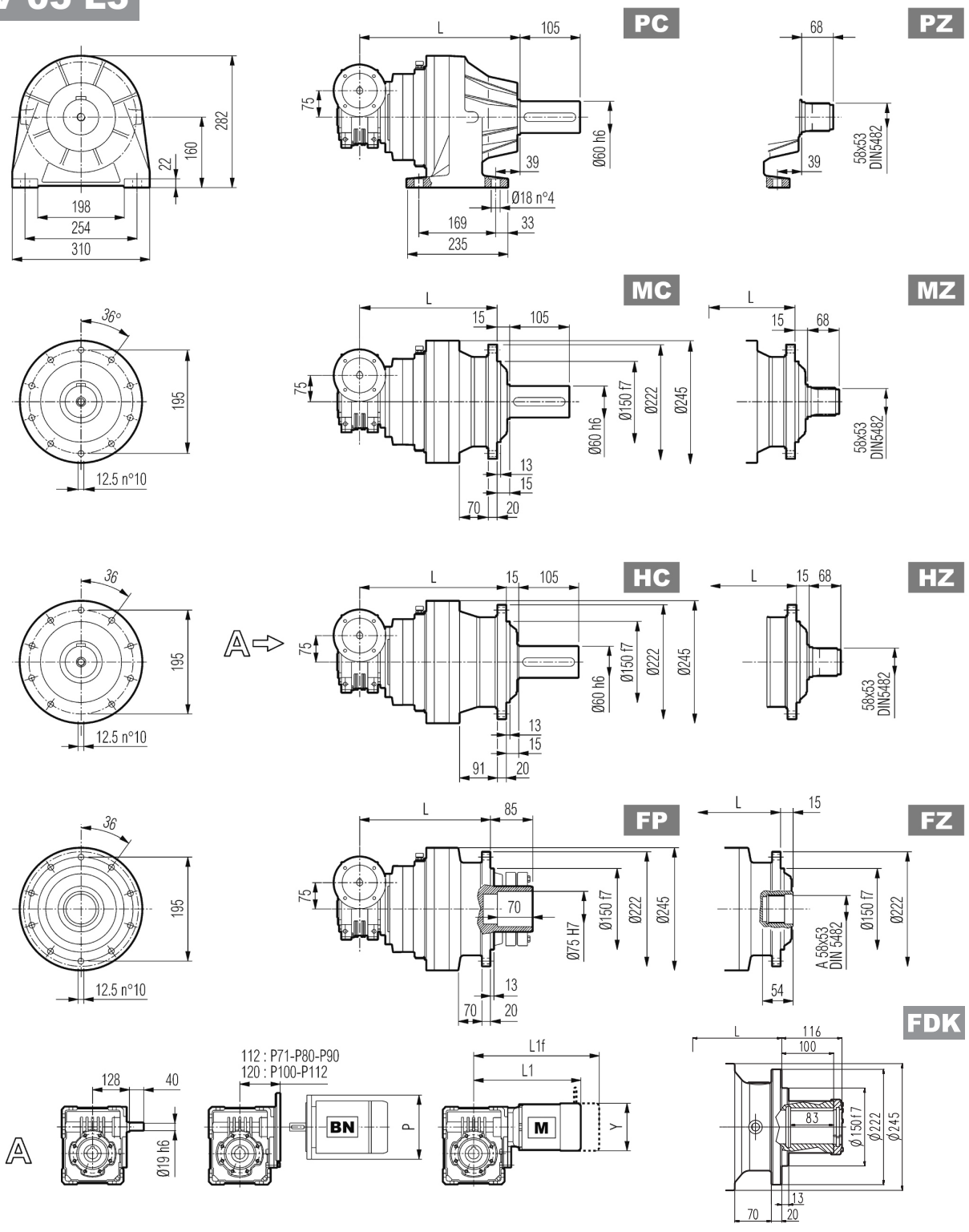

**FP** $M_{2max}$ = 7500 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **305 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **305 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **305 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **305 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **305 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **305 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |

# 3/V 05 L3



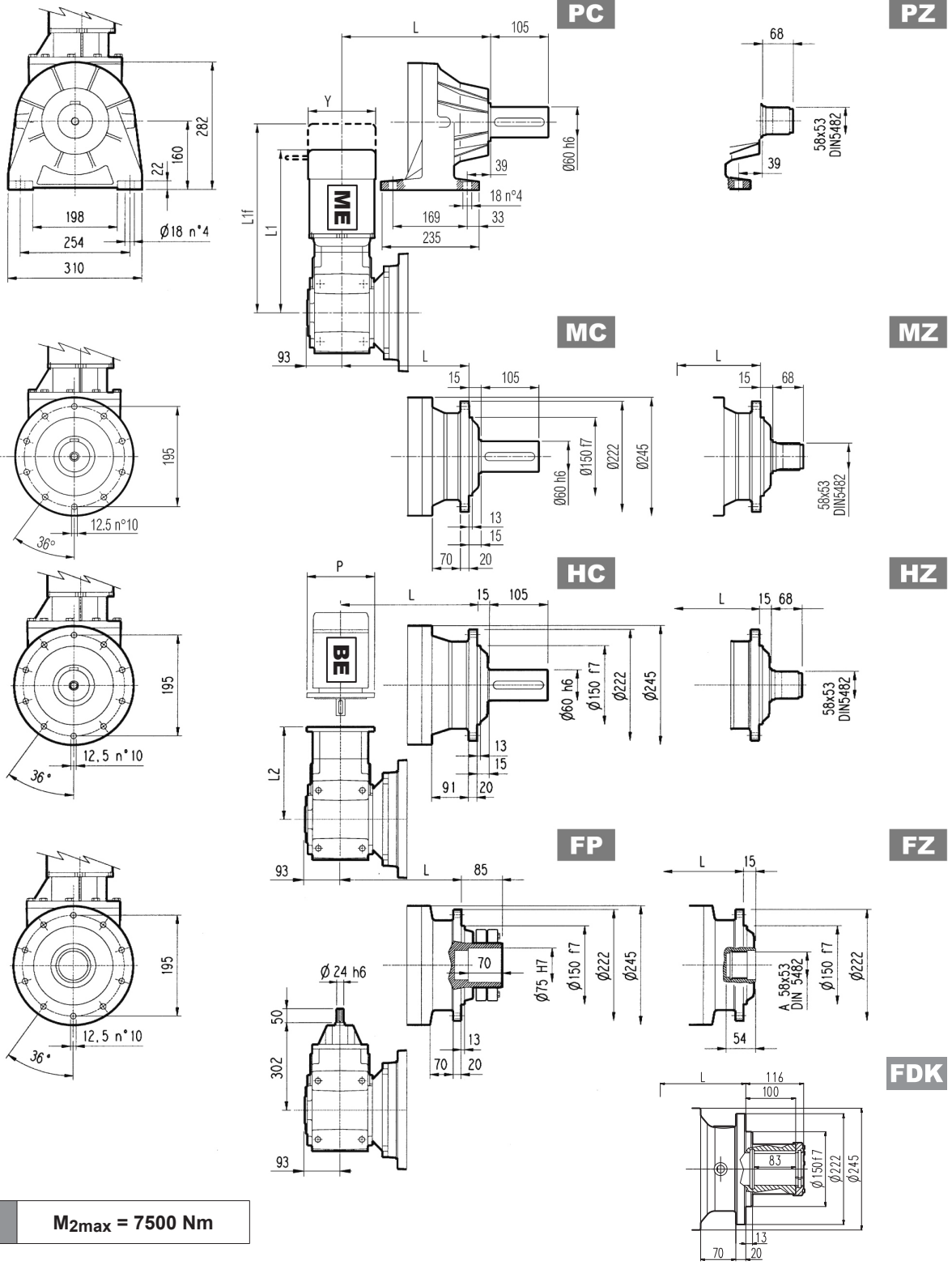



**FP** $M_{2max}$ = 7500 Nm

| | L | | | | Kg | | | | P71 | P80 | P90 | P100 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P | P |
| 3/V 05 L3 | 323 | 363 | 348 | 323 | 51 | 60 | 55 | 51 | 160 | 200 | 200 | 250 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 05 L3 | 308 | 369 | 138 | 333 | 409 | 156 | 376 | 472 | 193 | 408 | 499 | 193 |

# 3/A 05 L2

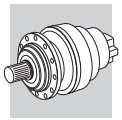



**FP** $M_{2max}$ = 7500 Nm

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 05 L2 | 276 | 316 | 301 | 276 | 90 | 105 | 100 | 90 |

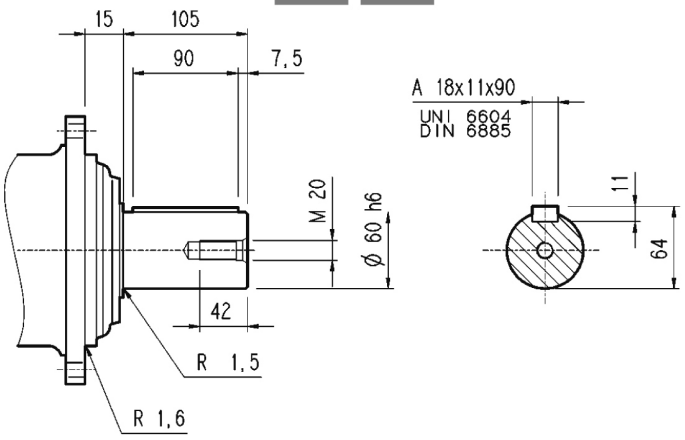
| | P63 | | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/A 05 L2 | 263 | 140 | 263 | 160 | 282.5 | 200 | 282.5 | 200 | 292.5 | 250 | 292.5 | 250 | 329 | 457 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 05 L2 | 418 | 439 | 138 | 447 | 517 | 156 | 490 | 487 | 195 | 522 | 538 | 195 | 630 | 738 | 258 |

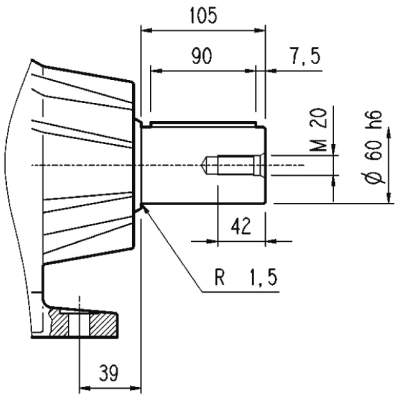


# 305 L | 305 R | 3/V 05 L3 | 3/A 05 L2

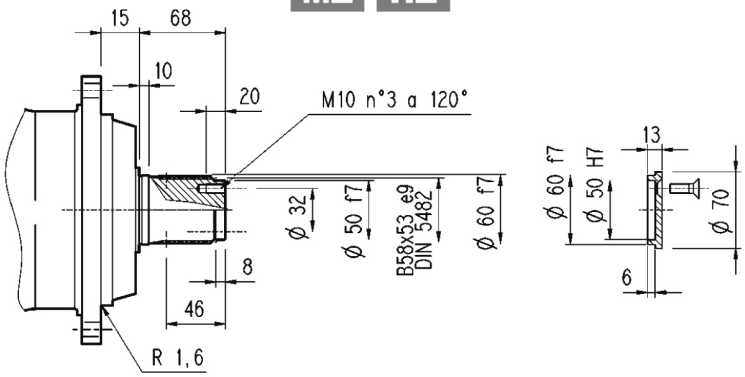
## MC HC



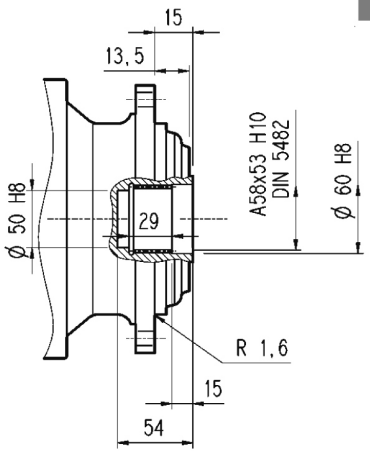

## PC



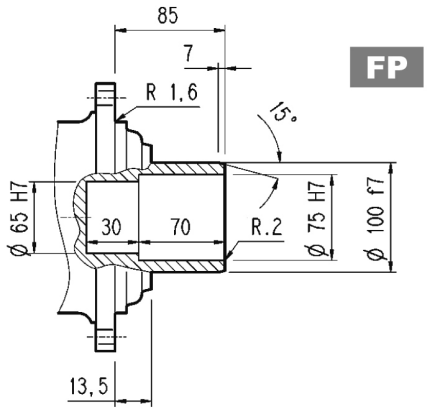

## MZ HZ

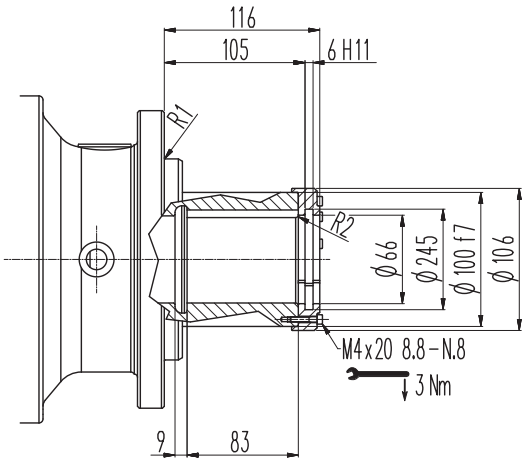



## FZ

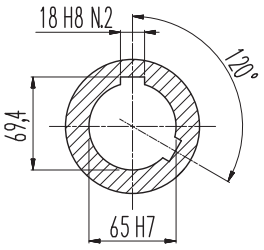



## FP

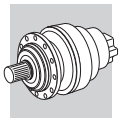



## FDK



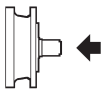

| FP | $M_{2max}$ = 7500 Nm |
|---|---|

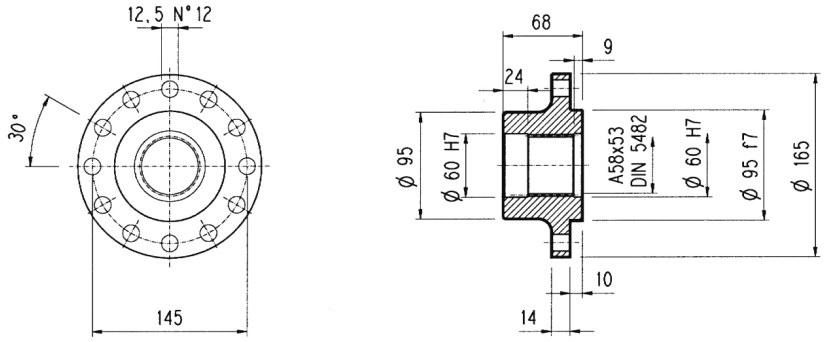


# 305 L | 305 R | 3/V 05 L3 | 3/A 05 L2

## Brida

**W0A**

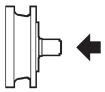


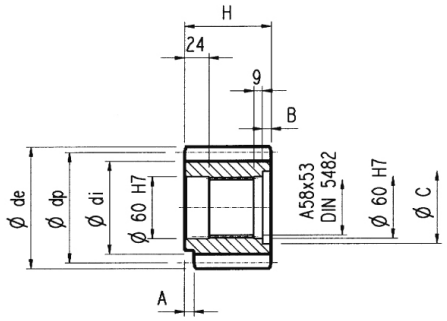



Material: Acero C40

## Piñón para giro

**P...**



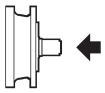


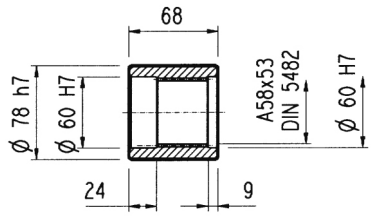

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PCL1** | 5 | 19 | — | 95 | 82 | 104 | 77 | 12 | 9 | 72 | Acero 39NiCr Mo3 Bonificado |
| **PCL2** | 5 | 19 | — | 95 | 82 | 104 | 68 | — | — | — | |
| **PCM** | 5 | 20 | — | 100 | 87.5 | 110 | 68 | 18 | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PCP** | 5 | 22 | — | 110 | 97.5 | 120 | 68 | 18 | — | — | |
| **PDE** | 6 | 14 | 0.500 | 84 | 75 | 99.6 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PDI** | 6 | 18 | 0.500 | 108 | 99 | 123.6 | 68 | — | — | — | |
| **PDM** | 6 | 20 | 0.833 | 120 | 115 | 140 | 68 | — | — | — | |
| **PFD** | 8 | 13 | 0.675 | 104 | 95 | 127.6 | 68 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PFE1** | 8 | 14 | — | 112 | 92 | 126 | 68 | — | — | — | |
| **PFE2** | 8 | 14 | — | 112 | 92 | 126 | 80 | — | 12 | 72 | |
| **PFF** | 8 | 15 | — | 120 | 100 | 136 | 68 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PFP** | 8 | 22 | — | 176 | 156 | 190 | 77 | 12 | 10 | 71 | |
| **PHG** | 10 | 16 | 0.500 | 160 | 145 | 188 | 75 | — | 7 | 72 | |

## Manguito cilíndrico

**M0A**

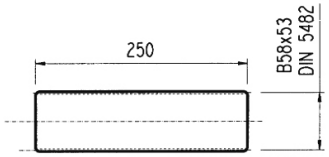





Material: Acero 16CrNi4

## Barra estriada

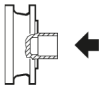
**B0A**

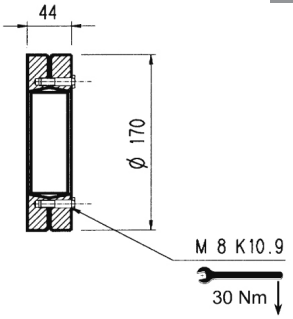


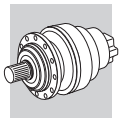

Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

## Aro cónico de apriete

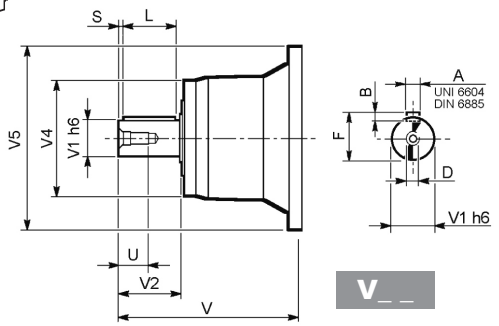
**G0A**



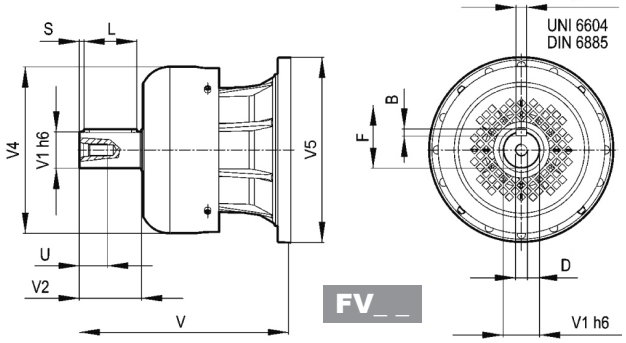




## 305 L 305 R



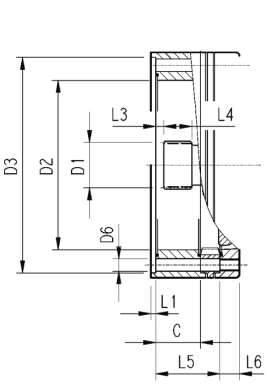

V_ _

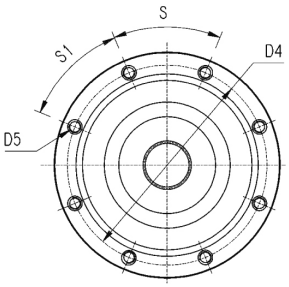



FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **305 L1** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **305 L2** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **305 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **305 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **305 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

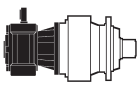
## 305 L 305 R

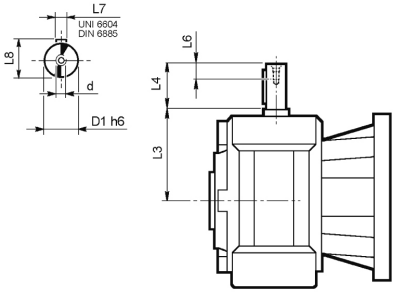



| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **305 L1** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | — | 18 | 45° | 45° | A |
| **305 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| **305 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 118 | 18 | 45° | 45° | A |
| **305 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 171 | 18 | 45° | 45° | A |
| **305 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

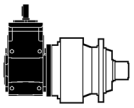
## 3/V 05 L3

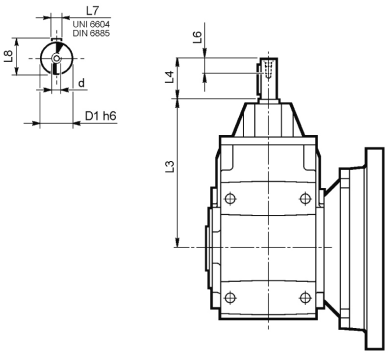





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 05 L3_HS** | 19 | 128 | 40 | 16 | 6 | 21.5 | M6 |

## 3/A 05 L2





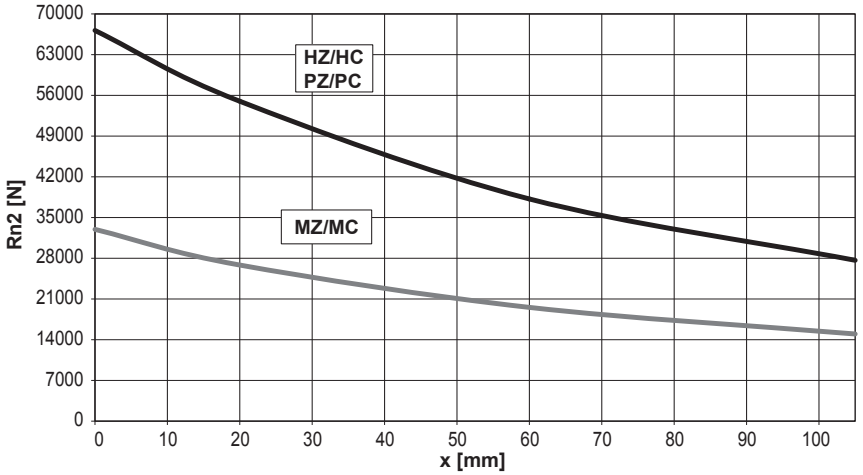

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 05 L2_HS** | 24 | 302 | 50 | 19 | 8 | 27 | M8 |

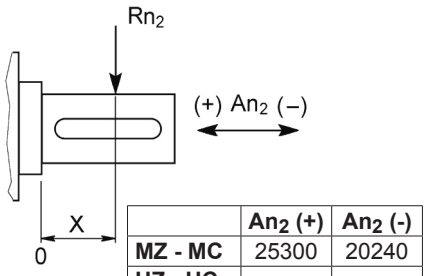


Bonfiglioli Riduttori

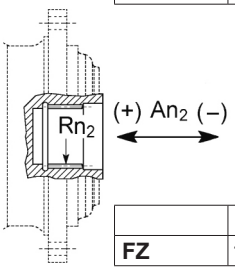
# 305 L | 305 R | 3/V 05 L3 | 3/A 05 L2

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



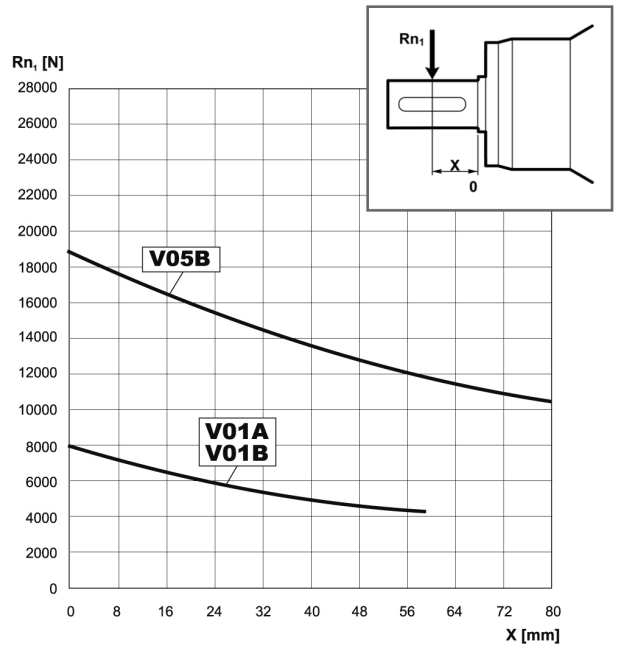

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 25300 | 20240 |
| HZ - HC PZ - PC | 27500 | 22000 |

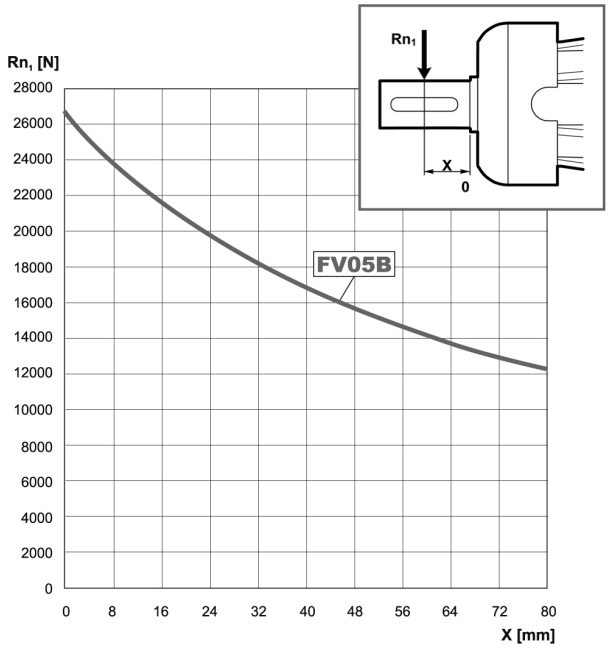



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 11140 | 11604 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.48** | **1.48** | **1.23** | **1.00** | **0.62** | **0.50** |

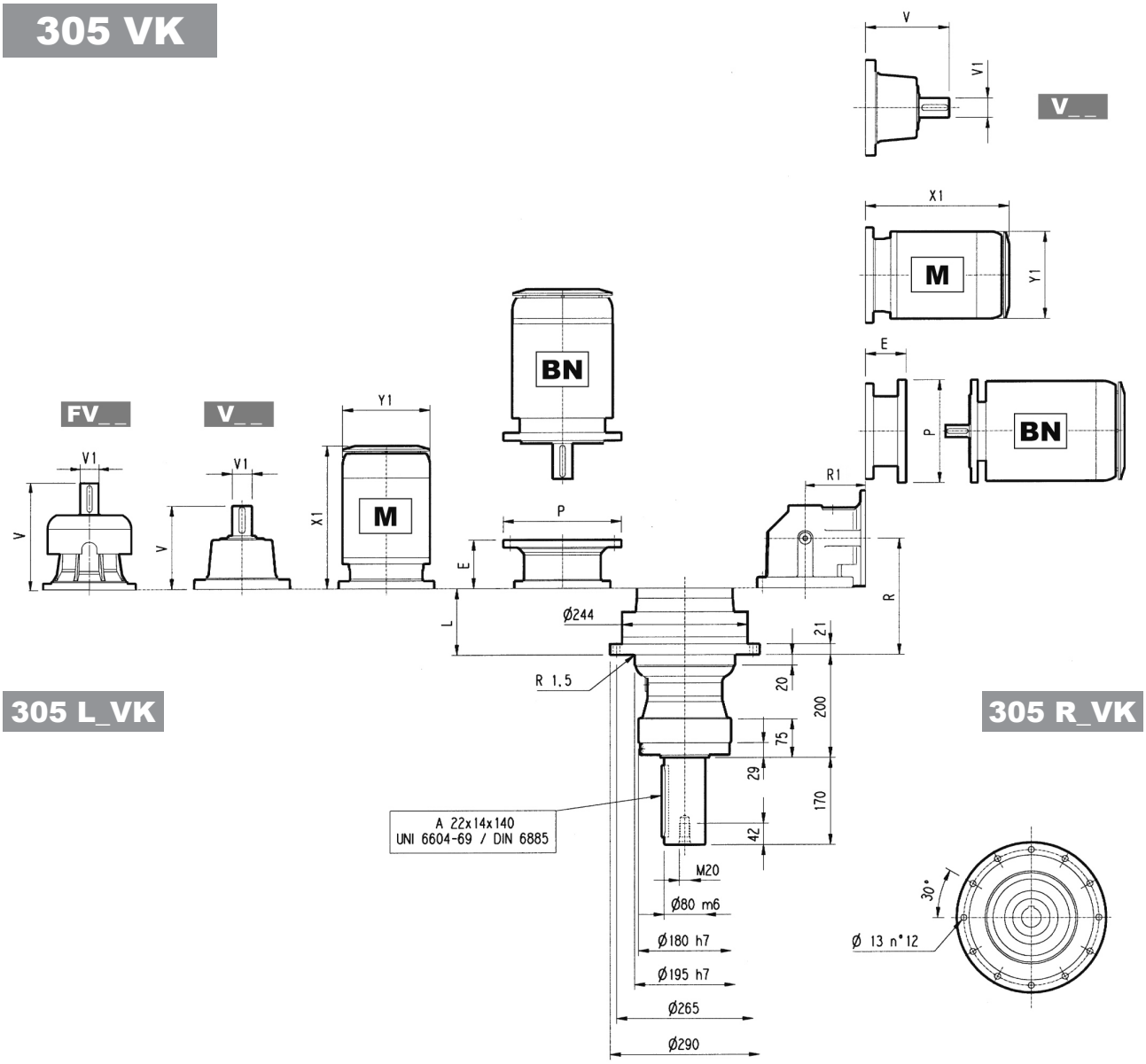
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 305 VK




**305 L_VK**

**305 R_VK**

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **305 L1** | 69 | 70 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **305 L2** | 134 | 77 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **305 L3** | 187 | 81 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **305 L4** | 240 | 85 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

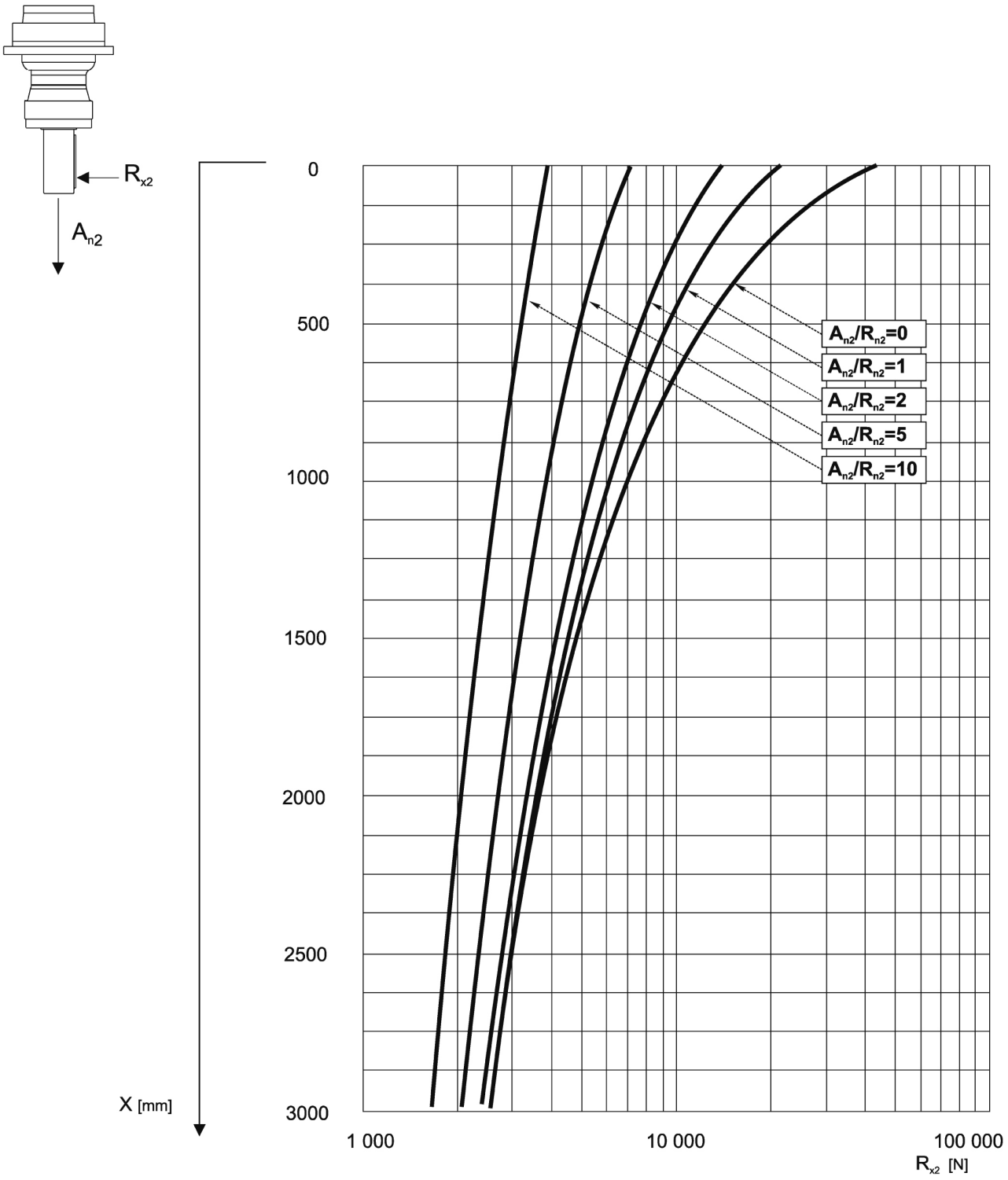
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **305 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **305 L2** | — | — | — | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **305 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **305 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P |
| **305 R2** | 161 | 140 | 90 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **305 R3** | 226 | 122 | 92 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |
| **305 R4** | 279 | 122 | 95 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **305 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **305 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **305 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |

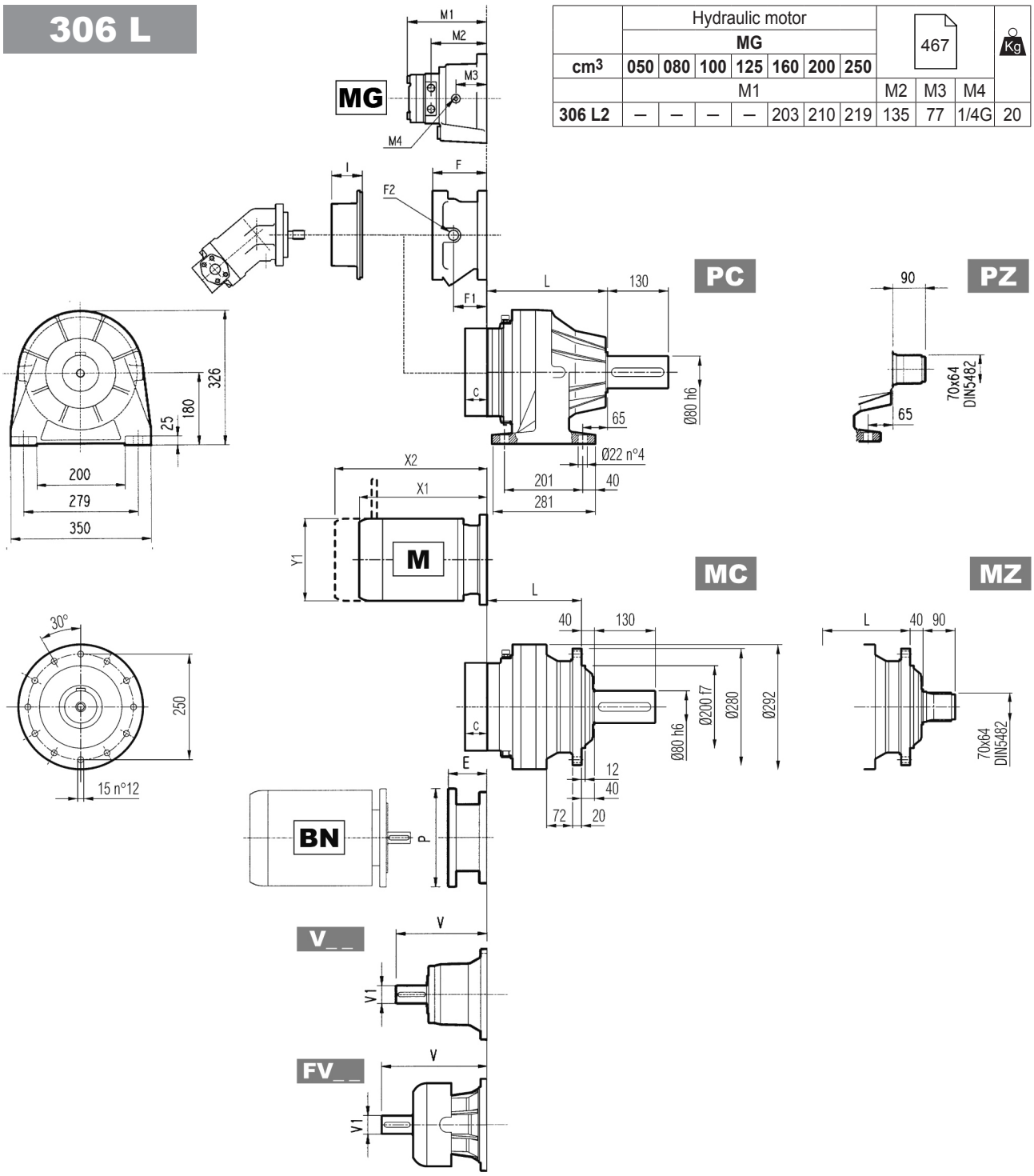
# 305 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



# 306 L

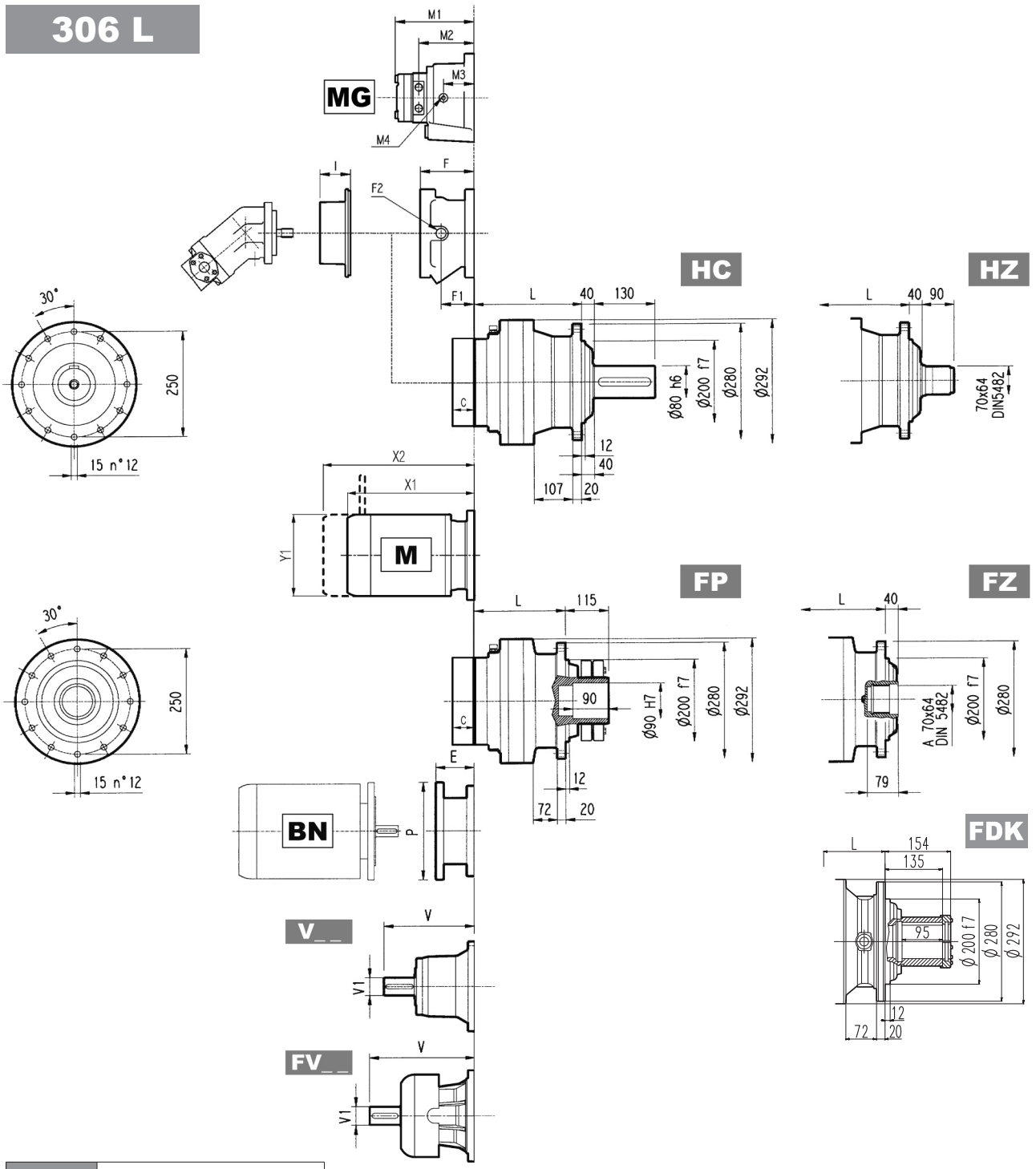
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 306 L2 | – | – | – | – | 203 | 210 | 219 | 135 | 77 | 1/4G | 20 |




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 306 L1 | 160 | 235 | 195 | 160 | 65 | 85 | 70 | 65 |
| 306 L2 | 225 | 300 | 260 | 225 | 74 | 95 | 79 | 74 |
| 306 L3 | 278 | 353 | 313 | 278 | 78 | 98 | 83 | 78 |
| 306 L4 | 331 | 406 | 366 | 331 | 82 | 103 | 87 | 82 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 306 L1 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| 306 L2 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| 306 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 306 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 306 L



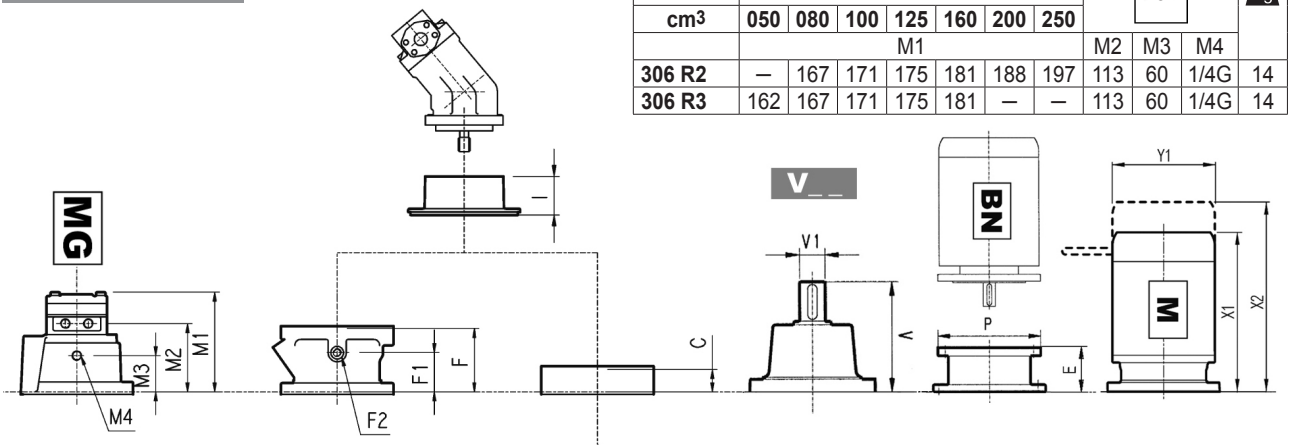

**FP** $M_{2max}$ = 12000 Nm

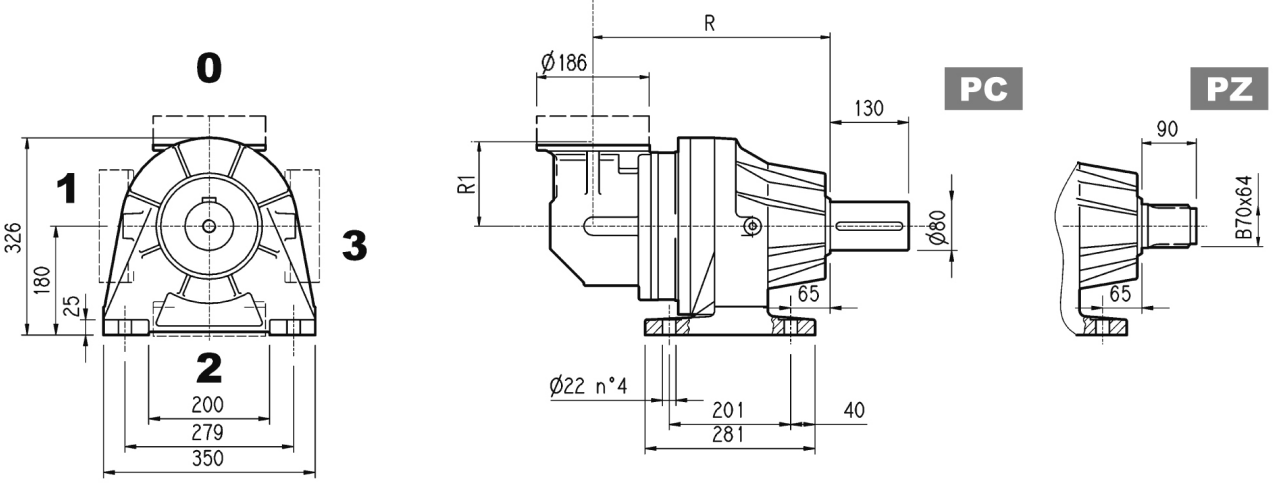
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **306 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 144 | 350 | 153 | 350 | 183 | 400 | 212 | 450 | 193 | 550 |
| **306 L2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **306 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **306 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

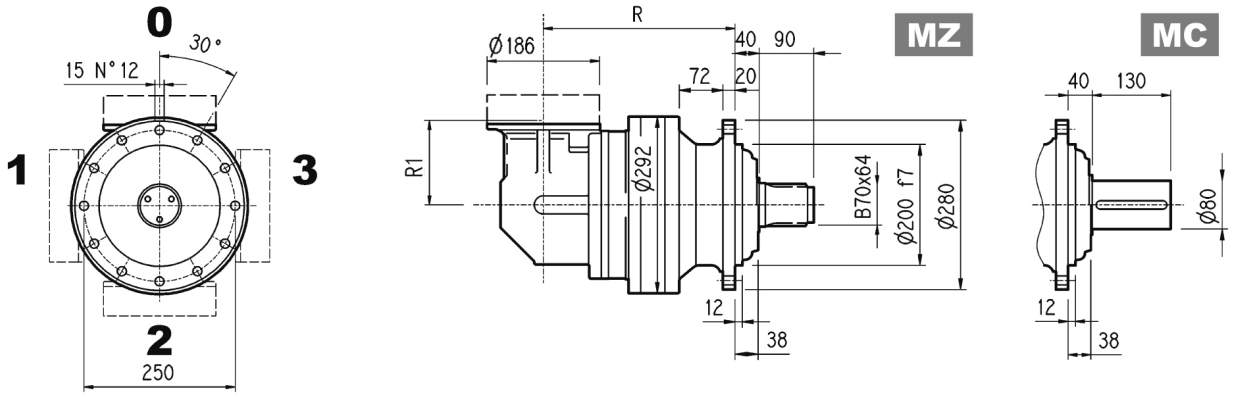
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **306 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **306 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **306 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **306 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

# 306 R

| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 306 R2 | – | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 1/4G | 14 |
| 306 R3 | 162 | 167 | 171 | 175 | 181 | – | – | 113 | 60 | 1/4G | 14 |



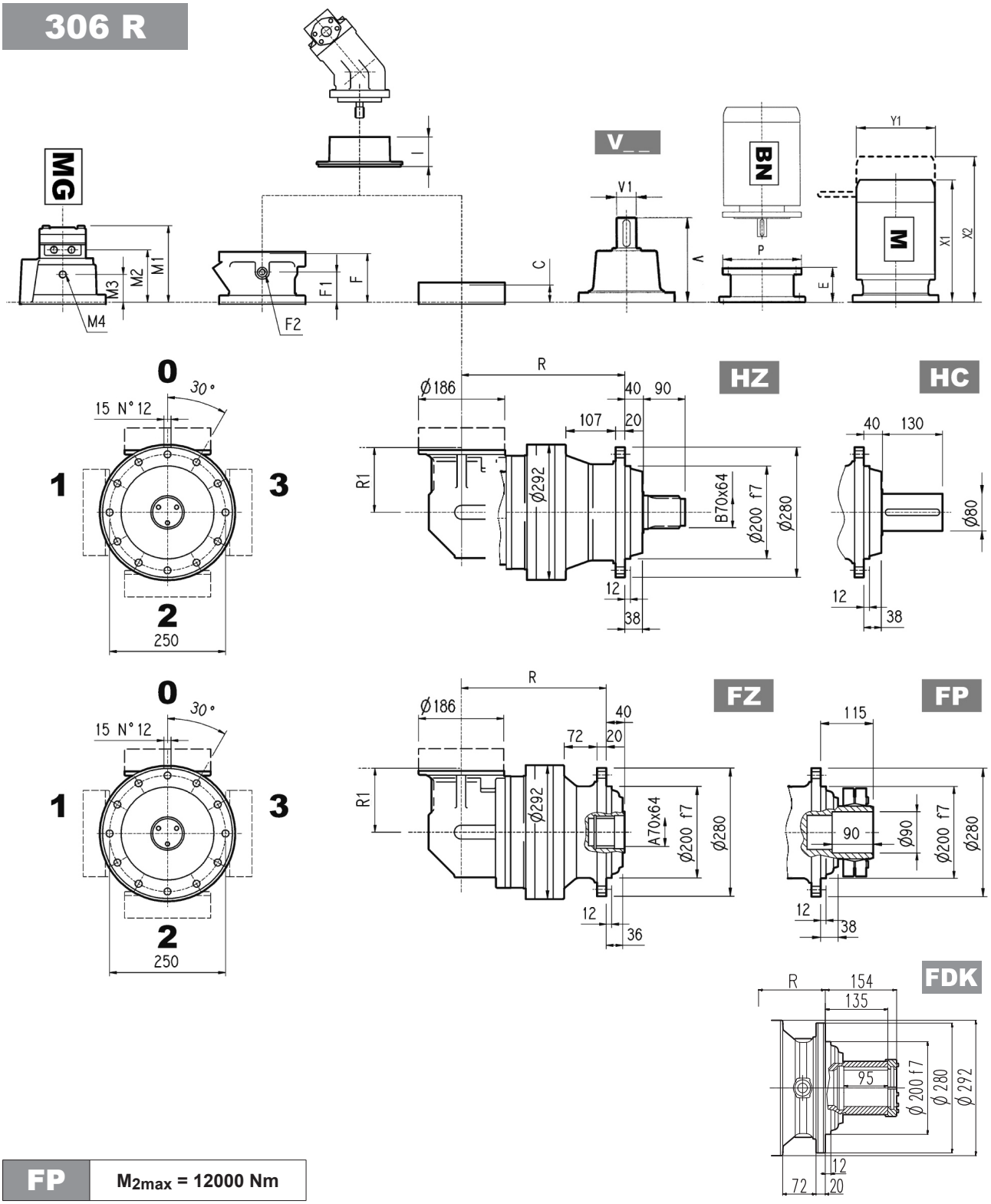




| | R | | | | R1 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 306 R2 | 297 | 372 | 332 | 297 | 140 | 89 | 105 | 94 | 89 |
| 306 R3 | 317 | 392 | 352 | 317 | 140 | 85 | 100 | 90 | 85 |
| 306 R4 | 370 | 445 | 405 | 370 | 122 | 79 | 95 | 84 | 79 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 306 R2 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 306 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 306 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

# 306 R

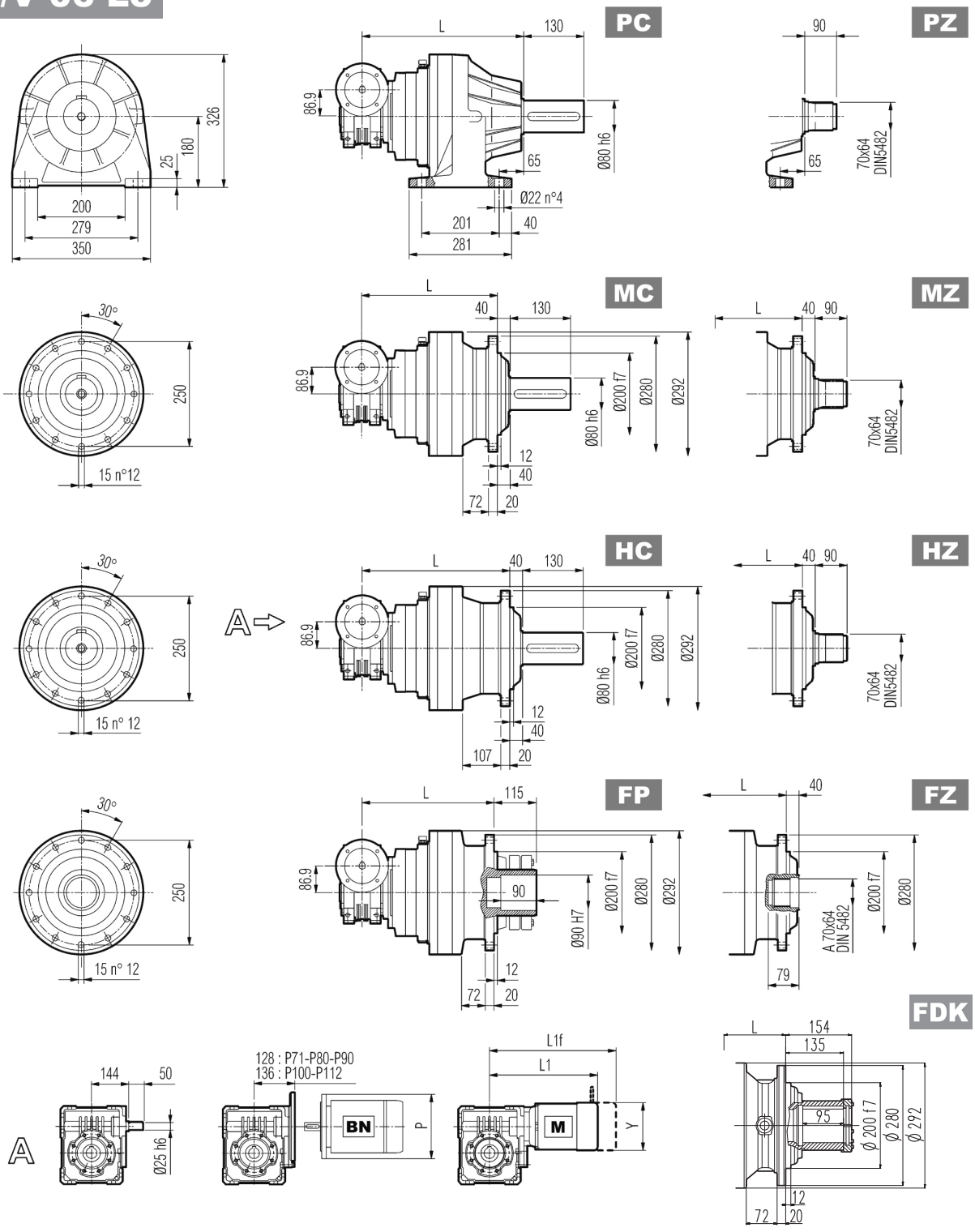



**FP** $M_{2max}$ = 12000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **306 R2** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |
| **306 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |
| **306 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **306 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **306 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **306 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |

# 3/V 06 L3

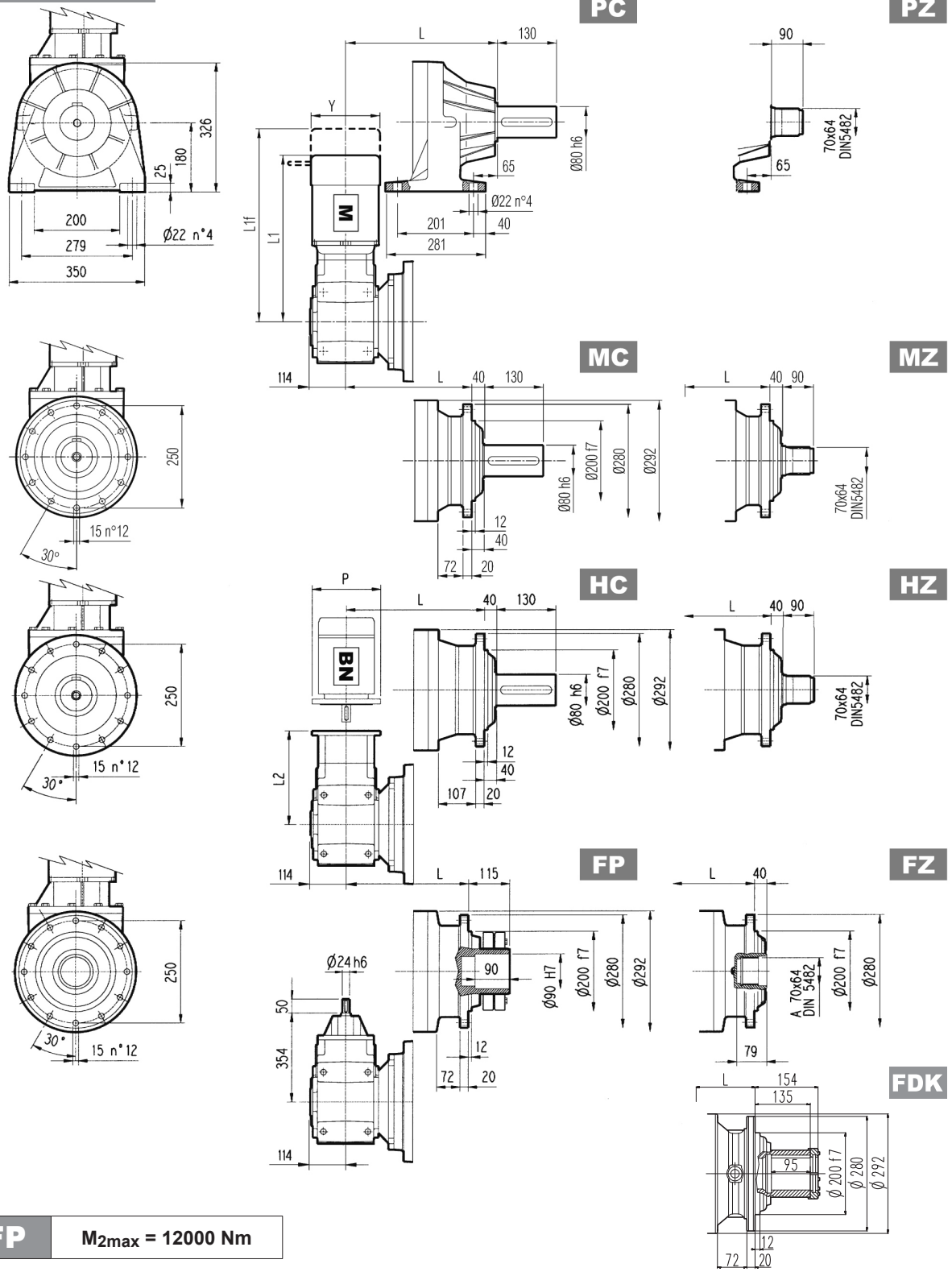



**FP** $M_{2max}$ = 12000 Nm

| | L | | | | Kg | | | | P71 | P80 | P90 | P100 | P112 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P | P | P |
| 3/V 06 L3 | 370 | 445 | 405 | 370 | 80 | 111 | 95 | 80 | 160 | 200 | 200 | 250 | 250 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 06 L3 | 324 | 385 | 138 | 349 | 425 | 156 | 392 | 477 | 193 | 424 | 515 | 193 |

# 3/A 06 L2




**FP** $M_{2max}$ = 12000 Nm

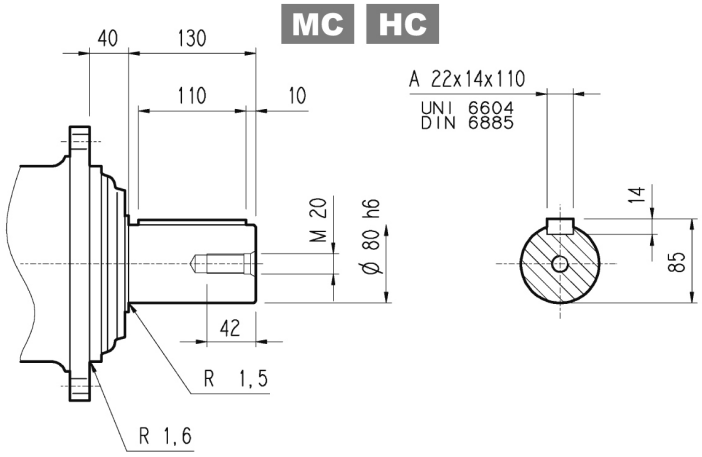
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 06 L2 | 340 | 415 | 375 | 340 | 140 | 170 | 150 | 140 |

| | P63 | | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/A 06 L2 | 314.5 | 140 | 314.5 | 160 | 334 | 200 | 334 | 200 | 344 | 250 | 344 | 250 | 380.5 | 300 | 431 | 350 | 431 | 350 |

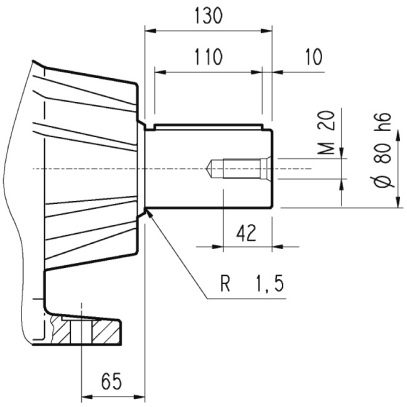
| | S1 + M1 | | | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 06 L2 | 445 | 508 | 138 | 568 | 517 | 156 | 541 | 637 | 195 | 572 | 665 | 195 | 678 | 789 | 258 |

# 306 L | 306 R | 3/V 06 L3 | 3/A 06 L2

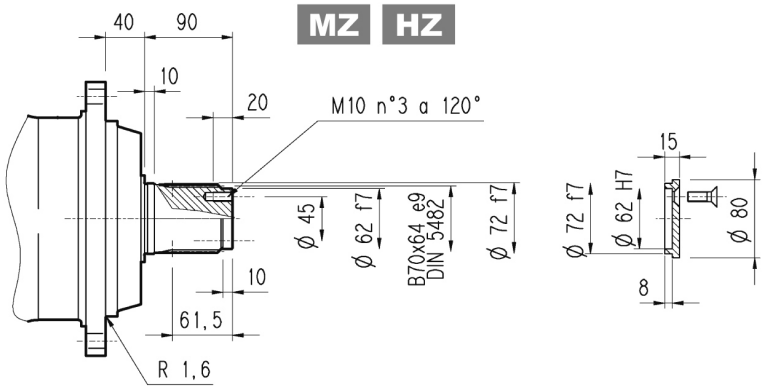
## MC HC



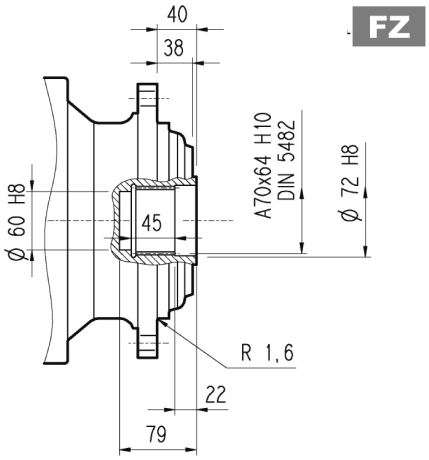

## PC



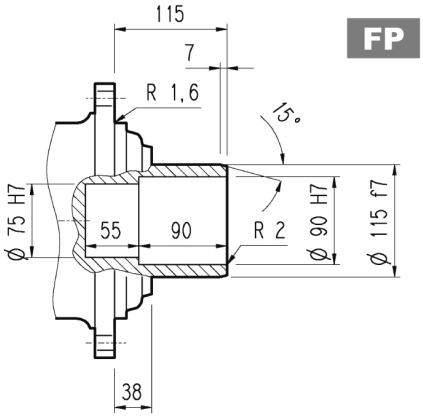

## MZ HZ

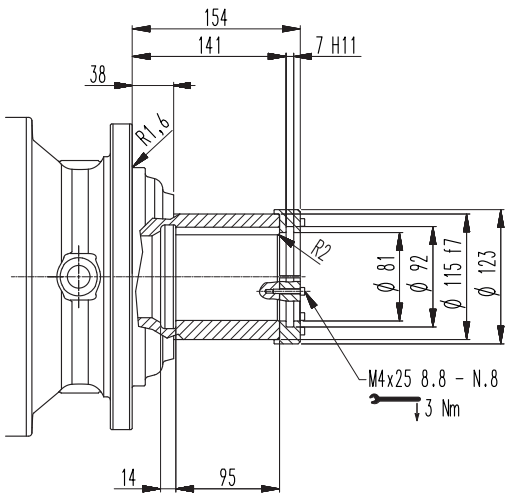



## FZ

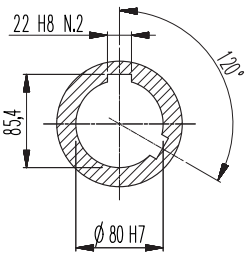



## FP



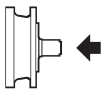

## FDK

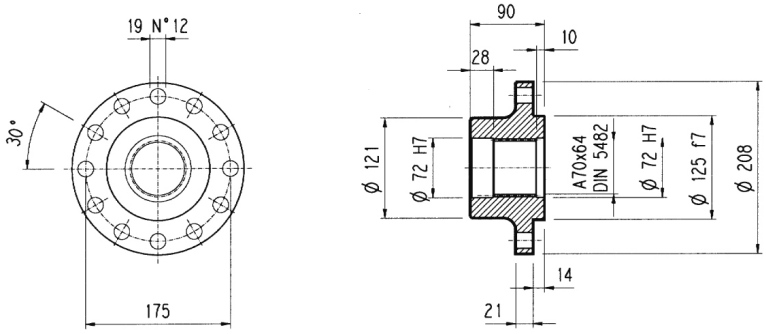



| FP | $M_{2max}$ = 12000 Nm |
|---|---|

## Brida

W0A

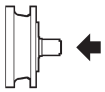


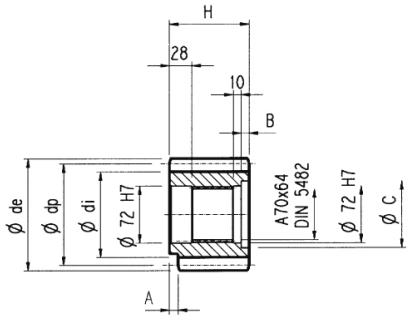



Material: Acero C40

## Piñón para giro

P...



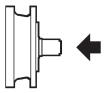


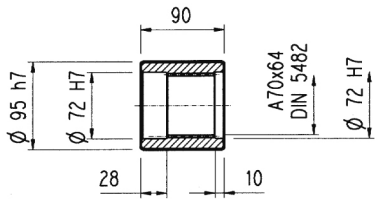

$\alpha$ = 20°

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PFF1** | 8 | 15 | — | 120 | 100 | 134 | 90 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PFF2** | 8 | 15 | 0.500 | 120 | 108 | 141 | 90 | — | — | — | |
| **PHB** | 10 | 11 | 0.500 | 110 | 95 | 136 | 90 | 10 | — | — | |
| **PHC1** | 10 | 12 | 0.450 | 120 | 104 | 145 | 90 | — | — | — | |
| **PHC2** | 10 | 12 | 0.320 | 120 | 100 | 144.2 | 90 | — | — | — | |
| **PHC3** | 10 | 12 | 0.350 | 120 | 101 | 144 | 90 | — | — | — | |
| **PHD1** | 10 | 13 | 0.950 | 130 | 124 | 165 | 90 | — | — | — | |
| **PHD2** | 10 | 13 | 0.500 | 130 | 115 | 159 | 90 | — | — | — | |
| **PHE1** | 10 | 14 | — | 140 | 115 | 160 | 90 | — | — | — | |
| **PHE2** | 10 | 14 | 0.500 | 140 | 125 | 166 | 90 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PHF** | 10 | 15 | — | 150 | 127 | 167 | 90 | 24 | — | — | Acero 39NiCr Mo3 Bonificado |
| **PHH** | 10 | 17 | 0.480 | 170 | 154 | 197.5 | 90 | 10 | — | — | |
| **PHM** | 10 | 20 | — | 200 | 175 | 220 | 90 | 10 | — | — | Acero 18NiCrMo5 Cementado y templado |

## Manguito cilíndrico

M0A

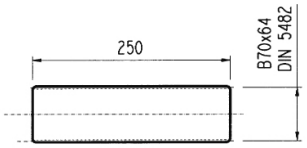





Material: Acero 16CrNi4

## Barra estriada

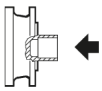
B0A

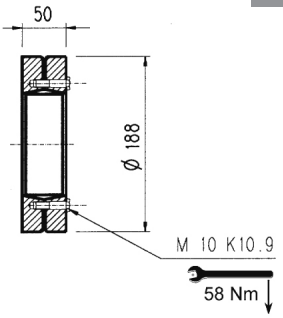


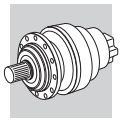

Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

## Aro cónico de apriete

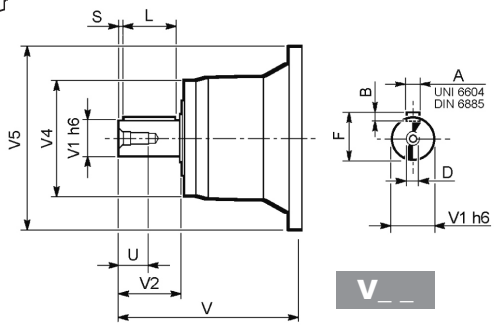
G0A



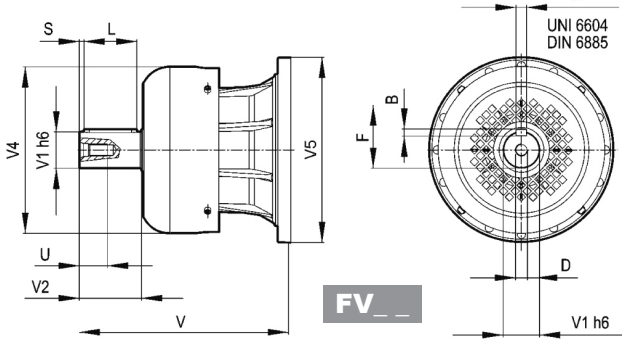




## 306 L 306 R



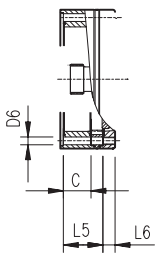

V_ _

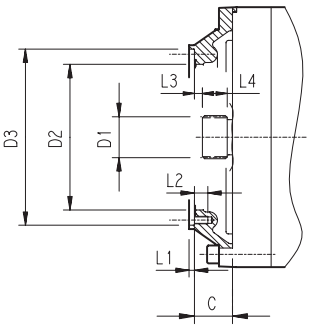


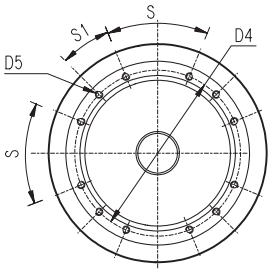

FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **306 L1** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **306 L2** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **306 L3** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **306 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **306 R2-R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 306 L 306 R

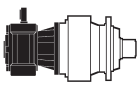


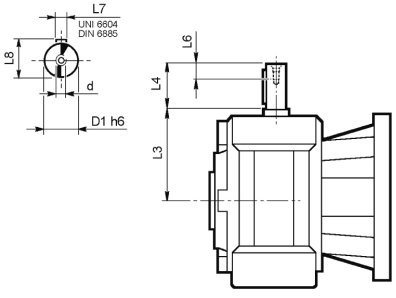




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **306 L1** | **V9AB** | 45 | 58x53 DIN5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **306 L2** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **306 L3** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 53 | 18 | 45° | 45° | A |
| **306 L4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 106 | 18 | 45° | 45° | A |
| **306 R2-R3-R4** | **V9AA** | 37 | 40x36 DIN5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

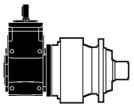
## 3/V 06 L3

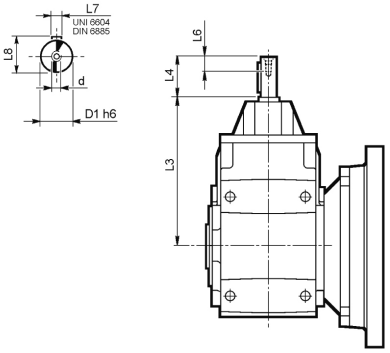





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 06 L3_HS** | 25 | 144 | 50 | 19 | 8 | 28 | M8 |

## 3/A 06 L2





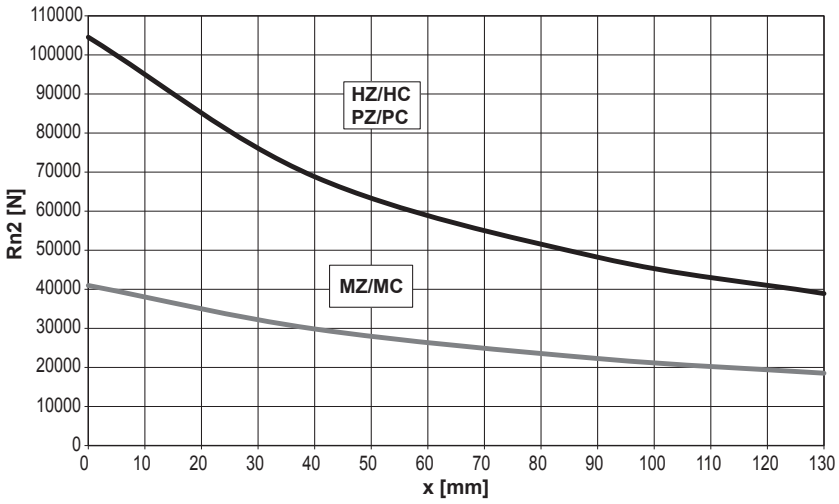

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/A 06 L2_HS** | 24 | 354 | 50 | 19 | 8 | 27 | M8 |

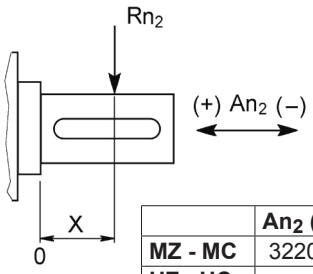


Bonfiglioli Riduttori

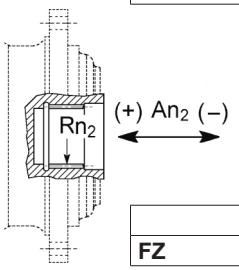
# 306 L | 306 R | 3/V 06 L3 | 3/A 06 L2

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



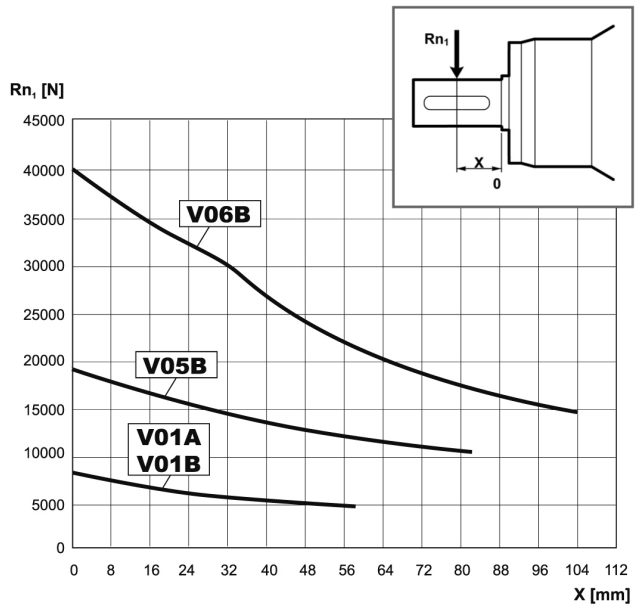

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 32200 | 20240 |
| HZ - HC<br>PZ - PC | 60000 | 30000 |

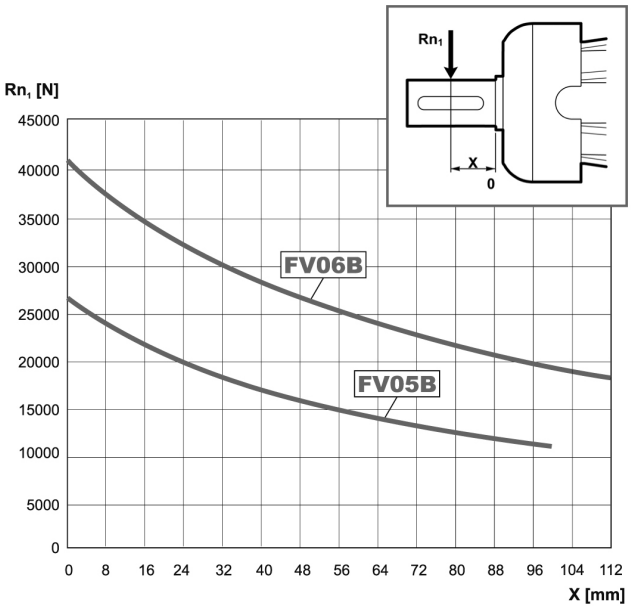



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 16246 | 16246 |

| | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_2$ para cargas sobre los ejes | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.34** | **1.34** | **1.23** | **1.00** | **0.62** | **0.50** |

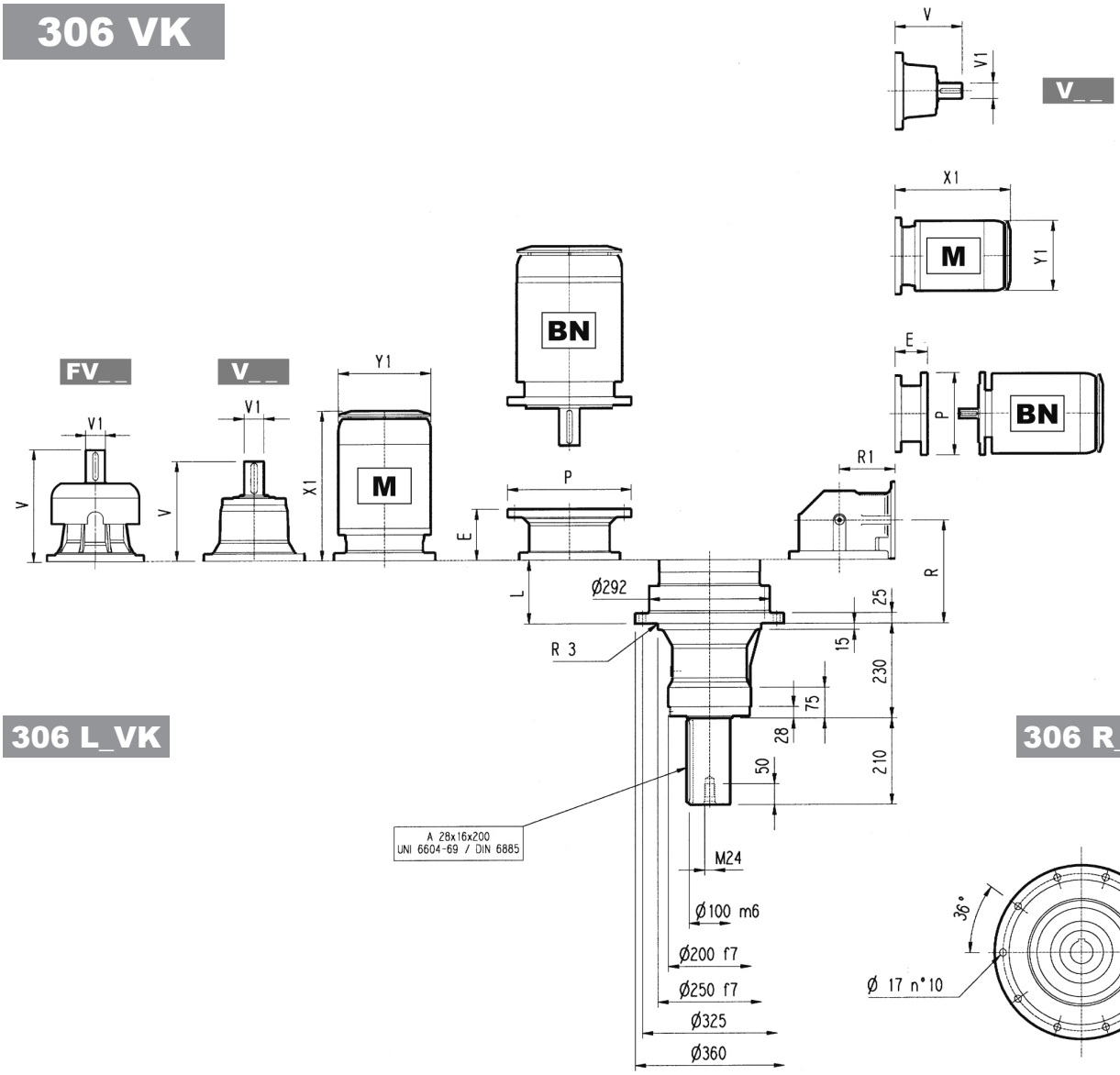
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 306 VK




306 L_VK

306 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **306 L1** | 75 | 110 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 144 | 350 | 153 | 350 | 183 | 400 | 212 | 450 | 193 | 550 |
| **306 L2** | 140 | 120 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **306 L3** | 193 | 125 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **306 L4** | 246 | 130 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

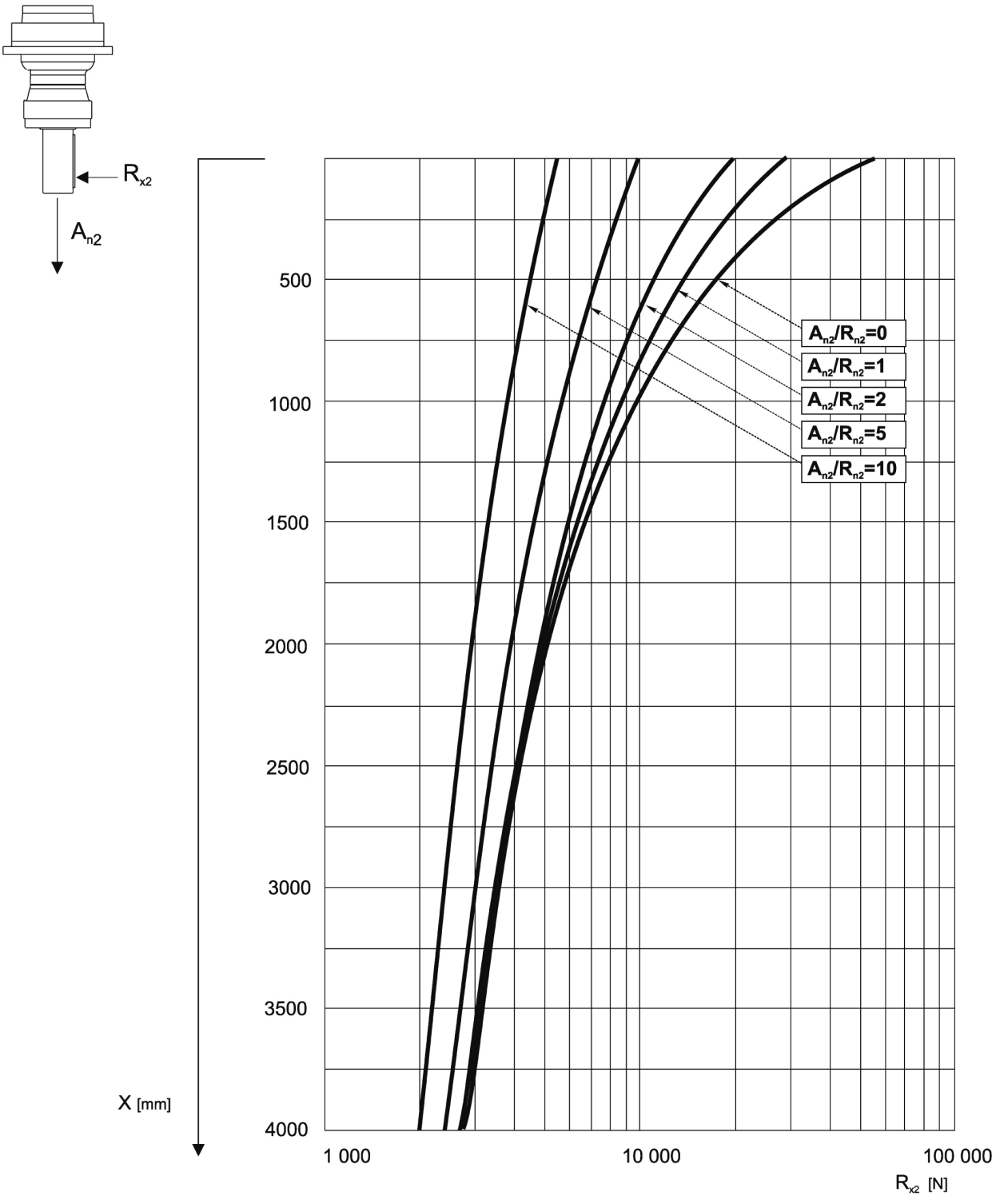
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **306 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **306 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **306 L3** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **306 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **306 R2** | 212 | 140 | 90 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |
| **306 R3** | 232 | 140 | 92 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |
| **306 R4** | 285 | 122 | 95 | 137.5 | 24 | 6 | 158 | 38 | 7 | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 |

| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **306 R2** | — | — | — | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **306 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |
| **306 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 |

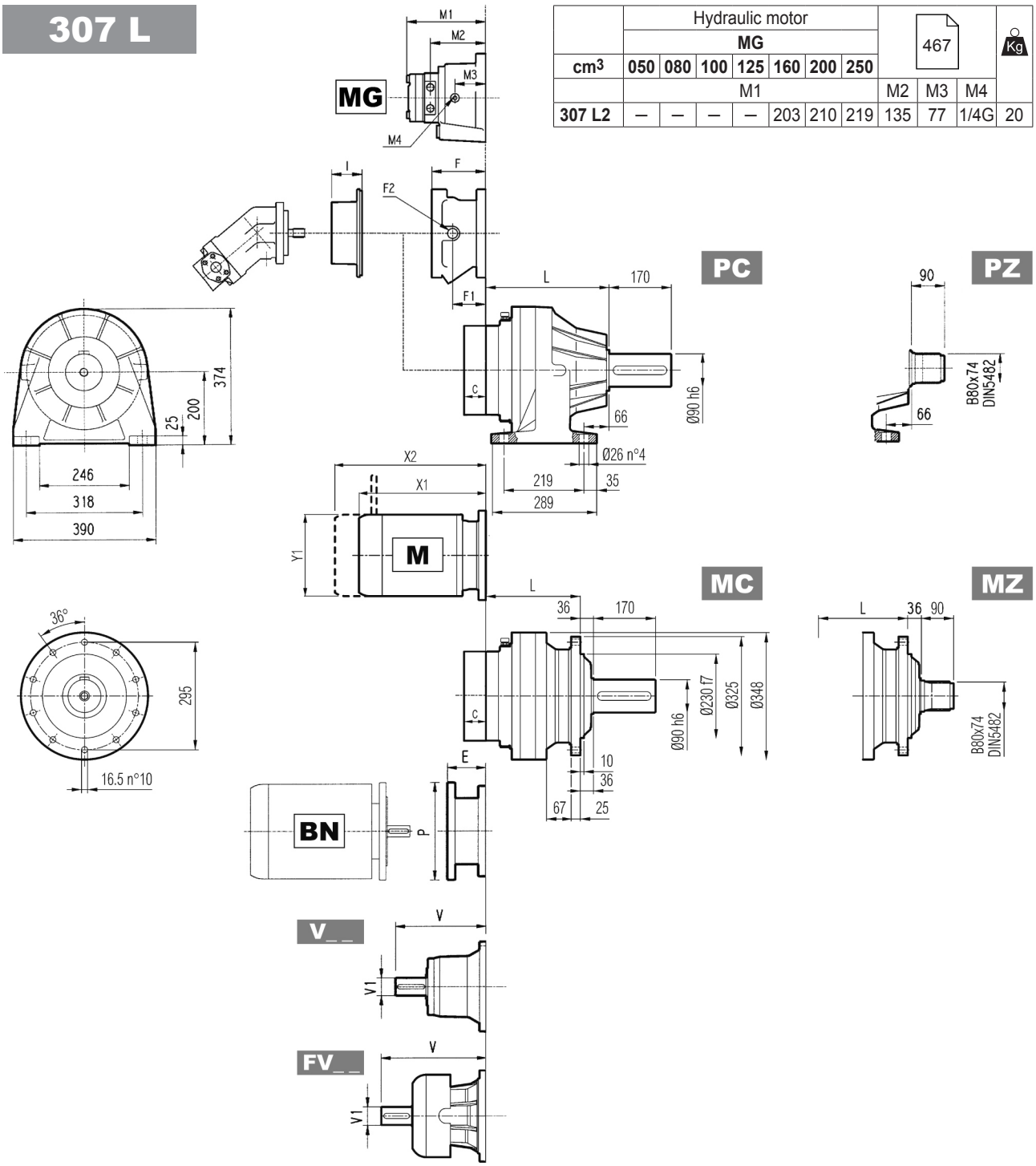
# 306 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



# 307 L

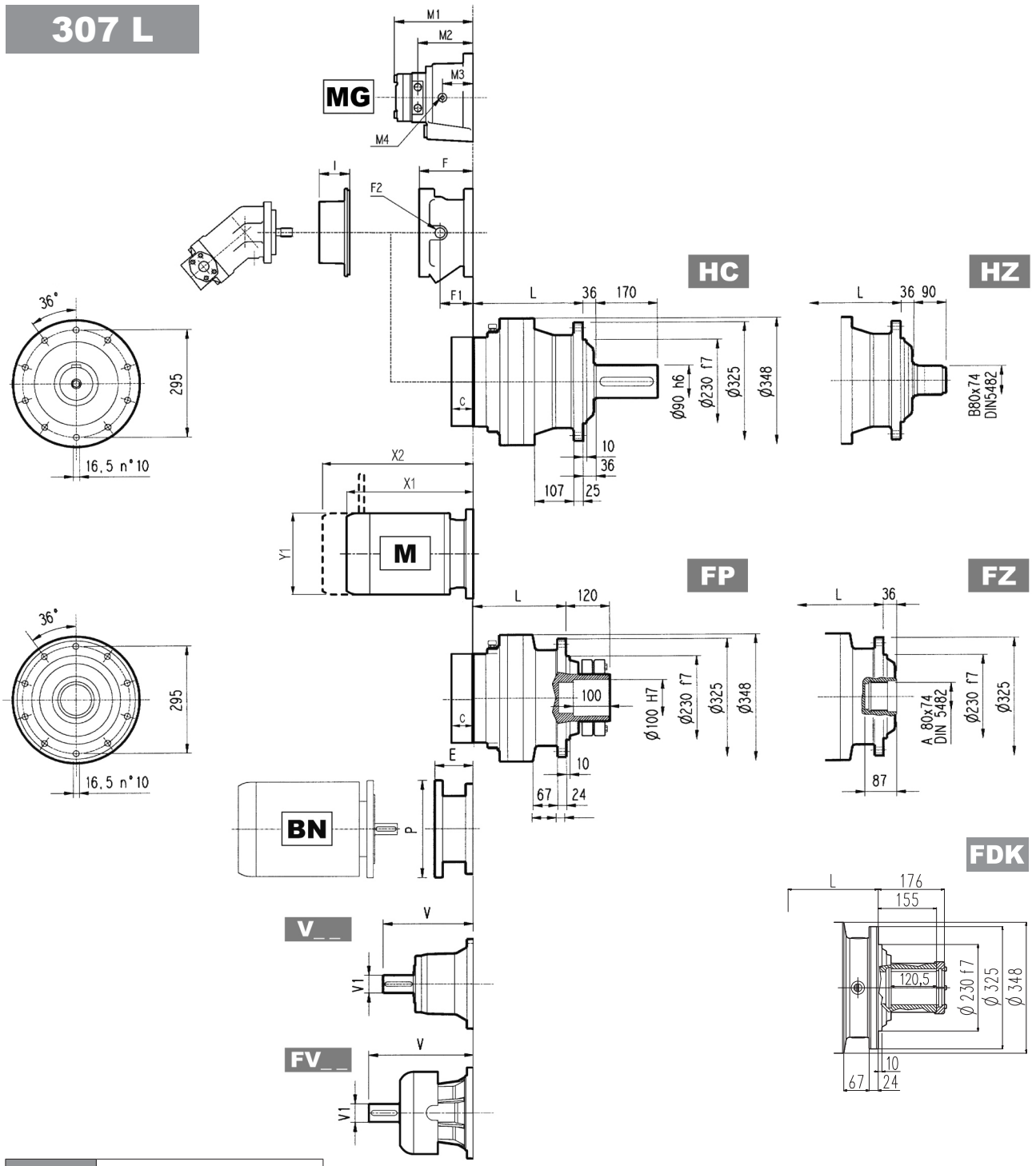
| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 307 L2 | – | – | – | – | 203 | 210 | 219 | 135 | 77 | 1/4G | 20 |




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 307 L1 | 165 | 246 | 210 | 165 | 85 | 120 | 105 | 85 |
| 307 L2 | 254 | 335 | 299 | 254 | 97 | 132 | 117 | 97 |
| 307 L3 | 319 | 400 | 364 | 319 | 104 | 139 | 124 | 104 |
| 307 L4 | 372 | 453 | 417 | 372 | 108 | 143 | 128 | 108 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 307 L1 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |
| 307 L2 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| 307 L3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |
| 307 L4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 307 L



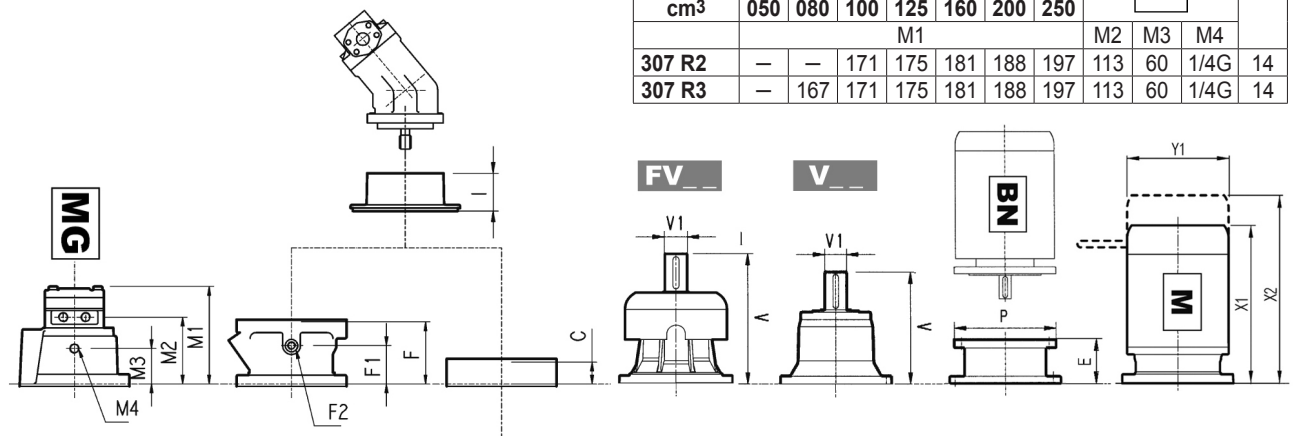

**FP** $M_{2max}$ = 18200 Nm

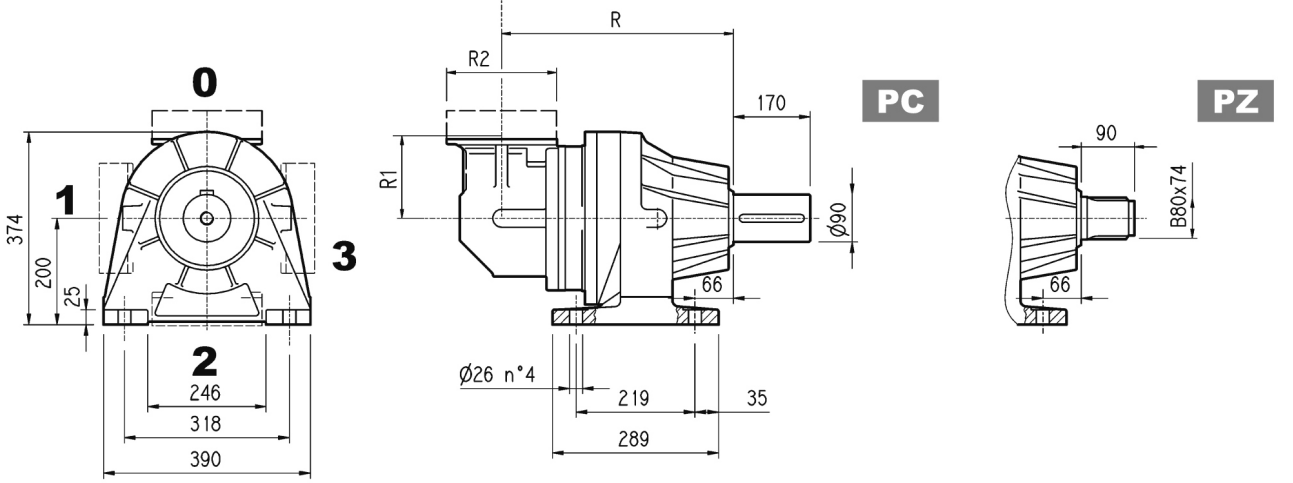
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **307 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |
| **307 L2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **307 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **307 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

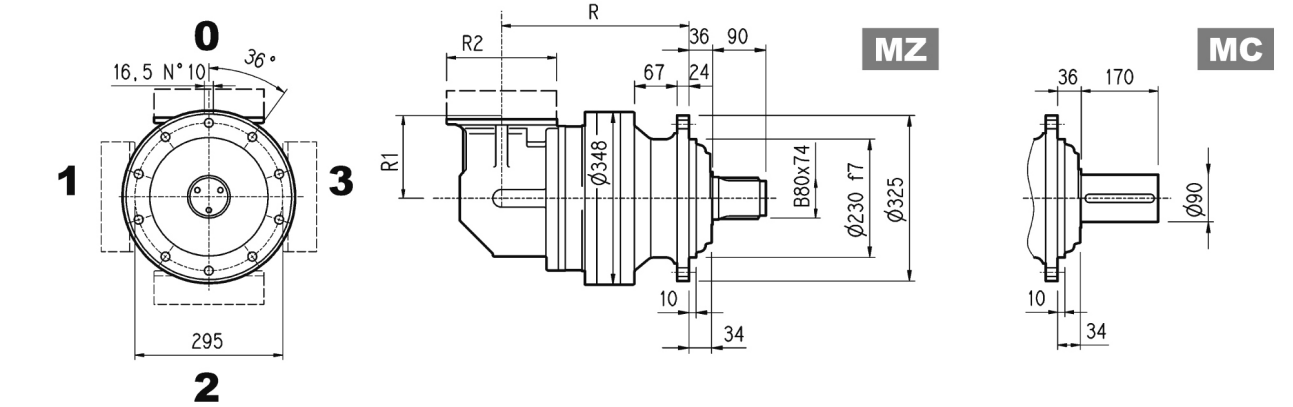
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **307 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **307 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **307 L3** | — | — | — | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **307 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

# 307 R

| | Hydraulic motor | | | | | | | 467 | | | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | MG | | | | | | | | | | |
| cm³ | 050 | 080 | 100 | 125 | 160 | 200 | 250 | | | | |
| | M1 | | | | | | | M2 | M3 | M4 | |
| 307 R2 | — | — | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 1/4G | 14 |
| 307 R3 | — | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 1/4G | 14 |



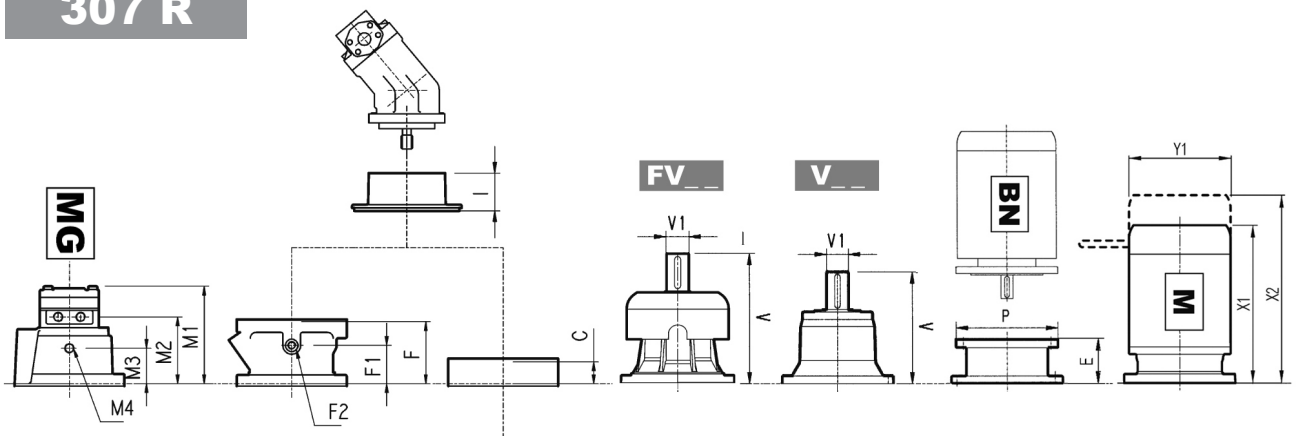



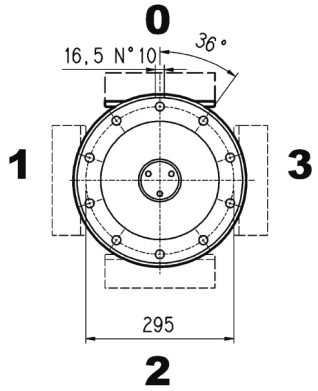



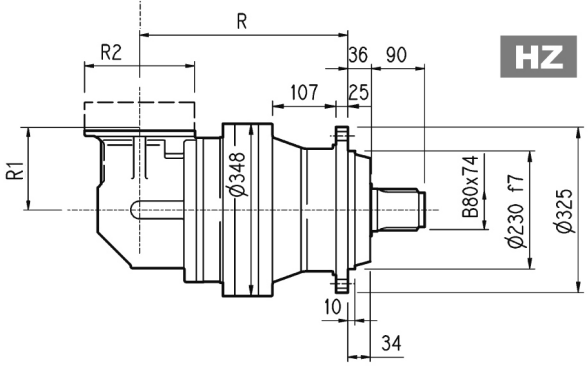

| | R | | | | R1 | R2 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | | | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 307 R2 | 284 | 365 | 329 | 284 | 225 | 245 | 135 | 170 | 155 | 135 |
| 307 R3 | 346 | 427 | 391 | 346 | 140 | 186 | 117 | 152 | 137 | 117 |
| 307 R4 | 411 | 492 | 456 | 411 | 122 | 186 | 118 | 153 | 138 | 118 |

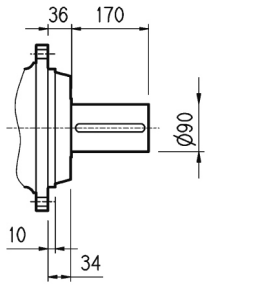
| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| 307 R2 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| 307 R3 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| 307 R4 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

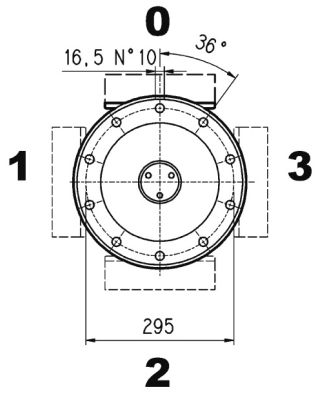
# 307 R

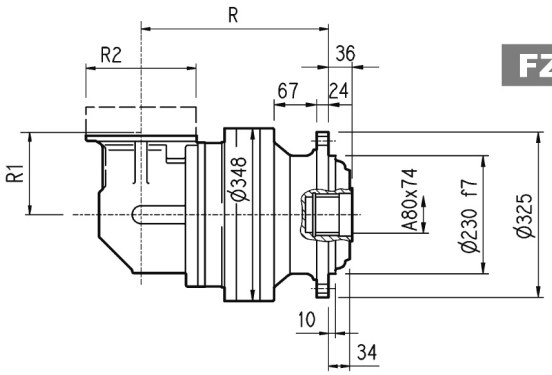


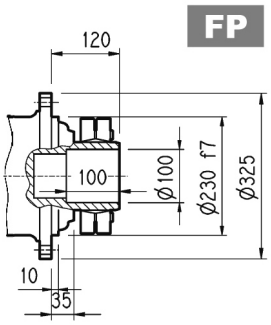



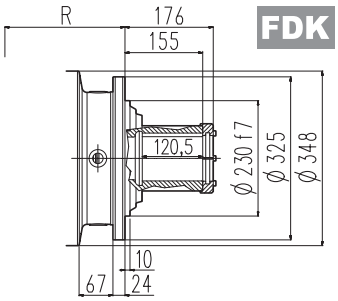



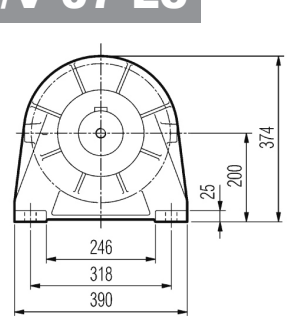



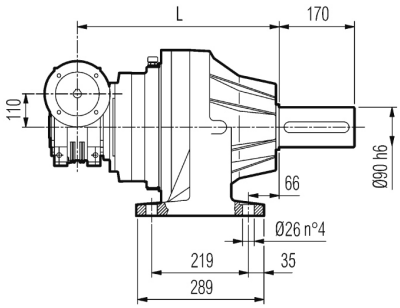

**FP** $M_{2max}$ = 18200 Nm

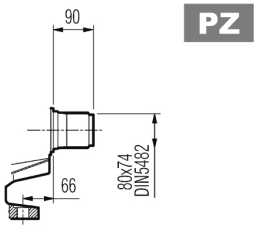
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **307 R2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **307 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **307 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

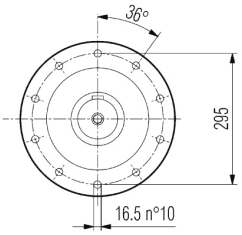
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **307 R2** | — | — | — | — | — | — | — | — | — | — | — | — | 508 | 619 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **307 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 | — | — | — | — | — | — |
| **307 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 | — | — | — | — | — | — |

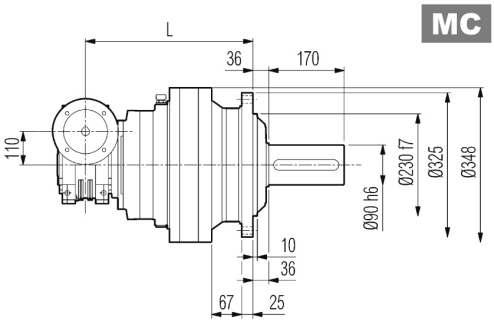
# 3/V 07 L3

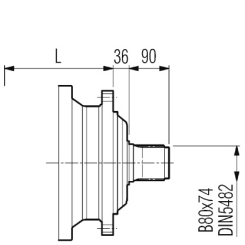


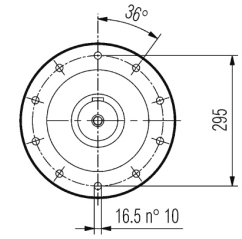



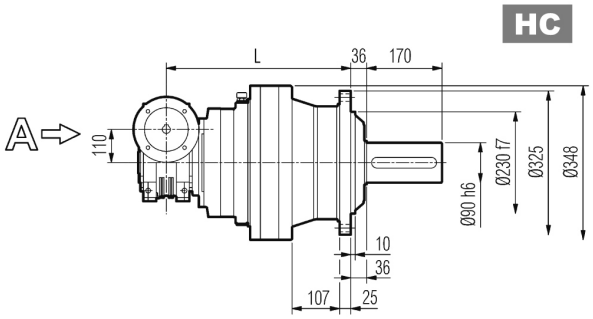



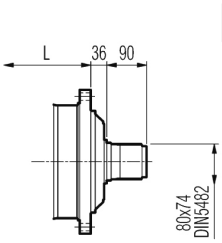



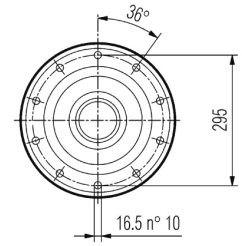



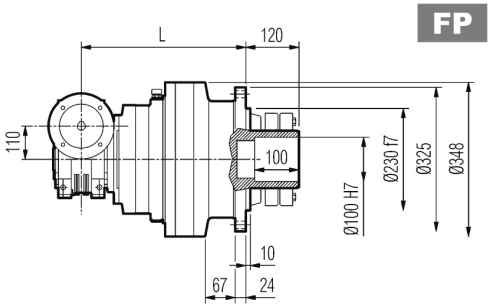



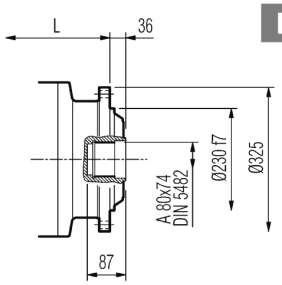



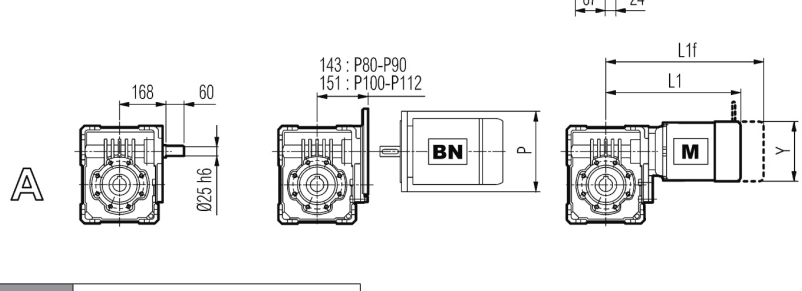



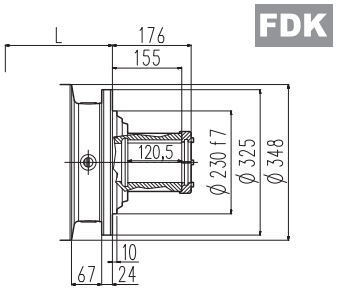



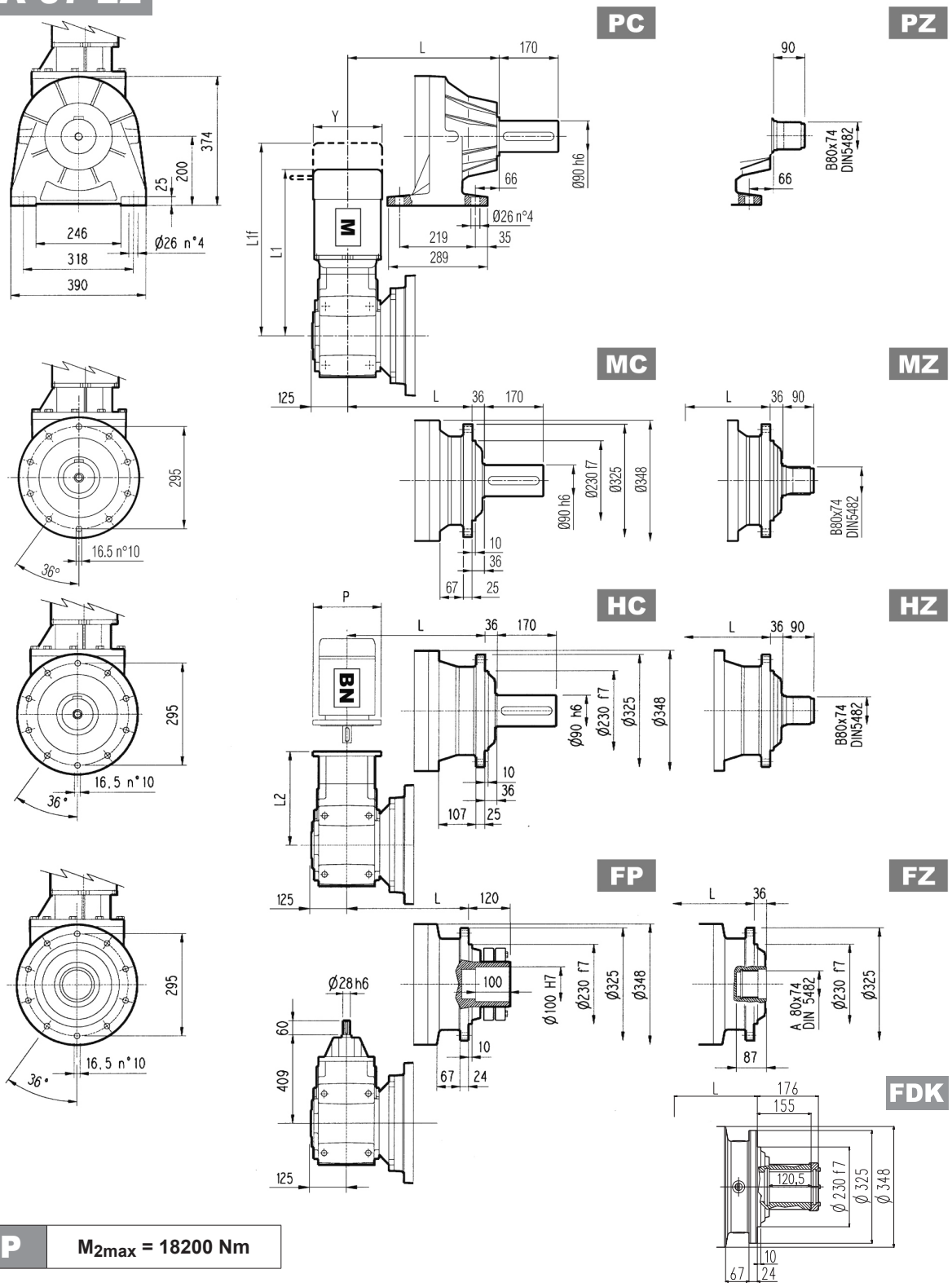




**FP** $M_{2max}$ = 18200 Nm

| | L | | | | Kg | | | | P80 | P90 | P100 | P112 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | P | P | P | P |
| 3/V 07 L3 | 414 | 495 | 459 | 414 | 130 | 165 | 150 | 130 | 200 | 200 | 250 | 250 |

| | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 07 L3 | 364 | 440 | 156 | 407 | 503 | 193 | 439 | 530 | 193 |

# 3/A 07 L2

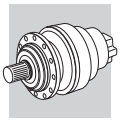



**FP** $M_{2max}$ = 18200 Nm

| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK | MC - MZ | PC - PZ | HC - HZ | FP - FZ - FDK |
| 3/A 07 L2 | 336 | 417 | 381 | 336 | 200 | 230 | 210 | 200 |

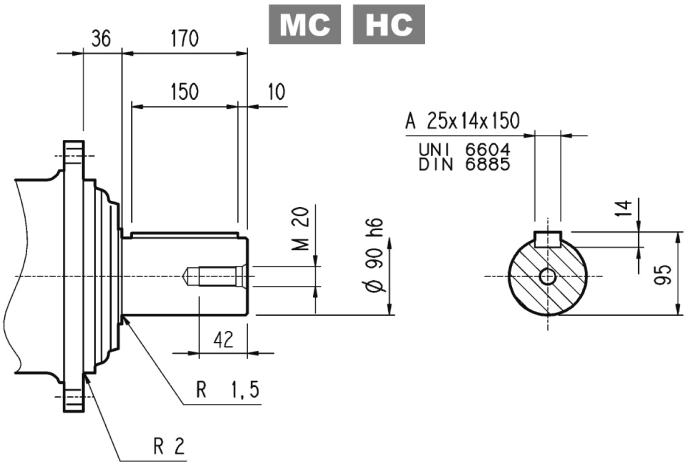
| | P80 | | P90 | | P100 | | P112 | P132 | | P160 | | P180 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/A 07 L2 | 371 | 200 | 371 | 200 | 381 | 250 | 381 | 250 | 416.5 | 300 | 468 | 350 | 468 | 350 |

| | S2 + M2S | | | S3 + M3SA | | | S3 + M3LA | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/A 07 L2 | 535 | 605 | 156 | 578.5 | 674.5 | 195 | 610.5 | 701.5 | 195 | 718.5 | 827.5 | 258 | 970 | 1110 | — | 1014 | 1154 | — |

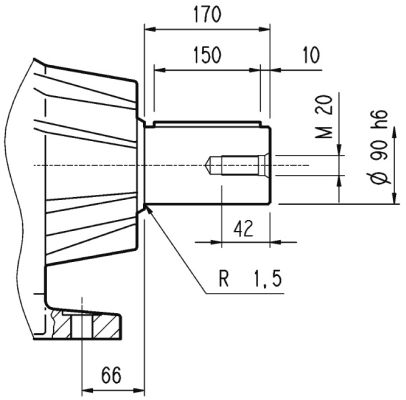


# 307 L | 307 R | 3/V 07 L3 | 3/A 07 L2

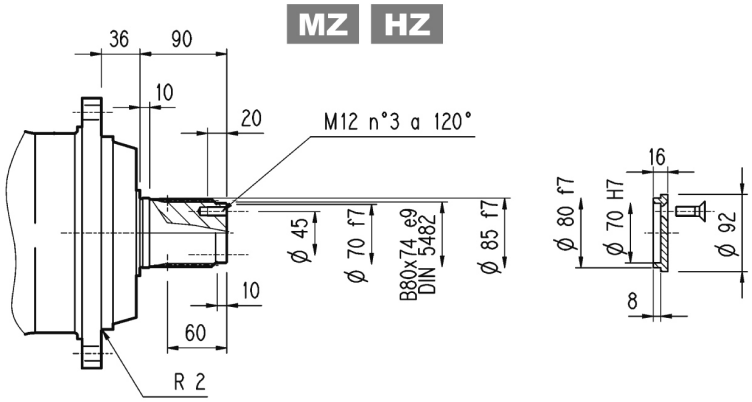
**MC** **HC**



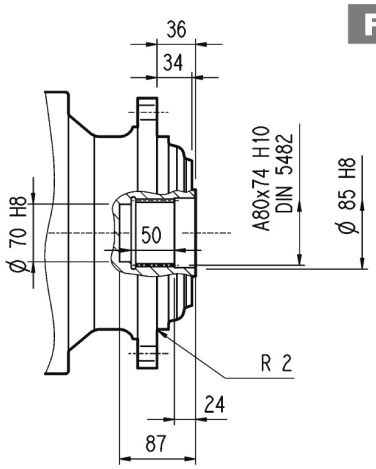

**PC**



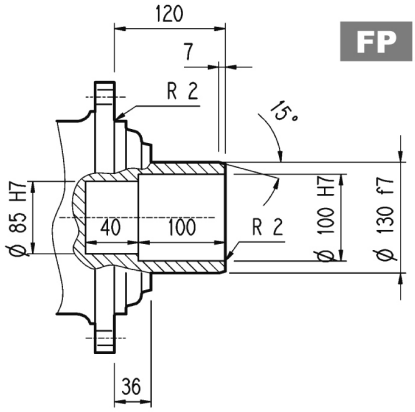

**MZ** **HZ**



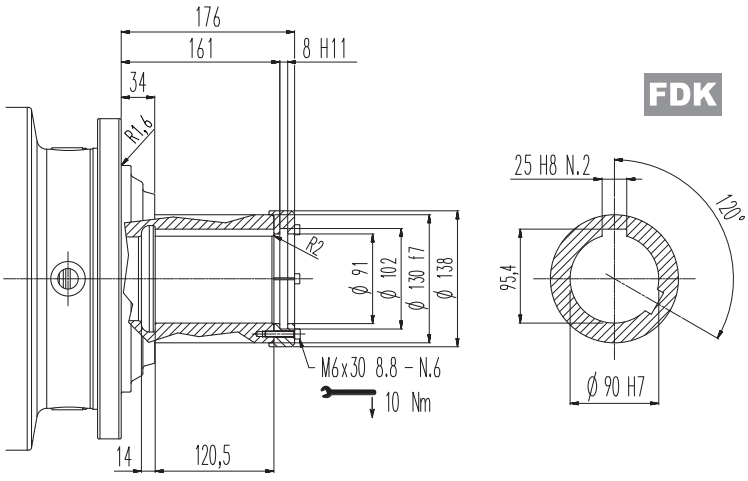

**FZ**




**FP**



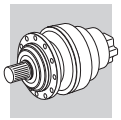

**FDK**




| FP | $M_{2max}$ = 18200 Nm |
|---|---|



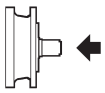
Bonfiglioli Riduttori

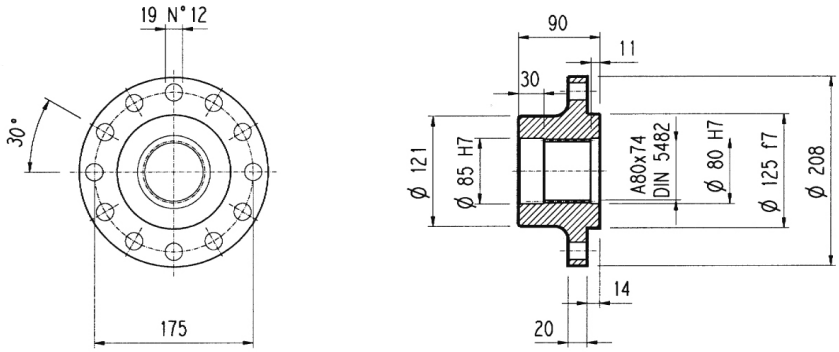


# 307 L | 307 R | 3/V 07 L3 | 3/A 07 L2

## Brida

**W0A**

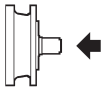


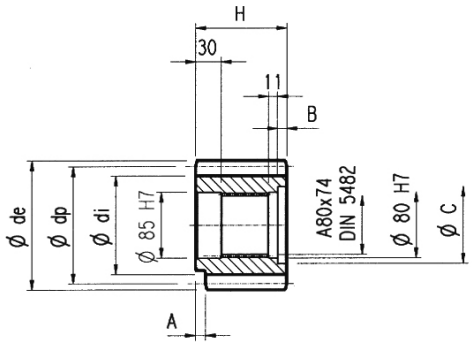



Material: Acero C40

## Piñón para giro

**P...**



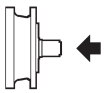


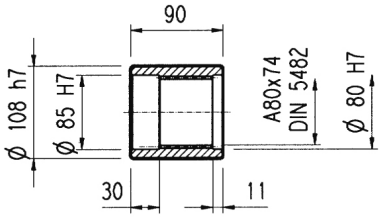

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PFG** | 8 | 16 | 0.500 | 128 | 117 | 149.5 | 90 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PHC** | 10 | 12 | 0.450 | 120 | 104 | 145 | 90 | — | — | — | |
| **PHE** | 10 | 14 | 0.320 | 140 | 121 | 165 | 116 | 13 | 26 | 95 | |
| **PHF** | 10 | 15 | 0.150 | 150 | 130 | 171.5 | 107 | 20 | 17 | 100 | |
| **PHG** | 10 | 16 | 0.500 | 160 | 145 | 186 | 90 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PHH1** | 10 | 17 | — | 170 | 145 | 189 | 90 | — | — | — | |
| **PHH2** | 10 | 17 | 0.500 | 170 | 154 | 198 | 90 | — | — | — | |
| **PLD** | 12 | 13 | 0.500 | 156 | 138 | 192 | 102 | — | 12 | 95 | Acero 39NiCr Mo3 Bonificado |
| **PLE** | 12 | 14 | 0.500 | 168 | 150 | 199.2 | 90 | — | — | — | |
| **PLI** | 12 | 18 | 0.500 | 216 | 198 | 249.6 | 107 | 7 | 17 | 95 | |
| **PLT** | 12 | 26 | — | 312 | 282 | 336 | 90 | 10 | — | — | Acero 18NiCrMo5 Cementado y templado |

## Manguito cilíndrico

**M0A**

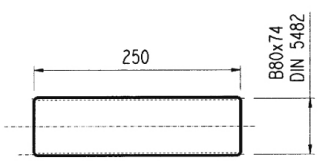





Material: Acero 16CrNi4

## Barra estriada

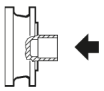
**B0A**

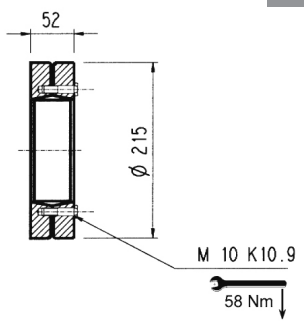



Material: Acero 18NiCrMo5 UNI 5331
Acementar y templar 50 – 55 HRC

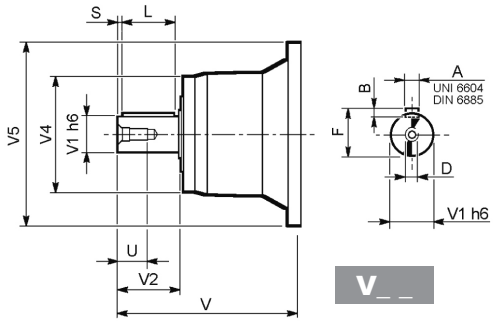
## Aro cónico de apriete

**G0A**

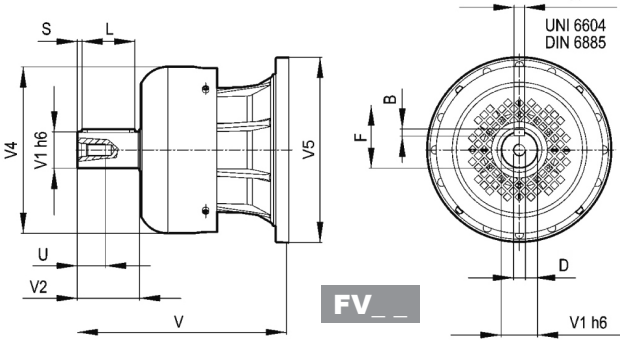




# 307 L 307 R



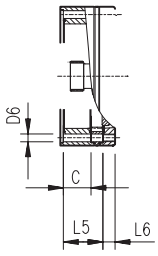

V_ _

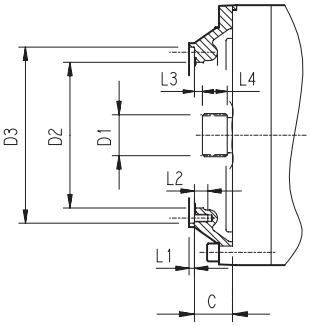


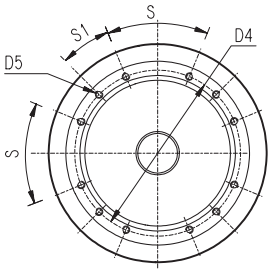

FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 307 L1 | V07B | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV07B | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | V07A | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV07A | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 307 L2 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 307 L3 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| 307 L4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| 307 R2 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 307 R3-R4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

# 307 L 307 R

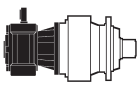


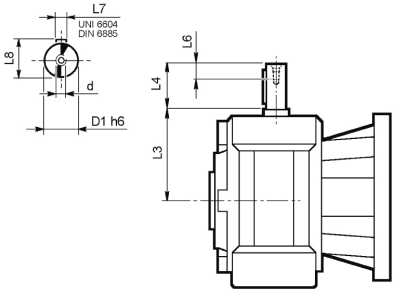




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 307 L1 | V9AB | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 307 L2 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 307 L3 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| 307 L4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 118 | 18 | 45° | 45° | A |
| 307 R2 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 307 R3-R4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

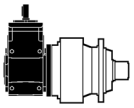
# 3/V 07 L3

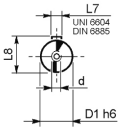


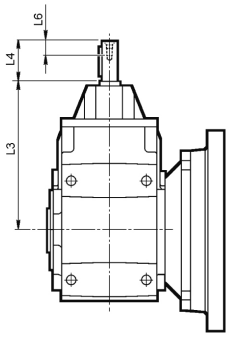



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 07 L3_HS | 25 | 168 | 60 | 19 | 8 | 28 | M8 |

# 3/A 07 L2





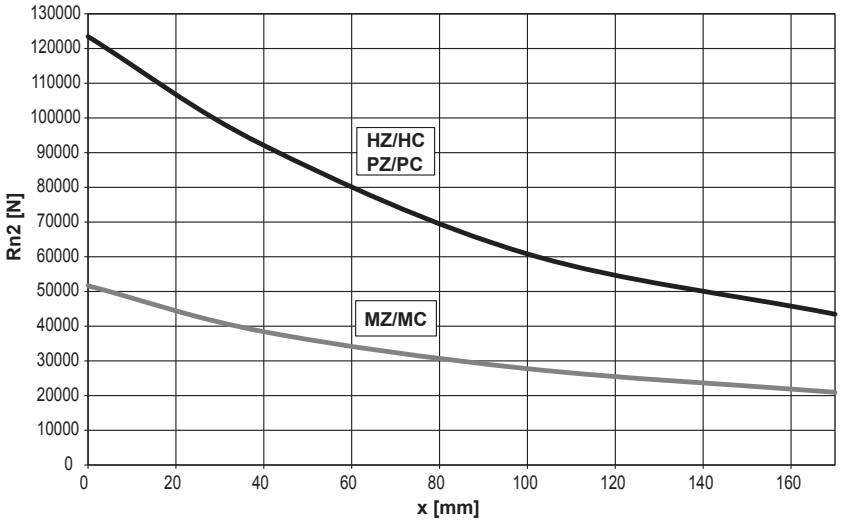



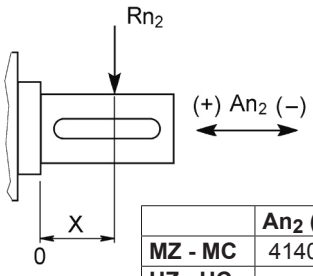

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/A 07 L2_HS | 28 | 409 | 60 | 22 | 8 | 31 | M10 |



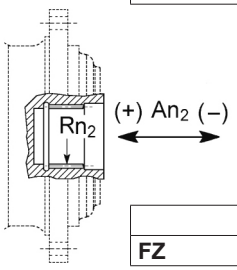
Bonfiglioli Riduttori

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



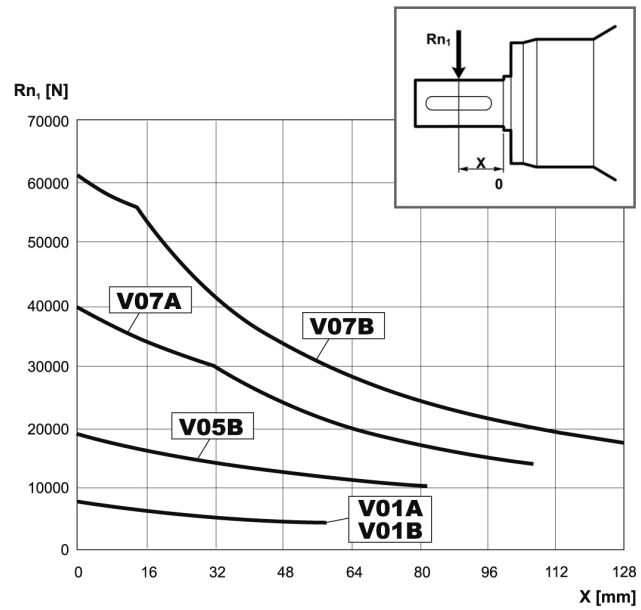

| | An2 (+) | An2 (-) |
|---|---|---|
| MZ - MC | 41400 | 23000 |
| HZ - HC<br>PZ - PC | 80000 | 40000 |

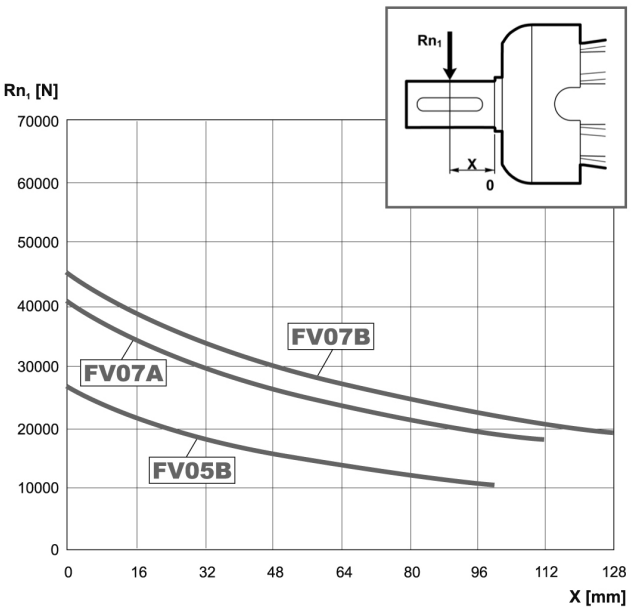



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 20887 | 20887 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | MZ - MC | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.49** | **1.49** | **1.23** | **1.00** | **0.62** | **0.50** |

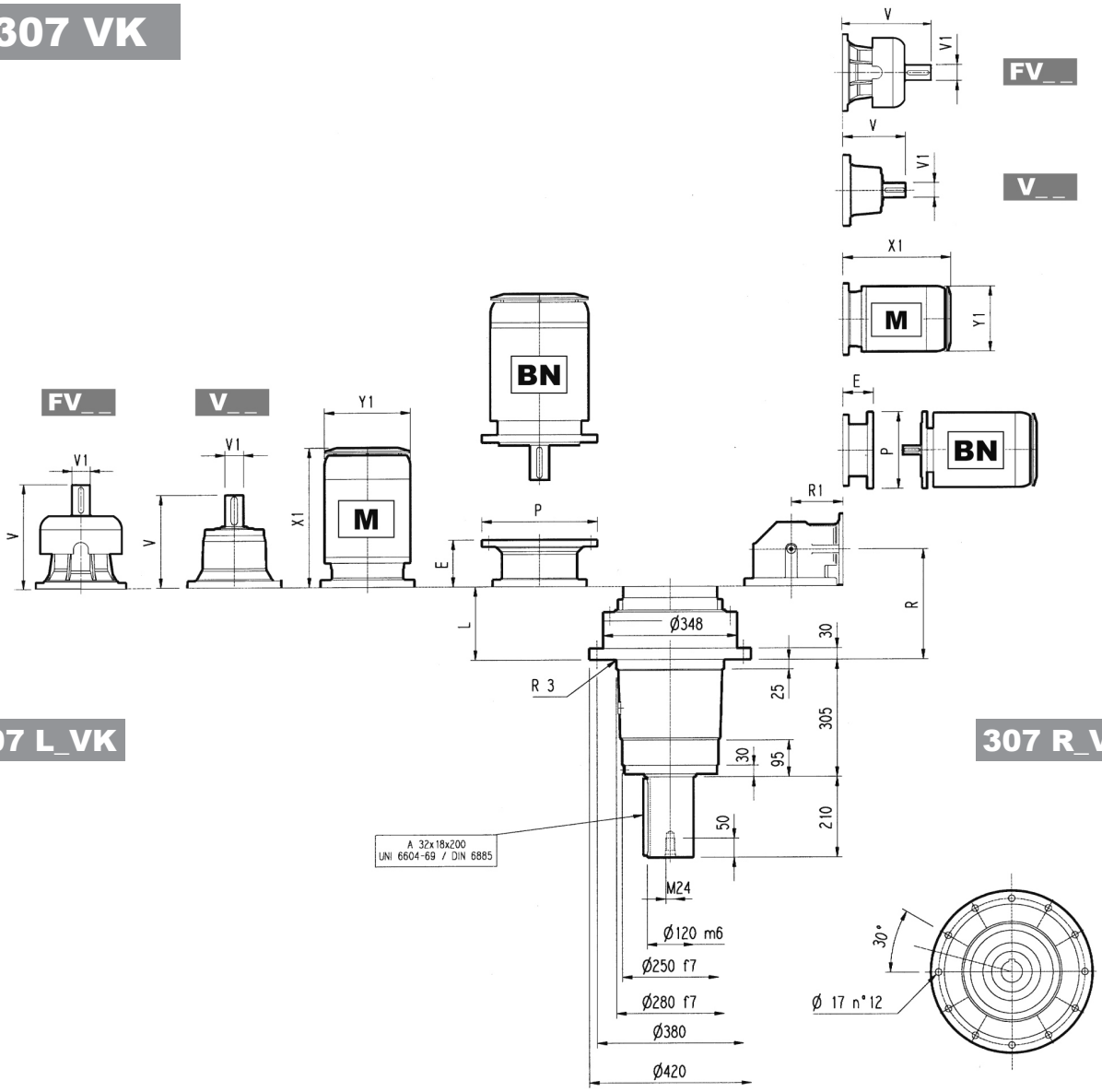
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 307 VK




## 307 L_VK

## 307 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **307 L1** | 80 | 145 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |
| **307 L2** | 169 | 160 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **307 L3** | 234 | 170 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **307 L4** | 287 | 175 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

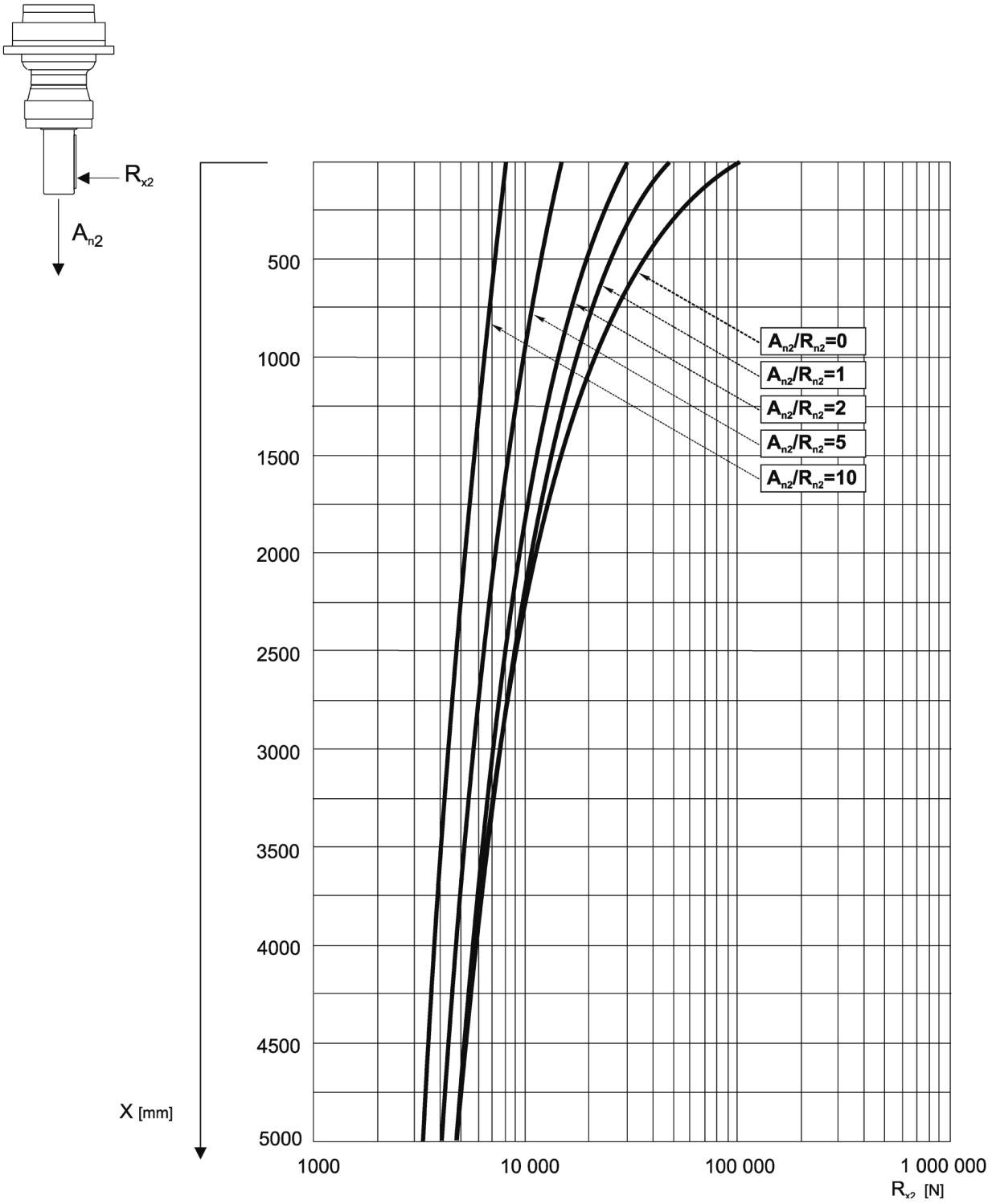
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **307 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **307 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 460 | 571 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **307 L3** | — | — | — | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |
| **307 L4** | 253 | 314 | 138 | 280 | 352 | 156 | 325 | 421 | 195 | 357 | 449 | 195 | 460 | 571 | 258 | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **307 R2** | 199 | 225 | 180 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **307 R3** | 261 | 140 | 170 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **307 R4** | 326 | 122 | 175 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

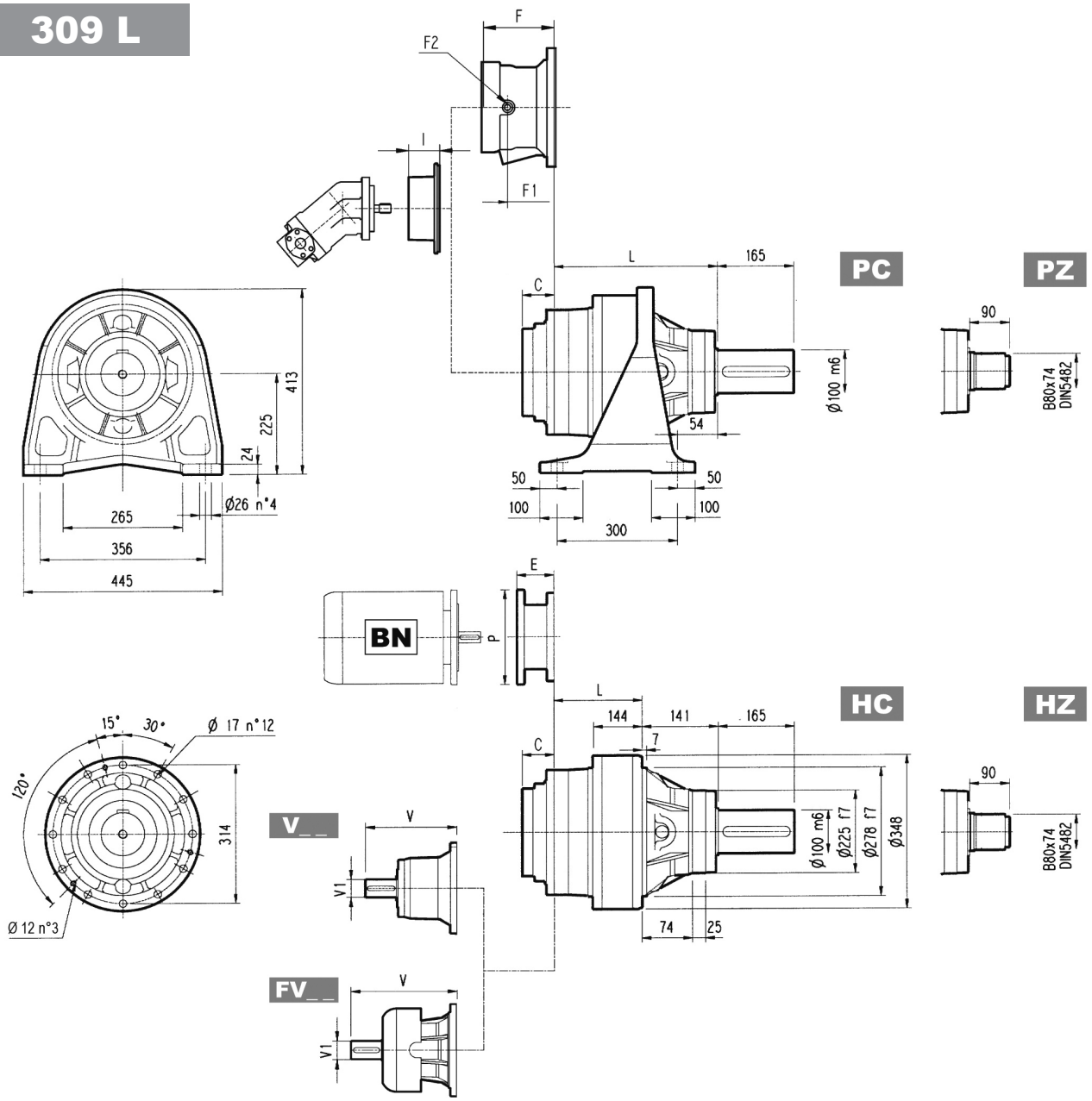
| | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | | S4 + M4 | | | S5 + M5S | | | S5 + M5L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 | X1 | X2 | Y1 |
| **307 R2** | — | — | — | — | — | — | — | — | — | — | — | — | 508 | 619 | 258 | 552 | 692 | 310 | 596 | 736 | 310 |
| **307 R3** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 | — | — | — | — | — | — |
| **307 R4** | 253 | 314 | 138 | 328 | 400 | 156 | 373 | 469 | 195 | 405 | 497 | 195 | 508 | 619 | 258 | — | — | — | — | — | — |

# 307 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



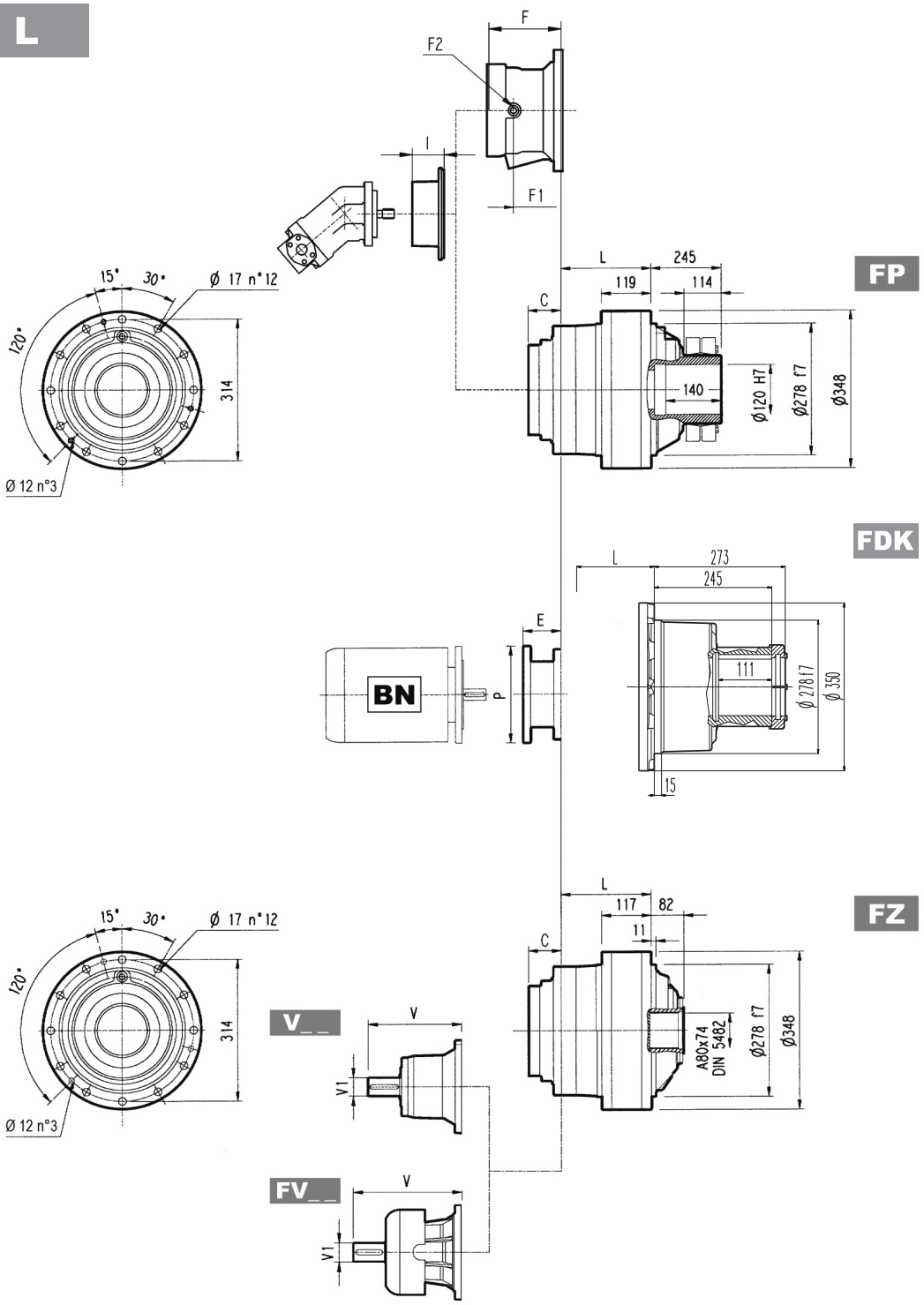
# 309 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP - FDK | PC - PZ | HC - HZ | FZ | FP - FDK |
| **309 L1** | 267 | 126 | 99 | 101 | 130 | 115 | 95 | 100 |
| **309 L2** | 356 | 215 | 188 | 190 | 142 | 127 | 107 | 112 |
| **309 L3** | 421 | 280 | 253 | 255 | 149 | 134 | 114 | 119 |
| **309 L4** | 474 | 333 | 306 | 308 | 153 | 138 | 118 | 123 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **309 L1** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |
| **309 L2** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **309 L3** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| **309 L4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

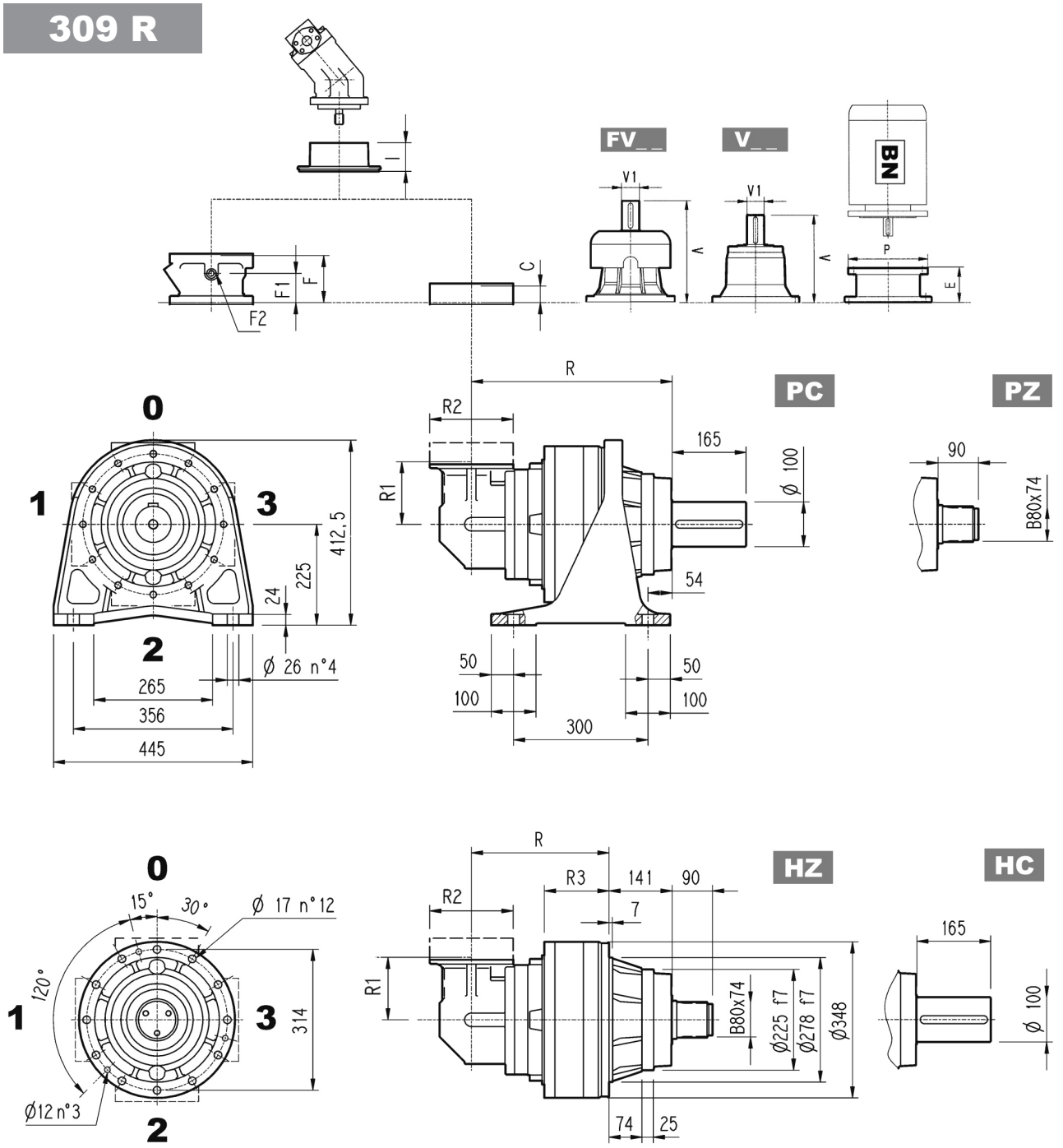
# 309 L




**FP** $M_{2max}$ = 29000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **309 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **309 L2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **309 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **309 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

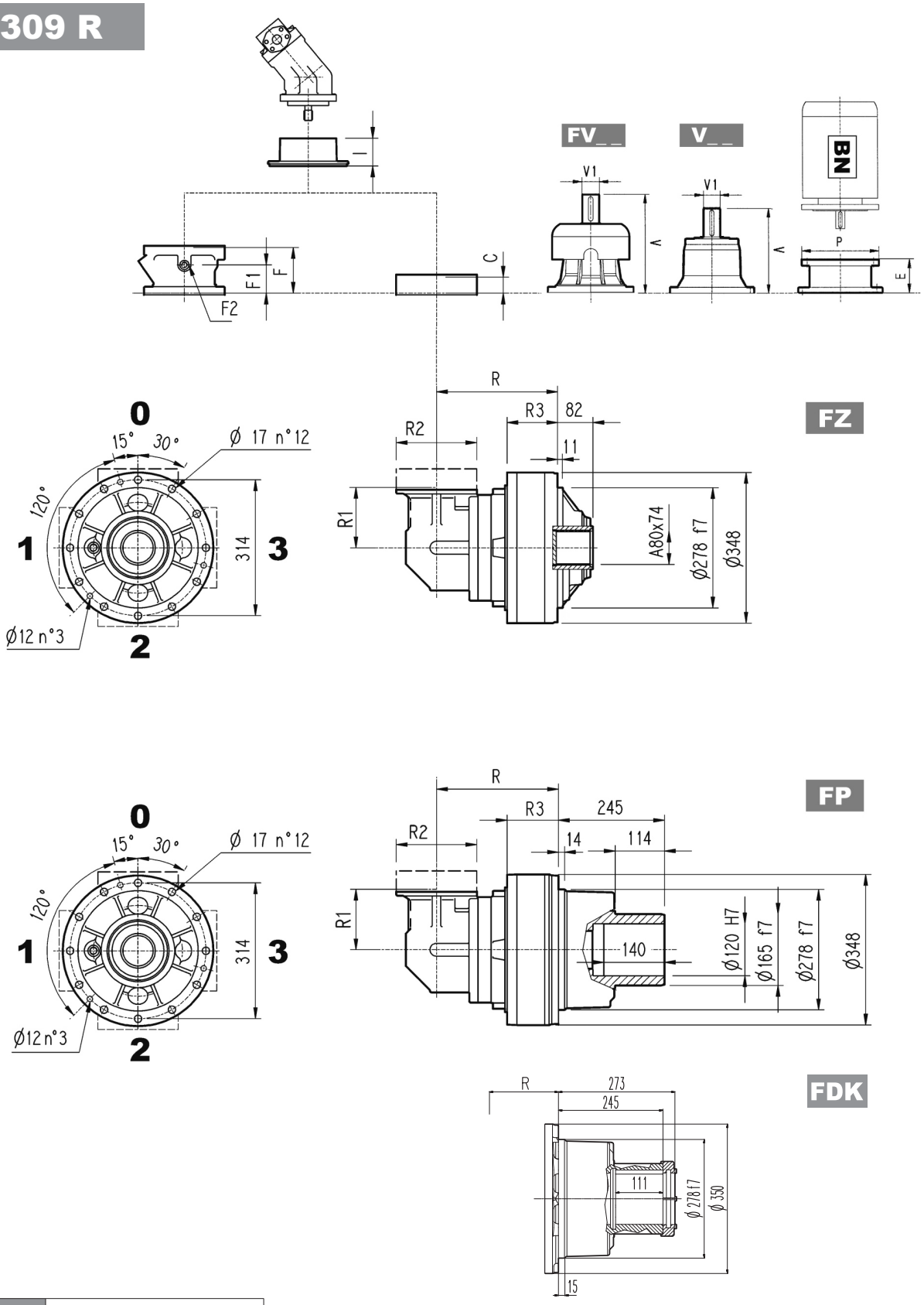
# 309 R




| | R | | | | R1 | R2 | R3 | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ | FP - FDK | | | HC-HZ | FZ | FP | PC-PZ | HC-HZ | FZ | FP - FDK |
| **309 R2** | 386 | 245 | 218 | 220 | 225 | 245 | 168 | 141 | 143 | 180 | 165 | 145 | 150 |
| **309 R3** | 448 | 307 | 280 | 282 | 140 | 186 | 144 | 117 | 119 | 162 | 147 | 127 | 132 |
| **309 R4** | 513 | 372 | 345 | 347 | 122 | 186 | 144 | 117 | 119 | 163 | 148 | 128 | 133 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **309 R2** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **309 R3** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |
| **309 R4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

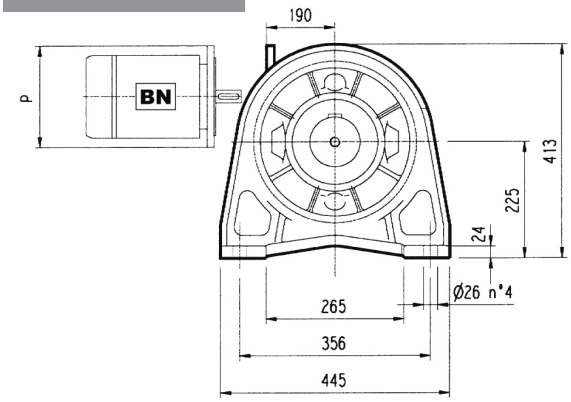
# 309 R



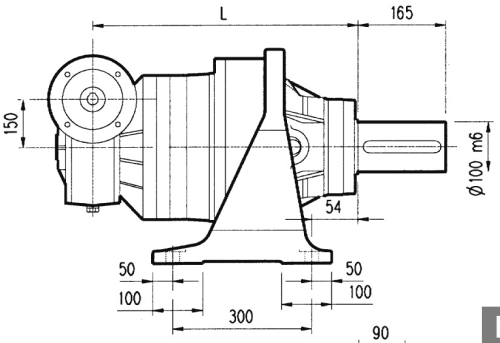

**FP** $M_{2max}$ = 29000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **309 R2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **309 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **309 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

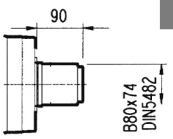
# 3/V 09 L3

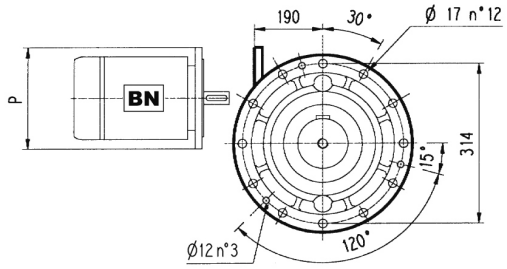



PC

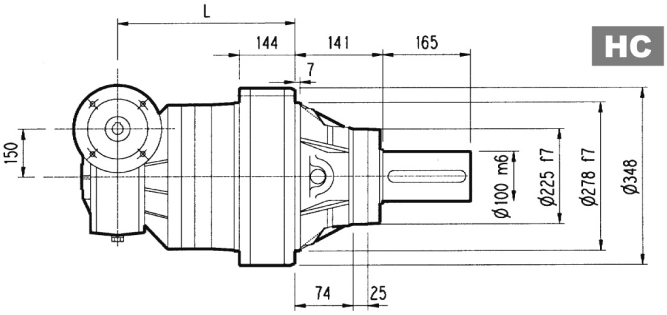


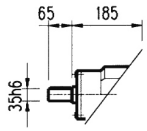

HZ PZ



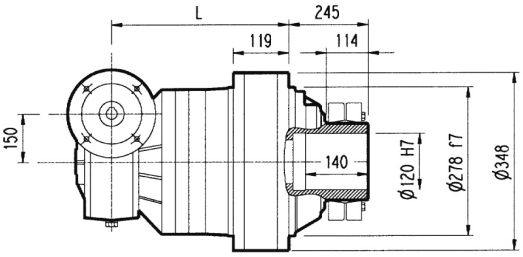



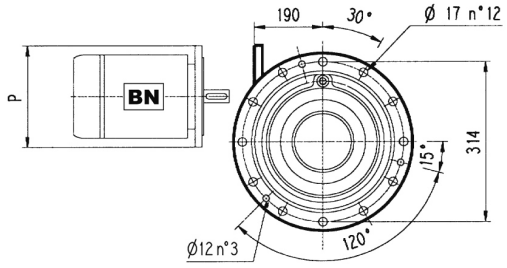

HC



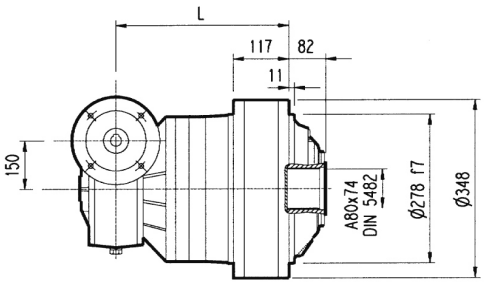




FP

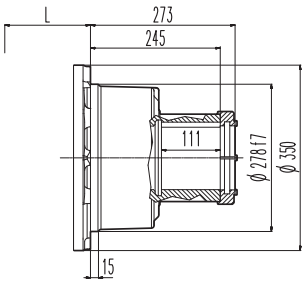



FZ

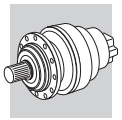


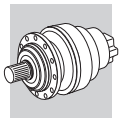

FDK




**FP** | $M_{2max}$ = 29000 Nm

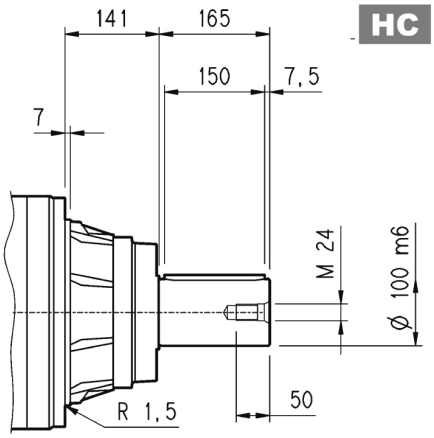
| | L | | | | Kg | | | | P100 | P112 | P132 | P160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP - FDK | PC - PZ | HC - HZ | FZ | FP - FDK | P | P | P | P |
| 3/V 09 L3 | 530 | 389 | 362 | 364 | 202 | 187 | 167 | 172 | 250 | 250 | 300 | 350 |

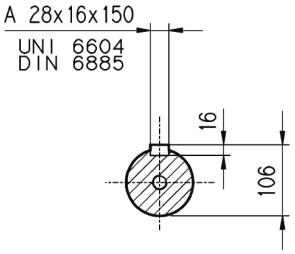




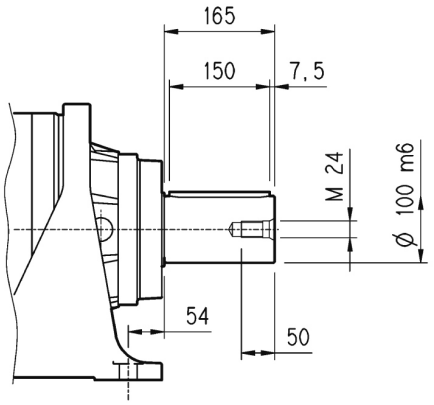
# 309 L | 309 R | 3/V 09 L3

## HC

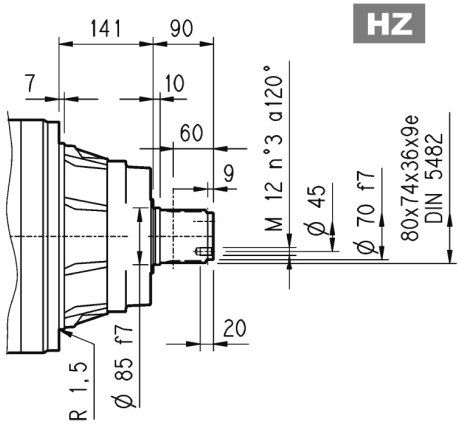


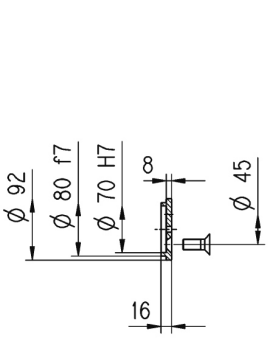




## PC

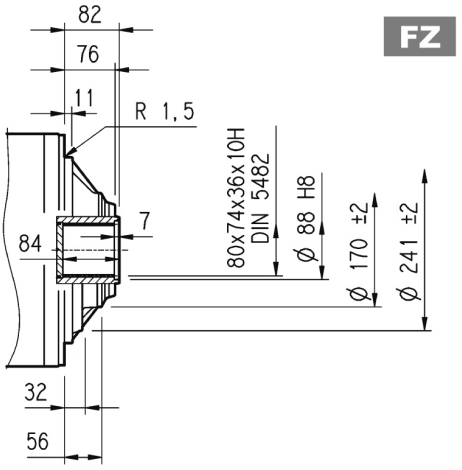



## HZ

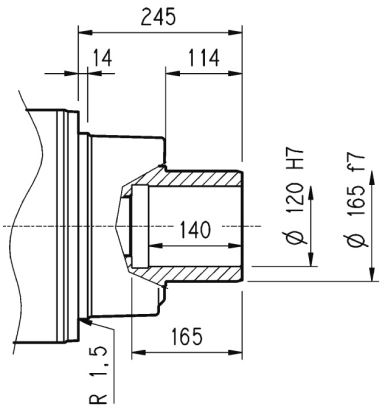


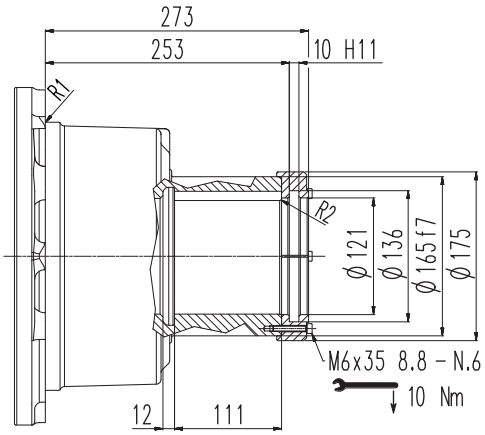

## FZ

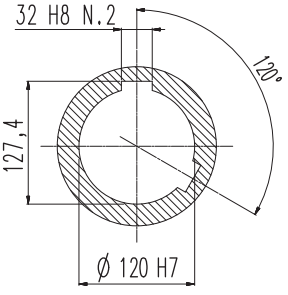



## FP

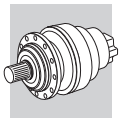



## FDK



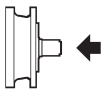

| FP | $M_{2max}$ = 29000 Nm |
|---|---|

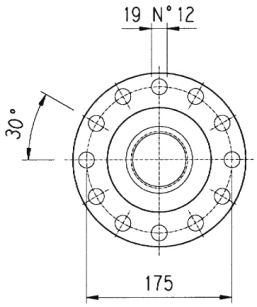


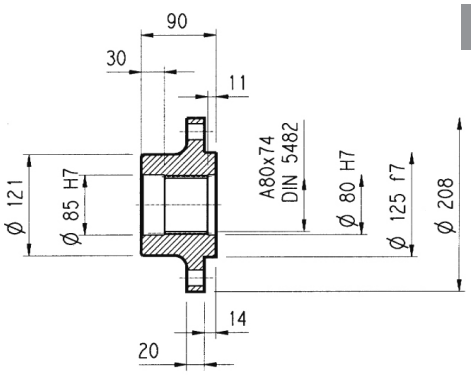
# 309 R | 3/V 09 L3

## Brida

W0A



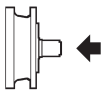


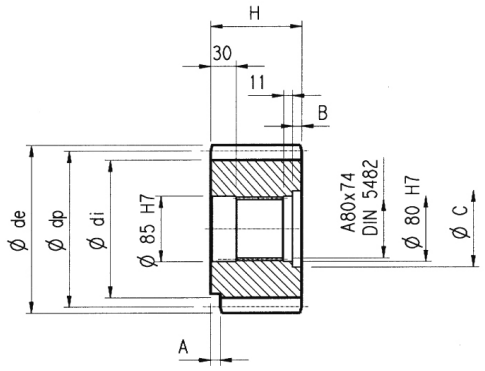




Material: Acero C40

## Piñón para giro

P...



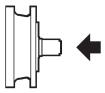


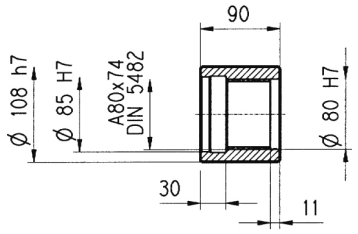

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PFG** | 8 | 16 | 0.500 | 128 | 117 | 149.5 | 90 | — | — | — | Acero 39NiCr Mo3 Bonificado |
| **PHC** | 10 | 12 | 0.450 | 120 | 104 | 145 | 90 | — | — | — | |
| **PHE** | 10 | 14 | 0.320 | 140 | 121 | 165 | 116 | 13 | 26 | 95 | |
| **PHF** | 10 | 15 | 0.150 | 150 | 130 | 171.5 | 107 | 20 | 17 | 100 | |
| **PHG** | 10 | 16 | 0.500 | 160 | 145 | 186 | 90 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PHH1** | 10 | 17 | — | 170 | 145 | 189 | 90 | — | — | — | |
| **PHH2** | 10 | 17 | 0.500 | 170 | 154 | 198 | 90 | — | — | — | |
| **PLD** | 12 | 13 | 0.500 | 156 | 138 | 192 | 102 | — | 12 | 95 | Acero 39NiCr Mo3 Bonificado |
| **PLE** | 12 | 14 | 0.500 | 168 | 150 | 199.2 | 90 | — | — | — | |
| **PLI** | 12 | 18 | 0.500 | 216 | 198 | 249.6 | 107 | 7 | 17 | 95 | |
| **PLT** | 12 | 26 | — | 312 | 282 | 336 | 90 | 10 | — | — | Acero 18NiCrMo5 Cementado y templado |

## Manguito cilíndrico

M0A

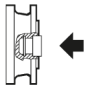


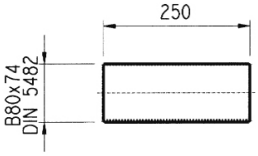



Material: Acero 16CrNi4

## Barra estriada

B0A

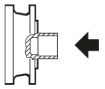


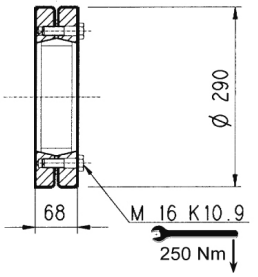


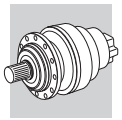

Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

## Aro cónico de apriete

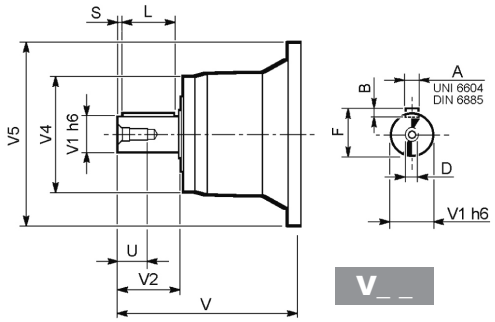
G0A



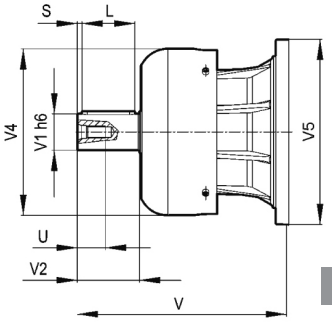




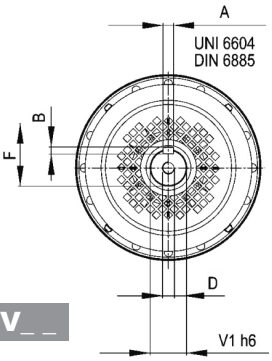
## 309 L 309 R




V_ _

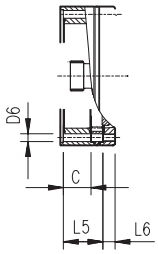


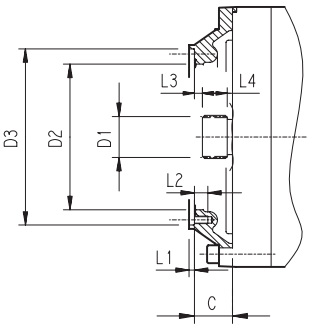

FV_ _

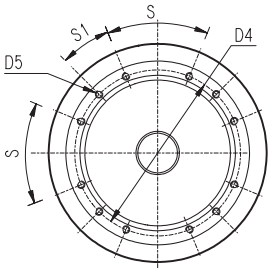



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 309 L1 | V07B | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV07B | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | V07A | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV07A | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 309 L2 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 309 L3 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| 309 L4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| 309 R2 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 309 R3-R4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 309 L 309 R

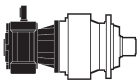


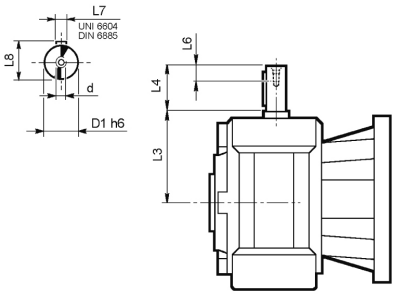




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 309 L1 | V9AB | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 309 L2 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 309 L3 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| 309 L4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 118 | 18 | 45° | 45° | A |
| 309 R2 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 309 R3-R4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

## 3/V 09 L3

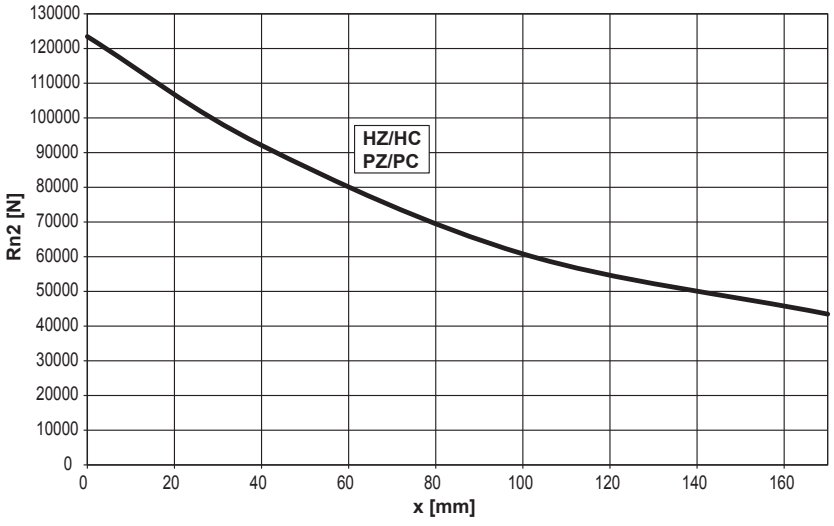





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 09 L3_HS | 35 | 185 | 65 | 20 | 10 | 38 | M8 |

# 309 L | 309 R | 3/V 09 L3

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$

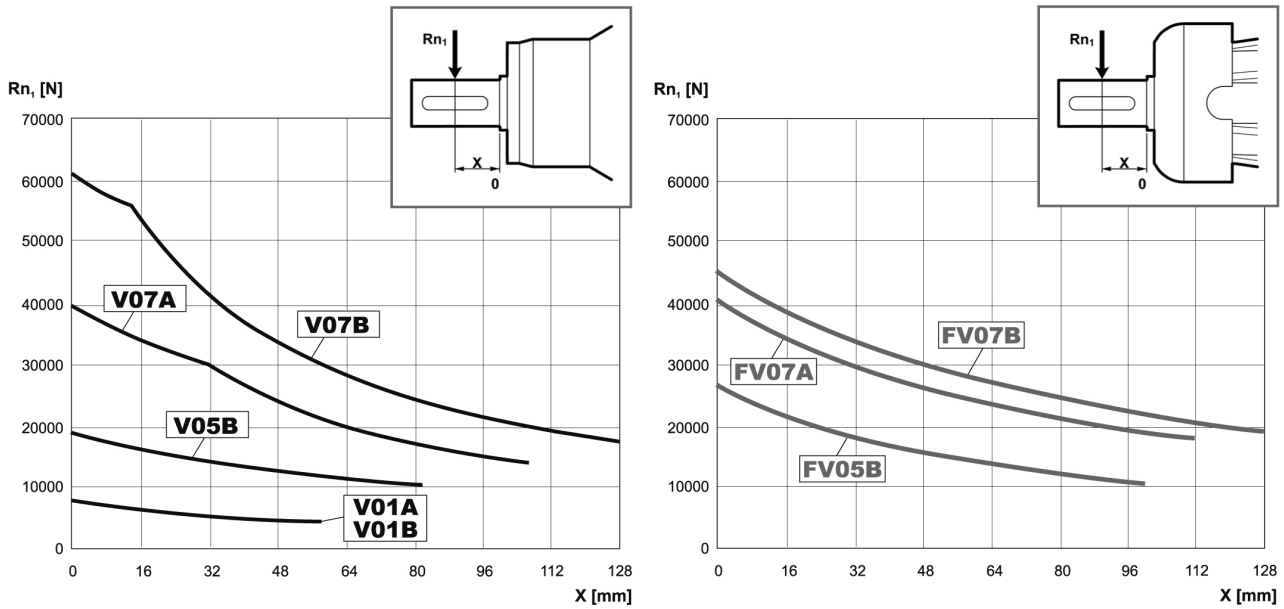



| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 80000 | 40000 |

| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 16710 | 17174 |

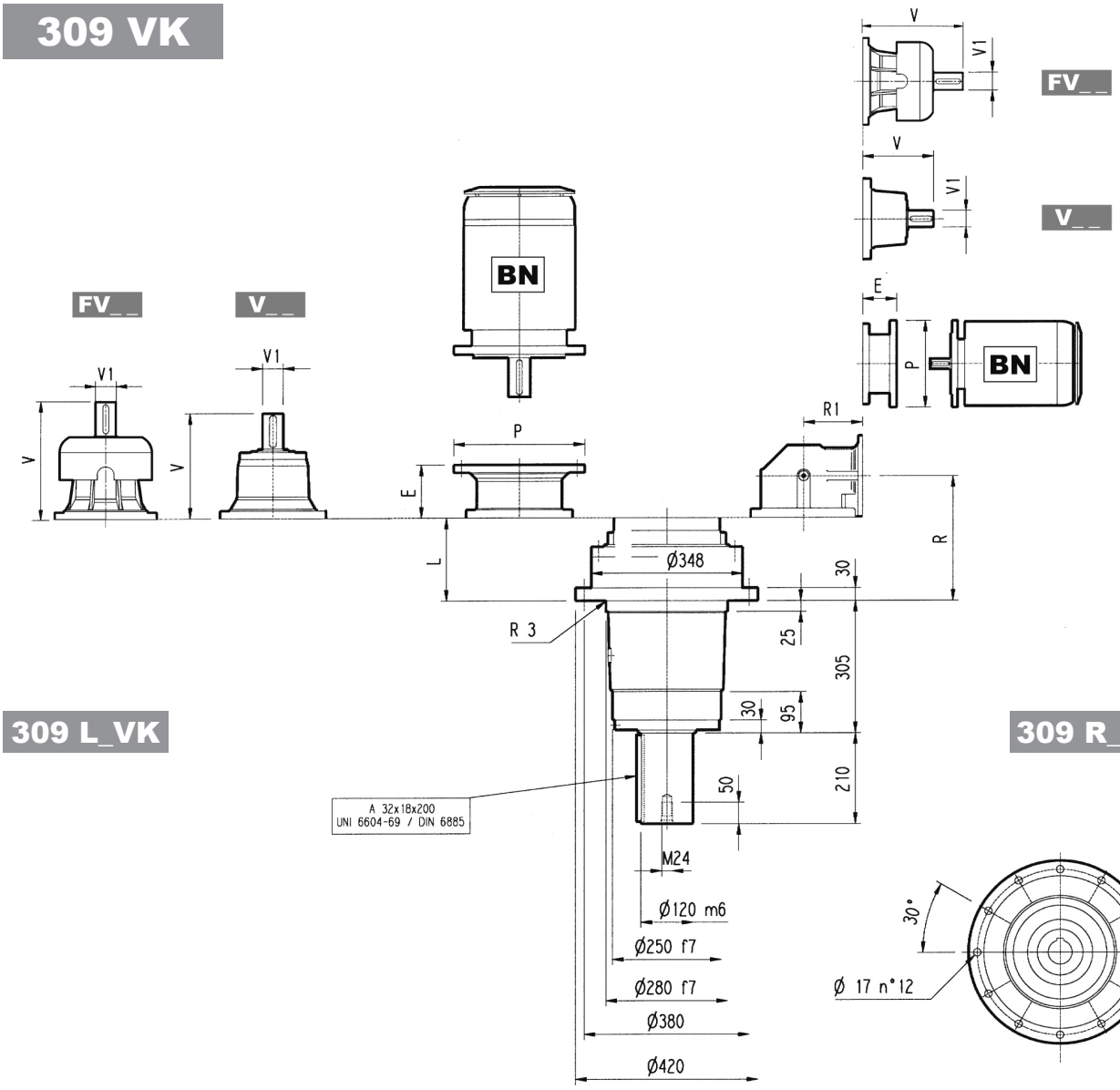
| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.49** | **1.49** | **1.23** | **1.00** | **0.62** | **0.50** |

Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 309 VK




309 L_VK

309 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **309 L1** | 102 | 165 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 |
| **309 L2** | 191 | 180 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **309 L3** | 256 | 190 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |
| **309 L4** | 309 | 195 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

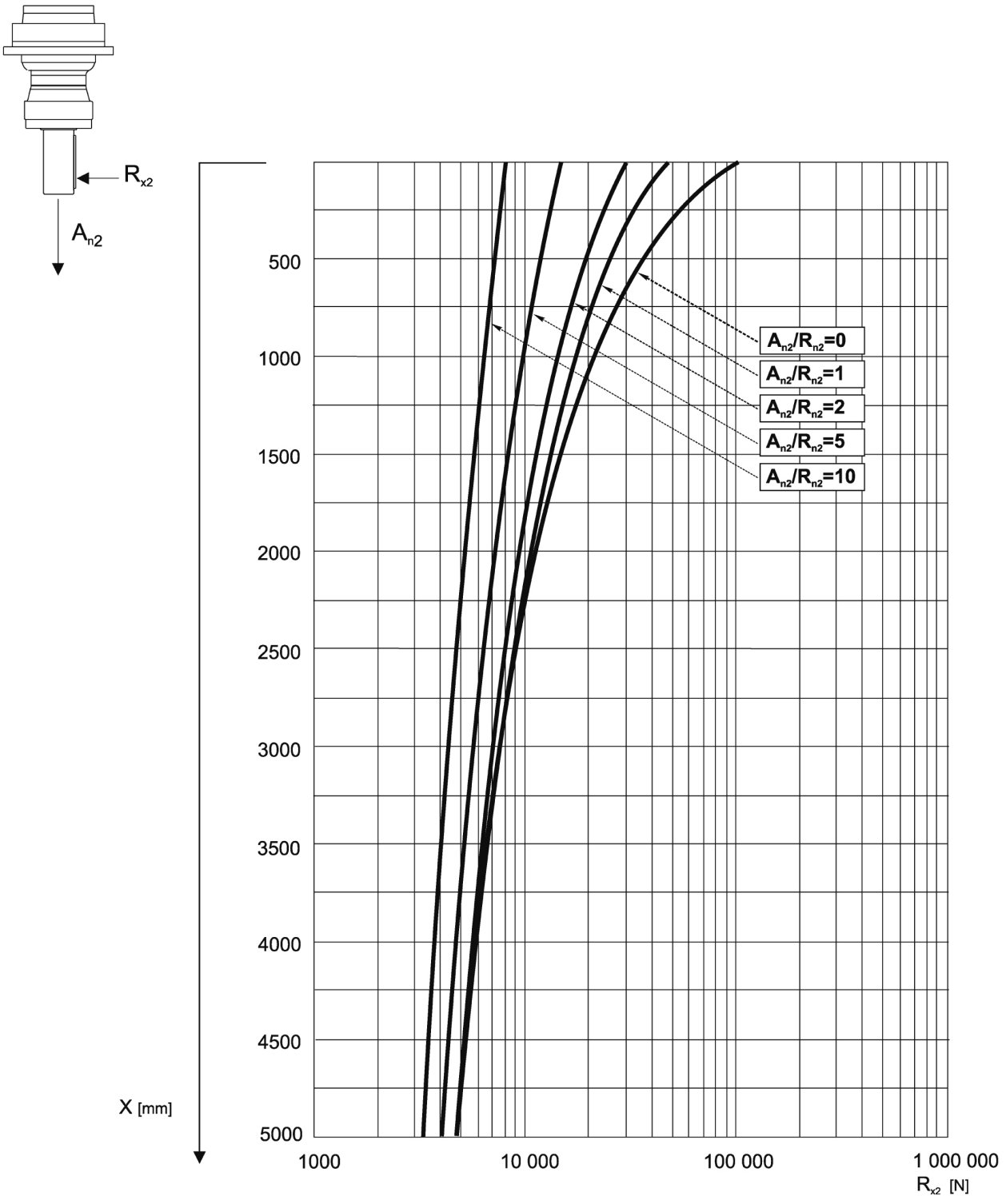
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **309 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 450 |
| **309 L2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **309 L3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |
| **309 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **309 R2** | 221 | 225 | 200 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **309 R3** | 283 | 140 | 190 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |
| **309 R4** | 348 | 122 | 195 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

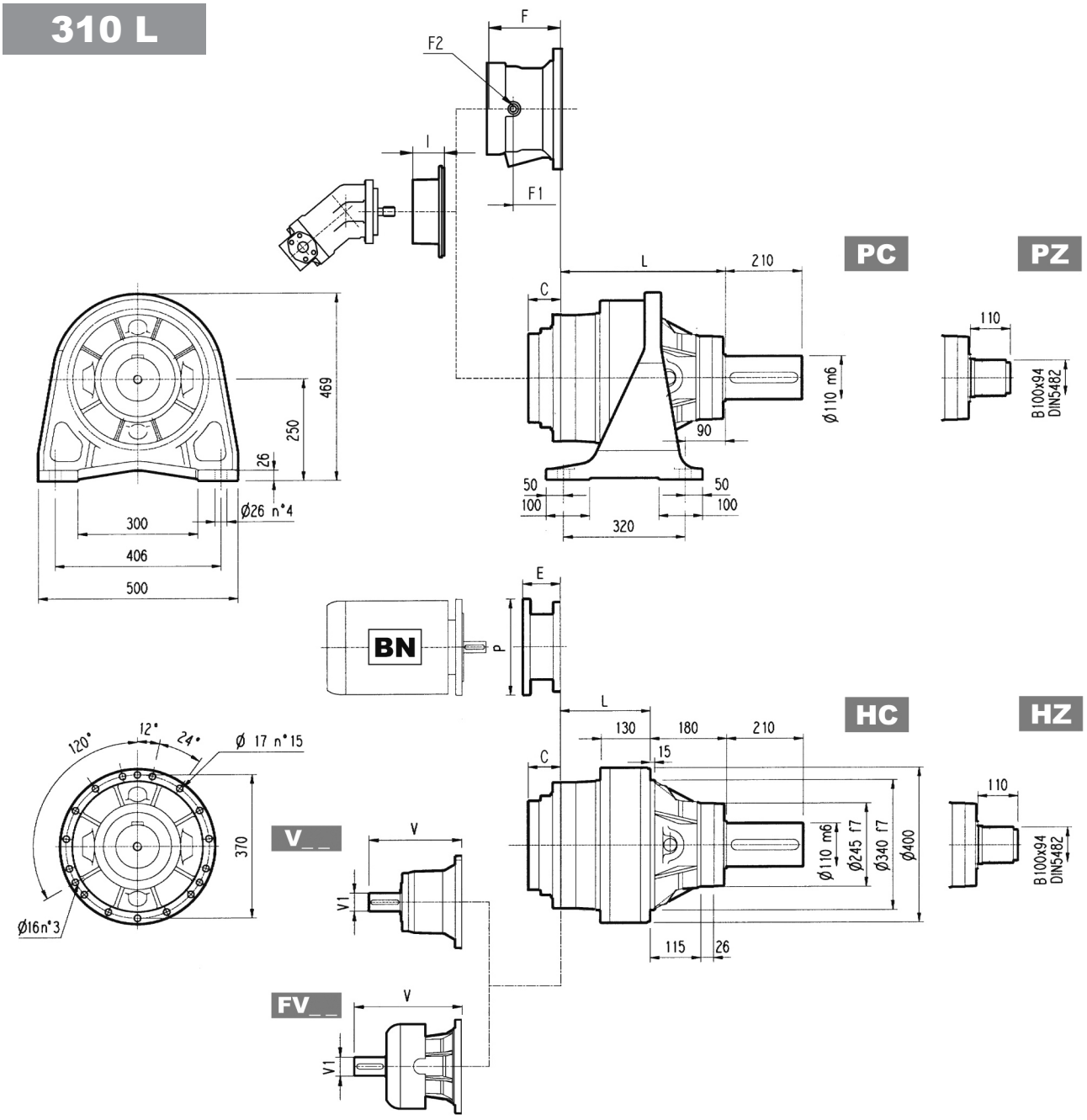
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **309 R2** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 |
| **309 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |
| **309 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — |

# 309 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



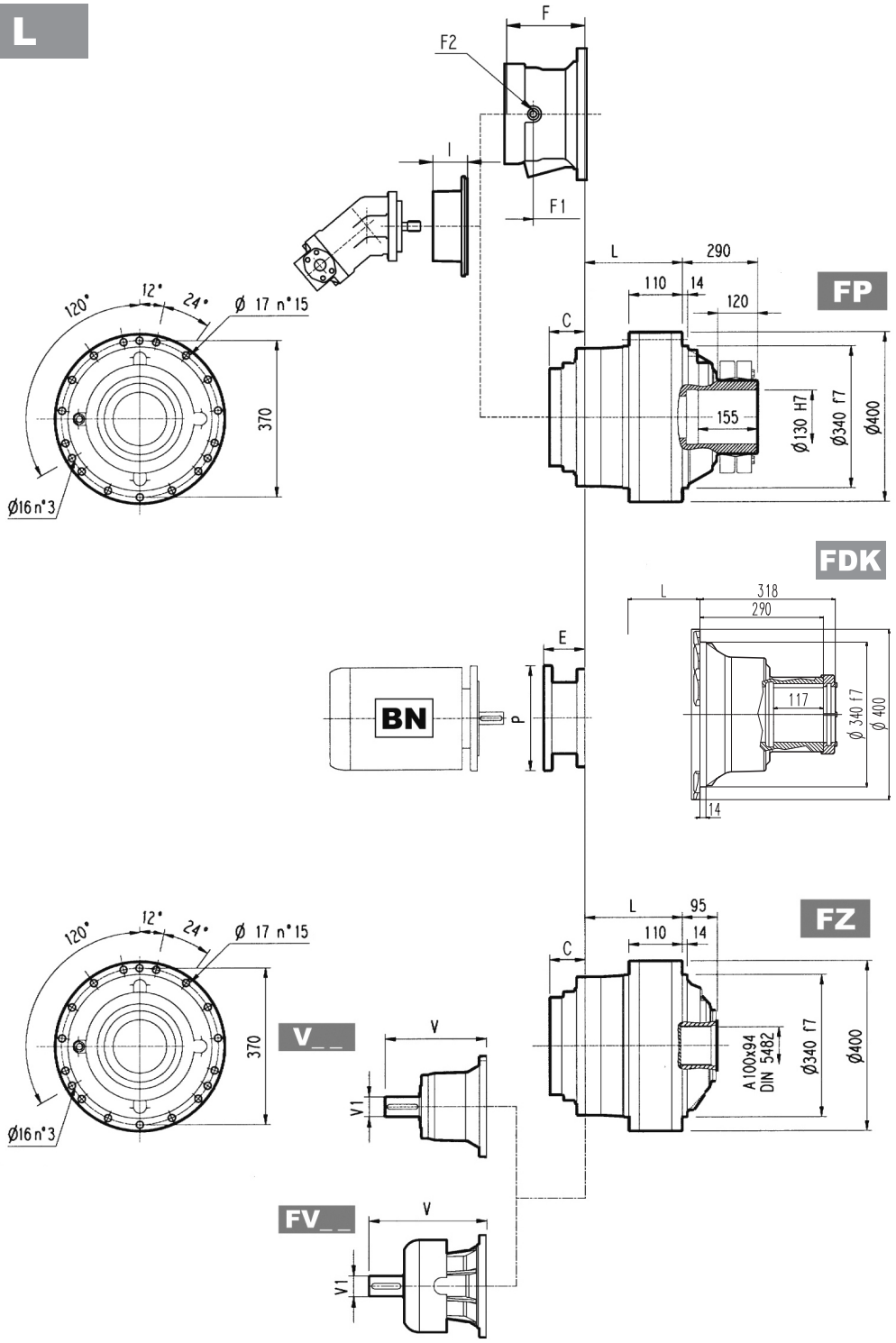
# 310 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP - FDK | PC - PZ | HC - HZ | FZ | FP - FDK |
| **310 L1** | 288 | 108 | 88 | 88 | 155 | 135 | 110 | 115 |
| **310 L2** | 424 | 244 | 224 | 224 | 185 | 165 | 140 | 145 |
| **310 L3** | 489 | 309 | 289 | 289 | 194 | 174 | 149 | 154 |
| **310 L4** | 542 | 362 | 342 | 342 | 198 | 178 | 153 | 158 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **310 L1** | 377 | 80 | 50 | — | — | — | 457 | 80 | 63 | — | — | — | 88 | C | | — | — | — | — | — | — |
| **310 L2** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **310 L3** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **310 L4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

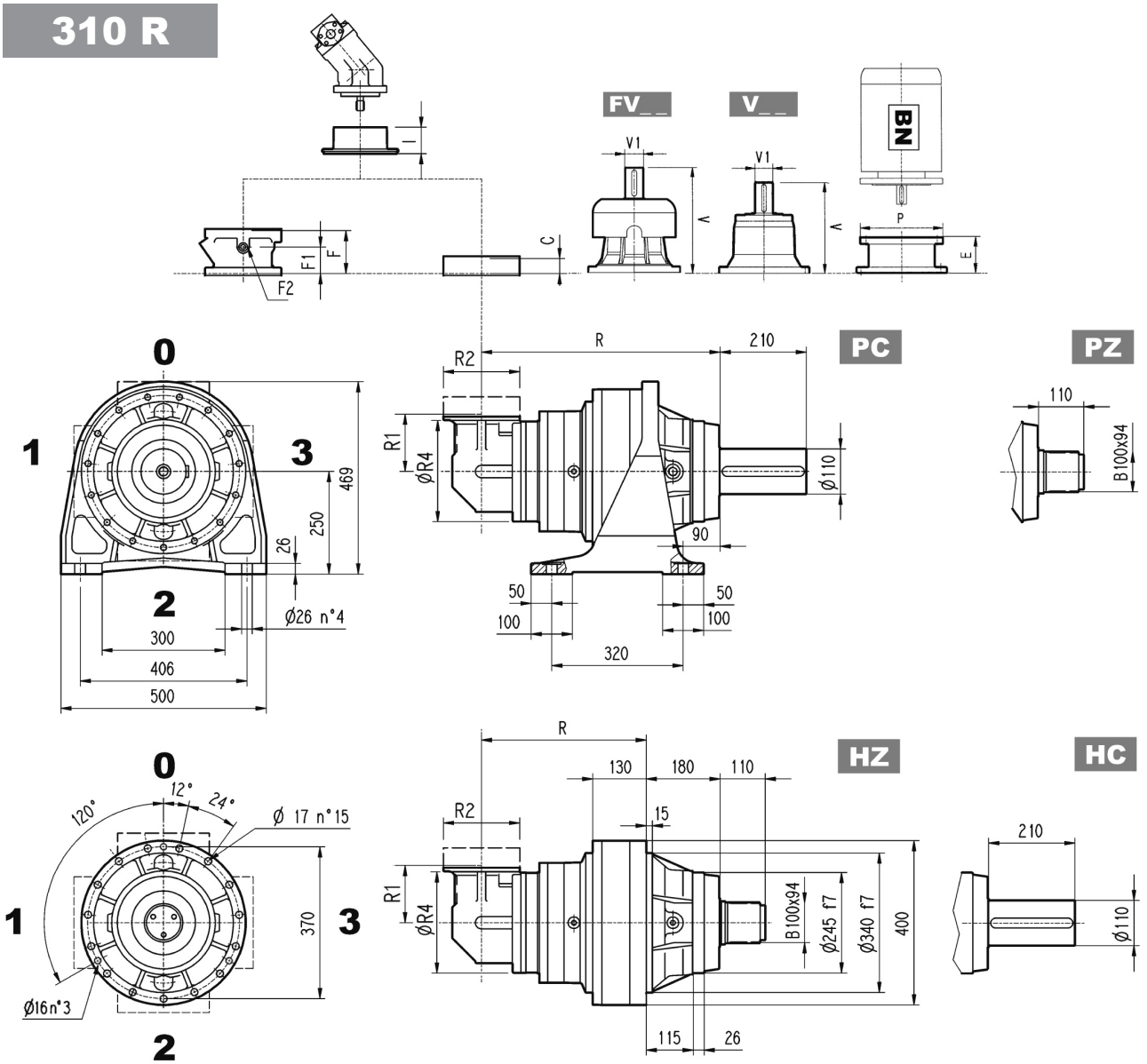
# 310 L




**FP** $M_{2max}$ = 44000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **310 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 271 | 400 | 301 | 450 | 281 | 550 |
| **310 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 153 | 350 | 183 | 400 | 212 | 450 | 193 | 550 |
| **310 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **310 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

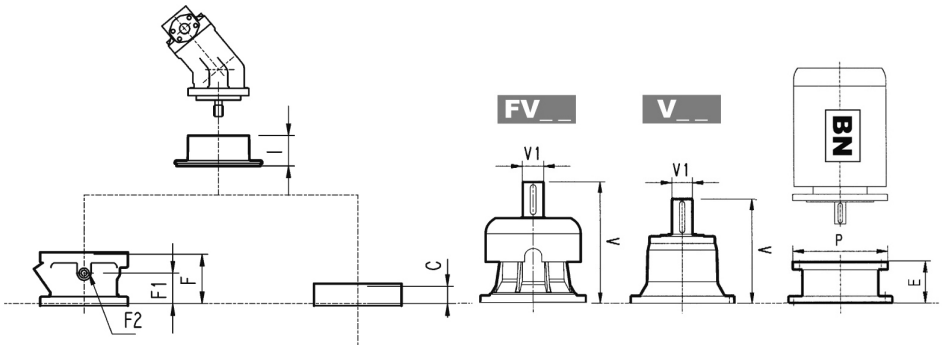
# 310 R

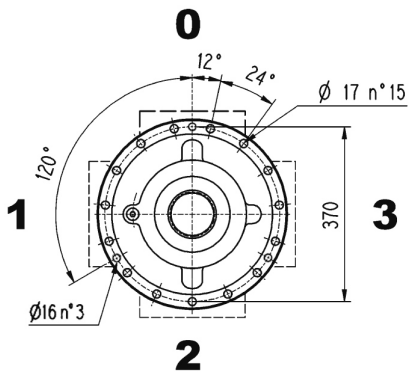


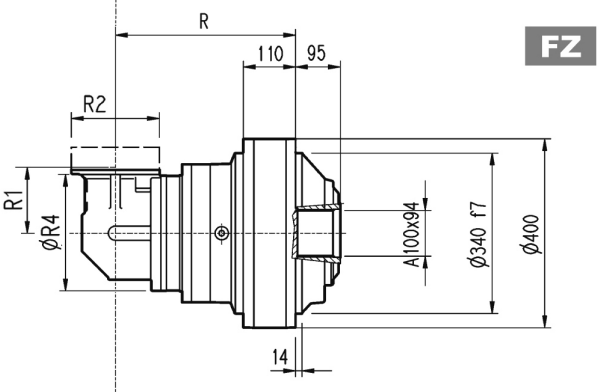

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ | FP - FDK | | | | PC-PZ | HC-HZ | FZ | FP - FDK |
| **310 R2 (B)** | 495 | 315 | 295 | 295 | 345 | 292 | 400 | 280 | 260 | 240 | 250 |
| **310 R2 (C)** | 513 | 333 | 313 | 313 | 390 | 292 | 480 | 300 | 280 | 260 | 270 |
| **310 R3** | 561 | 381 | 361 | 361 | 140 | 186 | 244 | 209 | 189 | 164 | 169 |
| **310 R4** | 581 | 401 | 381 | 381 | 140 | 186 | 244 | 214 | 194 | 169 | 174 |

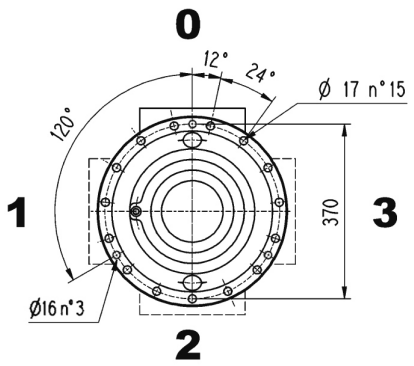
| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **310 R2 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **310 R2 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **310 R3** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **310 R4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

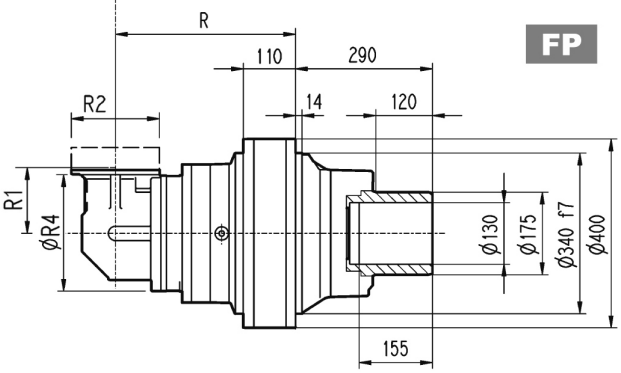
# 310 R

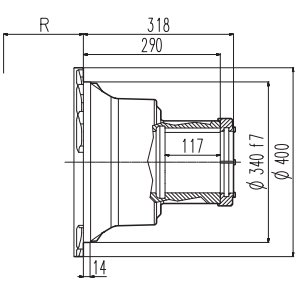


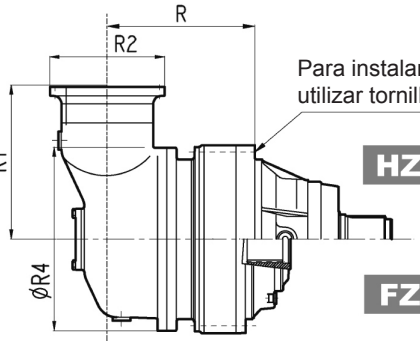




Solo para ejecución:

**R2**




Para instalar el reductor utilizar tornillos prisioneros

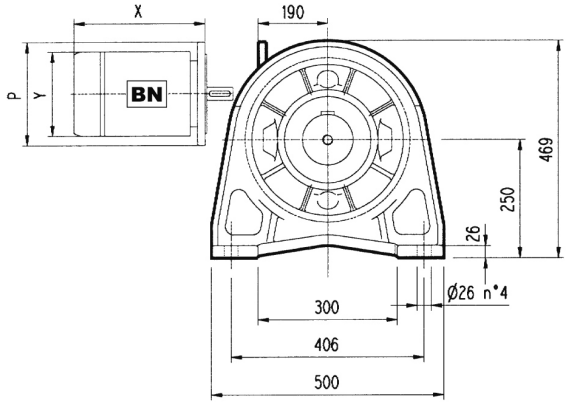
HZ HC

FZ FP

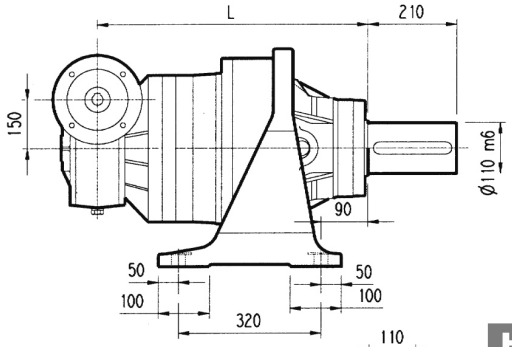
**FP** $M_{2max}$ = 44000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **310 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 152 | 350 | 182 | 400 | 212 | 450 |
| **310 R2 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 152 | 350 | 182 | 400 | 212 | 450 |
| **310 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — |
| **310 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — |

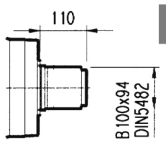
# 3/V 10 L3

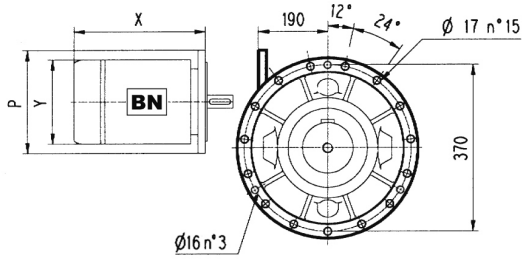



PC

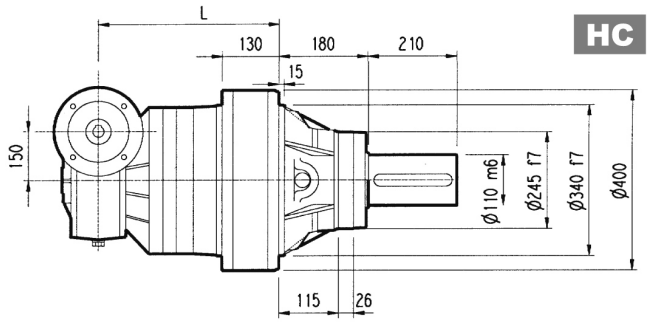


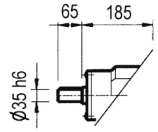

HZ PZ

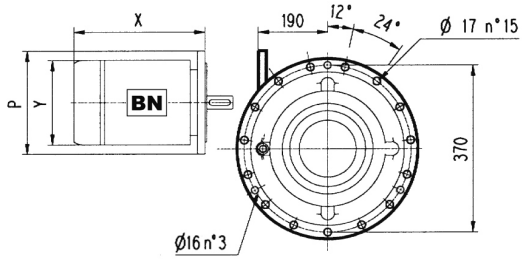


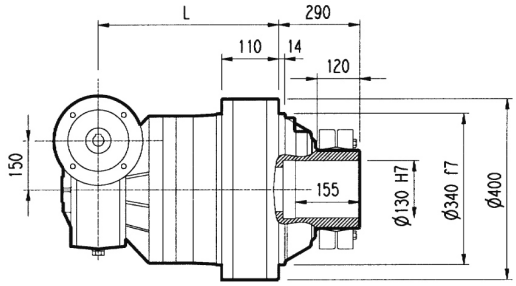

HC



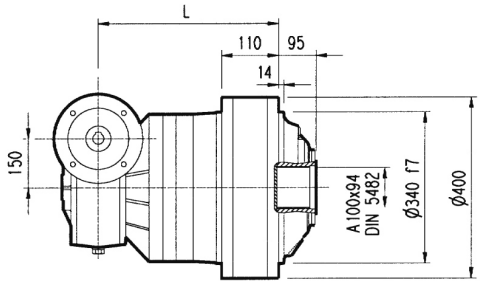



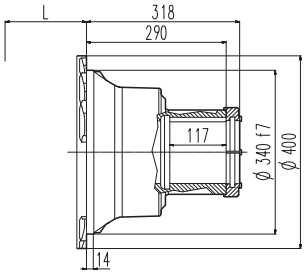

FP




FZ




FDK



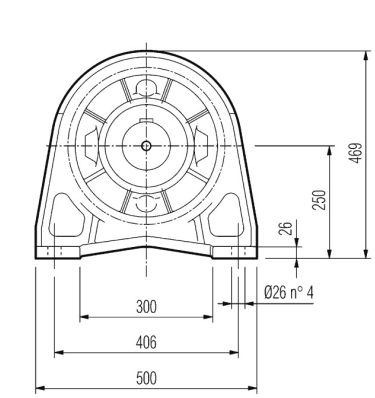

**FP** | $M_{2max}$ = 44000 Nm

| | L | | | | Kg | | | | P71 | P80 | P90 | P100 | P112 | P132 | P160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP | PC - PZ | HC - HZ | FZ | FP | P | P | P | P | P | P | P |
| 3/V 10 L3 | 608 | 428 | 408 | 408 | 245 | 225 | 200 | 205 | — | — | — | 250 | 250 | 300 | 300 |

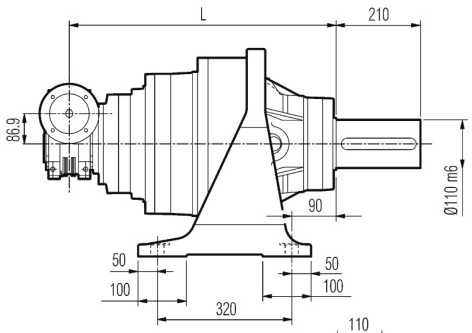


Bonfiglioli Riduttori

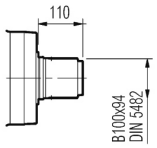
# 3/V 10 L4

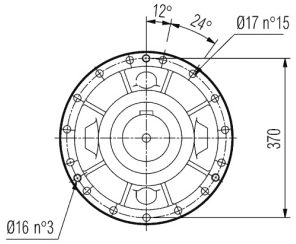



PC

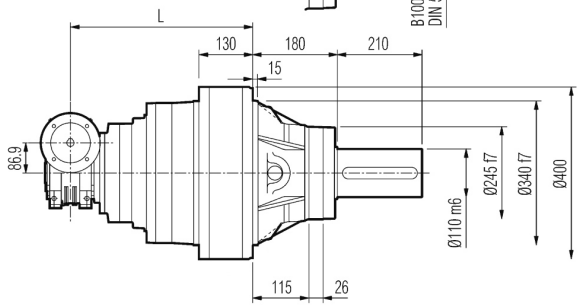



HZ PZ

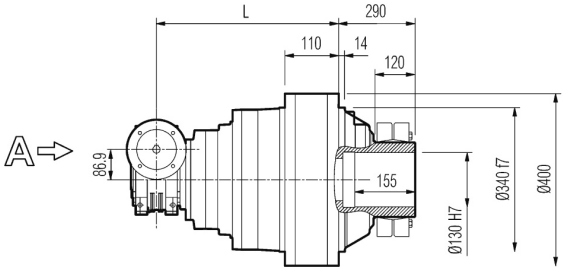


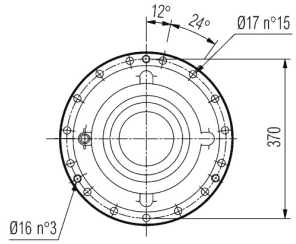




HC

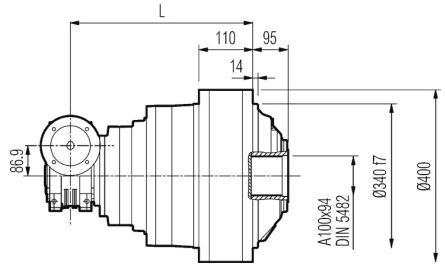



FP

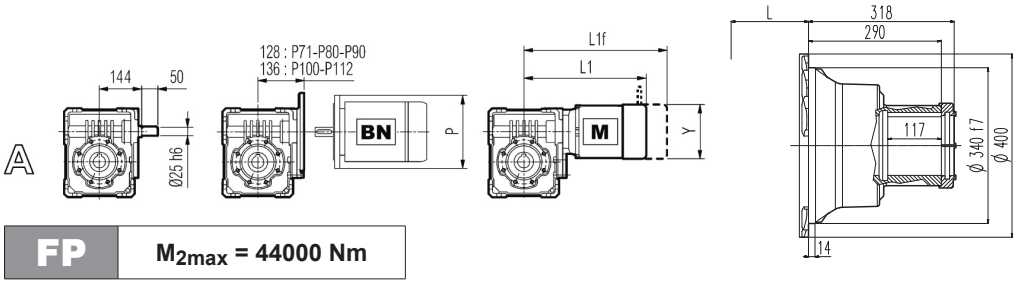



FZ



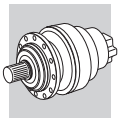

FDK




**FP** $M_{2max}$ = 44000 Nm

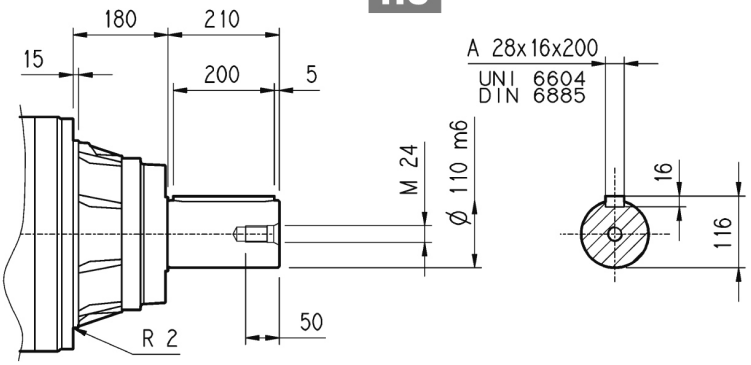
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP - FDK | PC - PZ | HC - HZ | FZ | FP - FDK |
| 3/V 10 L4 | 634 | 454 | 434 | 434 | 210 | 190 | 165 | 170 |

| | P71 | P80 | P90 | P100 | P112 | S1 + M1 | | | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | P | P | P | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 10 L4 | 160 | 200 | 200 | 250 | 250 | 324 | 385 | 138 | 349 | 425 | 156 | 392 | 477 | 193 | 424 | 515 | 193 |

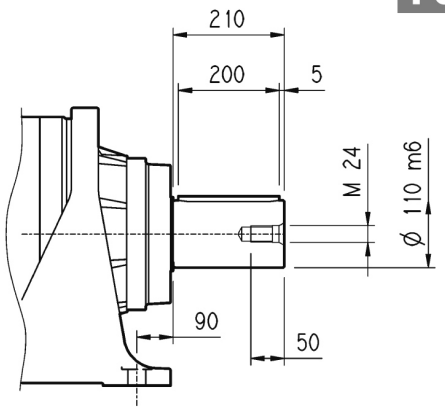


# 310 L | 310 R | 3/V 10 L

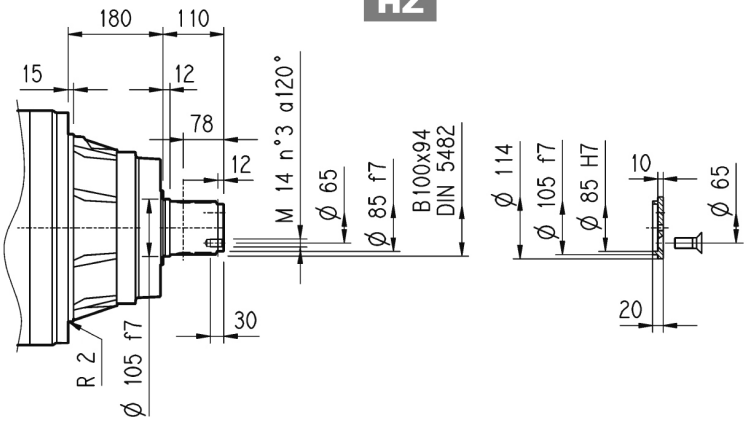
## HC



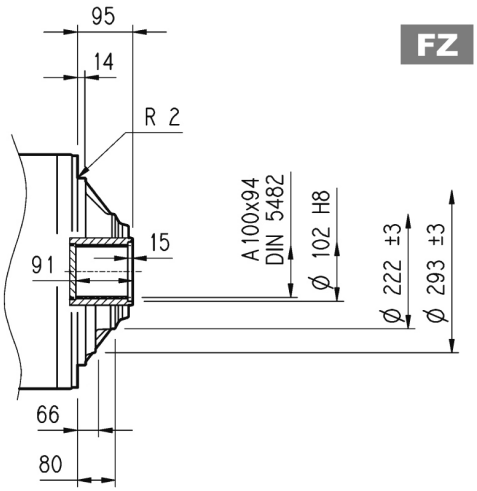

## PC



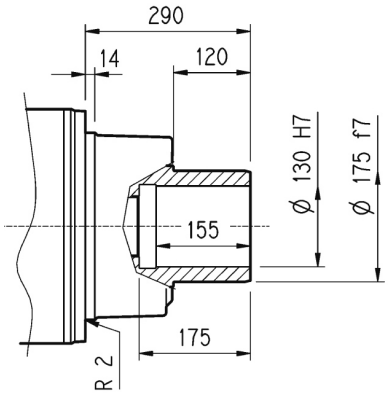

## HZ



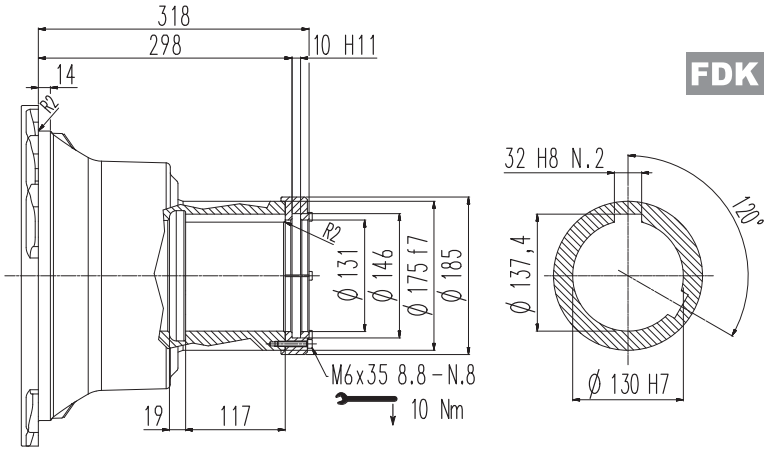

## FZ




## FP



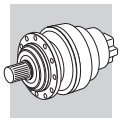

## FDK




| FP | $M_{2max}$ = 44000 Nm |
|---|---|



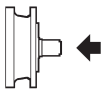
Bonfiglioli Riduttori

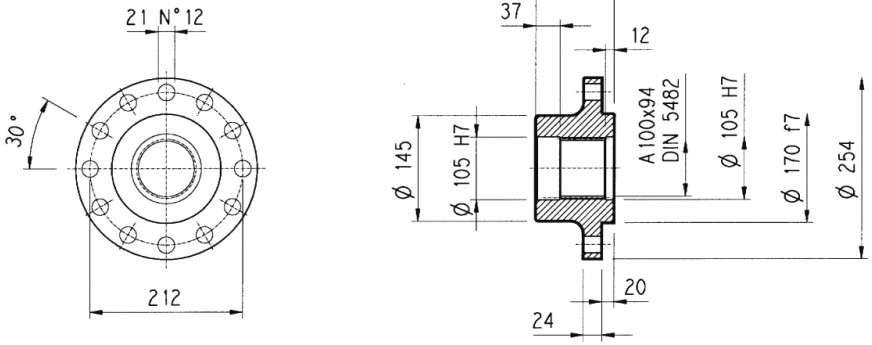


# 310 L | 310 R | 3/V 10 L

## Brida

**W0A**

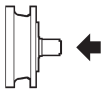


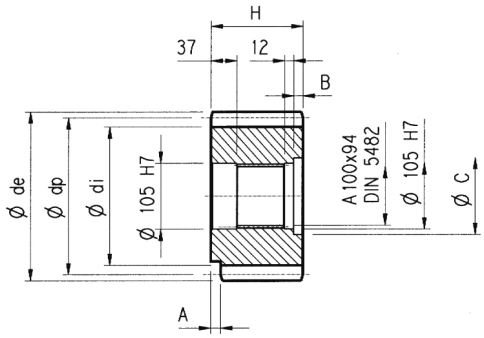



Material: Acero C40

## Piñón para giro

**P...**



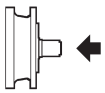


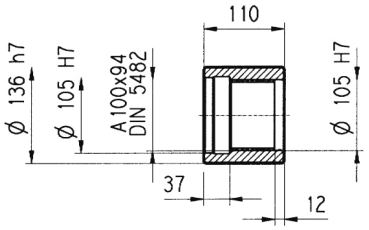

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PLQ** | 12 | 23 | — | 276 | 246 | 300 | 110 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PPD** | 16 | 13 | 0.500 | 208 | 184 | 252.5 | 145 | — | 35 | 116 | Acero 39NiCr Mo3 Bonificado |
| **PPF** | 16 | 15 | 0.450 | 240 | 215 | 280 | 125 | — | 15 | 120 | |

## Manguito cilíndrico

**M0A**

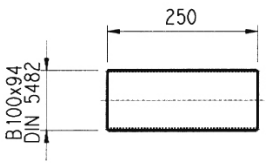





Material: Acero 16CrNi4

## Barra estriada

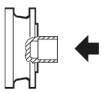
**B0A**

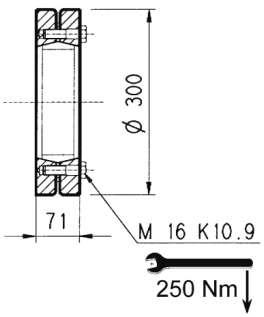


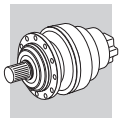

Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

## Aro cónico de apriete

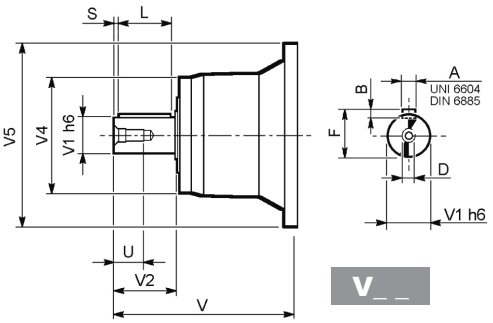
**G0A**



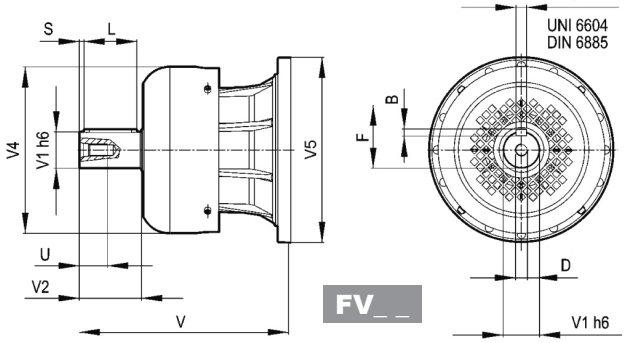




## 310 L 310 R



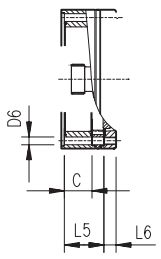

V_ _

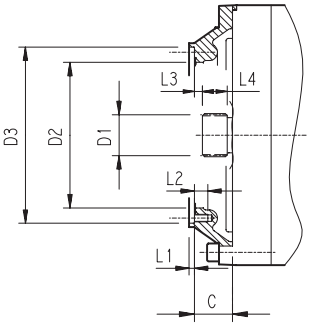


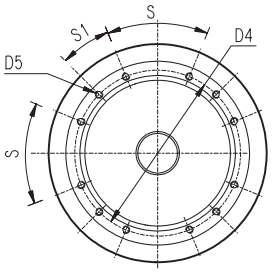

FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **310 L1** | **V10B** | 377 | 80 | 130 | 200 | 400 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV10B** | 457 | 80 | 130 | 347.5 | 400 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **310 L2** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **310 L3** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **310 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **310 R2 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **310 R3-R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 310 L 310 R

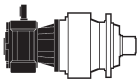


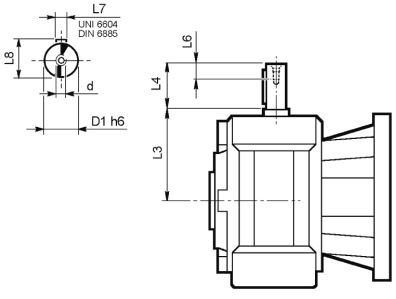




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **310 L1** | **V9AC** | 88 | 70x64 DIN 5482 | 200 | 282 H7 | 266 | M12 n°12 | — | 4 | 22 | 11 | 32 | — | — | 45° | 45° | C |
| **310 L2** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **310 L3** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **310 L4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 53 | 18 | 45° | 45° | A |
| **310 R2 (B) (C)** | **V9AA** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **310 R3-R4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

## 3/V 10 L

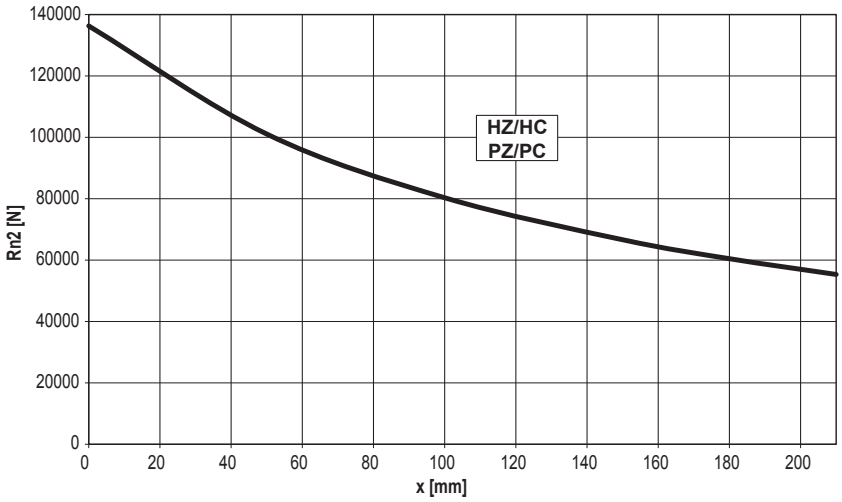





| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 10 L3_HS** | 35 | 185 | 65 | 20 | 10 | 38 | M8 |
| **3/V 10 L4_HS** | 25 | 144 | 50 | 19 | 8 | 28 | M8 |

# 310 L | 310 R | 3/V 10 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$

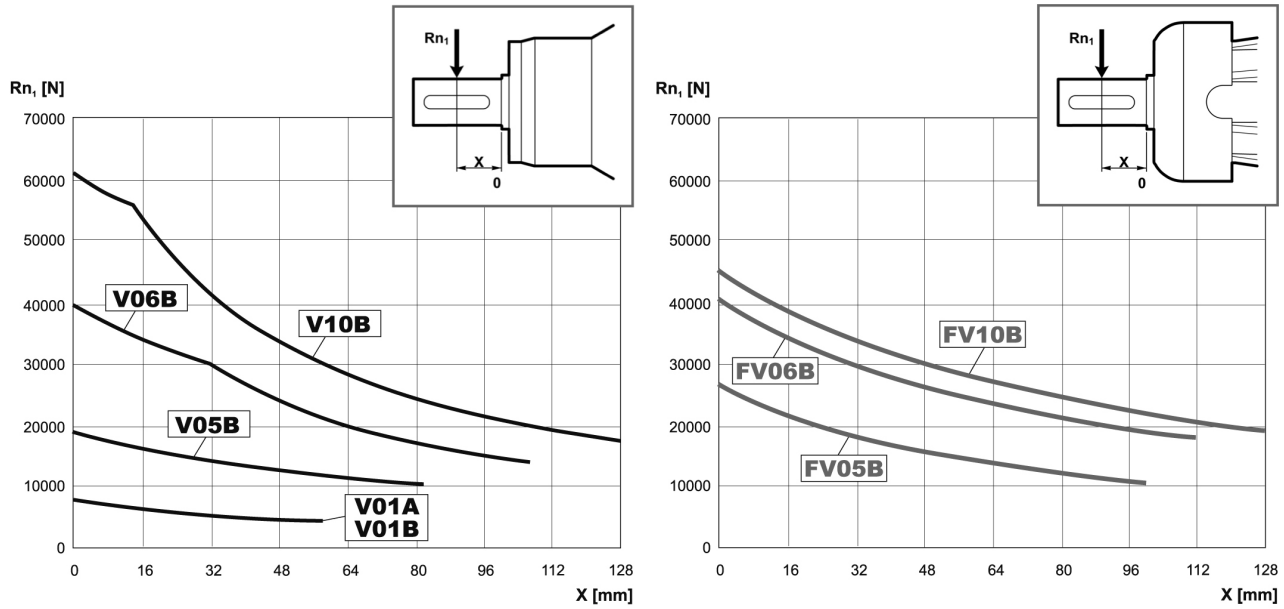



| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 85000 | 50000 |

| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 30170 | 24136 |

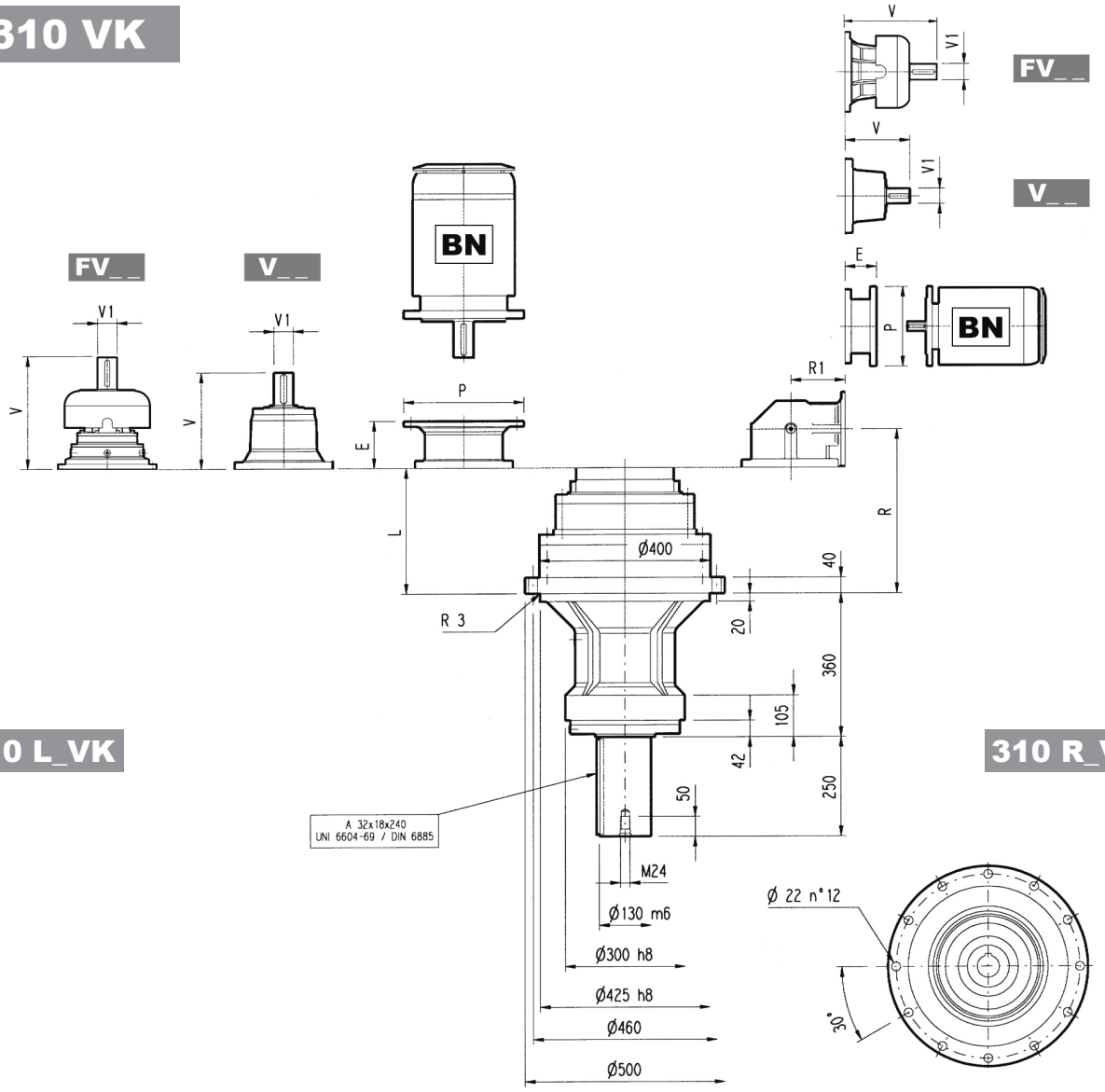
| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.27** | **1.27** | **1.23** | **1.00** | **0.62** | **0.50** |

Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 310 VK




## 310 L_VK

## 310 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **310 L1** | 107 | 200 | 377 | 80 | 50 | — | — | — | 457 | 80 | 63 | — | — | — |
| **310 L2** | 243 | 230 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **310 L3** | 308 | 240 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **310 L4** | 361 | 245 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

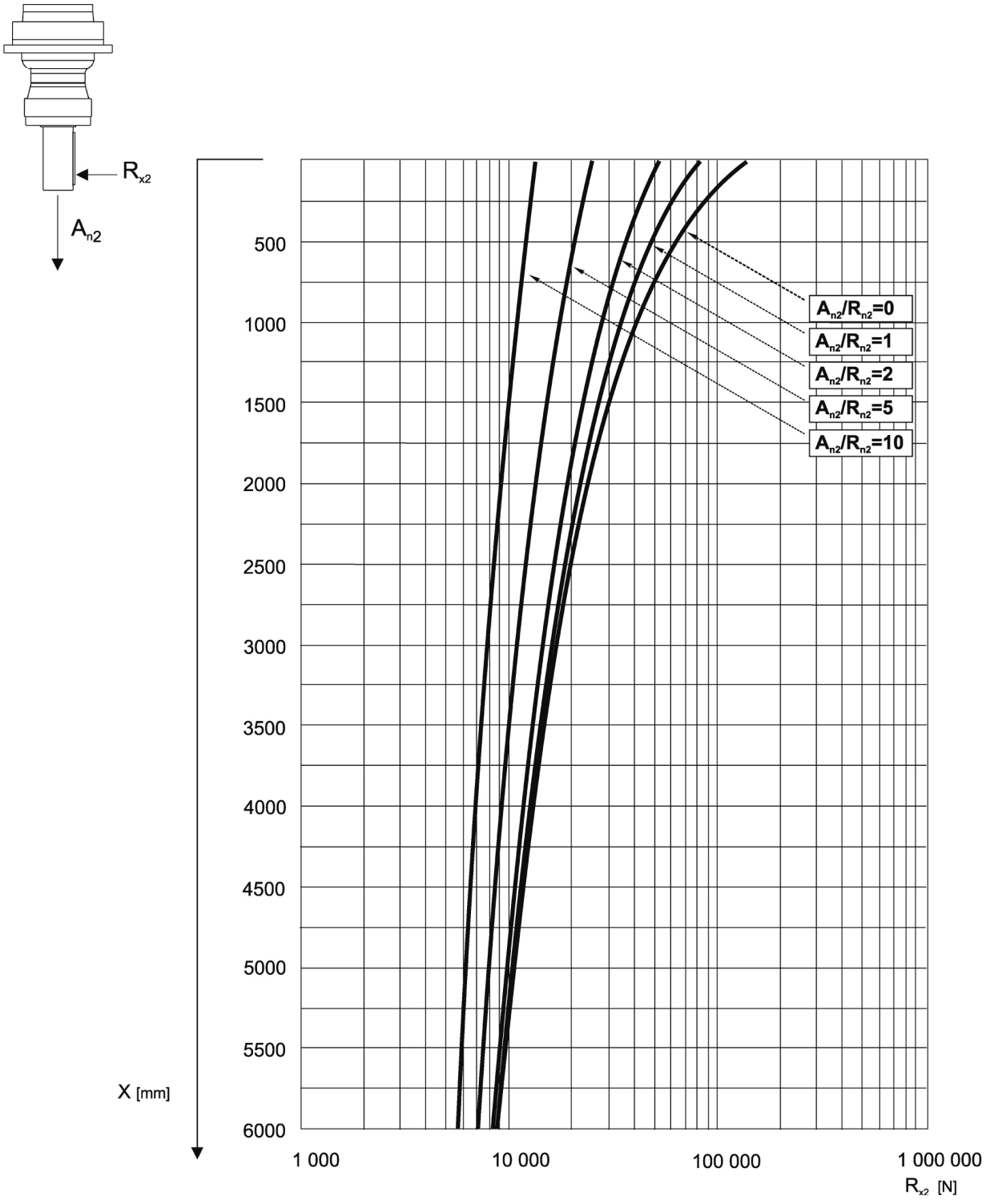
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **310 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 271 | 400 | 301 | 450 | 281 | 550 |
| **310 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 153 | 350 | 183 | 400 | 212 | 450 | 193 | 550 |
| **310 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **310 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **310 R2 (B)** | 315 | 345 | 320 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **310 R2 (C)** | 333 | 390 | 340 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **310 R3** | 380 | 140 | 250 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |
| **310 R4** | 400 | 140 | 260 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

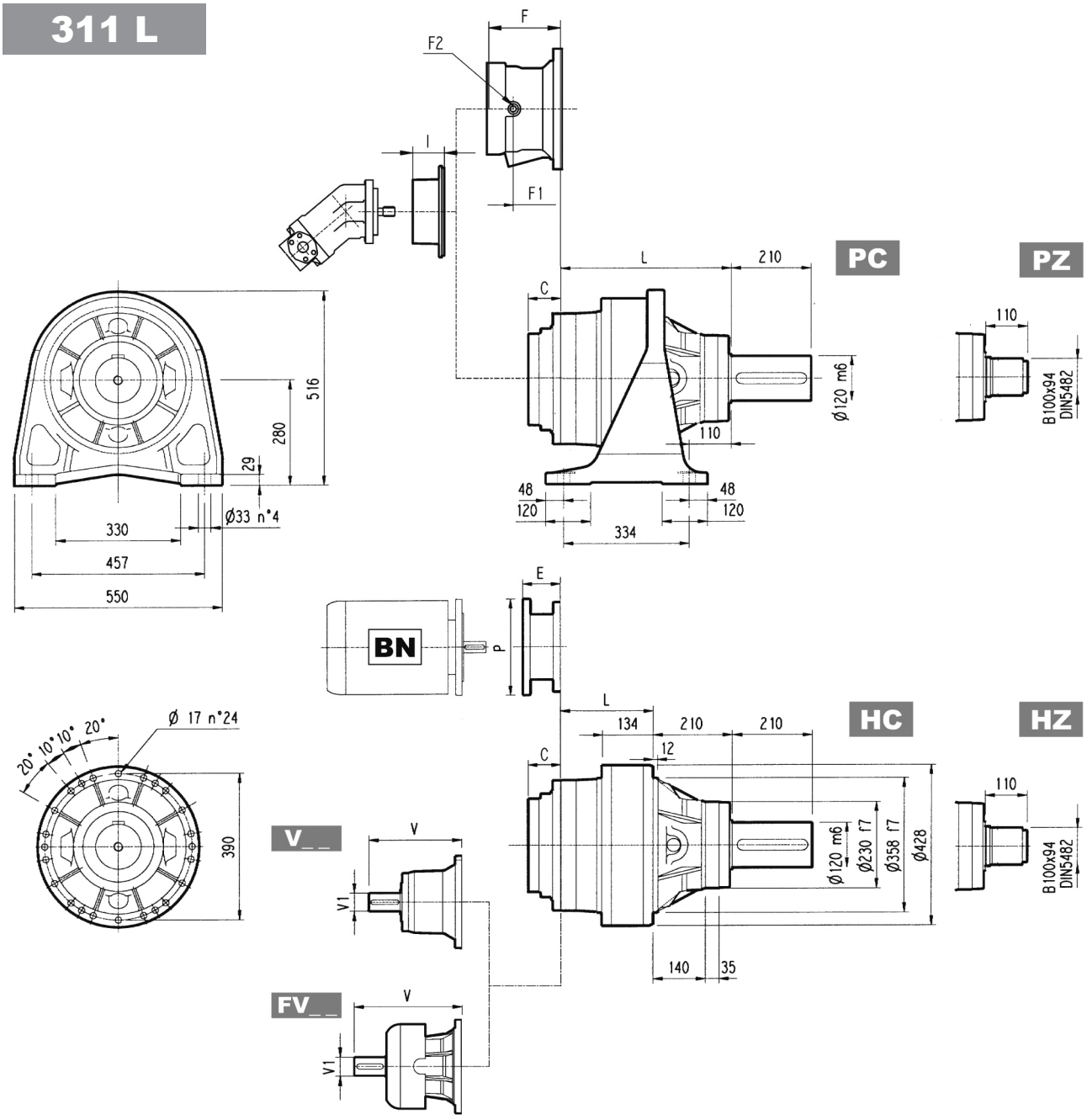
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **310 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 |
| **310 R2 (C)** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 152 | 350 | 152 | 350 | 182 | 400 | 212 | 450 |
| **310 R3** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — |
| **310 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — |

# 310 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



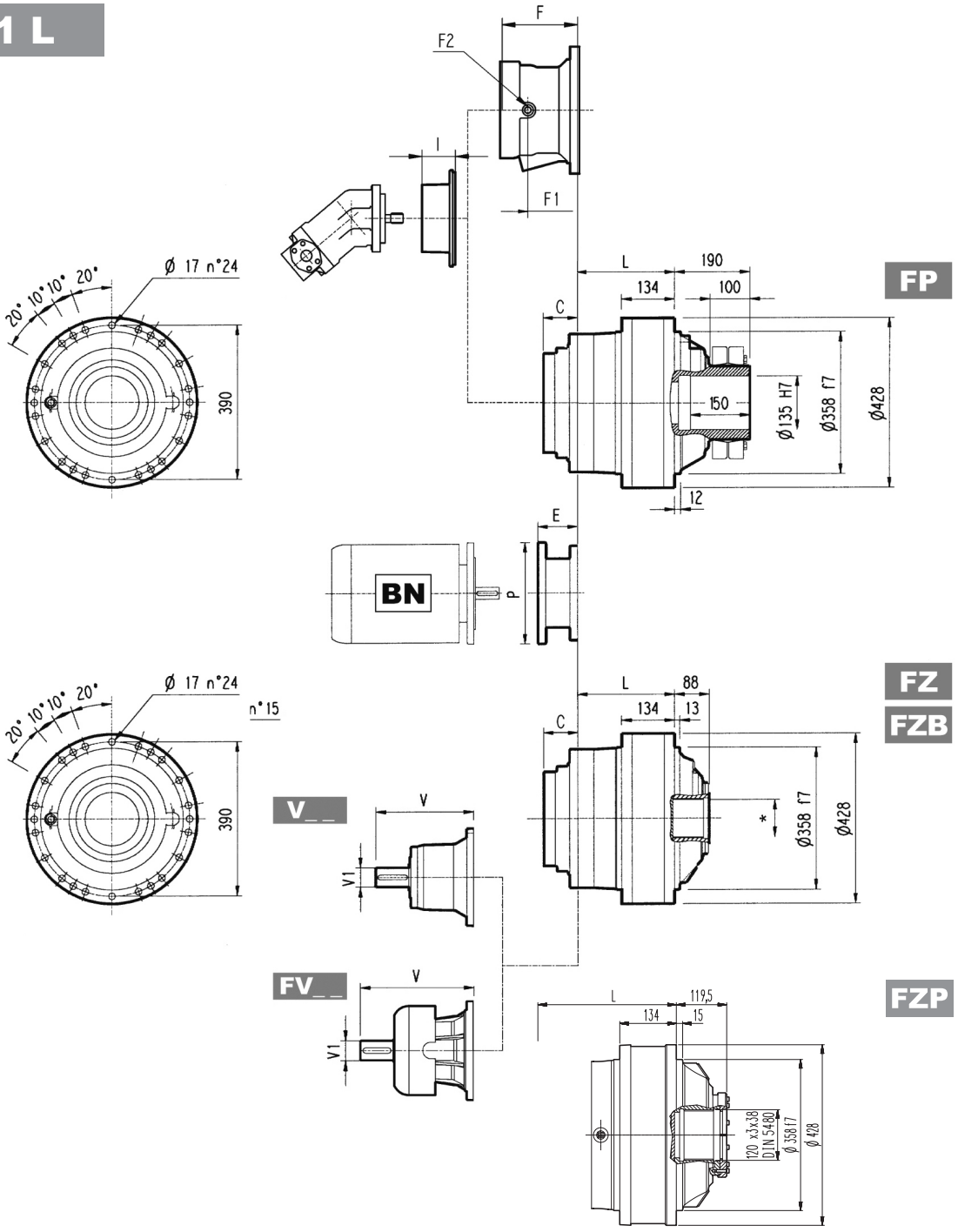
# 311 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **311 L1** | 325 | 115 | 115 | 115 | 250 | 180 | 160 | 170 |
| **311 L2** | 458 | 248 | 248 | 248 | 295 | 225 | 205 | 215 |
| **311 L3** | 547 | 337 | 337 | 337 | 307 | 237 | 217 | 227 |
| **311 L4** | 612 | 402 | 402 | 402 | 314 | 244 | 224 | 234 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **311 L1** | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | 81 | D | | — | — | — | — | — | — |
| **311 L2** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |
| **311 L3** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **311 L4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

# 311 L



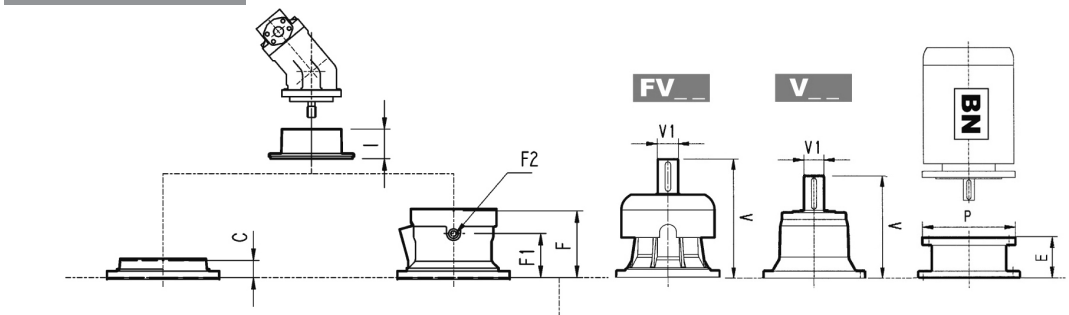

**FZB** $M_{2max}$ = 66900 Nm

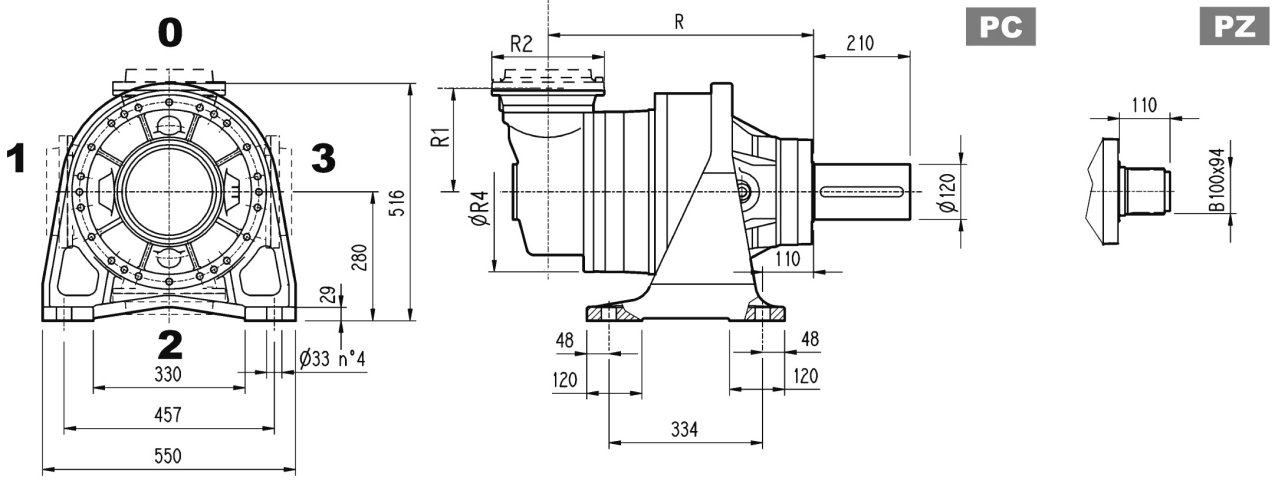
**FP** $M_{2max}$ = 55000 Nm

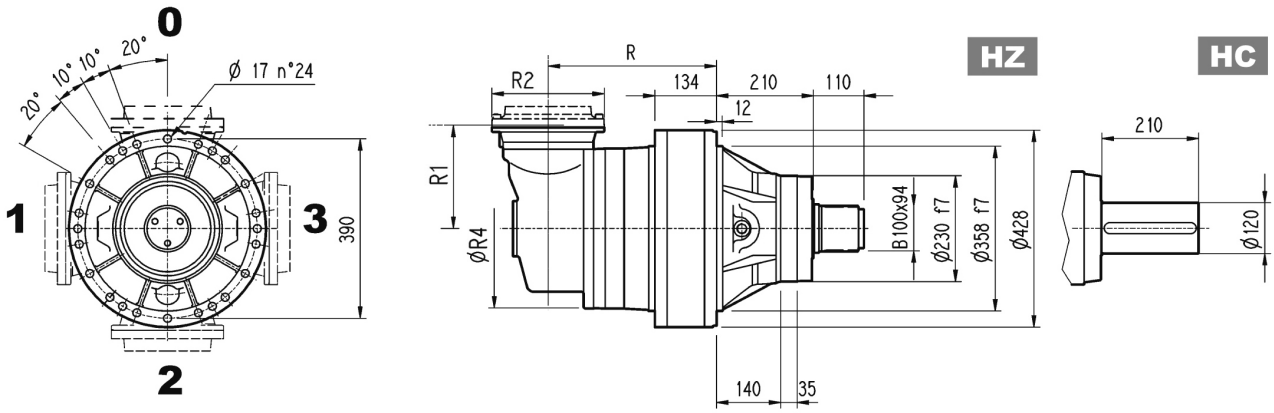
* Para dimensiones ver pág. 354

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **311 L1** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 267 | 400 | 297 | 450 | 297 | 550 |
| **311 L2** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **311 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **311 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

# 311 R



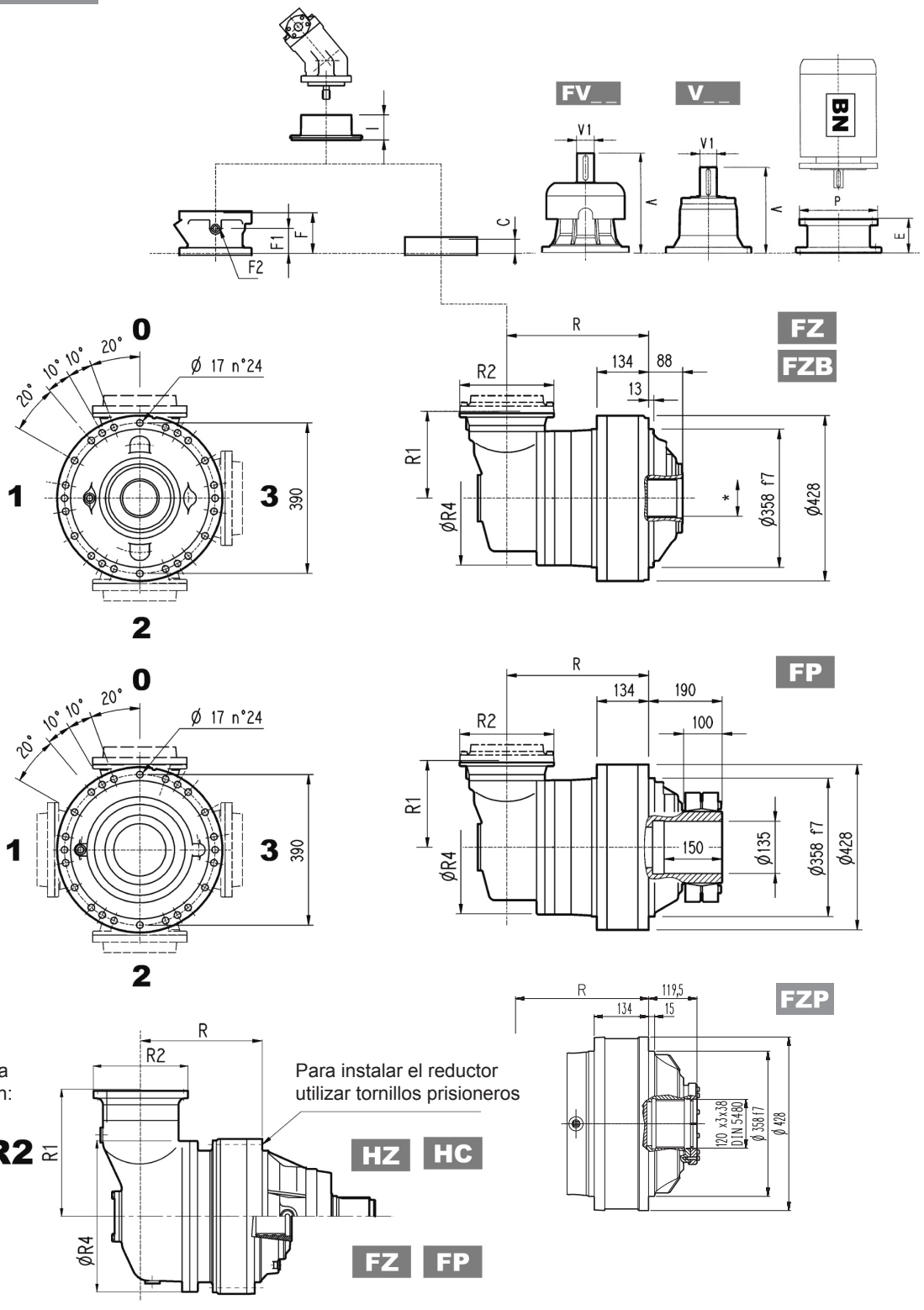




| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **311 R2 (B)** | 550 | 340 | 340 | 340 | 345 | 292 | 400 | 380 | 310 | 290 | 300 |
| **311 R2 (C)** | 550 | 340 | 340 | 340 | 390 | 292 | 480 | 390 | 320 | 300 | 310 |
| **311 R3** | 577 | 367 | 367 | 367 | 225 | 245 | 375 | 345 | 275 | 255 | 265 |
| **311 R4** | 639 | 429 | 429 | 429 | 140 | 186 | 244 | 327 | 257 | 237 | 247 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **311 R2 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **311 R2 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **311 R3** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | 457 | 145 | 95 | 1/4 G | 5 | A | 16 |
| **311 R4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

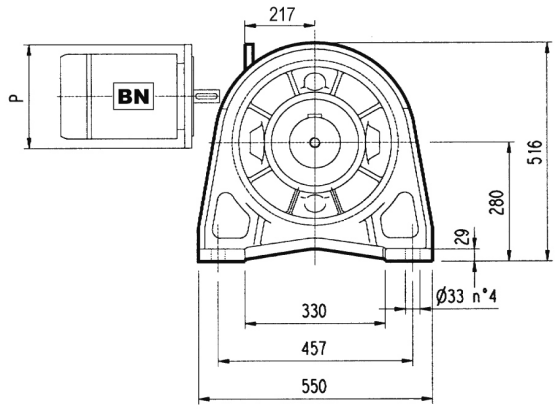
# 311 R

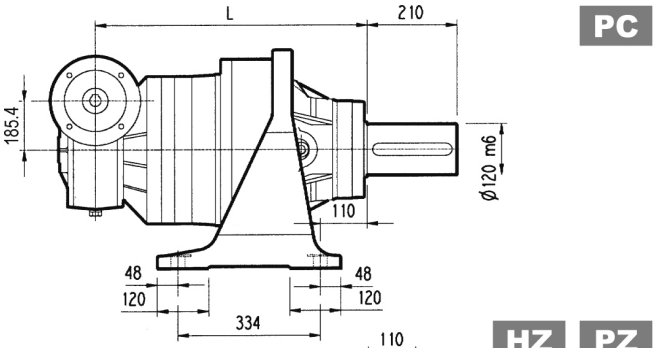


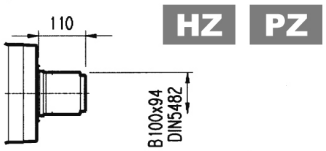

| | | | | |
|---|---|---|---|---|
| **FZB** | $M_{2max}$ = 66900 Nm | **FP** | $M_{2max}$ = 55000 Nm | * Para dimensiones ver pág. 354 |

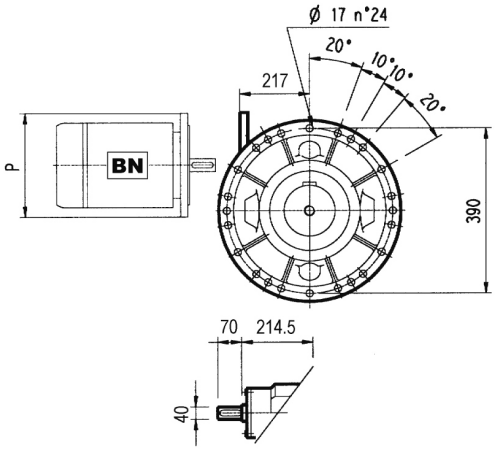
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **311 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **311 R2 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **311 R3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **311 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

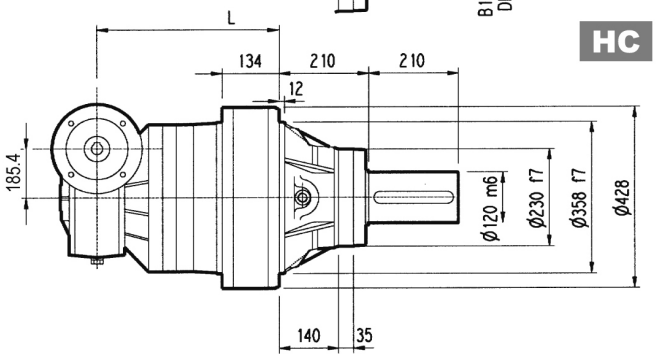
# 3/V 11 L3

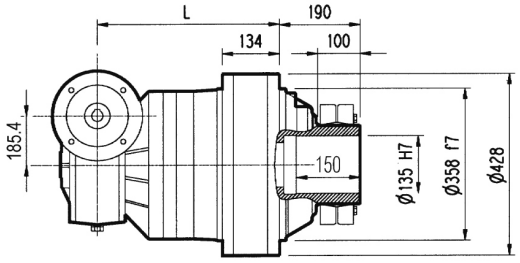


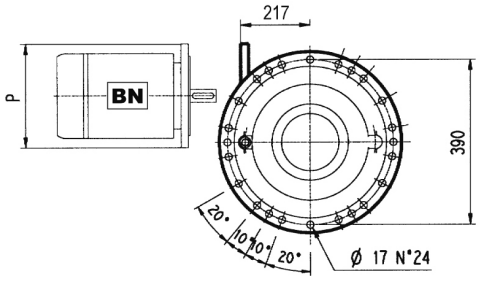



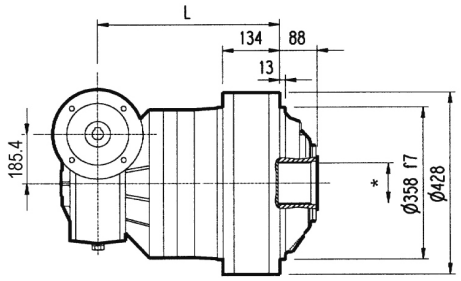



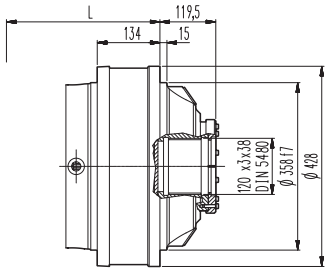



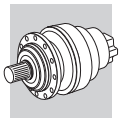



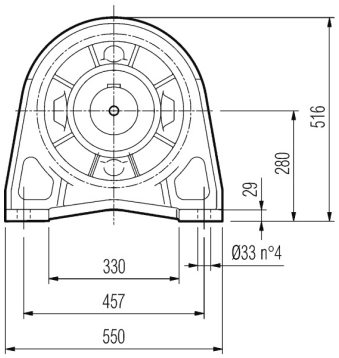

* Para dimensiones ver pág. 354

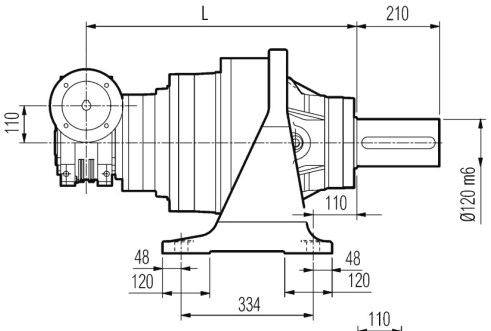
| | |
|---|---|
| **FZB** | **$M_{2max}$ = 66900 Nm** |
| **FP** | **$M_{2max}$ = 55000 Nm** |

| | L | | | | Kg | | | | P80 | P90 | P100 | P112 | P132 | P160 | P180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP | PC - PZ | HC - HZ | FZ | FP | P | P | P | P | P | P | P |
| **3/V 11 L3** | 659 | 449 | 449 | 449 | 390 | 320 | 300 | 310 | — | — | 250 | 250 | 300 | 350 | 350 |

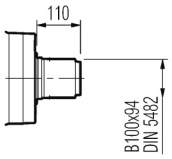


# 3/V 11 L4

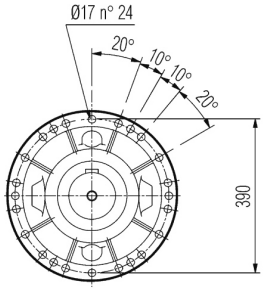


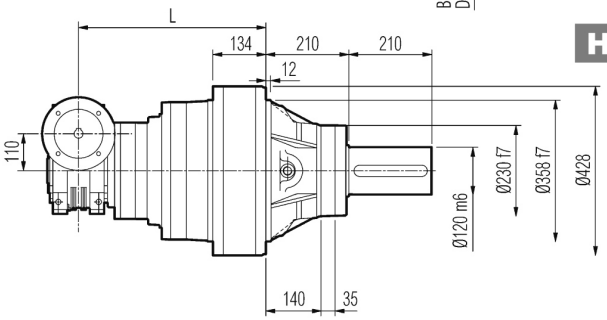




PC

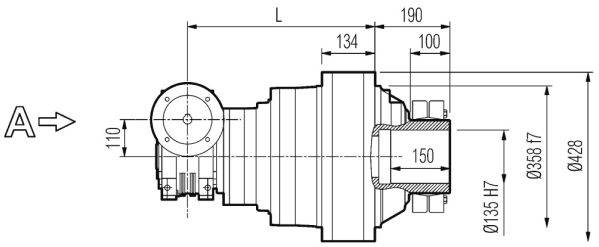



HZ PZ

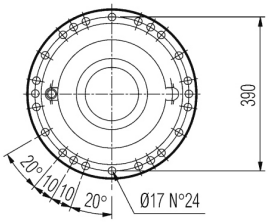


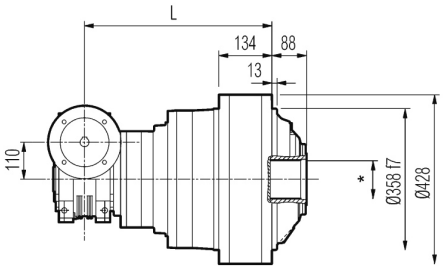




HC

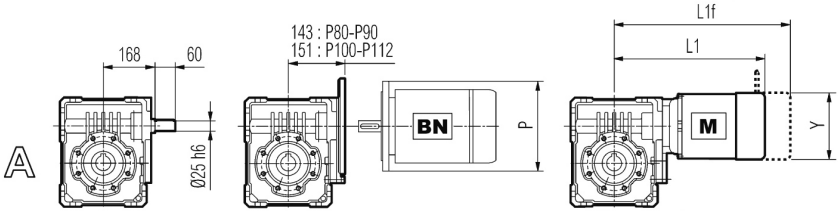


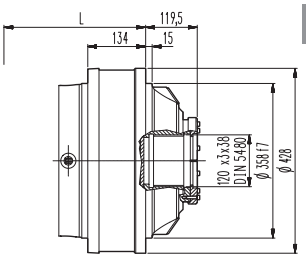

FP




FZ
FZB




FZP

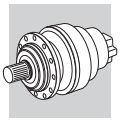
| FZB | $M_{2max}$ = 66900 Nm |
|---|---|

| FP | $M_{2max}$ = 55000 Nm |
|---|---|

* Para dimensiones ver pág. 354

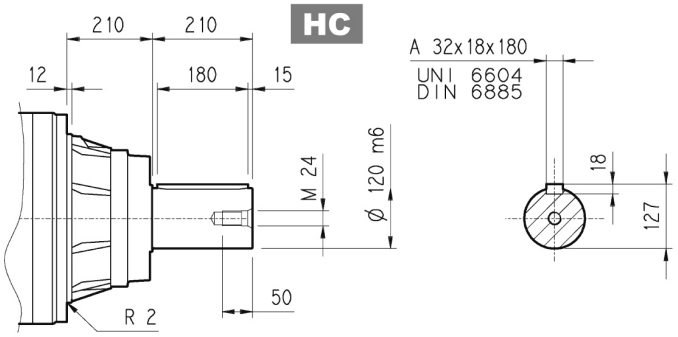
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 11 L4 | 707 | 497 | 497 | 497 | 340 | 270 | 250 | 260 |

| | P80 | P90 | P100 | P112 | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | P | P | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 11 L4 | 200 | 200 | 250 | 250 | 364 | 440 | 156 | 407 | 503 | 193 | 439 | 530 | 193 |

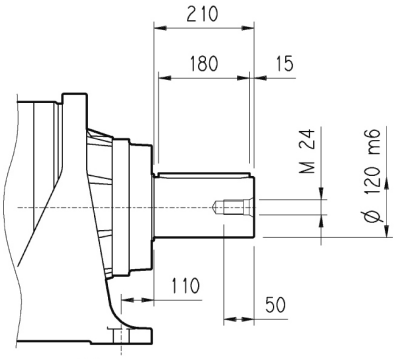


# 311 L | 311 R | 3/V 11 L

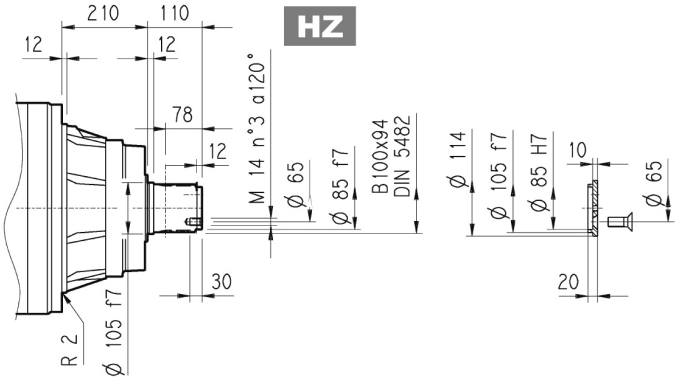
## HC



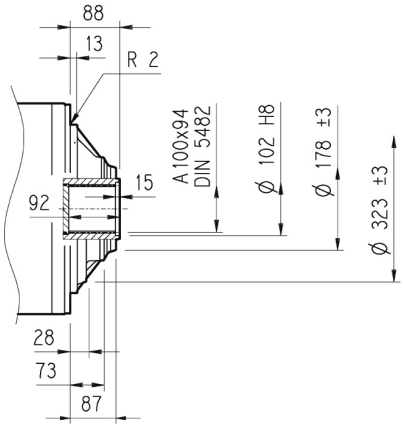

## PC



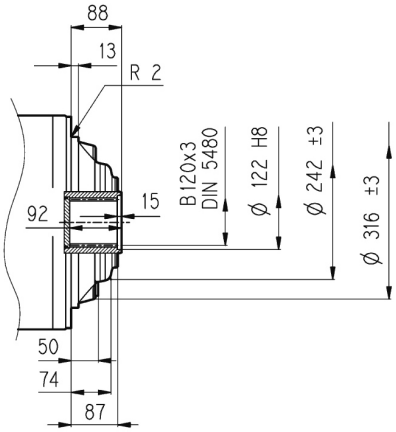

## HZ



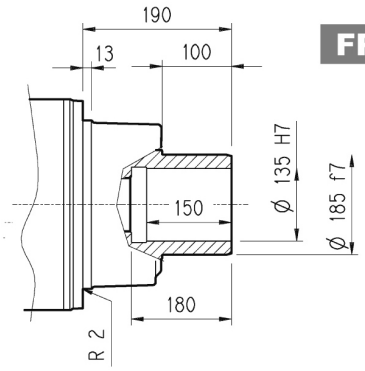

## FZ



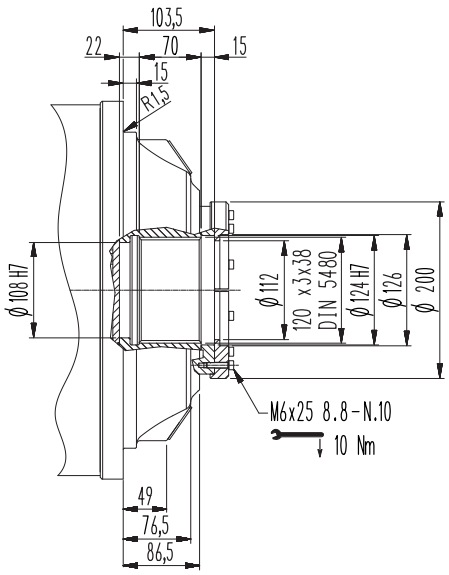

## FZB




## FP



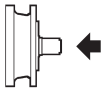

## FZP

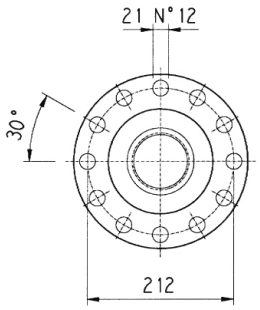


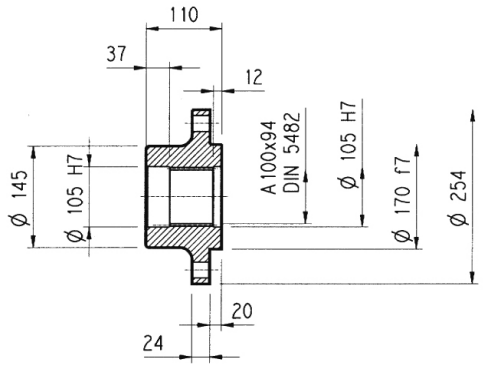

| | |
|---|---|
| **FZB** | $M_{2max}$ = 66900 Nm |
| **FP** | $M_{2max}$ = 55000 Nm |

## Brida

W0A



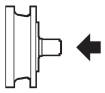


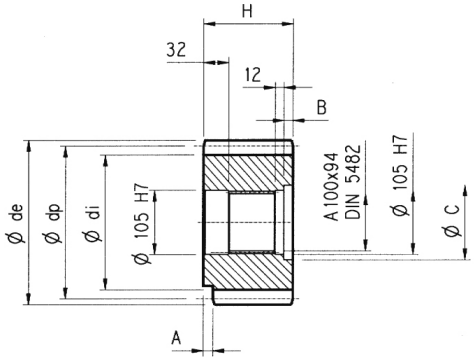




Material: Acero C40

## Piñón para giro

P...



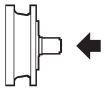


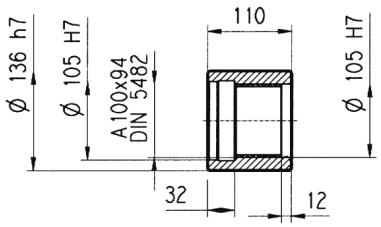

$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PLQ** | 12 | 23 | — | 276 | 246 | 300 | 110 | — | — | — | Acero 18NiCrMo5 Cementado y templado |
| **PPD** | 16 | 13 | 0.500 | 208 | 184 | 252.5 | 145 | — | 35 | 116 | Acero 39NiCr Mo3 Bonificado |
| **PPF** | 16 | 15 | 0.450 | 240 | 215 | 280 | 125 | — | 15 | 120 | |

## Manguito cilíndrico

M0A

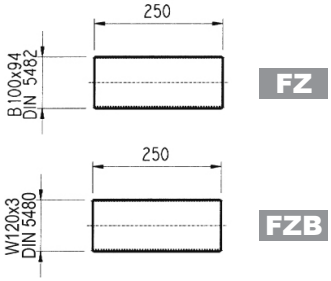





Material: Acero 16CrNi4

## Barra estriada

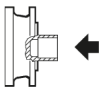
B0A

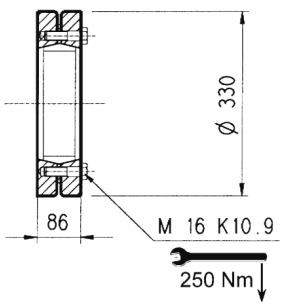


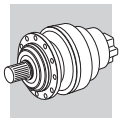

Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

## Aro cónico de apriete

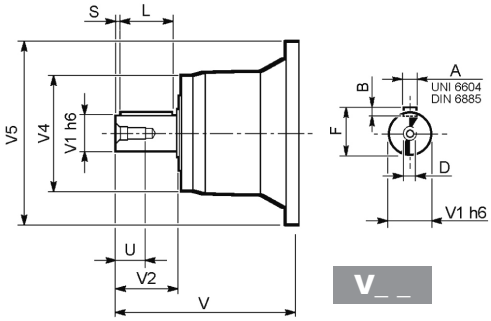
G0A



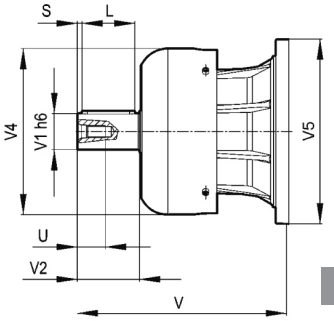




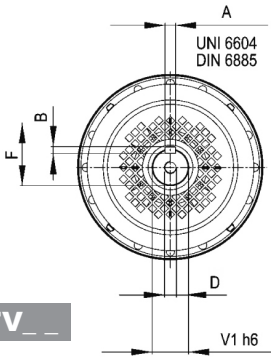
## 311 L 311 R




V_ _

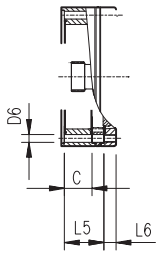


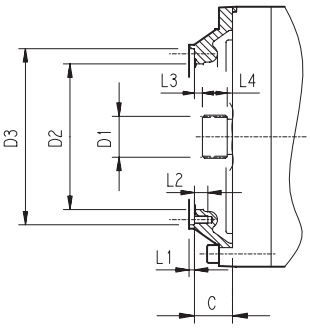

FV_ _

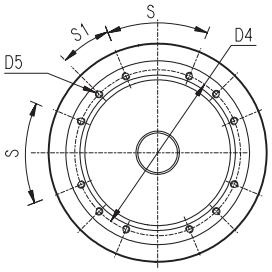



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 311 L1 | V11B | 348 | 80 | 130 | 200 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV11B | 456 | 80 | 130 | 347.5 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| 311 L2 | V07B | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV07B | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | V07A | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV07A | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 311 L3 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 311 L4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| 311 R2 (B)(C) | V06B | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV06B | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 311 R3 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 311 R4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 311 L 311 R

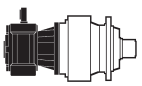


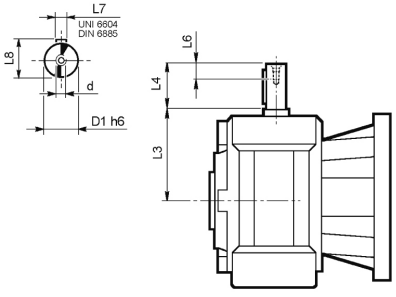




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 311 L1 | V9AD | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |
| 311 L2 | V9AB | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 311 L3 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 311 L4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| 311 R3 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 311 R2 (B) (C) | V9AB | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 311 R4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

## 3/V 11 L





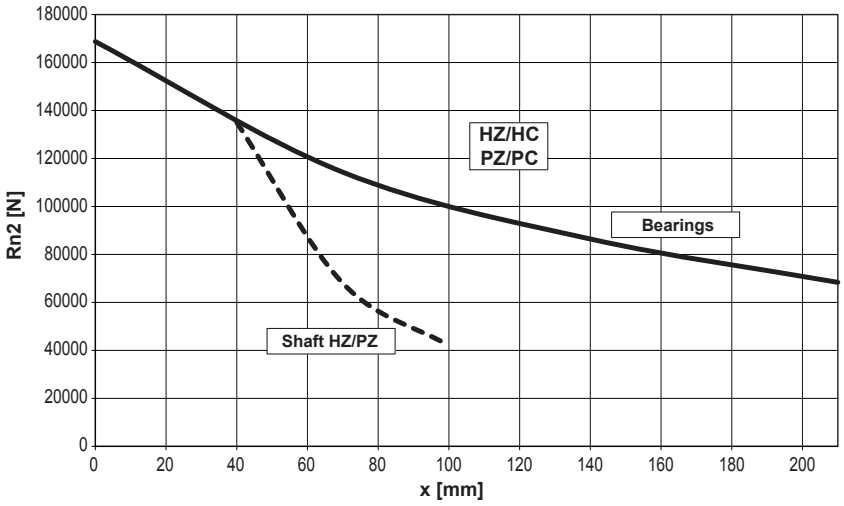

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 11 L3_HS | 40 | 214.5 | 70 | 20 | 12 | 43 | M8 |
| 3/V 11 L4_HS | 25 | 168 | 60 | 19 | 8 | 28 | M8 |

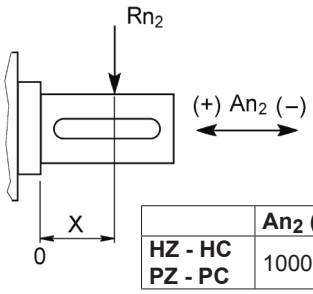


Bonfiglioli Riduttori

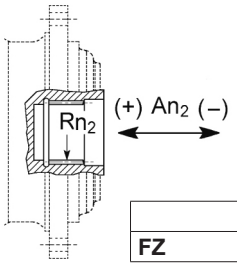
# 311 L | 311 R | 3/V 11 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



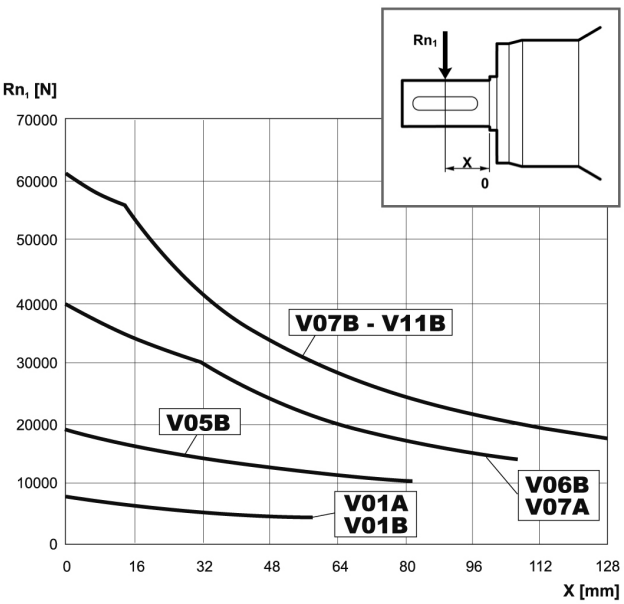

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 100000 | 70000 |

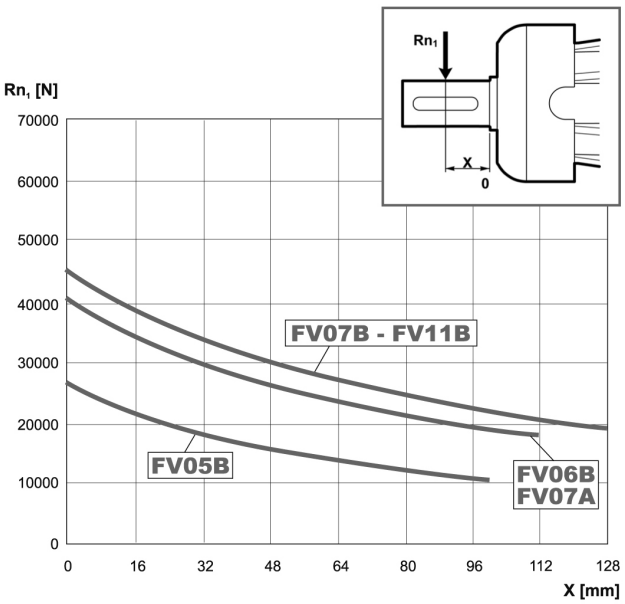



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 30170 | 27850 |

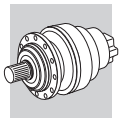
| | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| Factor de corrección $fh_2$ para cargas sobre los ejes | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HC - PC | **1.93** | **1.52** | **1.23** | **1.00** | **0.62** | **0.50** |
| | | HZ - PZ | **1.24** | **1.00** | **1.00** | **1.00** | **0.62** | **0.50** |

Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$

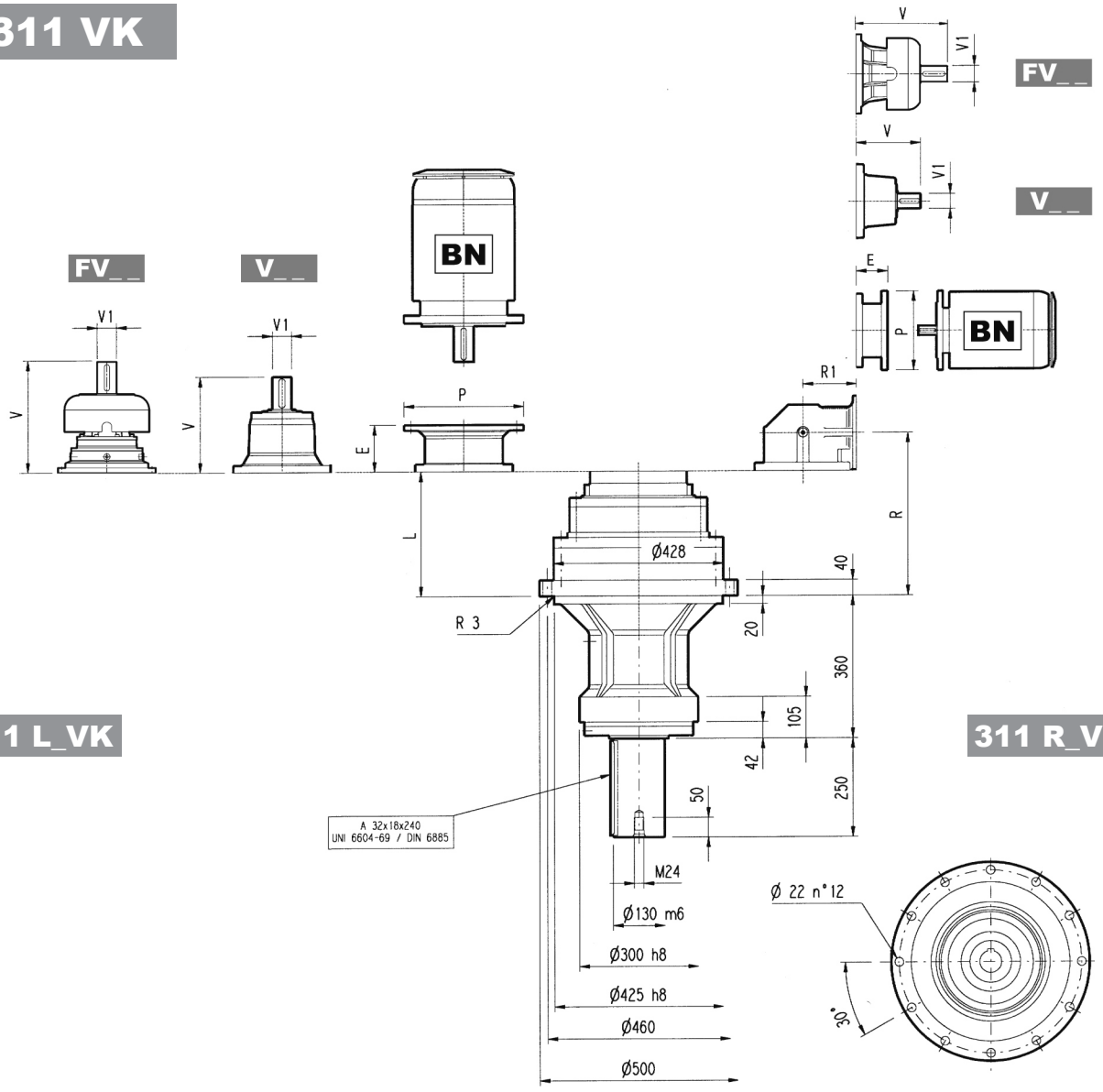



| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |



# 311 VK




311 L_VK

311 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **311 L1** | 129 | 295 | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — |
| **311 L2** | 262 | 340 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 |
| **311 L3** | 351 | 350 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **311 L4** | 416 | 360 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

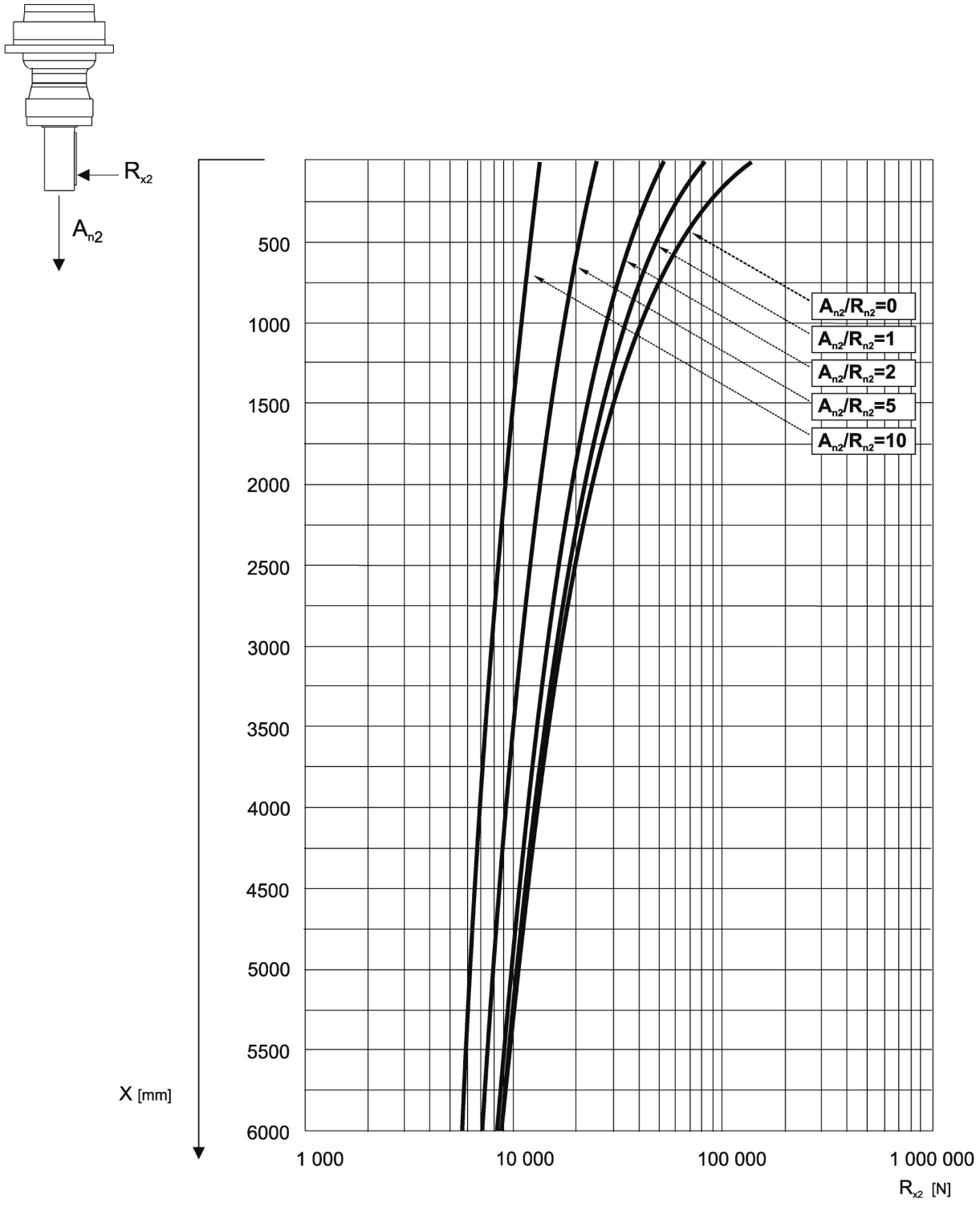
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **311 L2** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **311 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **311 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **311 R2 (B)** | 354 | 345 | 420 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **311 R2 (C)** | 354 | 390 | 430 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **311 R3** | 381 | 225 | 385 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **311 R4** | 443 | 140 | 360 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

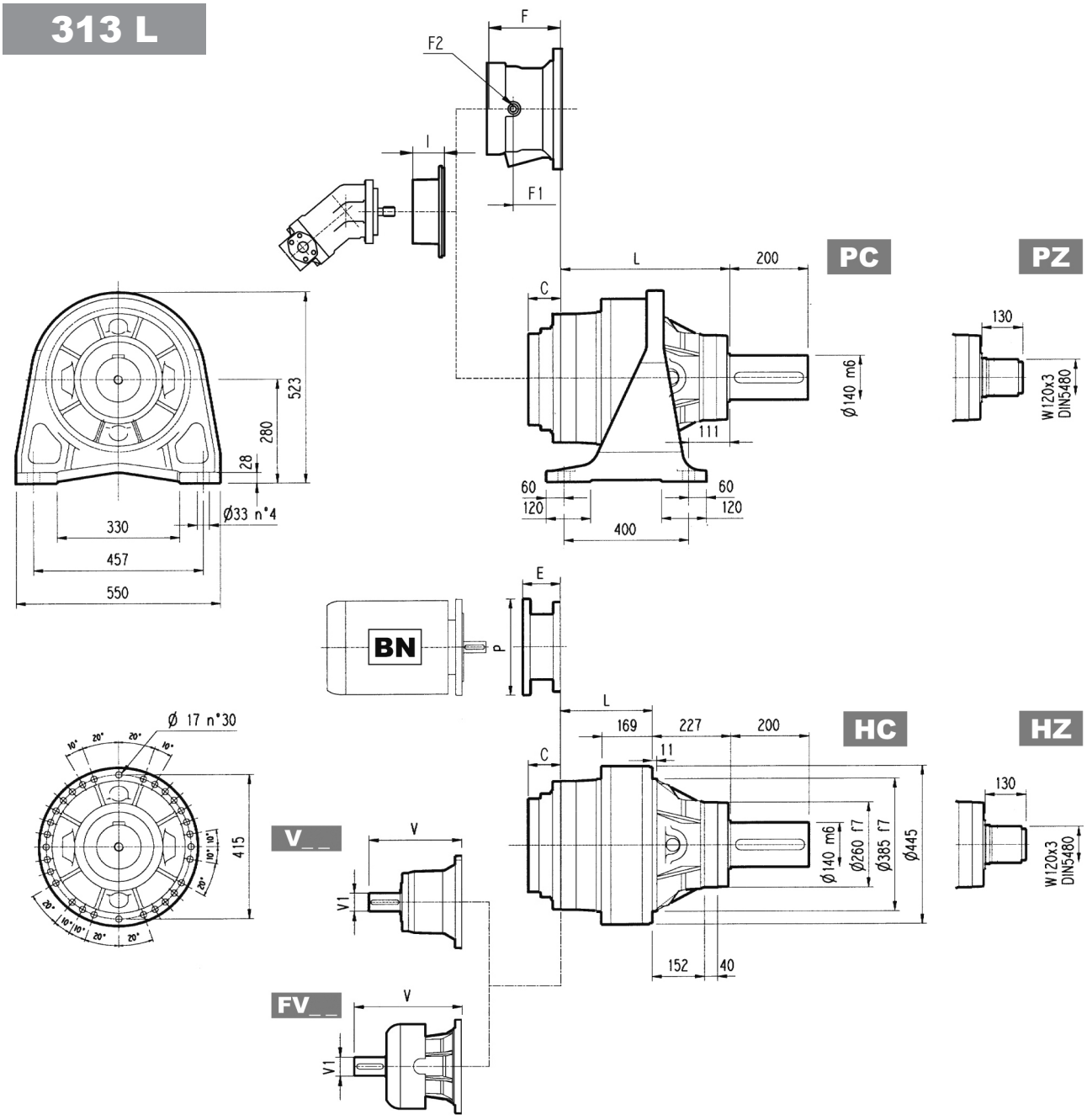
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **311 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **311 R2 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **311 R3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **311 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

# 311 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



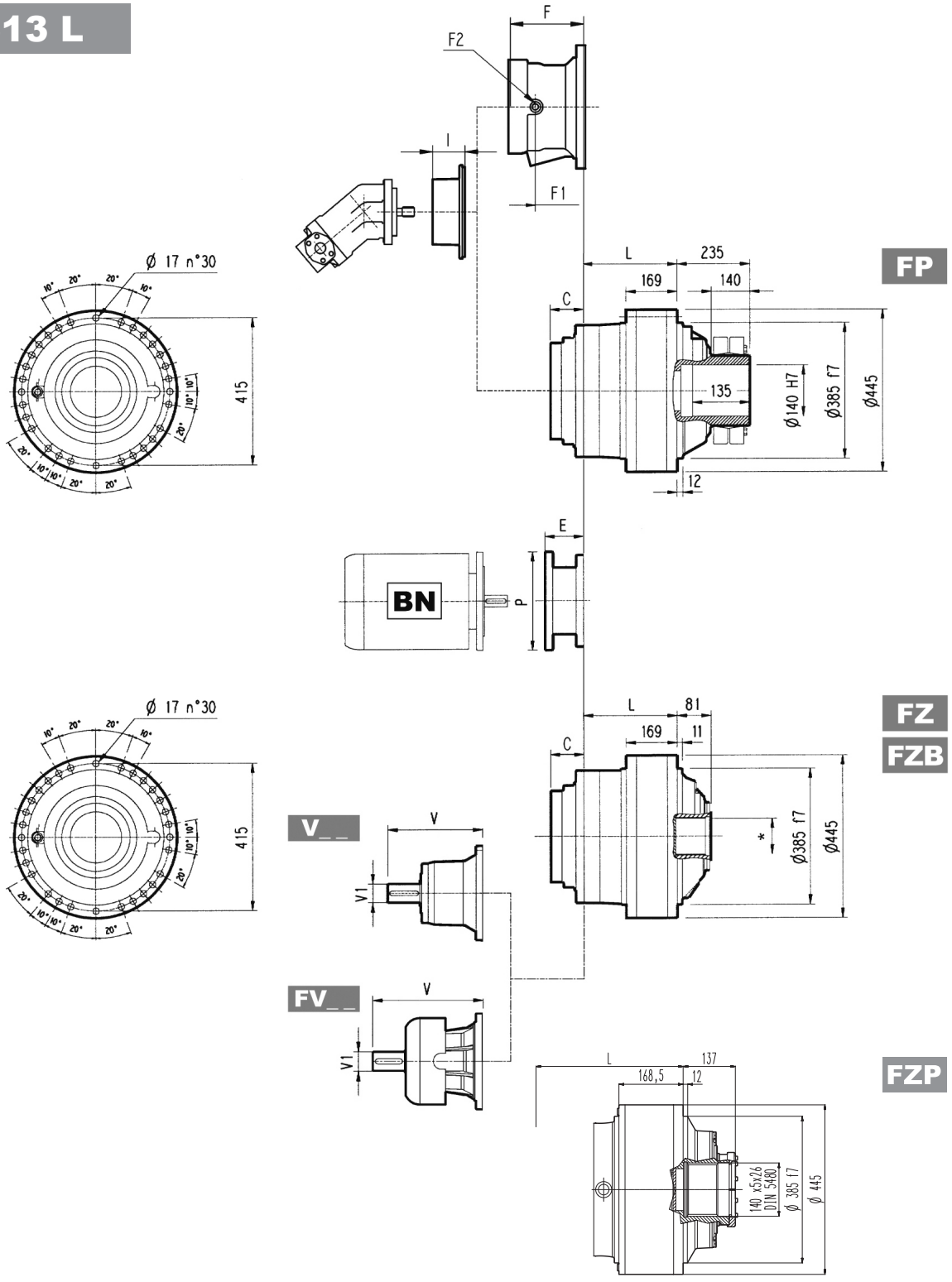
# 313 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **313 L1** | 381 | 154 | 154 | 154 | 320 | 230 | 200 | 200 |
| **313 L2** | 531 | 304 | 304 | 304 | 380 | 290 | 260 | 280 |
| **313 L3** | 620 | 393 | 393 | 393 | 392 | 302 | 272 | 292 |
| **313 L4** | 685 | 458 | 458 | 458 | 399 | 309 | 279 | 299 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **313 L1** | 343 | 80 | 55 | — | — | — | 451 | 80 | 71 | — | — | — | 76 | D | | — | — | — | — | — | — |
| **313 L2** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |
| **313 L3** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **313 L4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

# 313 L

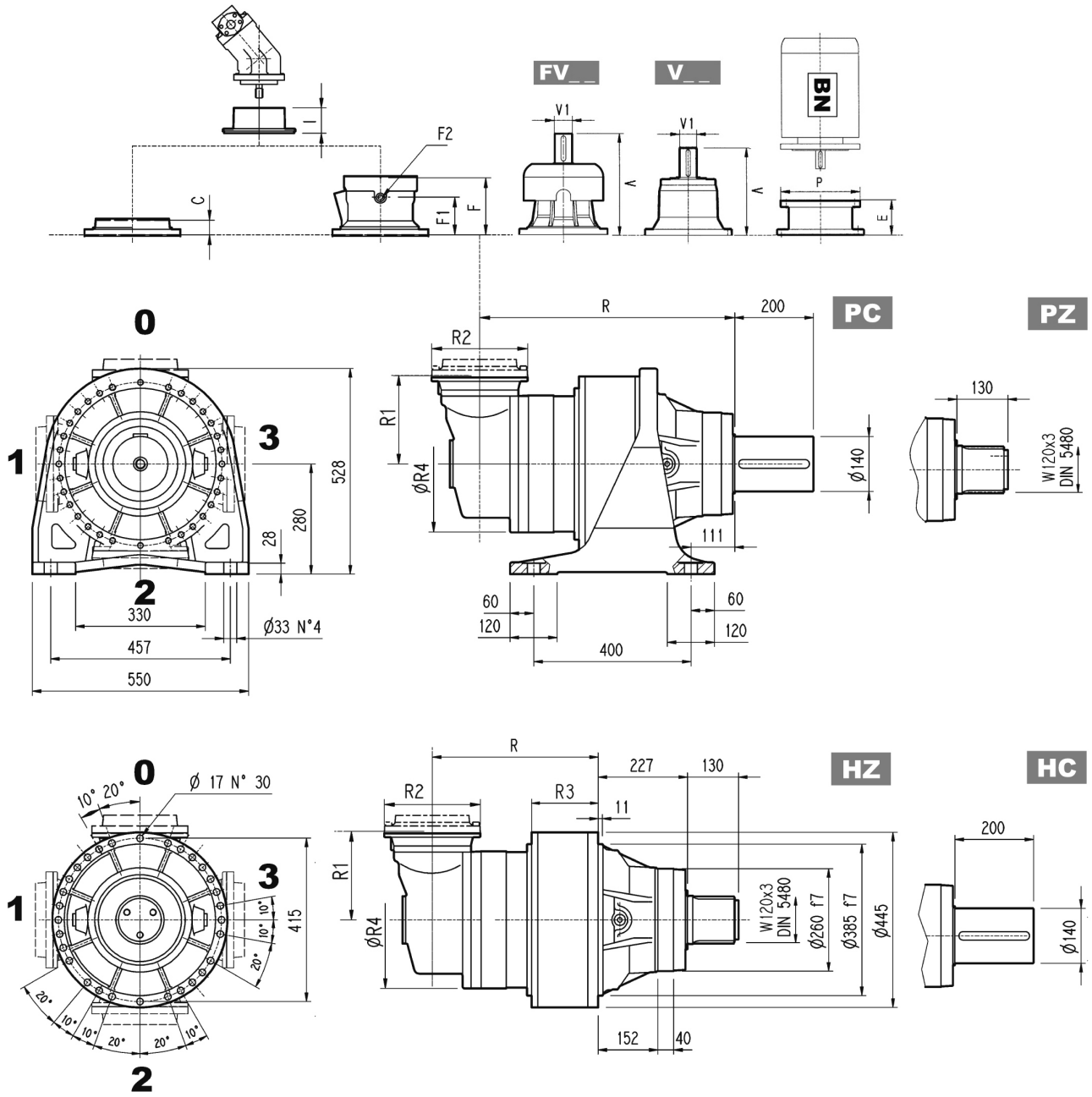



**FP** | $M_{2max}$ = 79000 Nm

* Para dimensiones ver pág. 366

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **313 L2** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **313 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **313 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

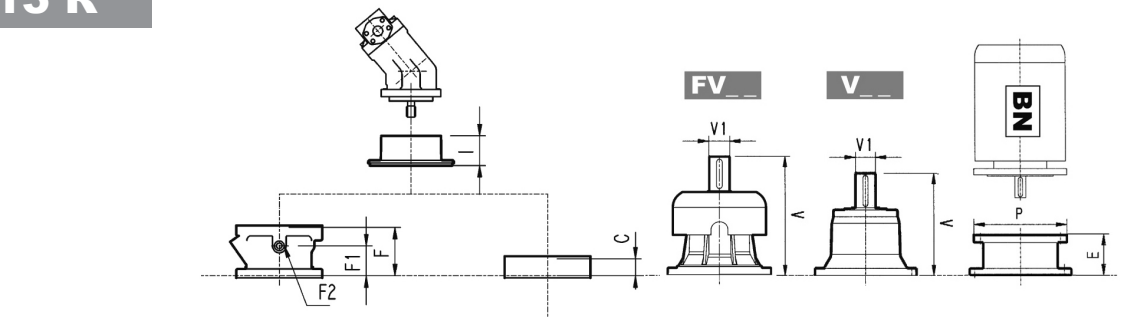
# 313 R

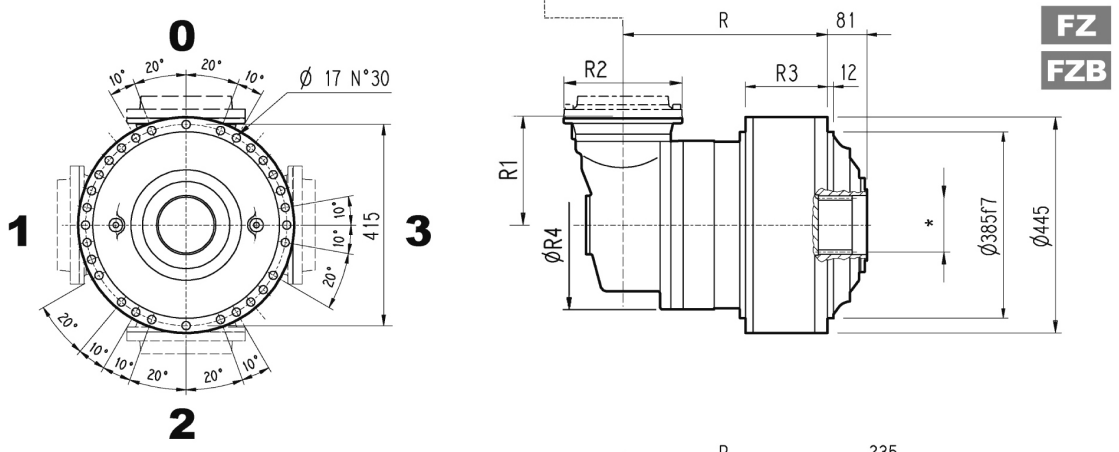


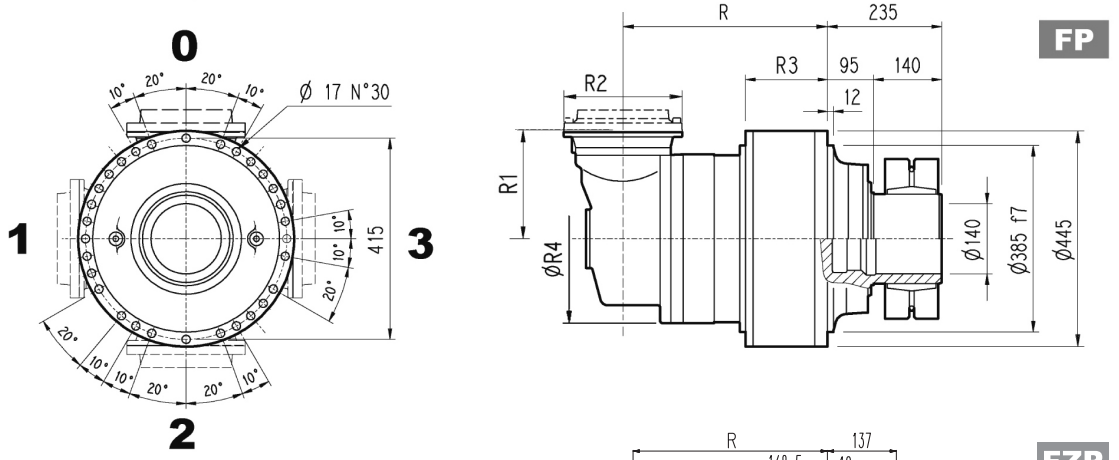

| | R | | | | R1 | R2 | R3 | | | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | HC-HZ | FZ | FP | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **313 R2 (B)** | 611 | 384 | 384 | 384 | 345 | 292 | 199 | 199 | 199 | 400 | 450 | 360 | 330 | 350 |
| **313 R2 (C)** | 611 | 384 | 384 | 384 | 390 | 292 | 168 | 168 | 168 | 480 | 460 | 370 | 340 | 360 |
| **313 R3** | 650 | 423 | 423 | 423 | 225 | 245 | 169 | 169 | 169 | 345 | 430 | 340 | 310 | 330 |
| **313 R4** | 712 | 485 | 485 | 485 | 140 | 186 | 169 | 169 | 169 | 244 | 412 | 322 | 292 | 312 |

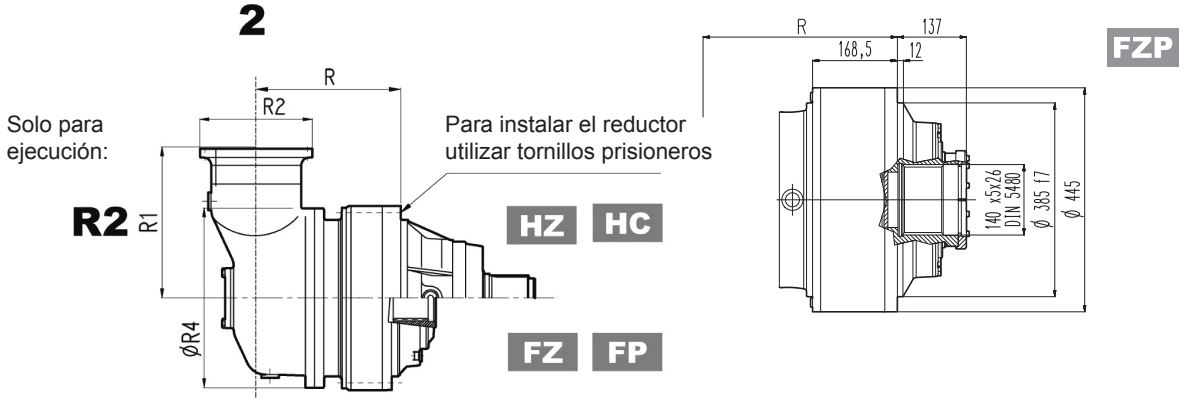
| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **313 R2 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **313 R2 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **313 R3** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |
| **313 R4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 4 | A | 10 |

# 313 R



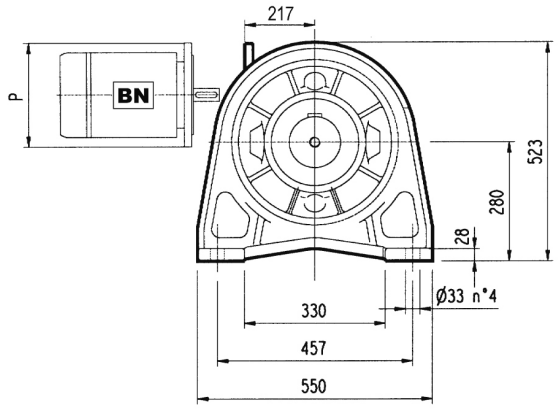



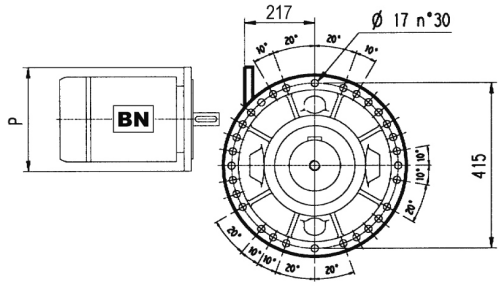

**FP** $M_{2max}$ = 79000 Nm

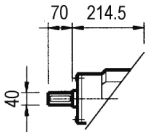
* Para dimensiones ver pág. 366

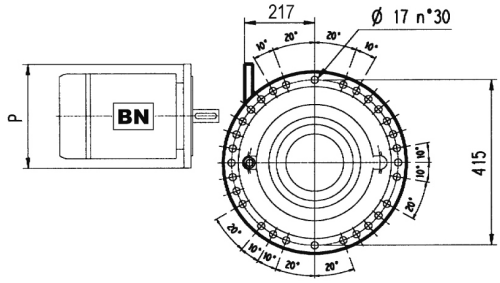
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **313 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **313 R2 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **313 R3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **313 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

# 3/V 13 L3

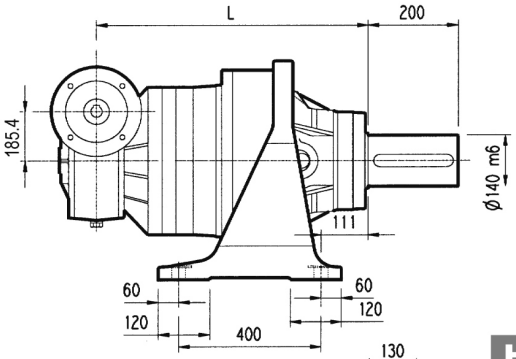


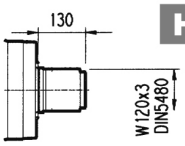



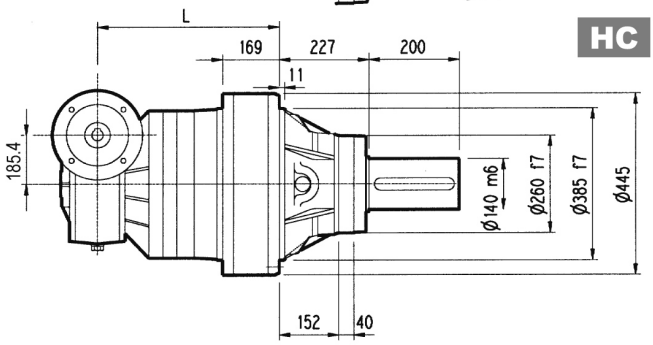

**PC**



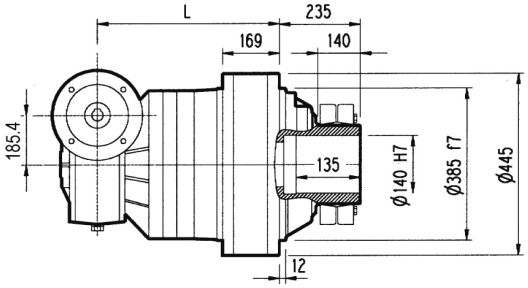

**HZ** **PZ**



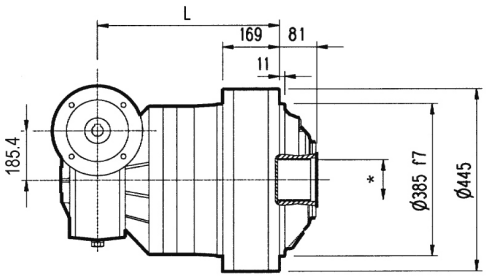

**HC**

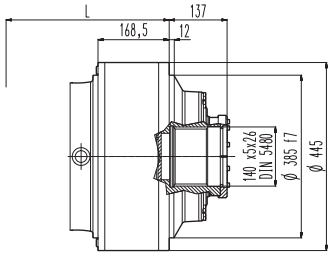



**FP**




**FZ**
**FZB**




* Para dimensiones ver pág. 366

**FP** | **$M_{2max}$ = 79000 Nm**

| | L | | | | Kg | | | | P80 | P90 | P100 | P112 | P132 | P160 | P180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP | P | P | P | P | P | P | P |
| **3/V 13 L3** | 732 | 505 | 505 | 505 | 475 | 385 | 355 | 375 | — | — | 250 | 250 | 300 | 350 | 350 |



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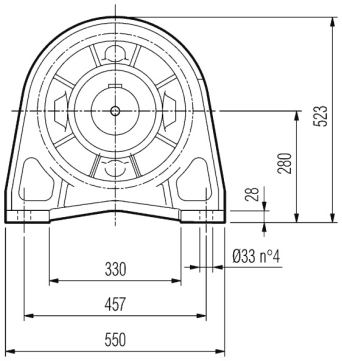
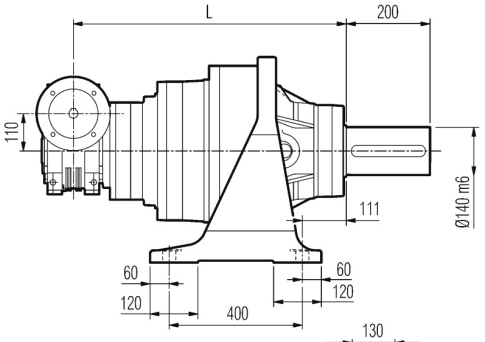
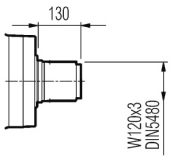
# 3/V 13 L4

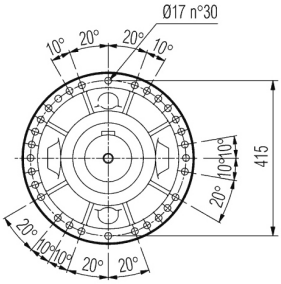



PC

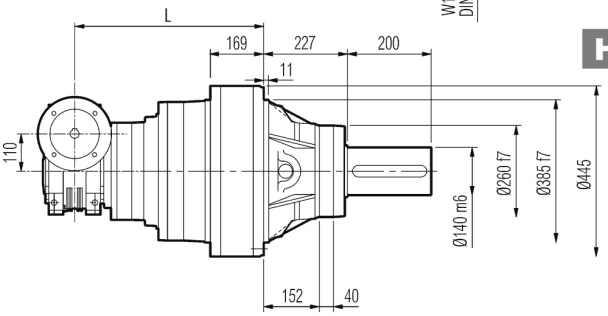



HZ PZ

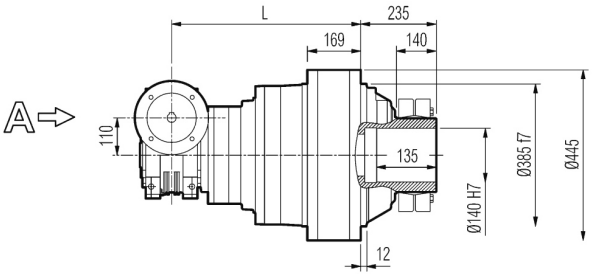


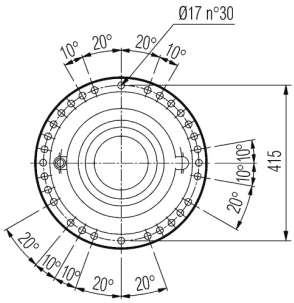




HC

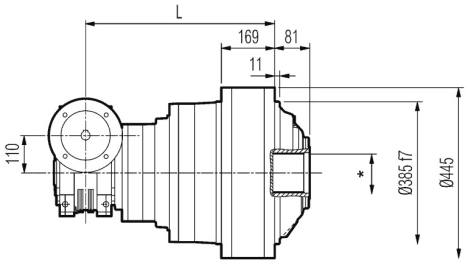



FP

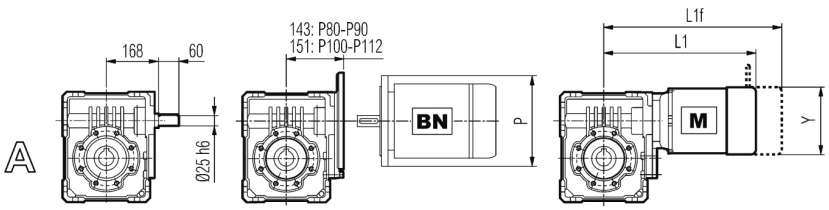


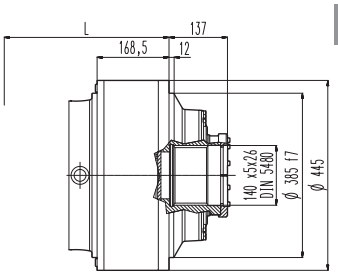




FZ
FZB




FZP



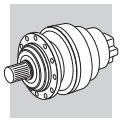




**FP** $M_{2max}$ = 79000 Nm

* Para dimensiones ver pág. 366

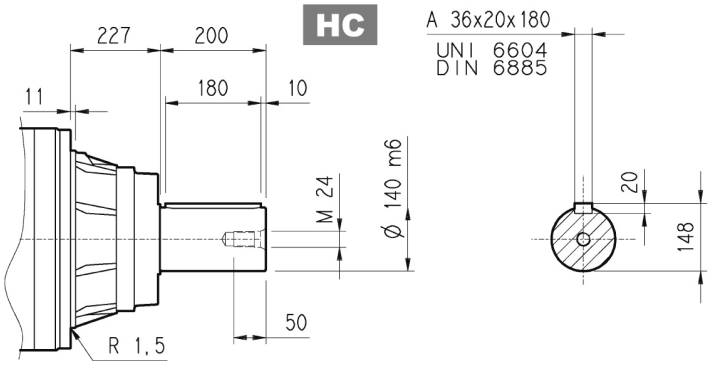
| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 13 L4 | 780 | 553 | 553 | 553 | 425 | 335 | 305 | 325 |

| | P80 | P90 | P100 | P112 | S2 + M2S | | | S3 + M3S | | | S3 + M3L | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | P | P | P | L1 | L1f | Y | L1 | L1f | Y | L1 | L1f | Y |
| 3/V 13 L4 | 200 | 200 | 250 | 250 | 364 | 440 | 156 | 407 | 503 | 193 | 439 | 530 | 193 |

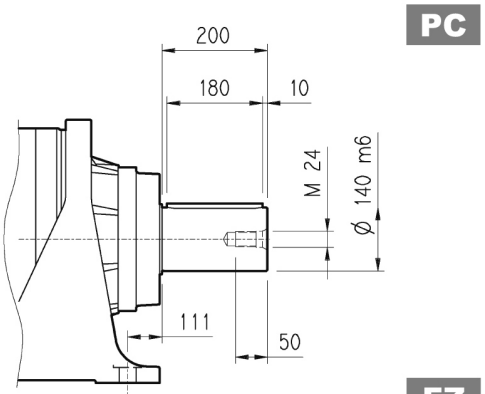


# 313 L | 313 R | 3/V 13 L

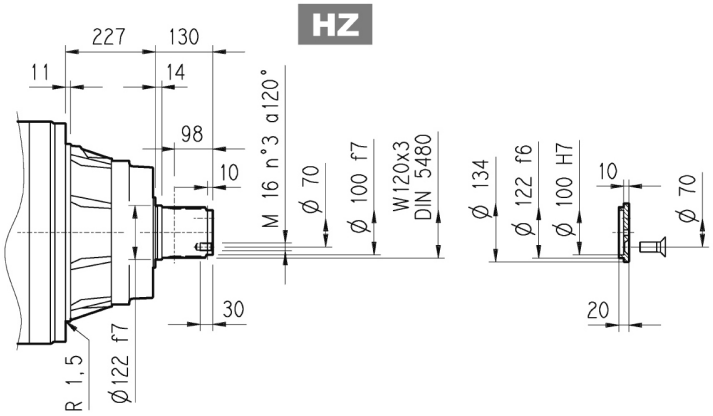
## HC



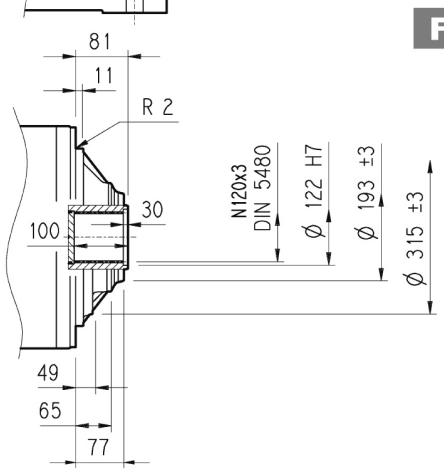

## PC



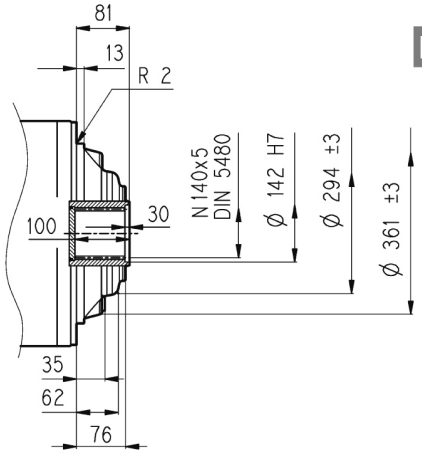

## HZ



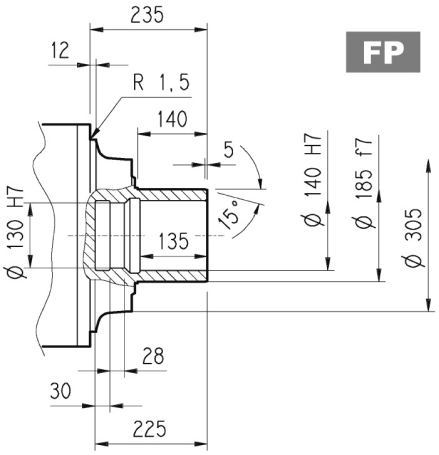

## FZ



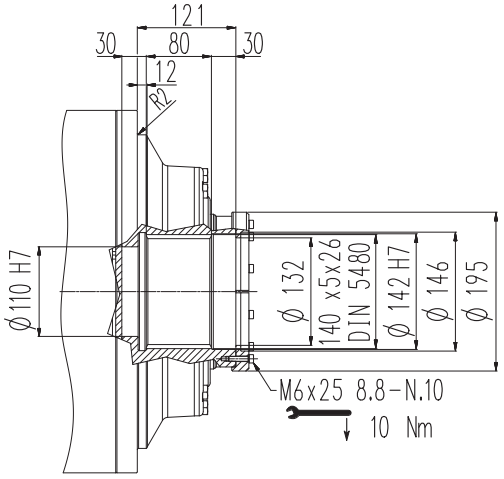

## FZB




## FP




## FZP




**FP** | $M_{2max}$ = 79000 Nm



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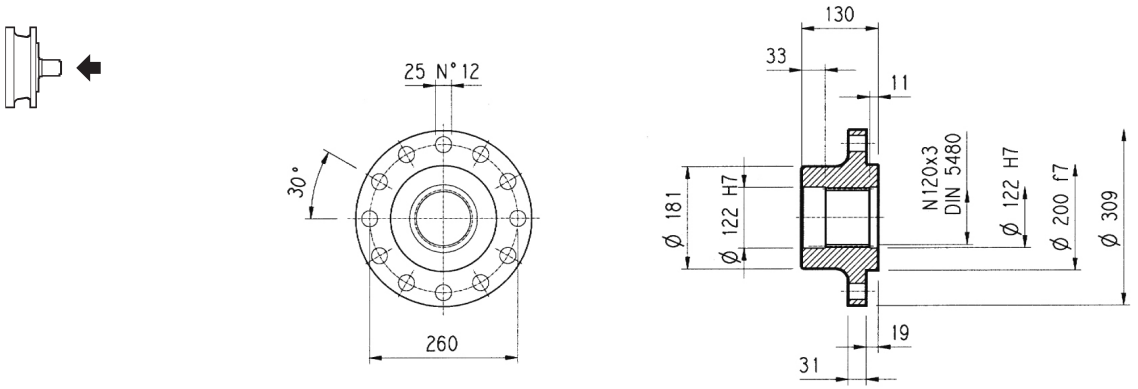
## Brida

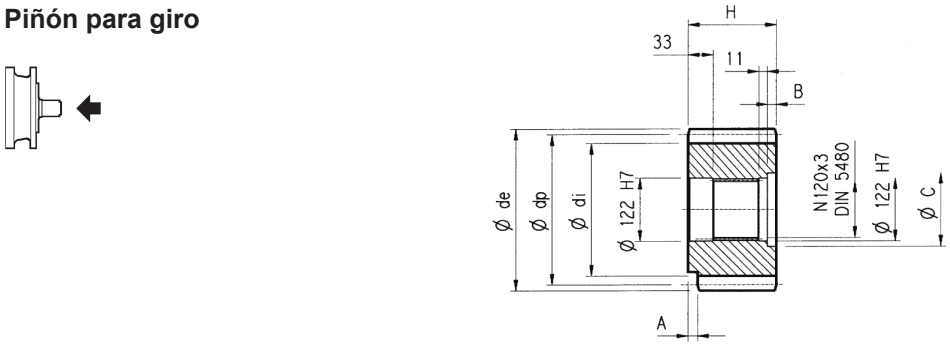
**W0A**




Material: Acero C40

## Piñón para giro

**P...**




$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PPH** | 16 | 17 | 0.500 | 272 | 247 | 315 | 135 | — | 5 | 136 | Acero 39NiCr Mo3 Bonificado |
| **PRI** | 18 | 18 | 0.333 | 324 | 294 | 365 | 140 | — | 10 | 140 | |

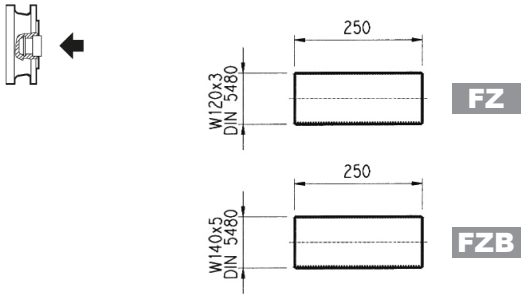
## Manguito cilíndrico

**M0A**

Material: Acero 16CrNi4

## Barra estriada

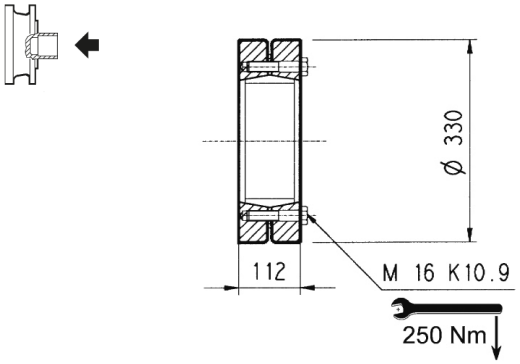
**B0A**

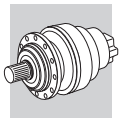



Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

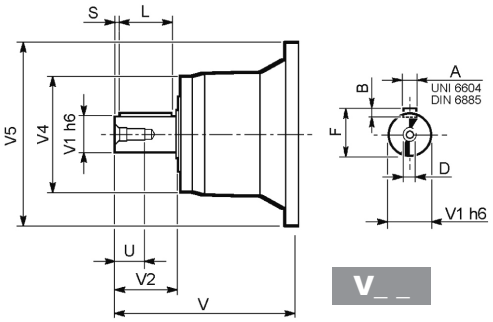
## Aro cónico de apriete

**G0A**

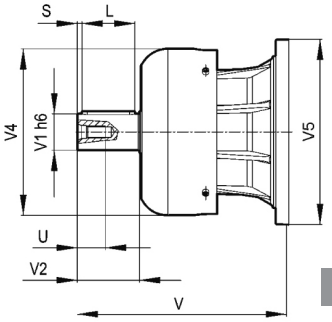




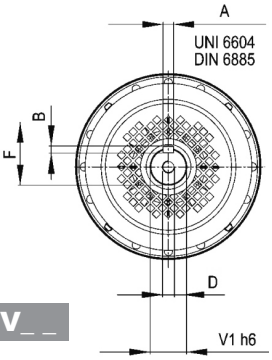
## 313 L 313 R




V_ _

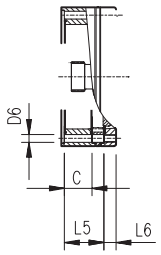


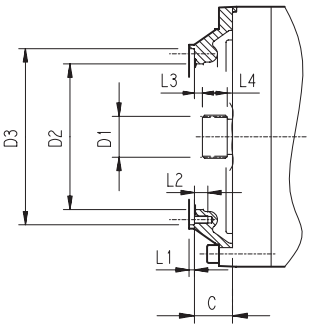

FV_ _

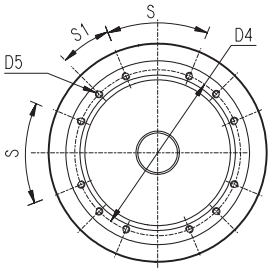



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **313 L1** | **V11B** | 343 | 80 | 130 | 200 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 451 | 80 | 130 | 347.5 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **313 L2** | **V07B** | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV07B** | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **V07A** | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV07A** | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **313 L3** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **313 L4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |
| **313 R2 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **313 R3** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **313 R4** | **V01A** | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | **V01B** | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 313 L 313 R

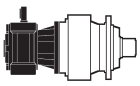


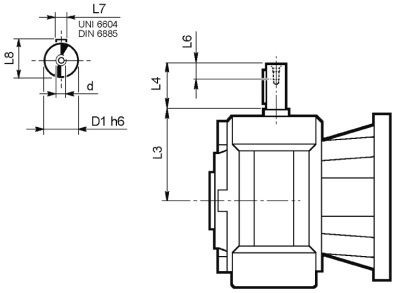




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **313 L1** | **V9AD** | 75 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 9.5 | 40 | — | — | 60° | 30° | D |
| **313 L2** | **V9AB** | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **313 L3** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **313 L4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 65 | 18 | 45° | 45° | A |
| **313 R3** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **313 R2 (B) (C)** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **313 R4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

## 3/V 13 L

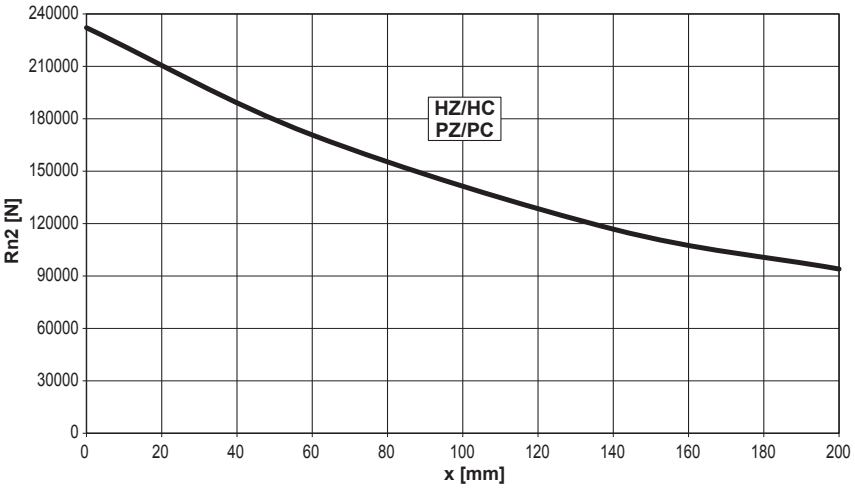


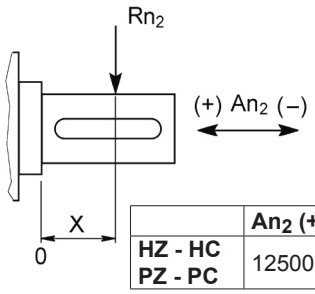



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 13 L3_HS** | 40 | 214.5 | 70 | 20 | 12 | 43 | M8 |
| **3/V 13 L4_HS** | 25 | 168 | 60 | 19 | 8 | 28 | M8 |

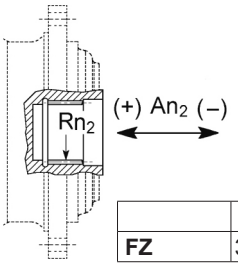
# 313 L | 313 R | 3/V 13 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



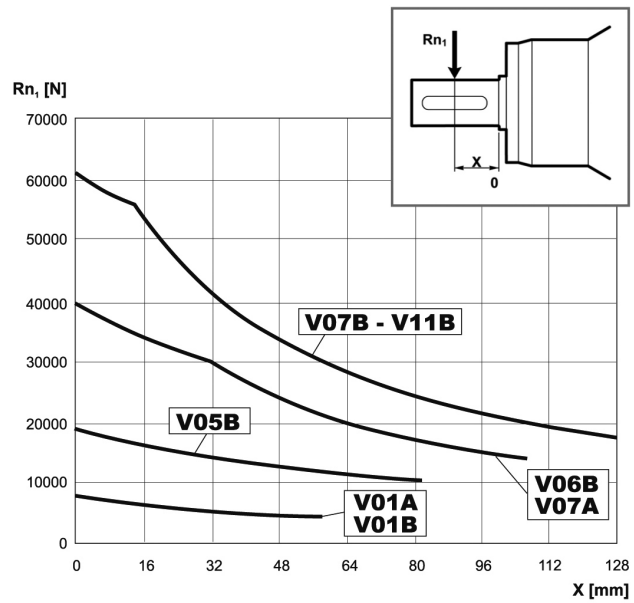

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 125000 | 80000 |

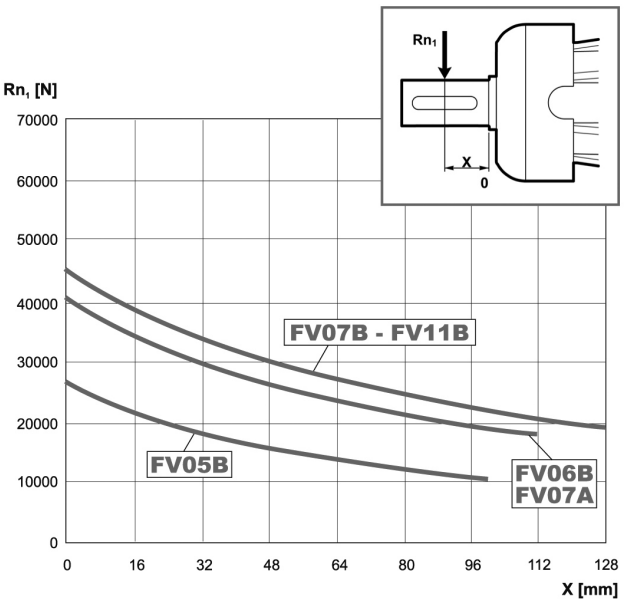



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 37133 | 34812 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.32** | **1.20** | **1.20** | **1.00** | **0.62** | **0.50** |

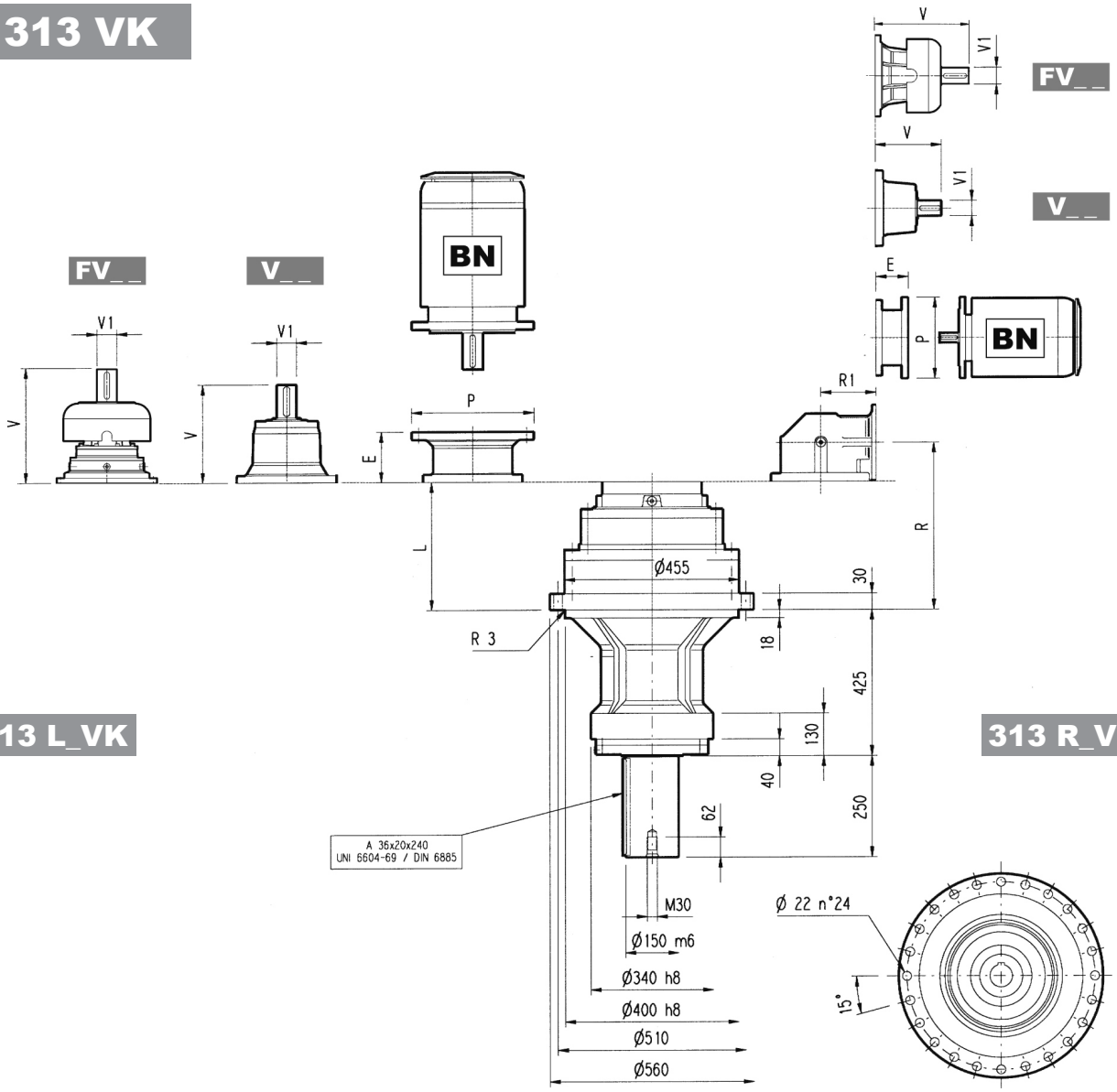
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 313 VK




313 L_VK

313 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **313 L1** | 158 | 380 | 343 | 80 | 55 | — | — | — | 451 | 80 | 71 | — | — | — |
| **313 L2** | 308 | 440 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 |
| **313 L3** | 397 | 450 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — |
| **313 L4** | 462 | 460 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

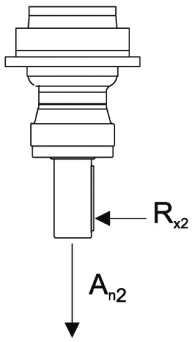
| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **313 L2** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **313 L3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **313 L4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

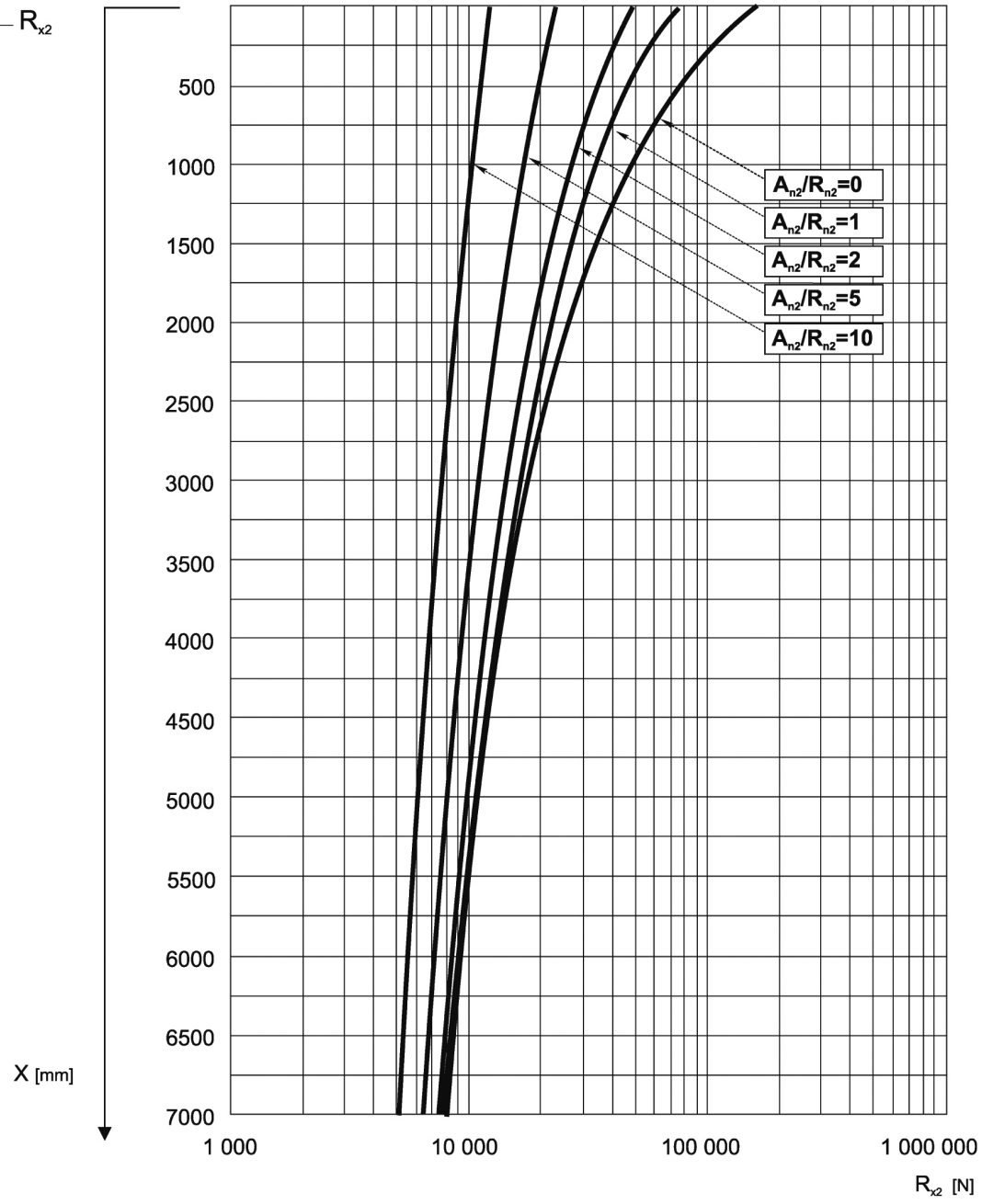
| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **313 R2 (B)** | 388 | 345 | 510 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **313 R2 (C)** | 388 | 390 | 520 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **313 R3** | 427 | 225 | 490 | 239 | 48 | 15 | — | — | — | — | — | — | — | — | — |
| **313 R4** | 489 | 140 | 470 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **313 R2 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **313 R2 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **313 R3** | — | — | — | — | — | — | — | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |
| **313 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

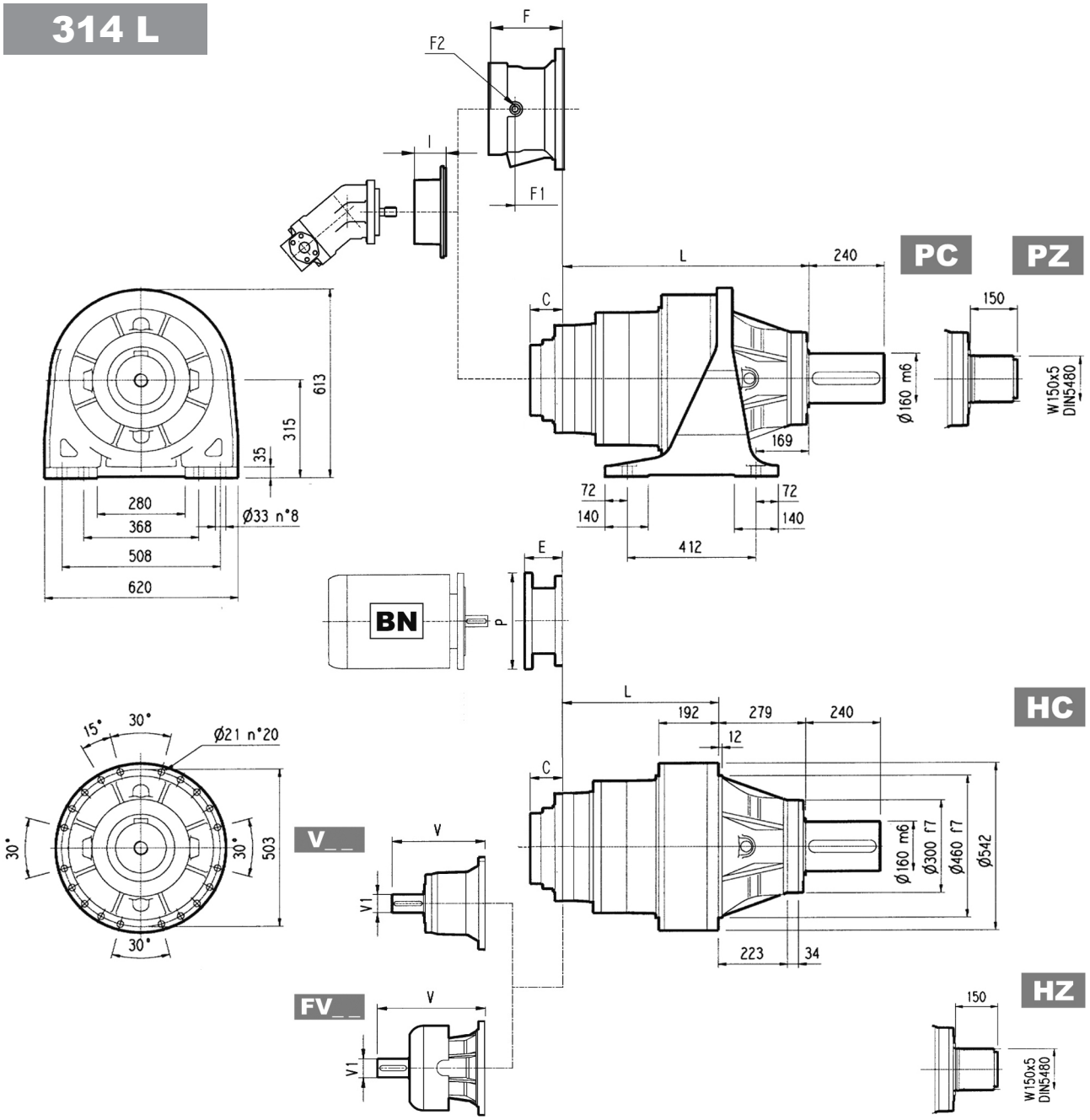
# 313 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 min$^{-1}$ y vida teórica de 10000 h.



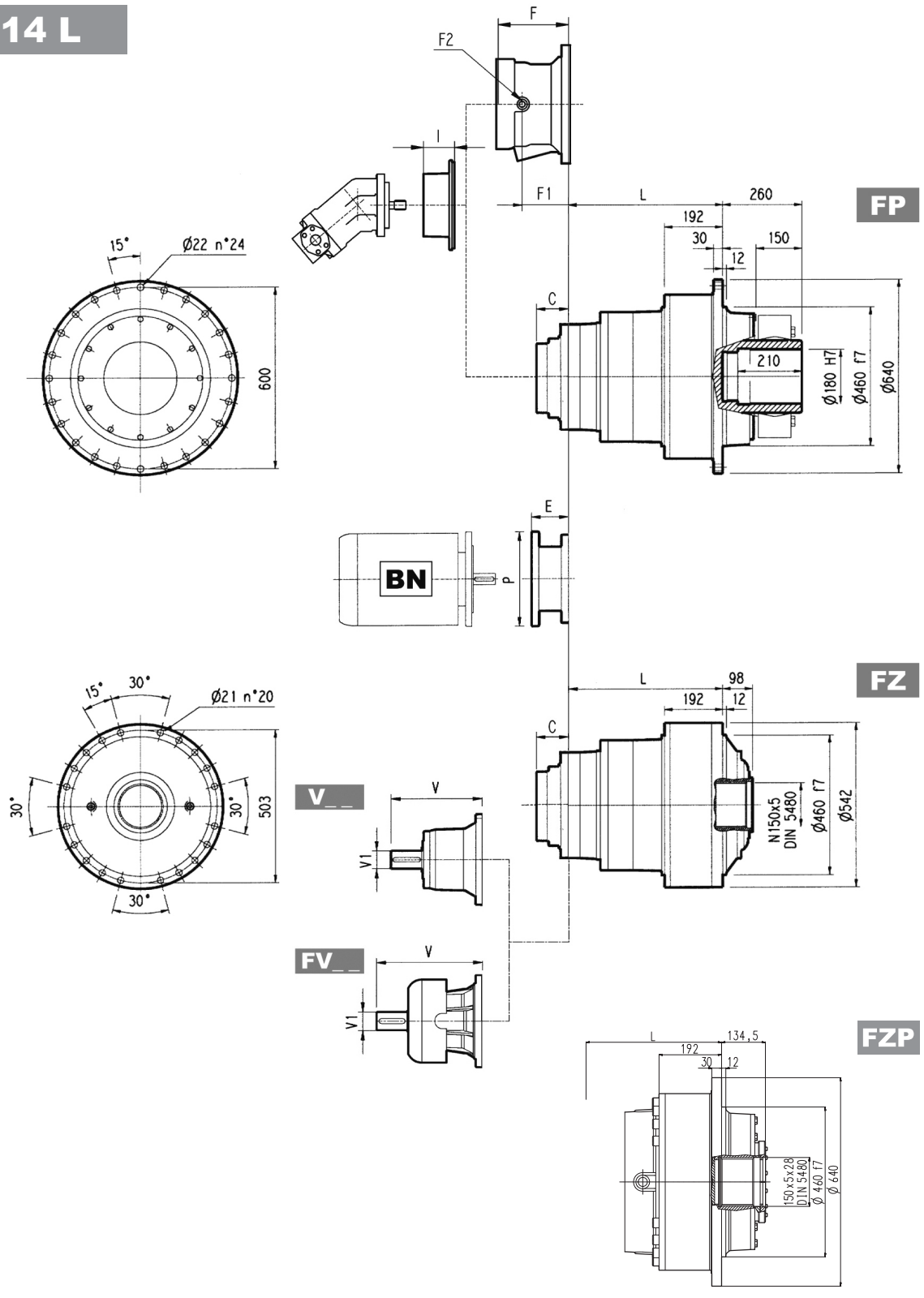
# 314 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **314 L1** | 453 | 174 | 174 | 174 | 500 | 370 | 280 | 330 |
| **314 L2** | 641 | 362 | 362 | 362 | 545 | 415 | 325 | 375 |
| **314 L3** | 777 | 498 | 498 | 498 | 590 | 460 | 370 | 420 |
| **314 L4** | 842 | 563 | 563 | 563 | 600 | 470 | 380 | 430 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **314 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 120 | L | | — | — | — | — | — | — |
| **314 L2** | 377 | 80 | 50 | — | — | — | 457 | 80 | 63 | — | — | — | 88 | C | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **314 L3** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 145 | 95 | 1/4 G | 5 | B | 16 |
| **314 L4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 105 | 65 | 1/4 G | 5 | A | 10 |

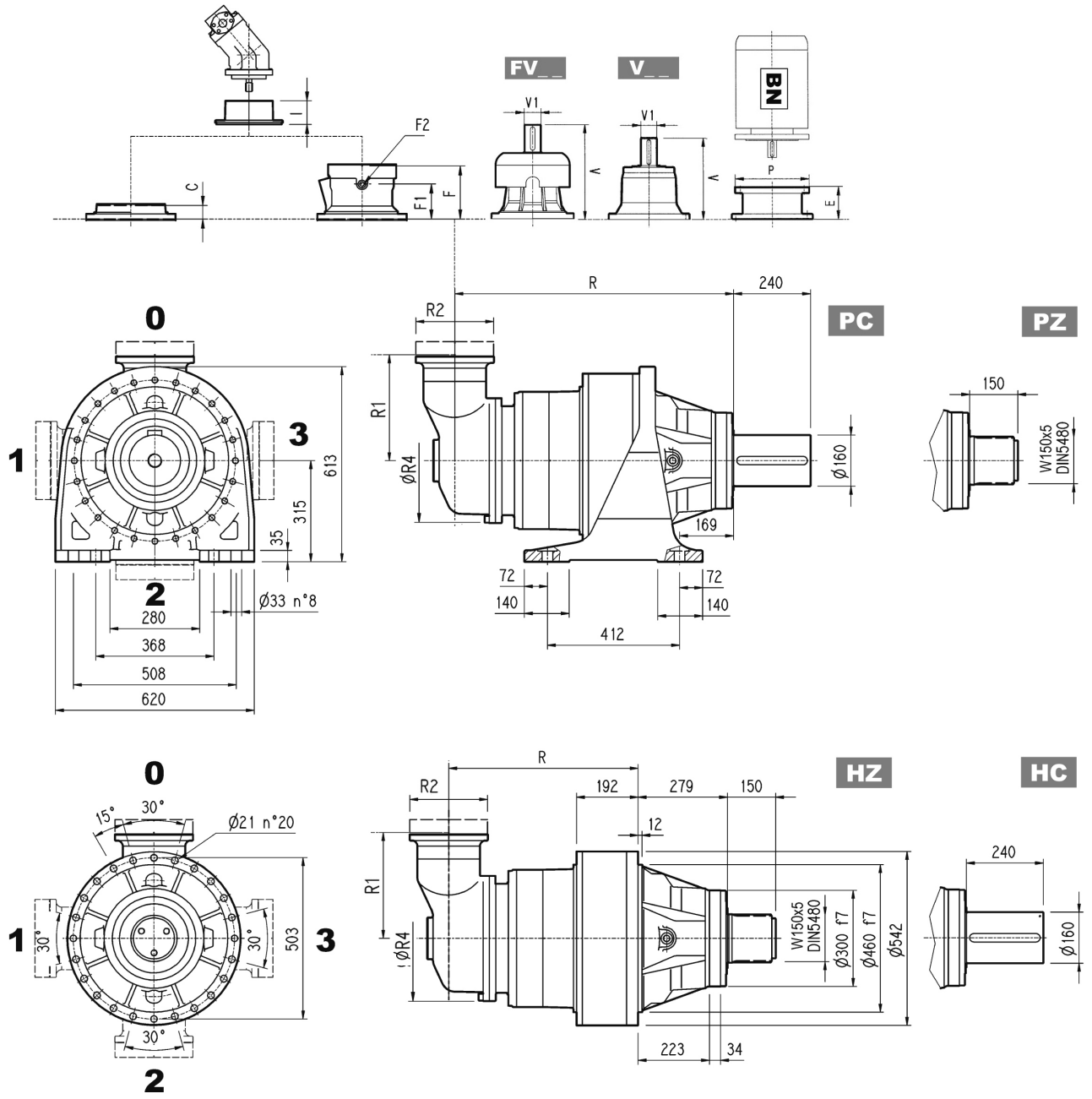
# 314 L




**FP** $M_{2max}$ = 115000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **314 L2** | — | — | — | — | — | — | 271 | 400 | 301 | 450 | 281 | 550 |
| **314 L3** | — | — | 153 | 350 | 153 | 350 | 183 | 400 | 213 | 450 | 193 | 550 |
| **314 L4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

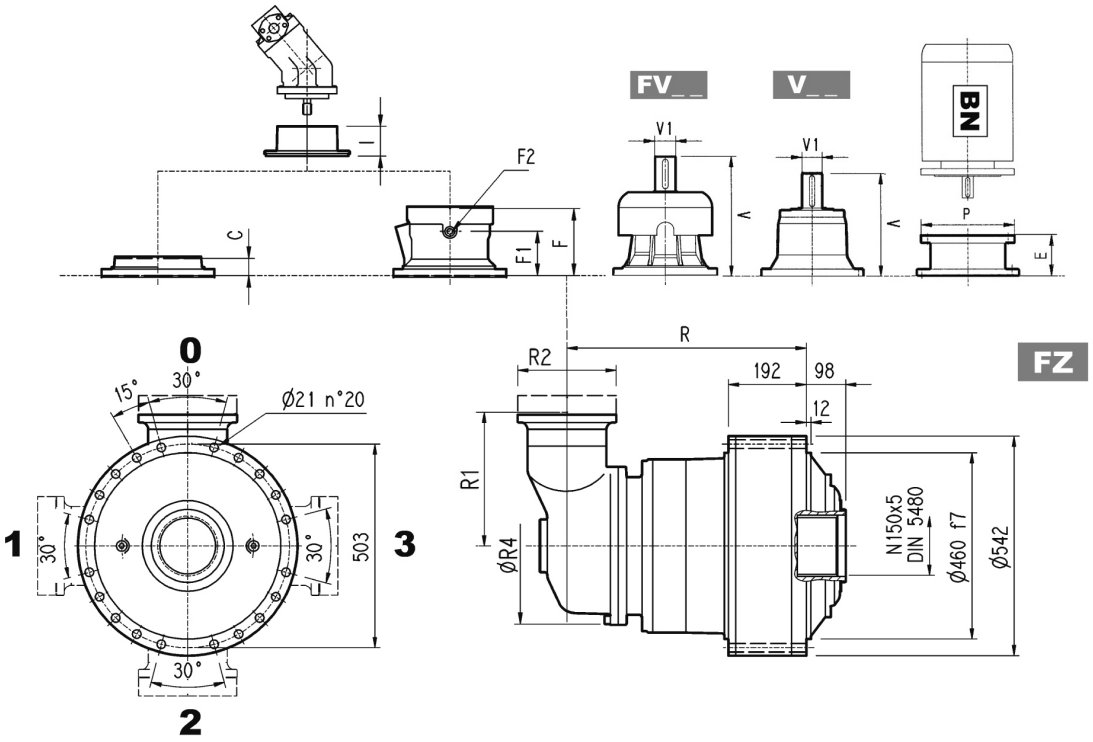
# 314 R

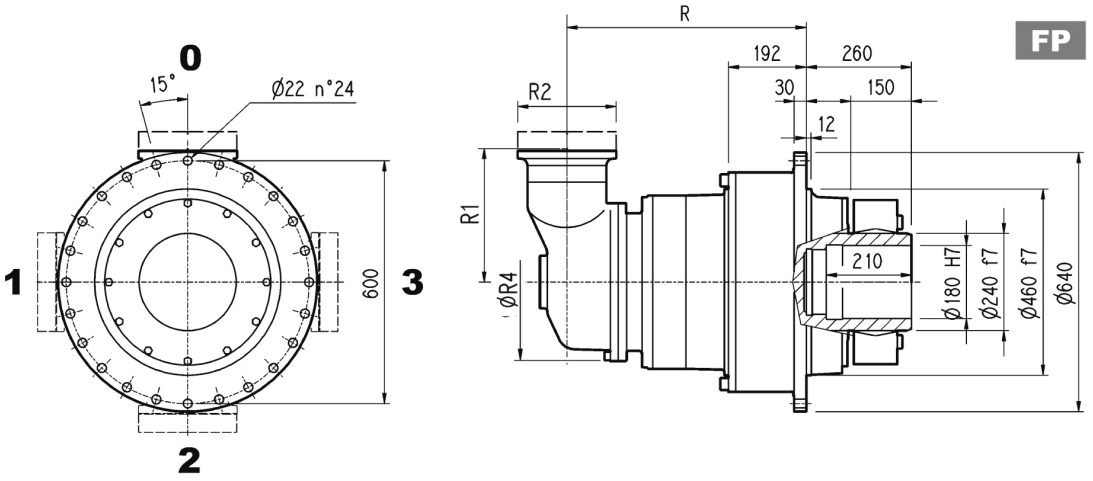


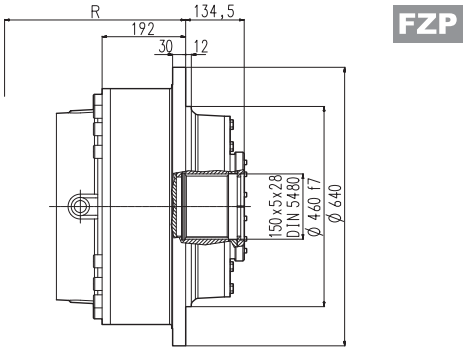

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **314 R3 (B)** | 848 | 569 | 569 | 569 | 345 | 292 | 400 | 720 | 590 | 500 | 550 |
| **314 R3 (C)** | 856 | 587 | 587 | 587 | 390 | 292 | 480 | 730 | 600 | 510 | 560 |
| **314 R4** | 914 | 635 | 635 | 635 | 140 | 186 | 244 | 680 | 550 | 460 | 510 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **314 R3 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **314 R3 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **314 R4** | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

# 314 R



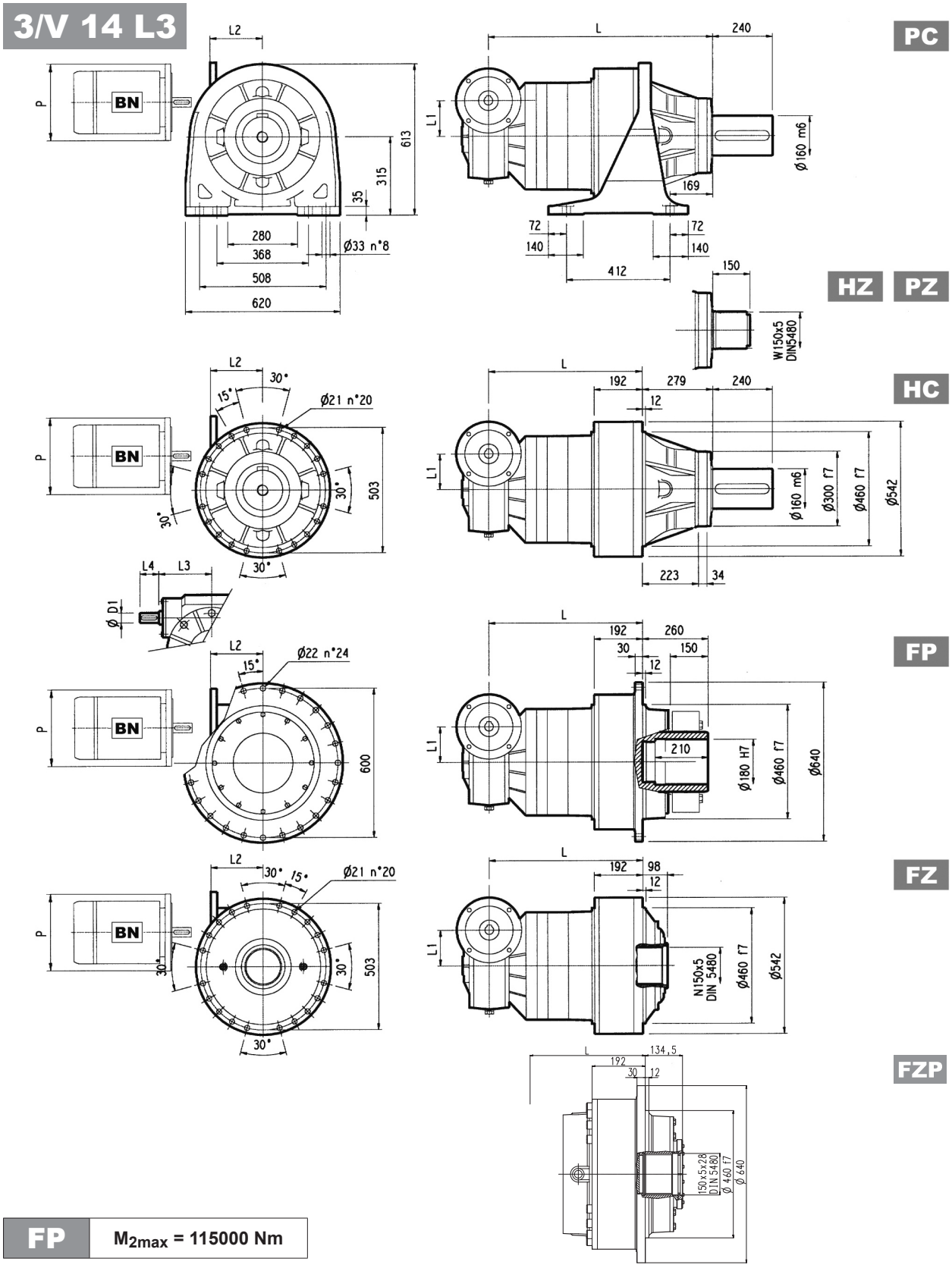




**FP** $M_{2max}$ = 115000 Nm

| | P71 | | P80 | | P90 | | P100 | | P112 | | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P | E | P |
| **314 R3 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **314 R3 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **314 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

# 3/V 14 L3

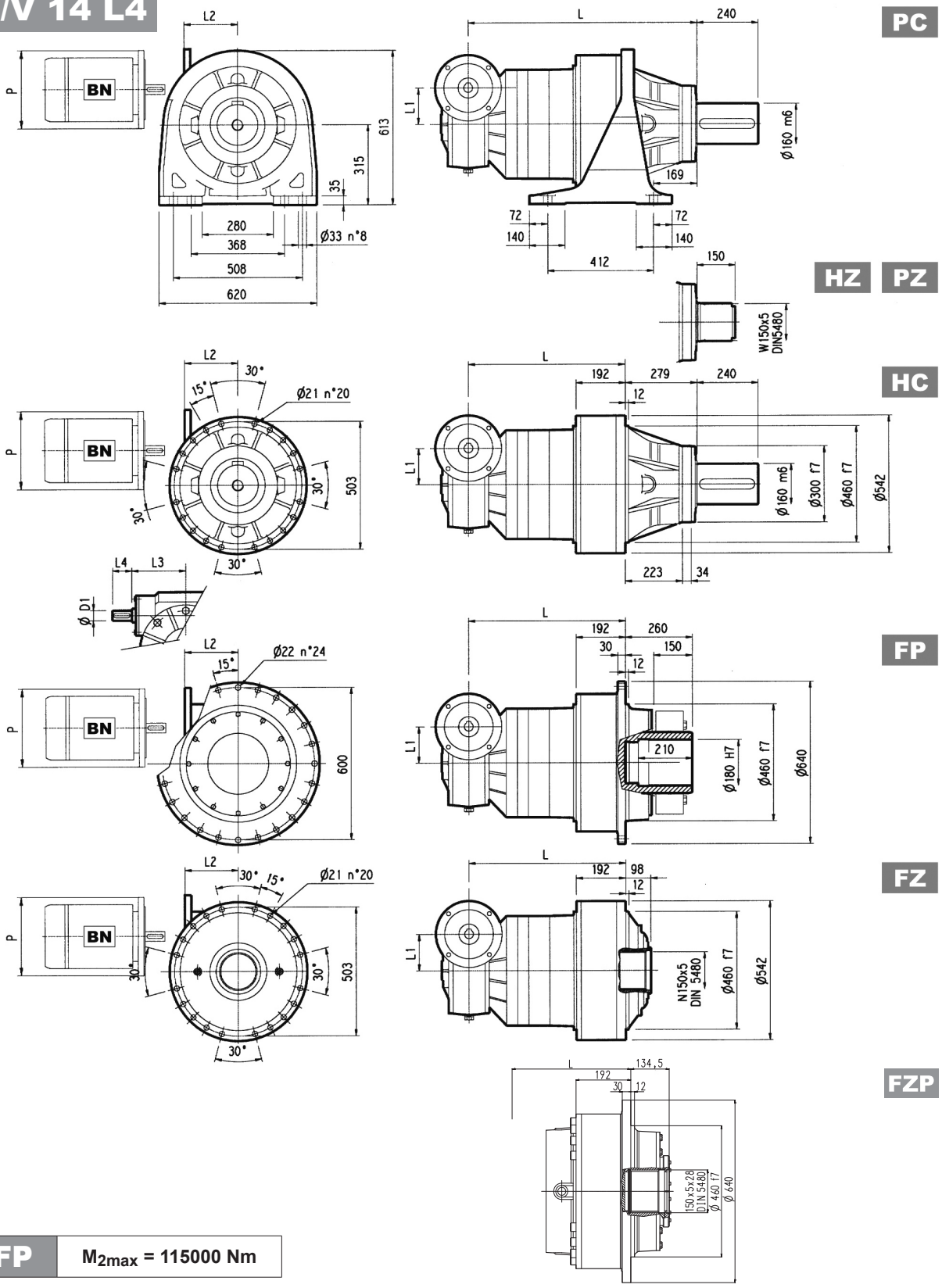



**FP** $M_{2max}$ = 115000 Nm

| | L | | | | L1 | L2 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 14 L3 | 920 | 641 | 641 | 641 | 185 | 217 | 40 | 214.5 | 70 | 665 | 535 | 445 | 495 |

| | P100 | P112 | P132 | | P160 | | P180 | |
|---|---|---|---|---|---|---|---|---|
| | P | P | L2 | P | L2 | P | L2 | P |
| 3/V 14 L3 | 250 | 250 | — | 300 | — | 350 | — | 350 |

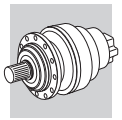
# 3/V 14 L4




**FP** $M_{2max}$ = 115000 Nm

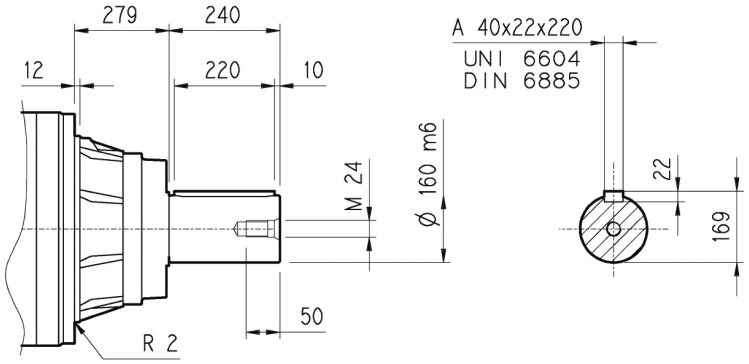
| | L | | | | L1 | L2 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 14 L4 | 961 | 682 | 682 | 682 | 150 | 190 | 35 | 185 | 65 | 690 | 560 | 470 | 520 |

| | P100 | P112 | P132 | | P160 | | P180 | |
|---|---|---|---|---|---|---|---|---|
| | P | P | L2 | P | L2 | P | L2 | P |
| 3/V 14 L4 | 250 | 250 | — | 300 | — | 350 | — | — |

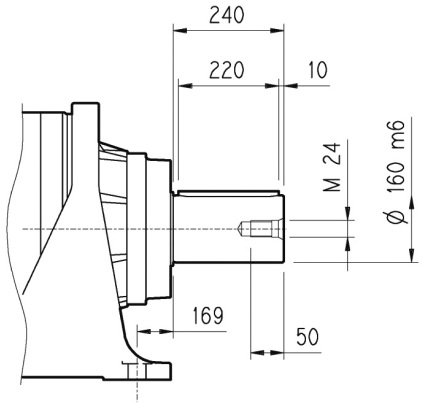


# 314 L | 314 R | 3/V 14 L

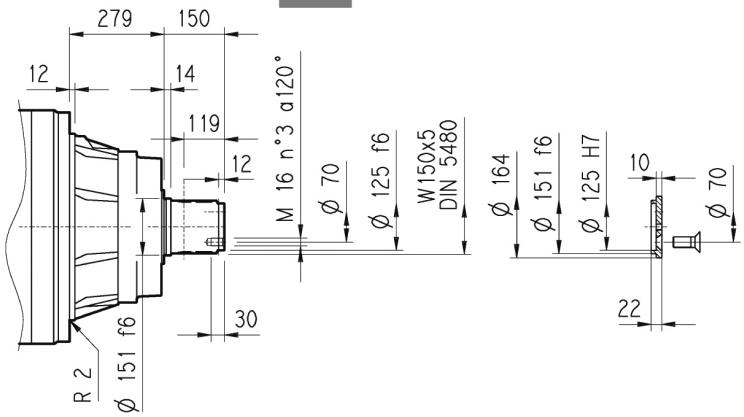
## HC



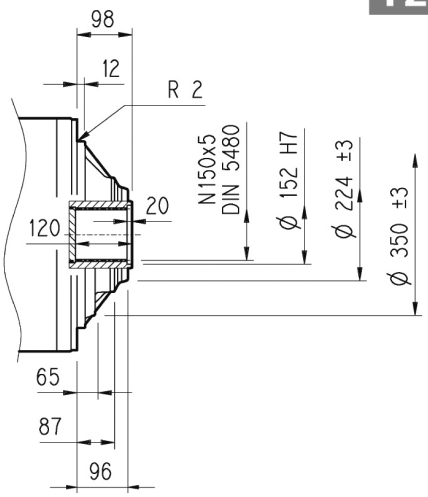

## PC



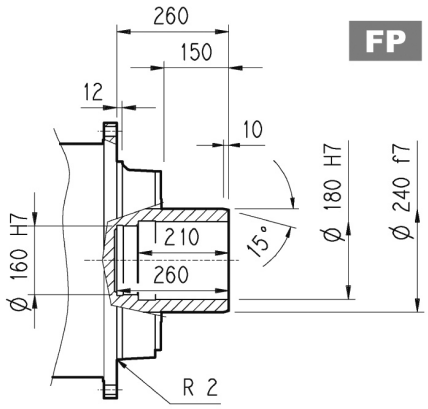

## HZ



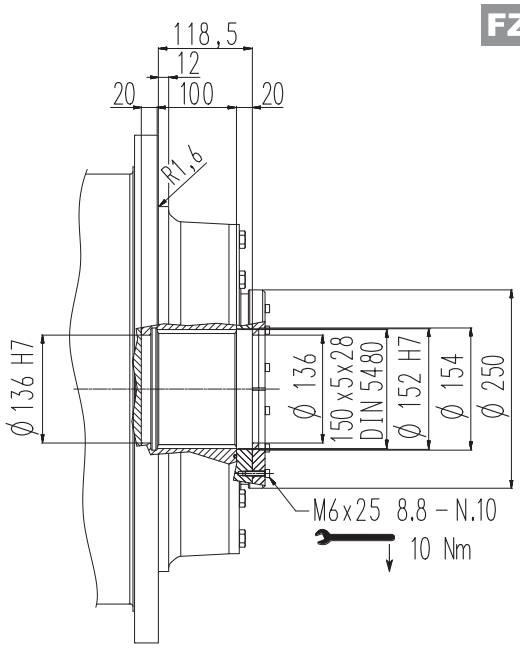

## FZ




## FP



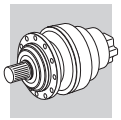

## FZP




**FP** | $M_{2max}$ = 115000 Nm



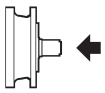
Bonfiglioli Riduttori

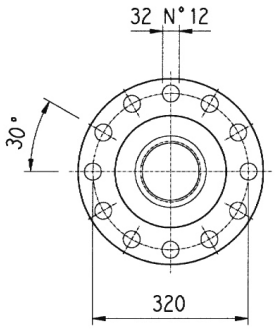


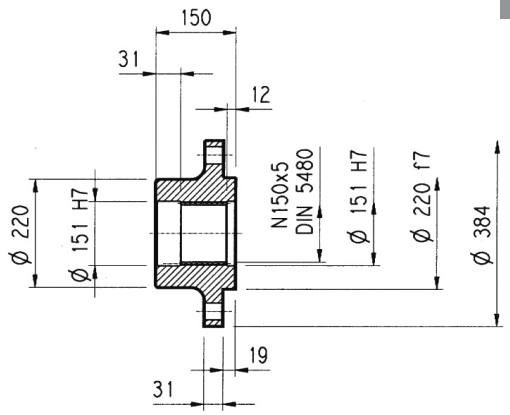
# 314 L | 314 R | 3/V 14 L

## Brida

**W0A**



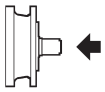


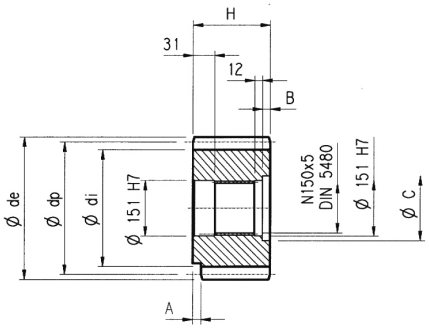




Material: Acero C40

## Piñón para giro

**P...**



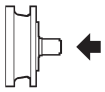


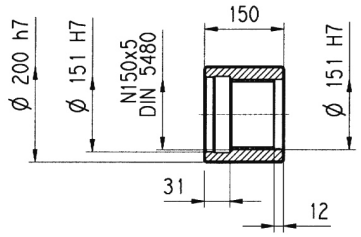

**$\alpha$ = 20°**

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PRG1** | 18 | 16 | 0.500 | 288 | 261 | 342 | 160 | — | 10 | 166 | Acero 18NiCrMo5 Cementado y templado |
| **PRG2** | 18 | 16 | 0.617 | 288 | 271 | 339 | 150 | 30 | — | — | Acero 39NiCr Mo3 Bonificado |

## Manguito cilíndrico

**M0A**

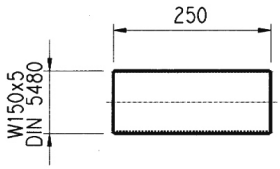





Material: Acero 16CrNi4

## Barra estriada

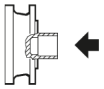
**B0A**

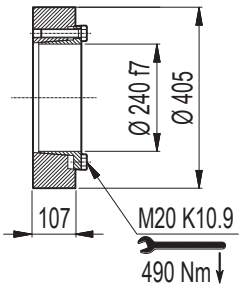


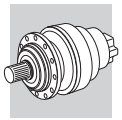

Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

## Aro cónico de apriete

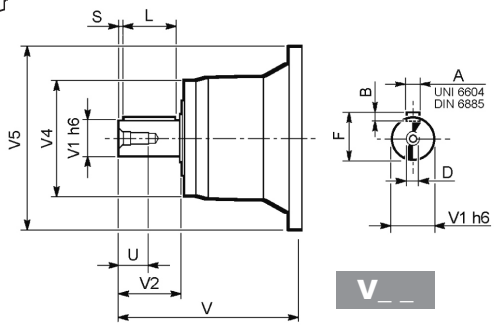
**G0A**



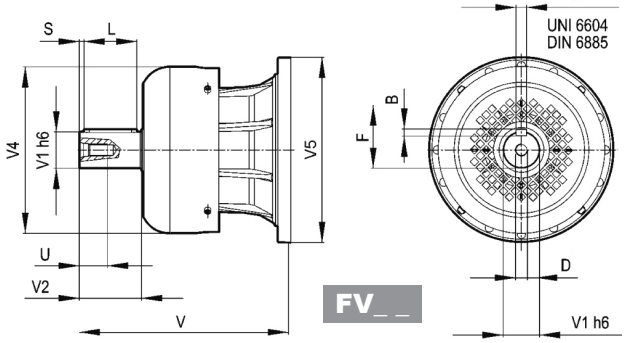




## 314 L 314 R



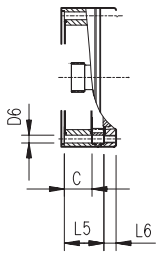

V_ _

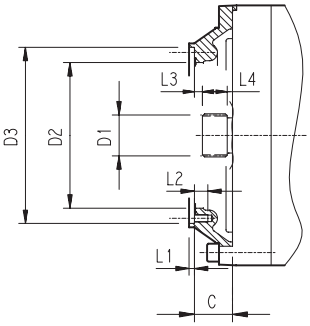


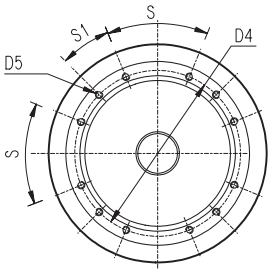

FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 314 L2 | V10B | 377 | 80 | 130 | 200 | 400 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV10B | 457 | 80 | 130 | 347.5 | 400 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| 314 L3 | V06B | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV06B | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 314 L4 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 314 R3 (B) (C) | V06B | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV06B | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 314 R4 | V01A | 137.5 | 24 | 36 | 120 | 186 | 8 | 7 | 27 | 30 | 3 | M8 | 19 |
| | V01B | 158 | 38 | 58 | 120 | 186 | 10 | 8 | 41 | 50 | 4 | M12 | 28 |

## 314 L 314 R

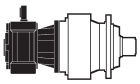


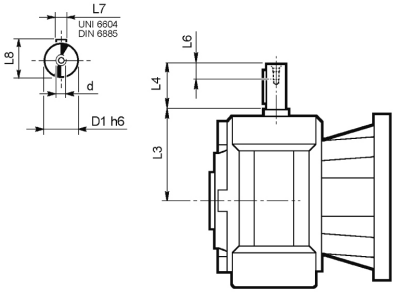




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 314 L1 | V9AL | 120 | 100x94 DIN 5482 | 295 | 336 H7 | 370 | M16 n°15 | — | 8 | 21 | 13 | 55 | — | — | 24° | 24° | L |
| 314 L2 | V9AC | 88 | 70x64 DIN 5482 | 200 | 282 H7 | 266 | M12 n°12 | — | 4 | 22 | 11 | 32 | — | — | 45° | 45° | C |
| 314 L3 | V9AB | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 314 L4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 314 R3 (B) (C) | V9AB | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 314 R4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | — | 9 | 18 | 37 | 18 | 45° | 45° | A |

## 3/V 14 L

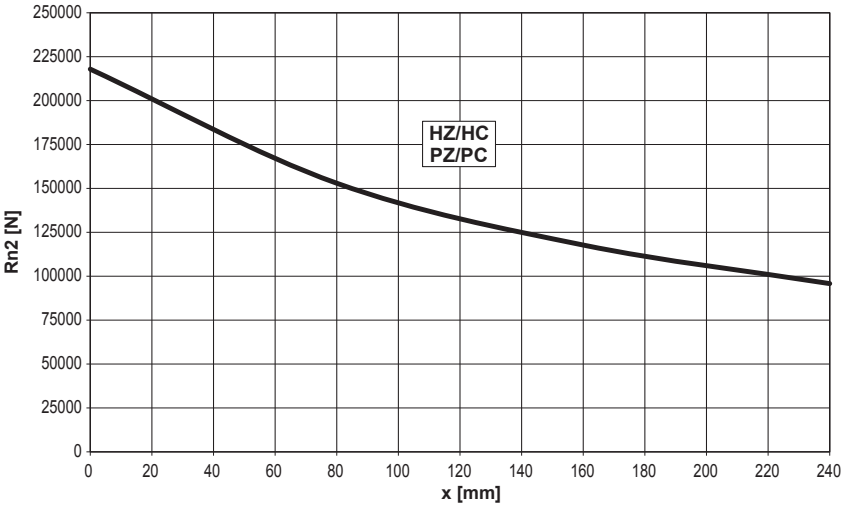


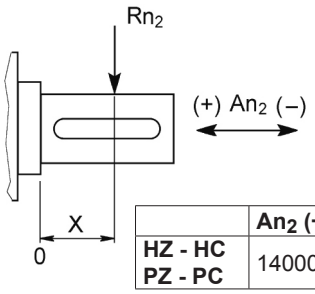



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 14 L3_HS | 40 | 214.5 | 70 | 20 | 12 | 43 | M8 |
| 3/V 14 L4_HS | 35 | 185 | 65 | 20 | 10 | 38 | M8 |

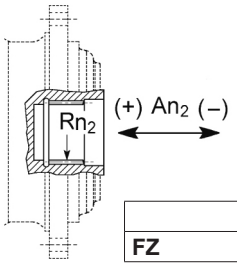
# 314 L | 314 R | 3/V 14 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



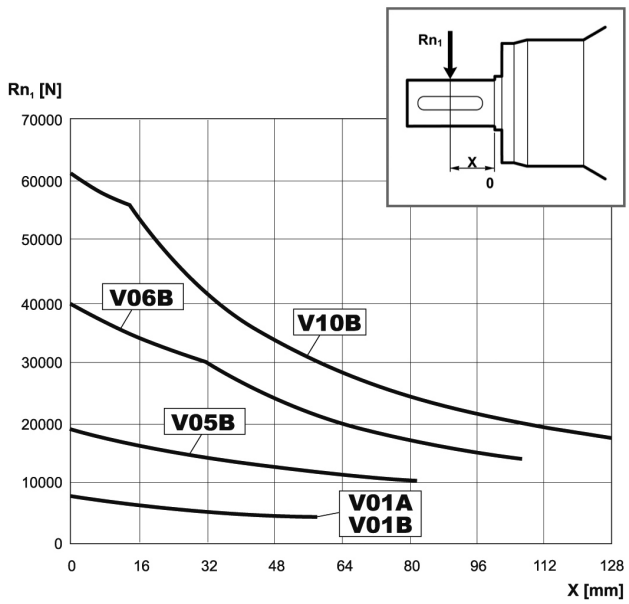

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 140000 | 105000 |

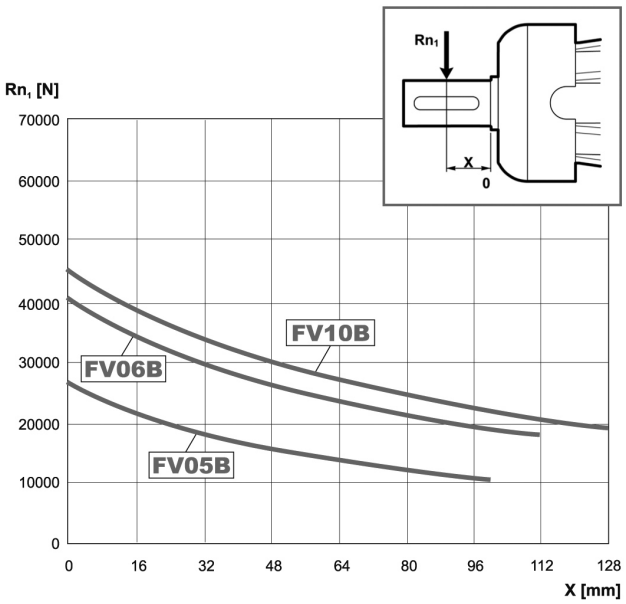



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 41774 | 41774 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **2.00** | **1.52** | **1.23** | **1.00** | **0.62** | **0.50** |

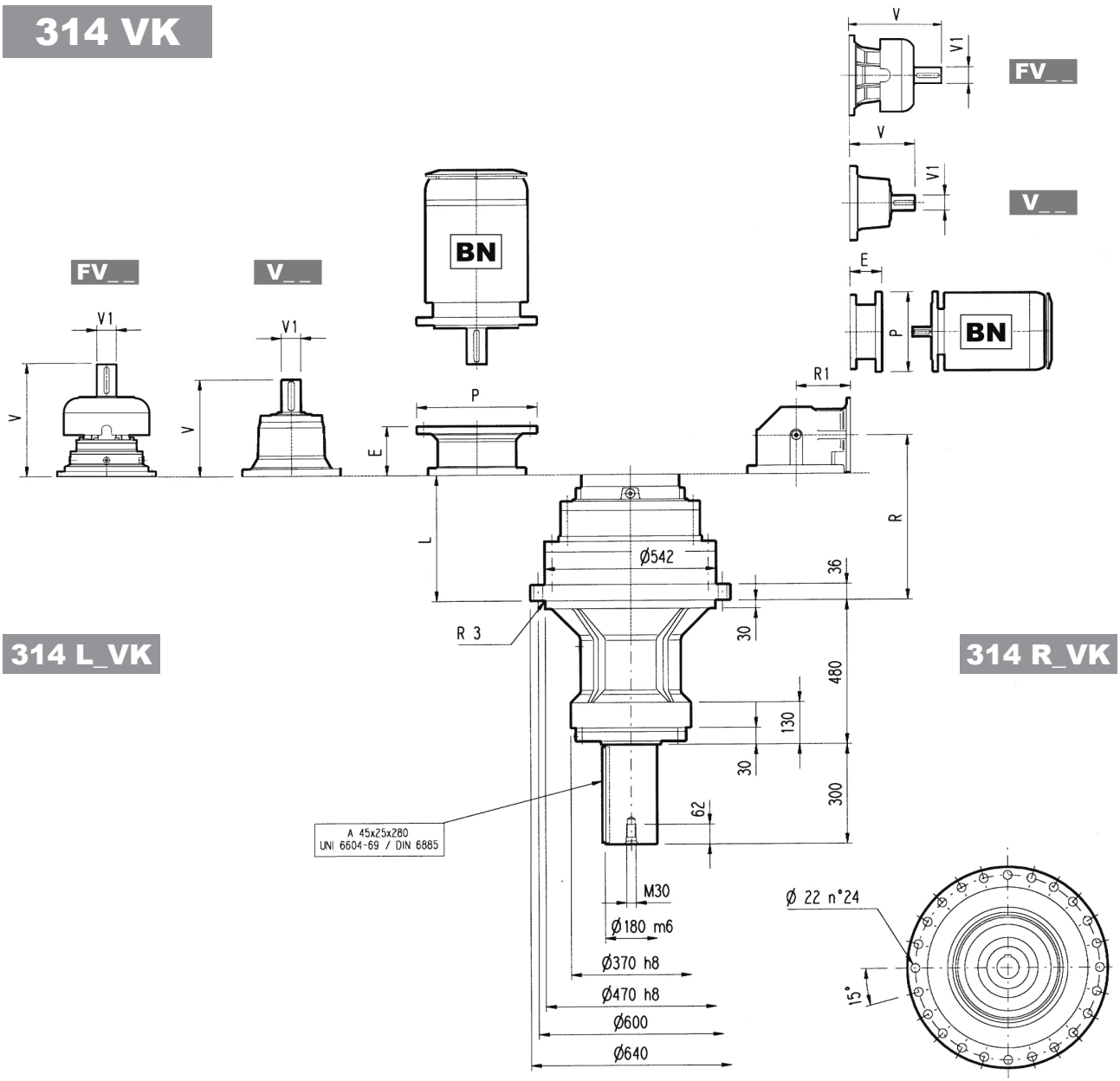
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 314 VK




314 L_VK

314 R_VK

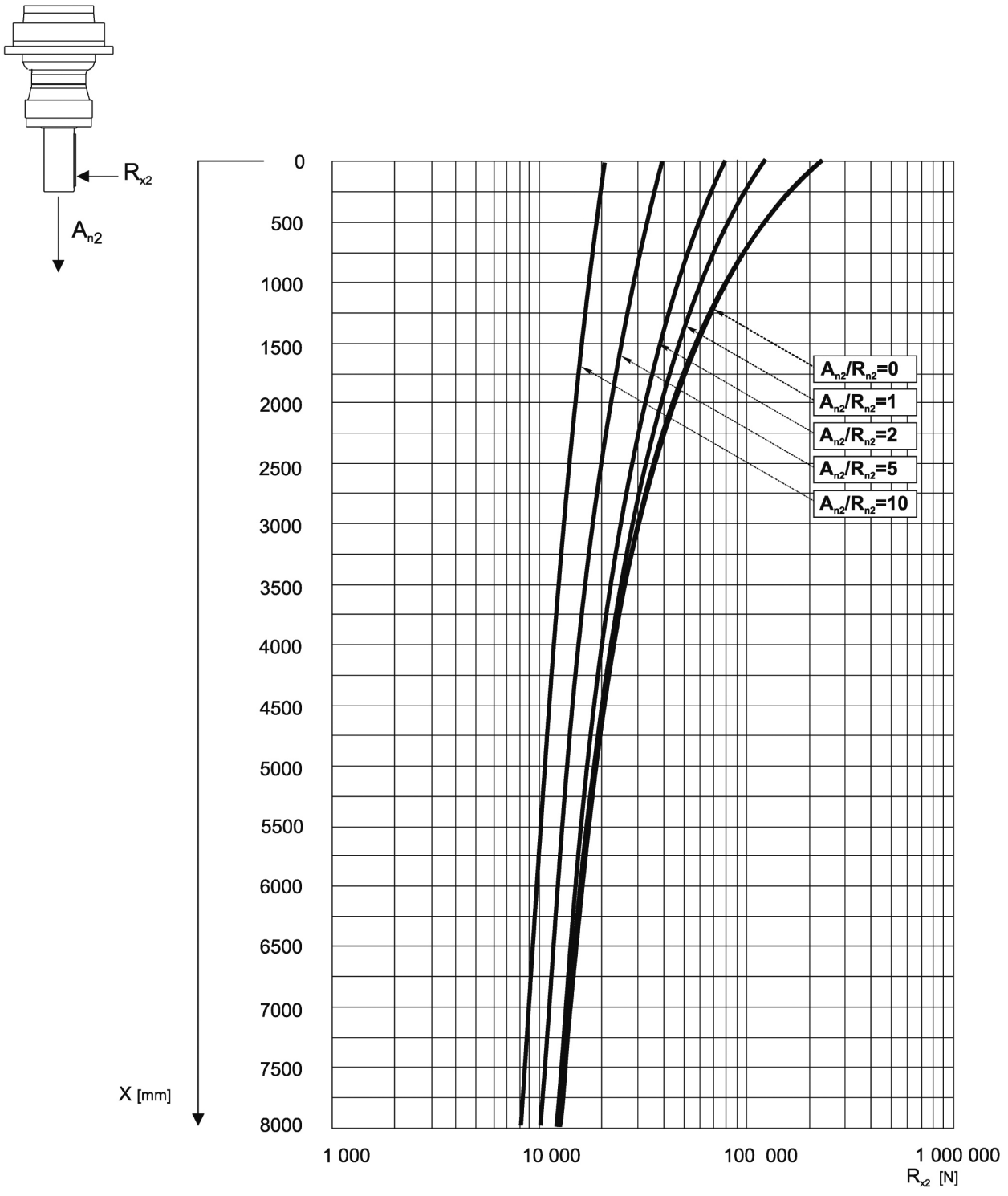
| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P132 E | P132 P | P160 E | P160 P | P180 E | P180 P | P200 E | P200 P | P225 E | P225 P | P250 E | P250 P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **314 L2** | 386 | 650 | 348 | 80 | 55 | — | — | — | 457 | 80 | 63 | — | — | — | — | — | — | — | — | — | 271 | 400 | 301 | 450 | 281 | 550 |
| **314 L3** | 519 | 700 | 315 | 80 | 35 | 313 | 60 | 28 | 357 | 60 | 28 | — | — | — | — | — | 153 | 350 | 153 | 350 | 183 | 400 | 213 | 450 | 193 | 550 |
| **314 L4** | 608 | 710 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **314 R3 (B)** | 611 | 345 | 720 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **314 R3 (C)** | 611 | 390 | 730 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — |
| **314 R4** | 638 | 225 | 690 | 137.5 | 24 | 6 | 158 | 38 | 7 | — | — | — | — | — | — |

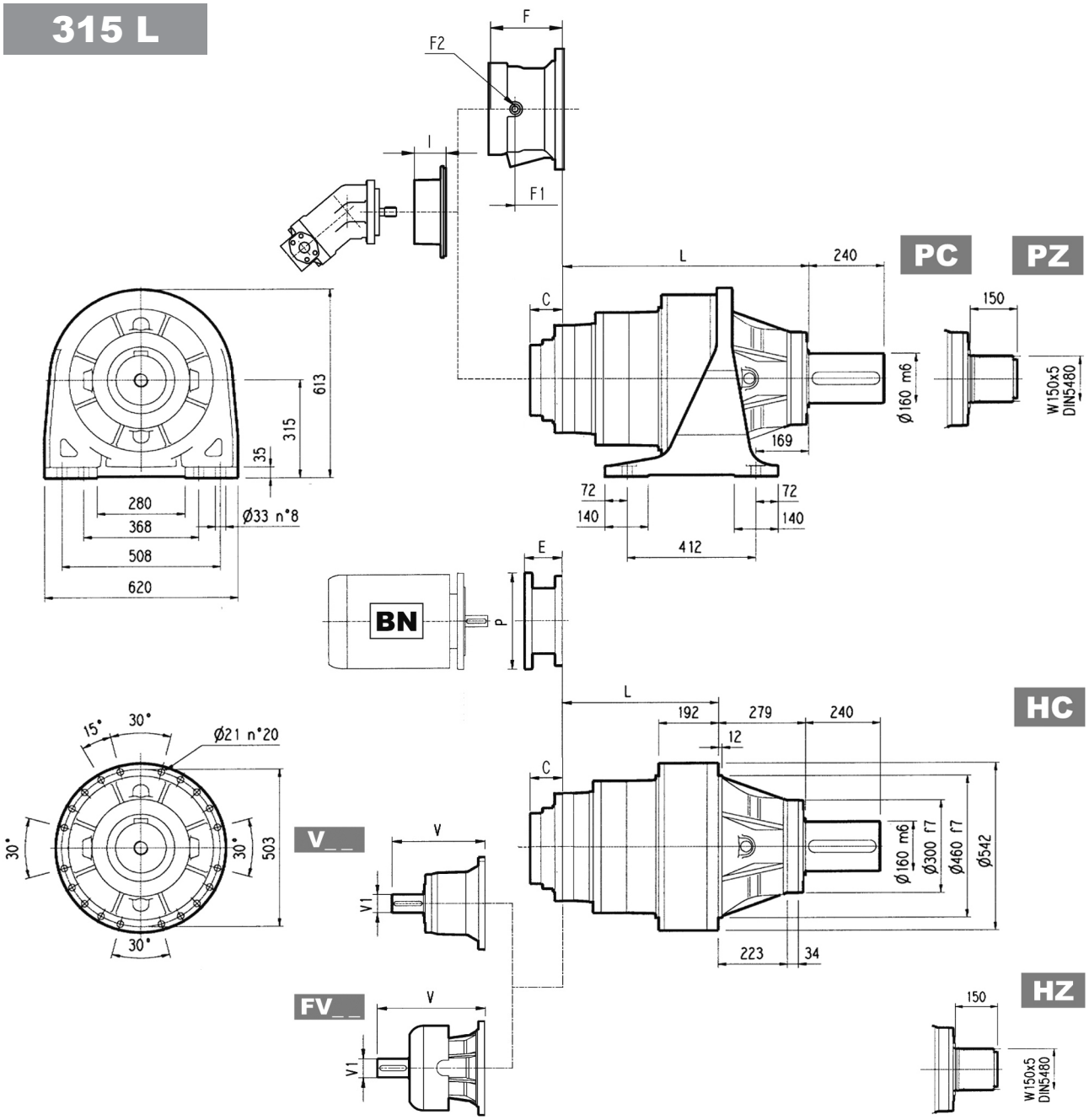
| | P71 E | P71 P | P80 E | P80 P | P90 E | P90 P | P100 E | P100 P | P112 E | P112 P | P132 E | P132 P | P160 E | P160 P | P180 E | P180 P | P200 E | P200 P | P225 E | P225 P | P250 E | P250 P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **314 R3 (B)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **314 R3 (C)** | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **314 R4** | 65 | 160 | 84 | 200 | 84 | 200 | 94 | 250 | 94 | 250 | 114 | 300 | 144 | 350 | — | — | — | — | — | — | — | — |

# 314 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



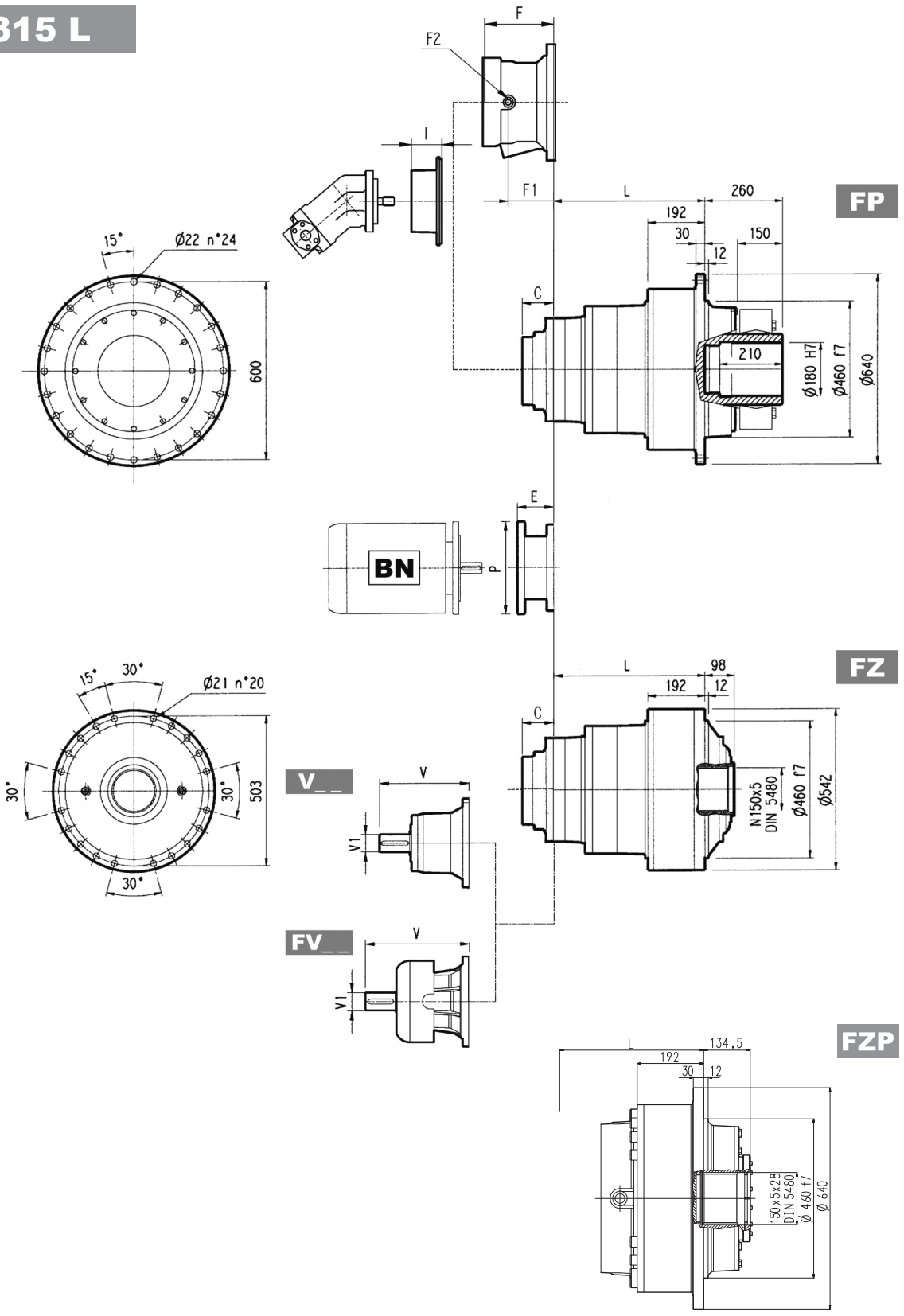
# 315 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **315 L1** | 453 | 174 | 174 | 174 | 500 | 370 | 280 | 330 |
| **315 L2** | 665 | 386 | 386 | 386 | 585 | 455 | 365 | 415 |
| **315 L3** | 798 | 519 | 519 | 519 | 630 | 500 | 410 | 460 |
| **315 L4** | 887 | 608 | 608 | 608 | 642 | 512 | 422 | 472 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **315 L1** | 556 | 120 | 125 | — | — | — | — | — | — | — | — | — | 116 | E | | — | — | — | — | — | — |
| **315 L2** | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | 81 | D | | 232 | 185 | 1/4 G | 6 | B | 35 |
| **315 L3** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | 457 | 201 | 153 | 1/4 G | 6 | B | 28 |
| **315 L4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |

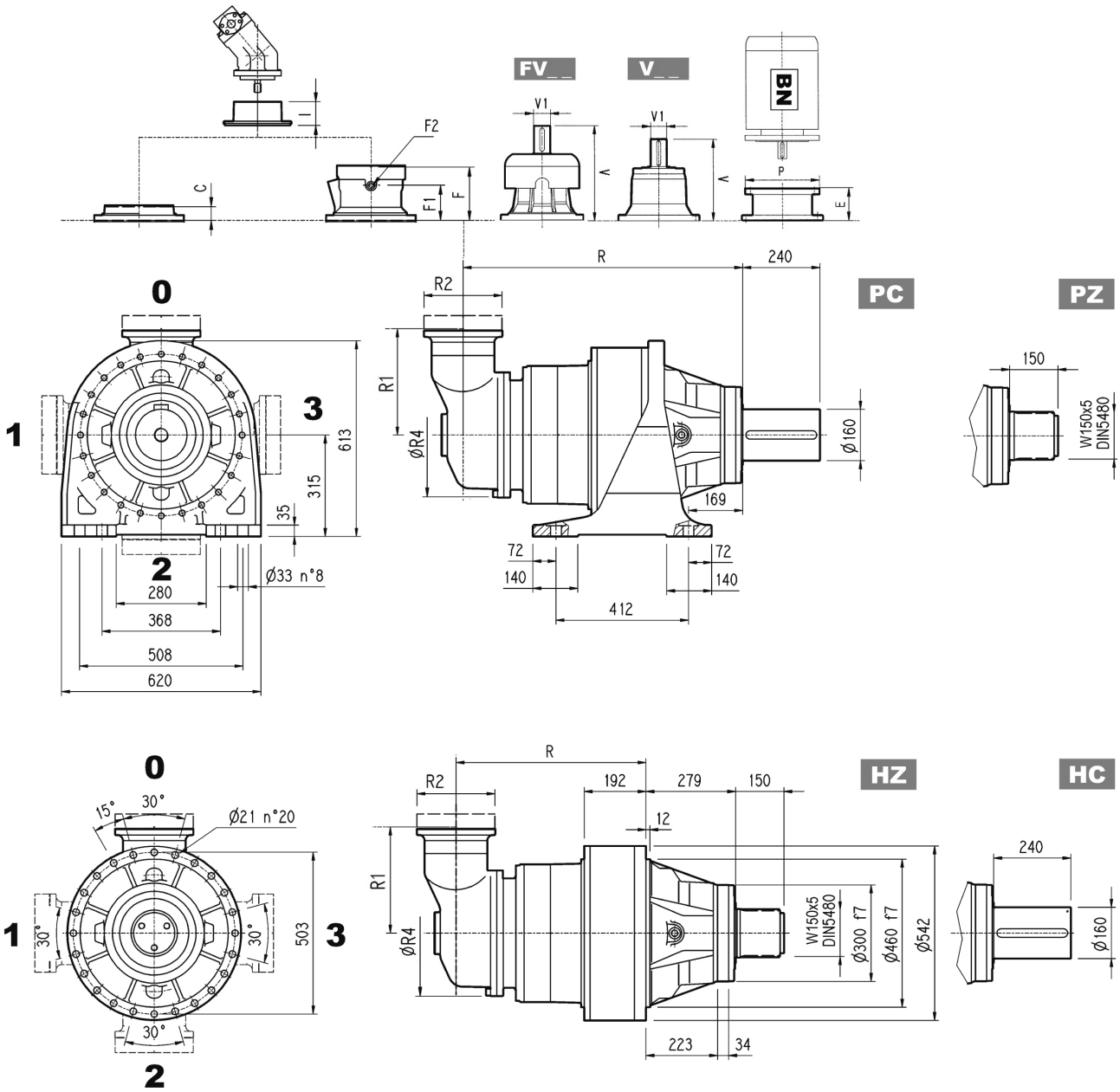
# 315 L




**FP** $M_{2max}$ = 135000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **315 L2** | — | — | — | — | — | — | 267 | 400 | 297 | 450 | 297 | 550 |
| **315 L3** | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |
| **315 L4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

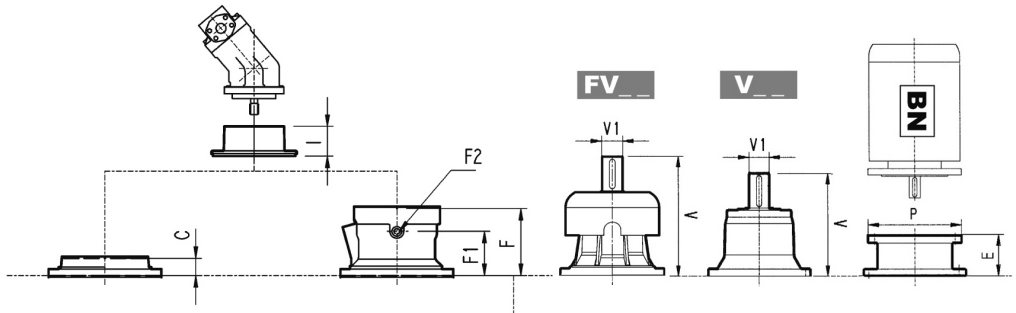
# 315 R

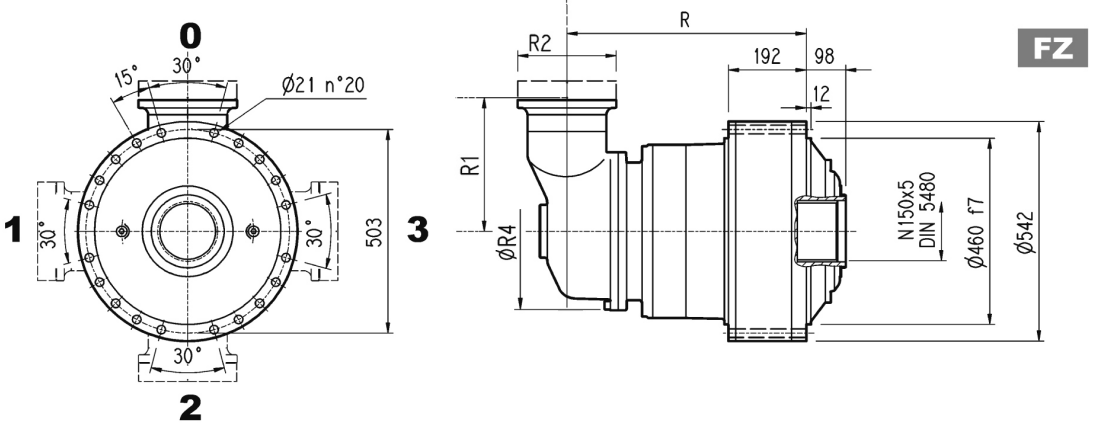


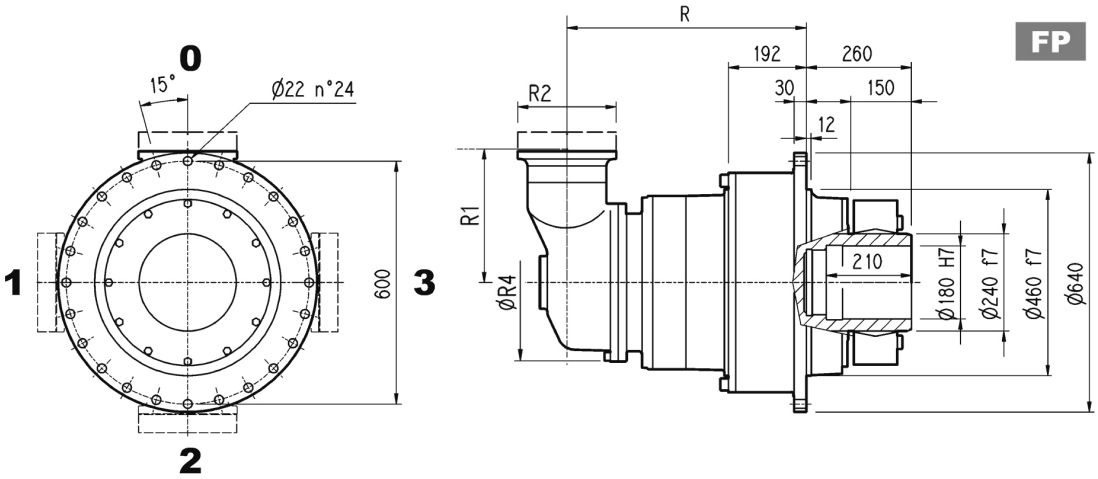

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **315 R3 (B)** | 890 | 611 | 611 | 611 | 345 | 292 | 400 | 720 | 590 | 500 | 550 |
| **315 R3 (C)** | 890 | 611 | 611 | 611 | 390 | 292 | 480 | 730 | 600 | 510 | 560 |
| **315 R4** | 917 | 638 | 638 | 638 | 225 | 245 | 345 | 680 | 550 | 460 | 510 |

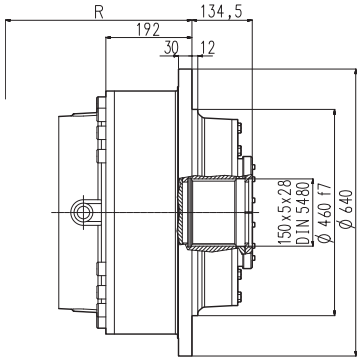
| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **315 R3 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **315 R3 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **315 R4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |

# 315 R



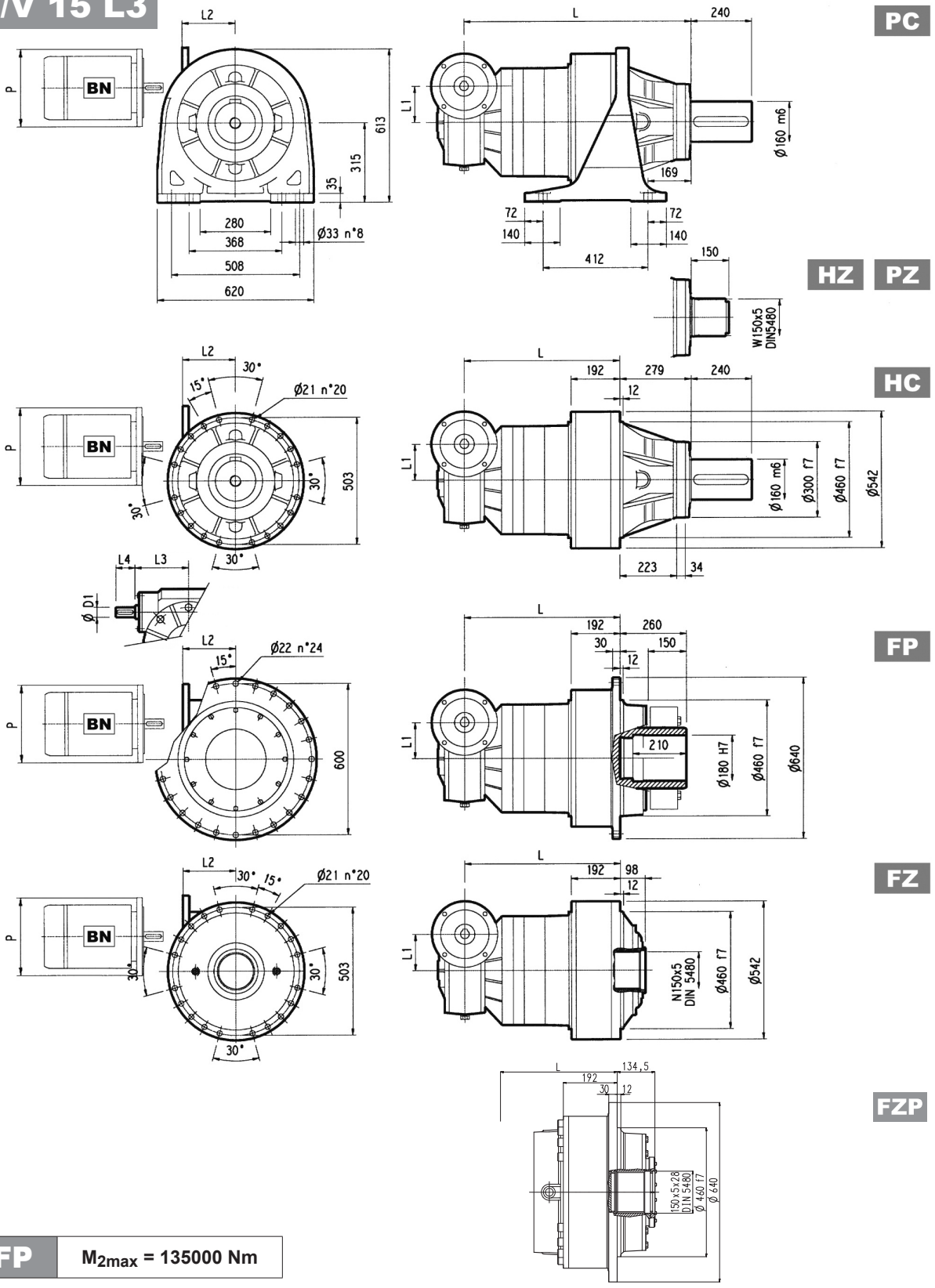




**FP** $M_{2max}$ = 135000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **315 R3 (B)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **315 R3 (C)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **315 R4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

# 3/V 15 L3



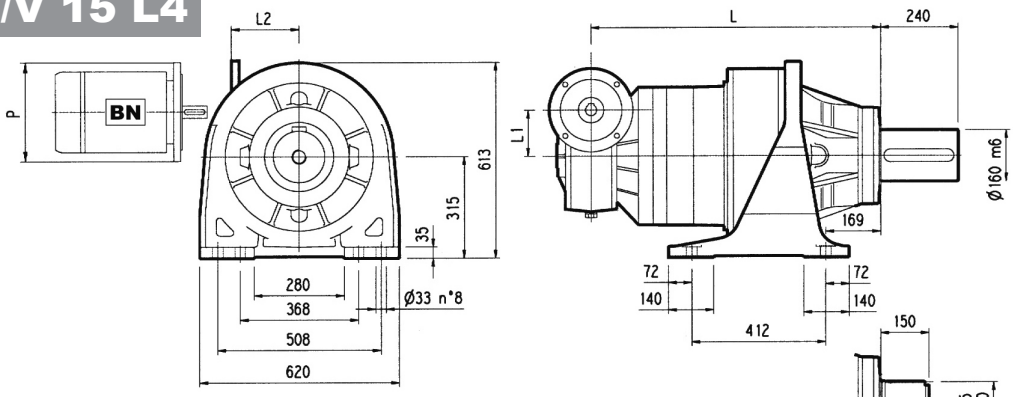

**FP** $M_{2max}$ = 135000 Nm

| | L | | | | L1 | L2 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 15 L3 | 885 | 606 | 606 | 606 | 210 | — | 48 | 230 | 110 | 800 | 670 | 575 | 625 |

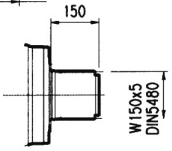
| | P100 | P112 | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 15 L3 | — | — | 485 | 300 | 460 | 350 | 460 | 350 | 485 | 400 | 490 | 450 |

# 3/V 15 L4

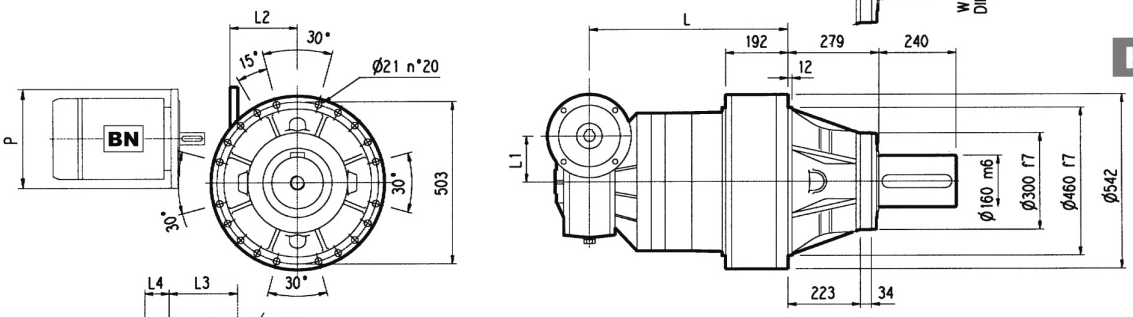
PC



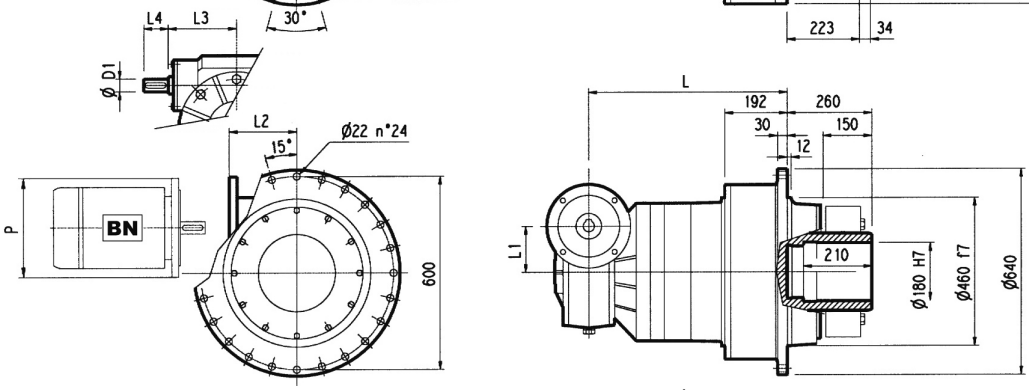

HZ PZ



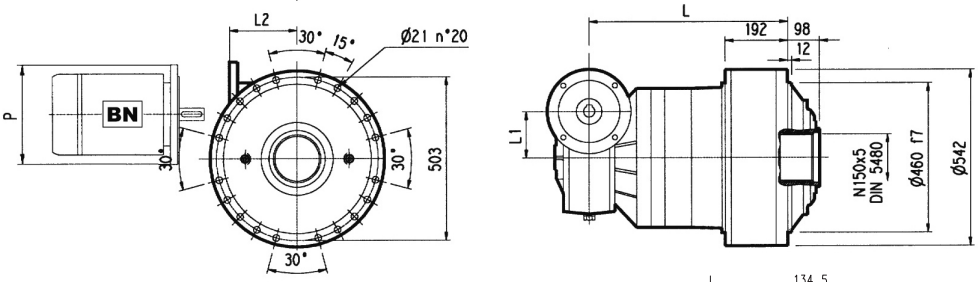

HC



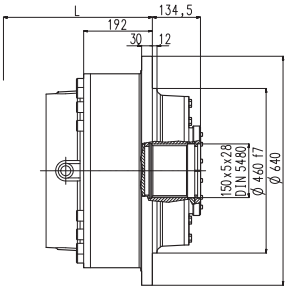

FP




FZ



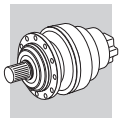

FZP




**FP** $M_{2max}$ = 135000 Nm

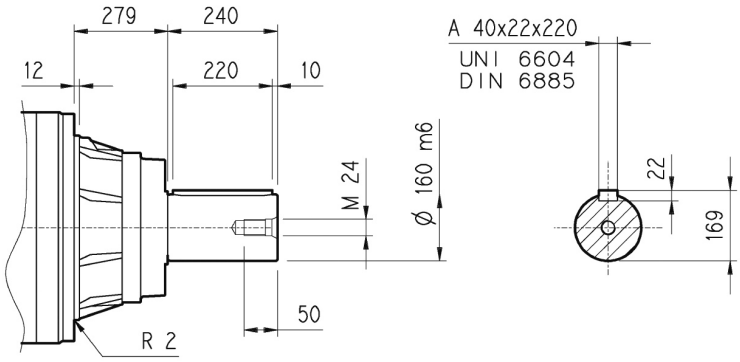
| | L | | | | L1 | L2 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 15 L4 | 989 | 710 | 710 | 710 | 150 | 190 | 35 | 185 | 65 | 690 | 560 | 470 | 520 |

| | P100 | P112 | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P | P | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 15 L4 | 250 | 250 | — | 300 | — | 350 | — | — | — | — | — | — |

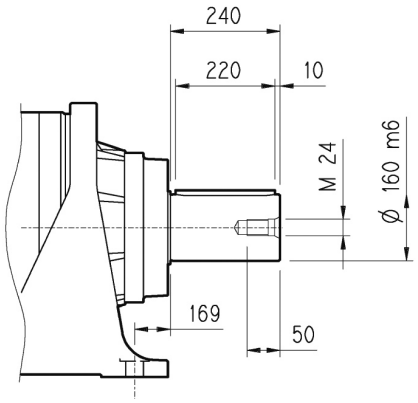


# 315 L | 315 R | 3/V 15 L

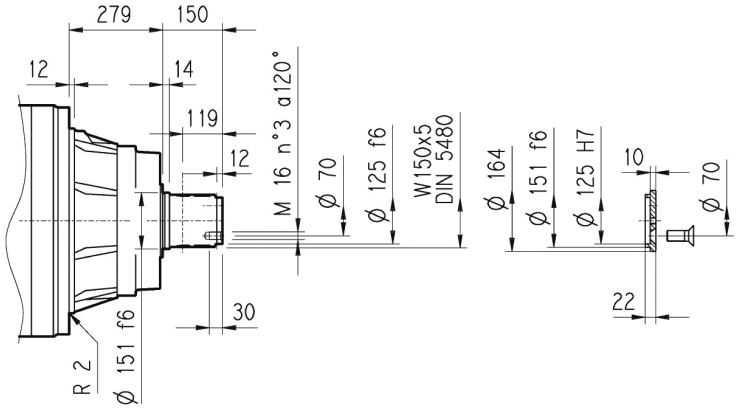
## HC



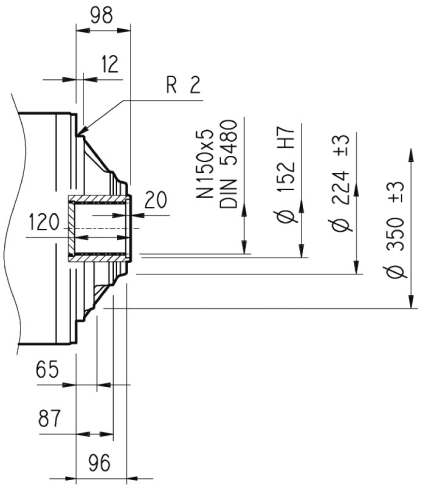

## PC



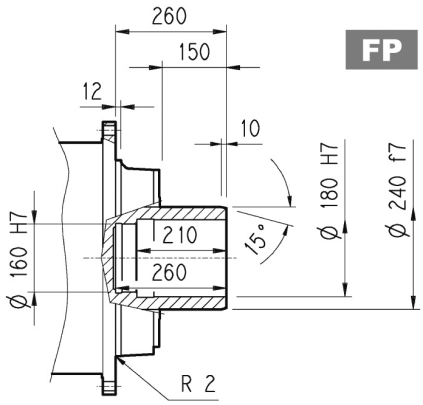

## HZ



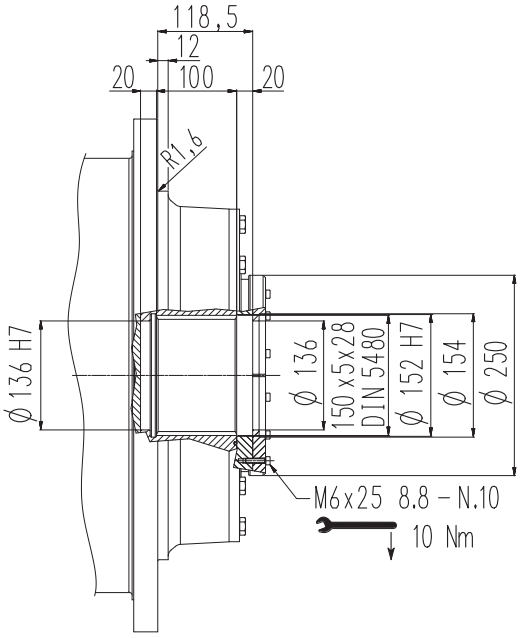

## FZ




## FP



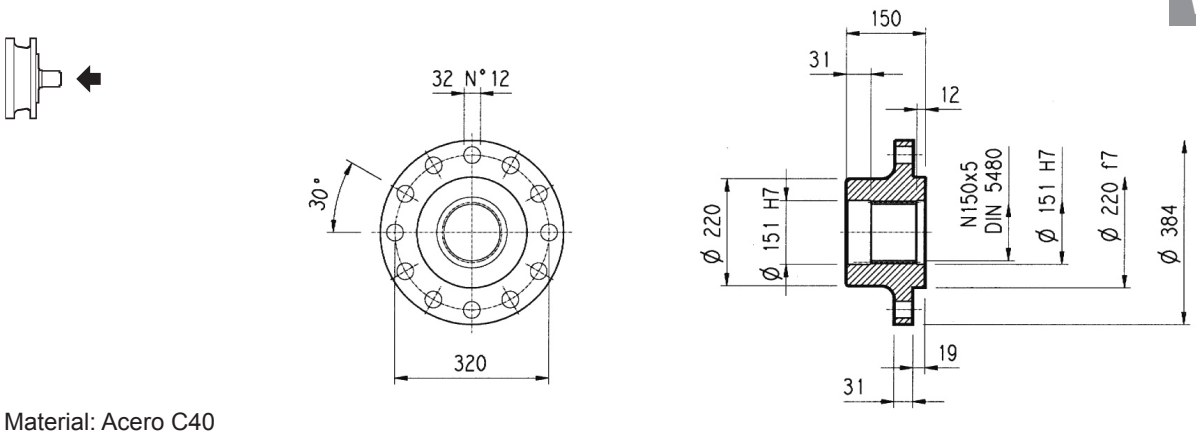

## FZP




| FP | $M_{2max}$ = 135000 Nm |
|---|---|

## Brida

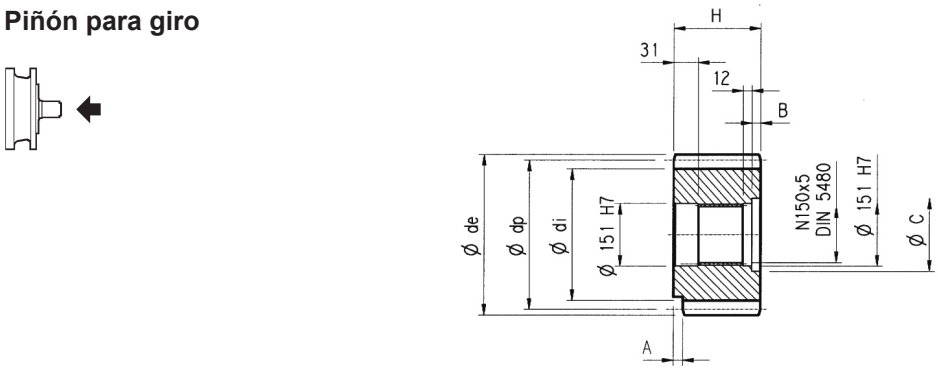
W0A




Material: Acero C40

## Piñón para giro

P...

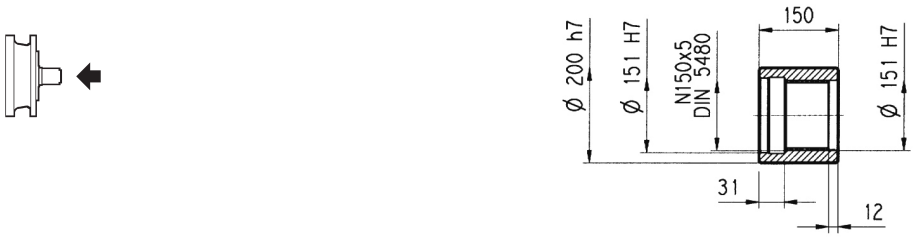



$\alpha = 20°$

| | m | z | x | dp | di | de | H | A | B | C | Material |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **PRG1** | 18 | 16 | 0.500 | 288 | 261 | 342 | 160 | — | 10 | 166 | Acero 18NiCrMo5 Cementado y templado |
| **PRG2** | 18 | 16 | 0.617 | 288 | 271 | 339 | 150 | 30 | — | — | Acero 39NiCr Mo3 Bonificado |

## Barra estriada

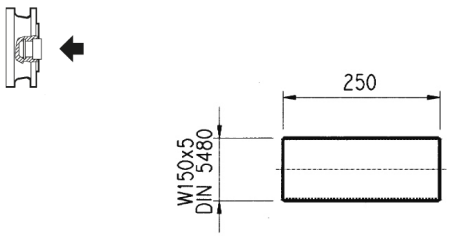
M0A




Material: Acero 16CrNi4

## Barra estriada

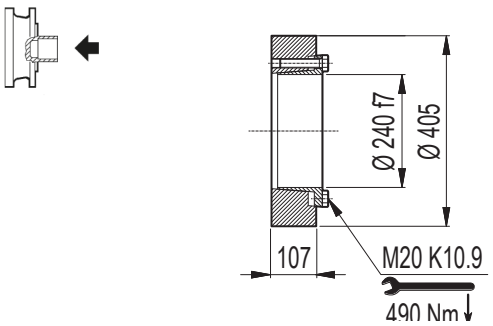
B0A

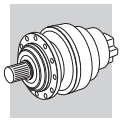



Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

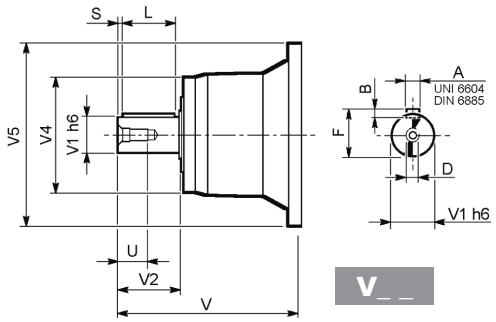
## Aro cónico de apriete

G0A

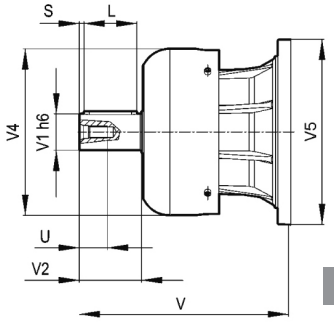




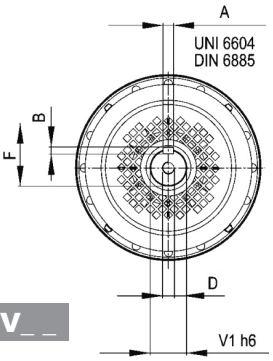
## 315 L 315 R




V_ _

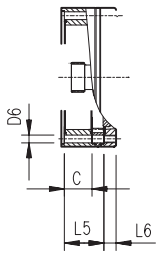


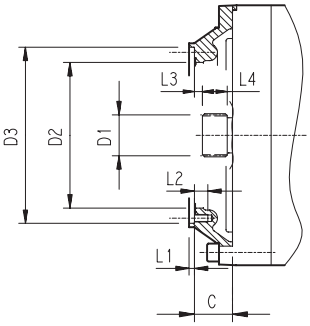

FV_ _

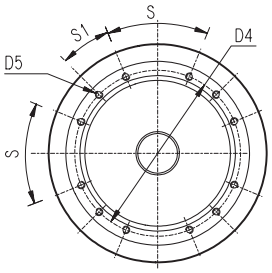



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **315 L1** | **V15B** | 523 | 120 | 210 | 320 | 542 | 32 | 18 | 127 | 180 | 15 | M24 | 50 |
| **315 L2** | **V11B** | 348 | 80 | 130 | 200 | 418 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 456 | 80 | 130 | 347.5 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **315 L3** | **V07B** | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV07B** | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **V07A** | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV07A** | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **315 L4** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **315 R3 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **315 R4** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |

## 315 L 315 R

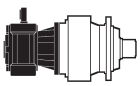


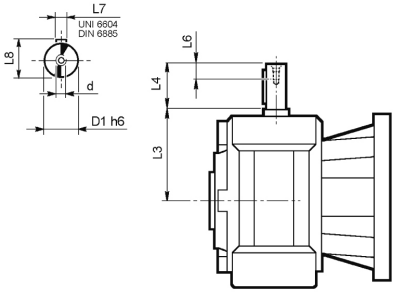




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **315 L1** | **V9AE** | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n°18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| **315 L2** | **V9AD** | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |
| **315 L3** | **V9AB** | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **315 L4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **315 R4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **315 R3 (B) (C)** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |

## 3/V 15 L





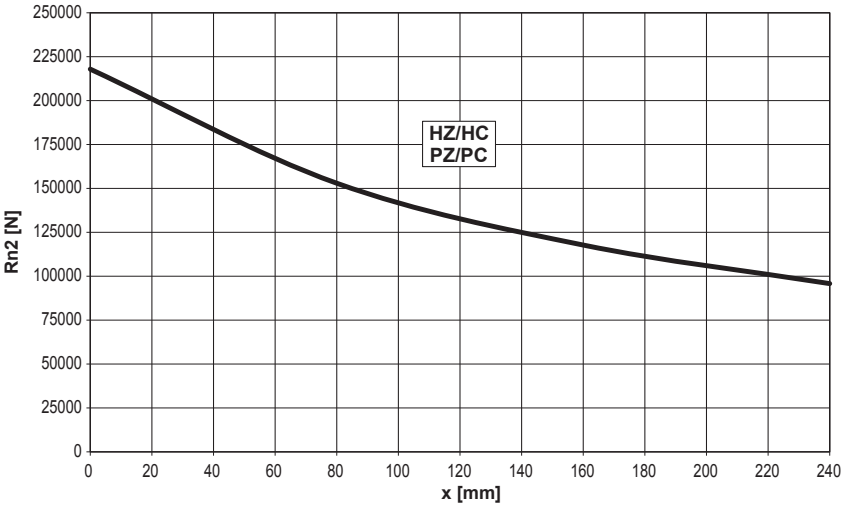

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 15 L3_HS** | 48 | 230 | 110 | 40 | 14 | 51.5 | M16 |
| **3/V 15 L4_HS** | 35 | 185 | 65 | 20 | 10 | 38 | M8 |

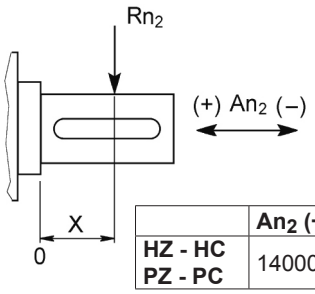


Bonfiglioli Riduttori

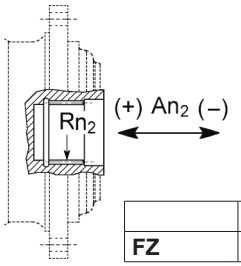
# 315 L | 315 R | 3/V 15 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



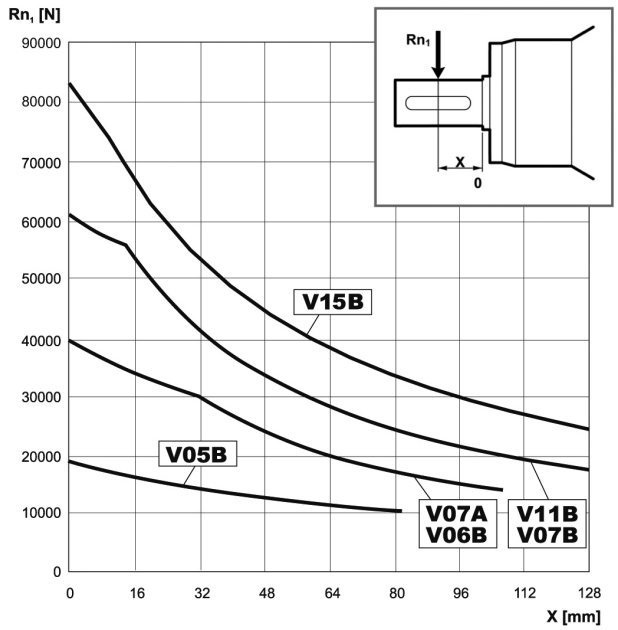

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 140000 | 105000 |

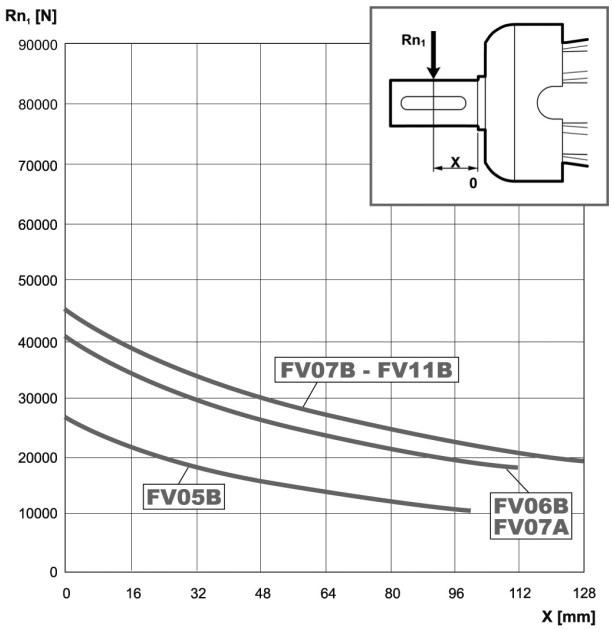



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 41774 | 41774 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **2.00** | **1.52** | **1.23** | **1.00** | **0.62** | **0.50** |

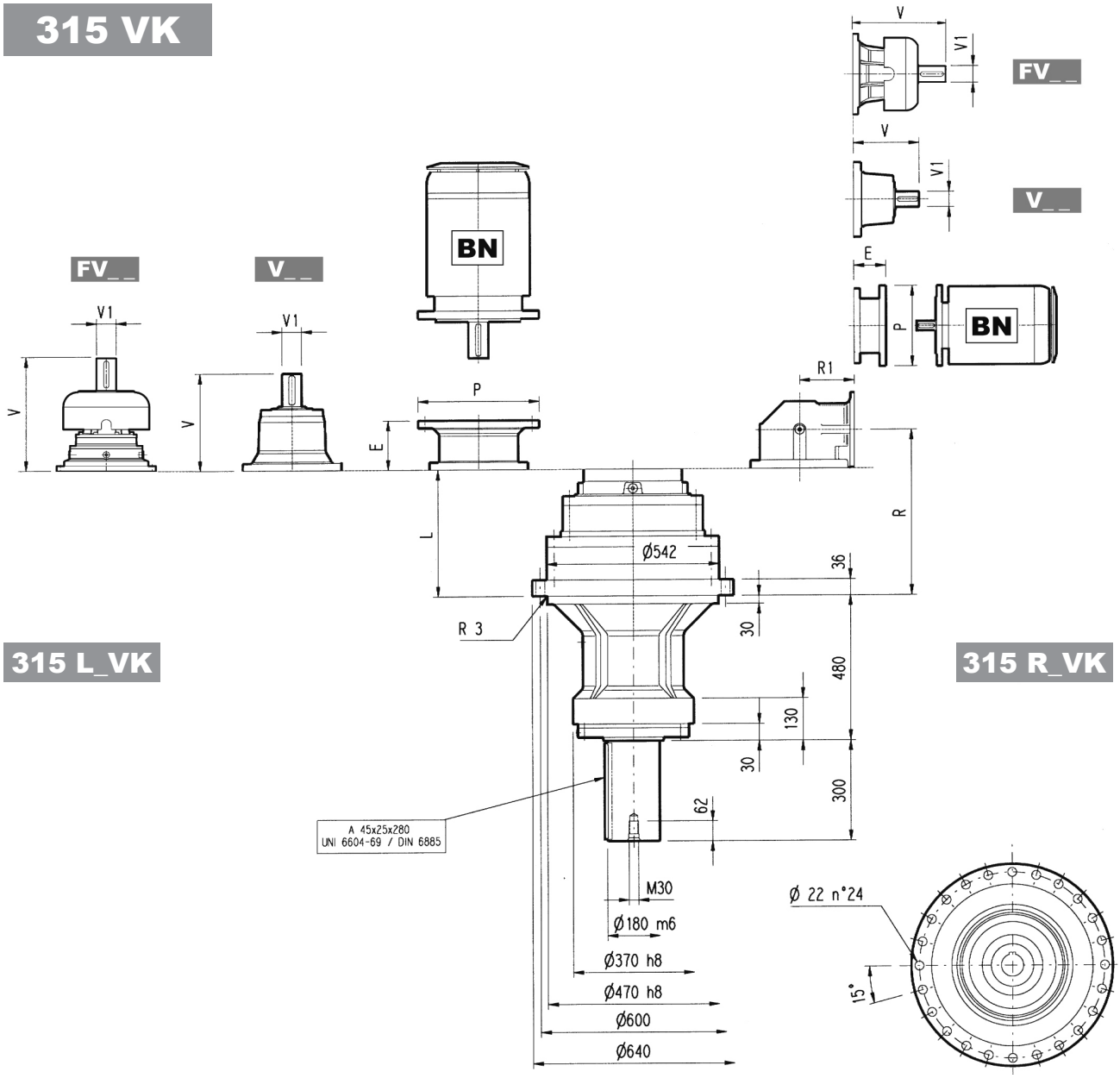
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 315 VK




315 L_VK

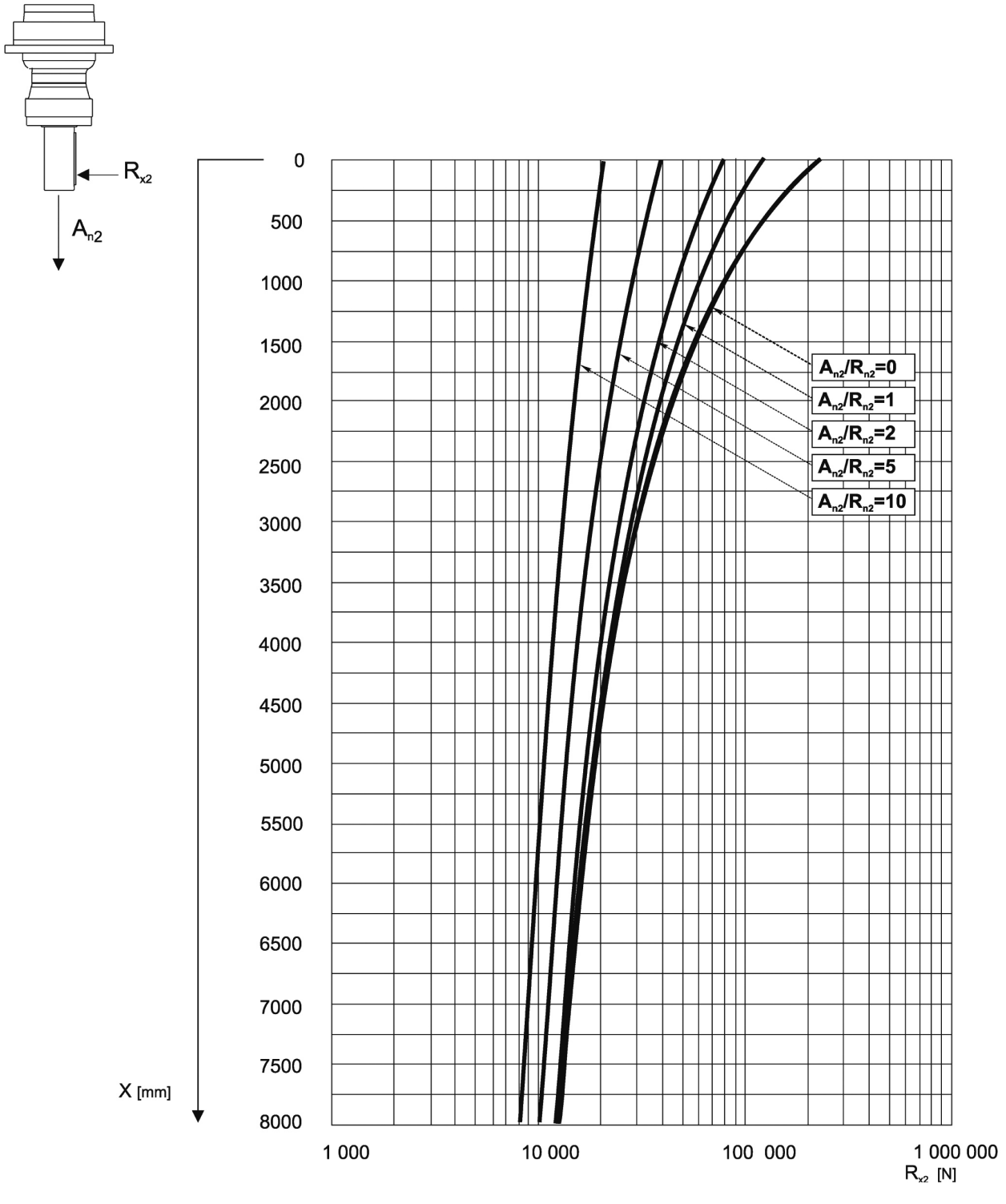
315 R_VK

| | L | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P |
| **315 L2** | 386 | 650 | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| **315 L3** | 519 | 700 | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |
| **315 L4** | 608 | 710 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

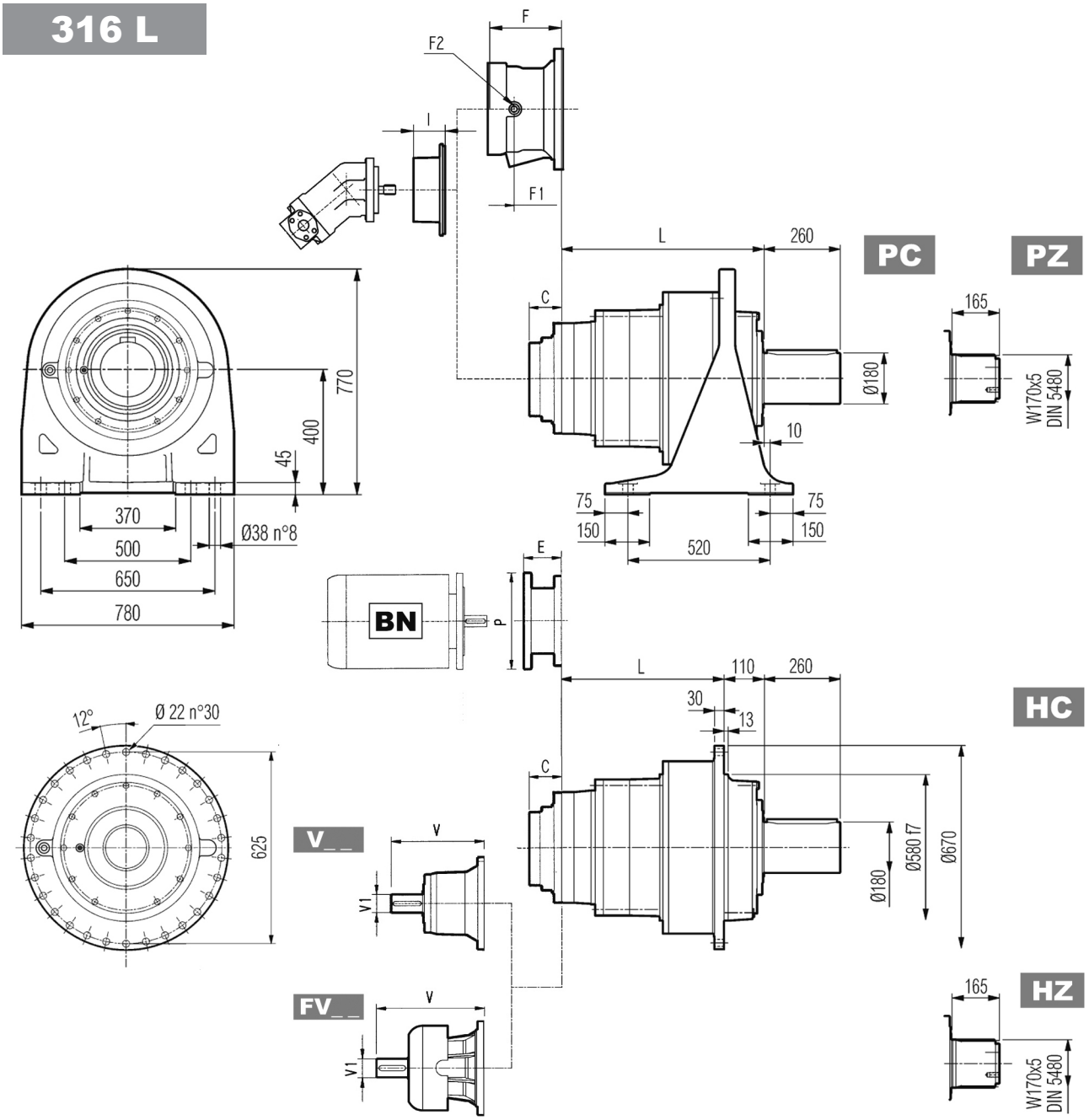
| | R | R1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | E | P | E | P | E | P | E | P | E | P | E | P |
| **315 R3 (B)** | 611 | 345 | 720 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **315 R3 (C)** | 611 | 390 | 730 | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **315 R4** | 638 | 225 | 690 | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

# 315 VK

El diagrama siguiente consiste en calcular la carga radial admisible $R_{x2}$ cuando está aplicada a la distancia x del resalte del eje de salida del reductor.
Las curvas hacen referencia al valor resultante de la relación entre la carga axial $A_{n2}$ y la carga radial $R_{n2}$, y a la vez referido a $n_2$ = 10 $min^{-1}$ y vida teórica de 10000 h.



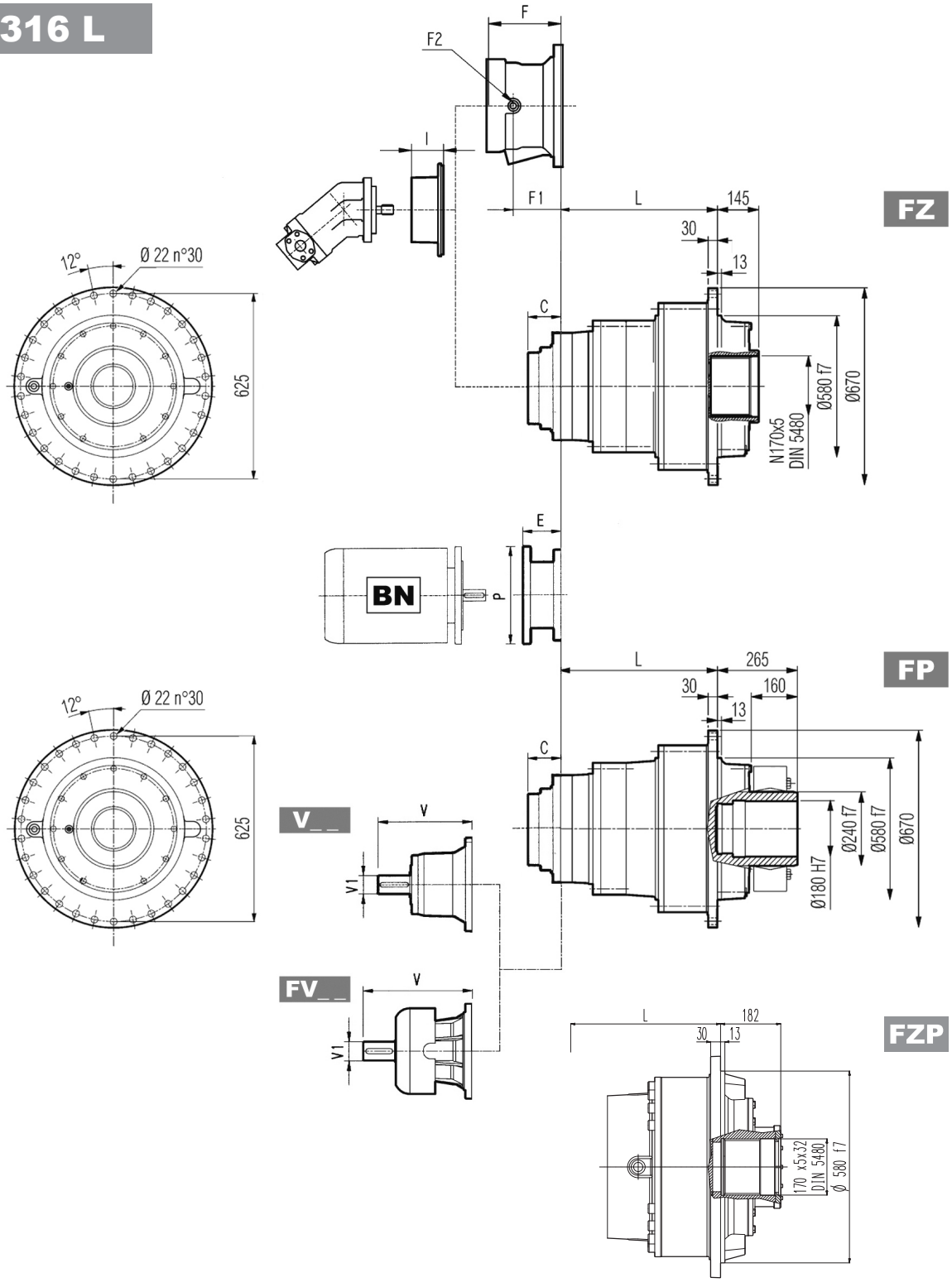
# 316 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **316 L1** | 289 | 179 | 179 | 179 | 700 | 500 | 430 | 450 |
| **316 L2** | 541 | 431 | 431 | 431 | 790 | 590 | 520 | 540 |
| **316 L3** | 674 | 564 | 564 | 564 | 840 | 640 | 570 | 590 |
| **316 L4** | 763 | 653 | 653 | 653 | 860 | 660 | 590 | 610 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **316 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 156 | E | | — | — | — | — | — | — |
| **316 L2** | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | 81 | D | | — | — | — | — | — | — |
| **316 L3** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | 457 | 201 | 153 | 1/4 G | 6 | B | 28 |
| **316 L4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |

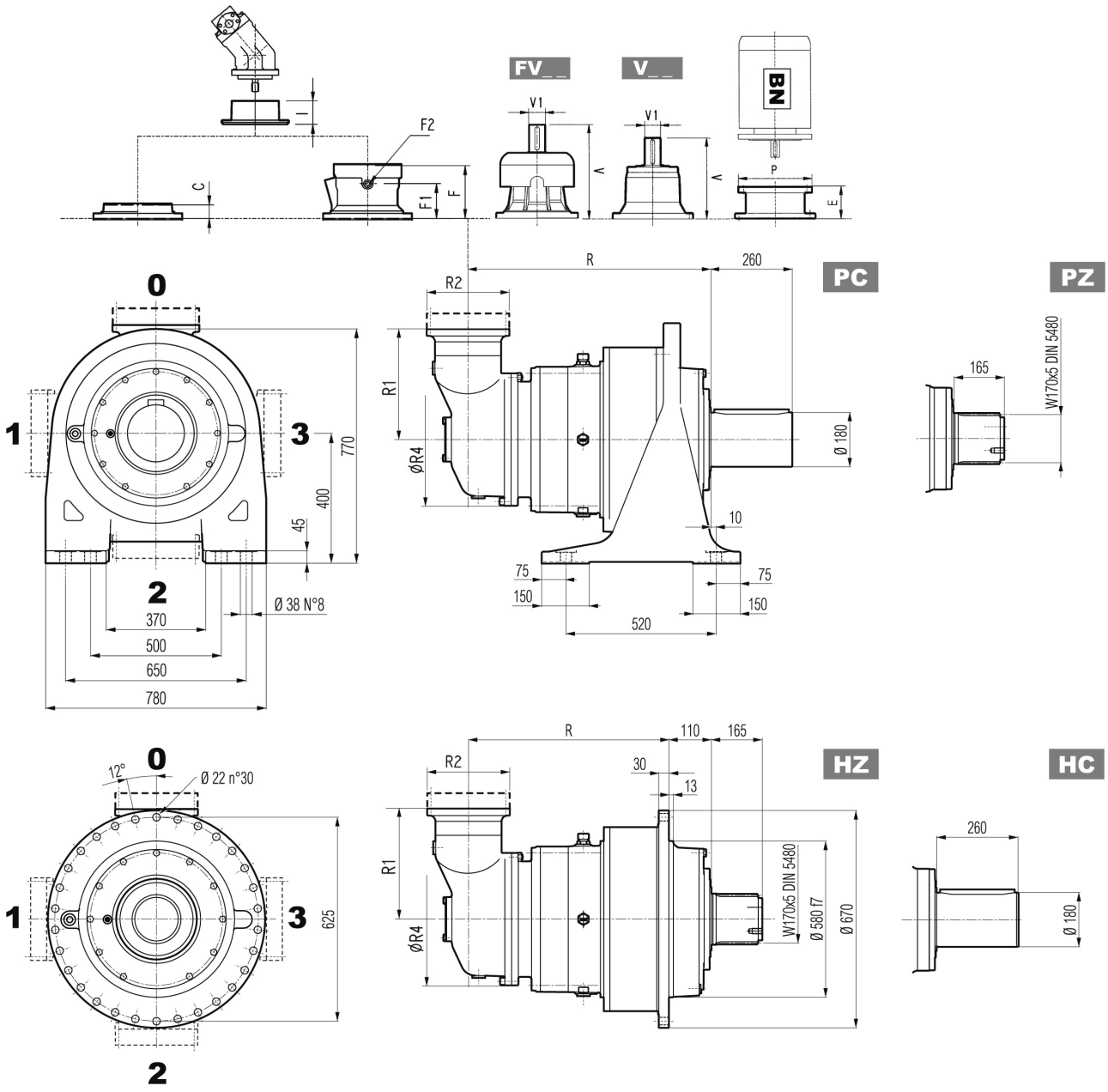
# 316 L




**FP** | $M_{2max}$ = 178000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **316 L2** | — | — | — | — | — | — | 267 | 400 | 297 | 450 | 297 | 550 |
| **316 L3** | — | — | — | — | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |
| **316 L4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

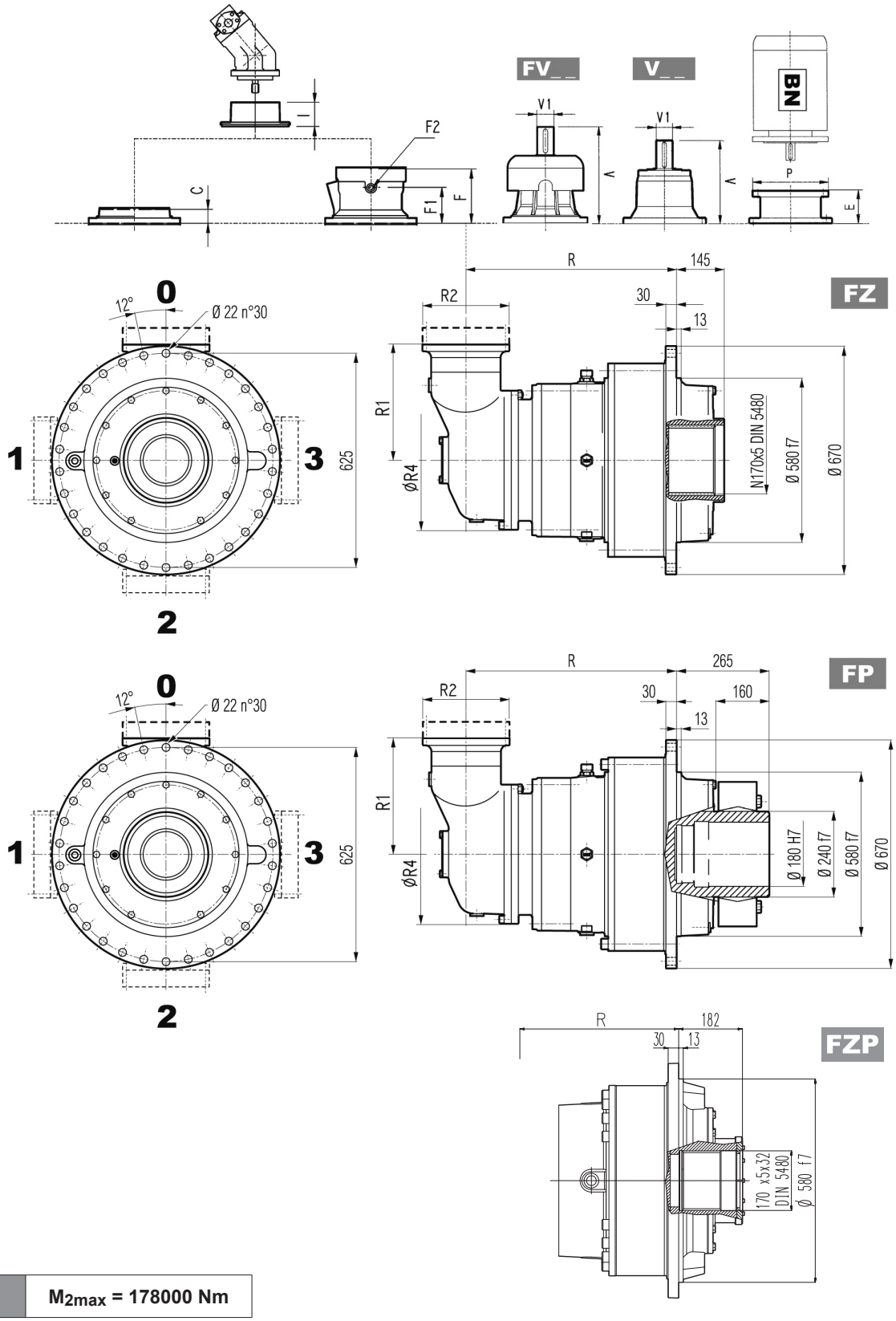
# 316 R




| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **316 R3 (B)** | 766 | 656 | 656 | 656 | 345 | 292 | 400 | 910 | 710 | 640 | 660 |
| **316 R3 (C)** | 766 | 656 | 656 | 656 | 390 | 292 | 480 | 920 | 720 | 650 | 670 |
| **316 R4** | 793 | 683 | 683 | 683 | 225 | 245 | 345 | 890 | 690 | 620 | 640 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **316 R3 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **316 R3 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **316 R4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | 457 | 145 | 95 | 1/4 G | 5 | A | 16 |

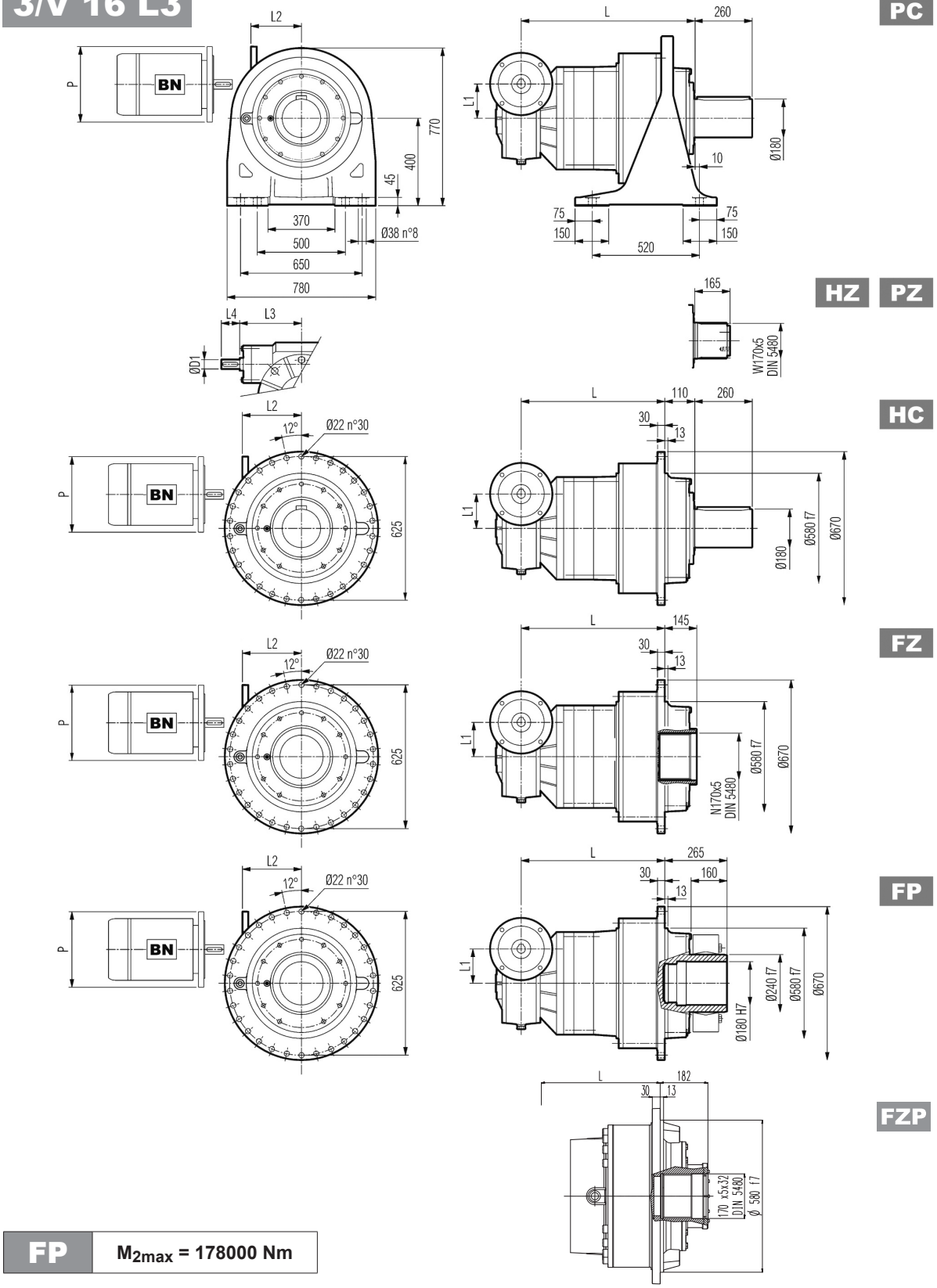
# 316 R




**FP** $M_{2max}$ = 178000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **316 R3 (B)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **316 R3 (C)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **316 R4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

# 3/V 16 L3

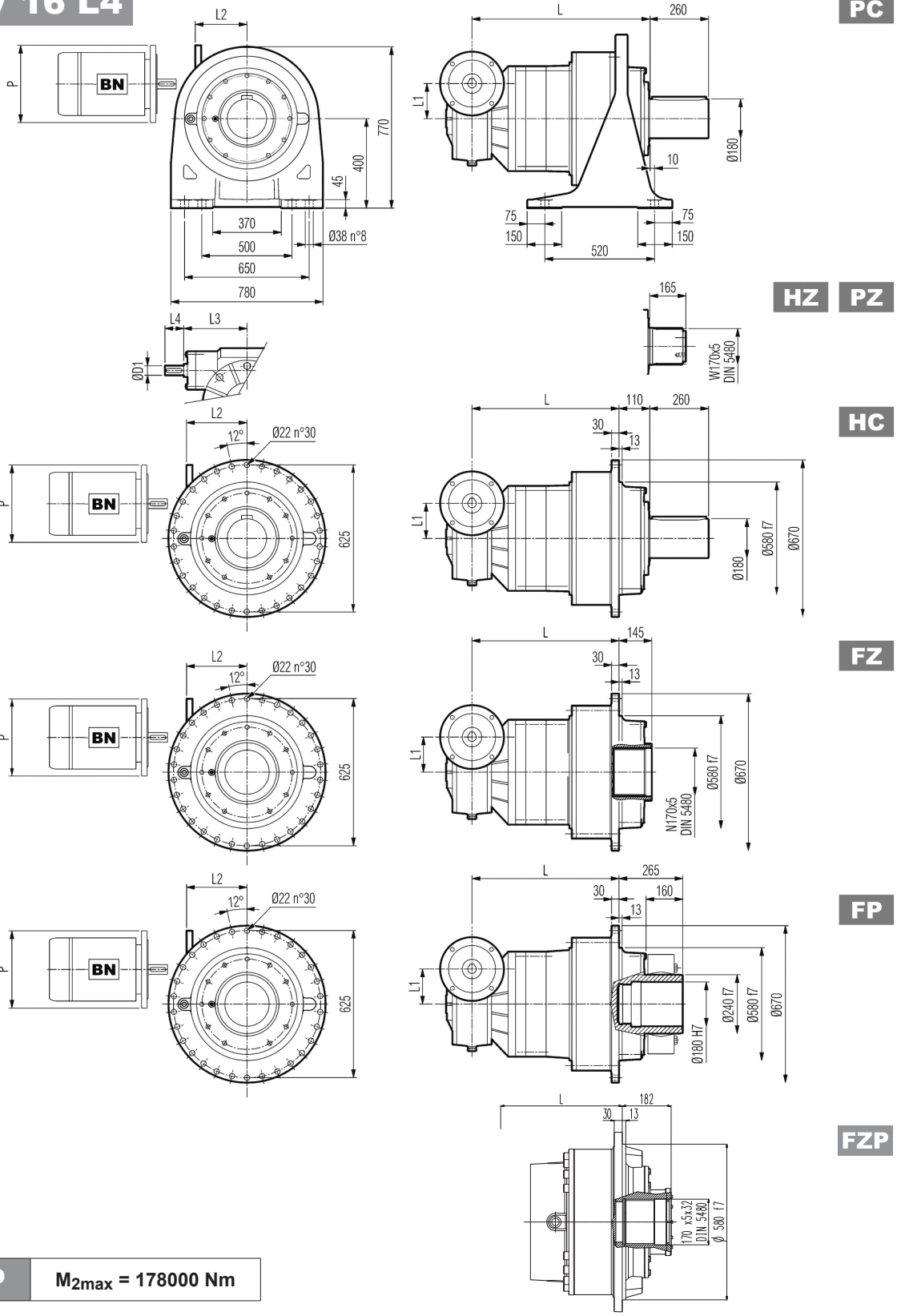



**FP** $M_{2max}$ = 178000 Nm

| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 16 L3 | 812 | 702 | 702 | 702 | 250 | 55 | 274 | 110 | 1100 | 900 | 830 | 850 |

| | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 16 L3 | 531 | 300 | 506 | 350 | 506 | 350 | 531 | 400 | 536 | 450 |

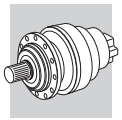
# 3/V 16 L4




**FP** $M_{2max}$ = 178000 Nm

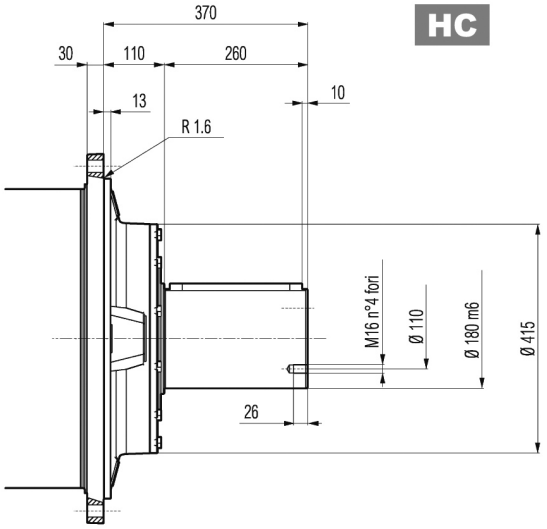
| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ | FP | | | | | PC - PZ | HC - HZ | FZ | FP |
| 3/V 16 L4 | 865 | 755 | 755 | 755 | 150 | 35 | 185 | 65 | 900 | 700 | 630 | 650 |

| | P100 | | P112 | | P132 | | P160 | |
|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 16 L4 | 190 | 250 | 190 | 250 | 190 | 300 | 190 | 350 |

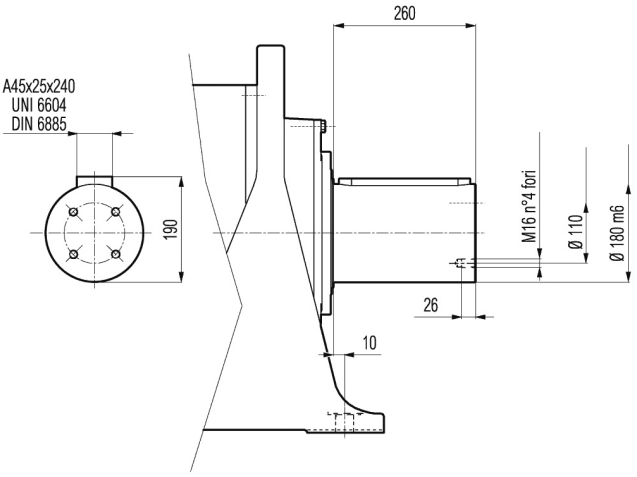


# 316 L | 316 R | 3/V 16 L

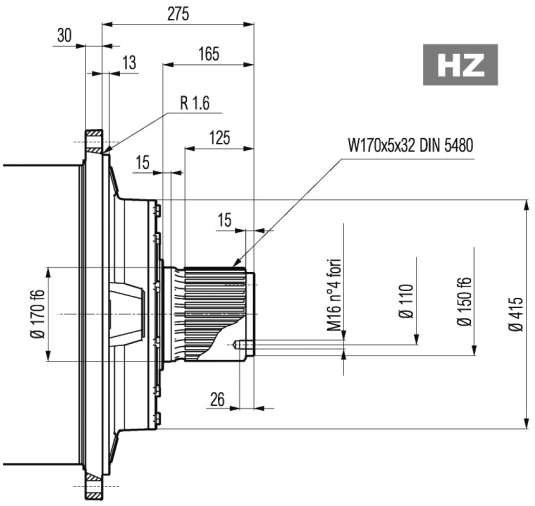
## HC



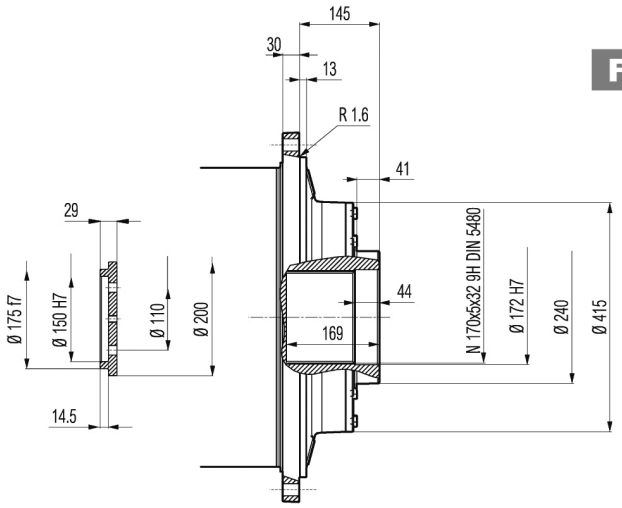

## PC



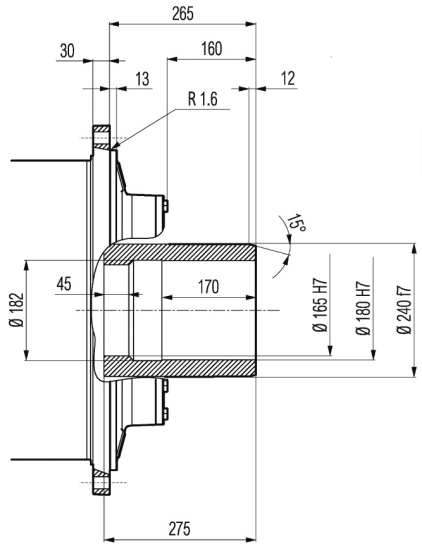

## HZ



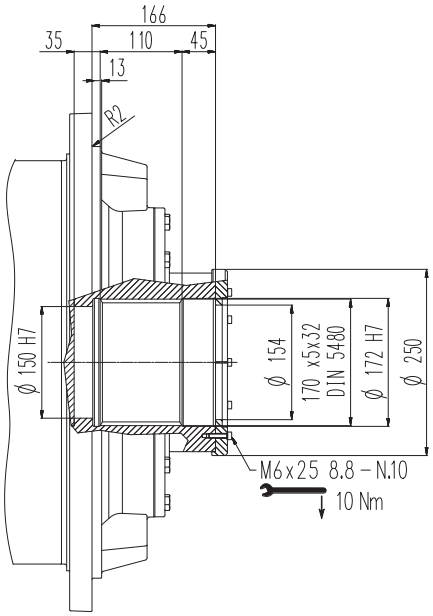

## FZ




## FP




## FZP



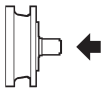

| FP | $M_{2max}$ = 178000 Nm |
|---|---|

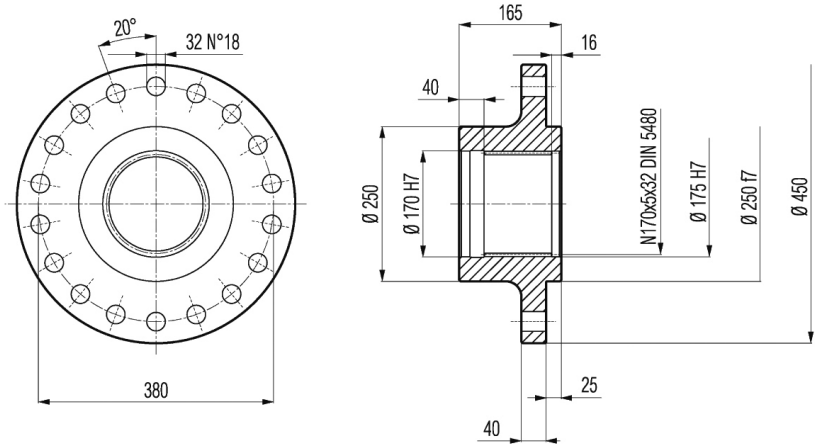


Bonfiglioli Riduttori

## Brida

W0A

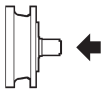


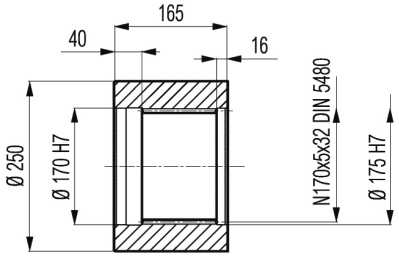



Material: Acero C40

## Manguito cilíndrico

M0A

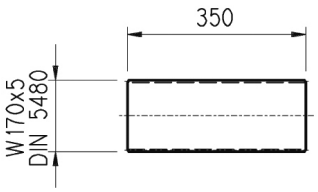





Material: Acero C40

## Barra estriada

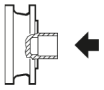
B0A

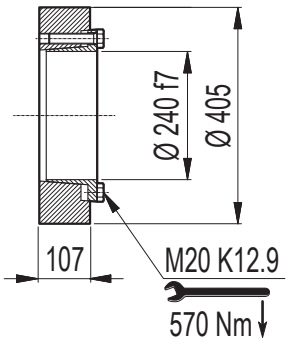


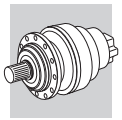

Material: Acero 18NiCrMo5 UNI 5331
cementar y templar 50 – 55 HRC

## Aro cónico de apriete

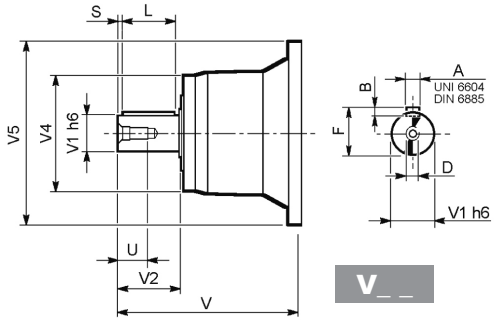
G0A



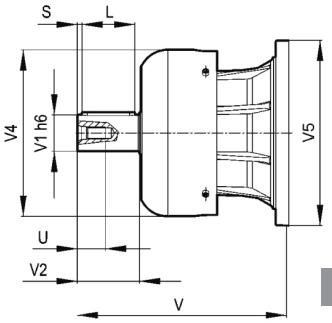




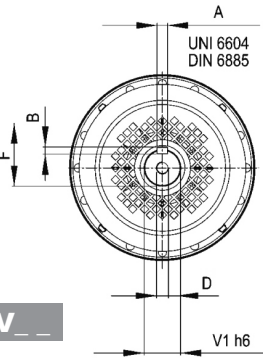
## 316 L 316 R




V_ _

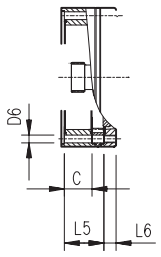


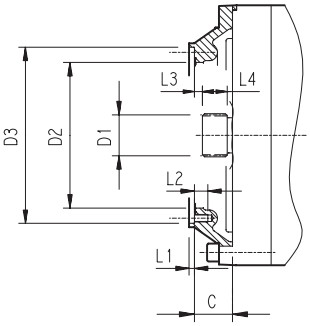

FV_ _

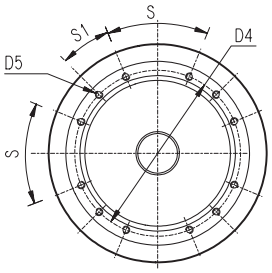



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 316 L2 | V11B | 348 | 80 | 130 | 200 | 418 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV11B | 456 | 80 | 130 | 347.5 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| 316 L3 | V07B | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV07B | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | V07A | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV07A | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 316 L4 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| 316 R3 (B) (C) | V06B | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV06B | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 316 R4 | V05B | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | FV05B | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |

## 316 L 316 R

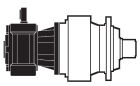


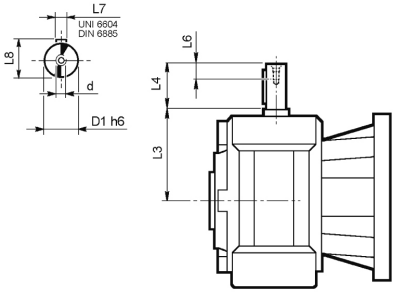




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 316 L1 | V9AE | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n° 18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| 316 L2 | V9AD | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n° 8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |
| 316 L3 | V9AB | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n° 12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 316 L4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n° 8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| 316 R3 (B) (C) | V9AB | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10° 12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 316 R4 | V9AA | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n° 8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |

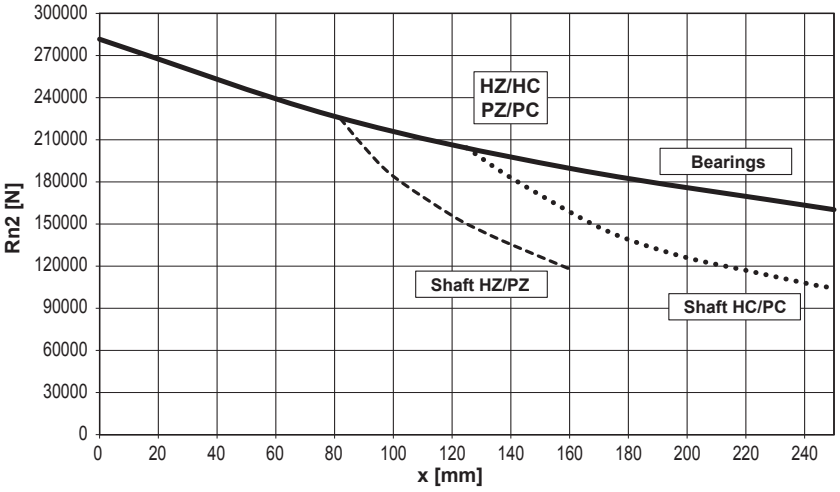
## 3/V 16 L

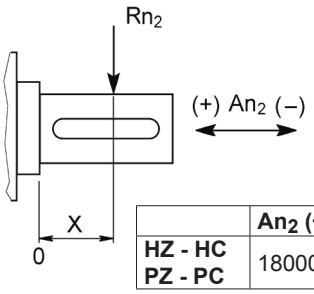




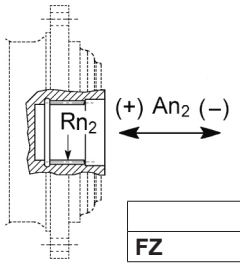

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 16 L3_HS | 55 | 274 | 110 | 40 | 16 | 59 | M16 |
| 3/V 16 L4_HS | 35 | 185 | 65 | 20 | 10 | 38 | M8 |

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



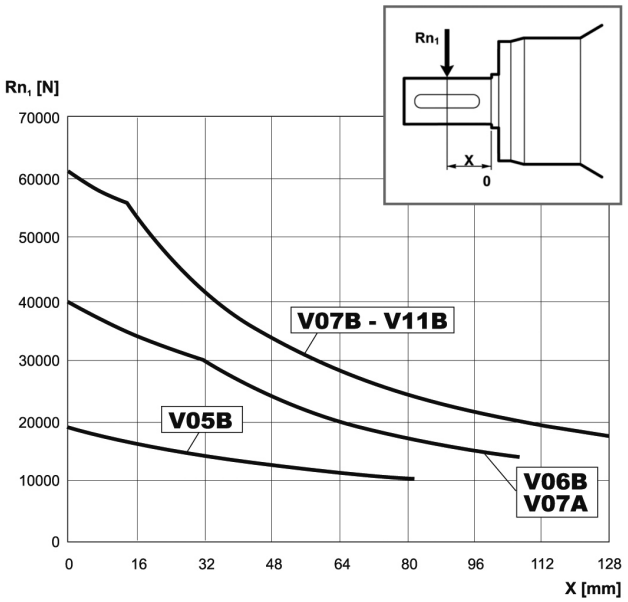

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC PZ - PC | 180000 | 150000 |

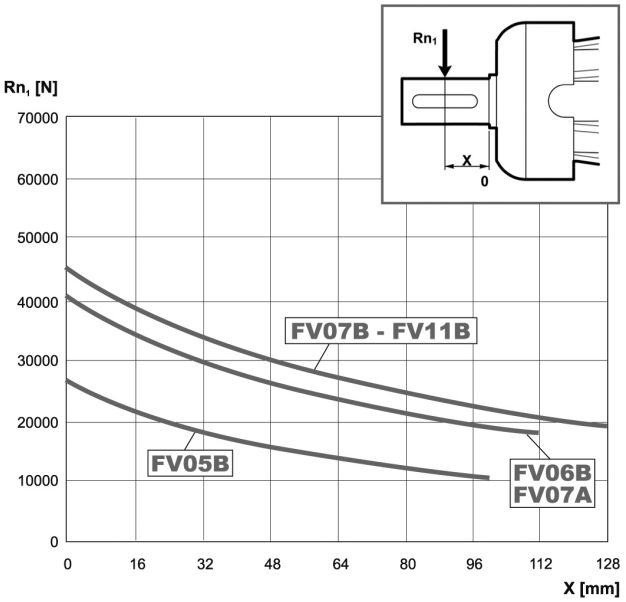



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 69624 | 69624 |

| | Fh2 = n2 · h | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|
| Factor de corrección fh2 para cargas sobre los ejes | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | fh2 HC - PC | **1.16** | **1.00** | **1.00** | **1.00** | **0.62** | **0.50** |
| | HZ - PZ | **1.19** | **1.02** | **1.02** | **1.00** | **0.62** | **0.50** |

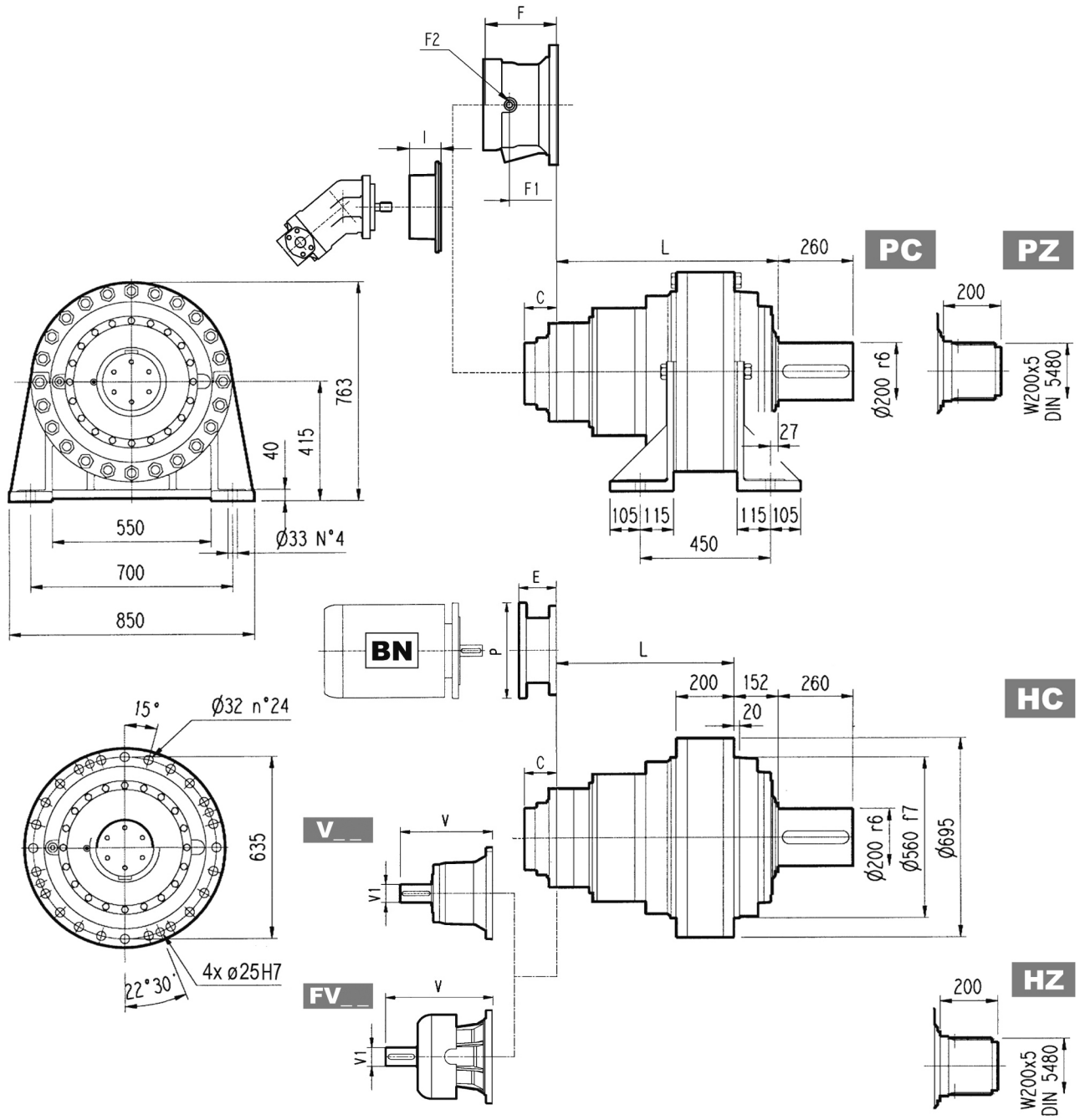
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección fh1 para cargas sobre los ejes | Fh1 = n1 · h | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | fh1 | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

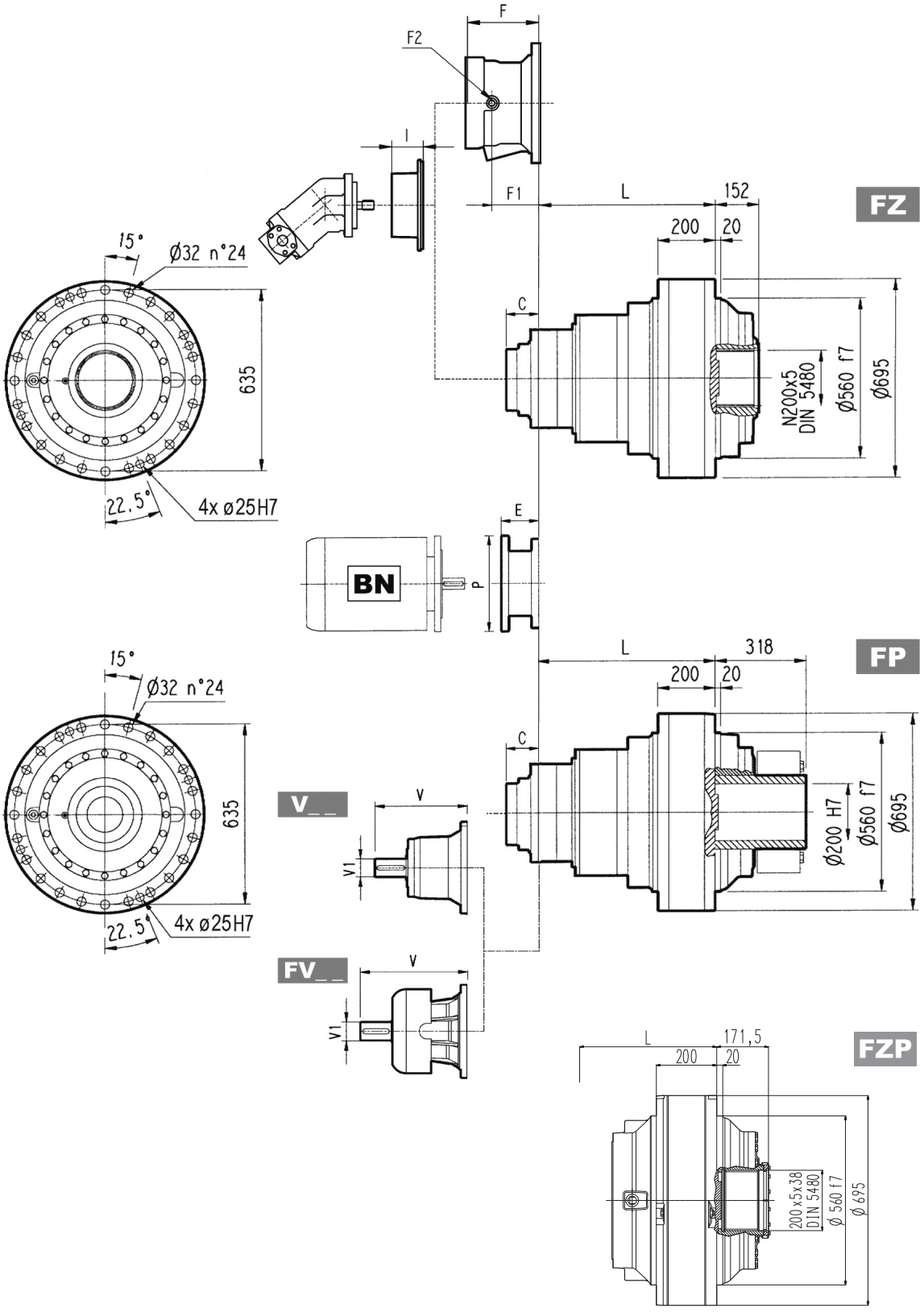
# 317 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **317 L1** | 315 | 163 | 163 | 163 | 950 | 800 | 750 | 800 |
| **317 L2** | 624 | 472 | 472 | 472 | 1080 | 930 | 880 | 930 |
| **317 L3** | 774 | 622 | 622 | 622 | 1140 | 990 | 940 | 990 |
| **317 L4** | 862 | 710 | 710 | 710 | 1152 | 1000 | 952 | 1000 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **317 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 181 | F | | — | — | — | — | — | — |
| **317 L2** | 343 | 80 | 55 | — | — | — | 451 | 80 | 71 | — | — | — | 75 | D | | — | — | — | — | — | — |
| **317 L3** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | 457 | 201 | 153 | 1/4 G | 6 | B | 28 |
| **317 L4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | | 145 | 95 | 1/4 G | 5 | A | 16 |

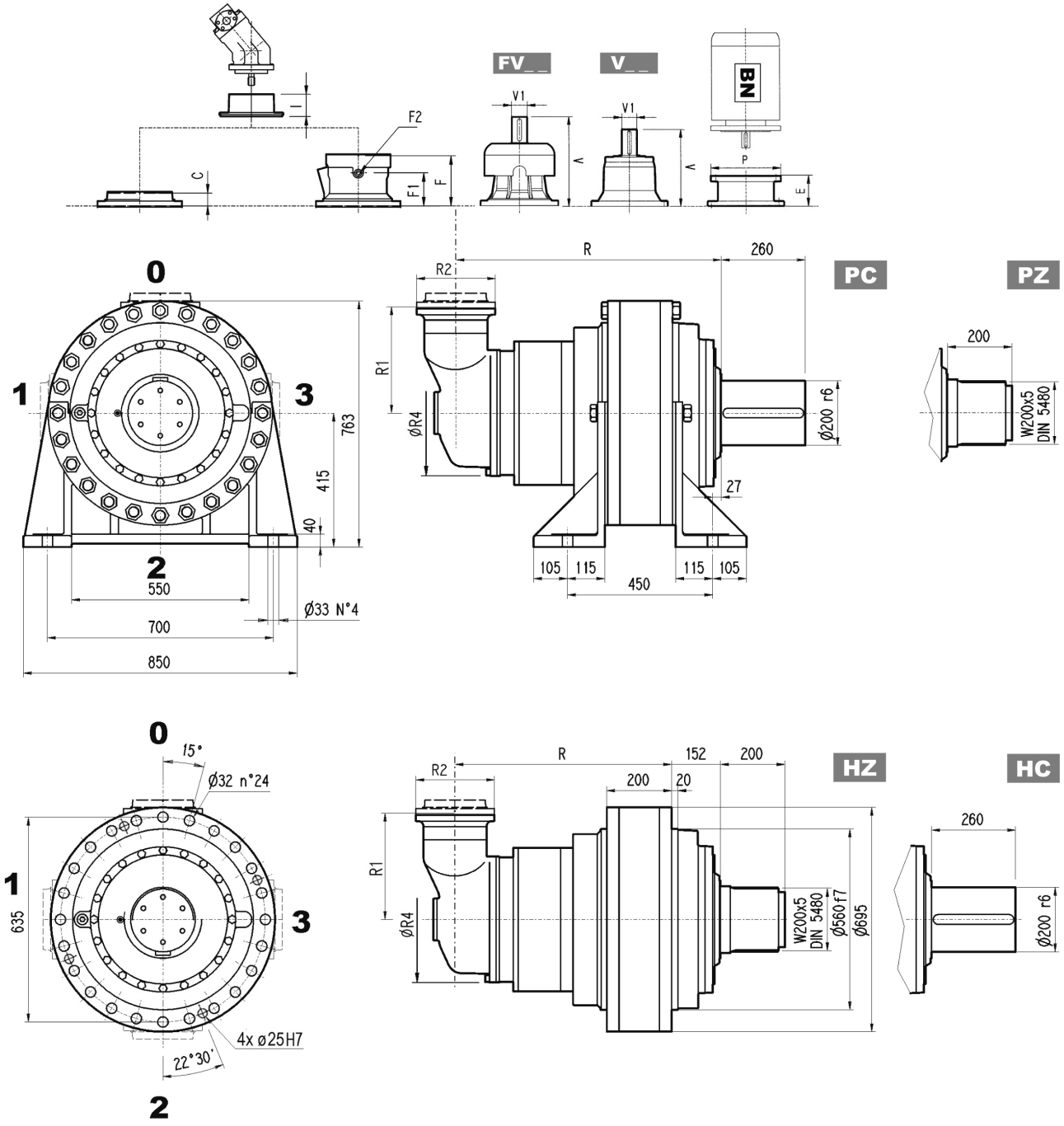
# 317 L




**FP** $M_{2max}$ = 242000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **317 L3** | — | — | — | — | 196 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |
| **317 L4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

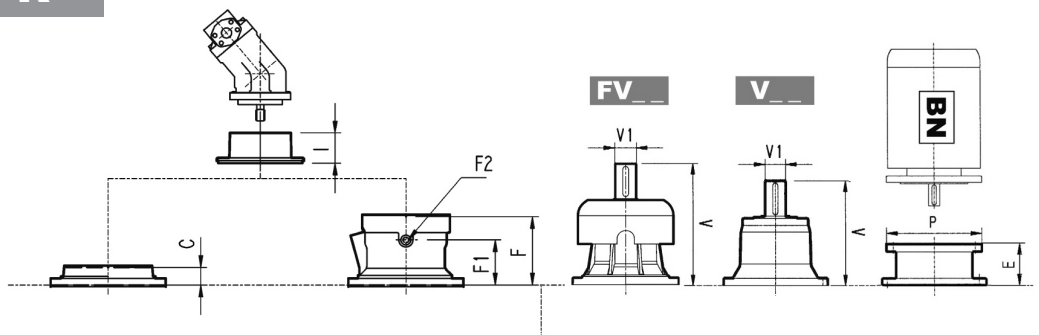
# 317 R

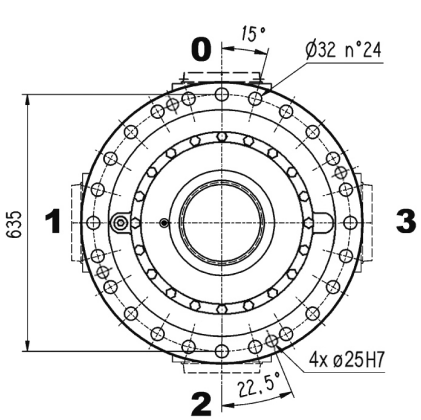


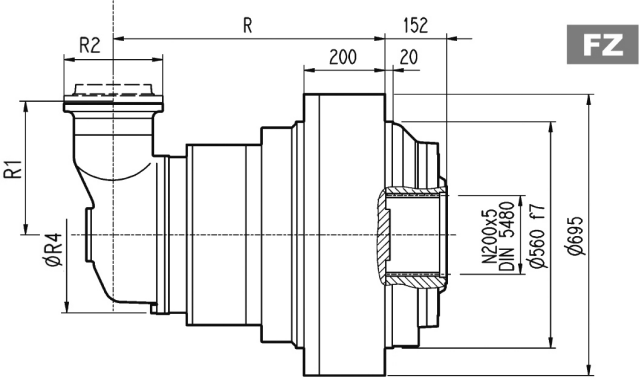

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **317 R3 (B)** | 853 | 701 | 701 | 701 | 345 | 292 | 400 | 1210 | 1060 | 1010 | 1060 |
| **317 R3 (C)** | 853 | 701 | 701 | 701 | 390 | 292 | 480 | 1220 | 1070 | 1020 | 1070 |
| **317 R4** | 892 | 740 | 740 | 740 | 225 | 245 | 345 | 1190 | 1040 | 990 | 1040 |

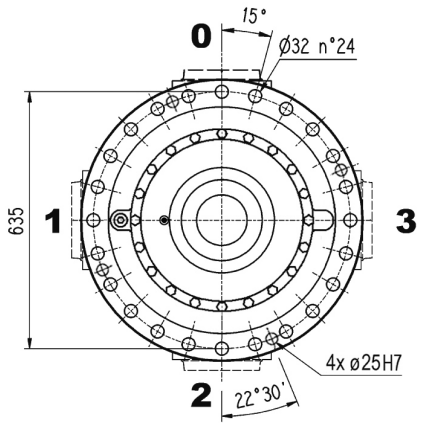
| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **317 R3 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **317 R3 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |
| **317 R4** | 239 | 48 | 15 | — | — | — | 276 | 48 | 17 | — | — | — | 37 | A | 457 | 105 | 65 | 1/4 G | 4 | A | 10 |

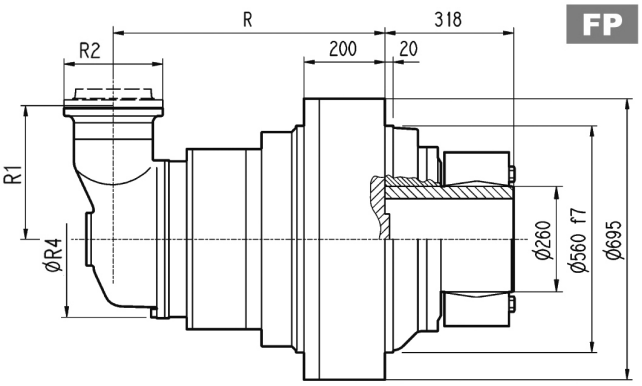
# 317 R

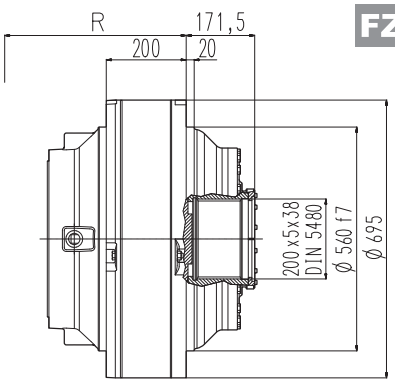


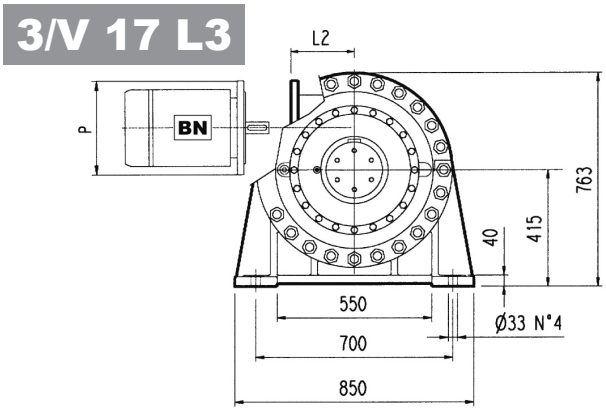



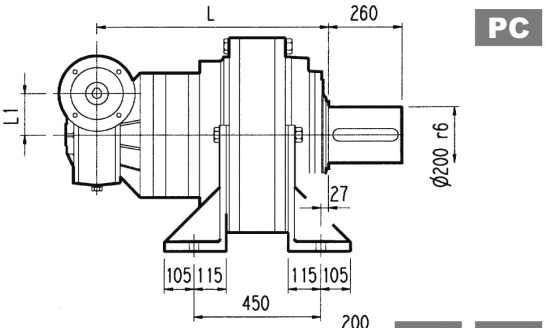



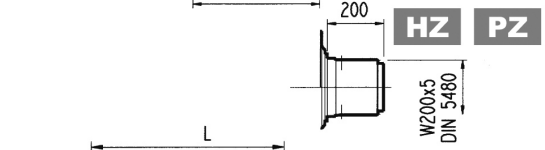

**FP** $M_{2max}$ = 242000 Nm

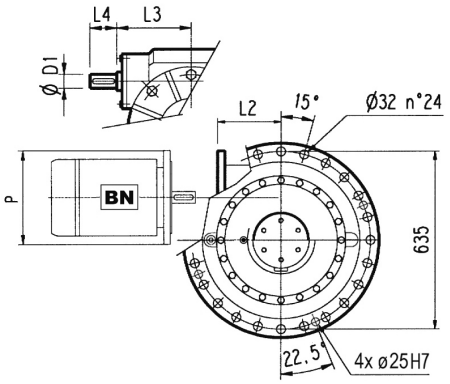
| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| **317 R3 (B)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **317 R3 (C)** | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| **317 R4** | 114 | 300 | 144 | 350 | 144 | 350 | 174 | 400 | — | — | — | — |

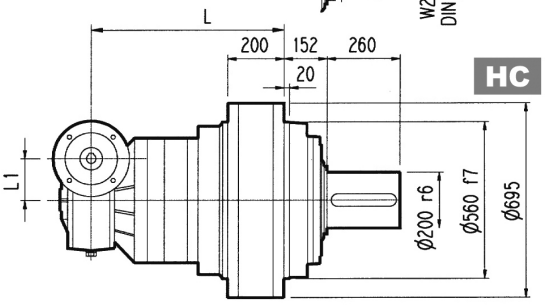
# 3/V 17 L3

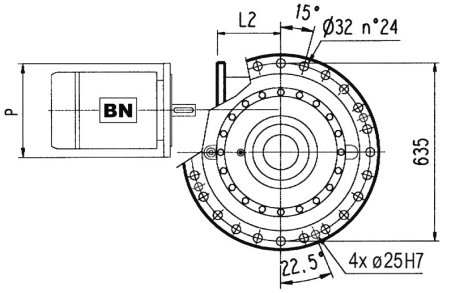


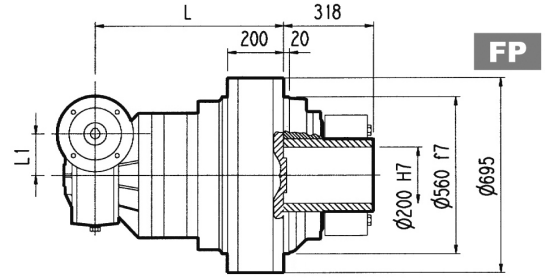



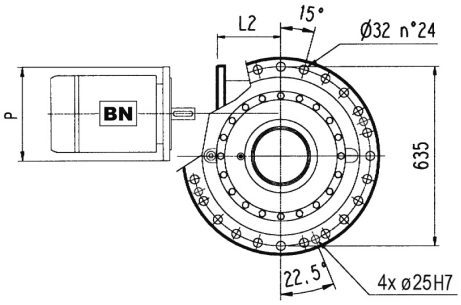



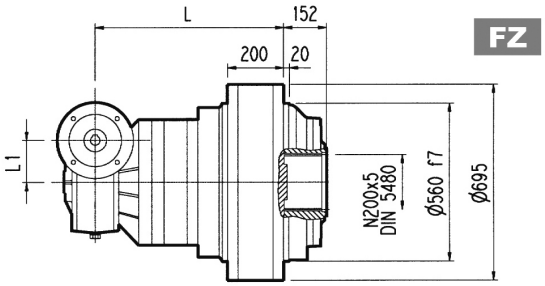



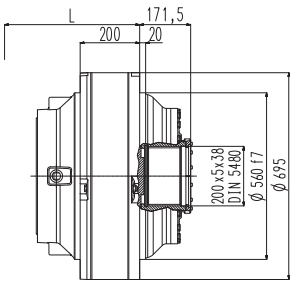



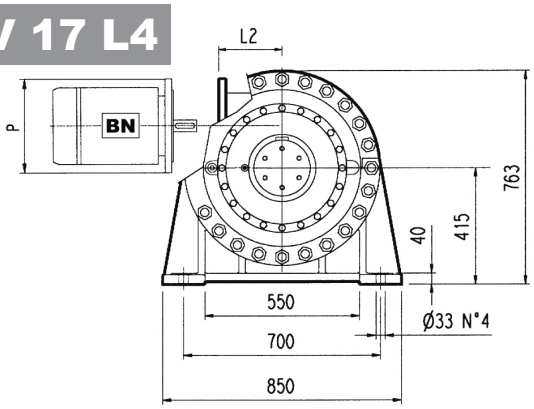



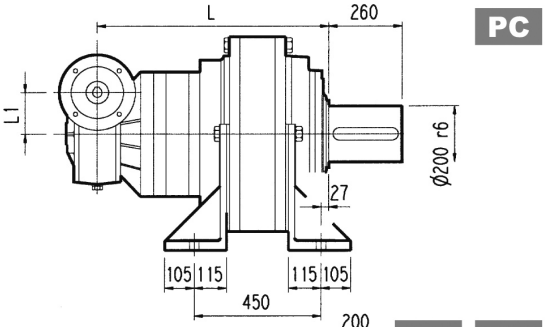

**FP** $M_{2max}$ = 242000 Nm

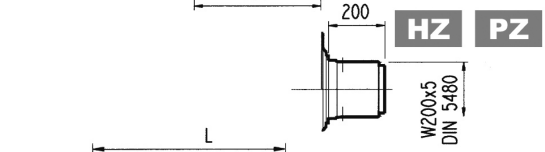
| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 17 L3 | 894 | 745 | 745 | 745 | 250 | 55 | 276 | 110 | 1400 | 1250 | 1200 | 1250 |

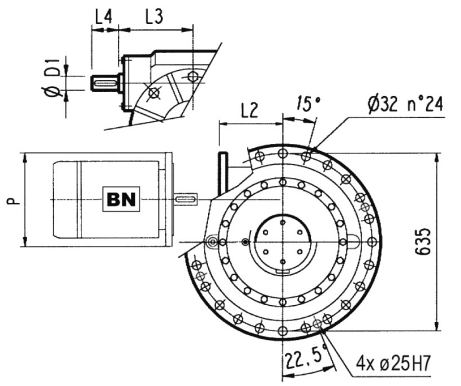
| | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 17 L3 | 531 | 300 | 506 | 350 | 506 | 350 | 531 | 400 | 536 | 450 |

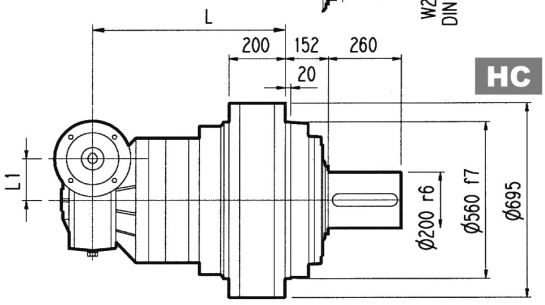
# 3/V 17 L4

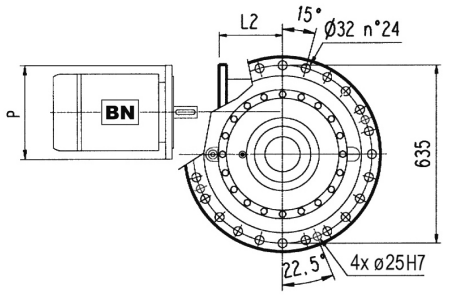


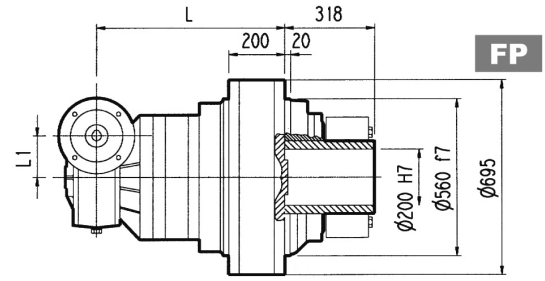



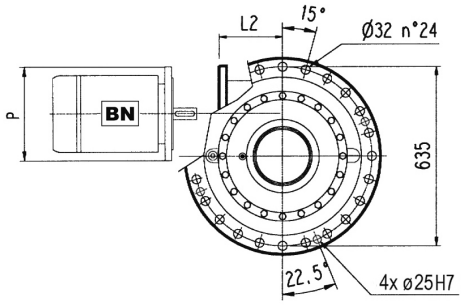



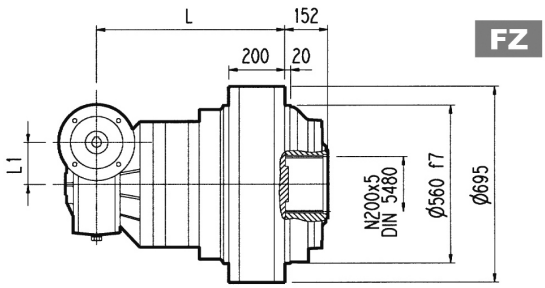



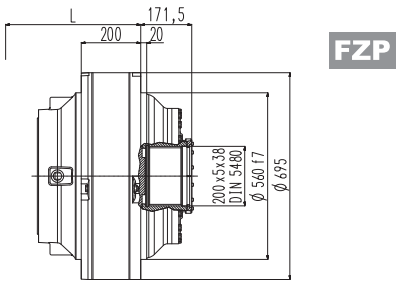



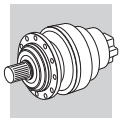




**FP** $M_{2max}$ = 242000 Nm

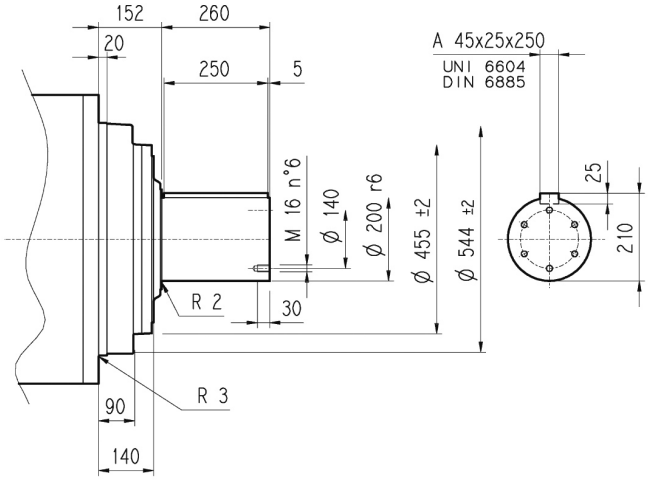
| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 17 L4 | 975 | 823 | 823 | 823 | 185.4 | 40 | 214.5 | 70 | 1250 | 1090 | 1040 | 1090 |

| | P100 | P112 | P132 | | P160 | | P180 | |
|---|---|---|---|---|---|---|---|---|
| | P | P | L2 | P | L2 | P | L2 | P |
| 3/V 17 L4 | 250 | 250 | 217 | 300 | 217 | 350 | 217 | 350 |

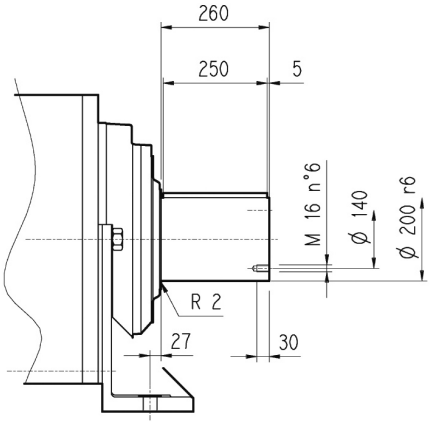


# 317 L | 317 R | 3/V 17 L

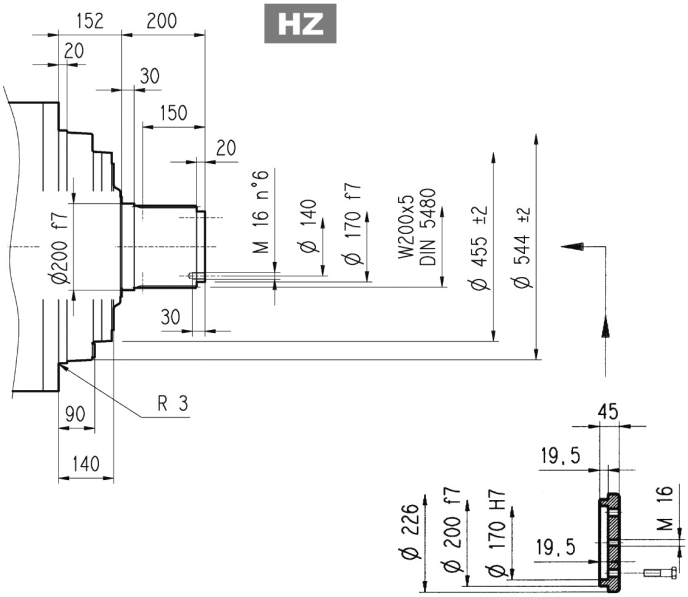
## HC




## PC



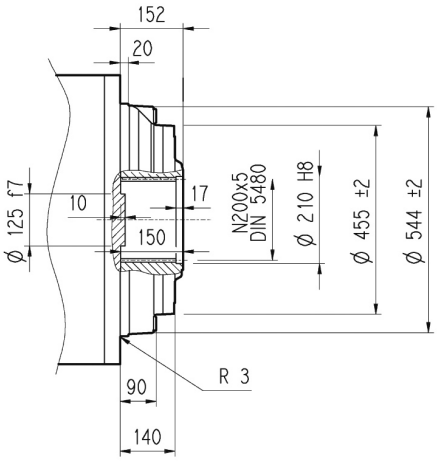

## HZ



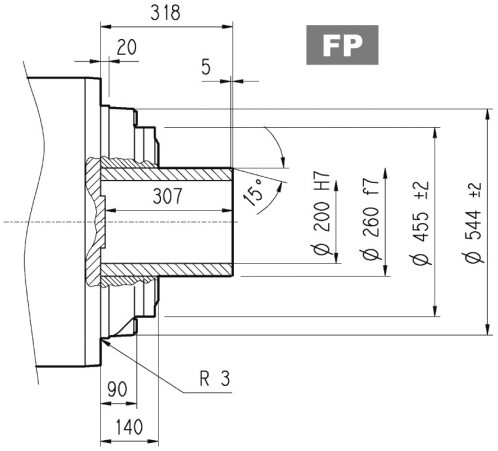




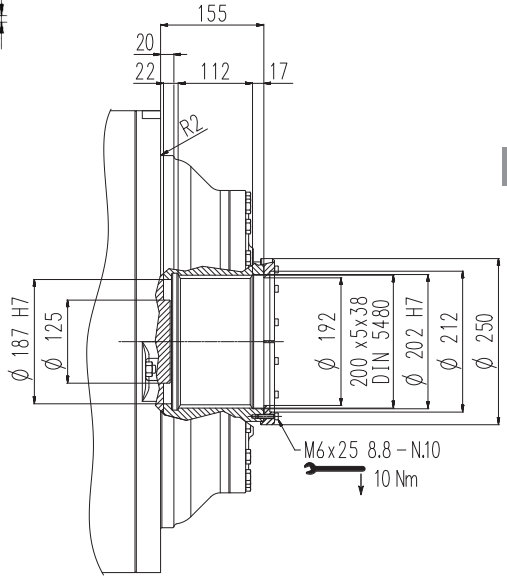
## FZ




## FP



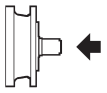

## FZP

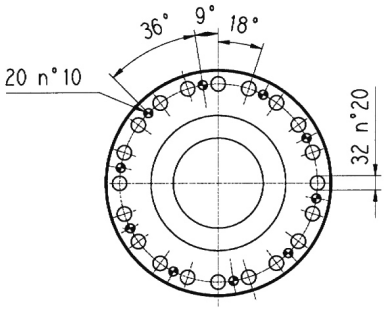


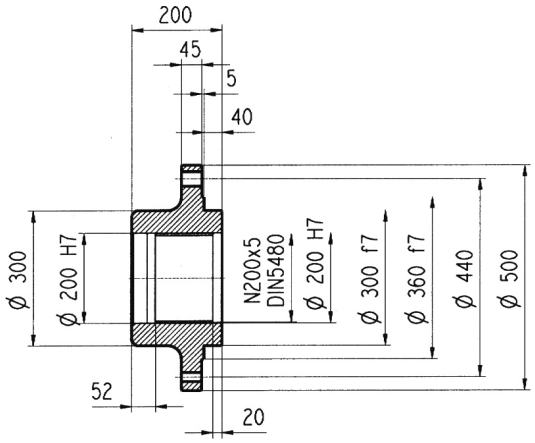

| FP | $M_{2max}$ = 242000 Nm |
|---|---|

## Brida

W0A



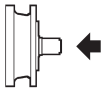


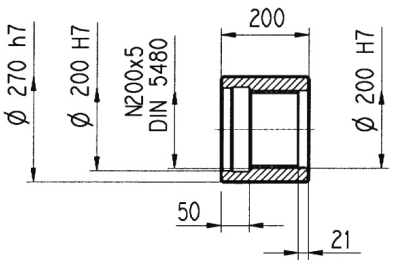




Material: Acero C40

## Manguito cilíndrico

M0A

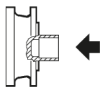


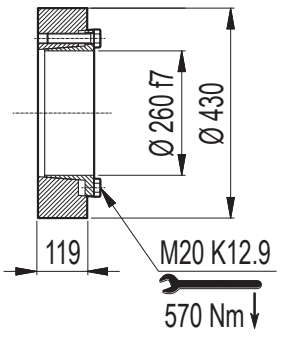


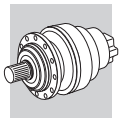

Material: Acero 16CrNi4

## Aro cónico de apriete

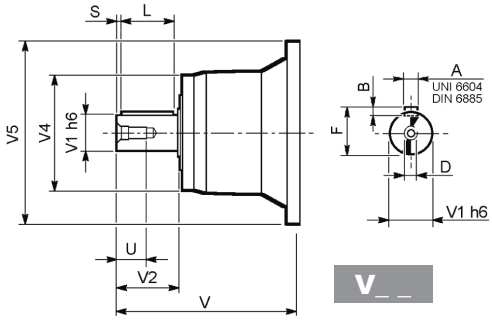
G0A



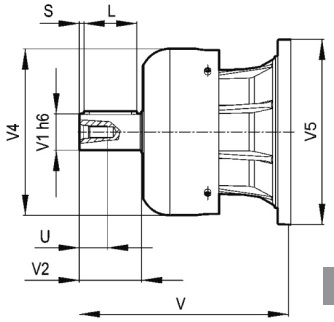




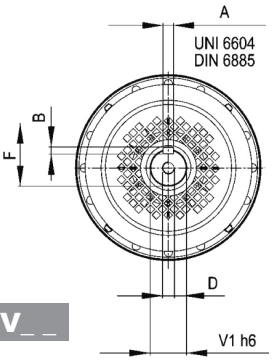
## 317 L 317 R




V_ _

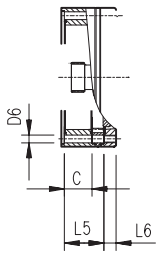


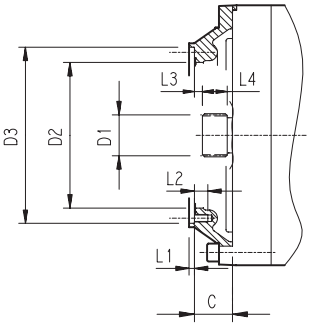

FV_ _

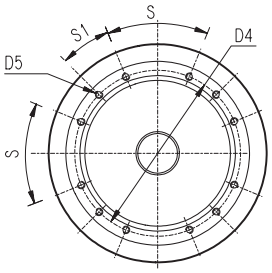



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **317 L2** | **V11B** | 343 | 80 | 130 | 200 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 451 | 80 | 130 | 347.5 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **317 L3** | **V07B** | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV07B** | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **V07A** | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV07A** | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **317 L4** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| **317 R3 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 40 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **317 R4** | **V05B** | 239 | 48 | 82 | 155 | 245 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |
| | **FV05B** | 276 | 48 | 82 | 219.5 | 244 | 14 | 9 | 51.5 | 70 | 6 | M16 | 36 |

## 317 L 317 R

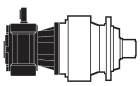


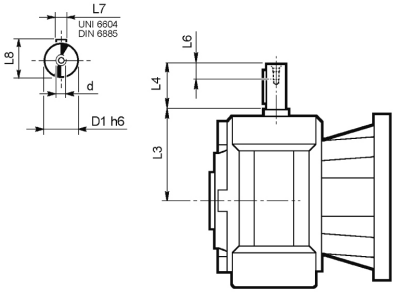




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **317 L1** | **V9AF** | 181 | 120x3 DIN 5480 | 365 | 390 g7 | 415 | M16 n°18 | — | 4 | 30 | 3 | 65 | — | — | 20° | 20° | F |
| **317 L2** | **V9AD** | 75 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 9.5 | 40 | — | — | 60° | 30° | D |
| **317 L3** | **V9AB** | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **317 L4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | — | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **317 R4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M10 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **317 R3 (B) (C)** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |

## 3/V 17 L





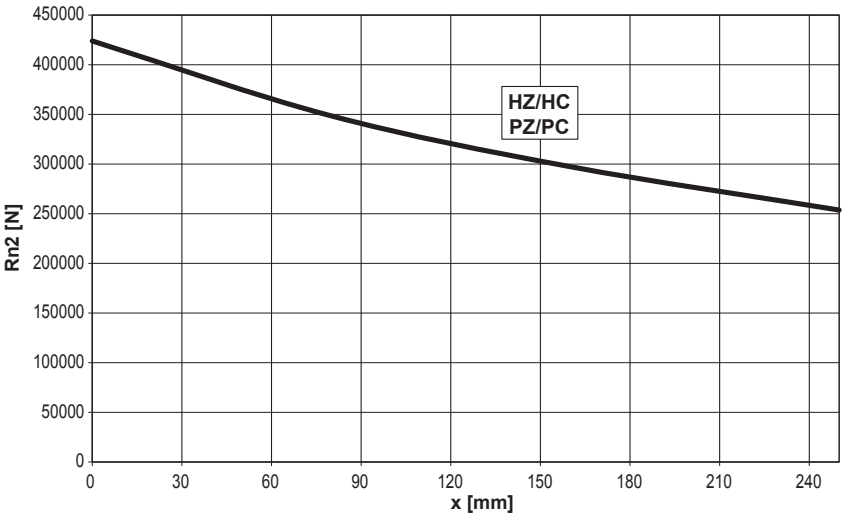

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 17 L3_HS** | 55 | 276 | 110 | 40 | 16 | 59 | M16 |
| **3/V 17 L4_HS** | 40 | 214.5 | 70 | 20 | 12 | 43 | M8 |

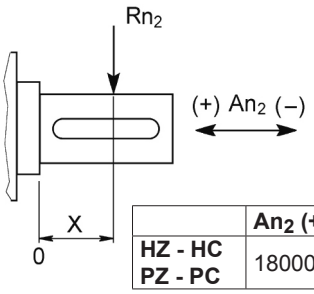


Bonfiglioli Riduttori

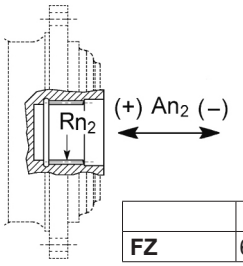
# 317 L | 317 R | 3/V 17 L

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



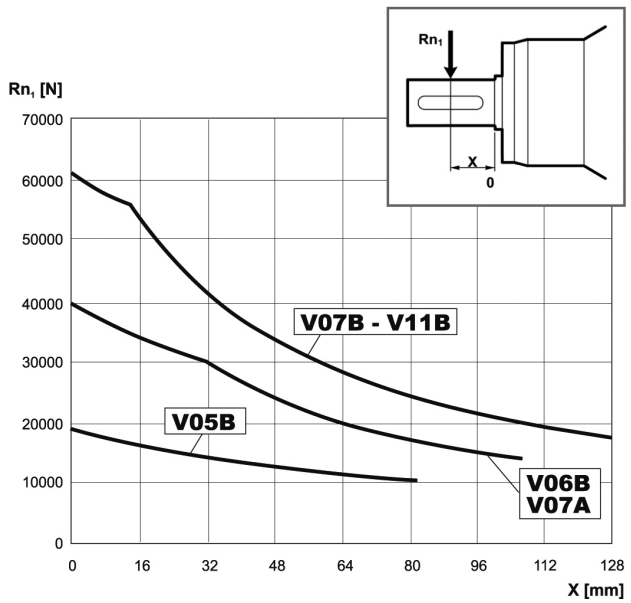

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 180000 | 150000 |

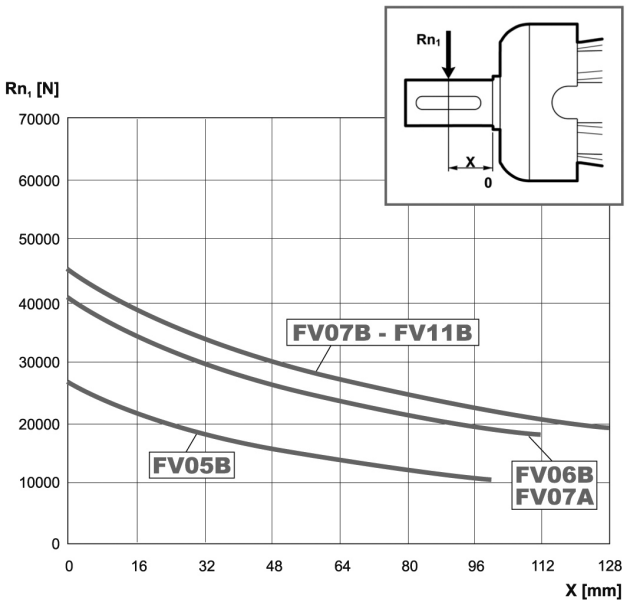



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 69624 | 69624 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.50** | **1.50** | **1.23** | **1.00** | **0.62** | **0.50** |

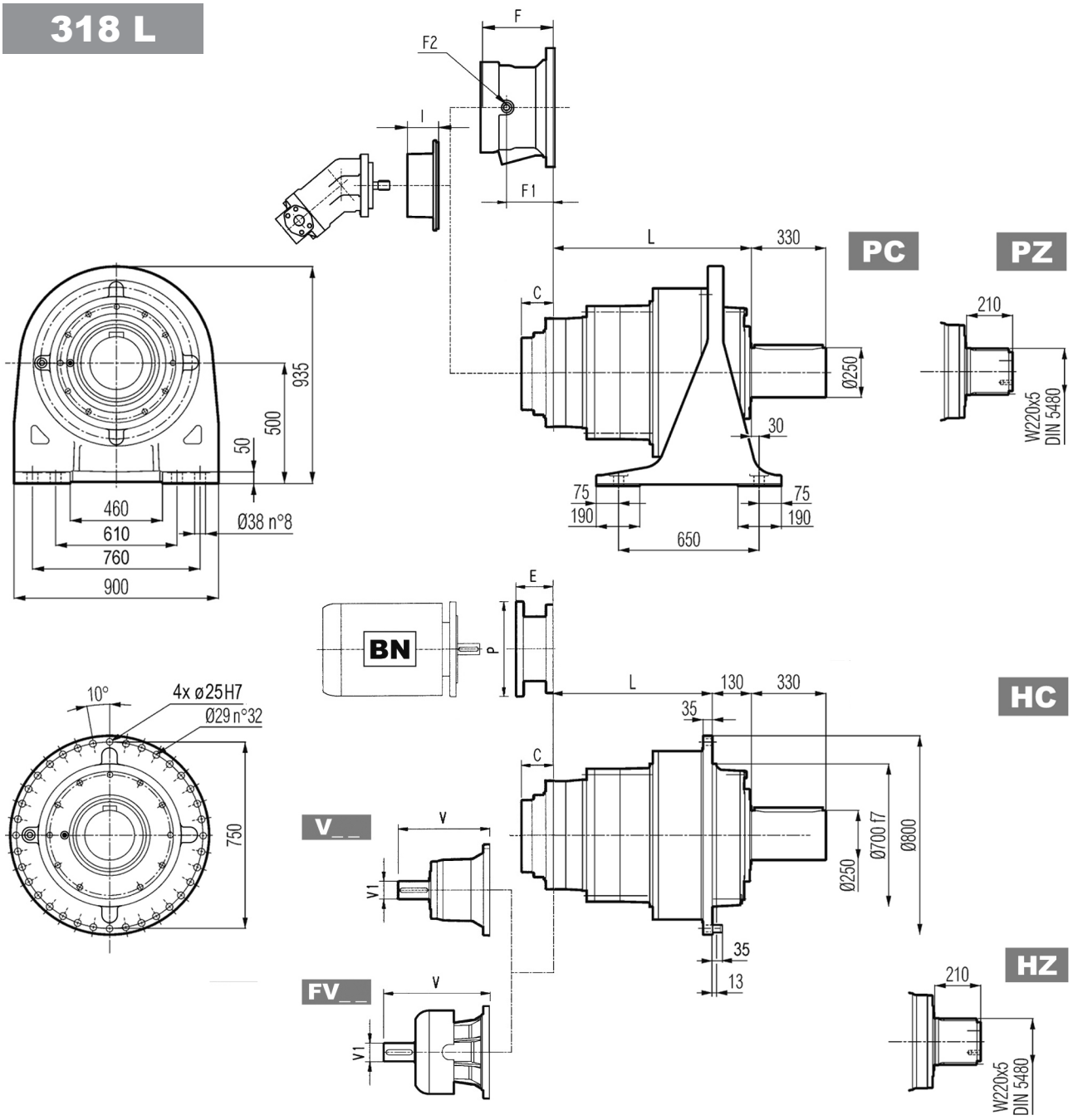
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

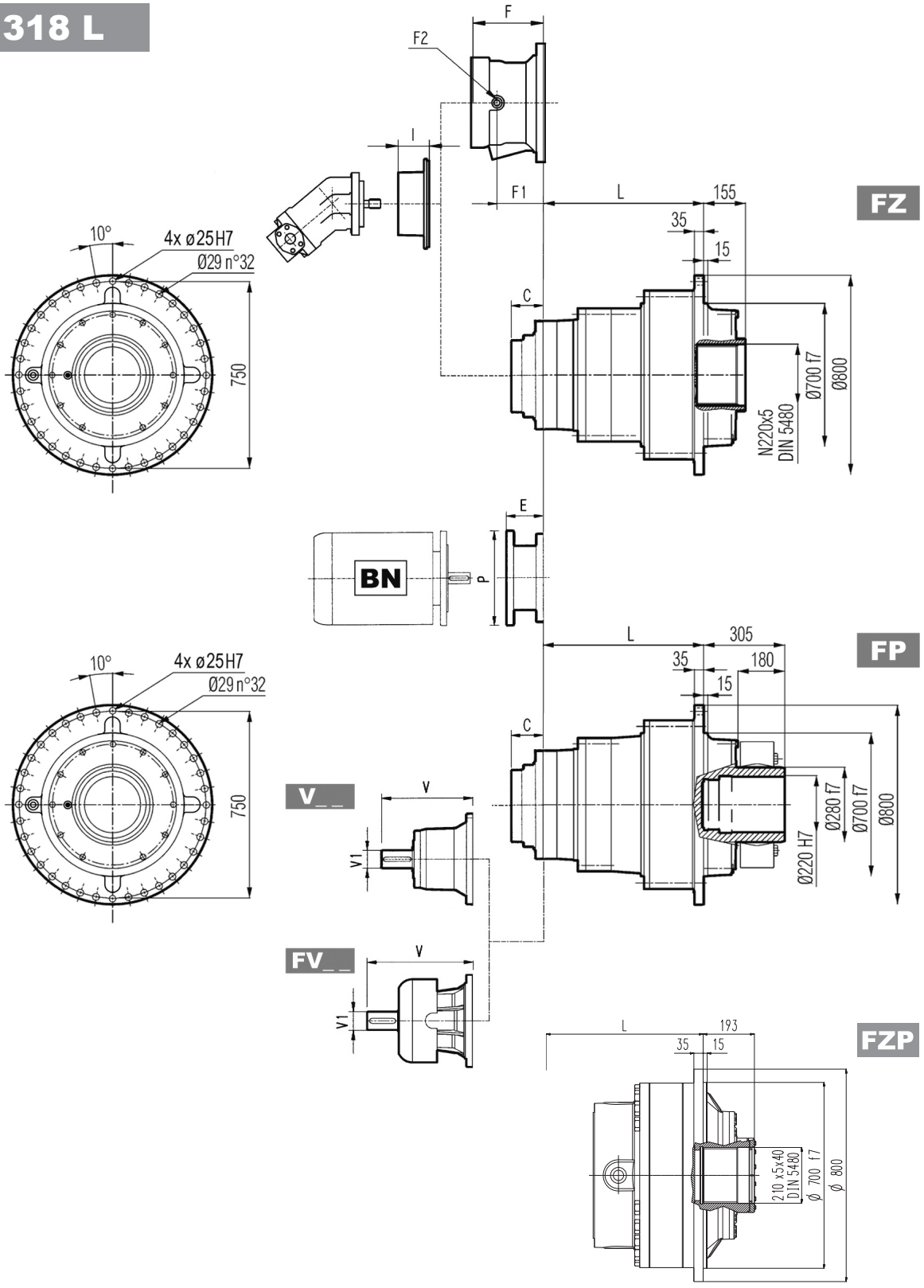
# 318 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **318 L1** | 332 | 202 | 202 | 202 | 1250 | 950 | 800 | 830 |
| **318 L2** | 677 | 547 | 547 | 547 | 1500 | 1200 | 1050 | 1080 |
| **318 L3** | 889 | 759 | 759 | 759 | 1600 | 1300 | 1150 | 1180 |
| **318 L4** | 1022 | 892 | 892 | 892 | 1650 | 1350 | 1200 | 1230 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **318 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 208 | G | | — | — | — | — | — | — |
| **318 L2** | 556 | 120 | 125 | — | — | — | — | — | — | — | — | — | 116 | E | | — | — | — | — | — | — |
| **318 L3** | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | 81 | D | 457 | 232 | 185 | 1/4 G | 6 | B | 28 |
| **318 L4** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |

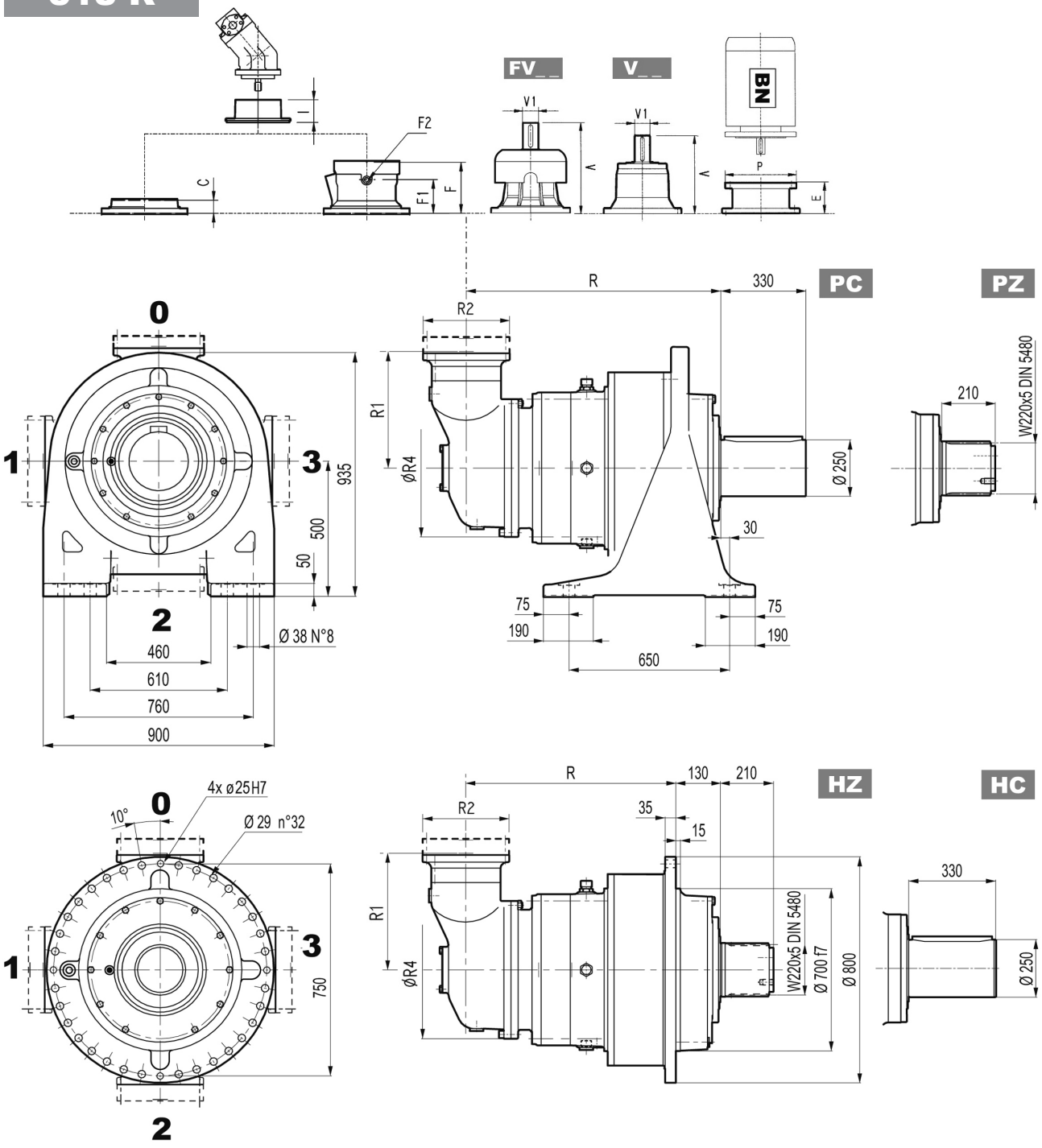
# 318 L




**FP** $M_{2max}$ = 322000 Nm

| | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P |
| **318 L3** | — | — | 267 | 400 | 297 | 450 | 297 | 550 |
| **318 L4** | 195 | 350 | 186 | 400 | 216 | 450 | 215 | 550 |

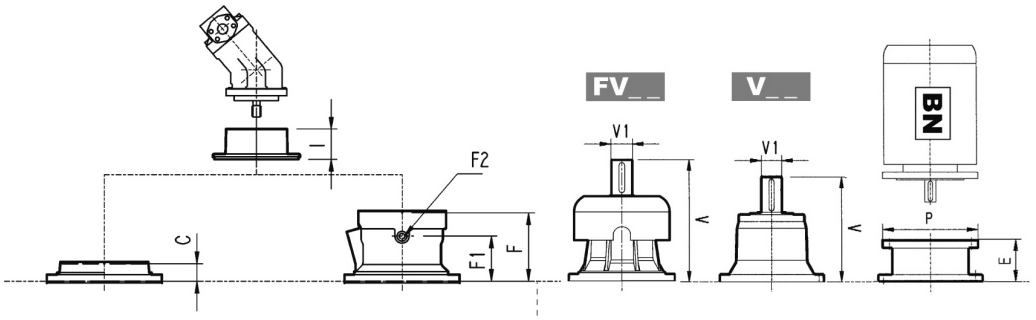
# 318 R

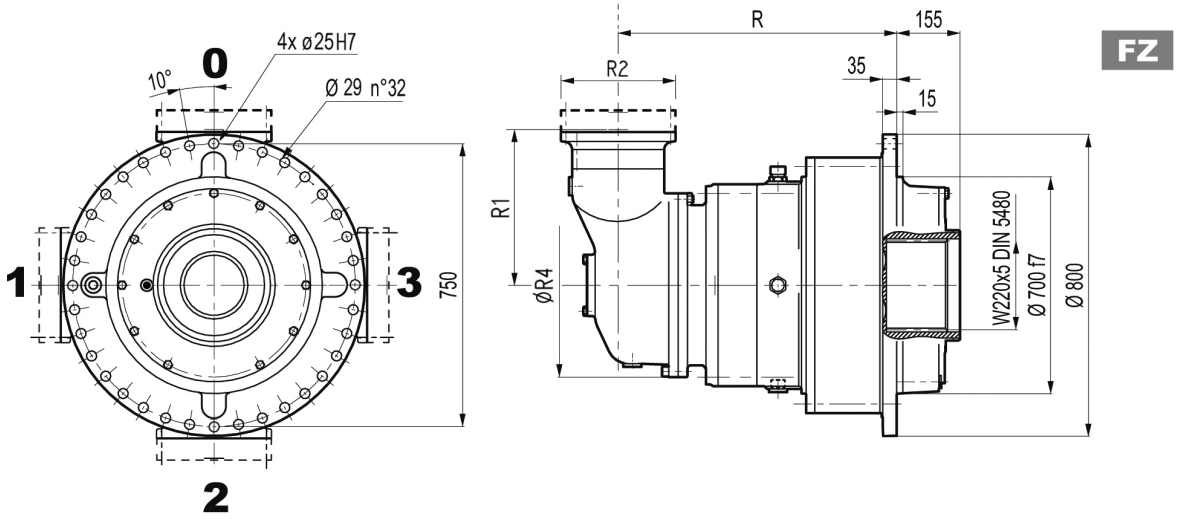


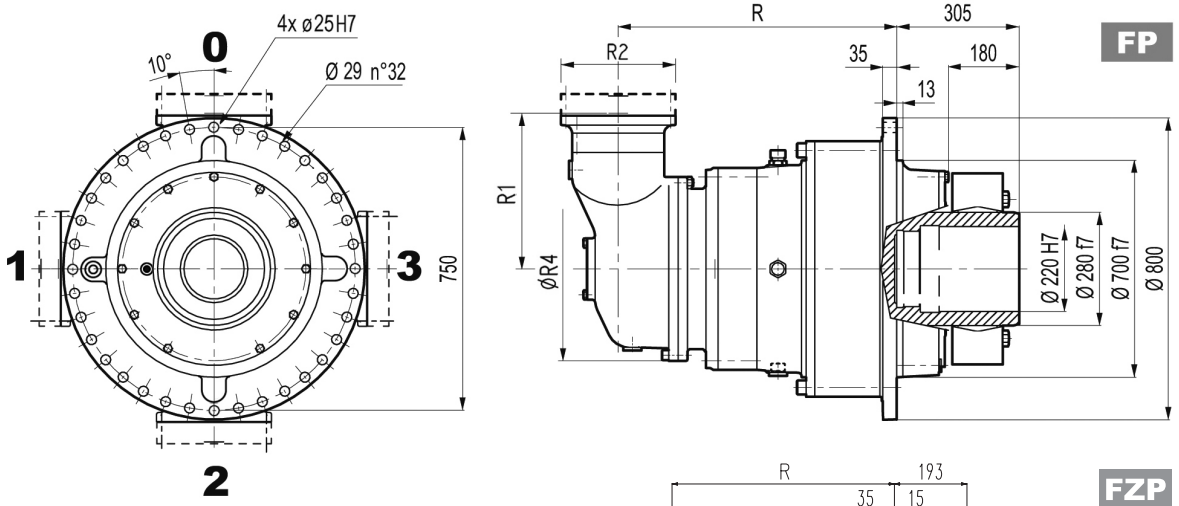

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **318 R4 (B)** | 1115 | 985 | 985 | 985 | 345 | 292 | 400 | 1720 | 1420 | 1270 | 1300 |
| **318 R4 (C)** | 1115 | 985 | 985 | 985 | 390 | 292 | 480 | 1730 | 1430 | 1280 | 1310 |

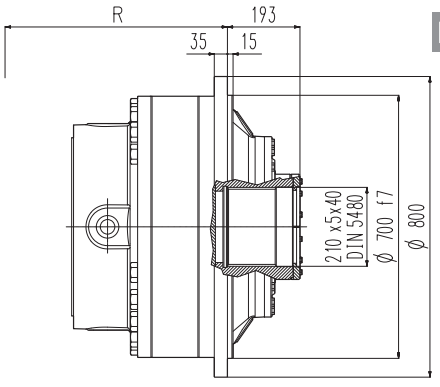
| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **318 R4 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **318 R4 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |

# 318 R



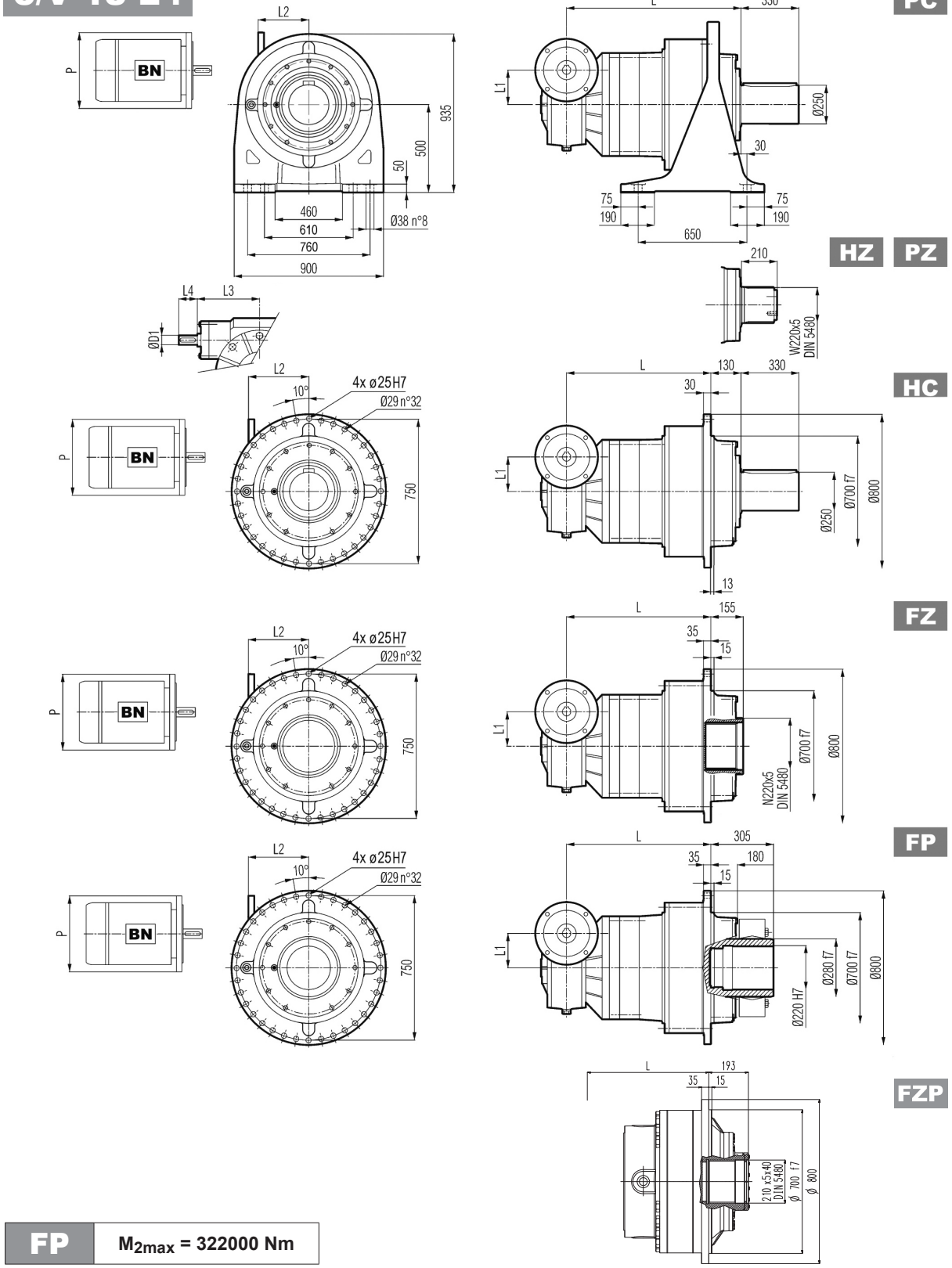




**FP** $M_{2max}$ = 322000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| 318 R4 (B) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| 318 R4 (C) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |

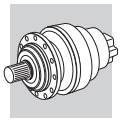
# 3/V 18 L4

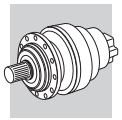



**FP** $M_{2max}$ = 322000 Nm

| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 18 L4 | 1114 | 984 | 984 | 984 | 210 | 48 | 230 | 110 | 1810 | 1510 | 1360 | 1390 |

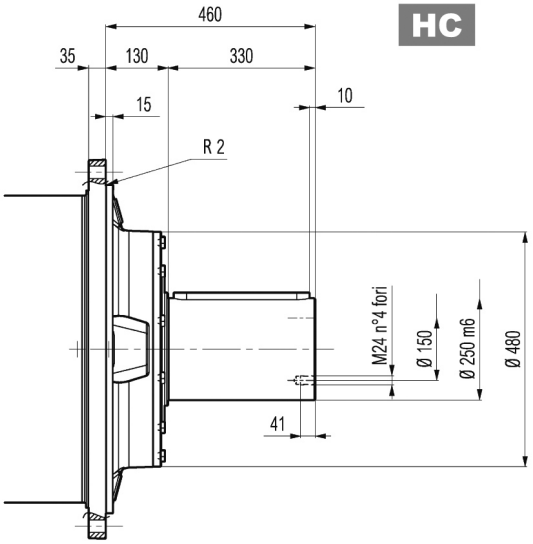
| | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 18 L4 | 485 | 300 | 460 | 350 | 460 | 350 | 485 | 400 | 490 | 450 |



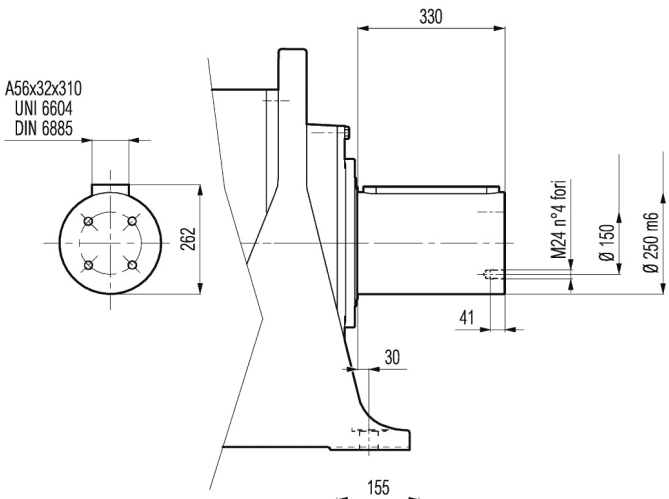


# 318 L | 318 R | 3/V 18 L4

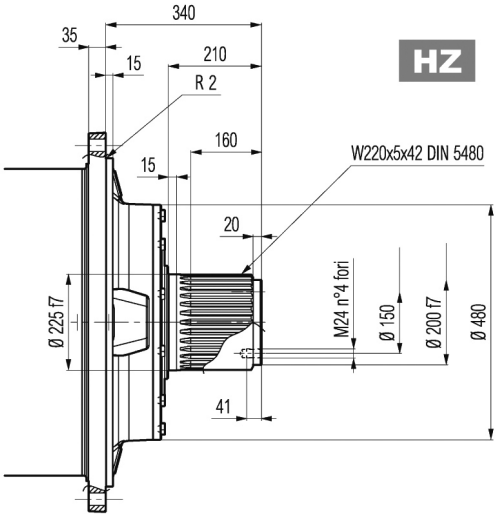
## HC



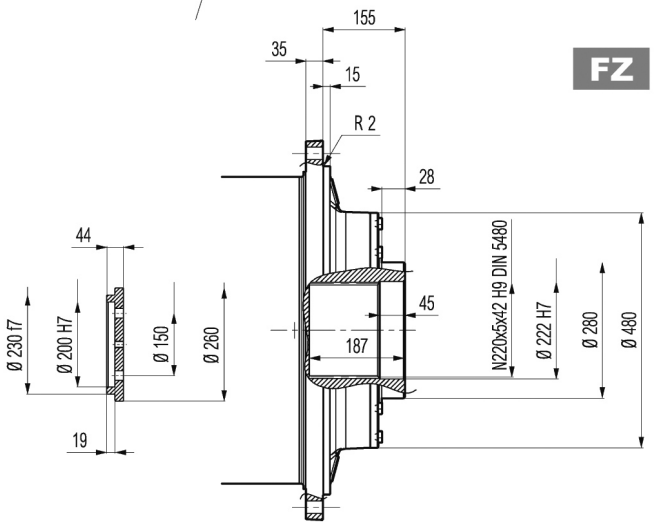

## PC



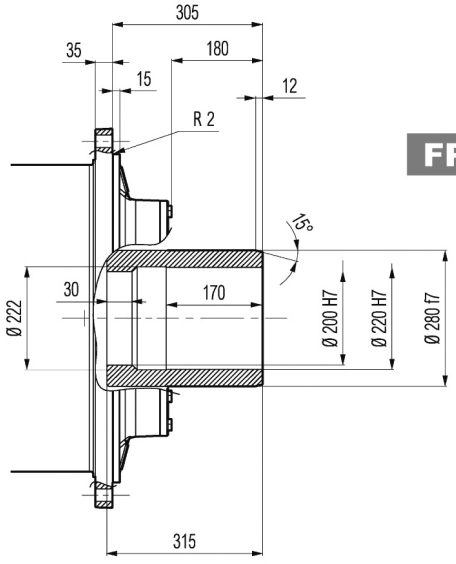

## HZ



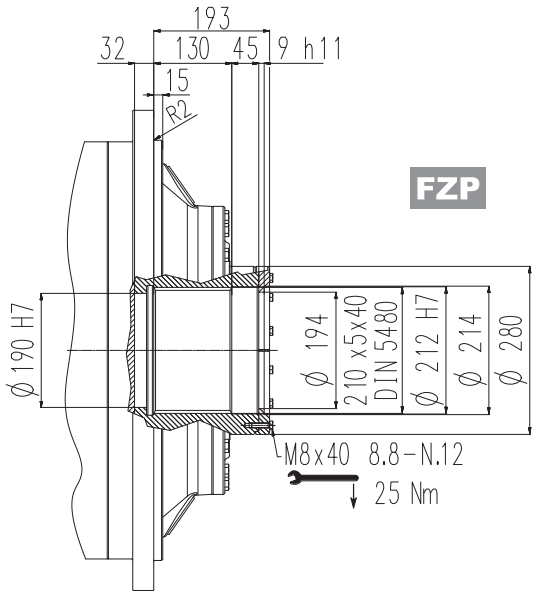

## FZ




## FP




## FZP



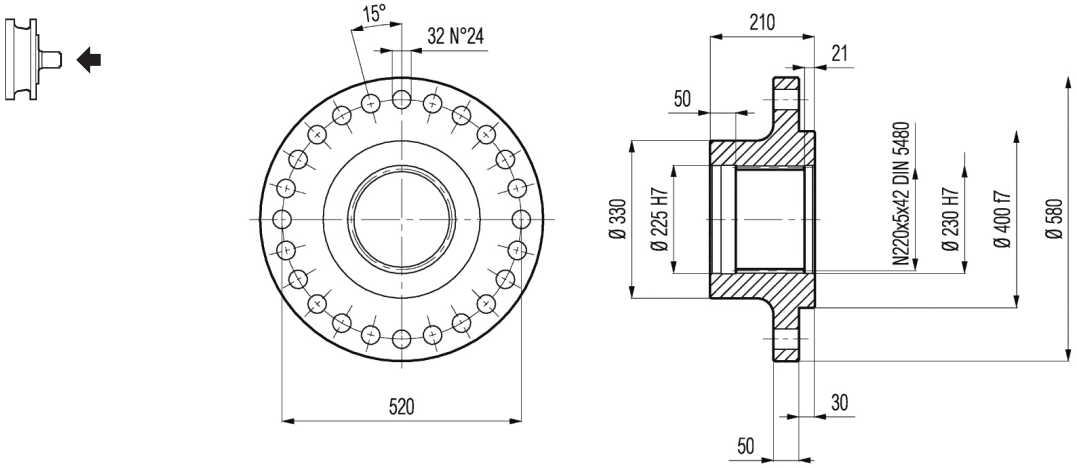

**FP** | $M_{2max}$ = 322000 Nm



Bonfiglioli Riduttori

## Brida

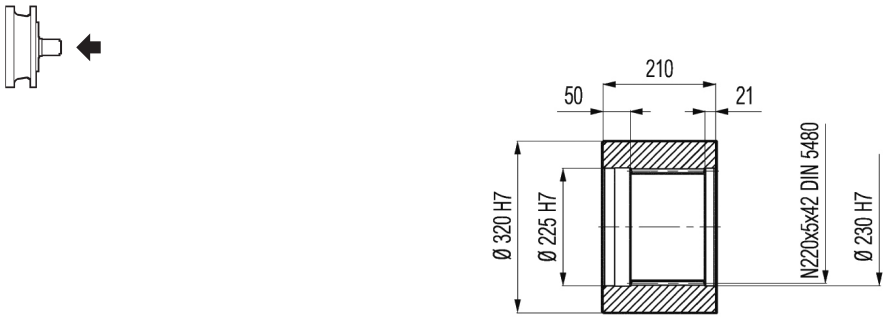
W0A




Material: Acero C40

## Manguito cilíndrico

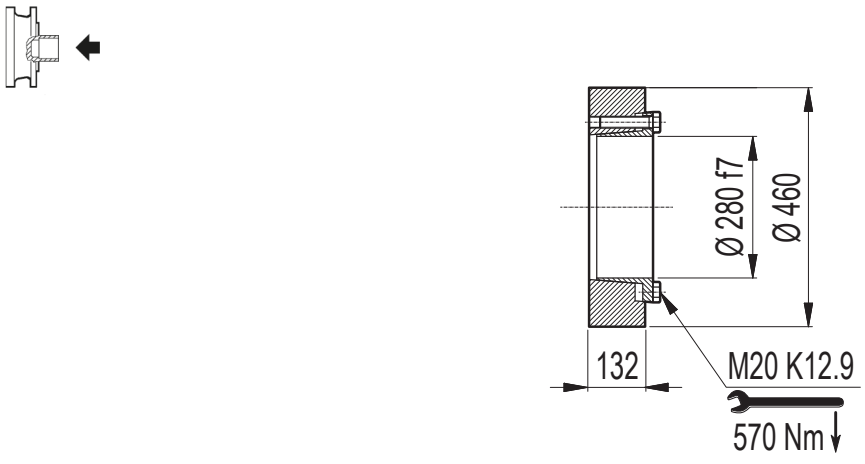
M0A

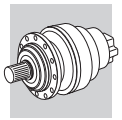



Material: Acero C40

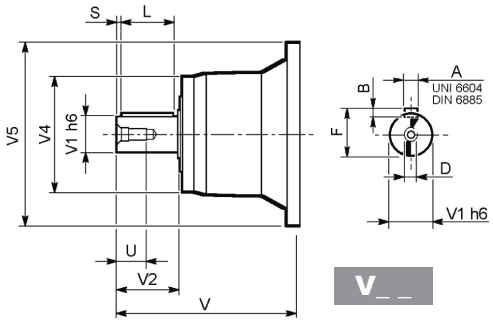
## Aro cónico de apriete

G0A

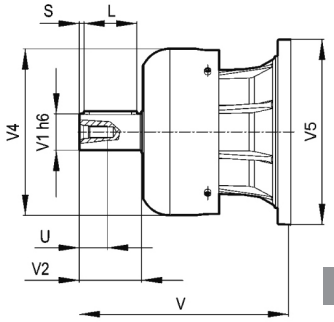




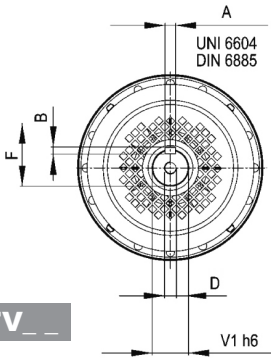
## 318 L 318 R




V_ _

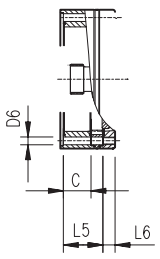


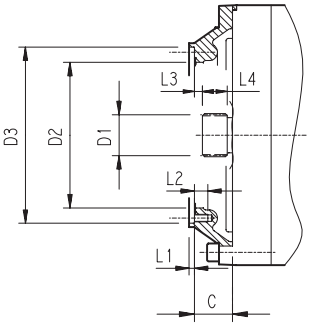

FV_ _

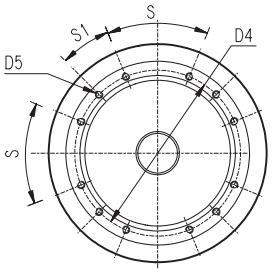



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **318 L2** | **V15B** | 523 | 120 | 210 | 320 | 542 | 32 | 18 | 127 | 180 | 15 | M24 | 50 |
| **318 L3** | **V11B** | 348 | 80 | 130 | 200 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 456 | 80 | 130 | 347.5 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **318 L4** | **V07B** | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV07B** | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **V07A** | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV07A** | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **318 R4 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |

## 318 L 318 R

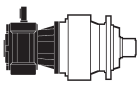


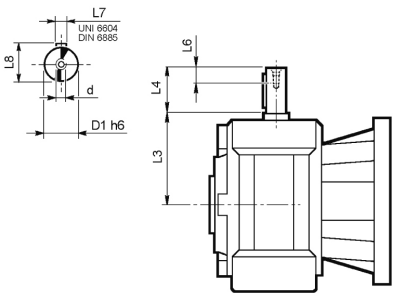




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **318 L1** | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | | | | | | | | |
| **318 L2** | **V9AE** | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n° 18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| **318 L3** | **V9AD** | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n° 8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |
| **318 L4** | **V9AB** | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M16 n° 12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **318 R4 (B) (C)** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n° 10 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |

## 3/V 18 L4

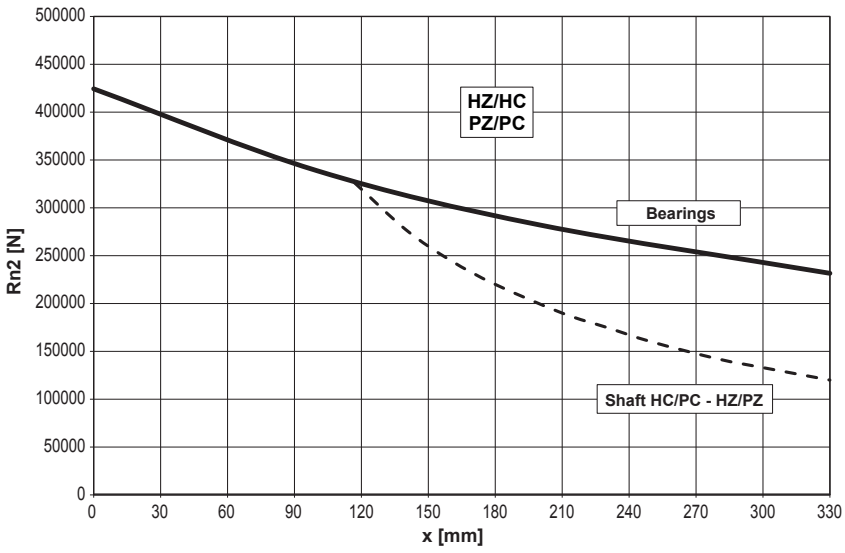


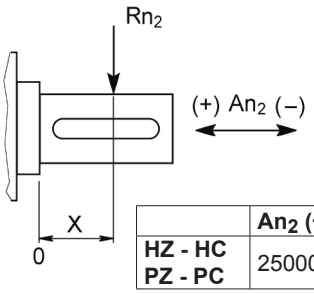



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 18 L4_HS** | 48 | 230 | 110 | 40 | 14 | 51.5 | M16 |

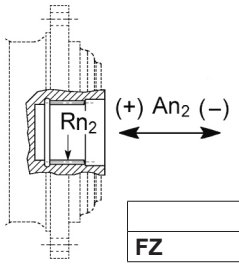
# 318 L | 318 R | 3/V 18 L4

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



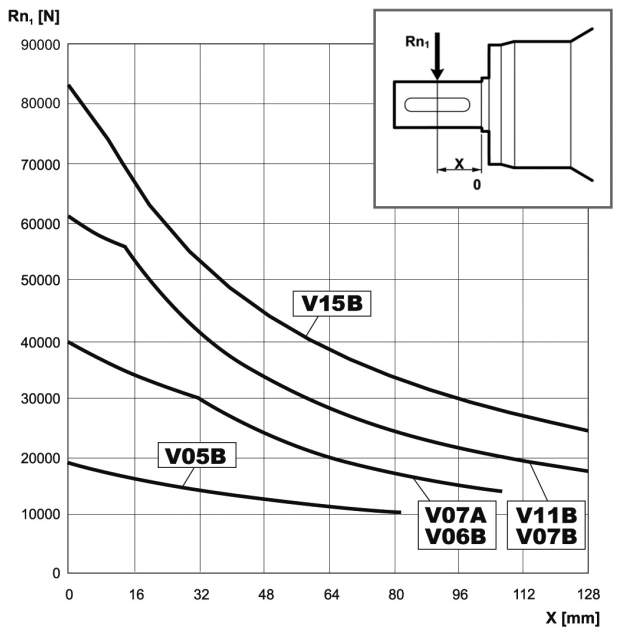

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 250000 | 225000 |

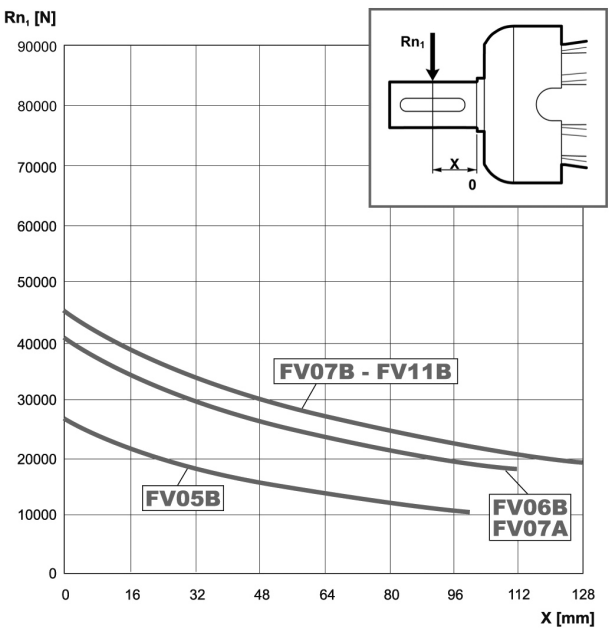



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 92832 | 92832 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HC - PC | **1.96** | **1.52** | **1.23** | **1.00** | **0.62** | **0.50** |
| | | HZ - PZ | **1.15** | **1.00** | **1.00** | **1.00** | **0.62** | **0.50** |

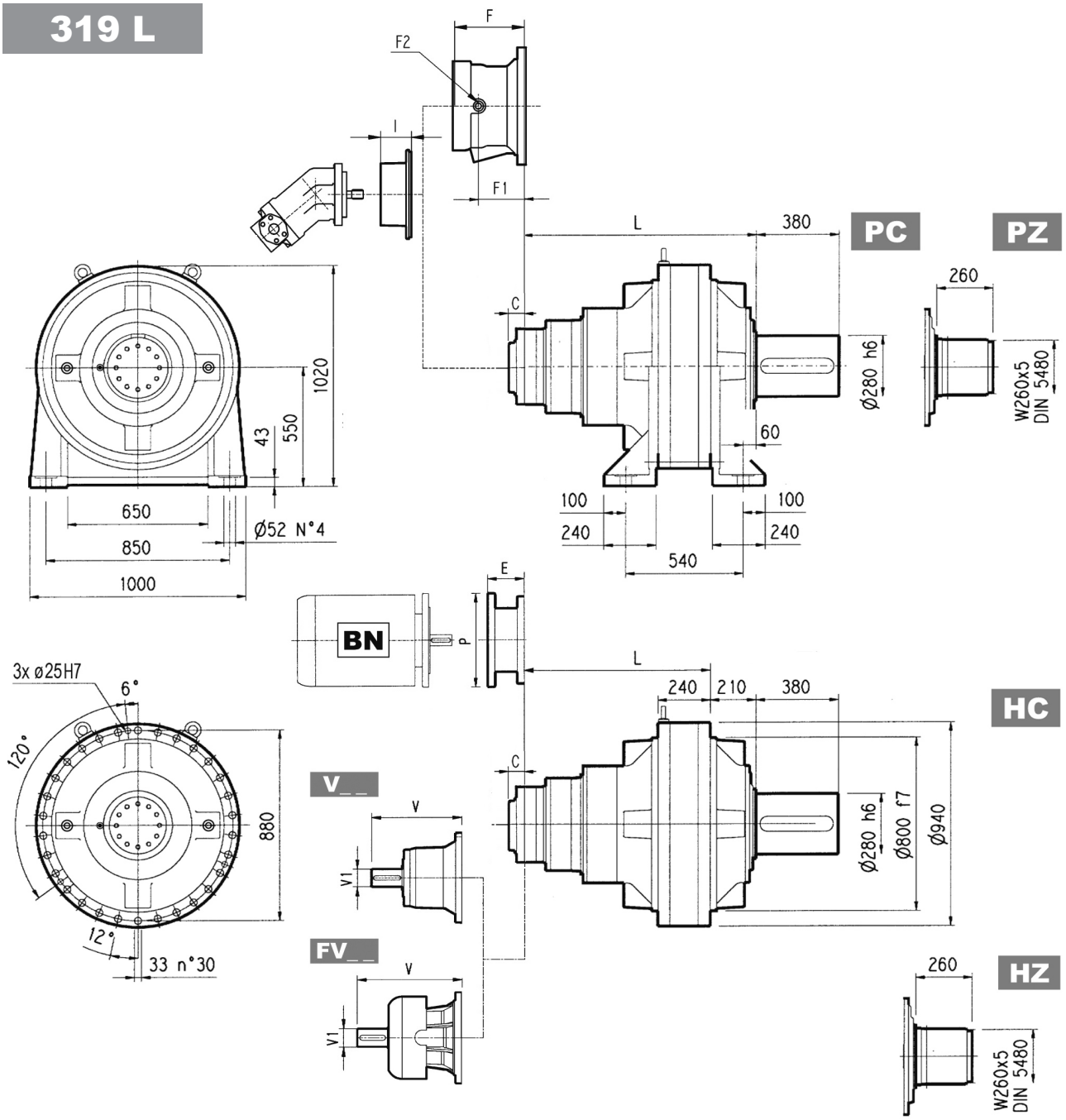
Cargas radiales admisibles en el eje de entrada para un valor d $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

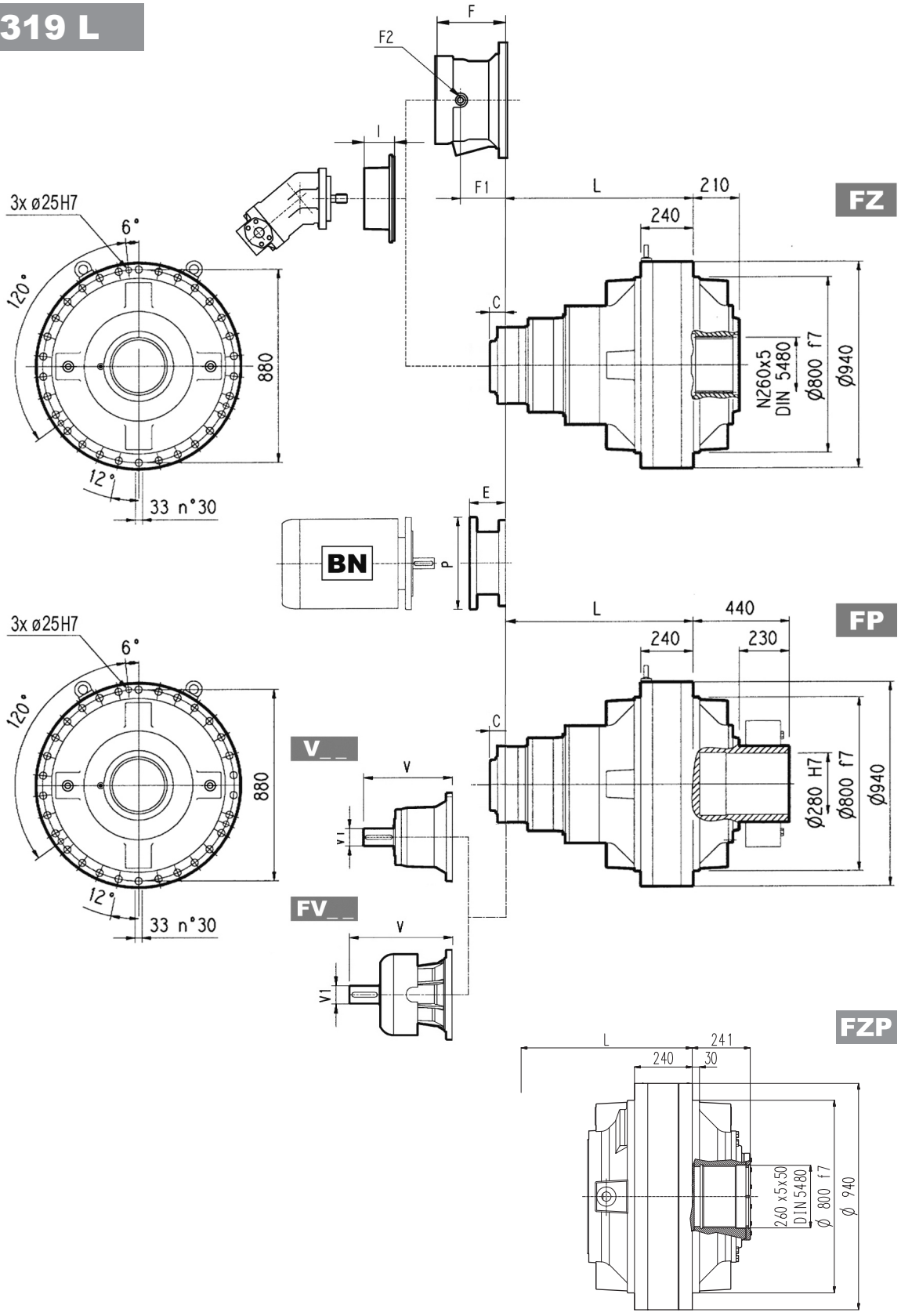
# 319 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **319 L1** | 395 | 185 | 185 | 185 | 2100 | 1800 | 1700 | 1700 |
| **319 L2** | 778 | 568 | 568 | 568 | 2350 | 2050 | 1950 | 1950 |
| **319 L3** | 990 | 780 | 780 | 780 | 2435 | 2135 | 2035 | 2035 |
| **319 L4** | 1123 | 913 | 913 | 913 | 2480 | 2180 | 2080 | 2080 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **319 L1** | — | — | — | — | — | — | — | — | — | — | — | — | 245 | G | | — | — | — | — | — | — |
| **319 L2** | 556 | 120 | 125 | — | — | — | — | — | — | — | — | — | 116 | E | | — | — | — | — | — | — |
| **319 L3** | 348 | 80 | 55 | — | — | — | 456 | 80 | 85 | — | — | — | 81 | D | 457 | 232 | 185 | 1/4 G | 6 | B | 28 |
| **319 L4** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | | 201 | 153 | 1/4 G | 6 | B | 28 |

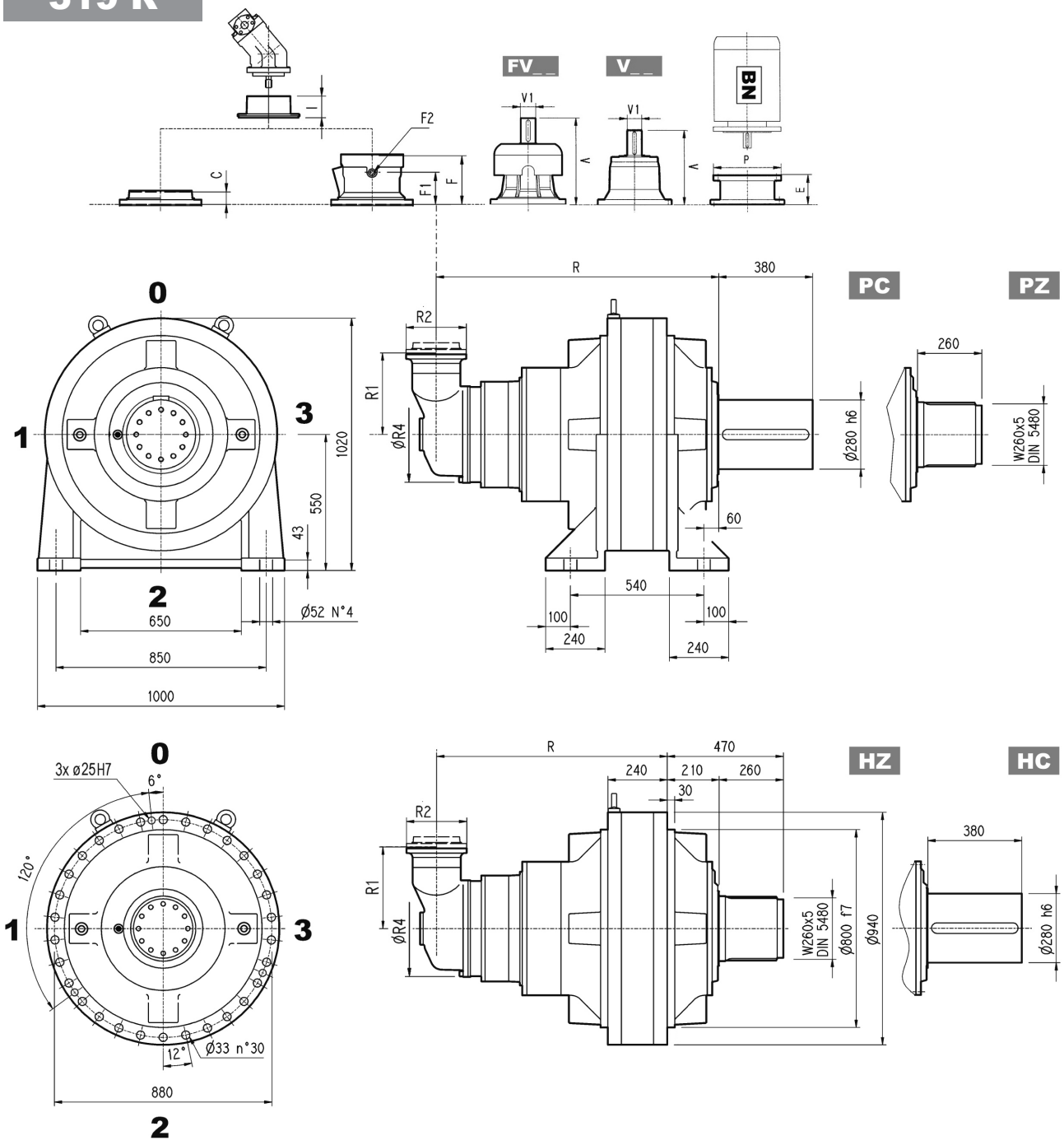
# 319 L




**FP** | **$M_{2max}$ = 480000 Nm**

| | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P |
| **319 L3** | — | — | 267 | 400 | 297 | 450 | 297 | 550 |
| **319 L4** | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |

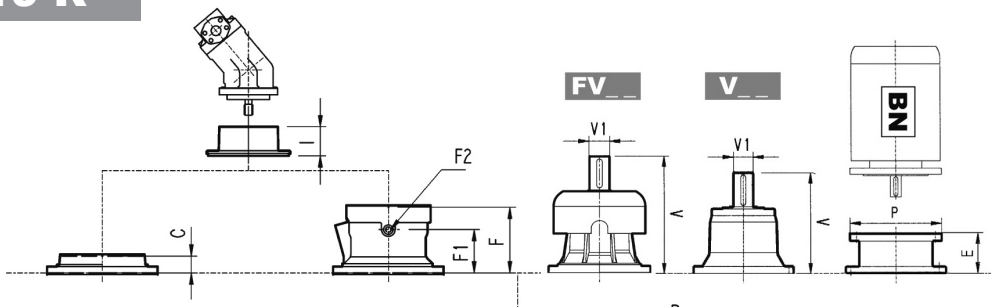
# 319 R



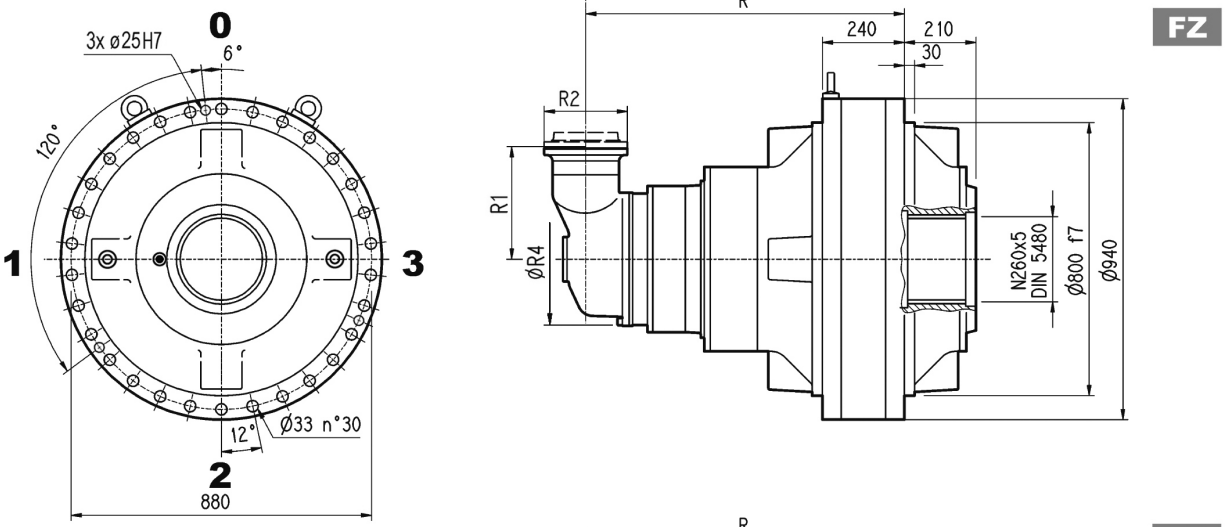

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **319 R4 (B)** | 1215 | 1005 | 1005 | 1005 | 345 | 292 | 400 | 2560 | 2260 | 2160 | 2160 |
| **319 R4 (C)** | 1215 | 1005 | 1005 | 1005 | 390 | 292 | 480 | 2580 | 2280 | 2180 | 2180 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **319 R4 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **319 R4 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |

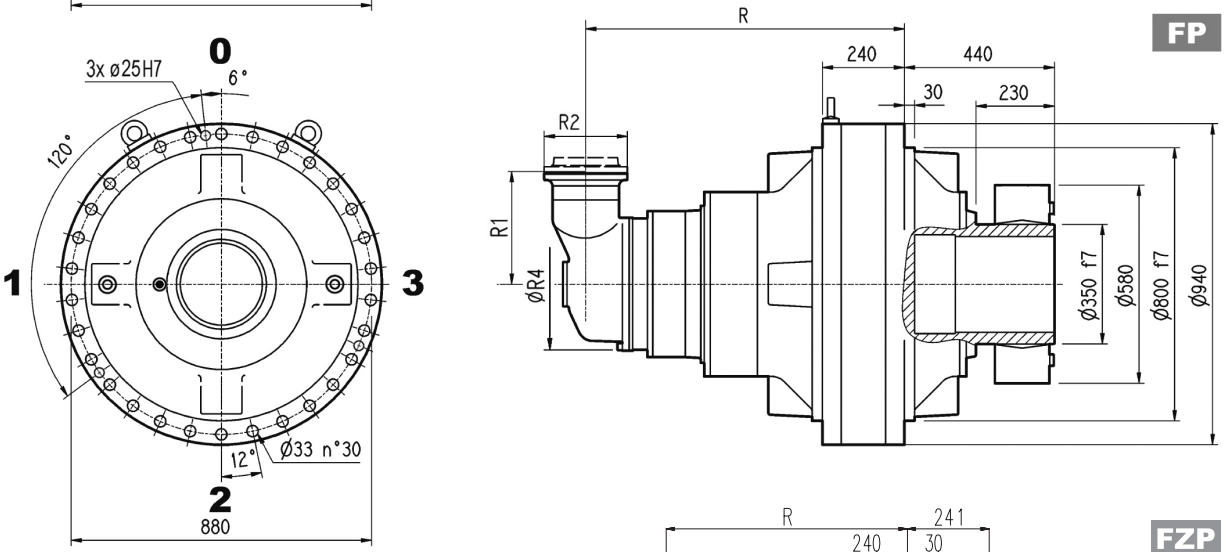
# 319 R



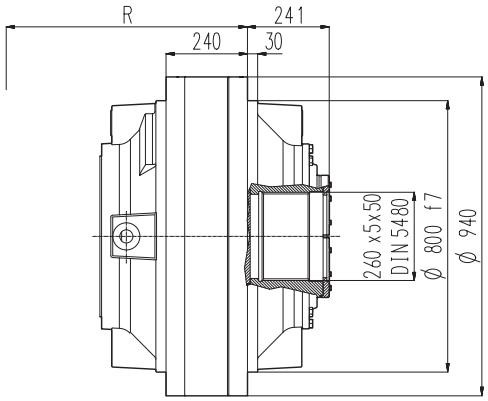

FZ




FP



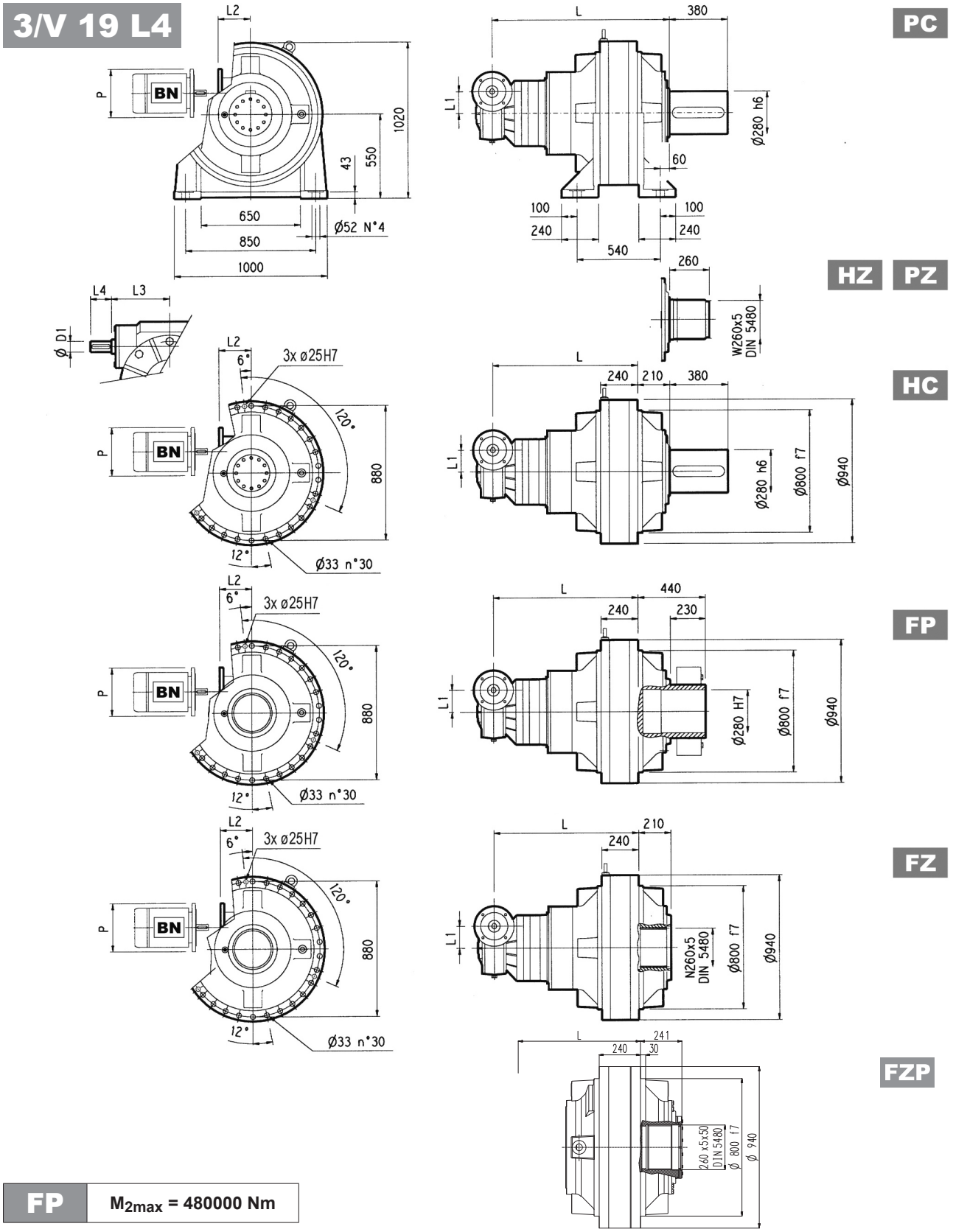

FZP




**FP** $M_{2max}$ = 480000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| 319 R4 (B) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| 319 R4 (C) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |

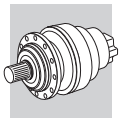
# 3/V 19 L4




**FP** $M_{2max}$ = 480000 Nm

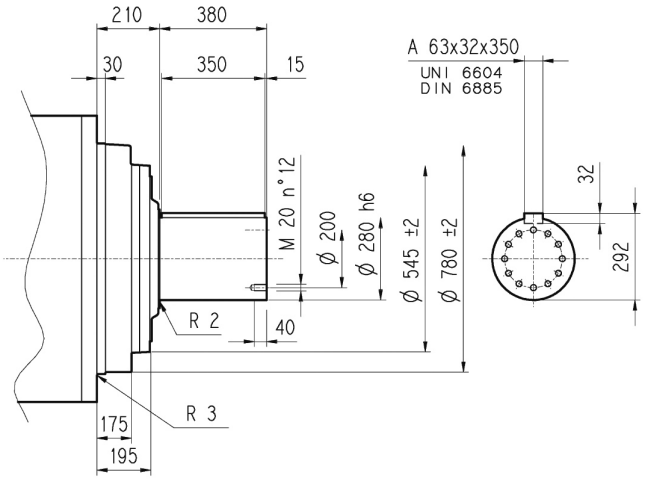
| | L | | | | L1 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 19 L4 | 1210 | 1000 | 1000 | 1000 | 210 | 48 | 230 | 110 | 2650 | 2350 | 2250 | 2250 |

| | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 19 L4 | 485 | 300 | 460 | 350 | 460 | 350 | 485 | 400 | 490 | 450 |

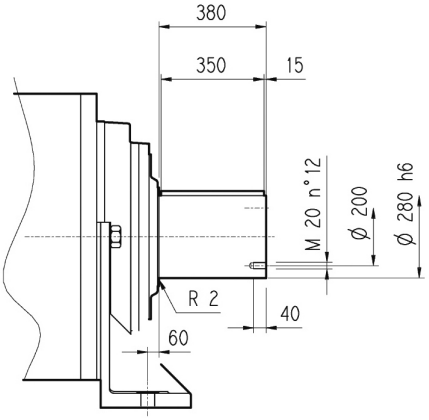


# 319 L | 319 R | 3/V 19 L4

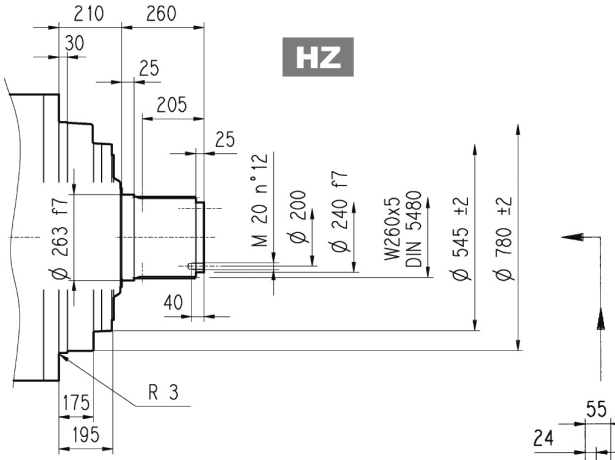
## HC

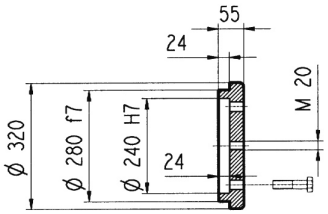



## PC

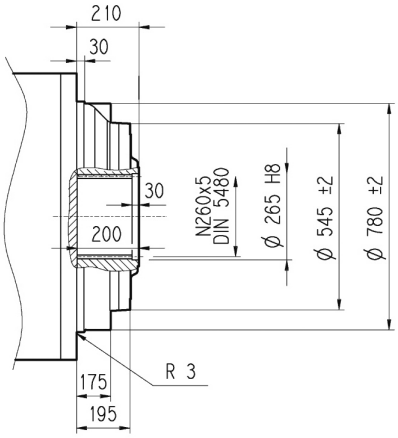



## HZ

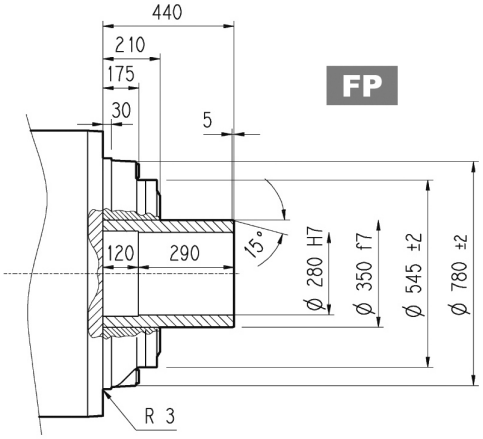


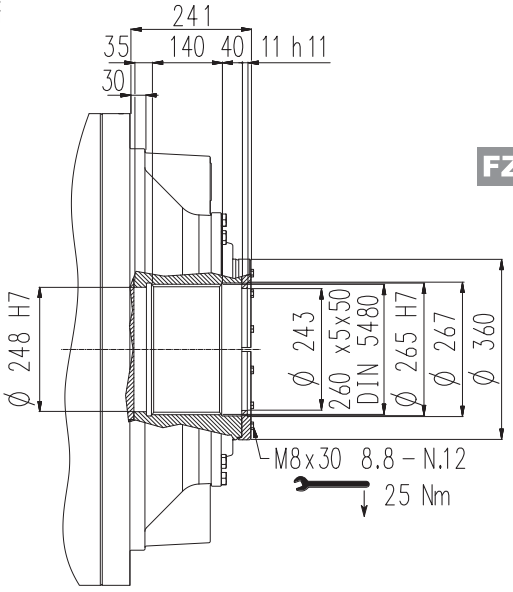

## FZ




## FP



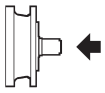

## FZP

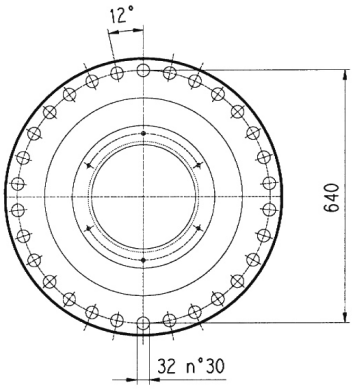


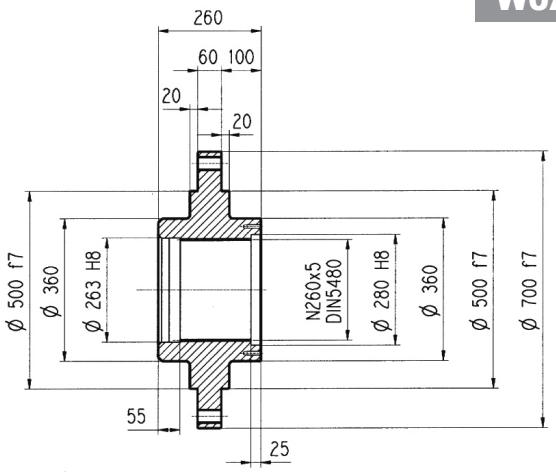

**FP** | $M_{2max}$ = 480000 Nm

## Brida

W0A



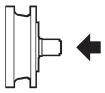


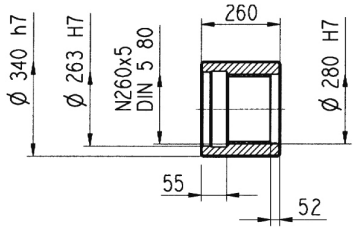




Material: Acero C40

## Manguito cilíndrico

M0A

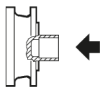


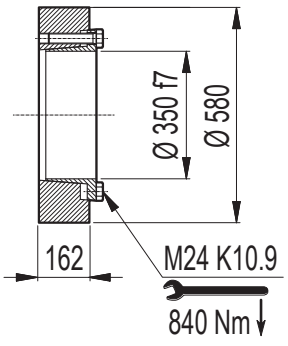


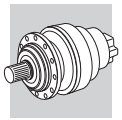

Material: Acero 16CrNi4

## Aro cónico de apriete

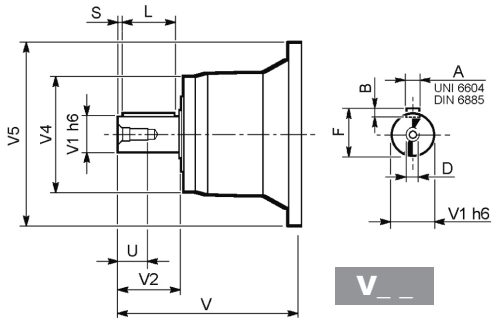
G0A



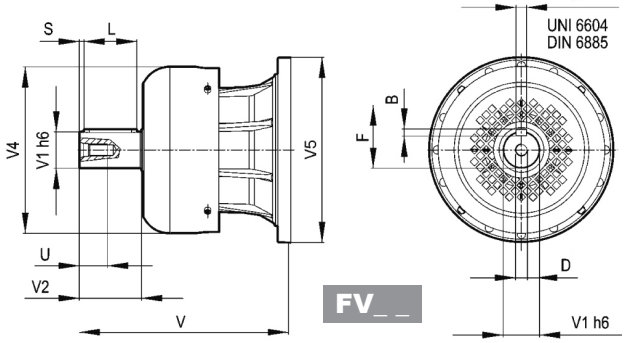




## 319 L 319 R



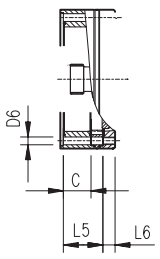

V_ _

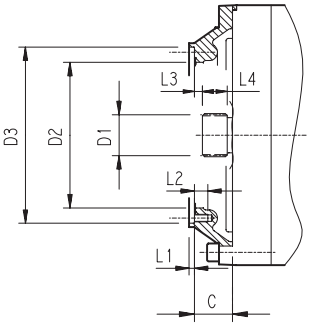


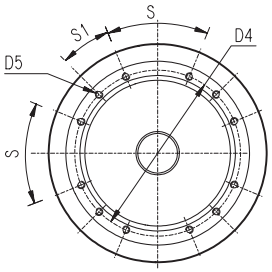

FV_ _

| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **319 L2** | **V15B** | 523 | 120 | 210 | 320 | 542 | 32 | 18 | 127 | 180 | 15 | M24 | 50 |
| **319 L3** | **V11B** | 348 | 80 | 130 | 200 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 456 | 80 | 130 | 347.5 | 428 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| **319 L4** | **V07B** | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV07B** | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **V07A** | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV07A** | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| **319 R4 (B) (C)** | **V06B** | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | **FV06B** | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |

## 319 L 319 R

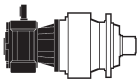


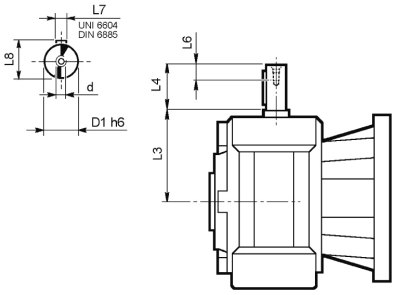




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **319 L1** | **V9AG** | 245 | 150x5x28 DIN 5480 | 444 | 474 g7 | 503 | M20 n°20 | 20 | 5 | 40 | 20 | 82 | — | — | 30° | 15° | G |
| **319 L2** | **V9AE** | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n°18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| **319 L3** | **V9AD** | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |
| **319 L4** | **V9AB** | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| **319 R4** | **V9AA** | 37 | 40x36 DIN 5482 | 140 | 178 H7 | 165 | M12 n°8 | 11 | 4 | 18 | 9 | 18 | — | — | 45° | 45° | A |
| **319 R4 (B) (C)** | **V9AB** | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |

## 3/V 19 L4

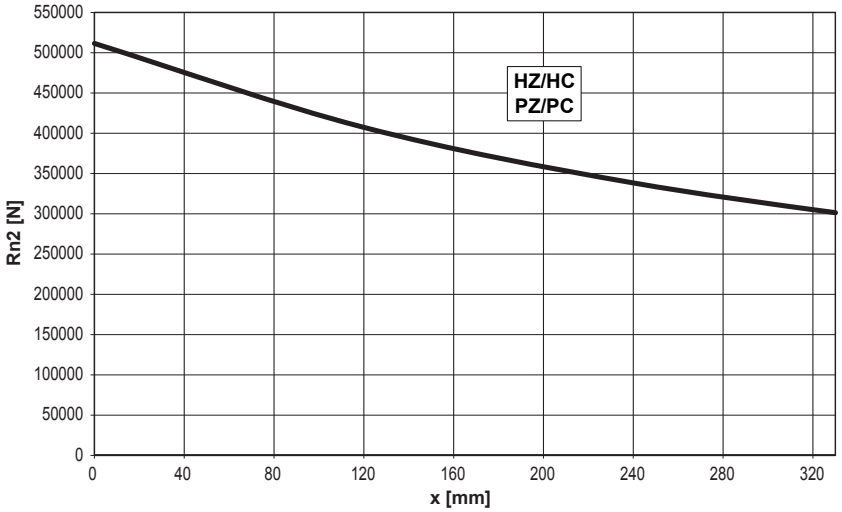


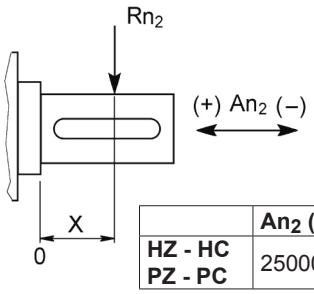



| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| **3/V 19 L4_HS** | 48 | 230 | 110 | 40 | 14 | 51.5 | M16 |

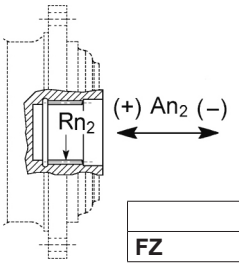
# 319 L | 319 R | 3/V 19 L4

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



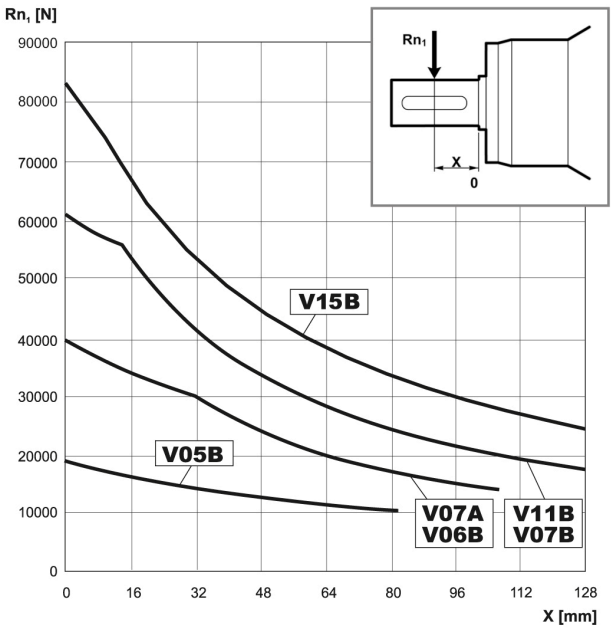

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 250000 | 225000 |

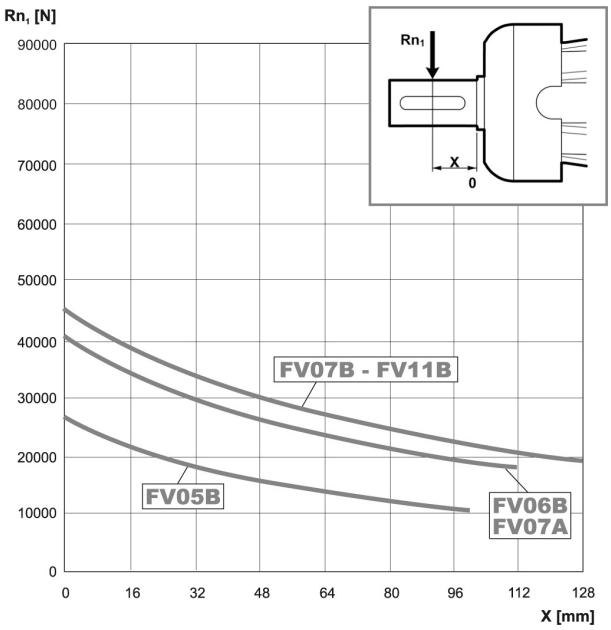



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 92832 | 92832 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.75** | **1.52** | **1.23** | **1.00** | **0.62** | **0.50** |

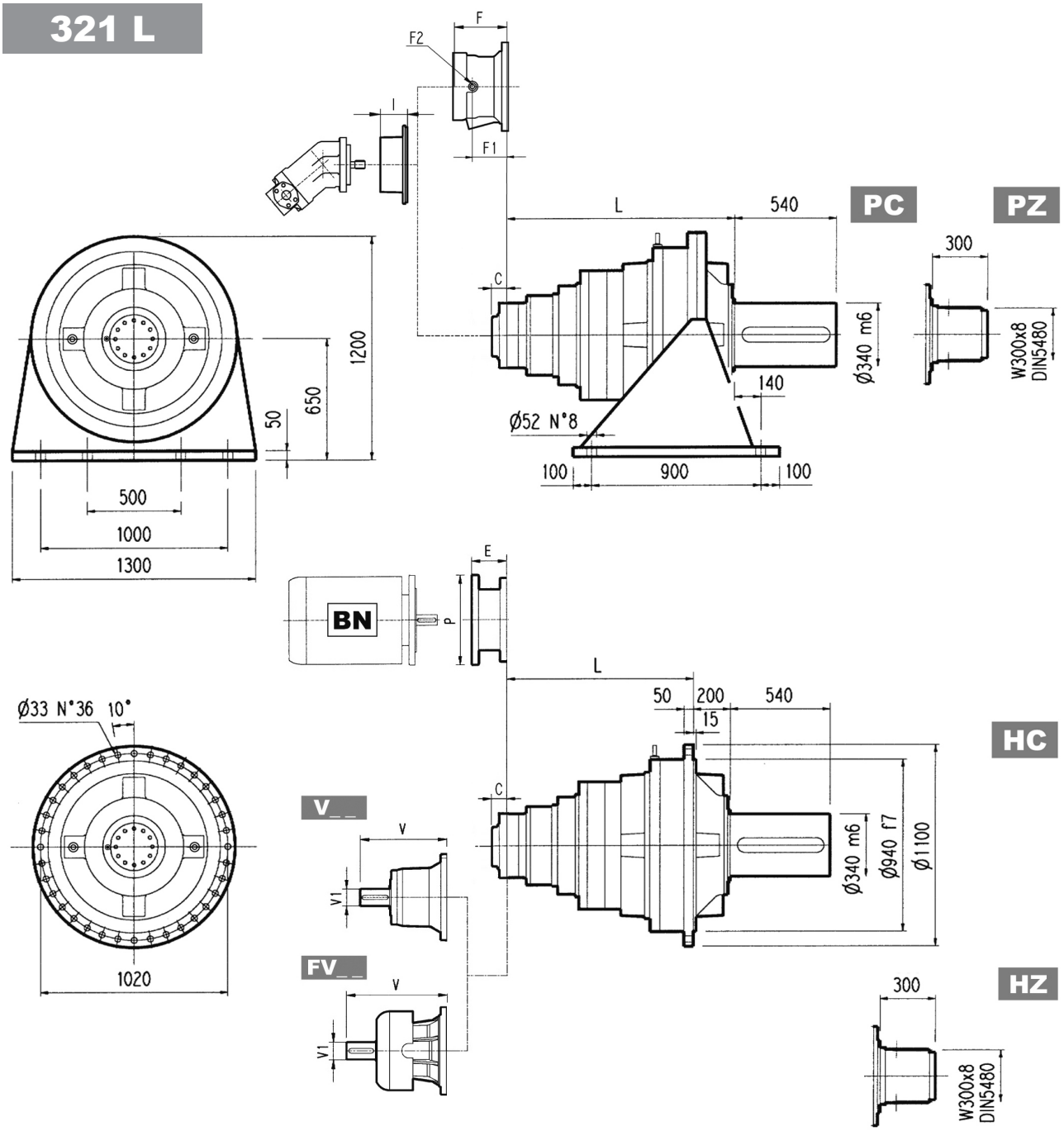
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

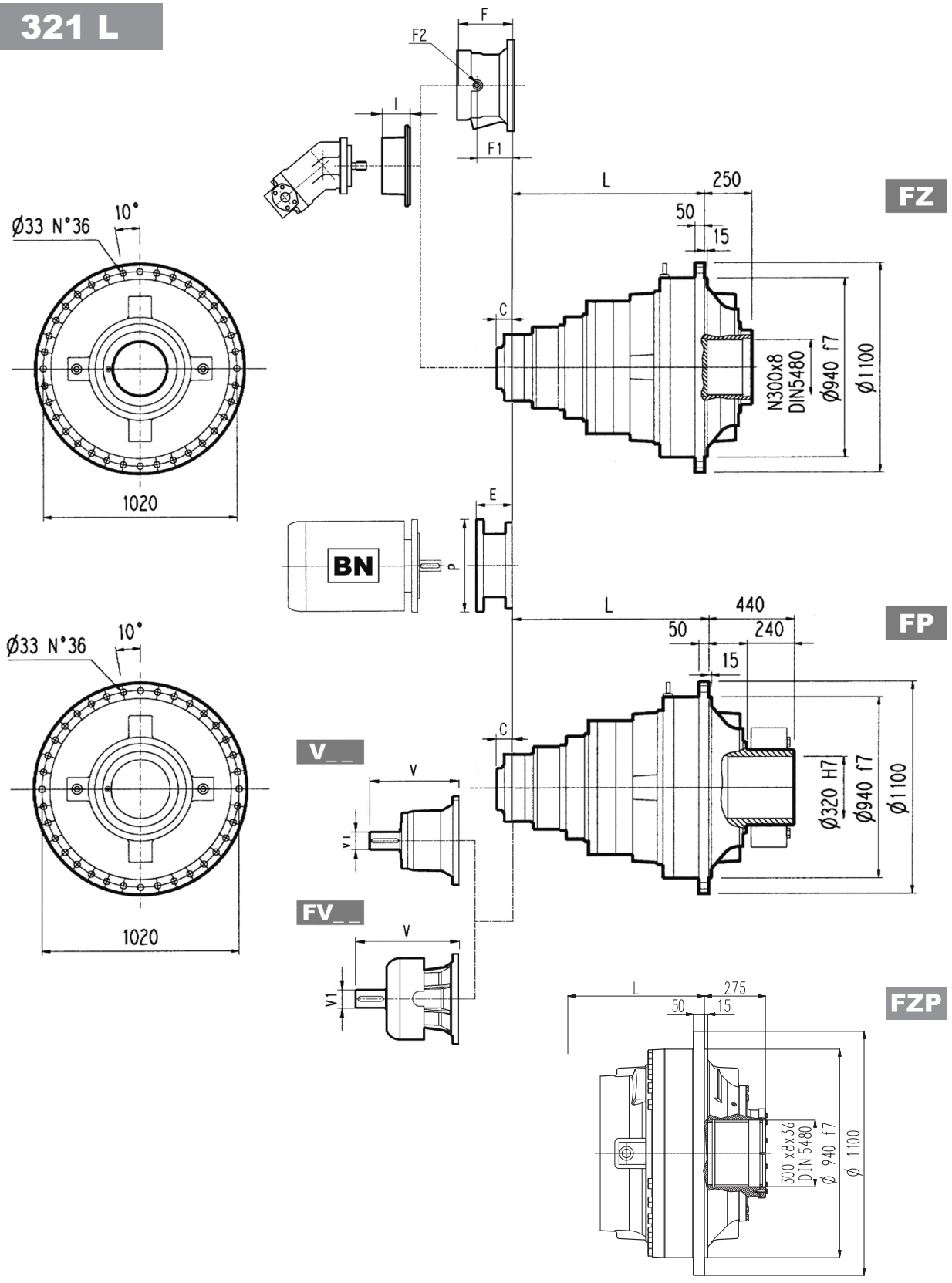
# 321 L




| | L | | | | Kg | | | |
|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | PC - PZ | HC - HZ | FZ - FZP | FP |
| **321 L2** | 795 | 595 | 595 | 595 | 3000 | 2700 | 2600 | 2600 |
| **321 L3** | 1104 | 904 | 904 | 904 | 3120 | 2820 | 2720 | 2720 |
| **321 L4** | 1253 | 1053 | 1053 | 1053 | 3180 | 2880 | 2780 | 2780 |

| | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **321 L2** | — | — | — | — | — | — | — | — | — | — | — | — | 181 | F | | — | — | — | — | — | — |
| **321 L3** | 343 | 80 | 55 | — | — | — | 451 | 80 | 71 | — | — | — | 75 | D | | — | — | — | — | — | — |
| **321 L4** | 315 | 80 | 35 | 313 | 60 | 28 | 375 | 80 | 48 | 363 | 60 | 34 | 51 | B | 457 | 201 | 153 | 1/4 G | 6 | B | 28 |

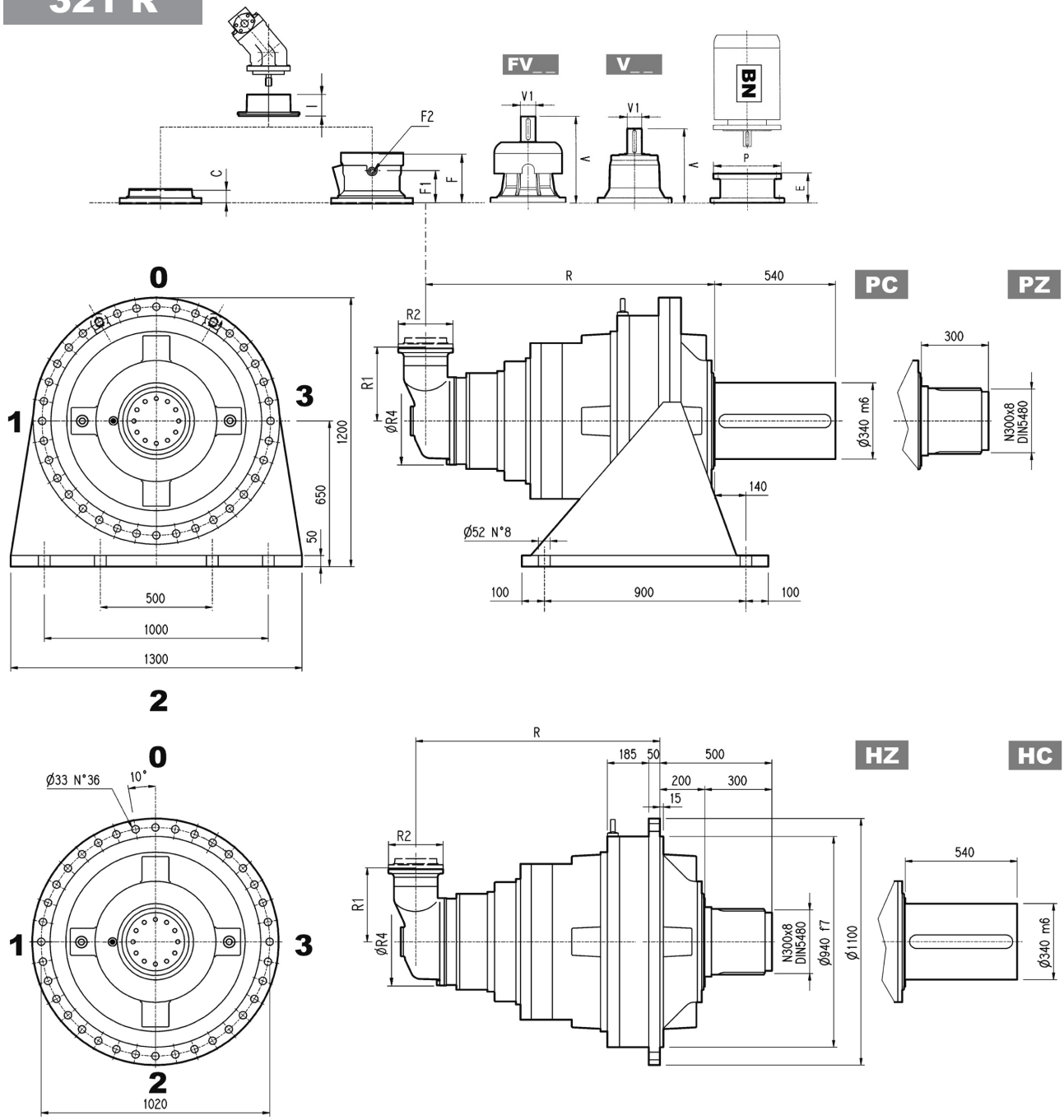
# 321 L




| FP | $M_{2max}$ = 720000 Nm |
|---|---|

| | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P |
| **321 L4** | 195 | 350 | 186 | 400 | 216 | 450 | 216 | 550 |

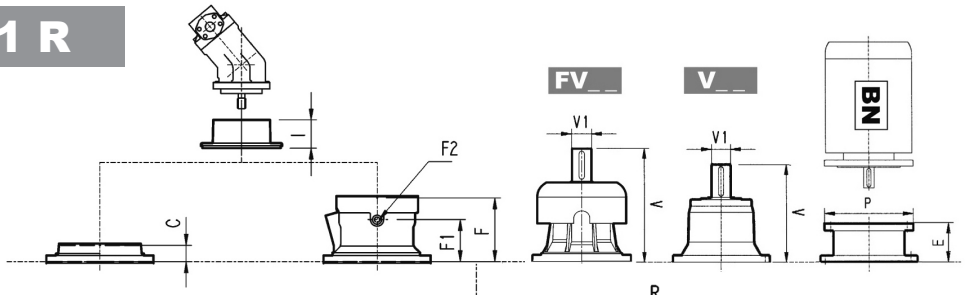
# 321 R

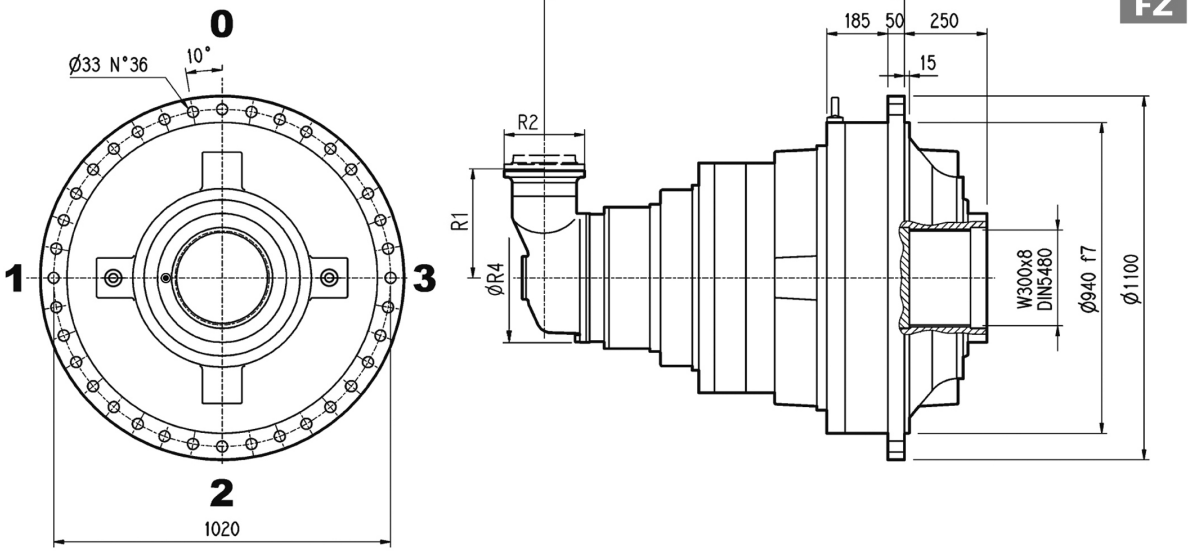


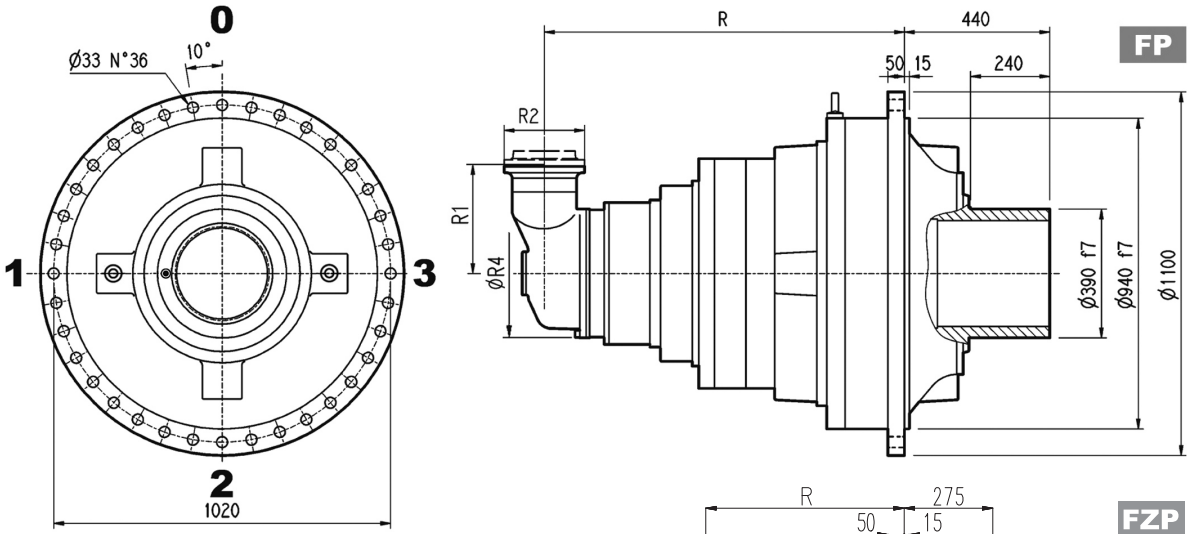

| | R | | | | R1 | R2 | R4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC-PZ | HC-HZ | FZ - FZP | FP | | | | PC-PZ | HC-HZ | FZ - FZP | FP |
| **321 R4 (B)** | 1334 | 1134 | 1134 | 1134 | 345 | 292 | 400 | 3250 | 2950 | 2850 | 2850 |
| **321 R4 (C)** | 1334 | 1134 | 1134 | 1134 | 390 | 292 | 480 | 3260 | 2960 | 2860 | 2860 |

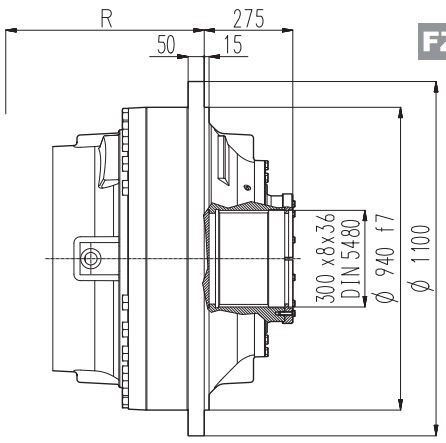
| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | V | V1 | Kg | C | Input | I | F | F1 | F2 | Type | Input | Kg |
| **321 R4 (B)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | 457 | 195 | 147 | 1/4 G | 6 | B | 28 |
| **321 R4 (C)** | 307 | 60 | 23 | — | — | — | 357 | 60 | 28 | — | — | — | 45 | B | | 195 | 147 | 1/4 G | 6 | B | 28 |

# 321 R



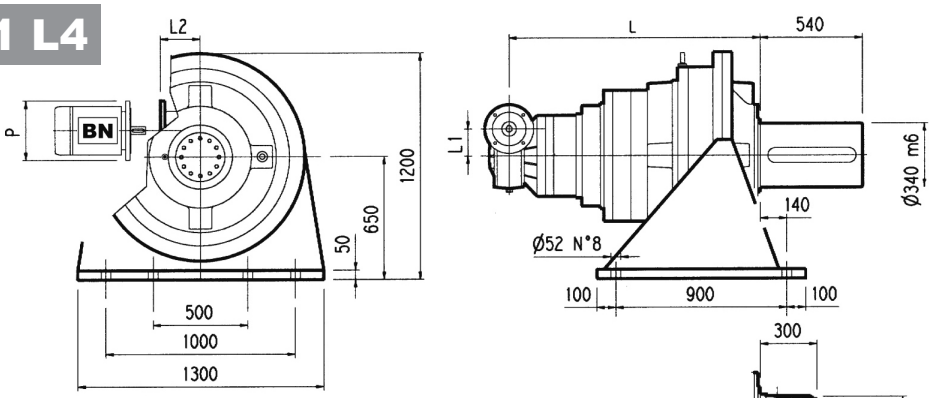




**FP** $M_{2max}$ = 720000 Nm

| | P132 | | P160 | | P180 | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | E | P | E | P | E | P | E | P | E | P | E | P |
| 321 R4 (B) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |
| 321 R4 (C) | — | — | — | — | 152 | 350 | 182 | 400 | 212 | 450 | 193 | 550 |

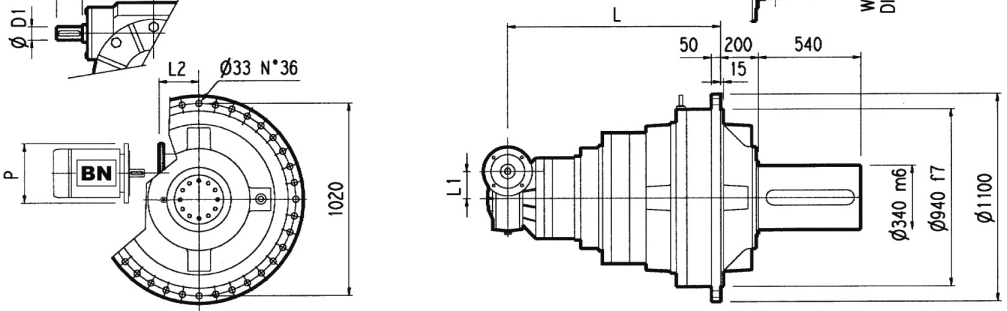
# 3/V 21 L4

PC

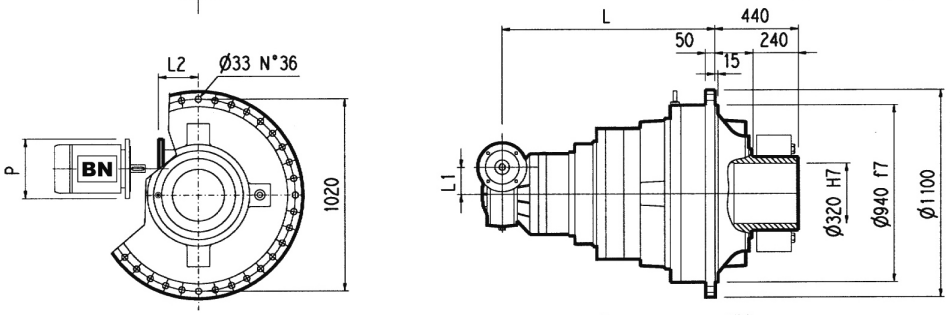



HZ PZ

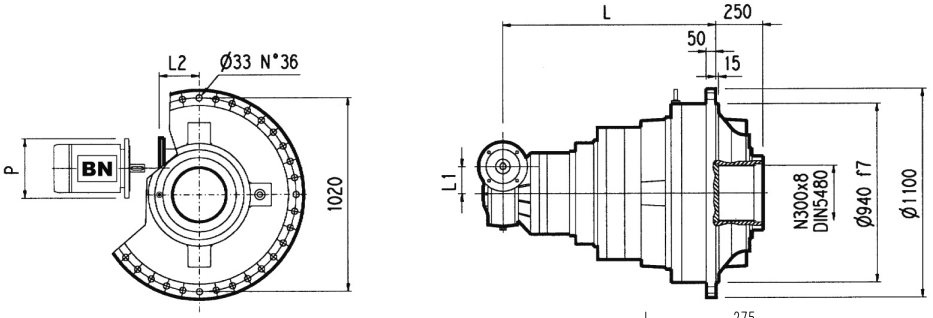
HC



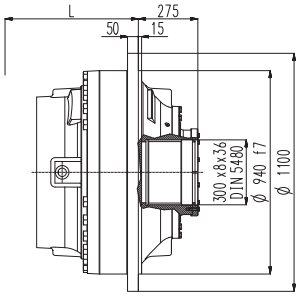

FP




FZ



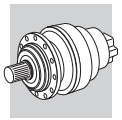

FZP

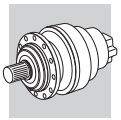



**FP** $M_{2max}$ = 720000 Nm

| | L | | | | L1 | L2 | D1 | L3 | L4 | Kg | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PC - PZ | HC - HZ | FZ - FZP | FP | | | | | | PC - PZ | HC - HZ | FZ - FZP | FP |
| 3/V 21 L4 | 1374 | 1174 | 1174 | 1174 | 250 | — | 55 | 276 | 110 | 3430 | 3130 | 3030 | 3030 |

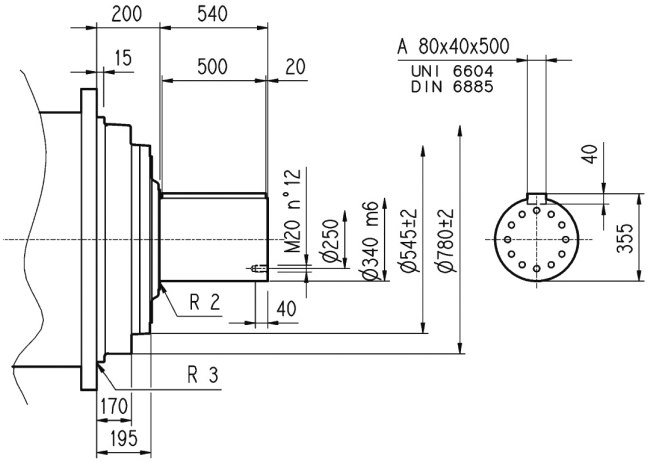
| | P132 | | P160 | | P180 | | P200 | | P225 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | L2 | P | L2 | P | L2 | P | L2 | P | L2 | P |
| 3/V 21 L4 | 531 | 300 | 506 | 350 | 506 | 350 | 531 | 400 | 536 | 450 |



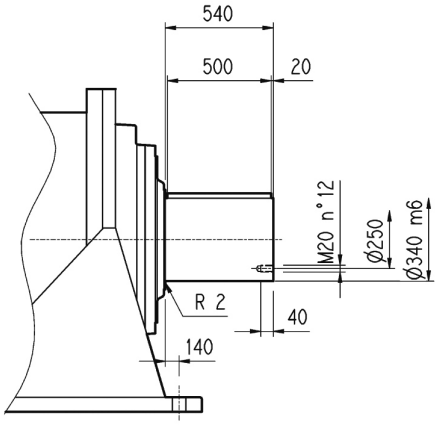


# 321 L | 321 R | 3/V 21 L4

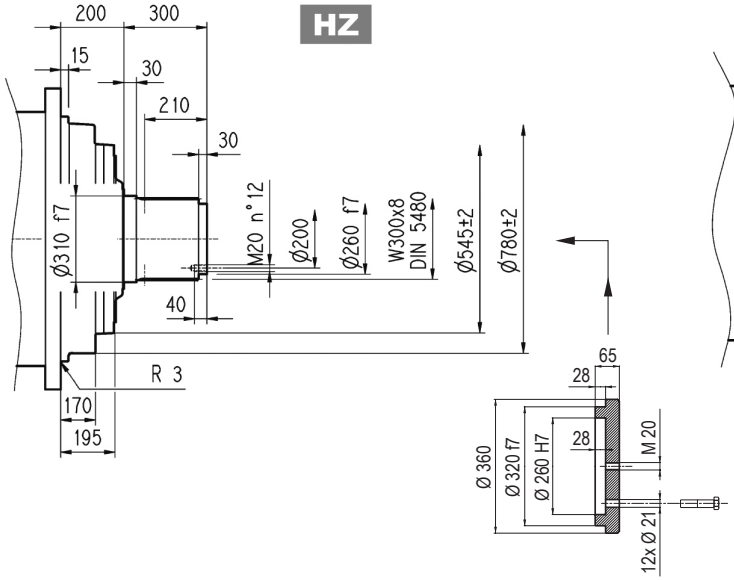
## HC



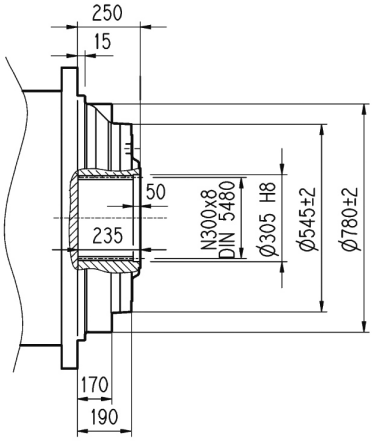

## PC




## HZ



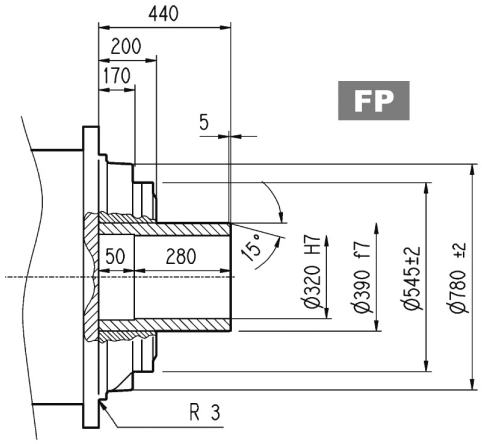

## FZ



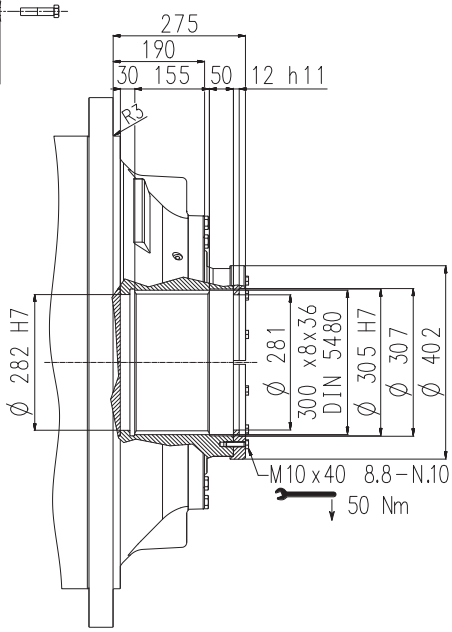




## FP



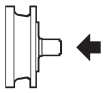

## FZP

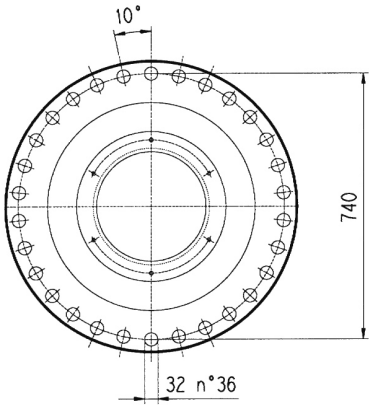


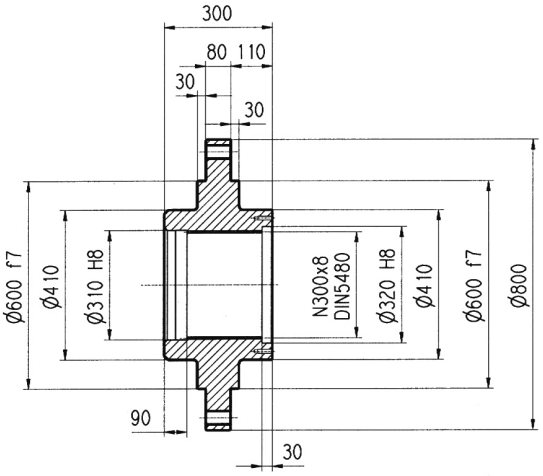

**FP** | $M_{2max}$ = 720000 Nm

## Brida

W0A



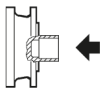


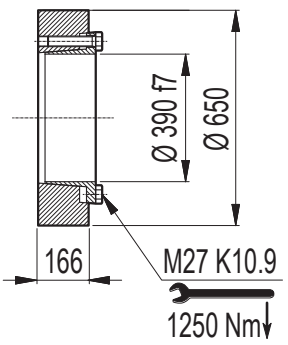



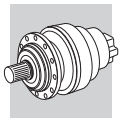

Material: Acero C40

## Aro cónico de apriete

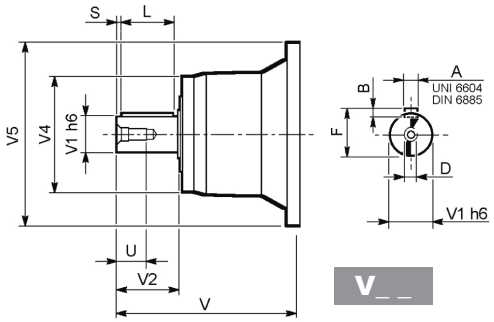
G0A



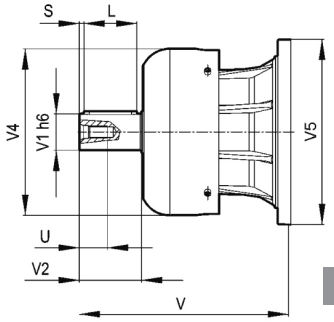




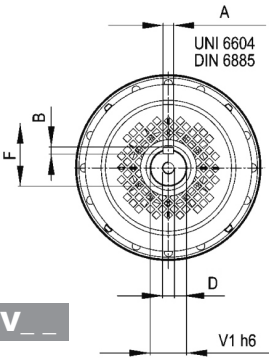
## 321 L 321 R




V_ _

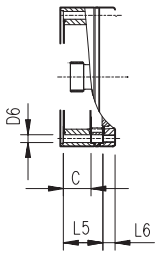


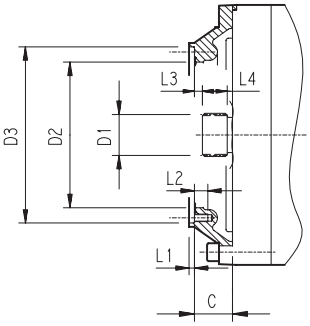

FV_ _

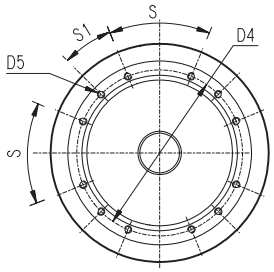



| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 321 L3 | V11B | 343 | 80 | 130 | 200 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV11B | 451 | 80 | 130 | 347.5 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| 321 L4 | V07B | 315 | 80 | 130 | 200 | 345 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | FV07B | 375 | 80 | 130 | 347.5 | 348 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | V07A | 313 | 60 | 105 | 155 | 345 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV07A | 363 | 60 | 105 | 309 | 348 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| 321 R4 (B) (C) | V06B | 307 | 60 | 105 | 155 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |
| | FV06B | 357 | 60 | 105 | 309 | 292 | 18 | 11 | 64 | 90 | 7.5 | M16 | 36 |

## 321 L 321 R

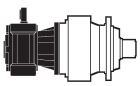


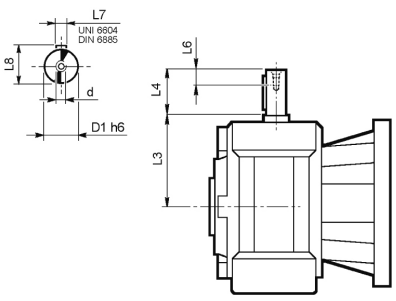




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 321 L1 | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | | | | | | | | |
| 321 L2 | V9AF | 181 | 120x3 DIN 5480 | 365 | 390 f7 | 415 | M16 n°18 | — | 4 | 30 | 3 | 65 | — | — | 20° | 20° | F |
| 321 L3 | V9AD | 75 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 9.5 | 40 | — | — | 60° | 30° | D |
| 321 L4 | V9AB | 51 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |
| 321 R4 (B) (C) | V9AB | 45 | 58x53 DIN 5482 | 195 | 236 H7 | 222 | M10 n°12 | — | 4 | 18 | 11 | 22 | — | — | 45° | 22.5° | B |

## 3/V 21 L4





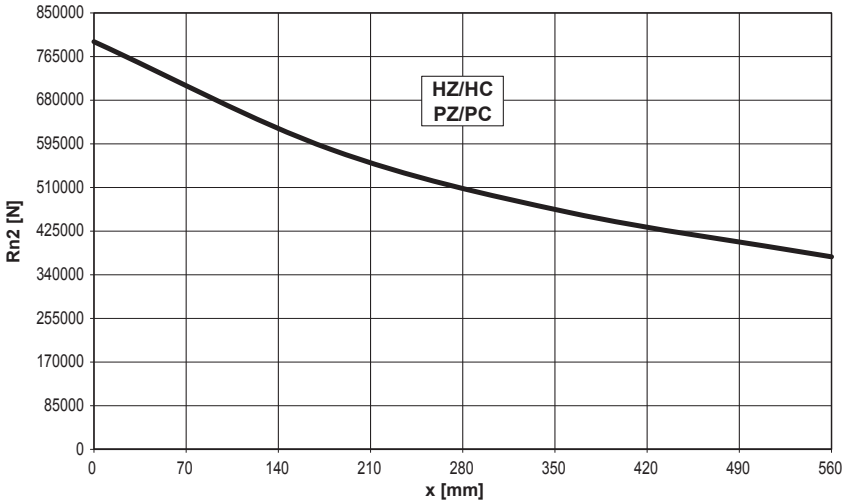

| | D1 h6 | L3 | L4 | L6 | L7 | L8 | d |
|---|---|---|---|---|---|---|---|
| 3/V 21 L4_HS | 55 | 276 | 110 | 40 | 16 | 59 | M16 |

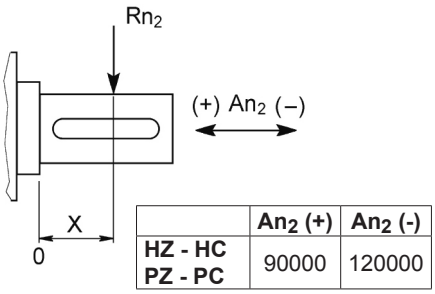


Bonfiglioli Riduttori

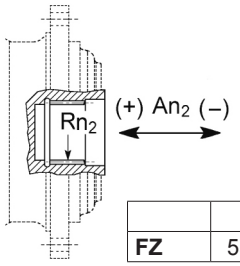
# 321 L | 321 R | 3/V 21 L4

Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$



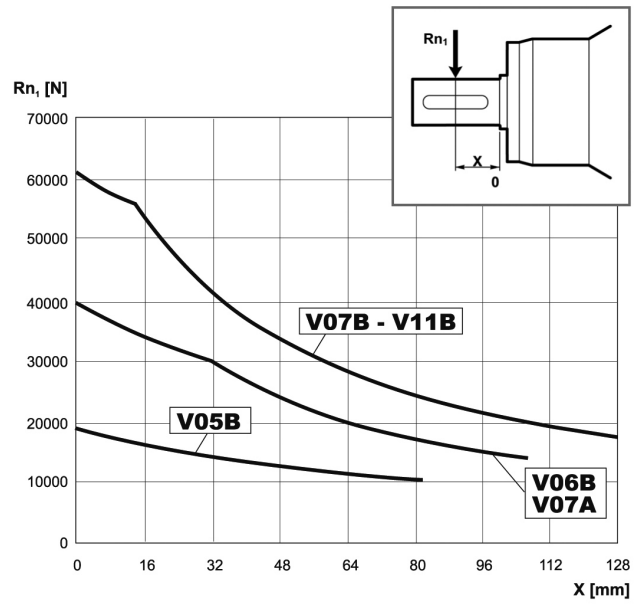

| | An2 (+) | An2 (-) |
|---|---|---|
| HZ - HC<br>PZ - PC | 90000 | 120000 |

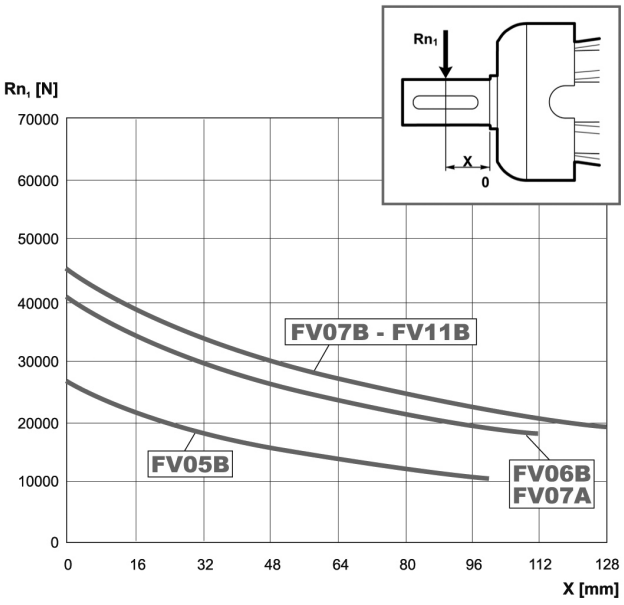



| | Rn2 | An2 (+/-) |
|---|---|---|
| FZ | 556991 | 83549 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | FZ | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |
| | | HZ - HC - PZ - PC | **1.54** | **1.35** | **1.23** | **1.00** | **0.62** | **0.50** |

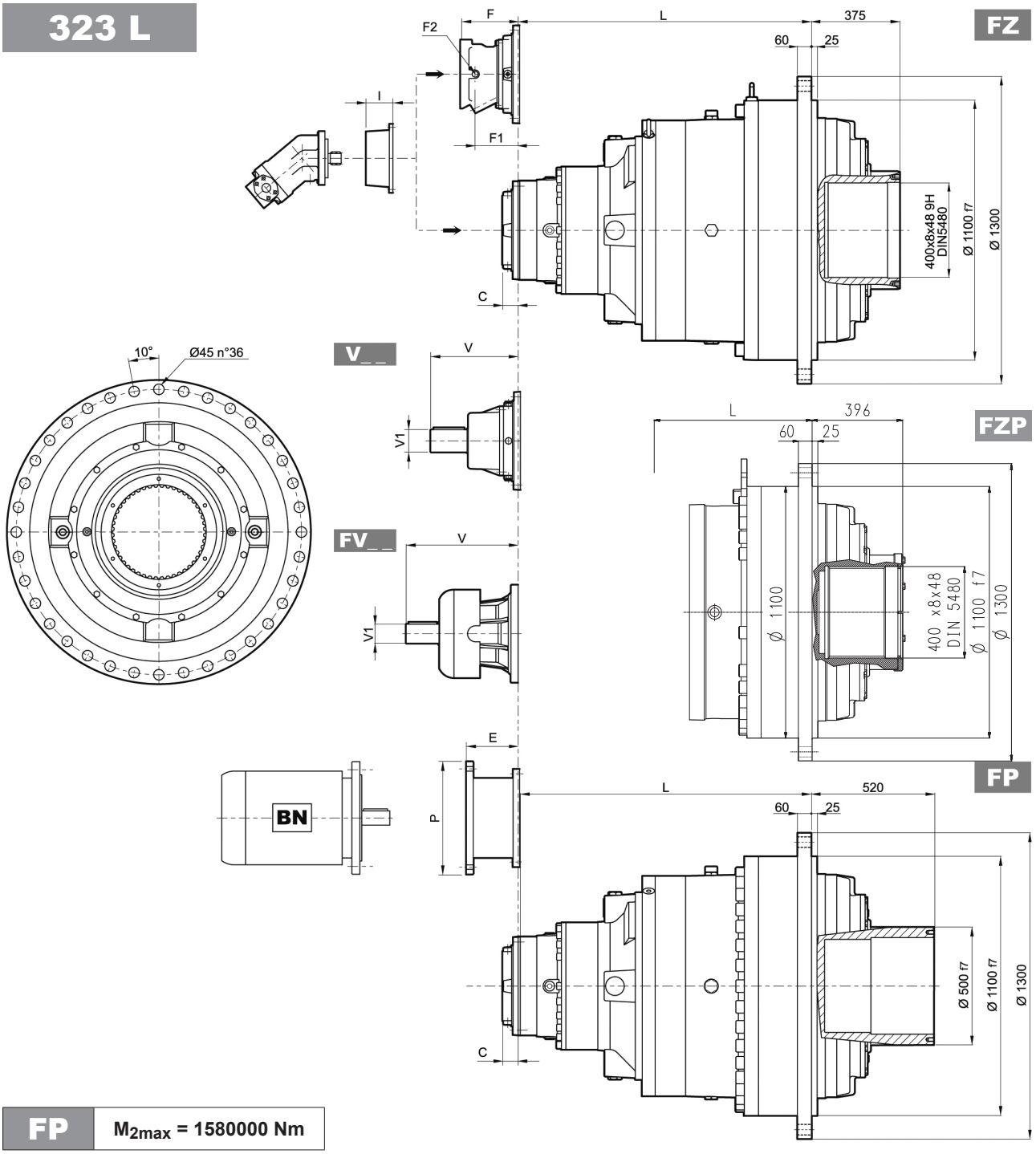
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 323 L




**FP** $M_{2max}$ = 1580000 Nm

| | L | | Kg | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | FZ - FZP | FP | FZ - FZP | FP | V | V1 | Kg | V | V1 | Kg |
| **323 L1** | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | |
| **323 L2** | 666 | 666 | 4450 | 4550 | — | — | — | — | — | — |
| **323 L3** | 1049 | 1049 | 4750 | 4850 | 556 | 120 | 125 | — | — | — |
| **323 L4** | 1261 | 1261 | 4900 | 5000 | 315 | 80 | 35 | 456 | 80 | 85 |

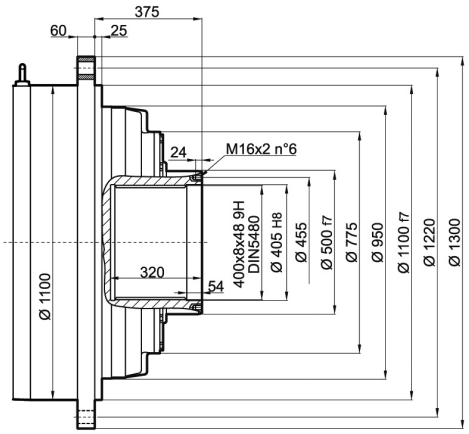
| | | | | | | | | | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C | Input | I | F | F1 | F2 | Type | Input | Kg | E | P | E | P | E | P |
| **323 L1** | — | — | 457 | — | — | — | — | — | — | — | — | — | — | — | — |
| **323 L2** | 245 | G | | — | — | — | — | — | — | — | — | — | — | — | — |
| **323 L3** | 116 | E | | — | — | — | — | — | — | — | — | — | — | — | — |
| **323 L4** | 81 | D | | 201 | 48 | 1/4 G | 6 | B | 22 | 267 | 400 | 297 | 450 | 297 | 550 |



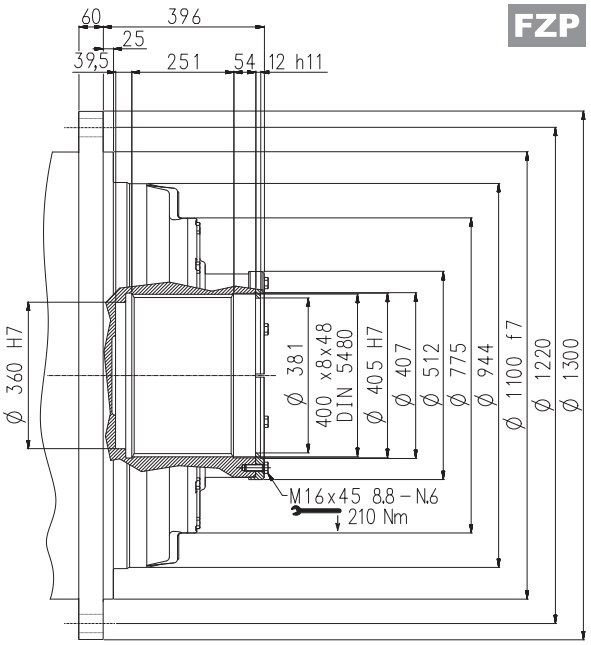
Bonfiglioli Riduttori

# 323 L

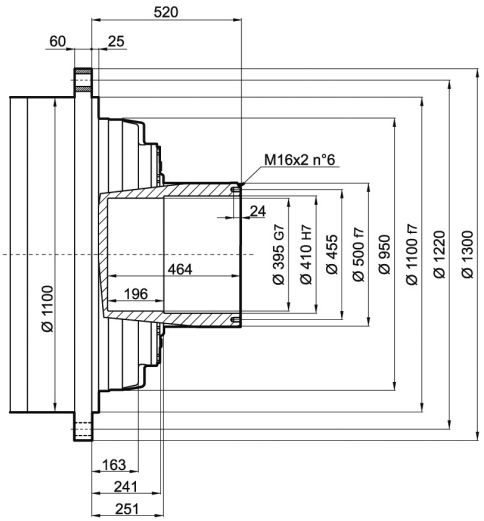
**FZ**




**FZP**

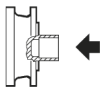


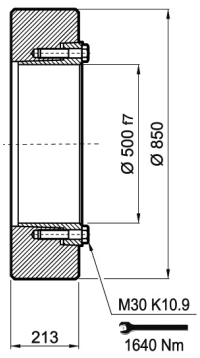

**FP**




## Aro cónico de apriete

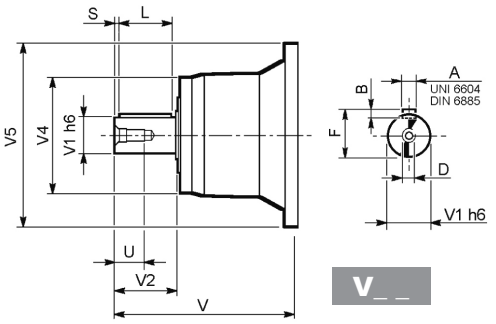
**G0A**

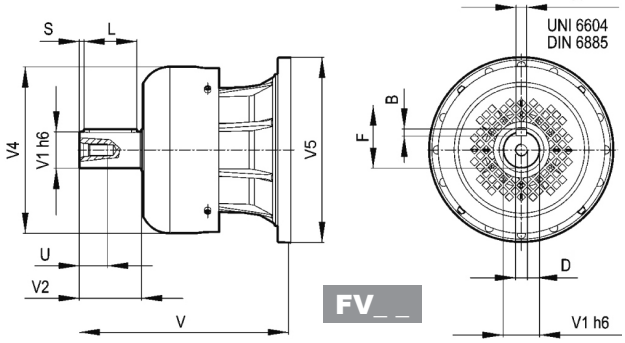





**FP** $M_{2max}$ = 1580000 Nm

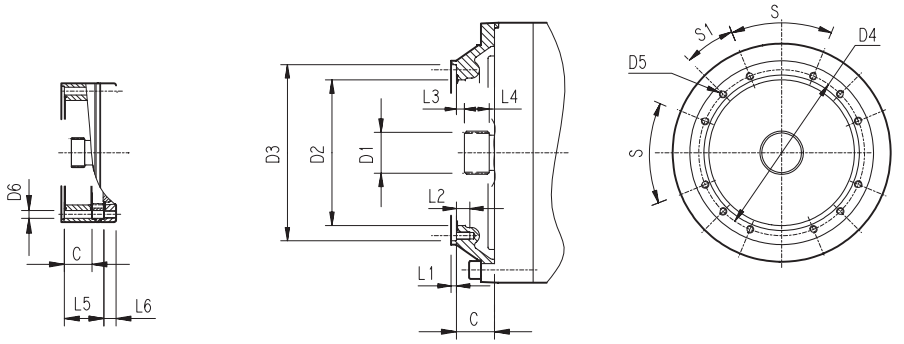
# 323 L




| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **323 L3** | **V15B** | 556 | 120 | 210 | 310 | 542 | 32 | 18 | 127 | 180 | 15 | M24 | 50 |
| **323 L4** | **V11B** | 343 | 80 | 130 | 200 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 451 | 80 | 130 | 347.5 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |

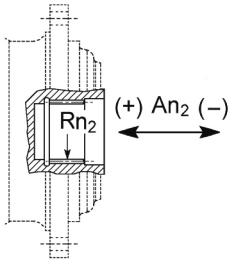
# 323 L




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **323 L1** | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | | | | | | | | |
| **323 L2** | **V9AG** | 245 | 150x5x28 DIN 5480 | 444 | 474 g7 | 503 | M20 n°20 | 20 | 5 | 40 | 20 | 82 | — | — | 30° | 15° | G |
| **323 L3** | **V9AE** | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n°18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| **323 L4** | **V9AD** | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |

# 323 L

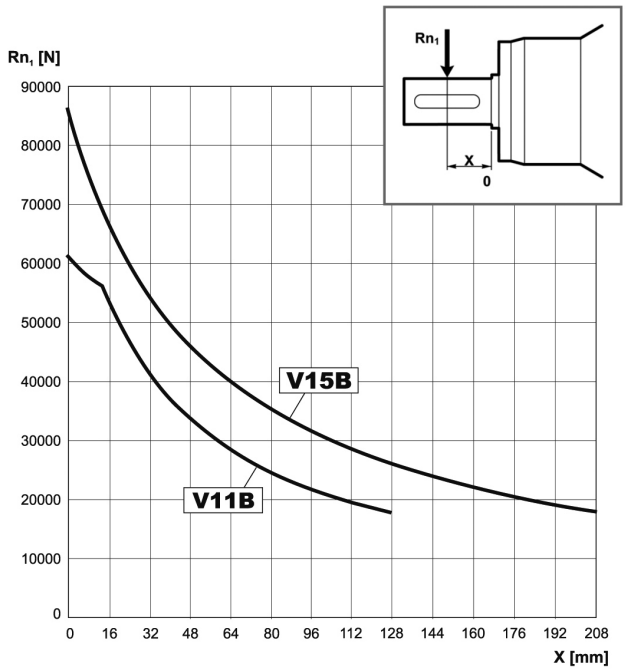
Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$

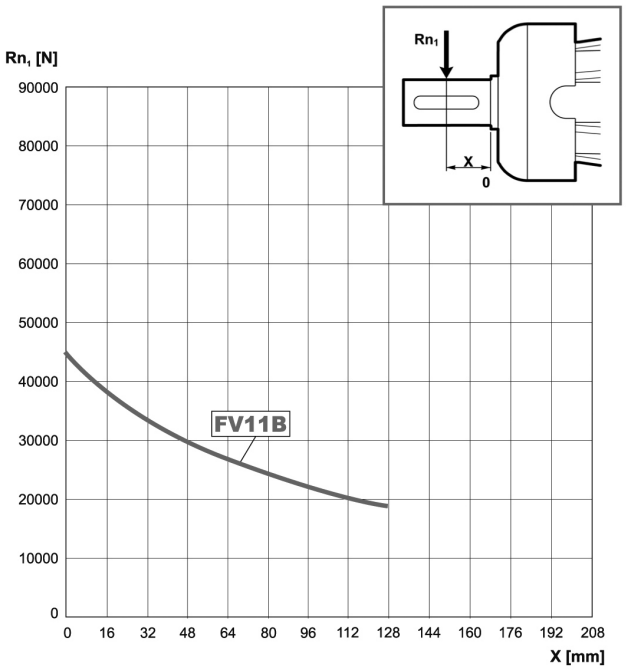



| | $Rn_2$ | $An_2$ (+) | $An_2$ (-) |
|---|---|---|---|
| **FZ** | 510575 | 174060 | 69624 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | $fh_2$ | **FZ** | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |

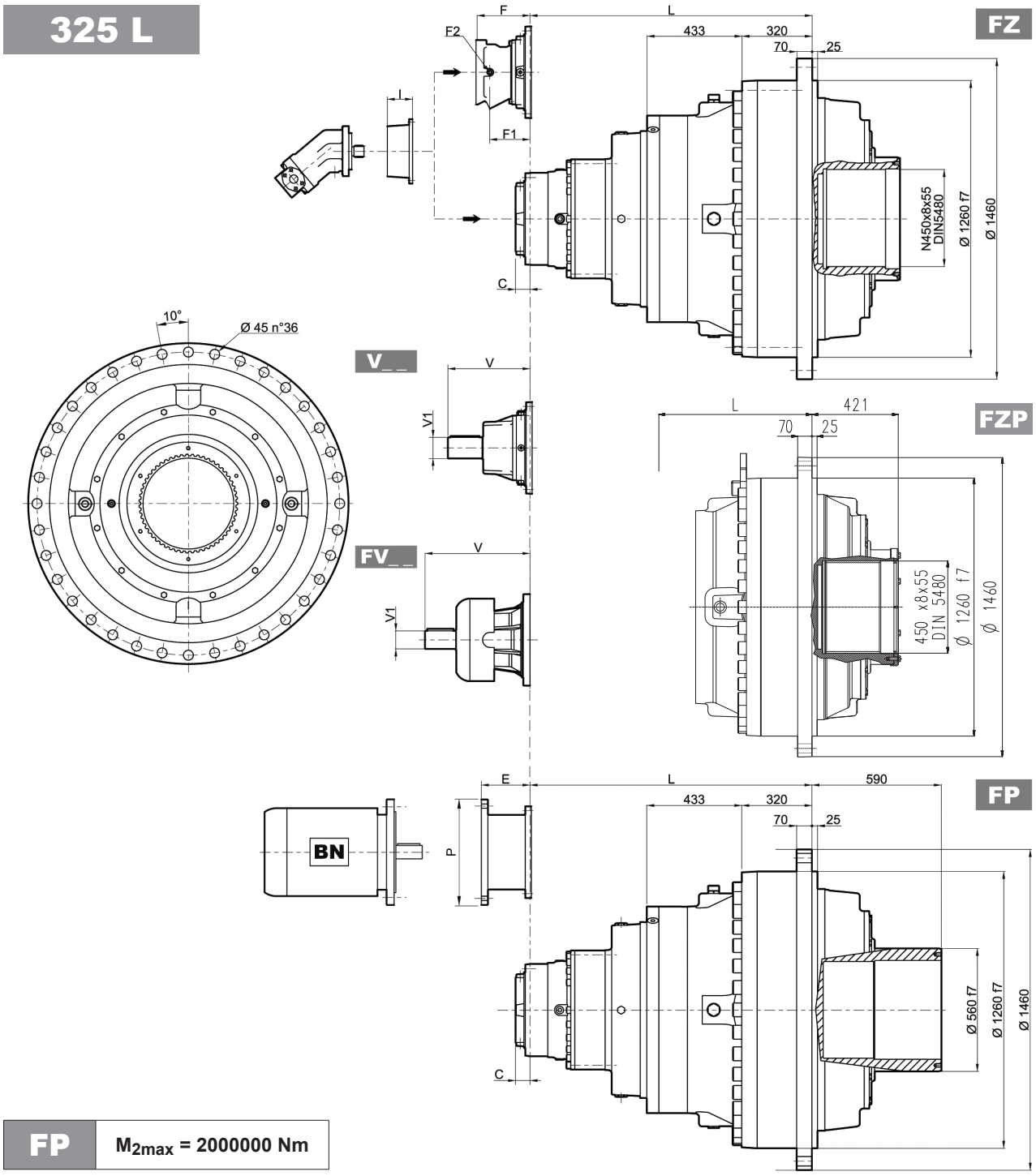
Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$




| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | $fh_1$ | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

# 325 L



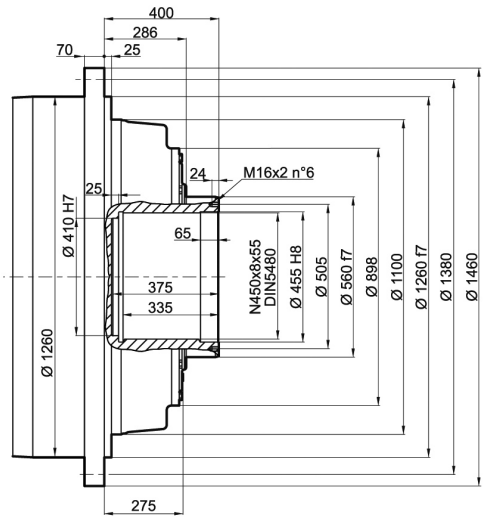

**FP** $M_{2max}$ = 2000000 Nm

| | L | | Kg | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | FZ - FZP | FP | FZ - FZP | FP | V | V1 | Kg | V | V1 | Kg |
| **325 L1** | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | |
| **325 L2** | 698 | 698 | 5700 | 5900 | — | — | — | — | — | — |
| **325 L3** | 1081 | 1081 | 6000 | 6200 | 556 | 120 | 125 | — | — | — |
| **325 L4** | 1293 | 1293 | 6150 | 6350 | 315 | 80 | 35 | 456 | 80 | 85 |

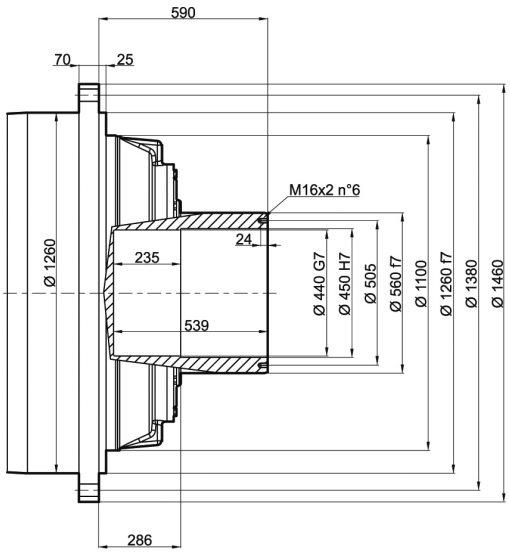
| | | | | | | | | | | P200 | | P225 | | P250 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | C | Input | I | F | F1 | F2 | Type | Input | Kg | E | P | E | P | E | P |
| **325 L1** | — | — | 457 | — | — | — | — | — | — | — | — | — | — | — | — |
| **325 L2** | 245 | G | | — | — | — | — | — | — | — | — | — | — | — | — |
| **325 L3** | 116 | E | | — | — | — | — | — | — | — | — | — | — | — | — |
| **325 L4** | 81 | D | | 201 | 48 | 1/4 G | 6 | B | 22 | 267 | 400 | 297 | 450 | 297 | 550 |

# 325 L

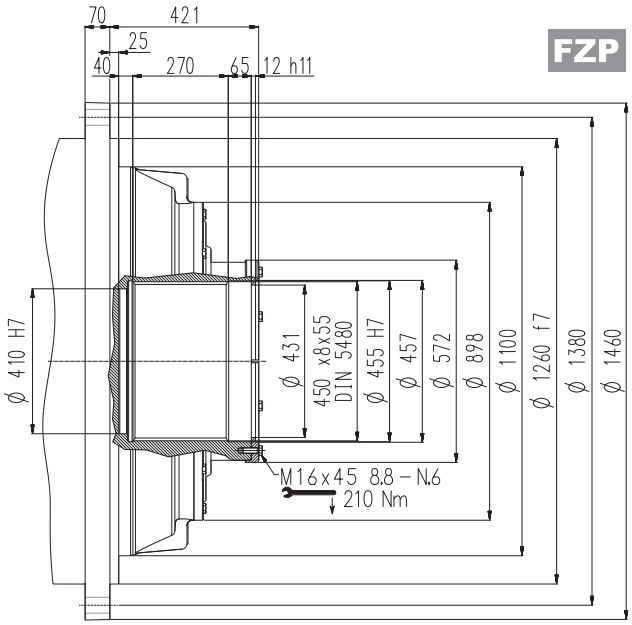
**FZ**




**FP**

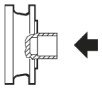


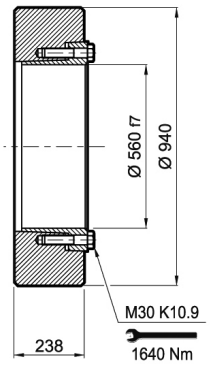

**FZP**




## Aro cónico de apriete

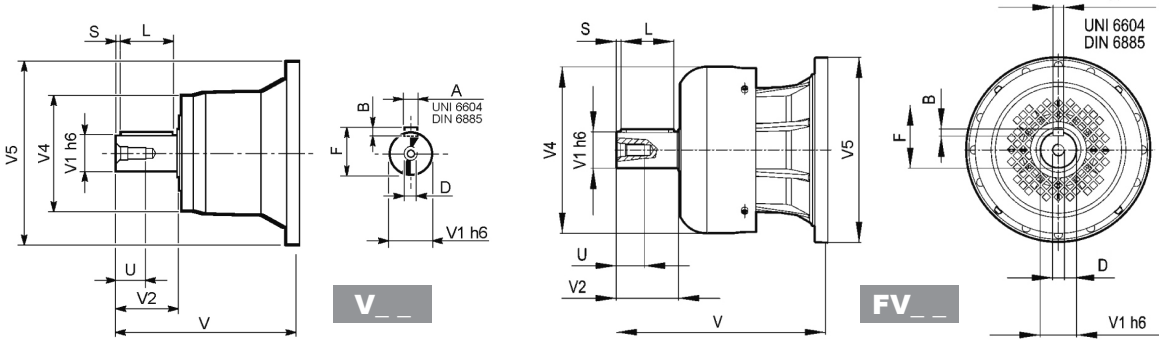
**G0A**





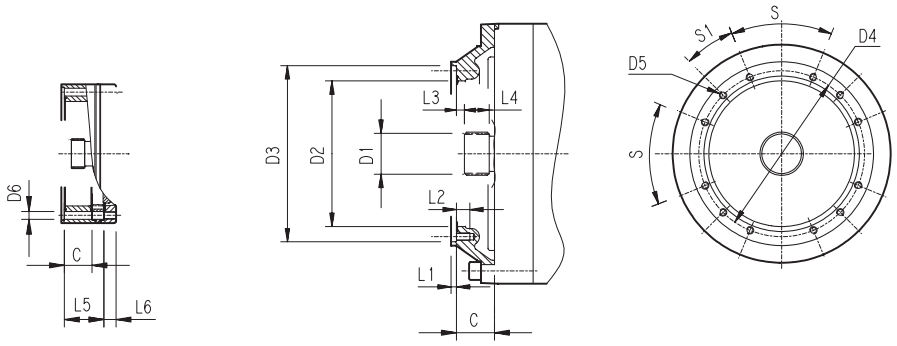

**FP** $M_{2max}$ = 2000000 Nm

# 325 L




| | | V | V1 | V2 | V4 | V5 | A | B | F | L | S | D | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **325 L3** | **V15B** | 556 | 120 | 210 | 310 | 542 | 32 | 18 | 127 | 180 | 15 | M24 | 50 |
| **325 L4** | **V11B** | 343 | 80 | 130 | 200 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |
| | **FV11B** | 451 | 80 | 130 | 347.5 | 445 | 22 | 14 | 85 | 110 | 10 | M16 | 36 |

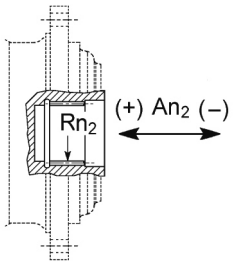
# 325 L




| | | C | D1 | D2 | D3 | D4 | D5 | D6 | L1 | L2 | L3 | L4 | L5 | L6 | S | S1 | Input |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **325 L1** | Consultar el Servicio Técnico Bonfiglioli | | | | | | | | | | | | | | | | |
| **325 L2** | **V9AG** | 245 | 150x5x28 DIN 5480 | 444 | 474 g7 | 503 | M20 n°20 | 20 | 5 | 40 | 20 | 82 | — | — | 30° | 15° | G |
| **325 L3** | **V9AE** | 116 | 100x94 DIN 5482 | 340 | 412 H7 | 390 | M16 n°18 | — | 7 | 30 | 8 | 55 | — | — | 20° | 20° | E |
| **325 L4** | **V9AD** | 81 | 80x74 DIN 5482 | 270 | 335 H7 | 314 | M16 n°8 | — | 5 | 30 | 8.5 | 40 | — | — | 60° | 30° | D |

# 325 L

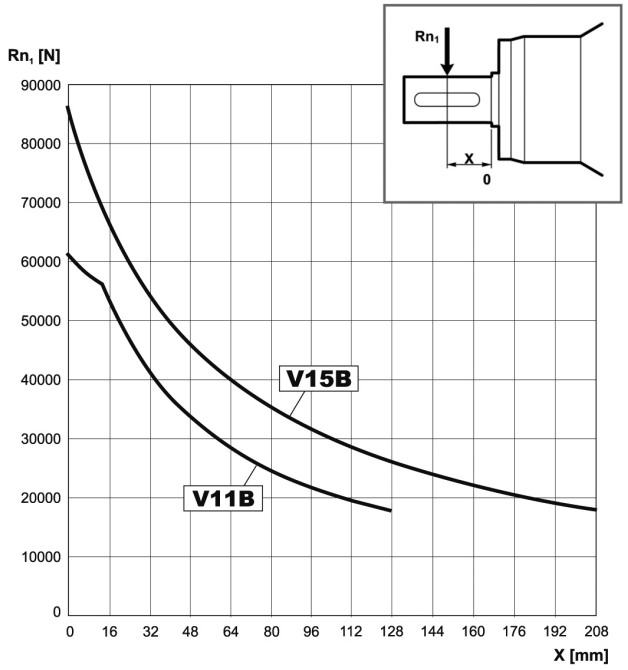
Cargas radiales y axiales admisibles en el eje de salida para un valor de $Fh_2 : n_2 \cdot h = 100000$

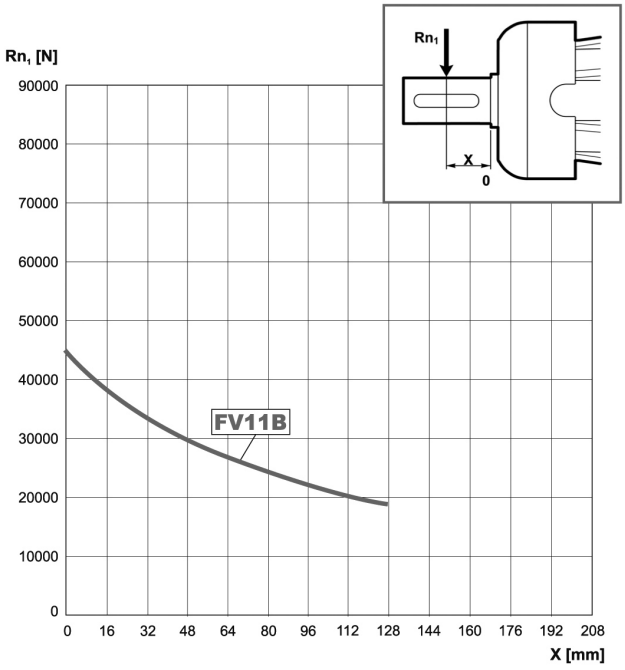



| | $Rn_2$ | $An_2$ (+) | $An_2$ (-) |
|---|---|---|---|
| **FZ** | 510575 | 174060 | 69624 |

| Factor de corrección $fh_2$ para cargas sobre los ejes | $Fh_2 = n_2 \cdot h$ | | 10000 | 25000 | 50000 | 100000 | 500000 | 1000000 |
|---|---|---|---|---|---|---|---|---|
| | **$fh_2$** | **FZ** | **2.15** | **1.59** | **1.26** | **1.00** | **0.58** | **0.46** |

Cargas radiales admisibles en el eje de entrada para un valor de $Fh_1 : n_1 \cdot h = 250000$

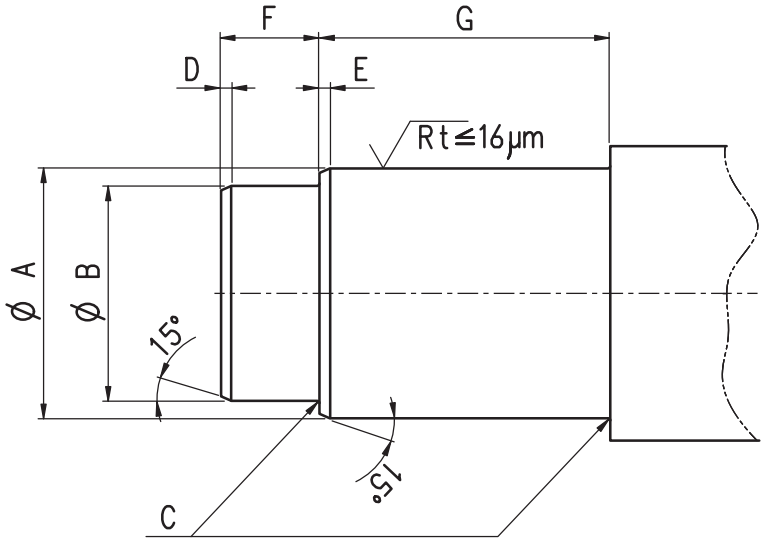



| Factor de corrección $fh_1$ para cargas sobre los ejes | $Fh_1 = n_1 \cdot h$ | 250000 | 500000 | 1000000 | 2000000 | 5000000 | 10000000 |
|---|---|---|---|---|---|---|---|
| | **$fh_1$** | **1** | **0.79** | **0.63** | **0.50** | **0.37** | **0.29** |

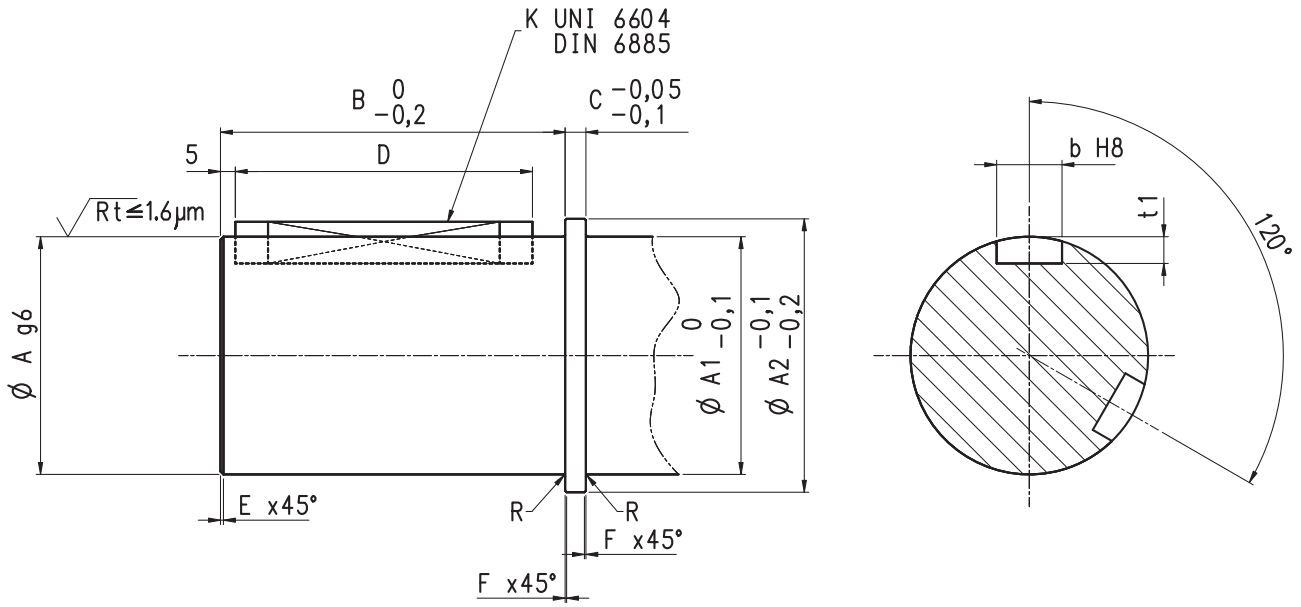
## EJE MAQUINA

**FP**



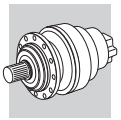

| | A Ø H7 - h6 [mm] | B Ø H7 - h6 [mm] | C [mm] | D [mm] | E [mm] | F [mm] | G [mm] | Material del eje |
|---|---|---|---|---|---|---|---|---|
| **300** | 42 | 35 | 1.6 | 2 | 2 | 18 | 38 | Material sugerido: Acero con resistencia a rotura σR ≥ 700MPa |
| **301** | 52 | 35 | 1.6 | 2 | 2 | 18 | 38 | |
| **303 - 304 - 305** | 75 | 65 | 1.6 | 2 | 2 | 30 | 65 | |
| **306** | 90 | 75 | 1.6 | 3 | 3 | 55 | 85 | |
| **307** | 100 | 85 | 1.6 | 3 | 3 | 40 | 95 | |
| **309** | 120 | — | 1.6 | — | 3 | — | 140 | |
| **310** | 130 | — | 1.6 | — | 3 | — | 155 | |
| **311** | 135 | — | 1.6 | — | 3 | — | 150 | |
| **313** | 140 | 130 | 2 | 3 | 3 | 45 | 150 | |
| **314** | 180 | 160 | 1.6 | 3 | 3 | 50 | 200 | |
| **315** | 180 | 160 | 1.6 | 3 | 3 | 50 | 200 | |
| **316** | 180 | 165 | 1.6 | 3 | 3 | 90 | 180 | |
| **317** | 200 | — | 1.6 | — | 3 | — | 250 | |
| **318** | 220 | 200 | 2 | 3 | 3 | 130 | 180 | |
| **319** | 280 | — | 2 | — | 3 | — | 300 | |
| **321** | 320 | — | 2 | — | 3 | — | 300 | |
| **323** | 410 | — | 2 | — | 3 | — | 250 | |
| **325** | 450 | — | 2 | — | 3 | — | 300 | |

# FDK

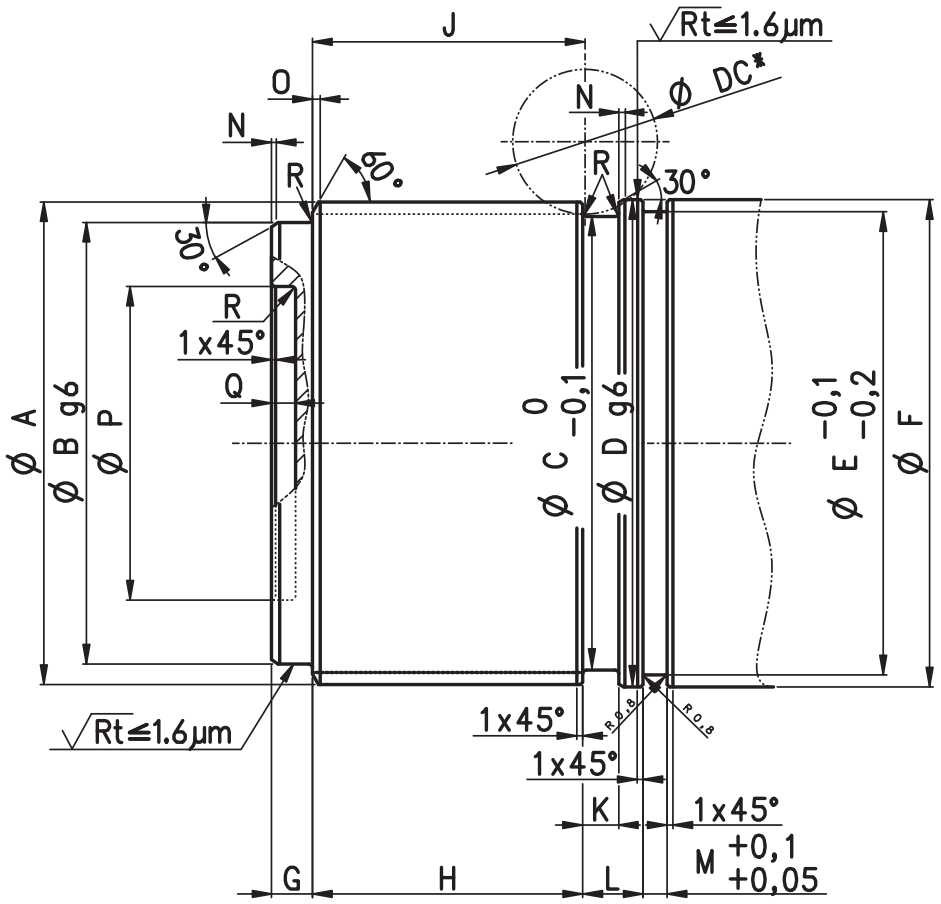



| | A | B | A1 | A2 | C | Material del eje | Medidas de chaveta | | b | $t_1$ | E | F | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ø eje | Longitud | | | | | Chaveta UNI 6604 / DIN 6885 | | | | Geometría del chaflán | | Acceso-rios |
| | [mm] | [mm] | [mm] | [mm] | [mm] | | — | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| **300** | 35 g6 | 64 | 35 | 39 | 4 | Material sugerido: Acero con resistencia a rotura σR ≥ 900MPa | N°2 x 120° | 10x8x50 | 10 H8 | Medida acorde a la norma UNI6604 / DIN 6885 | 1 x 45° | 0.5 x 45° | (*) |
| **301** | 35 g6 | 64 | 35 | 43 | 5 | | N°2 x 120° | 10x8x50 | 10 H8 | | 1 x 45° | 0.5 x 45° | 0.5 |
| **303 - 304 - 305** | 65 g6 | 95 | 65 | 75 | 6 | | N°2 x 120° | 18x11x80 | 18 H8 | | 1 x 45° | 0.5 x 45° | 0.8 |
| **306** | 80 g6 | 116 | 80 | 92 | 7 | | N°2 x 120° | 22x14x100 | 22 H8 | | 1 x 45° | 0.5 x 45° | 0.8 |
| **307** | 90 g6 | 141 | 90 | 102 | 8 | | N°2 x 120° | 25x14x125 | 25 H8 | | 2 x 45° | 1 x 45° | 0.8 |
| **309** | 120 g6 | 128 | 120 | 136 | 10 | | N°2 x 120° | 32x18x110 | 32 H8 | | 2 x 45° | 1 x 45° | 1.6 |
| **310** | 130 g6 | 138 | 130 | 146 | 10 | | N°2 x 120° | 32x18x120 | 32 H8 | | 2 x 45° | 1 x 45° | 1.6 |

(*) Salida de herramienta (UNI 4386 - 75 E0.6x0.3)



# FZP

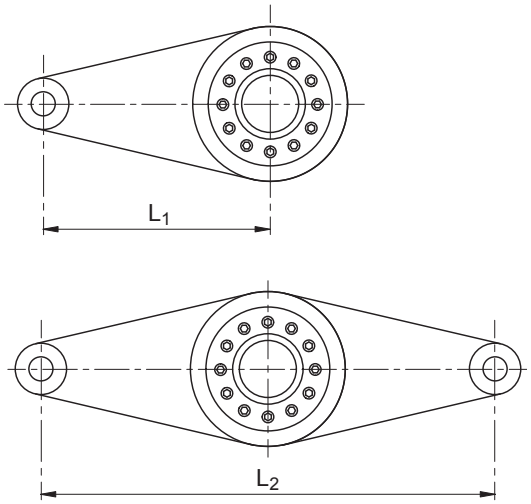



| | A | B | C | Material del eje | D | E | F | G | H | K | J | L | M | N | O | P | Q | R | DC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eje estriado DIN 5480 | Ø H7 - g6 | Diámetro de salida de herramienta | | | | | | | | | | | | | | | | |
| | [mm] | [mm] | [mm] | | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] |
| **311** | 120x3x38 | 108 | 112 | Material sugerido: Acero con resistencia a rotura σR ≥ 900MPa | 124 | 112 | 124 | 19 | 69 | 9 | 70 | 18,5 | 6 | 1 | 1.6 | — | — | 1.6 | 60 |
| **313** | 140x5x26 | 110 | 132 | | 142 | 132 | 142 | 26 | 83 | 18 | 84 | 30 | 6 | 1 | 2 | — | — | 3 | 60 |
| **314** | 150x5x28 | 136 | 136 | | 152 | 136 | 152 | 16 | 103 | 8 | 104 | 20 | 8 | 1 | 2 | — | — | 1.6 | 60 |
| **315** | 150x5x28 | 136 | 136 | | 152 | 136 | 152 | 16 | 103 | 8 | 104 | 20 | 8 | 1 | 2 | — | — | 1.6 | 60 |
| **316** | 170x5x32 | 150 | 154 | | 172 | 154 | 172 | 30 | 113 | 20 | 114 | 45 | 9 | 1 | 3 | — | — | 3 | 60 |
| **317** | 200x5x38 | 187 | 192 | | 202 | 192 | 202 | 16 | 112 | 7 | 113 | 21 | 9 | 1 | 3.5 | 130 | 10 | 1.6 | 60 |
| **318** | 210x5x40 | 190 | 194 | | 212 | 194 | 212 | 27 | 133 | 20 | 134 | 45 | 9 | 2 | 3 | — | — | 3 | 60 |
| **319** | 260x5x50 | 248 | 243 | | 265 | 243 | 265 | 29 | 144 | 20 | 145 | 40 | 11 | 2 | 3 | — | — | 3 | 60 |
| **321** | 300x8x36 | 282 | 281 | | 305 | 281 | 305 | 25 | 158 | 25 | 159 | 50 | 12 | 2 | 3 | — | — | 3 | 70 |
| **323** | 400x8x48 | 360 | 381 | | 405 | 381 | 405 | 35 | 254 | 26 | 256 | 53,5 | 12 | 2 | 4 | — | — | 5 | 70 |
| **325** | 450x8x55 | 410 | 431 | | 455 | 431 | 455 | 34 | 272 | 24 | 274 | 66 | 12 | 2 | 4 | — | — | 5 | 70 |

* Diámetro máximo cortador

## BRAZO DE REACCIÓN

| | L1 [mm] | L2 [mm] |
|---|---|---|
| **300** | 300 | 450 |
| **301** | 580 | |
| **303** | 350 | 500 |
| **304** | | |
| **305** | 370 | |
| **306** | 410 | 600 |
| **307** | 490 | 700 |
| **309** | 600 | 900 |
| **310** | 1030 | 1000 |
| **311** | 800 | 1100 |
| **313** | 900 | 1200 |
| **314** | 1100 | 1400 |
| **315** | | |
| **316** | 1280 | 1500 |
| **317** | 1300 | 1600 |
| **318** | 1900 | 1800 |
| **319** | 1500 | 2000 |
| **321** | 1500 | |
| **323** | 1750 | 3000 |
| **325** | 2050 | 3200 |



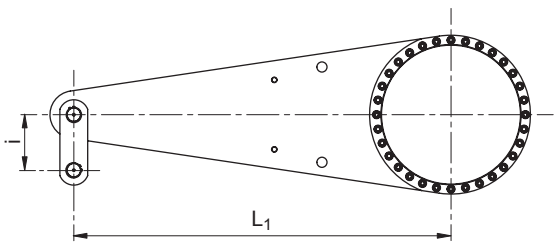

NOTA: Diseños solo para ilustración de la propuesta

Material sugerido: S275JR - UNI EN 10025 o S355JR - UNI EN 10025.

## KIT BRAZO DE REACCIÓN PARA VERSIÓN FP

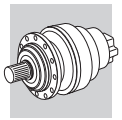
Previa solicitud existe la posibilidad de dotar a los reductores de la serie 300 en la versión FP de un kit de “brazo de reacción”. Para mayor información contactar con nuestro Servicio Técnico.

| | L1 [mm] | i [mm] |
|---|---|---|
| **300** | 300 | 55 |
| **301** | 580 | |
| **303** | 350 | 80 |
| **304** | | |
| **305** | 370 | |
| **306** | 410 | 115 |
| **307** | 490 | |
| **309** | 600 | |
| **310** | 1030 | 135 |
| **311** | 800 | 155 |
| **313** | 900 | 160 |
| **314** | 1100 | 200 |
| **315** | | |
| **316** | 1280 | 210 |
| **317** | 1300 | 240 |
| **318** | 1900 | 280 |
| **319** | 1500 | 320 |
| **321** | 1500 | 360 |
| **323** | 1750 | 400 |
| **325** | 2050 | 440 |




NOTA: Diseño solo para ilustración de la propuesta

Material sugerido: S275JR - UNI EN 10025 o S355JR - UNI EN 10025.



# FRENOS Y MOTORES HIDRÁULICOS

## H1 SIMBOLOGÍA Y UNIDADES DE MEDIDA

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| **V** | [$cm^3$] | Cilindrada |
| **p** | [bar] | Presión |
| **pA. pB** | [bar] | Presión en las entradas (racores) A y B |
| **Q** | [l/min] | Caudal |
| **ηt** | | Rendimiento total |
| **ηmh** | | Rendimiento mecánico-hidráulico |

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| **ηv** | | Rendimiento volumétrico |
| **n** | [$min^{-1}$] | Velocidad angular |
| **M** | [Nm] | Par efectivo en eje motor |
| **cont** | | Valor genérico, continuo en el tiempo |
| **int** | | Valor genérico, intermitente en el tiempo |

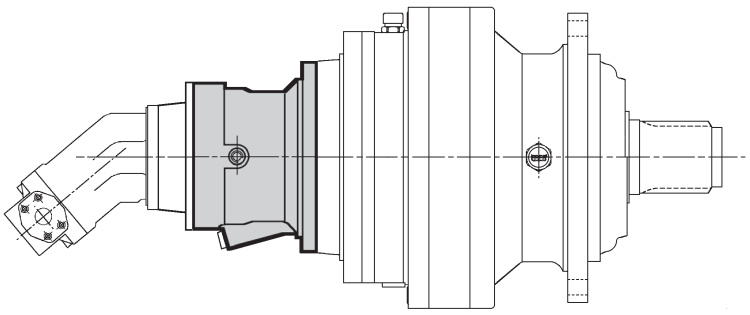
## H2 FRENOS HIDRÁULICOS NEGATIVOS

DESCRIPCIÓN

Son frenos estáticos de seguridad, en cuanto que la acción de frenado se desarrolla cuando la presión hidráulica de mando es nula, mientras que, cuando ésta alcanza los valores mínimos para el desbloqueo, la acción frenante cesa. Aplicados a la entrada del reductor, constituyen un grupo monobloc compacto. Se deben adoptar en todas aquellas aplicaciones donde es absolutamente necesario parar y tener bloqueada la transmisión incluso bajo la acción de pares externos.

Aplicaciones:

- cabrestantes
- giro torres
- frenos de estacionamiento en equipamientos móvilesi
- aplicaciones industriales generales



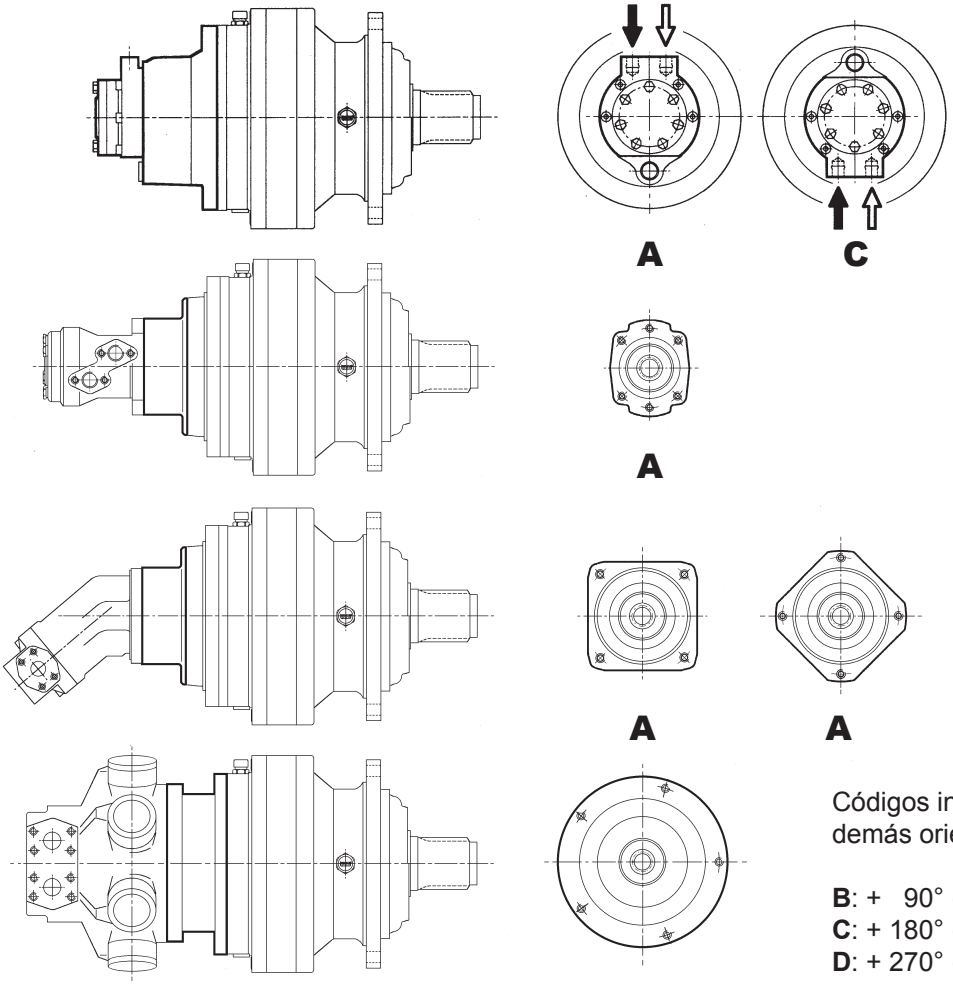
## H2.1 Datos técnicos de los frenos

(A 22)

| | | Tipo | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 4. | | | | | | | 5. | | | | | 6. | | | | | |
| | | A | B | D | F | H | K | L | B | C | E | G | K | B | C | E | G | K | L |
| Par de frenado estático | Nm ±10% | 50 | 100 | 160 | 260 | 330 | 400 | 440 | 400 | 500 | 630 | 800 | 1000 | 850 | 1100 | 1500 | 2100 | 2600 | 3200 |
| Presión mínima de abertura | bar | 10 | 20 | 30 | 20 | 25 | 30 | 34 | 20 | 27 | 20 | 26 | 32 | 14 | 19 | 25 | 19 | 24 | 29 |
| Presión máxima de mando | bar | 320 | | | | | | | | | | | | | | | | | |
| Volumen de aceite para el mando de abertura del freno | $cm^3$ | 6.65 | 6.65 | 6.65 | 6.65 | 6.65 | 6.65 | 6.65 | 13.96 | 13.96 | 13.96 | 13.96 | 13.96 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 | 37.2 |

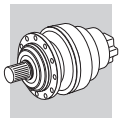
## H3 ENTRADAS PARA MOTORES HIDRÁULICOS

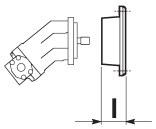
Todos los tamaños están predispuestos para el montaje de motores hidráulicos.
Los tipos de predisposiciones disponibles están indicados en las páginas siguientes.
Las orientaciones estándar (A) de la brida de ataque motor, están indicadas en los esquemas siguientes, vistas desde la entrada del reductor.



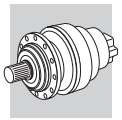

Códigos indicativos de las demás orientaciones:

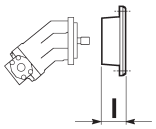
**B**: + 90° (sentido horario)
**C**: + 180° (sentido horario)
**D**: + 270° (sentido horario)



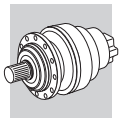


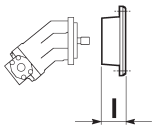
| | | SAE Standard J744c | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SAE A 16/32 z9 | SAE A ø15,875 | SAE B 16/32 z13 | SAE B ø22,2 | SAE BB 16/32 z15 | SAE BB ø25,4 | SAE C 12/24 z14 | SAE C ø31,7 | SAE CC 12/24 z17 | SAE C ø38,1 | SAE D 8/16 z13 | SAE E 8/16 z13 |
| | | S5AM | S5AN | S5BA | S5BB | S5BM | S5BN | S5CA | S5CB | S5CP | S5CQ | S5DA | S5EA |
| | CODE | I | | | | | | | | | | | |
| 300 | L1-L2-L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 301 | L1-L2-L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 303 | L1 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L2-L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 304 | L1 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L2-L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 305 | L1 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L2-L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 306 | L1 | | | | | | | | | | | 101 | 113 |
| | L2 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2-R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 307 | L1 | | | | | | | | | | | 101 | 113 |
| | L2 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 309 | L1 | | | | | | | | | | | 101 | 113 |
| | L2 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L3-L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 310 | L1 | | | | | | | | | | | 146 | 158 |
| | L2 | | | | | | | | | | | 101 | 113 |
| | L3 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 113 |
| | R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 311 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 101 | 113 |
| | L3 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 113 |
| | R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 313 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 101 | 113 |
| | L3 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 113 |
| | R3-R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 314 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 146 | 113 |
| | L3 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 113 |
| | R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 315 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 113 |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 113 |
| | R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 316 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 113 |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 113 |
| | R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 317 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 113 |
| | L4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 113 |
| | R4 | 42 | 42 | 52 | 52 | 52 | 52 | 64 | 64 | 80 | 80 | 81 | |
| 318 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 113 |
| | R4(B)-R4(C) | | | | | | | | | | | 101 | 113 |
| 319 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 113 |
| | R4(B)-R4(C) | | | | | | | | | | | 101 | 113 |
| 321 | L1 | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 113 |
| | R4(B)-R4(C) | | | | | | | | | | | 101 | 113 |



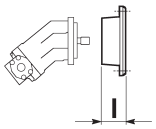


| | | CALZONI | | | | | | | | CHAR-LYNN (EATON) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CALZONI MR190 N z8 | CALZONI MR300 N z8 | CALZONI MRP300 N z8 | CALZONI MR450 N z8 | CALZONI MR700 N z8 | CALZONI MR1100 N z8 | CALZONI MR1800 N z10 | CALZONI MR2800 N z10 | SERIE 2000 SAE A 1" 6B | SERIE 2000 SAE A ø25,4 | SERIE 2000 SAE A ø32 | SERIE 2000 SAE A 12/24 z14 | SERIE 2000 BEARINGLESS 1 2/24 z12 | SERIE 4000 SAE B ø31,75 | SERIE 4000 SAE C 12/24 z17 | SERIE 6000 SAE C ø38,1 | SERIE 6000 SAE C 12/24 z17 |
| | CODE | C0AA | C0AD | C0BL | C0AG | C0AL | C0AP | C0AS | C0AV | S5AQ | S5AS | D0AG | D0AH | E2AA | S5BP | S5CP | S5CQ | S5CP |
| | | | | | | | | | | I | | | | | | | | |
| 300 | L1-L2-L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 301 | L1-L2-L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 303 | L1 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L2-L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 304 | L1 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L2-L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 305 | L1 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L2-L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 306 | L1 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L2 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2-R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 307 | L1 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L2 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 309 | L1 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L2 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L3-L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 310 | L1 | | | | 143 | 147 | 178 | | | | | | | | | | | |
| | L2 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L3 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2(B)-R2(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 311 | L1 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L2 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L3 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2(B)-R2(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 313 | L1 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L2 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L3 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R2(B)-R2(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R3-R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 314 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L3 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3(B)-R3(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 315 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L3 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3(B)-R3(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 316 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L3 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3(B)-R3(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 317 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L3 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | L4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| | R3(B)-R3(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4 | 64 | 78 | 78 | | | | | | 42 | 42 | 64 | 64 | 52 | 68 | 80 | 80 | 80 |
| 318 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L4 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4(B)-R4(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| 319 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L4 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4(B)-R4(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |
| 321 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | 130 | 130 | 165 | 200 | | | | | | | | | |
| | L4 | | | | 98 | 102 | 133 | | | | | | | | | | | |
| | R4(B)-R4(C) | | | | 98 | 102 | 133 | | | | | | | | | | | |





| | | SAUER DANFOSS (orbit) | | | | | | | | | DENISON Hydraulics | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OMP-OMR 50/315 ø25 | OMP-OMR 50/315 SAE 1" 6B | OMS 80/315 ø32 | OMS 80/315 12/24 z14 | OMSS 80/315 12/24 z12 | OMT 160/400 ø40 | OMT 160/400 12/24 z17 | OMTS 160/400 12/24 z16 | OMVS 315/800 10/20 z16 | M6-M7-M8 *3** 12/24 z14 | M11-M14 *3** 8/16 z13 | M3 B 16/32 z9 | M4C-M4SC 16/32 z13 | M4D-M4SD 12/24 z14 | M4DC-M4S DC 12/24 z14 | M4E-M4SE 12/24 z14 | M5BS 16/32 z13 |
| | | S5AP | S5AQ | D0AG | D0AH | D0AL | D0AM | D0AN | D0AQ | D0AU | S5CA | S5EA | S5AM | S5BA | S5CA | S5CA | S5CA | S5BA |
| | CODE | | | | | | | | | I | | | | | | | | |
| 300 | L1-L2-L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 301 | L1-L2-L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 303 | L1 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L2-L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 304 | L1 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L2-L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 305 | L1 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L2-L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 306 | L1 | | | | | | | | | 70 | | 113 | | | | | | |
| | L2 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2-R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 307 | L1 | | | | | | | | | 70 | | 113 | | | | | | |
| | L2 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 309 | L1 | | | | | | | | | 70 | | 113 | | | | | | |
| | L2 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L3-L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 310 | L1 | | | | | | | | | 115 | | 158 | | | | | | |
| | L2 | | | | | | | | | 70 | | 113 | | | | | | |
| | L3 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2(B)-R2(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 311 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 70 | | 113 | | | | | | |
| | L3 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2(B)-R2(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 313 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 70 | | 113 | | | | | | |
| | L3 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R2(B)-R2(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R3-R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 314 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 70 | | 113 | | | | | | |
| | L3 | 42 | 42 | 64 | 64 | 37 | | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3(B)-R3(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 315 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 70 | | 113 | | | | | | |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3(B)-R3(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 316 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 70 | | 113 | | | | | | |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3(B)-R3(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 317 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 70 | | 113 | | | | | | |
| | L4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| | R3(B)-R3(C) | | | | | | | | | 70 | | 113 | | | | | | |
| | R4 | 42 | 42 | 64 | 64 | 37 | 112 | 112 | 57 | | 64 | | 42 | 52 | 64 | 64 | 64 | 52 |
| 318 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 70 | | 113 | | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 70 | | 113 | | | | | | |
| 319 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 70 | | 113 | | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 70 | | 113 | | | | | | |
| 321 | L1 | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 70 | | 113 | | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 70 | | 113 | | | | | | |



| | | LINDE | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | MMF 43 16/32 z15 | MMF 63 12/24 z14 | HMF 28-35-02 16/32 z15 | HMF 50-02 16/32 z21 | HMF-HMV 75-02 16/32 z21 | HMF-HMV 105-02 16/32 z23 | HMF-HMV 135-02 16/32 z27 | BMF-BMV 186 50x2 Z24 |
| | | S5BM | S5CA | S5BM | S5CE | S5CE | S5CD | S5DC | I5AF |
| | CODE | I | | | | | | | |
| 300 | L1-L2-L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 301 | L1-L2-L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 303 | L1 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L2-L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 304 | L1 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L2-L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 305 | L1 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L2-L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 306 | L1 | | | | | | | 101 | 121 |
| | L2 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2-R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 307 | L1 | | | | | | | 101 | 121 |
| | L2 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 309 | L1 | | | | | | | 101 | 121 |
| | L2 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L3-L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 310 | L1 | | | | | | | 146 | 166 |
| | L2 | | | | | | | 101 | 121 |
| | L3 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2(B)-R2(C) | | | | | | | 101 | 121 |
| | R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 311 | L1 | | | | | | | | |
| | L2 | | | | | | | 101 | 121 |
| | L3 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2(B)-R2(C) | | | | | | | 101 | 121 |
| | R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 313 | L1 | | | | | | | | |
| | L2 | | | | | | | 101 | 121 |
| | L3 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R2(B)-R2(C) | | | | | | | 101 | 121 |
| | R3-R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 314 | L1 | | | | | | | | |
| | L2 | | | | | | | 101 | 121 |
| | L3 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3(B)-R3(C) | | | | | | | 101 | 121 |
| | R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 315 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | 101 | 121 |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3(B)-R3(C) | | | | | | | 101 | 121 |
| | R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 316 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | 101 | 121 |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3(B)-R3(C) | | | | | | | 101 | 121 |
| | R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 317 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | 101 | 121 |
| | L4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| | R3(B)-R3(C) | | | | | | | 101 | 121 |
| | R4 | 52 | 64 | 52 | 64 | 64 | 64 | 81 | |
| 318 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | | |
| | L4 | | | | | | | 101 | 121 |
| | R4(B)-R4(C) | | | | | | | 101 | 121 |
| 319 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | | |
| | L4 | | | | | | | 101 | 121 |
| | R4(B)-R4(C) | | | | | | | 101 | 121 |
| 321 | L1 | | | | | | | | |
| | L2 | | | | | | | | |
| | L3 | | | | | | | | |
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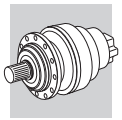

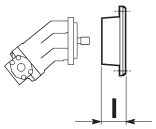

| | | BRUENINGHAUS HYDROMATIK (BOSCH REXROTH) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A2FM10-12-16 25x1.25 z18 | A2FM23-28-32 A6VM 28 30x2 z14 | A2FM23-28 ø25 | A2FM45 32x2 z14 | A2FM45-56 30x2 z14 | A2FM56-63 A6VM55 35x2 z16 | A2FM80-90 A6VM80 40x2 z18 | A2FM80 35x2 z16 | A2FM107-125 A6VM107 45x2 z21 | A2FM107 A6VM107 40x2 z18 | A2FM160-180 A6VM160 50x2 z24 | A2FM160 A6VM160 45x2 z21 | A2FM200 A6VM200 50x2 z24 | A6VM250 50x2 z24 | A2FM250 50x2 z24 | A10FM45.30W A10VM63 16/32 z15 |
| | CODE | H0AA | H0AE | H0AH | H0AI | H0BA | H0BC | H0BG | H0BI | H0CA | H0CC | H0CE | H0CG | H0CI | H0DA | H0DE | S5BM |
| | | I | | | | | | | | | | | | | | | |
| 300 | L1-L2-L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 301 | L1-L2-L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 303 | L1 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L2-L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 304 | L1 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L2-L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 305 | L1 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L2-L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 306 | L1 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L2 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2-R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 307 | L1 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L2 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 309 | L1 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L2 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L3-L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 310 | L1 | | | | | | | | | | | 146 | 146 | 146 | 158 | 158 | |
| | L2 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L3 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 311 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L3 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 313 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L3 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R2(B)-R2(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R3-R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 314 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L3 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | 113 | | 52 |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 315 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 316 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 317 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | L4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| | R3(B)-R3(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4 | 42 | 52 | 52 | 64 | 64 | 64 | 75 | 75 | 101 | 101 | | 101 | | | | 52 |
| 318 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4(B)-R4(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| 319 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| | R4(B)-R4(C) | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
| 321 | L1 | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | | 101 | 101 | 101 | 113 | 113 | |
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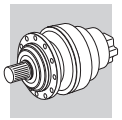
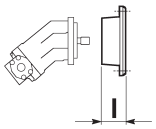
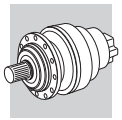
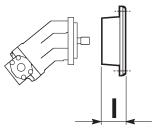




| | | SAI | | | | | | | KAWASAKI STAFFA | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GM05 UNI 8953 | GM1 UNI 8953 | GM1/P1/S1 35x2 z16 | GM2 UNI 8953 | GM3 UNI 8953 | GM4/GM5 UNI 8953 | SAI L7 (9) N80x3 z25 | B030 z17 | B045 z17 | HM (HD)B150 HM (HD)B200 5/10 z16 |
| | | S2BA | S2AB | S2CE | S2AF | S2DN | S2BF | S2BH | S1AB | S1AC | S1AL |
| | CODE | I | | | | | | | | | |
| 300 | L1-L2-L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 301 | L1-L2-L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 303 | L1 | 73 | 37 | 57 | | | | | | | |
| | L2-L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 304 | L1 | 73 | 37 | 57 | | | | | | | |
| | L2-L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 305 | L1 | 73 | 37 | 57 | | | | | | | |
| | L2-L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 306 | L1 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L2 | 73 | 37 | 57 | | | | | | | |
| | L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2-R3-R4 | 73 | 37 | 57 | | | | | | | |
| 307 | L1 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L2 | 73 | 37 | 57 | | | | | | | |
| | L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2 | 73 | 37 | 57 | | | | | | | |
| | R3-R4 | 73 | 37 | 57 | | | | | | | |
| 309 | L1 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L2 | 73 | 37 | 57 | | | | | | | |
| | L3-L4 | 73 | 37 | 57 | | | | | | | |
| | R2 | 73 | 37 | 57 | | | | | | | |
| | R3-R4 | 73 | 37 | 57 | | | | | | | |
| 310 | L1 | | 119 | | 143 | 143 | 150 | | 180 | 185 | |
| | L2 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L3 | 73 | 37 | 57 | | | | | | | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R2(B)-R2(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R3-R4 | 73 | 37 | 57 | | | | | | | |
| 311 | L1 | | | | 135 | | 150 | 90 | | | 187 |
| | L2 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L3 | 73 | 37 | 57 | | | | | | | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R2(B)-R2(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R3-R4 | 73 | 37 | 57 | | | | | | | |
| 313 | L1 | | | | 135 | | 150 | 90 | | | 187 |
| | L2 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L3 | 73 | 37 | 57 | | | | | | | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R2(B)-R2(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R3-R4 | 73 | 37 | 57 | | | | | | | |
| 314 | L1 | | | | | | | | | | |
| | L2 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L3 | 73 | 37 | 57 | | | | | | | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R3(B)-R3(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4 | 73 | 37 | 57 | | | | | | | |
| 315 | L1 | | | | | | | | | | |
| | L2 | | | | 135 | | 150 | 90 | | | 187 |
| | L3 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R3(B)-R3(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4 | 73 | 37 | 57 | | | | | | | |
| 316 | L1 | | | | | | | | | | |
| | L2 | | | | 135 | | 150 | 90 | | | 187 |
| | L3 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R3(B)-R3(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4 | 73 | 37 | 57 | | | | | | | |
| 317 | L1 | | | | | | | | | | |
| | L2 | | | | 135 | | 150 | 90 | | | 187 |
| | L3 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | L4 | 73 | 37 | 57 | | | | | | | |
| | R3(B)-R3(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4 | 73 | 37 | 57 | | | | | | | |
| 318 | L1 | | | | | | | | | | |
| | L2 | | | | | | | | | | |
| | L3 | | | | 135 | | 150 | 90 | | | 187 |
| | L4 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4(B)-R4(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| 319 | L1 | | | | | | | | | | |
| | L2 | | | | | | | | | | |
| | L3 | | | | 135 | | 150 | 90 | | | 187 |
| | L4 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4(B)-R4(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| 321 | L1 | | | | | | | | | | |
| | L2 | | | | | | | | | | |
| | L3 | | | | 135 | | 150 | 90 | | | 187 |
| | L4 | | 74 | | 98 | 98 | 105 | | 135 | 140 | |
| | R4(B)-R4(C) | | 74 | | 98 | 98 | 105 | | 135 | 140 | |





| | | SAUER DANFOSS (piston) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | OMF-SMF-OMV -SMV 1-038 16/32 z13 | SMF 2/033-052-070 16/32 z21 | SMF 2/089 16/32 z23 | SMF 2/119 16/32 z27 | SMF 2/166-227 16/32 z27 | SMF 4/023 90M042 16/32 z13 | SMF 4/046 90M042 16/32 z15 | 90 M055 16/32 z21 | 90 M075-M100 16/32 z23 | 90 M130 16/32 z27 | 51 V 060 12/24 z14 | 51 V 080 12/24 z14 | 51 V 110 8/16 z13 | 51 V 160 8/16 z13 | 51 V 250 8/16 z15 |
| | CODE | S5BA | S5CE | S5CD | S5DC | S5EC | S5BA | S5BM | S5CE | S5CD | S5DC | S5CA | S5CA | S5DA | S5DA | S5ED |
| | | | | | | | | | I | | | | | | | |
| 300 | L1-L2-L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 301 | L1-L2-L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 303 | L1 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L2-L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 304 | L1 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L2-L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 305 | L1 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L2-L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 306 | L1 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L2 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2-R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 307 | L1 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L2 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 309 | L1 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L2 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L3-L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 310 | L1 | | | | 146 | 158 | | | | | 146 | | | 146 | 146 | 158 |
| | L2 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L3 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2(B)-R2(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 311 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L3 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2(B)-R2(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 313 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L3 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R2(B)-R2(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R3-R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 314 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L3 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3(B)-R3(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 315 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3(B)-R3(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 316 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3(B)-R3(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 317 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | L4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| | R3(B)-R3(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4 | 52 | 64 | 64 | 81 | | 52 | 52 | 64 | 64 | 81 | 64 | 64 | 81 | 81 | |
| 318 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | |
| | L4 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4(B)-R4(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| 319 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | |
| | L4 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| | R4(B)-R4(C) | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
| 321 | L1 | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | |
| | L4 | | | | 101 | 113 | | | | | 101 | | | 101 | 101 | 113 |
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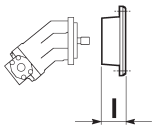
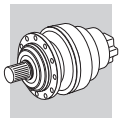
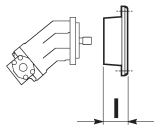


| | | TRW-TORQMOTOR (PARKER) | | | | | VICKERS (EATON) | | | | WHITE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MAG 04-32 SAE 1" 6B | MAF 06-40 SAE 1" 6B | MAB 06-32 SAE 1" 6B | MAB 06-32 SAE A ø25 | MAE 10-68 SAE 1" 6B | MFE 19 16/32 z15 | 25M**A11 16/32 z13 | 35-45 M**A11 12/24 z14 | 50 M**A11 8/16 z13 | HS 02-15 SAE A ø25 | HS 02-15 SAE A 1" 6B | RS 08-24 SAE A ø25 | RS 08-24 SAE A1" 6B | REO 06-45 SAE A1" 6B |
| | | S5AQ | S5AQ | S5AQ | S5AP | S5AQ | S5BM | S5BA | S5CA | S5DA | S5AP | S5AQ | S5AP | S5AQ | S5AP |
| | CODE | I | | | | | | | | | | | | | |
| 300 | L1-L2-L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 301 | L1-L2-L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 303 | L1 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L2-L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 304 | L1 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L2-L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 305 | L1 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L2-L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 306 | L1 | | | | | | | | | 101 | | | | | |
| | L2 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2-R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 307 | L1 | | | | | | | | | 101 | | | | | |
| | L2 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 309 | L1 | | | | | | | | | 101 | | | | | |
| | L2 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L3-L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 310 | L1 | | | | | | | | | 146 | | | | | |
| | L2 | | | | | | | | | 101 | | | | | |
| | L3 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2(B)-R2(C) | | | | | | | | | 101 | | | | | |
| | R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 311 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 101 | | | | | |
| | L3 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2(B)-R2(C) | | | | | | | | | 101 | | | | | |
| | R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 313 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 101 | | | | | |
| | L3 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R2(B)-R2(C) | | | | | | | | | 101 | | | | | |
| | R3-R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 314 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | 101 | | | | | |
| | L3 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3(B)-R3(C) | | | | | | | | | 101 | | | | | |
| | R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 315 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 101 | | | | | |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3(B)-R3(C) | | | | | | | | | 101 | | | | | |
| | R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 316 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 101 | | | | | |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3(B)-R3(C) | | | | | | | | | 101 | | | | | |
| | R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 317 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | 101 | | | | | |
| | L4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| | R3(B)-R3(C) | | | | | | | | | 101 | | | | | |
| | R4 | 42 | 42 | 42 | 42 | 42 | 52 | 52 | 64 | 81 | 42 | 42 | 42 | 42 | 42 |
| 318 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 101 | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 101 | | | | | |
| 319 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 101 | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 101 | | | | | |
| 321 | L1 | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | 101 | | | | | |
| | R4(B)-R4(C) | | | | | | | | | 101 | | | | | |



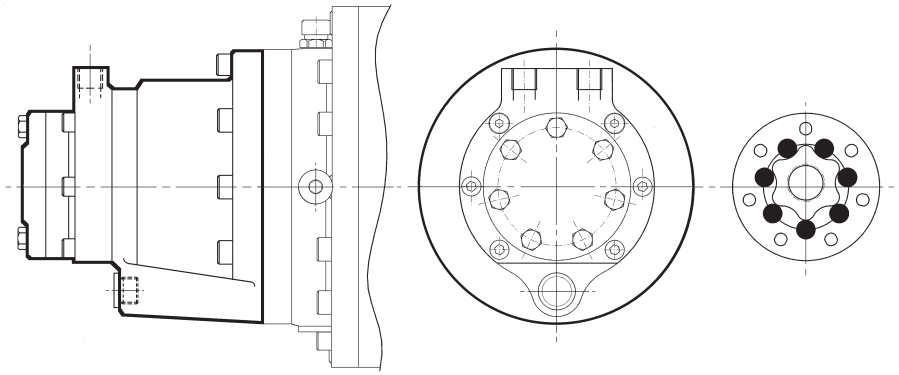


| | | VOAC (PARKER) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F11-5 CK ø18 | F11-10 CK ø20 | F11-19 CK ø25 | F11-19 CD 25x1,25 z18 | F12-30 MF*I*D 30x2 z14 | F12-40 MF*I*D 32x2 z14 | F12-60 MF*I*D 35x2 z16 | F12-80 MF*I*D 40x2 z18 | F12-110 MF*I*D 45x2 z21 | F11-150/250 S+S 8/16 z13 | V12 060 I*D 35x2 z16 | V12 060 S*S 12/24 z14 | V12 080 N*D 40x2 z18 | V12 080 S*S 12/24 z14 | V12 110 I*D 45x2 z21 | V12 110 S*S 8/16 z13 | V12 160 S*S 8/16 z13 | V12 160 N*C 45x2 z21 |
| | CODE | V0AA | V0AC | V0AE | V0AG | H0AE | H0AI | H0BC | H0BG | H0CA | S5DA | H0BC | S5CA | H0BG | S5CA | H0CA | S5DA | S5DA | H0CG |
| | | I | | | | | | | | | | | | | | | | | | |
| 300 | L1-L2-L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 301 | L1-L2-L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 303 | L1 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L2-L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 304 | L1 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L2-L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 305 | L1 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L2-L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 306 | L1 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L2 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2-R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 307 | L1 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L2 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 309 | L1 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L2 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L3-L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 310 | L1 | | | | | | | | | | 146 | | | | | | 146 | 146 | |
| | L2 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L3 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2(B)-R2(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 311 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L3 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2(B)-R2(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 313 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L3 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R2(B)-R2(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R3-R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 314 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L3 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3(B)-R3(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 315 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3(B)-R3(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 316 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3(B)-R3(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 317 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | L4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| | R3(B)-R3(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4 | 64 | 52 | 53 | 53 | 52 | 64 | 64 | 75 | 101 | 81 | 64 | 64 | 75 | 64 | 101 | 81 | 81 | 101 |
| 318 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4(B)-R4(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| 319 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4(B)-R4(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| 321 | L1 | | | | | | | | | | | | | | | | | | |
| | L2 | | | | | | | | | | | | | | | | | | |
| | L3 | | | | | | | | | | | | | | | | | | |
| | L4 | | | | | | | | | | 101 | | | | | | 101 | 101 | |
| | R4(B)-R4(C) | | | | | | | | | | 101 | | | | | | 101 | 101 | |

## H4 MOTORES HIDRÁULICOS

PRESENTACIÓN

Los reductores serie 300 pueden suministrarse equipados con motores hidráulicos MG fabricados por BONFIGLIOLI TRASMITAL. Las formas y dimensiones de dichos motores están establecidas de forma que se obtenga la máxima integración con el reductor, consiguiendo así motorreductores compactos con óptimas características económicas.
Al hacer el pedido debe ponerse en contacto con el Servicio Técnico Bonfiglioli.



### H4.1 Motores hidráulicos MG

Características constructivas:

- Sistema orbital, con rodillos entre rotor y estator GEROLER®
- Distribuidor en el eje de salida
- Cilindradas desde 50 a 250 $cm^3$
- Presión máx. 175 bar
- Caudal máx. 48 l/min
- Rendimientos elevados
- Posibilidad de disponer de freno hidráulico con las mismas dimensiones de empacho
- El freno es alimentado desde el propio motor, sin que se precisen válvulas ni circuitos externos.

## H5 CARACTERÍSTICAS TÉCNICAS

### H5.1 Cilindrada V [$cm^3$]

Es el volumen geométrico generado cada vuelta, correspondiente al volumen teórico de aceite hidráulico necesario para que dé una vuelta el eje motor.

### H5.2 Presión p [bar]

Es la presión hidráulica a la que es sometido el motor durante su funcionamiento.

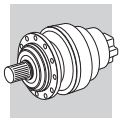
### H5.3 Caudal Q [l / min]

Es el flujo de aceite hidráulico que atraviesa el motor durante su funcionamiento.

### H5.4 Rendimiento total $\eta_t$

Es el rendimiento total del motor hidráulico derivado del producto:

$$\eta_t = \eta mh \times \eta v \quad (38)$$



### H5.5 Rendimiento mecánico-hidráulico ηmh

Representa la relación entre par efectivo y par teórico en el eje motor.
Depende de las fugas internas debidas a fricciones mecánicas y pérdidas de presión del fluido hidráulico, viene dado por la fórmula:

$$\eta mh = \frac{2\pi \times 10 \times M}{(pA - pB) \times V} \quad (39)$$

### H5.6 Rendimiento volumétrico ηv

Representa la relación entre velocidad efectiva y velocidad teórica del motor.
Depende de la tirada interna del motor entre los volúmenes de alta y baja presión; viene dado por la fórmula:

$$\eta v = \frac{n \times V}{Q \times 1000} \quad (40)$$

### H5.7 Velocidad angular n [min-1]

Es la velocidad de giro del motor hidráulico y viene dada por la fórmula:

$$n = \frac{Q \times 1000}{V} \times \eta v \quad (41)$$

### H5.8 Par M [Nm]

Es el par efectivo que el motor hidráulico puede transmitir, viene dado por la fórmula:

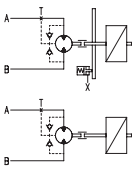
$$M = \frac{(p\,A - p\,B) \times V}{2\pi \times 10} \times \eta mh \quad (42)$$

## H6 DESIGNACIÓN

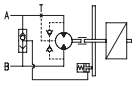
**MG 050 SD_R P010**

ALIMENTACIÓN

**P010 =** orificios de alimentación directamente sobre el cuerpo del motor — Con freno / Sin freno



**B02P =** orificios de alimentación con válvula selectora mando freno — Con freno



SERIE CONSTRUCTIVA

CILINDRADA

| | | | | | |
|---|---|---|---|---|---|
| **050** | 51.60 | cm³ | **160** | 159.60 | cm³ |
| **080** | 80.30 | cm³ | **200** | 199.80 | cm³ |
| **100** | 99.80 | cm³ | **250** | 249.30 | cm³ |
| **125** | 125.70 | cm³ | | | |

MOTOR ORBITAL TIPO MG

## H7 SELECCIÓN

La cilindrada V del motor hidráulico debe seleccionarse al mismo tiempo que el reductor.

Una vez establecido el par de salida que debe transmitir el reductor $M_{r2}$ y su velocidad $n_2$, se procederá como sigue:

Fijar el valor de la presión de mando del motor pA – pB ≤ 175 bar.

Calcular el valor de la cilindrada equivalente Veq del motorreductor con la fórmula:

$$Veq = \frac{2\pi \times 10 \times M_{r2}}{(pA - pB) \times \eta mh \times \eta d} \ [cm^3] \quad (43)$$

donde, para hmh, inicialmente fijar 0,85
$\eta_d$: rendimiento dinámico reductor fijar 0,94.

Calcular el valor del caudal Q necesario para alimentar el motor hidráulico con la fórmula :

$$Q = \frac{n_2 \times Veq}{1000 \times \eta v} \quad [l/min] \quad (44)$$

donde, para hv, inicialmente fijar 0,90.

− En base a las prestaciones requeridas $M_{r2}$ y $n_2$,

− Entrar en el diagrama (A23) del motorreductor con el valor de la cilindrada equivalente Veq y contemporáneamente escoger:
- el motor que satisfaga las condiciones de p int. y Q necesarios.
- el valor indicativo de i, teniendo en cuenta que éste se obtenga con el mínimo número de etapas de reducción, para disponer de un motorreductor con dimensiones compactas y de menor coste.

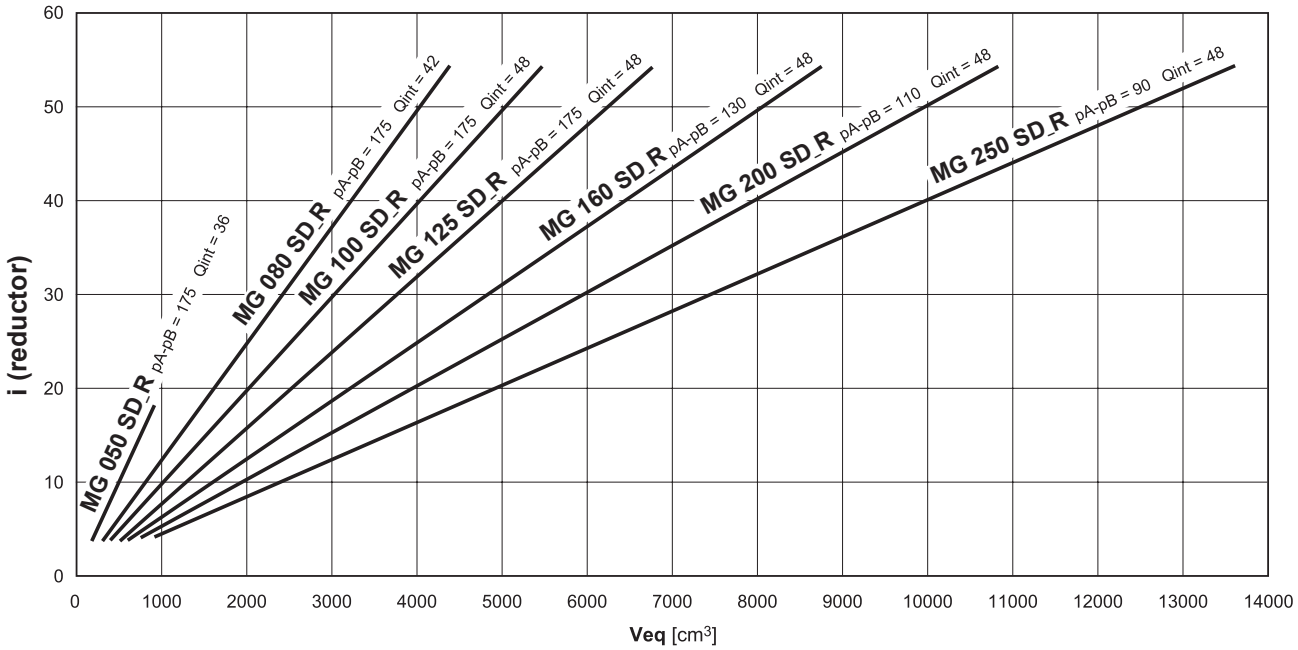
Con el valor de $M_2$ y el valor indicativo de i, proceder a la selección y comprobación del reductor según se indica en el capítulo 13.5.

## H8 VERIFICACIONES

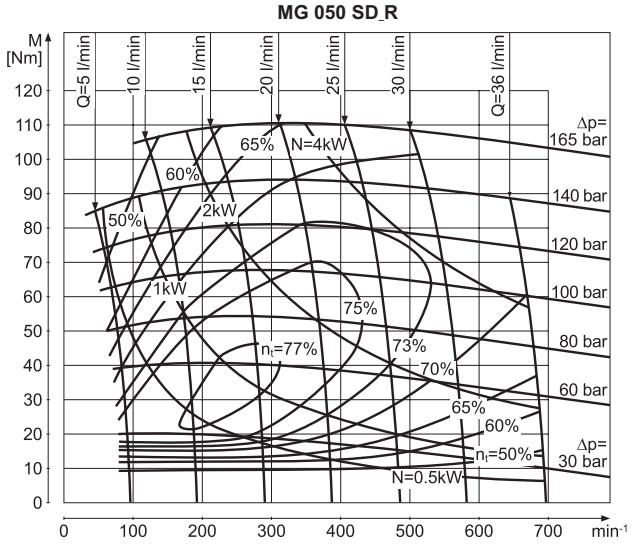
Después comprobar que los valores de presión, caudal y rendimientos, se correspondan con los indicados en la tabla (A24 y A25) de datos técnicos motores.

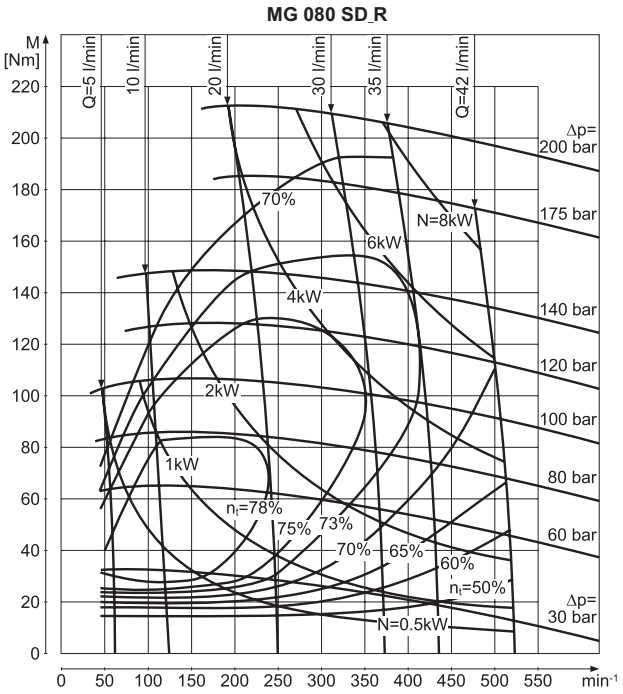
## H9 DATOS TÉCNICOS DE LOS MOTORES MG

(A 23)




(A 24)



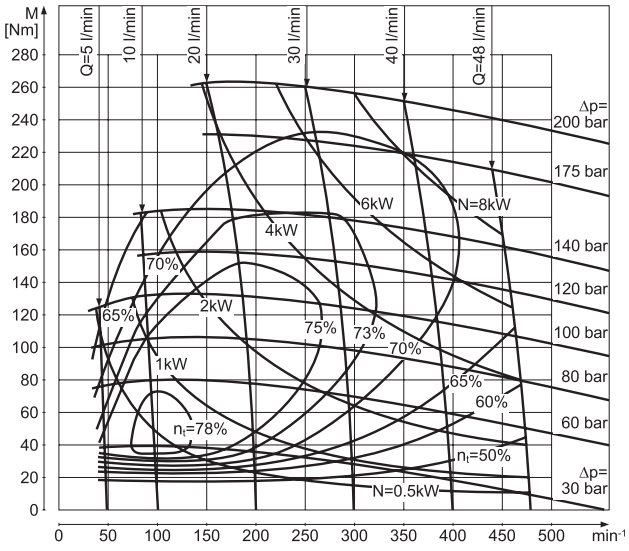





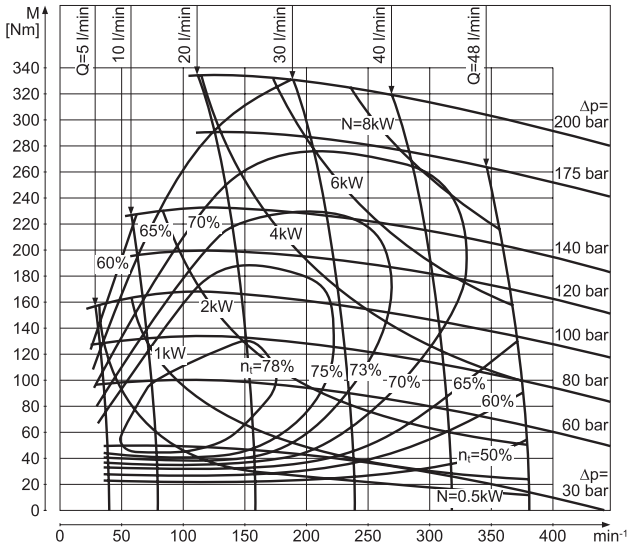

Bonfiglioli Riduttori

(A 25)

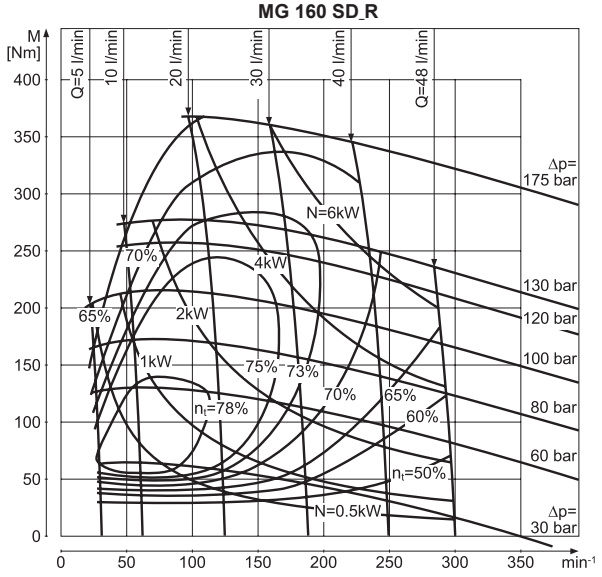
MG 100 SD_R



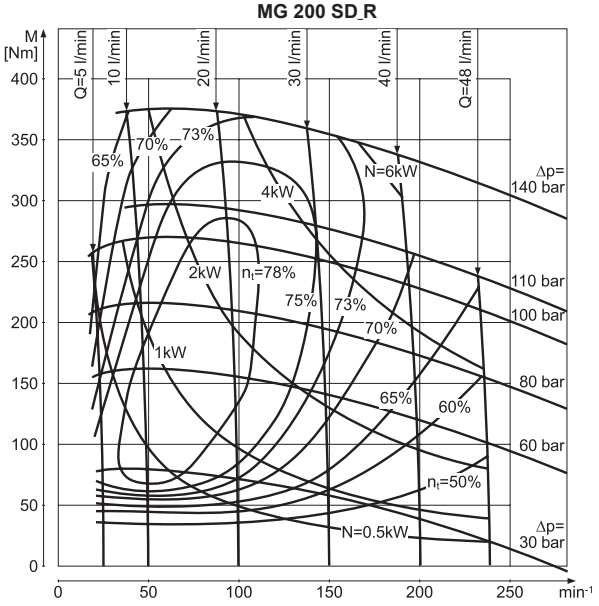

MG 125 SD_R



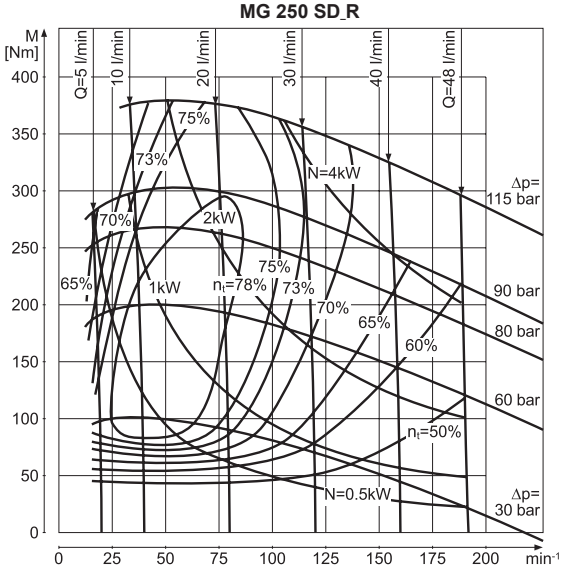

MG 160 SD_R




MG 200 SD_R

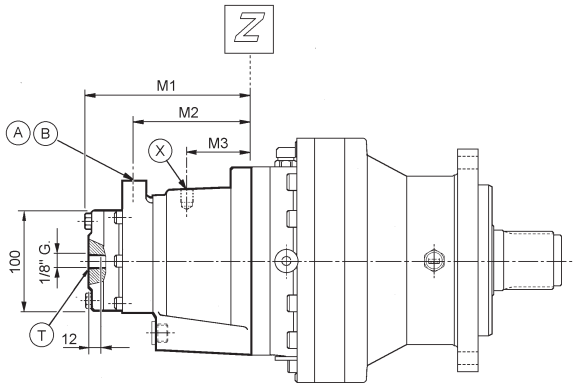


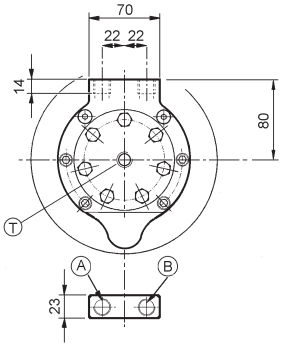

MG 250 SD_R

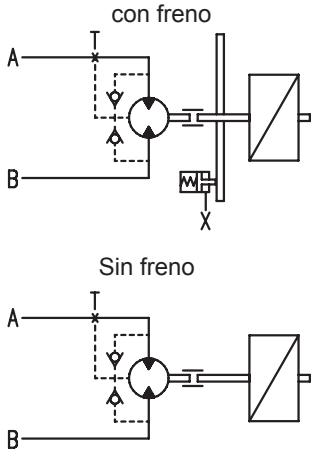


## H10 DIMENSIONES DE LOS MOTORES MG

# MG-**P010



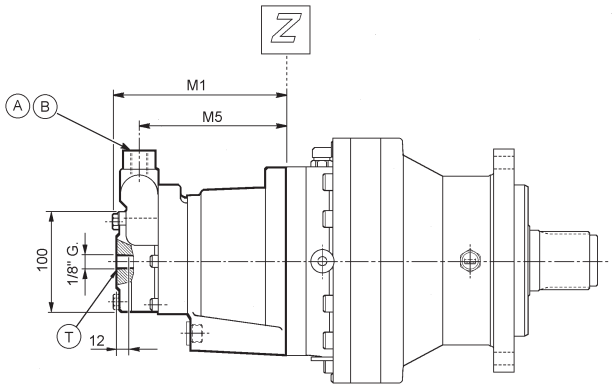



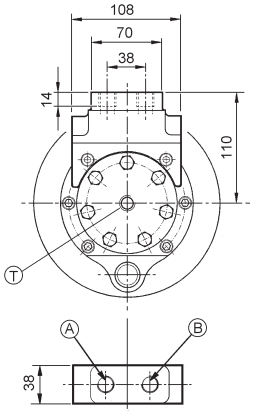



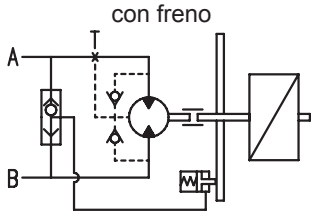

**ALIMENTACIÓN**

**A - B = 3/8" G 19TPI**
**T = 1/8" G 28TPI**
**X = 1/4 G 19TPI**

# MG-**B02P

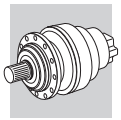



(A 26)

| Reductor aplicable | Motor | | | | | | | Ejecución | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **MG 050** | **MG 080** | **MG 100** | **MG 125** | **MG 160** | **MG 200** | **MG 250** | **P010** | | **B02P** |
| | M1 | | | | | | | M2 | M3 | M5 |
| **300 L1 - L2 - R2** | 162 | 167 | 171 | 175 | 181 | | | 113 | 60 | 143 |
| **301 L1 - L2 - R2** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |
| **303 L1** | | | | | 203 | 210 | 219 | 135 | 77 | 165 |
| **303 L2 - R2** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |
| **304 L1** | | | | 197 | 203 | 210 | 219 | 135 | 77 | 165 |
| **304 L2 - R2** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |
| **305 L1** | | | | | 203 | 210 | 219 | 135 | 77 | 165 |
| **305 L2 - R2** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |
| **306 L2** | | | | | 203 | 210 | 219 | 135 | 77 | 165 |
| **306 R2 - R3** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |
| **307 L2** | | | | | 203 | 210 | 219 | 135 | 77 | 165 |
| **307 R2 - R3** | 162 | 167 | 171 | 175 | 181 | 188 | 197 | 113 | 60 | 143 |



## H11 DATOS TÉCNICOS DE FRENOS PARA MOTORES MG

(A 27)

| | | Freno TYPE 3 | | | | Freno TYPE 4 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **3E** | **3I** | **3L** | **3N** | **4K** | **4N** | **4R** | **4U** |
| Par de frenado Mf | [Nm] | 120 | 200 | 280 | 350 | 260 | 320 | 430 | 620 |
| Presión mínima apertura | [bar] | 16 | 28 | 28 | 35 | 25 | 30 | 24 | 34 |
| Presión máxima de mando | [bar] | 200 | | | | | | | |
| Volumen de aceite para mando apertura freno | [cc] | 6.43 | 6.43 | 6.43 | 6.43 | 6.65 | 6.65 | 6.65 | 6.65 |

(A 28)

| Reductor aplicable | Motor | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **MG 050** | | **MG 080** | | **MG 100** | | **MG 125** | | **MG 160** | | **MG 200** | | **MG 250** | |
| | Mf [Nm] | | Mf [Nm] | | Mf [Nm] | | Mf [Nm] | | Mf [Nm] | | Mf [Nm] | | Mf [Nm] | |
| **300 L1 - L2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | | | | |
| **300 R2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | | | | | | | | |
| **301 L1 - L2** | | | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | 350 | **3N** |
| **301 R2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | | | | |
| **303 L1** | | | | | | | | | 430 | **4R** | 430 | **4R** | 430 | **4R** |
| **303 L2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **303 R2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **304 L1** | | | | | | | 350 | **3N** | 430 | **4R** | 430 | **4R** | 430 | **4R** |
| **304 L2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **304 R2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **305 L1** | | | | | | | | | 430 | **4R** | 430 | **4R** | 430 | **4R** |
| **305 L2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **305 R2** | 120 | **3E** | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **306 L2** | | | 260 | **4K** | 260 | **4K** | 430 | **4R** | 430 | **4R** | 430 | **4R** | 430 | **4R** |
| **306 R2 - R3** | | | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | | |
| **307 L2** | | | | | 260 | **4K** | 430 | **4R** | 430 | **4R** | 430 | **4R** | 430 | **4R** |
| **307 R2 - R3** | | | 200 | **3I** | 280 | **3L** | 350 | **3N** | 350 | **3N** | 350 | **3N** | 350 | **3N** |

## H12 INSTALACIÓN

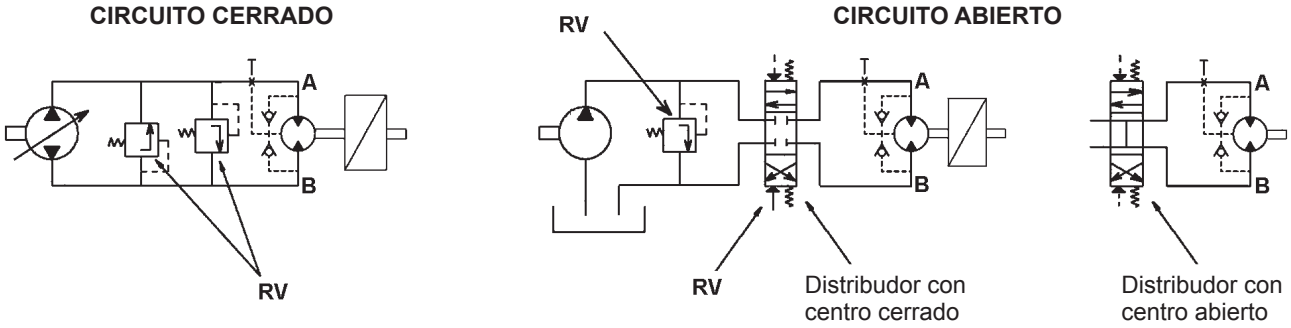
Además de las normas correspondientes a la instalación del reductor, ver capítulo 14, se recomienda seguir las siguientes normas para la instalación del motor hidráulico.

### a) Conexión al circuito hidráulico

Los motores pueden conectarse indistintamente a circuitos cerrados o abiertos. En el caso de circuito abierto, la electroválvula o distribuidor de mando puede ser con centro o abierto.

En el circuito de alimentación del motor hidráulico, es necesario instalar siempre una válvula de máxima presión tarada a un valor inferior al de $p_{int}$ admitida por el motor hidráulico. Ver esquemas hidráulicos (A29).

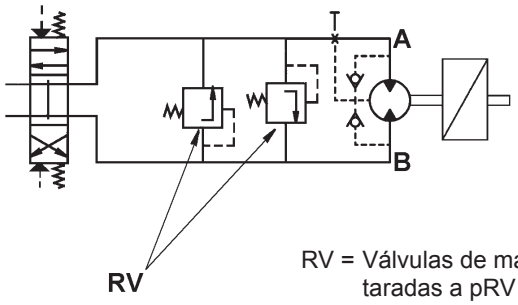
(A 29)




RV = Válvulas de presión máxima taradas a pRV < pmax

En el caso que esto no sea posible, cuando el circuito tenga que controlar otros accionamientos con presión más elevada, y/o en el caso que se disponga de un distribuidor con centro cerrado y el motor accione órganos con un momento de inercia elevado, es necesario montar las válvulas secundarias de máxima presión, lo más cerca posible del motor. Ver esquema (A30).

(A 30)

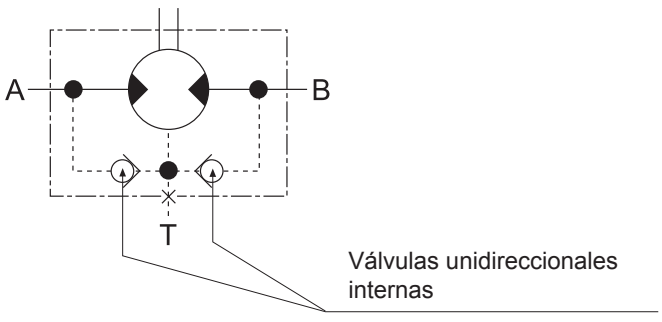



RV = Válvulas de máxima presión secundaria taradas a pRV < pmax

**b) Conexión agujero de drenaje T**

Los motores tienen agujero de drenaje de 18" G, en el centro de la tapa y está tapado por medio de un tapón metálico (ver figura inferior).
En el motor se han incorporado dos válvulas unidireccionales internas; dichas válvulas mantienen el mismo nivel de presión en ramal de baja presión A ó B, cuando el drenaje no está conectado a tanque.

(A 31)

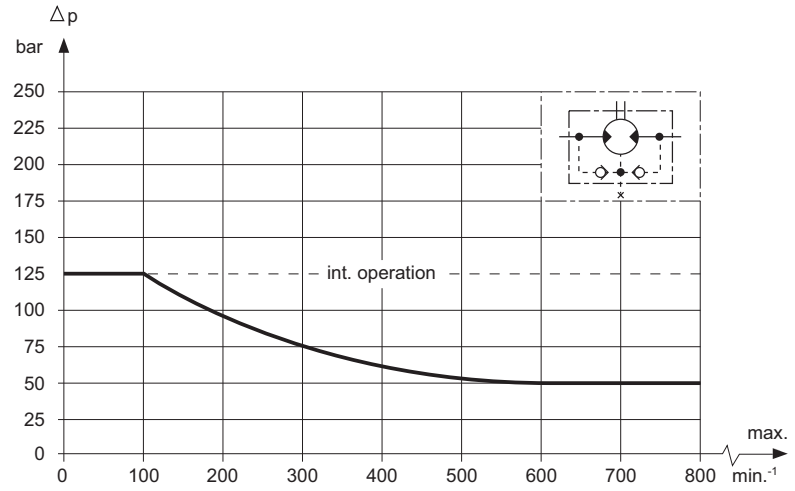



1) Si el drenaje está conectado, la presión sobre el retén del eje es igual a la presión del ramal del drenaje.

2) Si el drenaje está cerrado, la presión sobre el retén del eje nunca superará la presión del ramal de retorno.

Los valores máximos de presión en la línea de drenaje (caso 1) o en la línea de retorno (caso 2) están definidos en el siguiente gráfico (para las condiciones de trabajo continuo e intermitente).

(A 32)

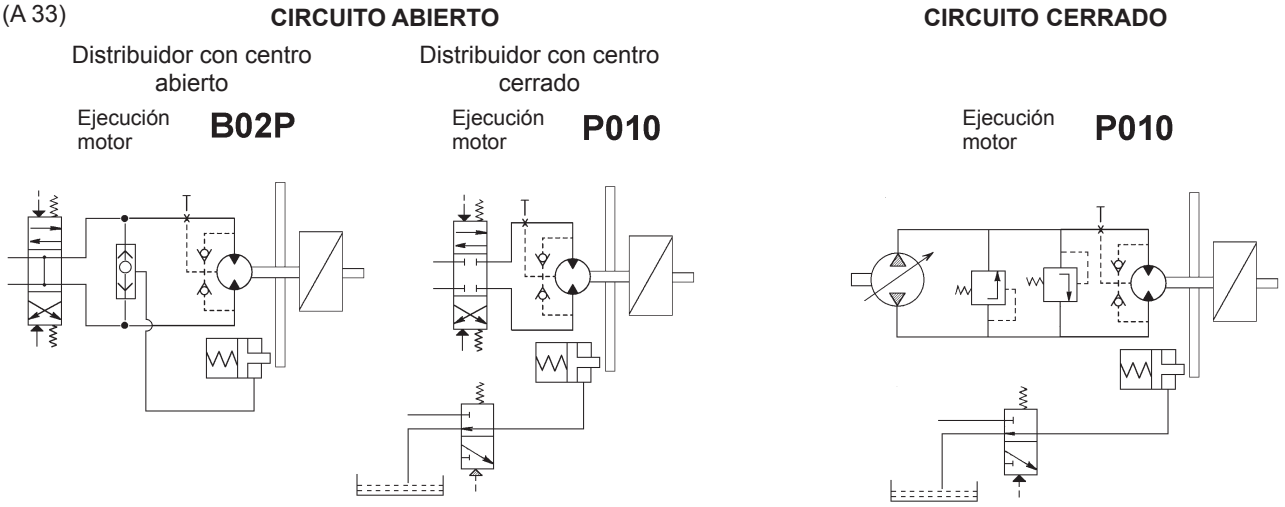



**El drenaje debe de estar siempre conectado cuando los motores están en serie.**

**c) Mando del freno**

Cuando el motorreductor está dotado de freno, el motor puede tener dos ejecuciones: B02P o P010. En la ejecución B02P, el mando del freno es interior, directo desde el motor. En la ejecución P010, es necesario una conducción auxiliar para el mando del freno. Ver el siguiente esquema.

(A 33)



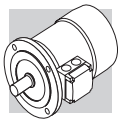

**d) Tipo de aceite hidráulico**

Se recomienda el uso de aceite hidráulico mineral con viscosidad ISO VG 46 (46 Cst a t = 40°C). Es recomendable que la temperatura el aceite esté comprendida entre +30 °C y +70 °C.

**e) Filtrado**

Para asegurar la fiabilidad de funcionamiento del motor y vida del mismo, es muy importante incorporar en el circuito hidráulico un filtro con una capacidad filtrante capaz de asegurar un grado de limpieza según el grado:

grado 9 NAS 1638
grado 6 SAE
grado 18/15 SO DIS 4406

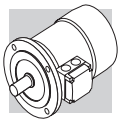




## M1 SÍMBOLOS Y UNIDADES DE MEDIDA

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| $\cos\varphi$ | – | Factor de potencia |
| $\eta$ | – | Rendimiento |
| $f_m$ | – | Factor corrector de la potencia |
| I | – | Relación de intermitencia |
| $I_N$ | [A] | Intensidad nominal |
| $I_S$ | [A] | Intensidad de arranque |
| $J_C$ | [Kgm$^2$] | Momento de inercia de la carga |
| $J_M$ | [Kgm$^2$] | Momento de inercia del motor |
| $K_c$ | – | Factor de par |
| $K_d$ | – | Factor de carga |
| $K_J$ | – | Factor de inercia |
| $M_A$ | [Nm] | Par de aceleración medio |
| $M_B$ | [Nm] | Par de frenado |
| $M_N$ | [Nm] | Par nominal |
| $M_L$ | [Nm] | Par resistente medio |
| $M_S$ | [Nm] | Par de arranque |

| Símbolos | Unidades de medida | Descripción |
|---|---|---|
| n | [min$^{-1}$] | Velocidad nominal |
| $P_B$ | [W] | Potencia absorbida por el freno a 20ºC |
| $P_n$ | [kW] | Potencia nominal |
| $P_r$ | [kW] | Potencia requerida |
| $t_1$ | [ms] | Retardo de desbloqueo del freno con alimentación de semionda |
| $t_{1s}$ | [ms] | Tiempo de desbloqueo del freno con alimentación con control electrónico |
| $t_2$ | [ms] | Retardo de la frenada con desconexión lado c.a. |
| $t_{2c}$ | [ms] | Retardo en la frenada con desconexión circuito c.a. y c.c. |
| $t_a$ | [°C] | Temperatura ambiente |
| $t_f$ | [min] | Tiempo de funcionamiento con carga constante |
| $t_r$ | [min] | Tiempo de reposo |
| W | [J] | Trabajo acumulado del freno entre dos operaciones de regulación del entrehierro. |
| $W_{max}$ | [J] | Energía máxima por frenada |
| Z | [1/h] | Número de arranques admisibles con carga |
| $Z_0$ | [1/h] | Número de arranques admisibles en vacío (I = 50 %) |



## M2 CARACTERÍSTICAS GENERALES

### M2.1 Programa de producción

Los motores eléctricos asíncronos trifásicos del programa de producción de BONFIGLIOLI RIDUTTORI están previstos en las formas constructivas básicas IMB5, IMB14 y sus derivadas con las siguientes polaridades: 2, 4, 6, 2/4, 2/6, 2/8, 2/12. En el presente catálogo se destacan, además, las características técnicas de los motores en la versión integrada, tipo M.

### M2.2 Normativa

Los motores descritos en el presente catálogo están fabricados de acuerdo con las Normas y unificaciones aplicables y relacionadas en la tabla siguiente.

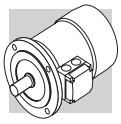
(F 1)

| Título | CEI | IEC |
|---|---|---|
| Requisitos generales para máquinas eléctricas rotativas | **CEI EN 60034-1** | **IEC 60034-1** |
| Identificación de terminales y sentido de giro para máquinas eléctricas rotativas | **CEI 2-8** | **IEC 60034-8** |
| Métodos de refrigeración de las máquinas eléctricas | **CEI EN 60034-6** | **IEC 60034-6** |
| Dimensiones y potencias nominales para máquinas eléctricas rotativas | **EN 50347** | **IEC 60072** |
| Clasificación de los grados de protección de las máquinas eléctricas rotativas | **CEI EN 60034-5** | **IEC 60034-5** |
| Límites de rumorosidad | **CEI EN 60034-9** | **IEC 60034-9** |
| Siglas de identificación de las formas constructivas y de los tipos de las instalaciones | **CEI EN 60034-7** | **IEC 60034-7** |
| Tensión nominal para los sistemas de distribución pública de la energía eléctrica de baja tensión | **CEI 8-6** | **IEC 60038** |
| Grado de vibración de las máquinas eléctricas | **CEI EN 60034-14** | **IEC 60034-14** |

Los motores cumplen, además, las normas extranjeras adaptadas a las IEC 60034 -31 indicadas en la tabla.

(F 2)

| | |
|---|---|
| **DIN VDE 0530** | Alemania |
| **BS5000 / BS4999** | Gran Bretaña |
| **AS 1359** | Australia |
| **NBNC 51 - 101** | Bélgica |
| **NEK - IEC 34** | Noruega |
| **NF C 51** | Francia |
| **OEVE M 10** | Austria |
| **SEV 3009** | Suiza |
| **NEN 3173** | Holanda |
| **SS 426 01 01** | Suecia |



## M2.3 Motores para Usa y Canada

**CUS**

Los motores BN y M están disponibles en la ejecución NEMA Diseño C (para las características eléctricas), certificados conforme a la norma CSA (Canadian Standard) C22.2 Nº 100 y UL (Underwriters Laboratory) UL1004. Especificando la opción CUS, la placa de características viene marcada con los símbolos indicados a continuación.

C US

La tensión de las redes eléctricas americanas y la correspondiente tensión nominal que se debe especificar para el motor, están indicadas en la tabla siguiente.

(F 3)

| Frecuencia | Tensión de la red | $V_{mot}$ |
|---|---|---|
| 60 Hz | 208 V | **200 V** |
| | 240 V | **230 V** |
| | 480 V | **460 V** |
| | 600 V | **575 V** |

Los motores con conexión YY/Y (230/460-60; 220/440-60) tienen de serie 9 terminales.
Para las mismas ejecuciones y con alimentación 575V-60Hz, la potencia de la placa corresponde a la normalizada a 50Hz.
Para los motores con freno en c.c. tipo BN/M_FD y BN/M_AFD la alimentación del rectificador se realiza a través de la caja de bornas del motor con tensión 230V corriente alterna monofásica.
Para los motores con freno la alimentación del freno se realiza del siguiente modo:

(F 4)

| **BN_FD ; BN_AFD<br>M_FD ; M_AFD** |
|---|
| De caja de bornes motor 1~230V c.a. |

| **BN_FA ; BN_BA<br>M_FA** | Especificar |
|---|---|
| Alimentación independiente 230V Δ - 60Hz | 230SA |
| Alimentación independiente 460V Y - 60Hz | 460SA |

La opción CUS, es incompatible con los motores que incorporan ventilación independiente o a los motores con freno AFD.

## M2.4 China Compulsory Certification

CCC

Los motores eléctricos destinados a ser comercializados en la Republica Popular China están afectados por la aplicación del sistema de certificación CCC (China Compulsory Certification) y motores BN con par nominal hasta 7 Nm están disponibles con certificación CCC y tarjeta especial que incluye la marca abajo indicada.

La opción CCC no es posible en motores con freno AFD.

## M2.5 Directivas 2006/95/CE (LVD) y 2004/108/CE (EMC)

Los motores de las series BN y M cumplen los requisitos de las Directivas 2006/95/CE (Directiva de Baja Tensión) y 2004/108/CE (Directiva de Compatibilidad Electromagnética). En sus placas muestran el sello CE.
Por lo que se refiere a la Directiva EMC, la construcción de estos motores es conforme a las Normas CEI EN 60034-1, EN 61000-6-2, EN 61000-6-4.
Los motores con freno de c.c. FD y AFD, si están equipados con el correspondiente filtro capacitativo en la entrada del rectificador (opción **CF**), cumplen con los límites de emisión previstas en la Norma EN 61000-6-3:2007 “Compatibilidad electromagnética – Norma Genérica sobre emisiones – Parte 6-3: Ambientes residenciales, comerciales y de la industria ligera”. Los motores cumplen, además, los requisitos de la Norma CEI EN 60204-1 “Equipamiento eléctrico de las máquinas”.
Es responsabilidad del fabricante o del montador de la instalación que incorpora los motores como componentes, garantizar la seguridad y la conformidad del producto final a las directivas.

## M2.6 Tolerancias

Según la Norma CEI EN 60034-1, las tolerancias admitidas para los tamaños garantizados, están indicadas en la tabla siguiente.

(F 5)

| | |
|---|---|
| -0.15 (1 - η) P ≤ 50kW | Rendimiento |
| -(1 - cosφ)/6 min 0.02 max 0.07 | Factor de potencia |
| ±20% * | Deslizamiento |
| +20% | Intensidad con rotor bloqueado |
| -15% +25% | Par con rotor bloqueado |
| -10% | Par máximo |

* ± 30% para motores con Pn < 1 kW

## M3 CARACTERÍSTICAS MECÁNICAS

### M3.1 Formas constructivas

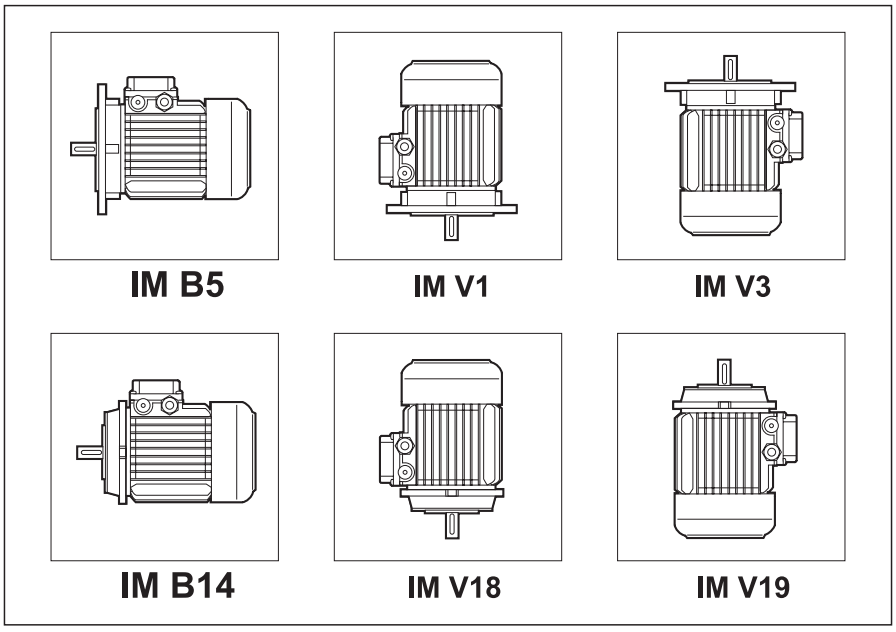
Los motores serie BN están previstos en las formas constructivas indicadas en la tabla (F6) según la Norma CEI EN 60034-14.

Las formas constructivas son las siguientes:

**IM B5** (base)
IM V1, IM V3 (variante)
**IM B14** (base)
IM V18, IMV19 (variante)

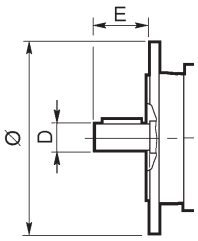
Los motores de forma constructiva IM B5 pueden instalarse en las posiciones IMV1y IMV3; los motores de forma constructiva IM B14 pueden instalarse en las posiciones IMV18 y IMV19. En estos casos, en la placa del motor se indicará la forma constructiva base IM B5 o IM B14.
En las formas constructivas donde el motor está en posición vertical con el eje hacia abajo, se aconseja solicitar el sombrerete antilluvia (se tiene que prever siempre en el caso de motores- freno). Estas ejecuciones se tienen que pedir expresamente en el pedido, ya que no están previstas en la opción base.

(F 6)




Los motores embridados pueden suministrarse con dimensiones de acoplamiento reducido, como queda indicado en la tabla (F7) - ejecuciones **B5R, B14R.**

(F 7)

| |  | | | | | |
|---|---|---|---|---|---|---|
| | **BN 71** | **BN 80** | **BN 90** | **BN 100** | **BN 112** | **BN 132** |
| | DxE - Ø | | | | | |
| **B5R** (1) | 11x23 - 140 | 14x30 - 160 | 19x40 - 200 | 24x50 - 200 | 24x50 - 200 | 28x60 - 250 |
| **B14R** (2) | 11x23 - 90 | 14x30 - 105 | 19x40 - 120 | 24x50 - 140 | — | — |

(1) brida con taladros pasantes
(2) brida con taladros roscados

## M3.2 Grado de protección

**IP..**

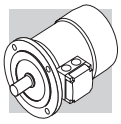
La tabla de abajo resume la disponibilidad de los varios grados de protección.
Independientemente del grado de protección especificado, para la instalación al aire libre, los motores deberán estar protegidos de las irradiaciones directas y, en el caso de instalación con el eje mirando hacia abajo, es necesario especificar, además, el sombrerete de protección contra la entrada de agua y cuerpos sólidos (opción **RC**)

(F 8)

| | | **IP 54** | **IP 55** | **IP 56** |
|---|---|---|---|---|
| **BN** | **M** | ⛔ | standard | |
| **BN_FD**<br>**BN_AFD**<br>**BN_FA** | **M_FD**<br>**M_AFD**<br>**M_FA** | standard | | ⛔ |
| **BN_BA** | **–** | ⛔ | standard | ⛔ |

## M3.3 Ventilación

Los motores están refrigerados mediante ventilación externa (C 411 según CEI EN 60034-6) y están provistos de un ventilador radial de plástico que actúa en ambos sentidos de giro.
En la instalación debe asegurarse una distancia mínima entre la tapa del ventilador y la pared, de modo que no exista impedimento a la libre circulación del aire y permitir la posibilidad del mantenimiento y, si éste está, del freno. Opcionalmente puede suministrarse la ventilación forzada independiente (opción U1). Esta solución permite aumentar el factor de utilización del motor, accionado con variador de frecuencia y a velocidad reducida.



## M3.4 Sentido de giro

Es posible el funcionamiento en ambos sentidos de giro.
Conectando los bornes U1, V1, W1 a las fases de línea L1, L2, L3, el giro será en sentido horario visto por el lado del acoplamiento; el sentido de giro antihorario se obtiene invirtiendo dos de las fases.

## M3.5 Rumorosidad

Los valores de nivel sonoro, medidos en conformidad con el procedimiento previsto por las Normas ISO 1680, están contenidos dentro de los límites máximos previstos por las Normas CEI EN 60034-9.

## M3.6 Vibraciones y equilibrado

Todos los rotores están equilibrados con media chaveta y están dentro de los límites de intensidad de vibración previstos por la Norma CEI EN 60034-14. Para exigencias particulares de baja rumorosidad, opcionalmente, está disponible una ejecución antivibrante de grado reducido B. La tabla siguiente indica los valores de velocidad eficaz de vibración para un equilibrado estándar (A) e incrementada (B).

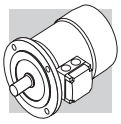
(F 9)

| Grado de vibración | Velocidad de giro<br>n [$min^{-1}$] | Límites de la velocidad de vibración<br>[mm/s]<br>**BN 56 ≤ H ≤ BN 200**<br>**M05 ≤ H ≤ M5** |
|---|---|---|
| **A** | 600 < n < 3600 | 1.6 |
| **B** | 600 < n < 3600 | 0.70 |

Los valores están referidos a la medición efectuada con el motor libremente suspendido y funcionamiento en vacío.

## M3.7 Caja de conexiones del motor

La caja de conexiones principal contiene seis bornes para conexionado con terminales de cable. En el interior de la caja está previsto un borne para el conductor de tierra. Las dimensiones de los terminales están indicadas en la tabla siguiente. Para la alimentación del freno ver párrafor M6, M7 (freno FD y AFD), M8, M9 (freno FA e BA). En los motores freno, el rectificador para la alimentación del freno está situado en el interior de la caja de bornes y provisto de los bornes adecuados para su conexionado. Efectuar el conexionado según los esquemas incluidos en el interior de la caja de bornes o en el manual de instrucciones.



(F 10)

| | | Nº terminales | Rosca de los terminales | Sección máx. del conductor $mm^2$ |
|---|---|---|---|---|
| **BN 56...BN 71** | **M05, M1** | 6 | M4 | 2.5 |
| **BN 80, BN 90** | **M2** | 6 | M4 | 2.5 |
| **BN 100...BN 112** | **M3** | 6 | M5 | 6 |
| **BN 132...BN 160MR** | **M4** | 6 | M5 | 6 |
| **BN 160M...BN 180M** | **M5** | 6 | M6 | 16 |
| **BN 180L...BN 200L** | **–** | 6 | M8 | 25 |

## M3.8 Entrada de cables

Respetando la Norma EN 50262,los taladros de entrada de cables en la caja de bornes están realizados con rosca métrica cuya medida se indica en la tabla siguiente.

(F 11)

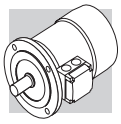
| | | Entrada de cables | Diámetro máx. del cable [mm] |
|---|---|---|---|
| **BN 63** | **M05** | 2 x M20 x 1.5 | 13 |
| **BN 71** | **M1** | 2 x M25 x 1.5 | 17 |
| **BN 80 - BN 90** | **M2** | 2 x M25 x 1.5 | 17 |
| **BN 100** | **M3** | 2 x M32 x 1.5 | 21 |
| | | 2 x M25 x 1.5 | 17 |
| **BN 112** | **—** | 2 x M32 x 1.5 | 17 |
| | | 4 x M25 x 1.5 | |
| **BN 132...BN 160MR** | **M4** | 4 x M32 x 1.5 | 21 |
| **BN 160M...BN 200L** | **M5** | 2 x M40 x 1.5 | 29 |

## M3.9 Rodamientos

Los rodamientos montados son del tipo radial a bolas, con lubricación permanente y precargados Axialmente. Los tipos utilizados se indican en la siguiente tabla. La duración nominal a fatiga $L_{10h}$ de los rodamientos, en ausencia de cargas externas aplicadas, es superior a 40.000 horas, calculadas según ISO 281.
**DE =** lado eje
**NDE =** lado ventilador

(F 12)

| | **DE** | **NDE** | |
|---|---|---|---|
| | **M, M_FD, M_AFD, M_FA** | **M** | **M_FD, M_AFD, M_FA** |
| **M05** | 6004 2Z C3 | 6201 2Z C3 | 6201 2RS C3 |
| **M1** | 6004 2Z C3 | 6202 2Z C3 | 6202 2RS C3 |
| **M2** | 6007 2Z C3 | 6204 2Z C3 | 6204 2RS C3 |
| **M3** | 6207 2Z C3 | 6206 2Z C3 | 6206 2RS C3 |
| **M4** | 6309 2Z C3 | 6308 2Z C3 | 6308 2RS C3 |
| **M5** | 6309 2Z C3 | 6309 2Z C3 | 6309 2RS C3 |



(F 13)

| | DE | NDE | |
|---|---|---|---|
| | BN, BN_FD, BN_AFD, BN_FA, BN_BA | BN, BN_BA | BN_FD, BN_AFD, BN_FA |
| **BN 56** | | 6201 2Z C3 | – |
| **BN 63** | 6201 2Z C3 | 6201 2Z C3 | 6201 2RS C3 |
| **BN 71** | 6202 2Z C3 | 6202 2Z C3 | 6202 2RS C3 |
| **BN 80** | 6204 2Z C3 | 6204 2Z C3 | 6204 2RS C3 |
| **BN 90** | 6205 2Z C3 | 6205 2Z C3 | 6305 2RS C3 |
| **BN 100** | 6206 2Z C3 | 6206 2Z C3 | 6206 2RS C3 |
| **BN 112** | 6306 2Z C3 | 6306 2Z C3 | 6306 2RS C3 |
| **BN 132** | 6308 2Z C3 | 6308 2Z C3 | 6308 2RS C3 |
| **BN 160MR** | 6309 2Z C3 | 6308 2Z C3 | 6308 2RS C3 |
| **BN 160M/L** | 6309 2Z C3 | 6309 2Z C3 | 6309 2RS C3 |
| **BN 180M** | 6310 2Z C3 | 6309 2Z C3 | 6309 2RS C3 |
| **BN 180L** | 6310 2Z C3 | 6310 2Z C3 | 6310 2RS C3 |
| **BN 200L** | 6312 2Z C3 | 6310 2Z C3 | 6310 2RS C3 |

## M4 CARACTERÍSTICAS ELÉCTRICAS

### M4.1 Tensión

Los motores de una sola velocidad en ejecución normal, están previstos para una tensión nominal de 230V Δ / 400V Y, 50Hz con una tolerancia de tensión ± 10% (excluidos los tipos M3LC4 y M3LC6). En la placa de características están indicados, además de la tensión nominal, el campo de funcionamiento permitido, por ejemplo:
220 - 240V Δ
380 - 415V Y/50 Hz.
De acuerdo con la Norma CEI EN 60034-1, los motores pueden funcionar correctamente a las tensiones arriba indicadas con una tolerancia de ± 5%.
Para el funcionamiento al límite de la tolerancia, la temperatura puede superar en 10 K el límite previsto para la clase adoptada de aislamiento.
A excepción de los motores freno tipo BN/M_FD y BN/M_AFD en la placa se indica, además del valor correspondiente al funcionamiento a 60 Hz (p. e. 460Y, 60Hz), el correspondiente campo de tensión:
440 - 480VY, 60Hz
Las tensiones estándar para los motores freno tipo FD y AFD son:
220V - 240V Δ - 50Hz
380V - 415V Y - 50Hz
con una tensión de alimentación del freno de 230V ± 10%.
En la tabla siguiente se indica la tensión prevista para los motores.

(F 14)

| | | BN M | BN_FD ; BN_AFD M_FD ; M_AFD | | BN_FA ; BN_BA M_FA | | Ejecución |
|---|---|---|---|---|---|---|---|
| | | $V_{mot}$ ± 10 % 3 ~ | $V_{mot}$ ± 10 % 3 ~ | $V_B$ ± 10 % 1 ~ | $V_{mot}$ ± 10 % 3 ~ | $V_B$ ± 10 % 3 ~ | |
| **BN 56 - BN 132** | **M05…M4** | 230/400 - 50 Hz 460 - 60 Hz | 230/400V Δ/Y- 50 Hz | 230V | 230/400V Δ/Y- 50 Hz 460V Y - 60Hz | 230/400V Δ/Y- 50 Hz 460V Y - 60Hz | Estandar |
| **BN 100 - BN 132** | **M3 - M4** | 400/690 - 50 Hz 460 - 60Hz | 400/690V Δ/Y- 50 Hz | 400V | 400/690V Δ/Y- 50 Hz 460V Y - 60Hz | 400/690V Δ/Y- 50 Hz 460V Y - 60Hz | Opcional sin sobre precio |

Los motores de dos velocidades 400V/50Hz, están previstos para una tensión nominal estándar de 400V; tolerancia aplicable según Norma CEI EN 60034-1

En la tabla siguiente están indicados los distintos tipos de conexionado previstos para los motores en función de la polaridad.

(F 15)

| | | Polos | Conexión del bobinado |
|---|---|---|---|
| **BN 56…BN 200** | **M05…M5** | 2, 4, 6 | Δ / Y |
| | | 2/4 | Δ / YY (Dahlander) |
| | | 2/6, 2/8, 2/12 | Y / Y (Doble bobinado) |

## M4.2 Frecuencia

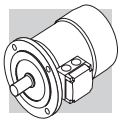
En la placa de características de los motores de una velocidad en ejecución estándar, están indicada además de la tensión de funcionamiento a 50Hz, el campo de tensión 440 – 480V 60Hz (excluidos los motores con freno FD y AFD) con la potencia aumentada en aproximadamente el 20%. La potencia de placa de los motores a 60Hz corresponde a la indicada en la tabla siguiente.

(F 16)

| | | 2P | 4P | 6P |
|---|---|---|---|---|
| | | | $P_n$ [kW] | |
| **BN 56A** | **–** | – | 0.06 | – |
| **BN 56B** | **M0B** | – | 0.10 | – |
| **BN 63A** | **M05A** | 0.21 | 0.14 | 0.10 |
| **BN 63B** | **M05B** | 0.30 | 0.21 | 0.14 |
| **BN 71A** | **M05C** | 0.45 | 0.30 | 0.21 |
| **BN 71B** | **M1SD** | 0.65 | 0.45 | 0.30 |
| **BN 80A** | **M1LA** | 0.90 | 0.65 | 0.45 |
| **BN 80B** | **M2SA** | 1.30 | 0.90 | 0.65 |
| **BN 90S** | **M2SB** | – | 1.30 | 0.90 |
| **BN 90SA** | **M2SB** | 1.8 | – | – |
| **BN 90L** | **M3SA** | 2.5 | – | 1.3 |
| **BN 90LA** | **M3SA** | – | 1.8 | – |
| **BN 100L** | **M3LA** | 3.5 | – | – |
| **BN 100LA** | **M3LA** | – | 2.5 | 1.8 |
| **BN 100LB** | **M3LB** | 4.7 | 3.5 | 2.2 |

| | | 2P | 4P | 6P |
|---|---|---|---|---|
| | | | $P_n$ [kW] | |
| **BN 112M** | **M3LB** | 4.7 | 4.7 | 2.5 |
| | **M3LC** | – | 4.7 | 2.5 |
| **BN 132S** | **M4SA** | – | 6.5 | 3.5 |
| **BN 132SA** | **M4SA** | 6.3 | – | – |
| **BN 132SB** | **M4SB** | 8.7 | – | – |
| **BN 132M** | **M4LA** | 11 | – | – |
| **BN 132MA** | **M4LA** | – | 8.7 | 4.6 |
| **BN 132MB** | **M4LB** | – | 11 | 6.5 |
| **BN 160MR** | **M4LC** | 12.5 | 12.5 | – |
| **BN 160MB** | **M5SB** | 17.5 | – | – |
| **BN 160M** | **M5SA** | – | – | 8.6 |
| **BN 160L** | **M5S** | 21.5 | 17.5 | 12.6 |
| **BN 180M** | **M5LA** | 24.5 | 21.5 | – |
| **BN 180L** | **–** | – | 25.3 | 17.5 |
| **BN 200L** | **–** | 34 | 34 | 22 |

Los motores de doble polaridad alimentados a 60Hz, ven incrementada su potencia en aproximadamente un 15% su potencia nominal, con relación a la correspondiente a 50Hz. Cuando en la placa de un motor preparado para ser alimentado con una frecuencia de 60Hz, se requiera la misma potencia nominal que la correspondiente a la normalizada para 50 Hz, deberá especificarse en la designación con la opción PN.
Los motores bobinados normalmente para una frecuencia de 50Hz, pueden utilizarse en redes de 60Hz con los datos corregidos como se indica en la tabla siguiente.
Si existe freno, éste deberá alimentarse a la tensión $V_b$ indicada en la placa.



(F 17)

| **50 Hz** | **60 Hz** | | | |
|---|---|---|---|---|
| **V** - 50 Hz | **V** - 60 Hz | **Pn** - 60 Hz | $\mathbf{M_n}$, $\mathbf{M_a/M_n}$ - 60 Hz | **n** [$min^{-1}$] - 60 Hz |
| **230/400 Δ/Y** | 220 - 240 Δ | 1 | 0.83 | 1.2 |
| | 380 - 415 Y | | | |
| **400/690 Δ/Y** | 380 - 415 Δ | | | |
| **230/400 Δ/Y** | 265 - 280 Δ | 1.15 | 1 | 1.2 |
| | 440 - 480 Y | | | |
| **400/690 Δ/Y** | 440 - 480 Δ | | | |

## M4.3 Potencia nominal

Las tablas de los datos técnicos del catálogo presentan las características funcionales a 50Hz en condiciones ambientales estándar, según la Norma CEI EN 60034-1 (temperatura 40ºC y altitud < 1000 m s.n.m.).
Los motores pueden emplearse a temperaturas comprendidas entre 40ºC a 60ºC aplicando las disminuciones de potencia indicadas en la tabla siguiente.

(F 18)

| Temperatura ambiente (°C) | 40° | 45° | 50° | 55° | 60° |
|---|---|---|---|---|---|
| Potencia admisible en % de la potencia nominal | 100% | 95% | 90% | 85% | 80% |

Cuando se precisa una disminución del motor superior del 15%, consultar con nuestro Servicio Técnico.

## M4.4 Clase de aislamiento

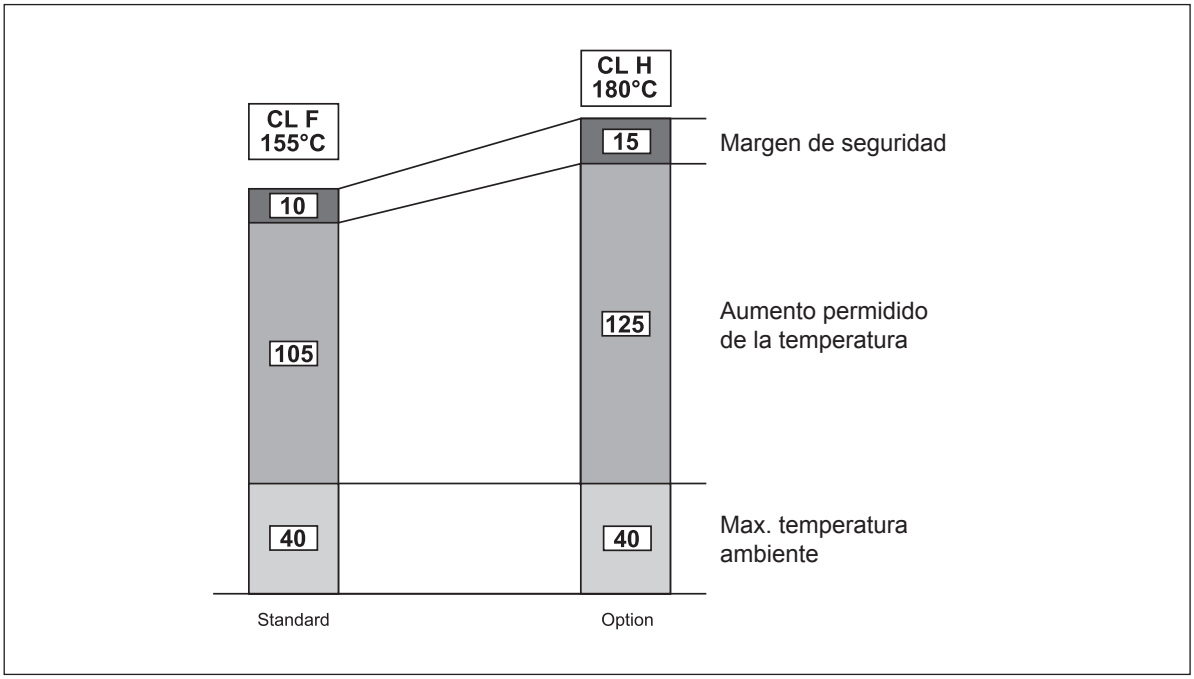
**CL F**

Los motores de producción Bonfiglioli emplean, de serie, material aislante (hilo esmaltado, aislante, resina de impregnación) en clase **F.**

**CL H**

Bajo pedido puede suministrarse los motores con aislamiento clase **H.**
En general, para los motores de ejecución estándar, el aumento de temperatura en el bobinado del estator está comprendido dentro del limite de 80 K, correspondiente a la sobretemperatura de la clase B**.**
La cuidadosa selección de los componentes del sistema aislante, permite el empleo de los motores incluso en climas tropicales y en presencia de vibraciones normales.
Para aplicaciones en presencia de sustancias químicas agresivas o de elevada humedad, es aconsejable contactar con nuestro Servicio Técnico para seleccionar el producto más idóneo. No disponible para los motores conformes a las normas CSA y UL (opción CUS).

(F 19)




## M4.5 Tipo de servicio

Si no se indica lo contrario, la potencia indicada en el catálogo se refiere al servicio continuo S1. Para los motores utilizados en condiciones distintas a S1 será necesario identificar el tipo de servicio previsto con referencia a las normas a CEI EN 60034-1. En concreto para servicio S2 y S3 es posible obtener un aumento de la potencia respecto a la prevista para servicio continuo según se indica en la siguiente tabla,válida para los motores de una sola velocidad.

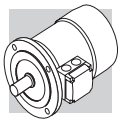
**Como alternativa al servicio contínuo S1, en fase de configuración del producto es posibile seleccionar uno de los siguientes valores: S2, S3 o S9; la placa del motor indicará una potencia aumentada en correspondencia al tipo de servicio, datos eléctricos y tipo de servicio S2-30min, S3-70% o S9, respectivamente. Para mayor información es necesario contactar con el Servicio Técnico de Bonfiglioli.**

Para el dimensionado de los motores de doble velocidad, consultar al Servicio Técnico de Bonfiglioli.

(F 20)

| | **Servicio** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **S2** | | | **S3 *** | | | **S4 - S9** |
| | Duración del ciclo (min) | | | Relación de intermitencia (I) | | | |
| | **10** | **20** | **60** | **25%** | **40%** | **60%** | Consultar |
| $f_m$ | 1.35 | 1.15 | 1.05 | 1.25 | 1.15 | 1.1 | |

* La duración del ciclo deberá ser igual o inferior a 10 minutos; si fuese superior consultar con nuestro Servicio Técnico.



### M4.5.1 Relación de intermitencia

$$I = \frac{t_f}{t_f + t_r} \cdot 100 \qquad (23)$$

$t_f$ = tiempo de funcionamiento con carga constante
$t_r$ = tiempo de reposo

### M4.5.2 Servicio de duración limitada S2

Se caracteriza por el funcionamiento a carga constante, durante un periodo de tiempo limitado, inferior al requerido para alcanzar el equilibrio térmico, seguido de un periodo de reposo de duración suficiente para que restablezca, en el motor, la temperatura ambiente.

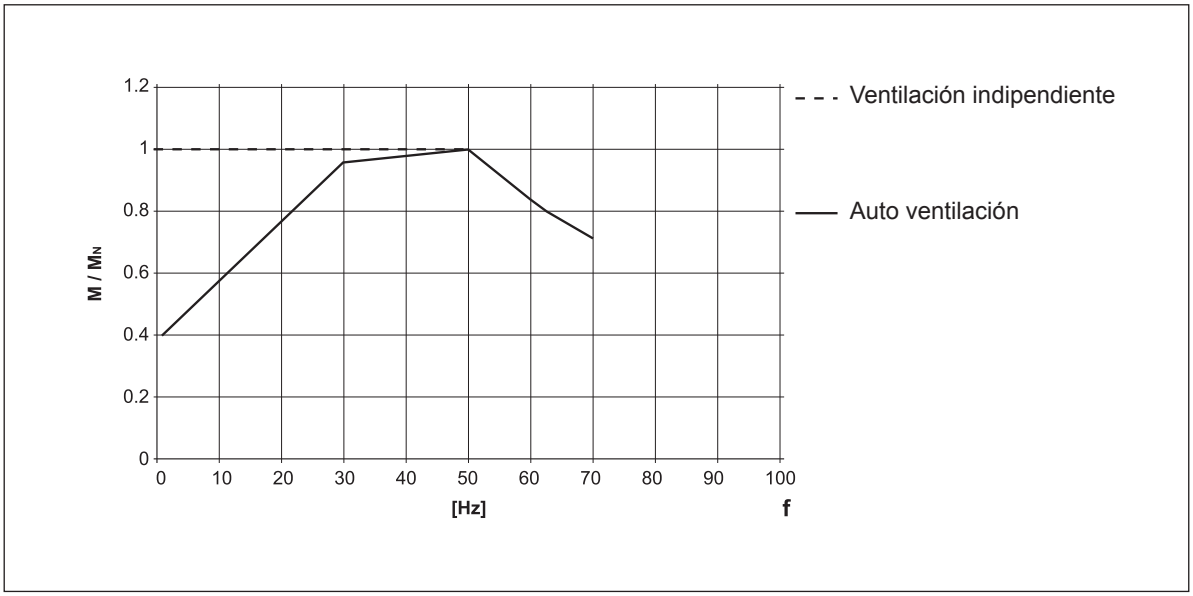
### M4.5.3 Servicio intermitente periódico S3:

Caracterizado por una secuencia de ciclos idénticos de funcionamiento, cada uno de los cuales comprende un periodo de funcionamiento a carga constante y un periodo de reposo. En este servicio, la intensidad de arranque no influye significativamente en un aumento de la temperatura.

## M4.6 Funcionamiento con variador de frecuencia

Los motores eléctricos de las series BN y M pueden ser utilizados alimentados con variador de frecuencia PWM, con tensión nominal en la entrada del variador de hasta 500V.
El sistema aislante de los motores de serie prevé el aislamiento de fase con separadores, la utilización de hilo esmaltado en grado 2 y resina de impregnación en clase H (límite de retención de la tensión punta a 1600V pico a pico enfrente de salida $t_s$> 0.1µs en bornes del motor).
La tabla (F30) refleja las características típicas de par / velocidad, de los motores con una frecuencia base $f_b$ = 50Hz en servicio S1.
El funcionamiento con frecuencias inferiores a 30Hz, comporta la disminución del par en los motores estándar autoventilados (IC411) como resultado de la reducción originada en la ventilación, o bien como alternativa, utilizar ventilación independiente.
Para frecuencias superiores a la frecuencia base, y con la tensión máx. a la salida del variador, el motor trabaja en un campo de funcionamiento a potencia constante, en estas condiciones, el par en el eje del motor se reduce según la relación ($f/f_b$).
Como el par máximo del motor decrece $(f/f_b)^2$, el margen de sobrecarga admisible deberá ser reducido gradualmente.

(F 21)




Para el funcionamiento a frecuencias superiores a la nominal, la velocidad límite mecánica de los motores se indica en la tabla (F22).

(F 22)

| | | **n** [min$^{-1}$] | | |
|---|---|---|---|---|
| | | **2p** | **4p** | **6p** |
| **≤ BN 112** | **M05…M3** | 5200 | 4000 | 3000 |
| **BN 132...BN 200L** | **M4, M5** | 4500 | 4000 | 3000 |

A velocidades superiores a la nominal, los motores presentan mayores vibraciones mecánicas y rumorosidad de la ventilación; en estas aplicaciones, es aconsejable el equilibrado del rotor con grado B y eventualmente montar ventilación independiente.

Los ventiladores independientes y los frenos electromagnéticos deben de alimentarse siempre directamente de la red.

## M4.7 Frecuencia máxima de arranque Z

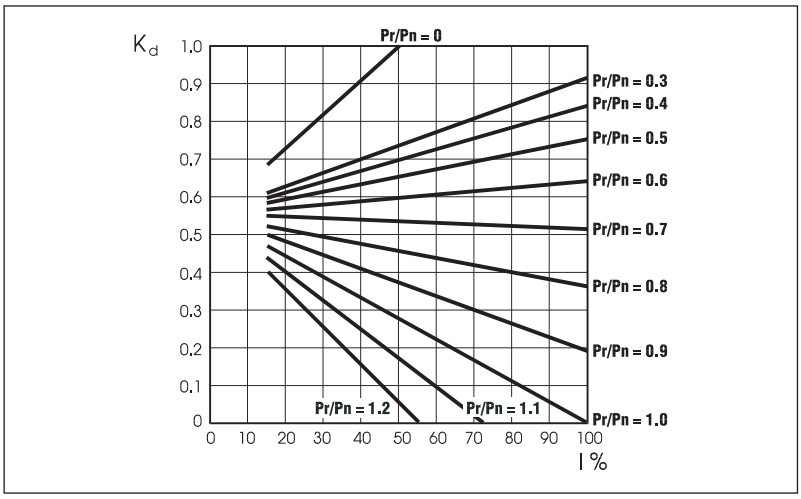
Las tablas de los datos técnicos de los motores indican la frecuencia máxima de arranque admisible en vacío $Z_0$ con I = 50% correspondiente a la versión de motor freno. Este valor define el número máx. de arranques / hora en vacío que el motor puede soportar sin superar la temperatura máxima admisible por el aislamiento clase F.
En la práctica, para un motor acoplado a una carga externa con potencia absorbida $P_r$, inercia $J_c$, un par resistente durante el arranque $M_L$, el número de arranques admisibles se puede calcular con la siguiente fórmula:

$$Z = \frac{Z_0 \cdot K_c \cdot K_d}{K_J} \qquad (24)$$

Donde:

| | |
|---|---|
| $K_J = \frac{J_m + J_c}{J_m}$ | factor de inercia |
| $K_c = \frac{M_a - M_L}{M_a}$ | factor de par |
| $K_d =$ | factor de carga ver tabla siguiente |

(F 23)



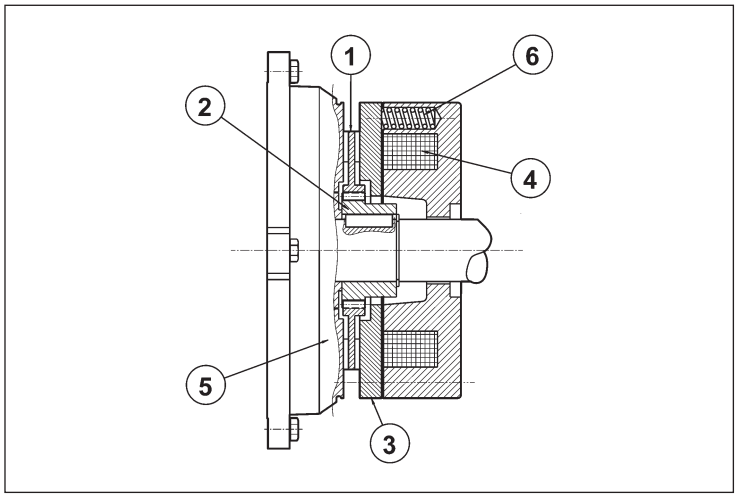

Con el número de arranques así obtenido deberá verificarse que el trabajo máximo de frenado sea compatible con la capacidad térmica del freno $W_{máx}$. Indicada en la tabla (F30)

## M5 MOTORES FRENO ASÍNCRONOS

### M5.1 Funcionamiento

La ejecución con freno prevé el uso de frenos de presión por muelles alimentados en c.c. (tipo FD, AFD) o en c.a. (tipo FA, BA).
Todos los frenos funcionan según el principio de seguridad, es decir, intervienen como efecto de la presión ejercida por los muelles, cuando falta la alimentación.

(F 24)




Leyenda:
① disco
② cubo
③ armadura móvil
④ bobina
⑤ escudo posterior motor
⑥ muelles

A falta de tensión, la armadura móvil, empujada por los muelles de presión, bloquea el disco de freno entre la superficie de la propia armaduramóvil y el escudo del motor impidiendo el giro del eje. Cuando se excita la bobina, se produce una atracción magnética sobre la armaduramóvil, que venciendo la reacción elástica de los muelles, libera el disco del freno y el eje al cual es solidario, permitiendo el giro libre del motor.

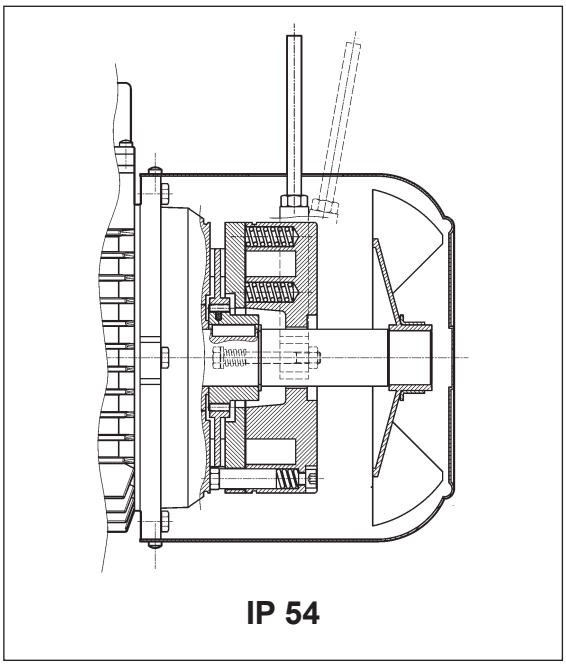
### M5.2 Características generales

- Par de frenado elevado (generalmente $M_b \approx 2\ M_n$) y regulable
- Disco freno con estructura de acero y doble superficie de fricción (material muy resistente al desgaste, sin amianto).
- Taladro hexagonal en el eje del motor lado ventilador (NDE), para el giro manual (no previsto cuando están presentes las opciones PS, RC,TC,U1, U2,EN1,EN2,EN3, EN4, EN5, EN6).
- Desbloqueo mecánico manual (opciones **R** y **RM** para BN/M_FD ; opción **R** para BN/M_FA).
- Desbloqueo mecánico manual (opción **R** para BN/M_AFD)
- Tratamiento anticorrosivo sobre toda la superficie del freno.
- Aislamiento clase F.

## M6 MOTORES FRENO EN C.C., TIPO BN_FD y M_FD

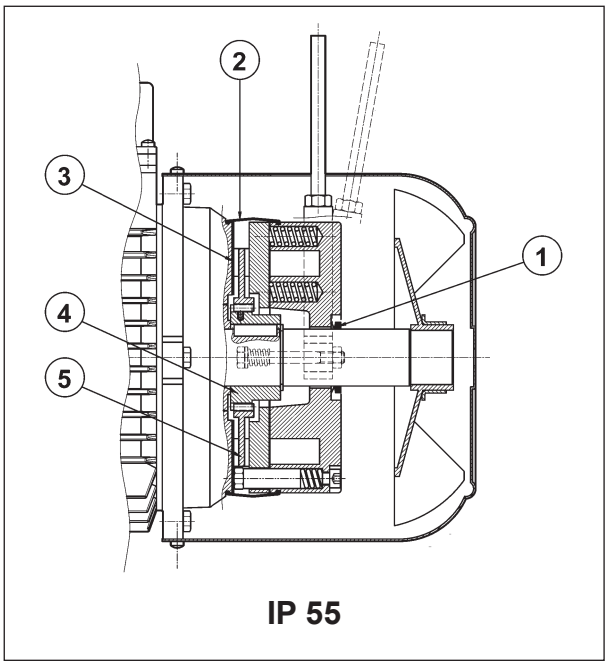
**Tamaños :** BN 63 … BN 200L / M05 ... M5

(F 25)



**IP 54**

(F 26)

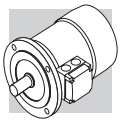



**IP 55**

Freno electromagnético con bobina toroidal en **corriente continua** fijado con tornillos al escudo del motor; los muelles de precarga realizan el posicionamiento axial del cuerpo magnético. El disco freno es deslizable sobre el cubo de accionamiento de acero acoplado sobre el eje y provisto de muelles antivibración. Los motores se suministran con el freno tarado en fábrica a los valores de par indicados en las tablas de datos técnicos; el par de frenado puede ser regulado modificando el tipo y/o el número de los muelles.
Bajo pedido, los motores pueden incorporar una palanca de desbloqueo manual con retorno automático **(R)** o con mantenimiento de la posición de desbloqueo freno (**RM**); para determinar la posición angular de la palanca de desbloqueo ver descripción de la variante correspondiente en el párrafo “SISTEMAS DE BLOQUEO DEL FRENO”.
El freno FD garantiza elevadas prestaciones dinámicas y baja rumorosidad; las características de la intervención del freno en corriente continua pueden ser optimizadas en función de la alimentación utilizando los diferentes tipos de alimentación disponibles y/o realizando el cableado oportuno.
**Para aplicaciones de elevación y/o para trabajos de mucha duración diaria, contacar con el departamento técnico comercial.**

### M6.1 Grado de protección

La ejecución estándar está prevista con el grado de protección IP54. Opcionalmente el motor freno tipo FD puede suministrarse con protección **IP55**, con las siguientes variantes constructivas:

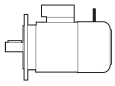


① retén axial V – ring montado en el eje del motor N.D.E.
② junta de goma de protección contra agua y polvo
③ anillo de acero inox. Situado entre el escudo del motor y el disco del freno
④ cubo de arrastre en acero inox.
⑤ disco freno en acero inox.

## M6.2 Alimentación del freno FD

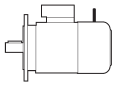
La alimentación de la bobina del freno en c.c. está prevista por medio de un rectificador apropiado, montado en el interior de la caja de bornes y cableado a la bobina del freno. Además, para los motores de simple polaridad, está prevista de serie la conexión del rectificador a los de bornes del motor. Independientemente de la frecuencia de red, la tensión estándar de alimentación del rectificador VB está indicada en la tabla siguiente:

(F 27)

| **2, 4, 6 P** | | | | | **1 speed** |
|---|---|---|---|---|---|
|  | | **BN_FD / M_FD** $V_{mot}$ ± 10% 3 ~ | $V_B$ ± 10% 1 ~ | alimentación del freno desde la caja de bornes | alimentación independiente |
| **BN 63…BN 132** | **M05...M4LB** | 230/400 V – 50 Hz | 230 V | estandar | especificar **$V_B$ SA** o **$V_B$ SD** |
| **BN 160…BN 200** | **M4LC...M5** | 400/690 V – 50 Hz | 400 V | estandar | especificar **$V_B$ SA** o **$V_B$ SD** |

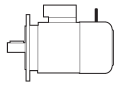
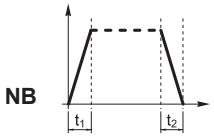
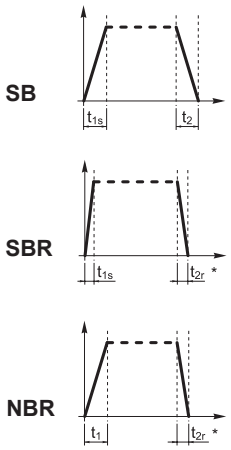
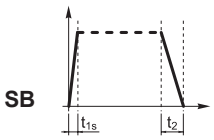
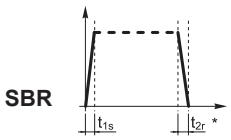
Para los motores de doble polaridad, la alimentación estándar del freno se realiza mediante una línea independiente con tensión de entrada al rectificador $V_B$ como se indica en la tabla siguiente:

(F 28)

| **2/4, 2/6, 2/8, 2/12, 4/6, 4/8 P** | | | | | **2 speed** |
|---|---|---|---|---|---|
|  | | **BN_FD / M_FD** $V_{mot}$ ± 10% 3 ~ | $V_B$ ± 10% 1 ~ | alimentación del freno desde la caja de bornes | alimentación independiente |
| **BN 63…BN 132** | **M05...M4LB** | 400 V – 50 Hz | 230 V | ⛔ | especificar **$V_B$ SA** o **$V_B$ SD** |

El rectificador es del tipo de diodos a semionda (Vc.c ≈ 0,45 x Vc.a.) y está disponible en las versiones **NB, SB, NBR** y **SBR**, como se detalla en la tabla siguiente:

(F 29)

|  | | freno | estandar | bajo pedido |
|---|---|---|---|---|
| **BN 63** | **M05** | **FD 02** |   |   |
| **BN 71** | **M1** | **FD 03** | | |
| | | **FD 53** | | |
| **BN 80** | **M2** | **FD 04** | | |
| **BN 90S** | **—** | **FD 14** | | |
| **BN 90L** | **—** | **FD 05** | | |
| **BN 100** | **M3** | **FD 15** | | |
| **—** | | **FD 55** |   |   |
| **BN 112** | **—** | **FD 06S** | | |
| **BN 132...160MR** | **M4** | **FD 56** | | |
| **BN 160L - BN 180M** | **M5** | **FD 06** | | |
| **BN 180L - NM 200L** | **—** | **FD 07** | | |

(*) $t_{2c} < t_{2r} < t_2$

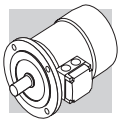
El rectificador **SB** con la excitación controlada electrónicamente, reduce los tiempos de desbloqueo del freno sobreexcitando el electroimán en los primeros instantes de la inserción, pasando seguidamente al funcionamiento normal de semionda una vez se ha desactivado el freno.

El uso del rectificador tipo **SB** debe preverse siempre en los casos siguientes:
- elevado número de arranques por hora
- tiempos de desbloqueo del freno reducidos
- elevadas solicitaciones térmicas del freno

Para aquellas aplicaciones donde se requiere un desbloqueo rápido del freno, pueden suministrarse bajo pedido los rectificadores **NBR** o **SBR**.
Estos rectificadores completanlos tipos **NB** y **SB**, integrando en el circuito electrónico un interruptor estático que interviene desactivando rápidamente el freno en el caso de falta de tensión.
Esta solución permite reducir el tiempo de desbloqueo del freno evitando ulteriores cableados y contactos externos. Para un mejor uso de los rectificadores **NBR** y **SBR** es necesario efectuar la alimentación del freno independiente. Tensiones disponibles: 230V ±10%, 400V ±10%, 50/60 Hz.

## M6.3 Datos técnicos del freno FD

En la tabla siguiente se indican las características técnicas de los frenos en c.c. tipo FD.



(F 30)

| Freno | Par de frenado $M_b$ [Nm] muelles | | | Desbloqueo | | Frenada | | $W_{max}$ por frenada [ J ] | | | W | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | $t_1$ | $t_{1s}$ | $t_2$ | $t_{2c}$ | | | | | |
| | 6 | 4 | 2 | [ms] | [ms] | [ms] | [ms] | 10 s/h | 100 s/h | 1000 s/h | [MJ] | [W] |
| **FD02** | – | 3.5 | 1.75 | 30 | 15 | 80 | 9 | 4500 | 1400 | 180 | 15 | 17 |
| **FD03** | 5 | 3.5 | 1.75 | 50 | 20 | 100 | 12 | 7000 | 1900 | 230 | 25 | 24 |
| **FD53** | 7.5 | 5 | 2.5 | 60 | 30 | 100 | 12 | | | | | |
| **FD04** | 15 | 10 | 5 | 80 | 35 | 140 | 15 | 10000 | 3100 | 350 | 30 | 33 |
| **FD14** | | | | | | | | | | | | |
| **FD05** | 40 | 26 | 13 | 130 | 65 | 170 | 20 | 18000 | 4500 | 500 | 50 | 45 |
| **FD15** | 40 | 26 | 13 | 130 | 65 | 170 | 20 | | | | | |
| **FD55** | 55 | 37 | 18 | – | 65 | 170 | 20 | | | | | |
| **FD06S** | 60 | 40 | 20 | – | 80 | 220 | 25 | 20000 | 4800 | 550 | 70 | 55 |
| **FD56** | – | 75 | 37 | – | 90 | 250 | 20 | 29000 | 7400 | 800 | 80 | 65 |
| **FD06** | | 100 | 50 | | 100 | 250 | 20 | | | | | |
| **FD07** | 150 | 100 | 50 | – | 120 | 200 | 25 | 40000 | 9300 | 1000 | 130 | 65 |
| **FD08*** | 250 | 200 | 170 | – | 140 | 350 | 30 | 60000 | 14000 | 1500 | 230 | 100 |
| **FD09**** | 400 | 300 | 200 | – | 200 | 450 | 40 | 70000 | 15000 | 1700 | 230 | 120 |

* valores de par de frenado con 9, 7 y 6 muelles respectivamente.

** valores de par de frenado con 12, 9 y 6 muelles respectivamente.

$t_1$ = tiempos de desbloqueo del freno con alimentador de semionda
$t_{1s}$ = tiempos de desbloqueo del freno con dispositivo con alimentador de la excitación a control electrónico
$t_2$ = retardo de la frenada con interrupción lado c.a. y alimentación independiente
$t_{2c}$ = retardo de la frenada con interrupción lado c.a. y c.c. – Los valores $t_1$, $t_{1s}$, $t_2$, $t_{2c}$ indicados en la tabla (F30) se refieren al freno tarado al par máximo, entrehierro medio y tensión nominal
$W_{max}$ = energía máxima por frenada
W = energía de frenada entre dos regulaciones sucesivas del entrehierro
$P_b$ = potencia absorbida por el freno a 20ºC
$M_b$ = par de frenado estático (±15%)
s/h = arranques hora

**El desgaste del ferodo depende de las condiciones de trabajo (temperatura, humedad, velocidad de deslizamientos, presión específica); los valores de desgaste deben de considerarse como indicativas.**

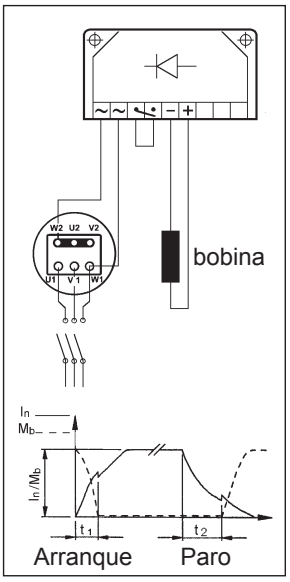
## M6.4 Conexiones del freno FD

Los motores estándar de una velocidad, se suministran con la conexión del rectificador a la caja de bornes realizada en fábrica.
Para los motores de 2 velocidades, y donde se requiera la alimentación independiente del freno, prever la conexión al rectificador de acuerdo con la tensión del freno VB indicada en la placa del motor.
**Dada la naturaleza inductiva de la carga, para el mando del freno y para la interrupción lado corriente continua, deben utilizarse contactos con categoría de uso AC-3 según IEC 60947-4-1.**

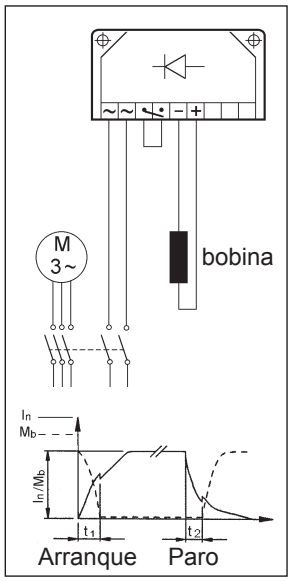
Tabla (F31) - Alimentación del freno desde los bornes del motor e interrupción lado c.a.
Tiempo de parada $t_2$ retardado en función de las constantes de tiempo del motor. Debe preverse cuando se requieran arranques/ paradas progresivos.
Tabla (F32) - Bobina del freno con alimentación independiente e interrupción del lado c.a.
Tiempo de parada normal e independiente del motor.
Los tiempos de paro $t_2$ están indicados en la tabla (F30).
Tabla (F33) - Bobina freno con alimentación independiente e interrupción del lado c.a. y c.c.
Tiempo de parada reducido según los valores $t_{2c}$ indicados en la tabla (F30).
Tabla (F34) - Bobina de freno con alimentación separada e interrupción lado c.a. y c.c.
Tiempo de parada reducido según los valores $t_{2c}$ indicados en la tabla (F30).

En las tablas de (F31) a (F34) están representados los esquemas típicos de conexión para una alimentación de 400 V, motores 230/400V conectados en estrella y freno a 230V.

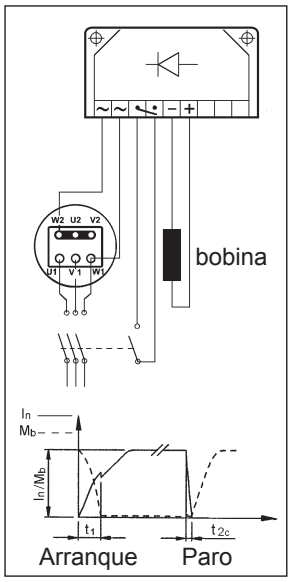
(F 31)



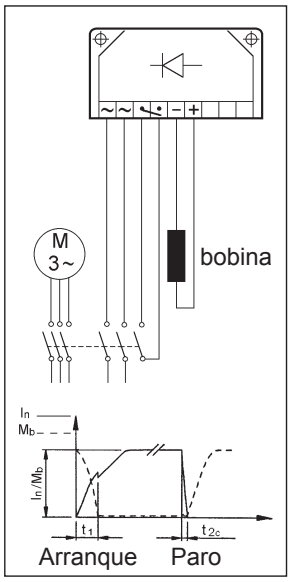

(F 32)




(F 33)



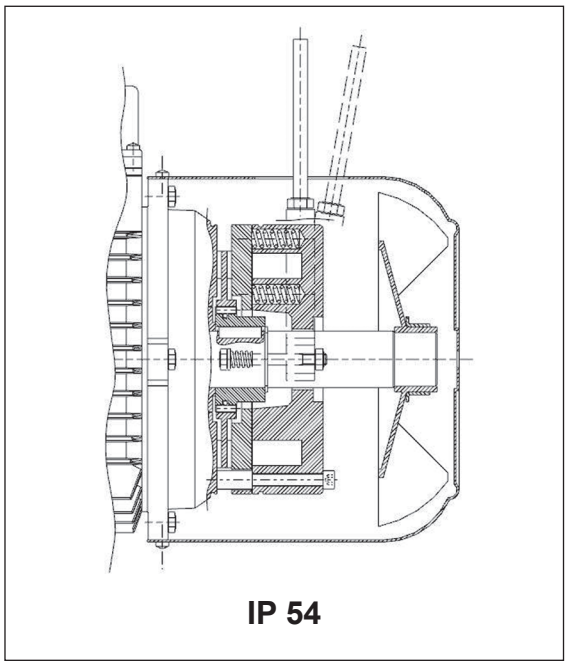

(F 34)



## M7 MOTORES FRENO EN C.C., TIPO BN_AFD y M_AFD

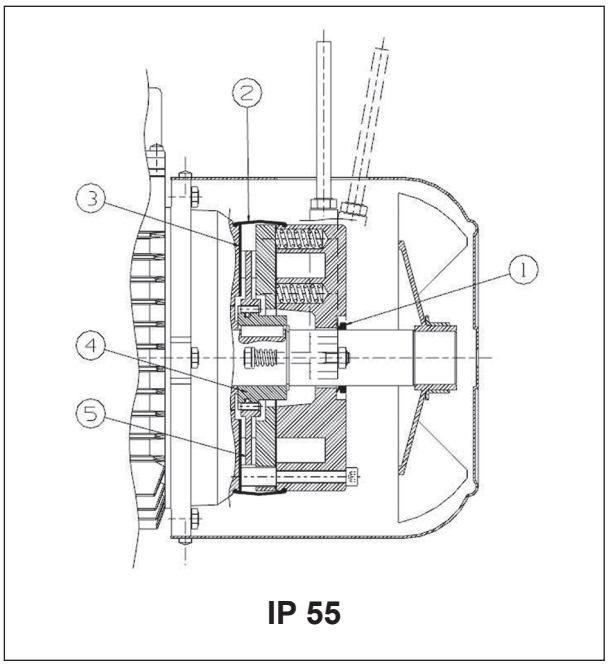
**Tamaños :** BN 63 … BN 200L / M05 ... M5

(F 35)



**IP 54**

(F 36)



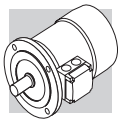

**IP 55**

**Freno con entrehierro fijo, sin mantenimiento hasta llegar al desgaste máximo admisible del ferodo del disco freno. El entrehierro viene impuesto y no debe de ser regulado.**

Freno electromagnético con bobina toroidal en **corriente continua** fijado con tornillos al escudo del motor.El disco feno desliza sobre el cubo de acero calado sobre el eje y dotado de dipositivo antivibración. Los motore se fabrican con el freno tarado en fábrica al valor de par indicado en la tabla de datos técnicosI; el par de frenado puede regularse modificando el tipo y/o el número de muelles.
Bajo pedido, los motores pueden llevar leva de desbloqueo manual del freno con retorno automático (**R**); para la posición angular de la leva de desbloqueo ver descripcióon de dicha variante en el párrafo “SISTEMAS DE DESBLOQUEO DEL FRENO”.
El freno AFD garantiza elevadas prestaciones dinámicas y baja rumorosidad; las características de intervención del freno en corriente continua pueden ser optimizadas en función de la aplicación, utilizando los diversos tipo de rectificador disponibles y/o realizando el correspondiente cableado.
El freno AFD está aconsejado para aplicaciones en las cuales se utiliza como freno de estacionamiento.
**Para aplicacion de elevación y/o muchas horas de trabajo al día, contactar con el servicio técnico comercial.**

### M7.1 Grado de protección

La ejecución estándar está prevista con el grado de protección IP54. Opcionalmente el motor freno tipo AFD puede suministrarse con protección **IP55**, con las siguientes variantes constructivas:

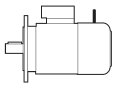


① retén axial V – ring montado en el eje del motor N.D.E.
② junta de goma de protección contra agua y polvo
③ anillo de acero inox. Situado entre el escudo del motor y el disco del freno
④ cubo de arrastre en acero inox.
⑤ disco freno en acero inox.

## M7.2 Alimentación del freno AFD

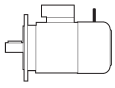
La alimentación de la bobina del freno en c.c. está prevista por medio de un rectificador apropiado, montado en el interior de la caja de bornes y cableado a la bobina del freno. Además, para los motores de simple polaridad, está prevista de serie la conexión del rectificador a los de bornes del motor. Independientemente de la frecuencia de red, la tensión estándar de alimentación del rectificador $V_B$ está indicada en la tabla siguiente:

(F 37)

| **2, 4, 6 P** | | | | | **1 speed** |
|---|---|---|---|---|---|
|  | | **BN_AFD / M_AFD** $V_{mot}$ ± 10% 3 ~ | **BN_AFD / M_AFD** $V_B$ ± 10% 1 ~ | alimentación del freno desde la caja de bornes | alimentación independiente |
| **BN 63…BN 132** | **M05...M4LB** | 230/400 V – 50 Hz | 230 V | estandar | especificar **$V_B$ SA** o **$V_B$ SD** |
| **BN 160MR** | **M4LC** | 400/690 V – 50 Hz | 400 V | estandar | especificar **$V_B$ SA** o **$V_B$ SD** |

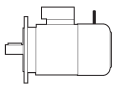
Para los motores de doble polaridad, la alimentación estándar del freno se realiza mediante una línea independiente con tensión de entrada al rectificador $V_B$ como se indica en la tabla siguiente:

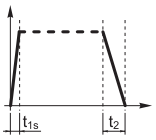
(F 38)

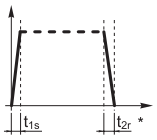
| **2/4, 2/6, 2/8, 2/12, 4/6, 4/8 P** | | | | | **2 speed** |
|---|---|---|---|---|---|
|  | | **BN_AFD / M_AFD** $V_{mot}$ ± 10% 3 ~ | **BN_AFD / M_AFD** $V_B$ ± 10% 1 ~ | alimentación del freno desde la caja de bornes | alimentación independiente |
| **BN 63…BN 132** | **M05...M4LB** | 400 V – 50 Hz | 230 V | ⛔ | especificar **$V_B$ SA** o **$V_B$ SD** |

El rectificador es del tipo de diodos a semionda (Vc.c ≈ 0,45 x Vc.a.) y está disponible en las versiones **SB** y **SBR**, como se detalla en la tabla siguiente:

(F 39)

|  | | freno | estandar | bajo pedido |
|---|---|---|---|---|
| **BN 63** | **M05** | **AFD 02** | | |
| **BN 71** | **M1** | **AFD 03** | | |
| **BN 80** | **M2** | **AFD 04** | | |
| **BN 90S** | **—** | **AFD 14** | | |
| **BN 90L** | **—** | **AFD 05** | | |
| **BN 100** | **M3** | **AFD 15** | | |
| **BN 112** | **—** | **AFD 06S** | | |
| **BN 132...160MR** | **M4** | **AFD 06** | | |
| | | **AFD 07** | | |

**SB** 


**SBR** 


(*) $t_{2c} < t_{2r} < t_2$

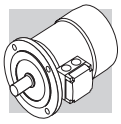
El rectificador **SB** con la excitación controlada electrónicamente, reduce los tiempos de desbloqueo del freno sobreexcitando el electroimán en los primeros instantes de la inserción, pasando seguidamente al funcionamiento normal de semionda una vez se ha desactivado el freno.

El uso del rectificador tipo **SB** debe preverse siempre en los casos siguientes:
- elevado número de arranques por hora
- tiempos de desbloqueo del freno reducidos
- elevadas solicitaciones térmicas del freno

Para aquellas aplicaciones donde se requiere un desbloqueo rápido del freno, pueden suministrarse bajo pedido los rectificadores **SBR**.
Estos rectificadores completanlos tipos **SB**, integrando en el circuito electrónico un interruptor estático que interviene desactivando rápidamente el freno en el caso de falta de tensión.
Esta solución permite reducir el tiempo de desbloqueo del freno evitando ulteriores cableados y contactos externos. Para un mejor uso de los rectificadores **SBR** es necesario efectuar la alimentación del freno independiente.
**Tensiones disponibles: 230Vac ±10%, 400V ±10%, 50/60 Hz (con rectificador); 100Vdc ±10%, 180Vdc ±10% (con opciónSD).**

## M7.3 Datos técnicos del freno AFD

En la tabla siguiente se indican las características técnicas de los frenos en c.c. tipo AFD.



(F 40)

| Freno | Par de frenado $M_b$ [Nm] muelles | | | Entrehierro tin | tmax | Desbl. $t_{1\,s}$ | Frenada $t_2$ | $t_{2c}$ | $W_{max}$ por frenada [ J ] | | | W | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 6 | 4 | 2 | (± 0.1 mm) | | [ms] | [ms] | [ms] | 10 s/h | 100 s/h | 1000 s/h | [MJ] | [W] |
| **AFD 02** | — | 3.5 | 1.8 | 0.3 | 0.7 | 20 | 110 | 10 | 4500 | 1400 | 160 | 40 | 15 |
| **AFD 03** | 7.5 | 5 | 2.5 | 0.3 | 0.7 | 35 | 140 | 15 | 7000 | 1900 | 210 | 60 | 21 |
| **AFD 04** / **AFD 14** | 15 | 10 | 5 | 0.4 | 0.8 | 55 | 180 | 15 | 11000 | 3100 | 350 | 75 | 27 |
| **AFD 05** / **AFD 15** | 40 | 26 | 13 | 0.4 | 0.8 | 85 | 240 | 25 | 18000 | 4500 | 500 | 125 | 37 |
| **AFD 06S** | 60 | 40 | 20 | 0.45 | 0.9 | 110 | 280 | 30 | 25000 | 6300 | 700 | 175 | 47 |
| **AFD 06** | 100 | 75(*) / 62(*) | 37 | 0.45 | 0.9 | 130 | 330 | 30 | 29000 | 7400 | 800 | 200 | 50 |
| **AFD 07** | 150 | 100 | 50 | 0.45 | 0.95 | 170 | 350 | 30 | 40000 | 9300 | 1000 | 320 | 55 |

(*) in funzione della tipologia di molle

tin = Entrehierro inicial con el nuevo disco de freno
tmax = Entrehierro máximo después de lo cual es necesario sustituir el disco de freno
$t_{1s}$ = tiempos de desbloqueo del freno con dispositivo con alimentador de la excitación a control electrónico
$t_2$ = retardo de la frenada con interrupción lado c.a. y alimentación independiente
$t_{2c}$ = retardo de la frenada con interrupción lado c.a. y c.c. – Los valores $t_{1s}$, $t_2$, $t_{2c}$ indicados en la tabla se refieren al freno tarado al par máximo, entrehierro medio y tensión nominal
$W_{max}$ = energía máxima por frenada
W = energía de frenada entre dos regulaciones sucesivas del entrehierro
$P_b$ = potencia absorbida por el freno a 20ºC
$M_b$ = par de frenado estático (±15%)
s/h = arranques hora

**El desgaste del ferodo depende de las condiciones de trabajo (temperatura, humedad, velocidad de deslizamientos, presión específica); los valores de desgaste deben de considerarse como indicativas.**

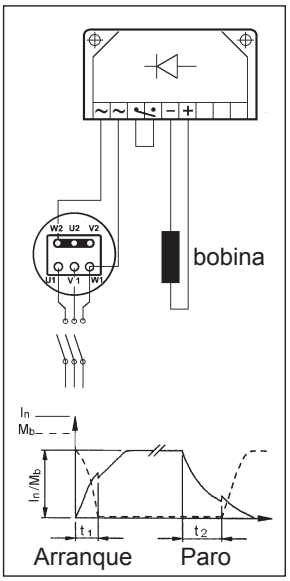
## M7.4 Conexiones del freno AFD

Los motores estándar de una velocidad, se suministran con la conexión del rectificador a la caja de bornes realizada en fábrica.
Para los motores de 2 velocidades, y donde se requiera la alimentación independiente del freno, prever la conexión al rectificador de acuerdo con la tensión del freno VB indicada en la placa del motor.
**Dada la naturaleza inductiva de la carga, para el accionamiento del freno y para la interrupción lado corriente continua, deben utilizarse contactos con categoría de uso AC-3 según IEC 60947-4-1.**

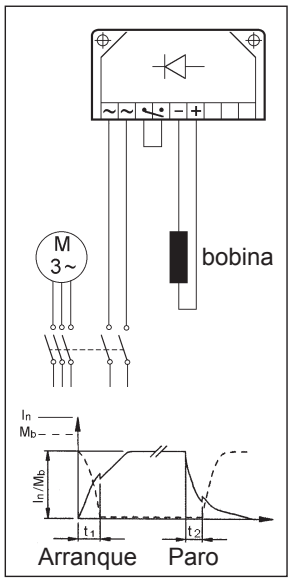
Tabla (F41) - Alimentación del freno desde los bornes del motor e interrupción lado c.a.
Tiempo de parada $t_2$ retardado en función de las constantes de tiempo del motor. Debe preverse cuando se requieran arranques/ paradas progresivos.
Tabla (F42) - Bobina del freno con alimentación independiente e interrupción del lado c.a.
Tiempo de parada normal e independiente del motor.
Los tiempos de paro $t_2$ están indicados en la tabla (F40).
Tabla (F43) - Bobina freno con alimentación independiente e interrupción del lado c.a. y c.c.
Tiempo de parada reducido según los valores $t_{2c}$ indicados en la tabla (F40).
Tabla (F44) - Bobina de freno con alimentación separada e interrupción lado c.a. y c.c.
Tiempo de parada reducido según los valores $t_{2c}$ indicados en la tabla (F40).

En las tablas de (F41) a (F44) están representados los esquemas típicos de conexión para una alimentación de 400 V, motores 230/400V conectados en estrella y freno a 230V.

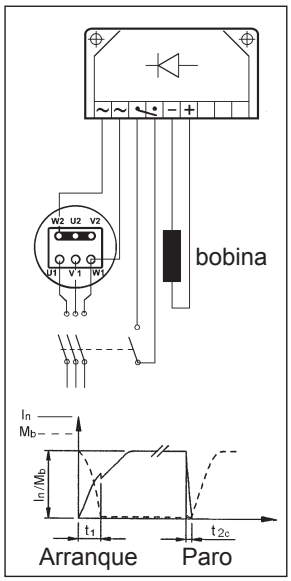
(F 41)



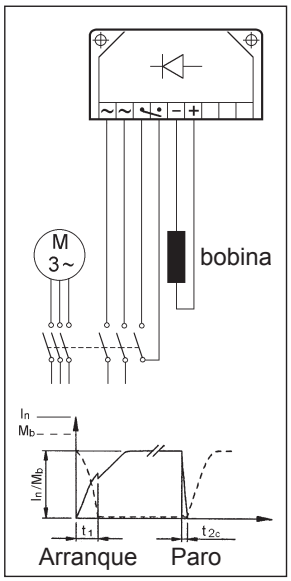

(F 42)




(F 43)



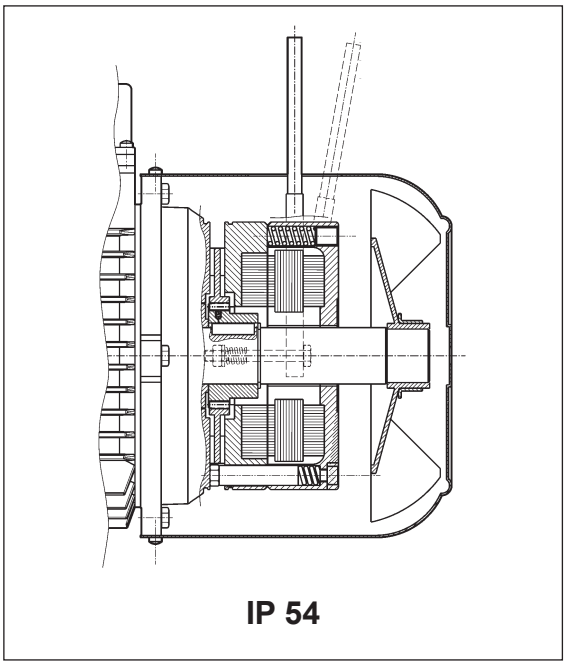

(F 44)



## M8 MOTORES FRENO DE C.A., TIPO BN_FA y M_FA

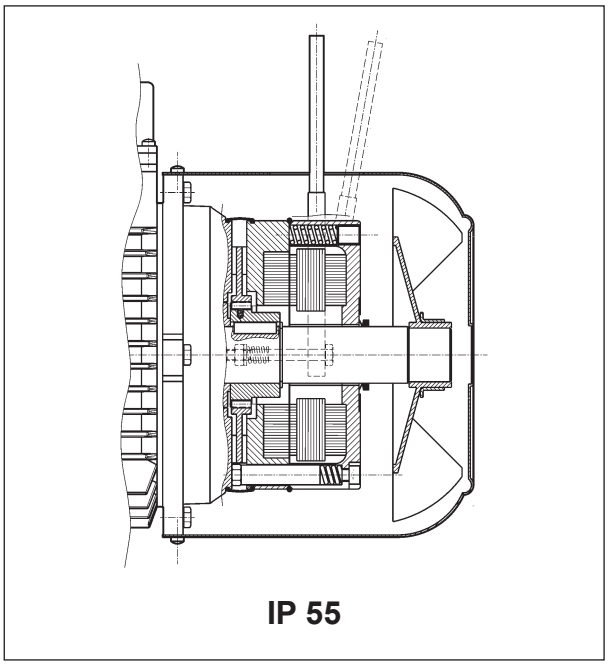
**Tamaños:** BN 63 … BN 180M / M05 ... M5

(F 45)



**IP 54**

(F 46)



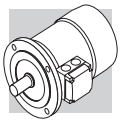
**IP 55**

Freno electromagnético alimentado con corriente corriente alterna trifásica, fijado con tornillos al escudo del motor; los muelles de precarga efectúan el posicionamiento axial del cuerpo magnético. El disco freno es deslizable axialmente sobre el cubo de accionamiento en acero, acoplado sobre el eje y provisto de muelles antivibración. El par de frenado viene regulado de fábrica con los valores que se indican en las tablas de características técnicas de los motores correspondientes. La acción del freno también es ajustable, regulando gradualmente el par de frenado a través del tornillo que realiza la precarga de los muelles; el campo de regulación del par es: 30% $M_{bMAX} < M_b < M_{bMAX}$ ($M_{bMAX}$ es el momento de frenado máximo indicado en la tabla (F48).
El freno tipo FA presenta unas características dinámicas muy elevadas que lo hacen idóneo en aplicaciones donde se requieren frecuencias de arranque elevadas con tiempos de intervención muy rápidos.
Bajo pedido, los motores pueden ser equipados con palanca para el desbloqueo manual con retorno automático (**R**). Para la especificar la posición angular de la palanca, ver la variante en el párrafo “SISTEMAS DE DESBLOQUEO DEL FRENO”.
**Para apliaciones de elevación y/o elevada disipación de energía diaria, contactar con el servicio técnico comercial**

### M8.1 Grado de protección

En la ejecución estándar está previsto el grado de protección IP54. Como opción, el motor freno BN_FA puede suministrarse con grado de protección **IP55** comportando las siguientes variantes constructivas.

- retén axial V-ring montado sobre el eje motor NDE.
- banda de protección de goma
- junta tórica



## M8.2 Alimentación del freno FA

En los motores de polaridad simple, la alimentación de la bobina del freno está conectada directamente en los bornes del motor, por tanto, la tensión del freno coincide con la tensión del motor. En este caso la tensión del freno puede ser omitida en la designación.
Para los motores de doble polaridad, y también para los motores con alimentación independiente del freno, existe una caja de bornes auxiliar con 6 terminales para la conexión del freno a la línea. En ambos casos el valor de la tensión del freno deberá especificarse en la designación.
En la tabla siguiente se indican los valores de la alimentación estándar del freno en c.a. Para los motores de simple o doble Polaridad.

(F 47)

| | BN 63…BN 132 | BN 160…BN 180 |
|---|---|---|
| **Motores de una sola velocidad** | **M05...M4LB** | **M4LC...M5** |
| | 230Δ / 400Y V ±10% – 50 Hz | 400Δ/ 690Y V ±10% – 50 Hz |
| | 265Δ / 460Y ±10% - 60 Hz | 460Y – 60 Hz |

| | BN 63…BN 132 |
|---|---|
| **Motor de doble velocidad (alimentación de línea independiente)** | **M05...M4** |
| | 230Δ / 400Y V ±10% – 50 Hz |
| | 460Y - 60 Hz |

Si no se especifica otra distinta, la alimentación estándar del freno es de 230Δ / 400 Y V. 50Hz.

Bajo pedido, pueden suministrarse tensiones especiales en el rango 24…690 V, 50-60 Hz.

## M8.3 Datos técnicos frenos FA

(F 48)

| Freno | Par de frenado $M_b$ [Nm] | Desbloqueo $t_1$ [ms] | Frenada $t_2$ [ms] | $W_{max}$ [ J ] | | | W [MJ] | P [VA] |
|---|---|---|---|---|---|---|---|---|
| | | | | **10 s/h** | **100 s/h** | **1000 s/h** | | |
| **FA 02** | 3.5 | 4 | 20 | 4500 | 1400 | 180 | 15 | 60 |
| **FA 03** | 7.5 | 4 | 40 | 7000 | 1900 | 230 | 25 | 80 |
| **FA 04** | 15 | 6 | 60 | 10000 | 3100 | 350 | 30 | 110 |
| **FA 14** | | | | | | | | |
| **FA 05** | 40 | 8 | 90 | 18000 | 4500 | 500 | 50 | 250 |
| **FA 15** | | | | | | | | |
| **FA 06S** | 60 | 16 | 120 | 20000 | 4800 | 550 | 70 | 470 |
| **FA 06** | 75 | 16 | 140 | 29000 | 7400 | 800 | 80 | 550 |
| **FA 07** | 150 | 16 | 180 | 40000 | 9300 | 1000 | 130 | 600 |
| **FA 08** | 250 | 20 | 200 | 60000 | 14000 | 1500 | 230 | 1200 |

Leyenda:
$M_b$ = par máx de frenado estático (±15%)
$t_1$ = tiempo de desbloqueo del freno
$t_2$ = retardo de la frenada
$W_{max}$ = energía máx. por frenada (capacidad térmica del freno)
W = energía de frenado entre dos regulaciones sucesivas del entrehierro
$P_b$ = potencia absorbida por el freno a 20º (50 Hz)
s/h = arranques hora

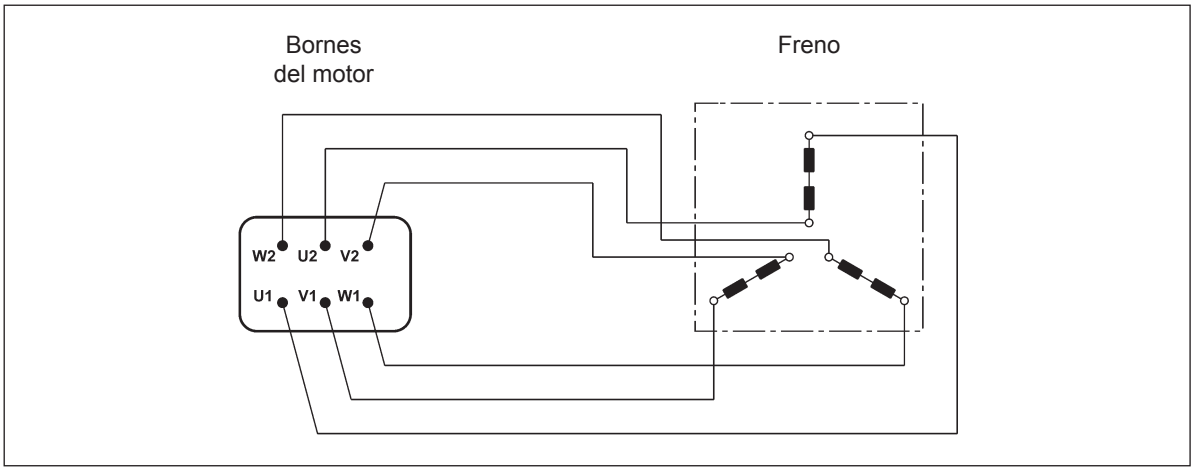
NOTA.
Los valores de $t_1$ y $t_2$ indicados en la tabla están referidos al valor del freno regulado en par, entrehierro medio y tensión nominales.

**El desgaste del ferodo depende de las condiciones de trabajo (temperatura, humedad, velocidad de deslizamientos, presión específica); los valores de desgaste deben de considerarse como indicativas.**

## M8.4 Conexiones del freno FA

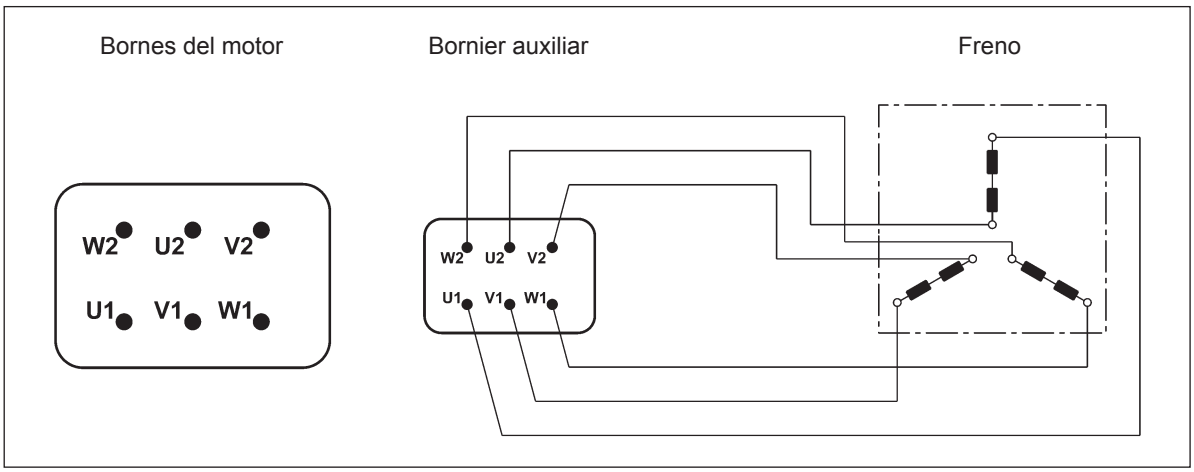
Para los motores con la alimentación del freno efectuada directamente desde la alimentación del motor, las conexiones a la caja de bornes corresponden a las indicaciones del esquema (F49):

(F 49)




Para los motores de doble polaridad, y cuando se requiera, los motores de una velocidad con alimentación independiente, está prevista una regleta auxiliar con 6 bornes para la conexión del freno; en esta ejecución los motores incorporan una caja de bornes mayor. Ver esquema (F50):

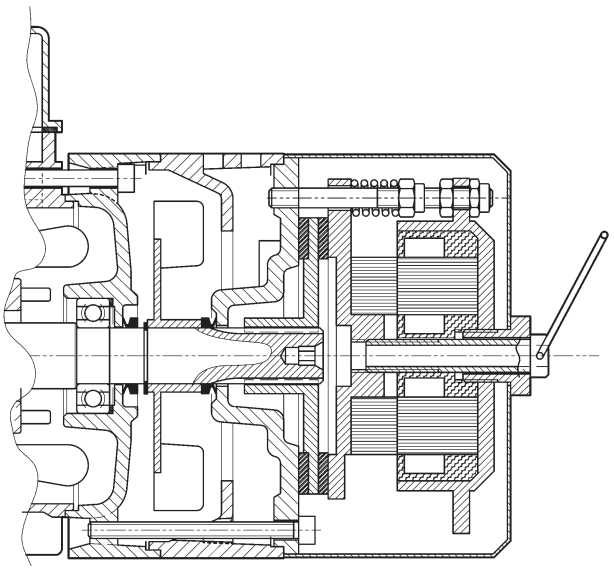
(F 50)



## M9 MOTORES FRENO EN C.A., TIPO BN_BA

**Tamaños:** BN 63 … BN 132M

(F 51)

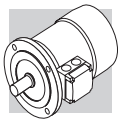


**IP 55**

Freno electromagnético con alimentación en **corriente alterna** trifásica, fijado con tornillos al escudo posterior del motor. El disco freno de acero, desliza axialmente sobre el eje motor acanalado (cubo deslizante en acero, acoplado sobre el eje para el tamaño 244).
Los motores se suministran con el freno regulado al par máximo.
El par de frenado es regulable actuando gradualmente sobre los tornillos de compresión de los muelles; el campo de regulación admitido es de un 30% $M_{bMAX} < M_b < M_{bMAX}$ ($M_{bMAX}$ es el momento de frenado máximo indicado en la tabla (F53).
Los motores se suministran de serie con tornillo para el desbloqueo manual del freno y mantenimiento de la posición de desbloqueo, permitiendo, de esta forma, el giro del eje motor. El tornillo de desbloqueo debe ser desmontado después de su utilización para asegurar el correcto funcionamiento del freno y evitar situaciones potencialmente peligrosas.
El freno BA, además de las elevadas características dinámicas típicas de los frenos de corriente alterna, presenta una construcción robusta con una energía de frenado aumentada que le hace particularmente idóneo para servicios pesados amén de aquellas aplicaciones donde se requieren elevadas frecuencias de maniobra y tiempos de intervención muy rápidos.
**Para aplicaciones de elevación y/o en las que se deban disipar elevados valores de energía diaria, contactar con el servicio técnico comercial.**

### M9.1 Grado de protección

Está contemplada una única ejecución con grado de protección IP55.



## M9.2 Alimentación freno BA

En los motores de simple polaridad, la alimentación de la bobina del freno se conecta directamente a la caja de bornes del motor, por tanto, la tensión del freno, coincide con la tensión del motor. En este caso la tensión del freno puede ser omitida en la designación. Para los motores de doble polaridad, y para los motores con alimentación independiente del freno, existe una caja de bornes auxiliar con 6 terminales para la conexión del freno directamente a la línea. En ambos casos el valor de la tensión del freno deberá especificarse en la designación. En la tabla siguiente se indican las condiciones de alimentación estándar del freno en c.a. Para los motores de una y dos polaridades.

(F 52)

| | BN 63 … BN 132 |
|---|---|
| **motor de simple polaridad** | 230Δ / 400Y V ±10% – 50 Hz |
| | 265Δ / 460Y ±10% - 60 Hz |

| | BN 63 … BN 132 |
|---|---|
| **motor de doble polaridad (alimentación de línea independiente)** | 230Δ / 400Y V ±10% – 50 Hz |
| | 460Y - 60 Hz |

Si no se especifica otra distinta, la alimentación estándar del freno es de 230Δ / 400 Y V – 50Hz.

Bajo pedido, están disponibles tensiones especiales, en el rango 24…690 V, 50-60 Hz

## M9.3 Datos técnicos frenos BA

En la tabla siguiente están descritos los datos técnicos de los frenos en c.a. tipo BA.

(F 53)

| Freno | Par de frenado $M_b$ [Nm] | Desbloqueo $t_1$ [ms] | Frenada $t_2$ [ms] | $W_{max}$ [ J ] 10 s/h | $W_{max}$ [ J ] 100 s/h | $W_{max}$ [ J ] 1000 s/h | W [MJ] | $P_B$ [VA] |
|---|---|---|---|---|---|---|---|---|
| **BA 60** | 5 | 5 | 20 | 4000 | 1500 | 180 | 30 | 60 |
| **BA 70** | 8 | 6 | 25 | 7000 | 2700 | 300 | 60 | 75 |
| **BA 80** | 18 | 6 | 25 | 10000 | 3100 | 350 | 80 | 110 |
| **BA 90** | 35 | 8 | 35 | 13000 | 3600 | 400 | 88 | 185 |
| **BA 100** | 50 | 8 | 35 | 18000 | 4500 | 500 | 112 | 225 |
| **BA 110** | 75 | 8 | 35 | 28000 | 6800 | 750 | 132 | 270 |
| **BA 140** | 150 | 15 | 60 | 60000 | 14000 | 1500 | 240 | 530 |

Leyenda:
$M_b$ = par máx de frenado estático (±15%)
$t_1$ = tiempo de desbloqueo del freno
$t_2$ = retardo de la frenada
$W_{max}$ = energía máx. por frenada (capacidad térmica del freno)
W = energía de frenado entre dos regulaciones sucesivas del entrehierro

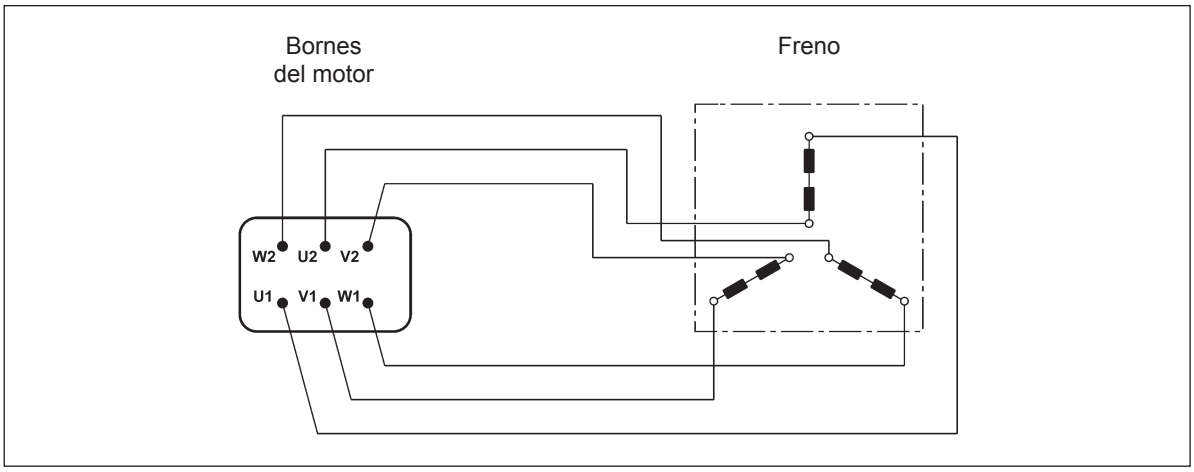
NOTA.
Los valores de $t_1$ y $t_2$ indicados en la tabla están referidos al freno regulado el par, entrehierro medio y la tensión nominal.

**El desgaste del ferodo depende de las condiciones de trabajo (temperatura, humedad, velocidad de deslizamientos, presión específica); los valores de desgaste deben de considerarse como indicativas.**

## M9.4 Conexiones del freno BA

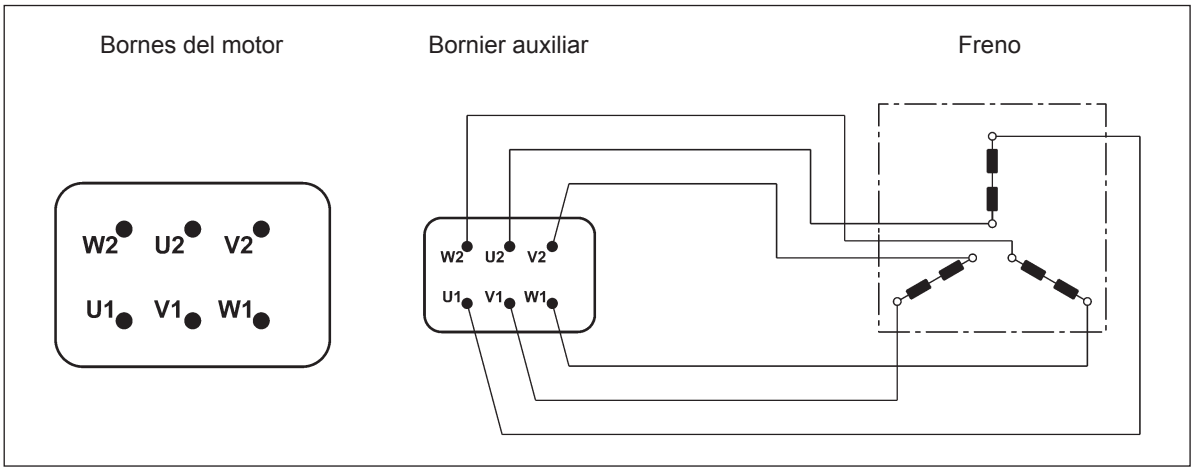
Para los motores con la alimentación del freno efectuada directamente desde la alimentación del motor, las conexiones a la caja de bornes corresponden a las indicaciones del esquema (F54):

(F 54)




Para los motores de doble polaridad y, cuando se requiera, los motores de una velocidad con alimentación independiente, tienen prevista una regleta auxiliar con 6 bornes para la conexión del freno; en esta ejecución, los motores llevan la caja de bornes mayor. Ver esquema (F55):

(F 55)

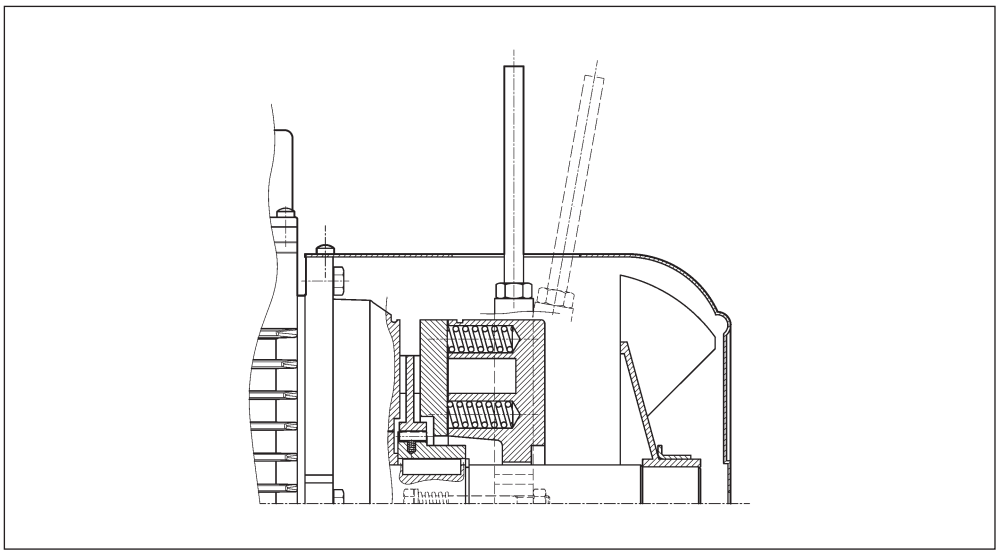


## M10 SISTEMA DE DESBLOQUEO DEL FRENO

Los frenos por presión de muelles tipo FD, AFD y FA pueden dotarse opcionalmente de dispositivos para el desbloqueo manual del freno, normalmente utilizados para efectuar intervenciones de mantenimiento sobre los componentes de la máquina, o de la instalación, accionados por el Motor.

**R**

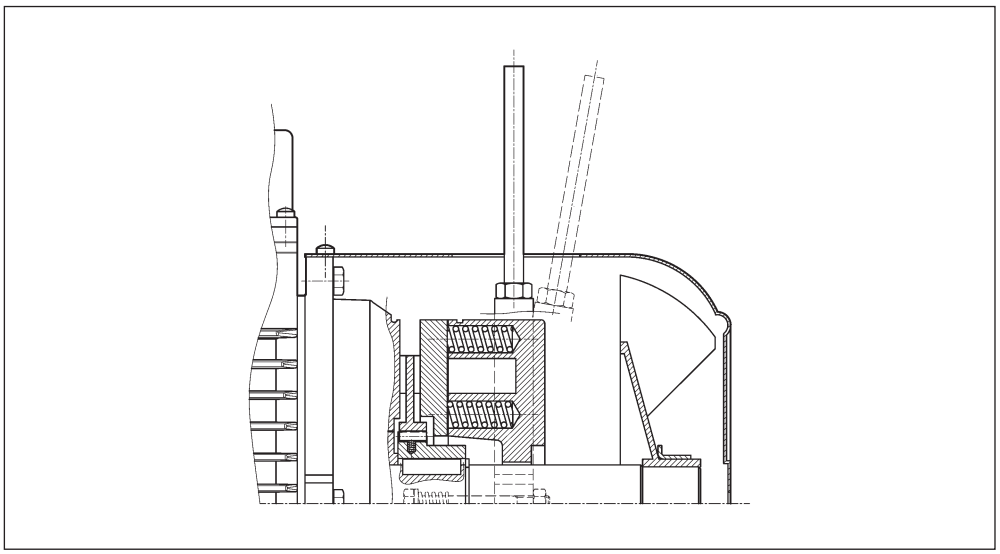
(F 56)



La palanca de desbloqueo incorpora el retorno automático a través de un dispositivo demuelles.

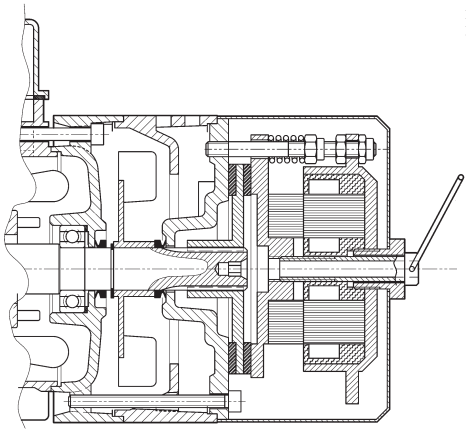
**RM**

(F 57)



En los motores BN_FD la palanca de desbloqueo puede fijarse temporalmente en posición de desbloqueo del freno, ajustando la misma hasta sujetar la extremidad en un resalte del cuerpo del freno.
La disponibilidad de los sistemas de desbloqueo del freno es distinta para los diversos tipos de motor, y se describe en la tabla siguiente:

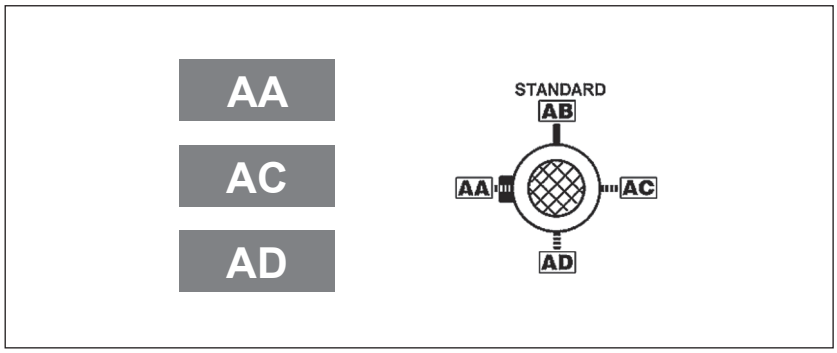
(F 58)

| | R | RM |
|---|---|---|
| **BN_FD** | **BN 63...BN 200** | **2p 63A2 ≤ H ≤ 132M2**<br>**4p 63A4 ≤ H ≤ 132MA4**<br>**6p 63A6 ≤ H ≤ 132MA6** |
| **BN_AFD** | **BN 63...BN 160MR** | ⛔ |
| **M_FD** | **M 05...M 5** | **M 05...M 4LA** |
| **M_AFD** | **M 05...M 4LC** | ⛔ |
| **BN_FA** | **BN 63...BN 180M** | ⛔ |
| **M_FA** | **M 05...M 5** | |
| **BN_BA** |  | **de serie** |

## M10.1 Orientación de la palanca de desbloqueo

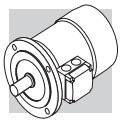
Para las dos opciones **R** y **RM**, si no se especifica lo contrario, la palanca de desbloqueo del freno viene situada con orientación de 90º en sentido horario, respecto a la posición de la caja de bornes - referencia [**AB**] en el dibujo de abajo.
Orientaciones alternativas, tipo [**AA**], [**AC**] y [**AD**] se pueden solicitar citando la especificación correspondiente:

(F 59)




## M10.2 Características de los volantes de inercia (F1)

En la siguiente tabla se detallan el peso y la inercia suplementaria del volante que puede ser solicitado con la opción F1. Las dimensiones generales del motor permanecen invariables.



(F 60)

| Datos técnicos del volante para motores tipo: BN_FD, BN_AFD, M_FD, M_AFD | | | |
|---|---|---|---|
| | | **Peso del volante** [Kg] | **Inercia del volante** [Kgm²] |
| **BN 63** | **M05** | 0.69 | 0.00063 |
| **BN 71** | **M1** | 1.13 | 0.00135 |
| **BN 80** | **M2** | 1.67 | 0.00270 |
| **BN 90 S - BN 90 L** | **–** | 2.51 | 0.00530 |
| **BN 100** | **M3** | 3.48 | 0.00840 |
| **BN 112** | **–** | 4.82 | 0.01483 |
| **BN 132 S - BN 132 M** | **M4** | 6.19 | 0.02580 |

## M11 OPCIONES

### M11.1 Protecciones térmicas

Además de la protección garantizada por el interruptor magnetotérmico, los motores pueden ser equipados con sondas térmicas incorporadas, para proteger al bobinado contra las excesivas temperaturas producidas por una ventilación insuficiente o a un servicio intermitente. Esta protección debería estar siempre prevista para motores con ventilación independiente (IC416).

### M11.2 Sonda térmica de termistores

**E3**

Los termistores son semiconductores que presentan una rápida variación de su resistencia cuando se aproxima a la temperatura nominal de actuación (150 °C).
La evolución de la característica R = f (T) está definida por las normas DIN 440811, IEC 34-11
Estos sensores presentan la ventaja de tener unas dimensiones reducidas, una respuesta muy rápida y dado que el funcionamiento se realiza sin contactos, están completamente libres de desgaste.
En general, se utilizan termistores con coeficientes de temperatura positivos, también denominados “resistores de conductor frío” PTC.
A diferencia de las sondas térmicas bimetálicas, no pueden intervenir directamente en la corriente de las bobinas de excitación y deben, por tanto, conectarse a una unidad especial de control (elemento de desconexión) que intercepte la conexión externa.
Con esta protección se instalan tres PTC (conectadas en serie) en el bobinado con los terminales situados en una caja de bornes Auxiliar.

**K1**

Son un subgrupo de termistores PTC las caracteristicas constructivas de los cuales permiten la función como sensores de temperatura teniendo un coeficiente de temperatura positivo en función de la resistencia. La temperatura de trabajo es: 0ºC…+260ºC.
Los termistores no pueden comandar directamente los relés y deben por tanto ser conectados a un adecuado sistema de desenganche.
Los terminales (polarizados) de n.1 KTY 84-130 están disponibles en una caja de bornas auxiliar.

## M11.3 Sondas térmicas bimetálicas

### D3

Los protectores de este tipo contienen en su interior un disco metálico que, al alcanzar la temperatura nominal de intervención (150 °C), conmuta los contactos desde la posición de reposo.
Al disminuir la temperatura, el disco y los contactos retornan automáticamente a la posición de reposo.
Normalmente se emplean tres sondas bimetálicas conectadas en serie con contactos normalmente cerrados y los terminales situados en una caja de bornes auxiliar.

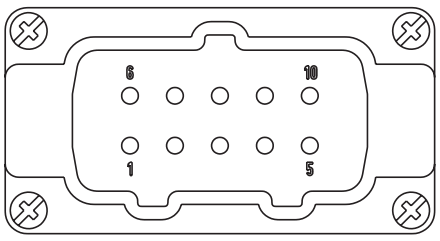
## M11.4 Motor con conector

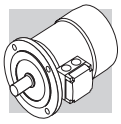
### CON

Hay disponibles tres tipos de conector (CON 1, CON 2, CON 3) que pueden instalarse en dos posiciones de montaje: lado derecho de la caja de bornas (C1D, C2D, C3D); lado izquierdo caja de bornas (C1S, C2S, C3S).
L'opción CON está prevista para los motores BN  M y una sola polarida (2, 4, 6, 8, polos) y en los tamaños indicados en la siguiente tablan. Quedan excluidas todas las versiones con doble polaridad.
Los conectores están disponibles para los motores BN y M en la versión sin freno y para los motores con freno  BN y M con freno en corriente continua FD o AFD, en los tamaños indicados en la sigiene tabla.
**Sobre el motor se fija el conector macho (von pin), el conector hembra no se suministra,**
**Con la opción CON siempre está prevista la conexión de las fases en  Y.**
Para los motores con servoventilación (opción U1) la alimentación el ventilador está prevista en una caja de bornas separada y fijado sobre la tapa del ventilador.
En los motores con encoder (opciones EN1...EN6) los terminales de la conexión del encoder se realiza a través del cable volante no contectado al conector.
La opción CON no se aplica a los motores con freno en corriente alterna FA, BA.
La opción CON no es compatible con las opciones U2, CUS, IC

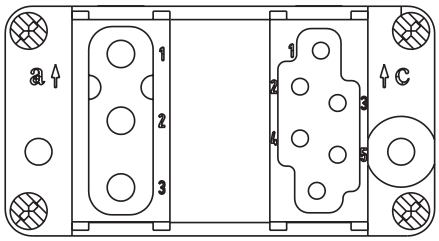
### Datos técnicos

(F 61)

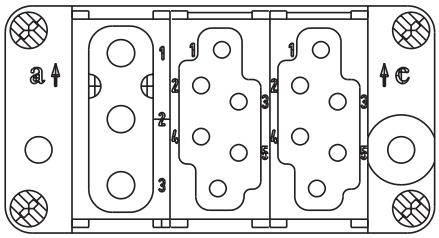
| Opción | **CON 1** |
|---|---|
| Tamaño motor | **BN63…BN112 / M05...M3** |
| Vista conector |  |
| Tipo de conector | Harting Han 10ES |
| Cuerpo conector | Han EMC 10B  con 2 levas |
| Número de pins - corriente norminal | 10 x 16A |
| Tensión de alimentación | 500 Vac |
| Tipo de conexión contactos | Terminales con tornillo |



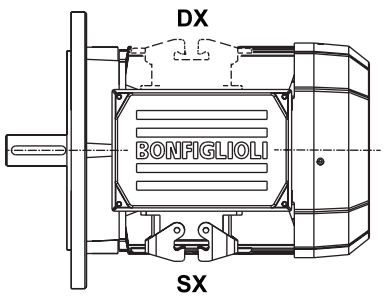
(F 62)

| Opción | **CON 2** |
|---|---|
| Tamaño motor | **BN63…BN160MR / M05...M4LC** |
| Vista conector |  |
| Tipo de conector | Harting Han Modular |
| Cuerpo conector | Han EMC 10B con 2 levas |
| Tipo Modulo | Modulo C + Modulo vacío + Modulo E |
| Número de pins - corriente norminal | 3 x 36A / 6 x 16A |
| Tensión de alimentación | 500 Vac |
| Tipo de conexión contactos | Contactos a crimpar |

(F 63)

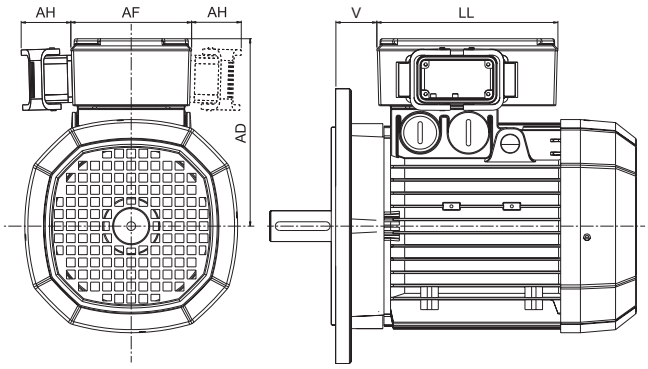
| Opción | **CON 3** |
|---|---|
| Tamaño motor | **BN63…BN160MR / M05...M4LC** |
| Vista conector |  |
| Tipo de conector | Harting Han Modular |
| Cuerpo conector | Han EMC 10B con 2 levas |
| Tipo Modulo | Modulo C + Modulo vacío + Modulo E |
| Número de pins - corriente norminal | 3 x 36A / 6 + 6 x 16A |
| Tensión de alimentación | 500 Vac |
| Tipo de conexión contactos | Contactos a crimpar |

(F 64)

| **Orientamiento conectores** |
|---|
|  |

(F 65)

**Diseño de dimensiones motores sin freno**

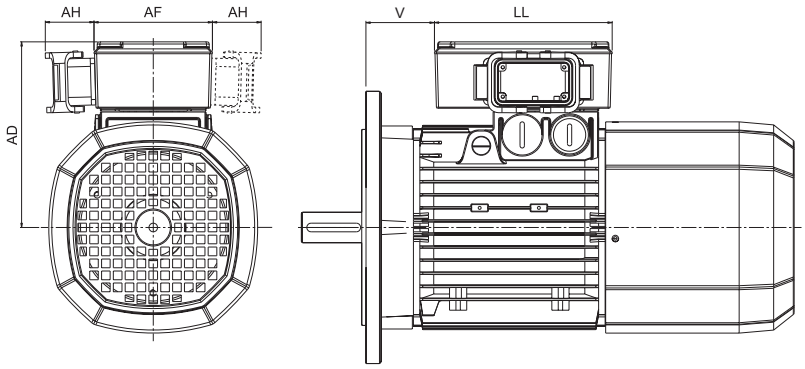



| | | **AD** (mm) | **AF** (mm) | **AH** (mm) | **LL** (mm) | **V**(*) (mm) |
|---|---|---|---|---|---|---|
| **BN63** | **M05** | 136 | 110 | 45 | 165 | 4.5 |
| **BN71** | **M1** | 149 | 110 | 45 | 165 | 15.5 |
| **BN80** | **M2** | 160 | 110 | 45 | 165 | 16.5 |
| **BN90** | **—** | 162 | 110 | 45 | 165 | 31.5 |
| **BN100** | **M3** | 171 | 110 | 45 | 165 | 37.5 |
| **BN112** | **—** | 186 | 110 | 45 | 165 | 39 |
| **BN132** | **M4** | 210 | 140 | 45 | 188 | 45.5 |
| **BN160MR** | **—** | 210 | 140 | 45 | 188 | 161 |

(*) Dimension válida solo para motores BN

(F 66)

**Diseño de dimensiones motores con freno FD**




| | | **AD** (mm) | **AF** (mm) | **AH** (mm) | **LL** (mm) | **V**(*) (mm) |
|---|---|---|---|---|---|---|
| **BN63** | **M05** | 136 | 110 | 45 | 165 | 4.5 |
| **BN71** | **M1** | 149 | 110 | 45 | 165 | 1.5 |
| **BN80** | **M2** | 160 | 110 | 45 | 165 | 18.5 |
| **BN90** | **—** | 162 | 110 | 45 | 165 | 39.5 |
| **BN100** | **M3** | 171 | 110 | 45 | 165 | 63.5 |
| **BN112** | **—** | 186 | 110 | 45 | 165 | 75 |
| **BN132** | **M4** | 210 | 140 | 45 | 188 | 122 |
| **BN160MR** | **—** | 210 | 140 | 45 | 188 | 161 |

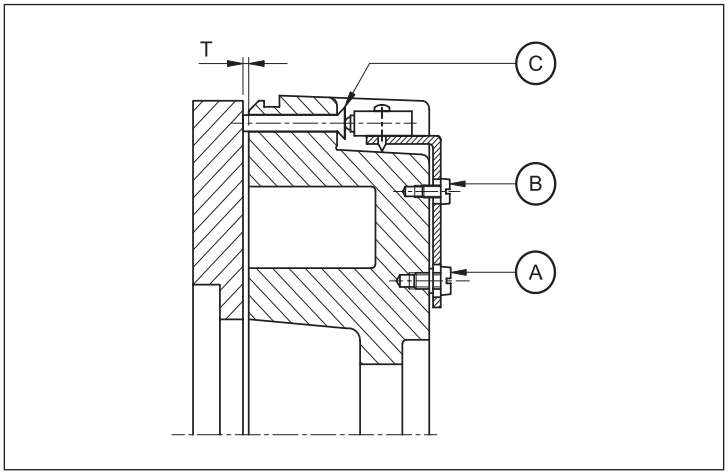
(*) Dimension válida solo para motores BN

### M11.5 Control de la funcionalidad de freno

## MSW

El microinterruptor puede ser regulado para indicar la atracción/liberación del áncora móvil o para señalar que se ha llegado al valor máximo admisible del entrehierro.
**La pción MSW está disponible para los freno FD03...FD09 y AFD03...AFD07.**
El microswitch tiene tres terminales NC, NO, COM. En la sigura de abajo, vienen indicados los principales componentes del freno equipado con microswitch.

(F 67)




A: Tornillo de fijación
B: Tornillo de regulación
C: Actuador

### M11.6 Entrada de cables suplementarios para motores autofrenantes

## IC

En la tapa de la caja de bornas de los motores freno BN63...BN160MR / M05...M4 están disponibles dos entradas adicionales para cables M16 x 1.5 (uno por cada lado).
En la tapa de la caja de bornas de los motores freno BN160...BN200 / M5 está disponible una entrada para cable de M16 x 1.5 al lado de la entrada del cable del freno.

### M11.7 Resistencias anticondensación

## H1

Los motores funcionando en ambientes muy húmedos y/o con grandes variaciones de temperatura, pueden equiparse con una resistencia de caldeo (anticondensación).
La alimentación monofásica se realiza mediante un una regleta auxiliar situada en la caja principal.
La potencia absorbida por la resistencia eléctrica, está indicada en la lista siguiente:

(F 68)

| | | H1<br>1~ 230V ± 10%<br>P [W] |
|---|---|---|
| **BN 56...BN 80** | **M0...M2** | 10 |
| **BN 90...BN 160MR** | **M3 - M4** | 25 |
| **BN 160M...BN 180M** | **M5** | 50 |
| **BN 180L...BN 200L** | **—** | 50 |

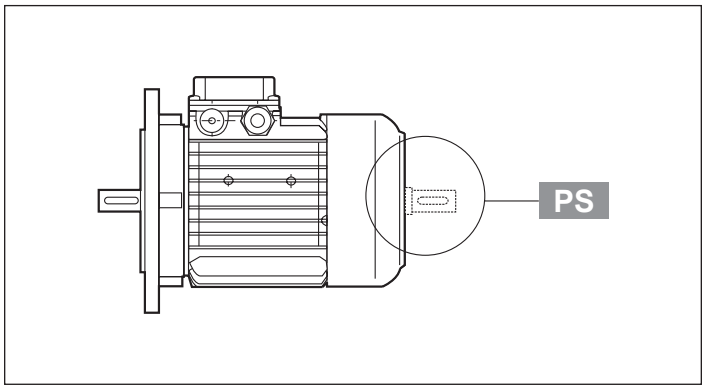
**Importante**
**Durante el funcionamiento del motor, la resistencia de caldeo nunca debe permanecer alimentada.**

### M11.8 Segunda extremidad del eje

**PS**

Esta opción excluye las opciones RC, TC, U1, U2, EN1, EN2, EN3, EN4, EN5, EN6 – no es aplicable a los motores freno tipo BA.
Las dimensiones pueden obtenerse en la tabla de dimensiones de los motores.

(F 69)




### M11.9 Dispositivo antirretorno

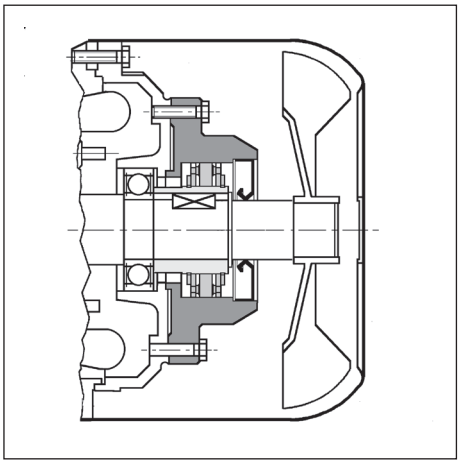
**AL** **AR**

En las aplicaciones donde sea necesario impedir el giro inverso del motor motivado por la carga, es posible emplear motores provistos de un dispositivo antirretorno (solamente disponible en los motores serie M). Este dispositivo permite el giro libre en el sentido de marcha, interviniendo instantáneamente en ausencia de la corriente bloqueando el giro del eje en el sentido inverso.
El dispositivo antirretorno está lubricado de por vida con grasa específica para está aplicación.
En el momento del pedido deberá indicarse con claridad el sentido de giro previsto.
En ningún caso, el dispositivo antirretorno, deberá utilizarse para impedir el giro inverso en caso de conexión eléctrica errónea.
En la tabla (F70) están indicados los valores del par nominal y máximo de retención, aplicable al dispositivo antirretorno utilizado, la representación esquemática del dispositivo se muestra en la tabla (F71).
Las dimensiones son las mismas que las del motor freno.El sentido de girlo libre está descrito en el párrafo “OPCIONES MOTORES” para cada sección dedicadas a los reductores.

(F 70)

| | Par nominal de bloqueo [Nm] | Par máx. de bloqueo [Nm] | Velocidad de liberación [$min^{-1}$] |
|---|---|---|---|
| **M1** | 6 | 10 | 750 |
| **M2** | 16 | 27 | 650 |
| **M3** | 54 | 92 | 520 |
| **M4** | 110 | 205 | 430 |

(F 71)



## M11.10 Ventilación

Los motores están refrigerados mediante ventilación externa (IC 411 según CEI EN 60034-6) y están equipados con un ventilador radial de plástico que funciona en ambos sentidos de giro.
En la instalación deberá asegurarse una distancia mínima entre la tapa del ventilador y la pared más cercana, de modo que se asegure una buena circulación del aire y permita realizar el mantenimiento oportuno del motor y, si lo lleva, el del freno.
Bajo pedido, y a partir del tamaño BN 71, o bien M1, los motores pueden suministrarse con ventilación y alimentación independientes.
La refrigeración se realiza mediante un ventilador axial, con alimentación independiente, montado sobre la tapa del ventilador (método de enfriamiento IC 416).
Esta ejecución es utilizada cuando el motor es alimentado mediante variador de frecuencia, con objeto de ampliar el campo de funcionamiento del motor a par constante, incluso a baja velocidad o cuando está solicitado con frecuencias de arranque elevadas.
Quedan excluidos de esta opción los motores freno tipo BN_BA y todos los motores con doble eje (opción PS)

(F 72)

| Datos de la alimentación | | | | | |
|---|---|---|---|---|---|
| | | **V a.c. ± 10%** | **Hz** | **P** [W] | **I** [A] |
| **BN 71** | **M1** | 1~ 230 | 50 / 60 | 22 | 0.12 |
| **BN 80** | **M2** | | | 22 | 0.12 |
| **BN 90** | **—** | | | 40 | 0.30 |
| **BN 100 (*)** | **M3** | | | 50 | 0.25 |
| **BN 112** | **—** | 3~ 230 Δ / 400Y | | 50 | 0.26 / 0.15 |
| **BN 132S** | **M4S** | | | 110 | 0.38 / 0.22 |
| **BN 132M...BN 160MR** | **M4L** | | | | |
| **BN 160...BN 180M** | **M5** | | 50 | 180 | 1.25 / 0.72 |

Para esta variante, están disponibles dos ejecuciones alternativas, denominadas **U1** y **U2**, que tienen la misma dimensión en el sentido longitudinal. Para ambas ejecuciones, el incremento de longitud de la tapa del ventilador (**ΔL**) está indicado en la tabla siguiente. Las dimensiones generales se obtienen de las tablas dimensionales de los motores.

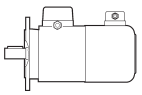
(F 73)

| Tabla del incremento de la longitud del motor | | | |
|---|---|---|---|
| | | **Δ $L_1$** | **Δ $L_2$** |
| **BN 71** | **M1** | 93 | 32 |
| **BN 80** | **M2** | 127 | 55 |
| **BN 90** | **—** | 131 | 48 |
| **BN 100** | **M3** | 119 | 28 |
| **BN 112** | **—** | 130 | 31 |
| **BN 132S** | **M4S** | 161 | 51 |
| **BN 132M** | **M4L** | 161 | 51 |

$\Delta L_1$ = incremento de la longitud respecto a la cota LB del motor estándar correspondiente

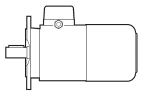
$\Delta L_2$ = incremento de la longitud respecto a la cota LB del motor freno correspondiente

## U1



Terminales de alimentación del ventilador en caja de bornes independiente.
Los motores freno de tamaños BN 71...BN 160MR, con variante **U1**, la palanca de desbloqueo no permite su montaje en la posición AA.
La opción es incompatible con motores según las normas CSA y UL (opción CUS).

## U2



Los terminales de alimentación del ventilador están situados en la caja de bornes principal del motor. Esta opción no es aplicable para los motores BN 160M ... BN 200L, con excepción del motor 160 MR, por lo cual la opción está disponible a los motores con opción CUS (conformes a las normas CSA y UL)

(F 74)

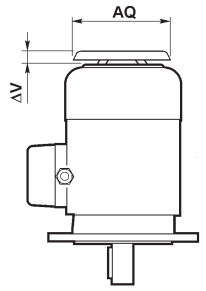
| **(*)** | | | **V a.c. ± 10%** | **Hz** | **P** [W] | **I** [A] |
|---|---|---|---|---|---|---|
| | **BN 100_U2** | **M3** | 3~ 230 Δ / 400Y | 50 / 60 | 40 | 0.12 / 0.09 |

### M11.11 Sombrerete protector de la lluvia

## RC

El dispositivo protector de la lluvia está recomendado cuando el motor se instale verticalmente con el eje hacia abajo; sirve para proteger al proprio motor de la entrada de cuerpos sólidos y del goteo Las dimensiones adicionales están indicadas en la tabla siguiente.
El sombrerete excluye las variantes PS, EN1, EN2, EN3, EN4, EN5, EN6 y no es aplicable a los motores con freno tipo BA.

(F 75)

| | | AQ | ΔV | |
|---|---|---|---|---|
| **BN 63** | **M05** | 118 | 24 |  |
| **BN 71** | **M1** | 134 | 27 | |
| **BN 80** | **M2** | 152 | 25 | |
| **BN 90** | **—** | 168 | 30 | |
| **BN 100** | **M3** | 190 | 28 | |
| **BN 112** | **—** | 211 | 32 | |
| **BN 132...BN 160MR** | **M4** | 254 | 32 | |
| **BN 160M...BN 180M** | **M5** | 302 | 36 | |
| **BN 180L...BN 200L** | **—** | 340 | 36 | |



### M11.12 Sombrerete para ambiente textil

**TC**

La variante del sombrerete tipo TC se ha de especificar cuando el motor se instale en ambientes de la industria textil, donde existen filamentos que podrían obstruir la rejilla de la tapa del ventilador, impidiendo el flujo regular del aire de refrigeración.
Esta opción excluye las variantes EN1, EN2, EN3, EN4, EN5, EN6 y no puede aplicarse a los motores con freno tipo BA. Las dimensiones totales son las mismas que las del sombrerete tipo RC.

### M11.13 Dispositivos de retroacción

Los motores pueden dotarse con tres tipos distintos de encoder que se describen a continuación. El montaje del encoder excluye la ejecución con doble eje (PS) y del sombrerete de protección (RC, TC). El dispositivo no puede aplicarse a los motores con freno de c.a. tipo BA.

**EN1**

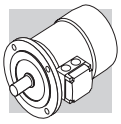
Encoder incremental, $V_{IN}$= 5 V, salida “line-driver” RS 422.

**EN2**

Encoder incremental, $V_{IN}$ = 10-30 V, salida “line-driver” RS 422

**EN3**

Encoder incremental, $V_{IN}$ = 12-30 V, salida “push-pull” 12-30 V



## EN4

Encoder sin/cos, $V_{IN}$ = 4.5-5.5 V, salida Sinus 0.5$V_{PP}$.

## EN5

Encoder absoluto monogiro, interfaz HIPERFACE®, $V_{IN}$ = 7-12 V.

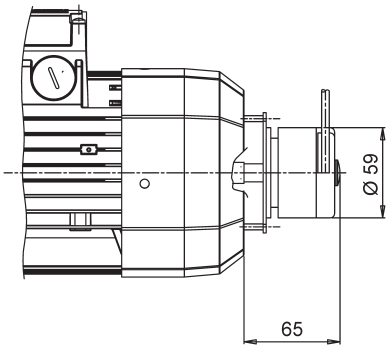
## EN6

Encoder absoluto multigiro, interfaz HIPERFACE®, $V_{IN}$ = 7-12 V.

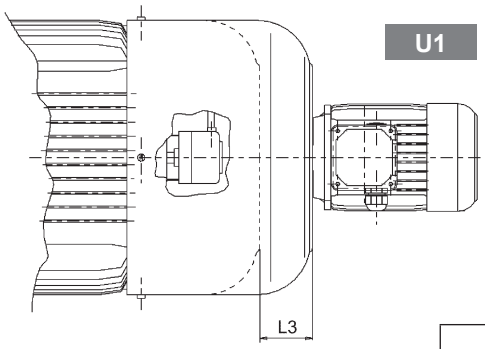
(F 76)

| | | EN1 | EN2 | EN3 | EN4 | EN5 | EN6 |
|---|---|---|---|---|---|---|---|
| Interfaz | | TTL/RS 422 | TTL/RS 422 | HTL/push-pull | Sinus 0.5 VPP | HIPERFACE® | HIPERFACE® |
| Tensión alimentación | [V] | 4...6 | 10...30 | 12...30 | 4.4...5.5 | 7...12 | 7...12 |
| Tensión de salida | [V] | 5 | 5 | 12...30 | — | — | — |
| Intensidad de utilización sin carga | [mA] | 120 | 100 | 100 | 40 | 80 | 80 |
| Nº de impulsos por revolución | | 1024 | | | | | |
| resolución | | — | — | — | — | 15 bit | 15 bit |
| revoluciones | | — | — | — | — | — | 12 bit |
| Nº de señales | | 6 (A, B, Z + señales invertidas) | | | 6 (cos-, cos+, sin-, sin+, Z, $\overline{Z}$) | — | — |
| Frecuencia máx. de salida | [kHz] | 600 | | | 200 | | |
| Velocidad máxima | [$min^{-1}$] | 6000 (9000 $min^{-1}$ para 10 s ) | | | | | |
| Rango de temperatura | [°C] | -30 ... +100 | | | | | |
| Grado de protección | | IP 65 | | | | | |

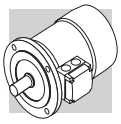
(F 78)

| EN1, EN2, EN3, EN4, EN5, EN6 | |
|---|---|
|  | |
| **BN 63...BN 200L** | **M05...M5** |
| **BN 63_FD...BN 200L_FD** | **M05_FD...M5_FD** |
| **BN 63_AFD...BN 160MR_AFD** | **M05_AFD...M4LC_AFD** |
| **BN 63_FA...BN 200L_FA** | **M05_FA...M5_FA** |

(F 77)

| EN_ + U1 | | |
|---|---|---|
|  | | |
| | | **L3** |
| **BN 160M...BN 180M** | **M5** | 72 |
| **BN 180L...BN 200L** | **-** | 82 |
| **BN 160M_FD...BN 180M_FD** | **M5_FD** | 35 |
| **BN 180L_FD...BN 200L_FD** | **-** | 41 |

Si la opción EN_ se solicita para motores de tamaño BN71...BN160MR / M1...M4 junto a la opción U1/U2, la variación de las dimensiones del motor coincide con las de la opción U1/U2.



## C_

### M11.14 Protección de la superficie

Cuando no se requiere ninguna clase de protección específica, las superficies de los motores están protegidas al menos con la clase de corrosividad C2 (UNI EN ISO 12944-2). Para mejorar la resistencia a la corrosión atmosférica, los motores se pueden entregar con una protección de superficie C3 y C4.

| **PROTECCIÓN SUPERFICIE** | Ambientes típicos | Temperatura maxima superficie | Clase corrosividad conforme a UNI EN ISO 12944-2 |
|---|---|---|---|
| **C3** | Ambientes industriales y urbanos con una humedad relativa de hasta el 100% (contaminación atmosférica media) | 120°C | C3 |
| **C4** | Zonas industriales, zonas costeras, fábrica de productos químicos, con una humedad relativa de hasta el 100% (alta contaminación atmosférica) | 120°C | C4 |

Los motores con la protección opcional de clase C3 o C4 están disponibles en una variedad de colores.
Si no se solicita color específico (ver la opción “PINTURA”) el acabado de los motores será en RAL 7042.
Los motores también se pueden suministrar con protección de la superficie para la clase de corrosividad C5 según la norma UNI EN ISO 12944-2. Póngase en contacto con nuestro Servicio Técnico para más detalles.

## RAL_

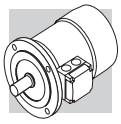
### M11.15 Pintura

Los motores con la protección opcional de clase C3 o C4 están disponibles en los colores que figuran en la siguiente tabla.

| **PINTURA** | Color | Número RAL |
|---|---|---|
| **RAL7042*** | Gris Tráfico A | 7042 |
| **RAL5010** | Azul genciana | 5010 |
| **RAL9005** | Negro Jet | 9005 |
| **RAL9006** | Aluminio Blanco | 9006 |
| **RAL9010** | Blanco Puro | 9010 |

* Los reductores se suministran en este color estándar si no se especifica ningún otro color.

NOTA - Las opciones “PINTURA” sólo se pueden especificar en combinación con las opciones “PROTECCIÓN DE LA SUPERFICIE”.



## M11.16 Documentación

### ACM

**Certificado de conformidad de los motores**
Documento en el cual se certifica la conformidad del producto con lo indicado en el pedido y su fabricación según los procedimientos estándar de producción y control que establece el sistema de calidad de Bonfiglioli Riduttori.

### CC

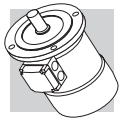
**Certificado de prueba**
La obtención de este certificado conlleva verificar la conformidad del producto con el pedido, realizar inspecciones visuales de carácter general y las pruebas instrumentales de las características eléctrica (funcionamiento en vacío). Para llevar a cabo la prueba se utiliza una muestra estadística del lote de expedición.

## 2P — 3000 min$^{-1}$ - S1 — 50 Hz

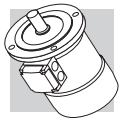
| | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | | freno c.a. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.18 | **BN 63A 2** | 2730 | 0.63 | ○ | 59.9 | 56.9 | 51.9 | 0.77 | 0.56 | 3.0 | 2.1 | 2.0 | 2.0 | 3.5 | **FD 02** | 1.75 | 3900 | 4800 | 2.6 | 5.2 | **AFD 02** | 1.75 | 4800 | 2.6 | 5.0 | **FA 02** | 1.75 | 4800 | 2.6 | 5.0 | **BA 60** | 5 | 3500 | 4.0 | 5.8 |
| 0.25 | **BN 63B 2** | 2740 | 0.87 | ○ | 66.0 | 64.8 | 64.8 | 0.76 | 0.72 | 3.3 | 2.3 | 2.3 | 2.3 | 3.9 | **FD 02** | 1.75 | 3900 | 4800 | 3.0 | 5.6 | **AFD 02** | 1.75 | 4800 | 3.0 | 5.4 | **FA 02** | 1.75 | 4800 | 3.0 | 5.4 | **BA 60** | 5 | 3600 | 4.3 | 6.2 |
| 0.37 | **BN 63C 2** | 2800 | 1.26 | ○ | 69.1 | 66.8 | 66.8 | 0.78 | 0.99 | 3.9 | 2.6 | 2.6 | 3.3 | 5.1 | **FD 02** | 3.5 | 3600 | 4500 | 3.9 | 6.8 | **AFD 02** | 3.5 | 4500 | 3.9 | 6.6 | **FA 02** | 3.5 | 4500 | 3.9 | 6.6 | **BA 60** | 5 | 3500 | 5.3 | 7.4 |
| 0.37 | **BN 71A 2** | 2820 | 1.25 | ○ | 73.8 | 73.0 | 70.6 | 0.76 | 0.95 | 4.8 | 2.8 | 2.6 | 3.5 | 5.4 | **FD 03** | 3.5 | 3000 | 4100 | 4.6 | 8.1 | **AFD 03** | 5 | 4100 | 4.6 | 7.8 | **FA 03** | 3.5 | 4200 | 4.6 | 7.8 | **BA 70** | 8 | 3500 | 5.5 | 9.3 |
| 0.55 | **BN 71B 2** | 2820 | 1.86 | ○ | 76.0 | 75.8 | 74.8 | 0.76 | 1.37 | 5.0 | 2.9 | 2.8 | 4.1 | 6.2 | **FD 03** | 5 | 2900 | 4200 | 5.3 | 8.9 | **AFD 03** | 5 | 4200 | 5.3 | 8.6 | **FA 03** | 5 | 4200 | 5.3 | 8.6 | **BA 70** | 8 | 3600 | 6.1 | 10.1 |
| 0.75 | **BN 71C 2** | 2810 | 2.6 | ○ | 76.6 | 76.2 | 76.2 | 0.76 | 1.86 | 5.1 | 3.1 | 2.8 | 5.0 | 7.3 | **FD 03** | 5 | 1900 | 3300 | 6.1 | 10.0 | **AFD 03** | 7.5 | 3300 | 6.1 | 9.7 | **FA 03** | 5 | 3600 | 6.1 | 9.7 | **BA 70** | 8 | 3200 | 7.0 | 11.2 |
| 0.75 | **BN 80A 2** | 2810 | 2.6 | • | 76.2 | 75.5 | 68.3 | 0.81 | 1.75 | 4.8 | 2.6 | 2.2 | 7.8 | 8.6 | **FD 04** | 5 | 1700 | 3200 | 9.4 | 12.5 | **AFD 04** | 5 | 3200 | 9.4 | 12.1 | **FA 04** | 5 | 3200 | 9.4 | 12.4 | **BA 80** | 18 | 2800 | 10.8 | 13.9 |
| 1.1 | **BN 80B 2** | 2800 | 3.8 | • | 76.4 | 76.2 | 75.0 | 0.81 | 2.57 | 4.8 | 2.8 | 2.4 | 9.0 | 9.5 | **FD 04** | 10 | 1500 | 3000 | 10.6 | 13.4 | **AFD 04** | 10 | 3000 | 10.6 | 13.0 | **FA 04** | 10 | 3000 | 10.6 | 13.3 | **BA 80** | 18 | 2700 | 12.0 | 14.8 |
| 1.5 | **BN 80C 2** | 2800 | 5.1 | • | 79.1 | 79.5 | 77.2 | 0.81 | 3.4 | 4.9 | 2.7 | 2.4 | 11.4 | 11.3 | **FD 04** | 15 | 1300 | 2600 | 13.0 | 15.2 | **AFD 04** | 15 | 2600 | 13.0 | 14.8 | **FA 04** | 15 | 2600 | 13.0 | 15.1 | **BA 80** | 18 | 2400 | 14.4 | 16.6 |
| 1.5 | **BN 90SA 2** | 2870 | 5.0 | • | 82.0 | 81.5 | 78.1 | 0.80 | 3.4 | 5.9 | 2.7 | 2.6 | 12.5 | 12.3 | **FD 14** | 15 | 900 | 2200 | 14.1 | 16.5 | **AFD 14** | 15 | 2200 | 14.1 | 16.1 | **FA 14** | 15 | 2200 | 14.1 | 16.4 | **BA 90** | 35 | 1600 | 19.5 | 19.6 |
| 1.85 | **BN 90SB 2** | 2880 | 6.1 | • | 82.5 | 82.0 | 75.4 | 0.80 | 4.0 | 6.2 | 2.9 | 2.6 | 16.7 | 14 | **FD 14** | 15 | 900 | 2200 | 18.3 | 18.2 | **AFD 14** | 15 | 2200 | 18.3 | 17.8 | **FA 14** | 15 | 2200 | 18.3 | 18.1 | **BA 90** | 35 | 1700 | 23.7 | 21.3 |
| 2.2 | **BN 90L 2** | 2880 | 7.3 | • | 82.7 | 82.1 | 80.8 | 0.80 | 4.8 | 6.3 | 2.9 | 2.7 | 16.7 | 14 | **FD 05** | 26 | 900 | 2200 | 21 | 20 | **AFD 05** | 26 | 2200 | 21 | 19.4 | **FA 05** | 26 | 2200 | 21 | 20.7 | **BA 90** | 35 | 1700 | 24 | 21.3 |
| 3 | **BN 100L 2** | 2860 | 10.0 | • | 81.5 | 81.3 | 77.4 | 0.79 | 6.7 | 5.6 | 2.6 | 2.2 | 31 | 20 | **FD 15** | 26 | 700 | 1600 | 35 | 26 | **AFD 15** | 26 | 1600 | 35 | 25 | **FA 15** | 26 | 1600 | 35 | 27 | **BA 100** | 50 | 1300 | 43 | 30 |
| 4 | **BN 100LB 2** | 2870 | 13.3 | • | 83.1 | 83.0 | 77.8 | 0.80 | 8.7 | 5.8 | 2.7 | 2.5 | 39 | 23 | **FD 15** | 40 | 450 | 900 | 43 | 29 | **AFD 15** | 40 | 900 | 43 | 28 | **FA 15** | 40 | 1000 | 43 | 30 | **BA 100** | 50 | 850 | 51 | 33 |
| 4 | **BN 112M 2** | 2900 | 13.2 | • | 85.5 | 84.5 | 83.0 | 0.82 | 8.2 | 6.9 | 3.0 | 2.9 | 57 | 28 | **FD 06S** | 40 | — | 950 | 66 | 39 | **AFD 06S** | 40 | 950 | 66 | 38 | **FA 06S** | 40 | 950 | 66 | 40 | **BA 110** | 75 | 850 | 73 | 41 |
| 5.5 | **BN 132SA 2** | 2890 | 18.2 | • | 84.7 | 84.5 | 81.2 | 0.84 | 11.2 | 5.9 | 2.6 | 2.2 | 101 | 35 | **FD 06** | 50 | — | 600 | 112 | 48 | **AFD 06** | 62 | 600 | 112 | 47 | **FA 06** | 50 | 600 | 112 | 49 | **BA 140** | 150 | 500 | 151 | 67 |
| 7.5 | **BN 132SB 2** | 2900 | 25 | • | 86.5 | 86.3 | 84.4 | 0.85 | 14.7 | 6.4 | 2.6 | 2.2 | 145 | 42 | **FD 06** | 50 | — | 550 | 154 | 55 | **AFD 06** | 62 | 550 | 154 | 54 | **FA 06** | 50 | 550 | 154 | 56 | **BA 140** | 150 | 450 | 195 | 74 |
| 9.2 | **BN 132M 2** | 2930 | 30 | • | 87.0 | 86.5 | 83.6 | 0.86 | 17.7 | 6.7 | 2.8 | 2.3 | 178 | 53 | **FD 56** | 75 | — | 430 | 189 | 66 | **AFD 06** | 75 | 430 | 189 | 65 | **FA 06** | 75 | 430 | 189 | 67 | **BA 140** | 150 | 400 | 228 | 85 |
| 11 | **BN 160MR 2** | 2920 | 36 | • | 87.6 | 87.0 | 86.0 | 0.88 | 20.6 | 6.9 | 2.9 | 2.5 | 210 | 65 | | | | | | | | | | | | | | | | | | | | | | |
| 15 | **BN 160MB 2** | 2930 | 49 | • | 89.6 | 89.4 | 88.0 | 0.86 | 28.1 | 7.1 | 2.6 | 2.3 | 340 | 84 | | | | | | | | | | | | | | | | | | | | | | |
| 18.5 | **BN 160L 2** | 2930 | 60 | • | 90.4 | 90.1 | 89.0 | 0.86 | 34 | 7.6 | 2.7 | 2.3 | 420 | 97 | | | | | | | | | | | | | | | | | | | | | | |
| 22 | **BN 180M 2** | 2930 | 72 | • | 89.9 | 89.7 | 89.5 | 0.88 | 40 | 7.8 | 2.6 | 2.4 | 490 | 109 | | | | | | | | | | | | | | | | | | | | | | |
| 30 | **BN 200LA 2** | 2930 | 98 | • | 90.7 | 90.1 | 87.6 | 0.89 | 54 | 7.8 | 2.7 | 2.9 | 770 | 140 | | | | | | | | | | | | | | | | | | | | | | |

○ = n.a. • = IE1





## 4P — 1500 min$^{-1}$ - S1 — 50 Hz



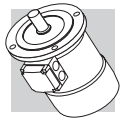
| | | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | | freno c.a. | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.06 | **BN 56A 4** | 1340 | 0.43 | ○ | 46.8 | 44.2 | 41.3 | 0.65 | 0.28 | 2.6 | 2.3 | 2.0 | 1.5 | 3.1 | | | | | | | | | | | | | | | | | | | | | | |
| 0.09 | **BN 56B 4** | 1350 | 0.64 | ○ | 51.7 | 47.6 | 42.9 | 0.60 | 0.42 | 2.6 | 2.5 | 2.4 | 1.5 | 3.1 | | | | | | | | | | | | | | | | | | | | | | |
| 0.12 | **BN 63A 4** | 1350 | 0.85 | ○ | 59.8 | 56.2 | 47.0 | 0.62 | 0.47 | 2.6 | 1.9 | 1.8 | 2.0 | 3.5 | **FD 02** | 1.75 | 10000 | 13000 | 2.6 | 5.2 | **AFD 02** | 1.75 | 13000 | 2.6 | 5.0 | **FA 02** | 1.75 | 13000 | 2.6 | 5.0 | **BA 60** | 5.0 | 9000 | 4.0 | 5.8 |
| 0.18 | **BN 63B 4** | 1320 | 1.30 | ○ | 54.8 | 52.9 | 52.5 | 0.67 | 0.71 | 2.6 | 2.2 | 2.0 | 2.3 | 3.9 | **FD 02** | 3.5 | 10000 | 13000 | 3.0 | 5.6 | **AFD 02** | 3.5 | 13000 | 3.0 | 5.4 | **FA 02** | 3.5 | 13000 | 3.0 | 5.4 | **BA 60** | 5.0 | 9000 | 4.3 | 6.2 |
| 0.25 | **BN 63C 4** | 1340 | 1.78 | ○ | 65.3 | 65.0 | 57.9 | 0.69 | 0.80 | 2.7 | 2.1 | 1.9 | 3.3 | 5.1 | **FD 02** | 3.5 | 7800 | 10000 | 3.9 | 6.8 | **AFD 02** | 3.5 | 10000 | 3.9 | 6.6 | **FA 02** | 3.5 | 10000 | 3.9 | 6.6 | **BA 60** | 5.0 | 8500 | 5.3 | 7.4 |
| 0.25 | **BN 71A 4** | 1380 | 1.73 | ○ | 63.7 | 62.2 | 59.1 | 0.73 | 0.78 | 3.3 | 1.9 | 1.7 | 5.8 | 5.1 | **FD 03** | 3.5 | 7700 | 11000 | 6.9 | 7.8 | **AFD 03** | 5 | 11000 | 6.9 | 7.5 | **FA 03** | 3.5 | 11000 | 6.9 | 7.5 | **BA 70** | 8.0 | 9700 | 7.8 | 9.0 |
| 0.37 | **BN 71B 4** | 1370 | 2.6 | ○ | 66.8 | 66.7 | 63.0 | 0.76 | 1.05 | 3.7 | 2.0 | 1.9 | 6.9 | 5.9 | **FD 03** | 5 | 6000 | 9400 | 8.0 | 8.6 | **AFD 03** | 5 | 9400 | 8.0 | 8.3 | **FA 03** | 5.0 | 9400 | 8.0 | 8.3 | **BA 70** | 8.0 | 8500 | 8.9 | 9.8 |
| 0.55 | **BN 71C 4** | 1380 | 3.8 | ○ | 69.0 | 68.9 | 68.8 | 0.74 | 1.55 | 4.1 | 2.3 | 2.3 | 9.1 | 7.3 | **FD 53** | 7.5 | 4300 | 8700 | 10.2 | 10.0 | **AFD 03** | 7.5 | 8700 | 10.2 | 9.7 | **FA 03** | 7.5 | 8700 | 10.2 | 9.7 | **BA 70** | 8.0 | 8000 | 11.1 | 11.2 |
| 0.55 | **BN 80A 4** | 1390 | 3.8 | ○ | 72.0 | 71.3 | 69.7 | 0.77 | 1.43 | 4.1 | 2.3 | 2.0 | 15 | 8.2 | **FD 04** | 10 | 4100 | 8000 | 16.6 | 12.1 | **AFD 04** | 10 | 8000 | 16.6 | 11.7 | **FA 04** | 10 | 8000 | 16.6 | 12.0 | **BA 80** | 18 | 7400 | 18 | 13.5 |
| 0.75 | **BN 80B 4** | 1400 | 5.1 | • | 75.0 | 74.5 | 69.3 | 0.78 | 1.85 | 4.9 | 2.7 | 2.5 | 20 | 9.9 | **FD 04** | 15 | 4100 | 7800 | 22 | 13.8 | **AFD 04** | 15 | 7800 | 22 | 13.4 | **FA 04** | 15 | 7800 | 22 | 13.7 | **BA 80** | 18 | 7400 | 23 | 15.2 |
| 1.1 | **BN 80C 4** | 1400 | 7.5 | • | 75.5 | 76.2 | 70.4 | 0.78 | 2.7 | 5.1 | 2.8 | 2.5 | 25 | 11.3 | **FD 04** | 15 | 2600 | 5300 | 27 | 15.2 | **AFD 04** | 15 | 5300 | 27 | 14.8 | **FA 04** | 15 | 5300 | 27 | 15.1 | **BA 80** | 18 | 5100 | 28 | 16.6 |
| 1.1 | **BN 90S 4** | 1390 | 7.6 | • | 76.5 | 76.2 | 72.2 | 0.77 | 2.70 | 4.6 | 2.6 | 2.2 | 21 | 12.2 | **FD 14** | 15 | 4800 | 8000 | 23 | 16.4 | **AFD 14** | 15 | 8000 | 23 | 16 | **FA 14** | 15 | 8000 | 23 | 16.3 | **BA 90** | 35 | 6500 | 28 | 19.5 |
| 1.5 | **BN 90LA 4** | 1410 | 10.2 | • | 78.7 | 78.5 | 74.9 | 0.77 | 3.6 | 5.3 | 2.8 | 2.4 | 28 | 13.6 | **FD 05** | 26 | 3400 | 6000 | 32 | 19.6 | **AFD 05** | 26 | 6000 | 32 | 19 | **FA 05** | 26 | 6000 | 32 | 20.3 | **BA 90** | 35 | 5400 | 35 | 21.0 |
| 1.85 | **BN 90LB 4** | 1390 | 12.7 | • | 78.6 | 78.9 | 77.2 | 0.79 | 4.3 | 5.1 | 2.8 | 2.6 | 30 | 15.1 | **FD 05** | 26 | 3200 | 5900 | 34 | 21.1 | **AFD 05** | 26 | 5900 | 34 | 20.5 | **FA 05** | 26 | 5900 | 34 | 21.8 | **BA 90** | 35 | 5400 | 37 | 22.5 |
| 2.2 | **BN 100LA 4** | 1410 | 14.9 | • | 81.1 | 81.4 | 79.9 | 0.75 | 5.2 | 4.5 | 2.2 | 2.0 | 40 | 18 | **FD 15** | 40 | 2600 | 4700 | 44 | 25 | **AFD 15** | 40 | 4700 | 44 | 24.4 | **FA 15** | 40 | 4700 | 44 | 25 | **BA 100** | 50 | 4000 | 52 | 29 |
| 3 | **BN 100LB 4** | 1410 | 20 | • | 82.6 | 83.8 | 83.7 | 0.77 | 6.8 | 5.0 | 2.3 | 2.2 | 54 | 22 | **FD 15** | 40 | 2400 | 4400 | 58 | 28 | **AFD 15** | 40 | 4400 | 58 | 27 | **FA 15** | 40 | 4400 | 58 | 29 | **BA 100** | 50 | 3800 | 66 | 32 |
| 4 | **BN 112M 4** | 1430 | 27 | • | 84.4 | 84.2 | 81.6 | 0.81 | 8.4 | 5.6 | 2.7 | 2.5 | 98 | 30 | **FD 06S** | 60 | — | 1400 | 107 | 40 | **AFD 06S** | 60 | 1400 | 107 | 39 | **FA 06S** | 60 | 2100 | 107 | 42 | **BA 110** | 75 | 2000 | 114 | 43 |
| 5.5 | **BN 132S 4** | 1440 | 36 | • | 84.7 | 84.8 | 82.5 | 0.81 | 11.6 | 5.5 | 2.3 | 2.2 | 213 | 44 | **FD 56** | 75 | — | 1050 | 223 | 57 | **AFD 06** | 75 | 1050 | 223 | 56 | **FA 06** | 75 | 1200 | 223 | 58 | **BA 140** | 150 | 1200 | 263 | 76 |
| 7.5 | **BN 132MA 4** | 1440 | 50 | • | 86.0 | 86.3 | 85.3 | 0.81 | 15.5 | 5.7 | 2.5 | 2.4 | 270 | 53 | **FD 06** | 100 | — | 950 | 280 | 66 | **AFD 06** | 100 | 950 | 280 | 65 | **FA 07** | 100 | 1000 | 280 | 71 | **BA 140** | 150 | 1000 | 320 | 85 |
| 9.2 | **BN 132MB 4** | 1440 | 61 | • | 88.4 | 88.6 | 87.5 | 0.81 | 18.8 | 5.9 | 2.7 | 2.5 | 319 | 59 | **FD 07** | 150 | — | 900 | 342 | 75 | **AFD 07** | 150 | 900 | 342 | 73 | **FA 07** | 150 | 900 | 342 | 77 | **BA 140** | 150 | 900 | 369 | 91 |
| 11 | **BN 160MR 4** | 1440 | 73 | • | 87.6 | 87.8 | 86.0 | 0.81 | 22.4 | 6.0 | 2.7 | 2.5 | 360 | 70 | **FD 07** | 150 | — | 850 | 382 | 86 | **AFD 07** | 150 | 850 | 382 | 84 | **FA 07** | 150 | 850 | 382 | 88 | | | | | |
| 15 | **BN 160L 4** | 1460 | 98 | • | 88.7 | 88.5 | 88.4 | 0.81 | 30 | 6.0 | 2.3 | 2.1 | 650 | 99 | **FD 08** | 200 | — | 750 | 725 | 129 | | | | | | **FA 08** | 200 | 750 | 710 | 128 | | | | | |
| 18.5 | **BN 180M 4** | 1460 | 121 | • | 89.3 | 89.5 | 89.2 | 0.81 | 37 | 6.2 | 2.6 | 2.5 | 790 | 115 | **FD 08** | 250 | — | 700 | 865 | 145 | | | | | | **FA 08** | 250 | 700 | 850 | 144 | | | | | |
| 22 | **BN 180L 4** | 1460 | 144 | • | 89.9 | 90.0 | 90.0 | 0.80 | 44 | 6.4 | 2.5 | 2.5 | 1250 | 135 | **FD 09** | 300 | — | 400 | 1450 | 175 | | | | | | | | | | | | | | | |
| 30 | **BN 200L 4** | 1460 | 196 | • | 91.4 | 91.7 | 91.0 | 0.80 | 59 | 7.1 | 2.7 | 2.8 | 1650 | 157 | **FD 09** | 400 | — | 300 | 1850 | 197 | | | | | | | | | | | | | | | |

○ = n.a. • = IE1

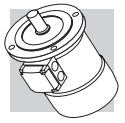
## 6P — 1000 min$^{-1}$ - S1 — 50 Hz

| | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.a. a entrehierro fijo | | | | | | freno c.a. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is / In | Ms / Mn | Ma / Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.09 | **BN 63A 6** | 880 | 0.98 | ○ | 41.0 | 41.0 | 32.9 | 0.53 | 0.60 | 2.1 | 2.1 | 1.8 | 3.4 | 4.6 | **FD 02** | 3.5 | 9000 | 14000 | 4.0 | 6.3 | **AFD 02** | 3.5 | 14000 | 4.0 | 6.1 | **FA 02** | 3.5 | 14000 | 4.0 | 6.1 | **BA 60** | 5.0 | 12000 | 5.4 | 6.9 |
| 0.12 | **BN 63B 6** | 870 | 1.32 | ○ | 45.0 | 44.0 | 41.8 | 0.60 | 0.64 | 2.1 | 1.9 | 1.7 | 3.7 | 4.9 | **FD 02** | 3.5 | 9000 | 14000 | 4.3 | 6.6 | **AFD 02** | 3.5 | 14000 | 4.3 | 6.4 | **FA 02** | 3.5 | 14000 | 4.3 | 6.4 | **BA 60** | 5.0 | 12000 | 5.7 | 7.2 |
| 0.18 | **BN 71A 6** | 900 | 1.91 | ○ | 55.0 | 55.5 | 51.0 | 0.69 | 0.68 | 2.6 | 1.9 | 1.7 | 8.4 | 5.5 | **FD 03** | 5 | 8100 | 13500 | 9.5 | 8.2 | **AFD 03** | 5 | 13500 | 9.5 | 7.9 | **FA 03** | 5.0 | 13500 | 9.5 | 7.9 | **BA 70** | 8.0 | 12300 | 10.4 | 9.4 |
| 0.25 | **BN 71B 6** | 900 | 2.70 | ○ | 62.0 | 58.5 | 51.4 | 0.71 | 0.82 | 2.6 | 1.9 | 1.7 | 10.9 | 6.7 | **FD 03** | 5 | 7800 | 13000 | 12 | 9.4 | **AFD 03** | 5 | 13000 | 12 | 9.1 | **FA 03** | 5.0 | 13000 | 12 | 9.1 | **BA 70** | 8.0 | 12000 | 12.9 | 10.6 |
| 0.37 | **BN 71C 6** | 910 | 3.9 | ○ | 66.0 | 60.0 | 53.3 | 0.69 | 1.17 | 3.0 | 2.4 | 2.0 | 12.9 | 7.7 | **FD 53** | 7.5 | 5100 | 9500 | 14 | 10.4 | **AFD 03** | 7.5 | 9500 | 14 | 10.1 | **FA 03** | 7.5 | 9500 | 14 | 10.1 | **BA 70** | 8.0 | 8900 | 14.9 | 11.6 |
| 0.37 | **BN 80A 6** | 910 | 3.9 | ○ | 68.0 | 67.4 | 63.3 | 0.68 | 1.15 | 3.2 | 2.2 | 2.0 | 21 | 9.9 | **FD 04** | 10 | 5200 | 8500 | 23 | 13.8 | **AFD 04** | 10 | 8500 | 23 | 13.4 | **FA 04** | 10 | 8500 | 23 | 13.7 | **BA 80** | 18 | 8000 | 24 | 15.2 |
| 0.55 | **BN 80B 6** | 920 | 5.7 | ○ | 70.0 | 69.8 | 64.3 | 0.68 | 1.67 | 3.9 | 2.6 | 2.2 | 25 | 11.3 | **FD 04** | 15 | 4800 | 7200 | 27 | 15.2 | **AFD 04** | 15 | 7200 | 27 | 14.8 | **FA 04** | 15 | 7200 | 27 | 15.1 | **BA 80** | 18 | 6800 | 28 | 16.6 |
| 0.75 | **BN 80C 6** | 920 | 7.8 | • | 70.0 | 70.0 | 64.4 | 0.65 | 2.38 | 3.8 | 2.5 | 2.2 | 28 | 12.2 | **FD 04** | 15 | 3400 | 6400 | 30 | 16.1 | **AFD 04** | 15 | 6400 | 30 | 15.7 | **FA 04** | 15 | 6400 | 30 | 16.0 | **BA 80** | 18 | 6100 | 31 | 17.5 |
| 0.75 | **BN 90S 6** | 920 | 7.8 | • | 70.0 | 69.0 | 64.2 | 0.68 | 2.27 | 3.8 | 2.4 | 2.2 | 26 | 12.6 | **FD 14** | 15 | 3400 | 6500 | 28 | 16.8 | **AFD 14** | 15 | 6500 | 28 | 16.4 | **FA 14** | 15 | 6500 | 28 | 16.7 | **BA 90** | 35 | 5500 | 33 | 19.9 |
| 1.1 | **BN 90L 6** | 920 | 11.4 | • | 72.9 | 72.6 | 69.1 | 0.69 | 3.2 | 3.9 | 2.3 | 2.0 | 33 | 15 | **FD 05** | 26 | 2700 | 5000 | 37 | 21 | **AFD 05** | 26 | 5000 | 37 | 20 | **FA 05** | 26 | 5000 | 37 | 22 | **BA 90** | 35 | 4600 | 40 | 22 |
| 1.5 | **BN 100LA 6** | 940 | 15.2 | • | 75.2 | 74.2 | 70.3 | 0.72 | 4.0 | 4.1 | 2.1 | 2.0 | 82 | 22 | **FD 15** | 40 | 1900 | 4100 | 86 | 28 | **AFD 15** | 40 | 4100 | 86 | 27 | **FA 15** | 40 | 4100 | 86 | 29 | **BA 100** | 50 | 3800 | 94 | 32 |
| 1.85 | **BN 100LB 6** | 930 | 19.0 | • | 76.6 | 72.8 | 62.6 | 0.73 | 4.8 | 4.6 | 2.1 | 2.0 | 95 | 24 | **FD 15** | 40 | 1700 | 3600 | 99 | 30 | **AFD 15** | 40 | 3600 | 99 | 29 | **FA 15** | 40 | 3600 | 99 | 31 | **BA 100** | 50 | 3400 | 107 | 34 |
| 2.2 | **BN 112M 6** | 940 | 22 | • | 78.5 | 79.0 | 76.5 | 0.73 | 5.5 | 4.8 | 2.2 | 2.0 | 168 | 32 | **FD 06S** | 60 | — | 2100 | 177 | 42 | **AFD 06S** | 60 | 2100 | 177 | 41 | **FA 06S** | 60 | 2100 | 177 | 44 | **BA 110** | 75 | 2000 | 184 | 45 |
| 3 | **BN 132S 6** | 940 | 30 | • | 79.7 | 77.0 | 75.1 | 0.76 | 7.1 | 5.1 | 1.9 | 1.8 | 216 | 36 | **FD 56** | 75 | — | 1400 | 226 | 49 | **AFD 06** | 75 | 1400 | 226 | 48 | **FA 06** | 75 | 1400 | 226 | 50 | **BA 140** | 150 | 1200 | 266 | 68 |
| 4 | **BN 132MA 6** | 950 | 40 | • | 81.4 | 81.5 | 79.5 | 0.77 | 9.2 | 5.5 | 2.0 | 1.8 | 295 | 45 | **FD 06** | 100 | — | 1200 | 305 | 58 | **AFD 06** | 100 | 1200 | 305 | 57 | **FA 07** | 100 | 1200 | 318 | 63 | **BA 140** | 150 | 1050 | 345 | 77 |
| 5.5 | **BN 132MB 6** | 945 | 56 | • | 83.1 | 80.9 | 79.1 | 0.78 | 12.2 | 6.1 | 2.1 | 1.9 | 383 | 56 | **FD 07** | 150 | — | 1050 | 406 | 72 | **AFD 07** | 150 | 1050 | 406 | 70 | **FA 07** | 150 | 1050 | 406 | 74 | **BA 140** | 150 | 1000 | 433 | 88 |
| 7.5 | **BN 160M 6** | 955 | 75 | • | 85.0 | 85.0 | 84.8 | 0.81 | 15.7 | 5.9 | 2.2 | 2.0 | 740 | 83 | **FD 08** | 170 | — | 900 | 815 | 112 | | | | | | **FA 08** | 170 | 900 | 815 | 113 | | | | | |
| 11 | **BN 160L 6** | 960 | 109 | • | 86.4 | 86.5 | 85.9 | 0.81 | 22.7 | 6.6 | 2.5 | 2.3 | 970 | 103 | **FD 08** | 200 | — | 800 | 1045 | 133 | | | | | | **FA 08** | 200 | 800 | 1045 | 133 | | | | | |
| 15 | **BN 180L 6** | 970 | 148 | • | 87.7 | 88.0 | 87.3 | 0.82 | 30 | 6.2 | 2.0 | 2.4 | 1550 | 130 | **FD 09** | 300 | — | 600 | 1750 | 170 | | | | | | | | | | | | | | | |
| 18.5 | **BN 200LA 6** | 960 | 184 | • | 88.6 | 88.0 | 87.3 | 0.81 | 37 | 5.9 | 2.0 | 2.3 | 1700 | 145 | **FD 09** | 400 | — | 450 | 1900 | 185 | | | | | | | | | | | | | | | |

○ = n.a. • = IE1



## 2/4P — 3000/1500 min$^{-1}$ - S1 — 50 Hz

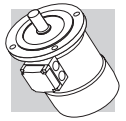


| | | | | | | | | | | | | freno c.c. | | | | | | freno c.a. | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | |
| $P_n$ | | n | $M_n$ | η | cosφ | In | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | max. Nm | | kgm$^2$ | Kg |
| 0.20 | **BN 63B** 2 | 2700 | 0.71 | 55 | 0.82 | 0.64 | 3.5 | 2.1 | 1.9 | 2.9 | 4.4 | **FD 02** | 3.5 | 2200 | 2600 | 3.5 | 6.1 | **AFD 02** | 3.5 | 2600 | 3.5 | 5.9 | **FA 02** | 3.5 | 2600 | 3.5 | 5.9 | **BA 60** | 5.0 | 2000 | 4.9 | 6.7 |
| 0.15 | 4 | 1350 | 1.06 | 49 | 0.67 | 0.66 | 2.6 | 1.8 | 1.7 | | | | | 4000 | 5100 | | | | | 5100 | | | | | 5100 | | | | | 4000 | | |
| 0.28 | **BN 71A** 2 | 2700 | 0.99 | 56 | 0.82 | 0.88 | 2.9 | 1.9 | 1.7 | 4.7 | 4.4 | **FD 03** | 3.5 | 2100 | 2400 | 5.8 | 7.1 | **AFD 03** | 5 | 2400 | 5.8 | 6.8 | **FA 03** | 3.5 | 2400 | 5.8 | 6.8 | **BA 70** | 8.0 | 2100 | 5.6 | 8.3 |
| 0.20 | 4 | 1370 | 1.39 | 59 | 0.72 | 0.68 | 3.1 | 1.8 | 1.7 | | | | | 3800 | 4800 | | | | | 4800 | | | | | 4800 | | | | | 4200 | | |
| 0.37 | **BN 71B** 2 | 2740 | 1.29 | 56 | 0.82 | 1.16 | 3.5 | 1.8 | 1.8 | 5.8 | 5.1 | **FD 03** | 5.0 | 1400 | 2100 | 6.9 | 7.8 | **AFD 03** | 5 | 2100 | 6.9 | 7.5 | **FA 03** | 5.0 | 2100 | 6.9 | 7.5 | **BA 70** | 8.0 | 1800 | 7.8 | 9.0 |
| 0.25 | 4 | 1390 | 1.72 | 60 | 0.73 | 0.82 | 3.3 | 2.0 | 1.9 | | | | | 2900 | 4200 | | | | | 4200 | | | | | 4200 | | | | | 3600 | | |
| 0.45 | **BN 71C** 2 | 2780 | 1.55 | 63 | 0.85 | 1.21 | 3.8 | 1.8 | 1.8 | 6.9 | 5.9 | **FD 03** | 5.0 | 1400 | 2100 | 8.0 | 8.6 | **AFD 03** | 5 | 2100 | 8.0 | 8.3 | **FA 03** | 5.0 | 2100 | 8.0 | 8.3 | **BA 70** | 8.0 | 1800 | 8.9 | 9.8 |
| 0.30 | 4 | 1400 | 2.0 | 63 | 0.73 | 0.94 | 3.6 | 2.0 | 1.9 | | | | | 2900 | 4200 | | | | | 4200 | | | | | 4200 | | | | | 3600 | | |
| 0.55 | **BN 80A** 2 | 2800 | 1.9 | 63 | 0.85 | 1.48 | 3.9 | 1.7 | 1.7 | 15 | 8.2 | **FD 04** | 5.0 | 1600 | 2300 | 17 | 12.1 | **AFD 04** | 5 | 2300 | 17 | 11.7 | **FA 04** | 5.0 | 2300 | 16.6 | 12.0 | **BA 80** | 18 | 2100 | 18 | 13.5 |
| 0.37 | 4 | 1400 | 2.5 | 67 | 0.79 | 1.01 | 4.1 | 1.8 | 1.9 | | | | | 3000 | 4000 | | | | | 4000 | | | | | 4000 | | | | | 3700 | | |
| 0.75 | **BN 80B** 2 | 2780 | 2.6 | 65 | 0.85 | 1.96 | 3.8 | 1.9 | 1.8 | 20 | 9.9 | **FD 04** | 10 | 1400 | 1600 | 22 | 13.8 | **AFD 04** | 10 | 1600 | 22 | 13.4 | **FA 04** | 10 | 1600 | 22 | 13.7 | **BA 80** | 18 | 1500 | 22 | 15.2 |
| 0.55 | 4 | 1400 | 3.8 | 68 | 0.81 | 1.44 | 3.9 | 1.7 | 1.7 | | | | | 2700 | 3600 | | | | | 3600 | | | | | 3600 | | | | | 3300 | | |
| 1.1 | **BN 90S** 2 | 2790 | 3.8 | 71 | 0.82 | 2.73 | 4.7 | 2.3 | 2.0 | 21 | 12.2 | **FD 14** | 10 | 1500 | 1600 | 23 | 16.4 | **AFD 14** | 10 | 1600 | 23 | 16 | **FA 14** | 10 | 1600 | 23 | 16.3 | **BA 90** | 35 | 1300 | 28 | 19.5 |
| 0.75 | 4 | 1390 | 5.2 | 66 | 0.79 | 2.08 | 4.6 | 2.4 | 2.2 | | | | | 2300 | 2800 | | | | | 2800 | | | | | 2800 | | | | | 2300 | | |
| 1.5 | **BN 90L** 2 | 2780 | 5.2 | 70 | 0.85 | 3.64 | 4.5 | 2.4 | 2.1 | 28 | 14.0 | **FD 05** | 26 | 1050 | 1200 | 32 | 20 | **AFD 05** | 26 | 1200 | 32 | 19.4 | **FA 05** | 26 | 1200 | 32 | 21 | **BA 90** | 35 | 1100 | 35 | 21 |
| 1.1 | 4 | 1390 | 7.6 | 73 | 0.81 | 2.69 | 4.7 | 2.5 | 2.2 | | | | | 1600 | 2000 | | | | | 2000 | | | | | 2000 | | | | | 1800 | | |
| 2.2 | **BN 100LA** 2 | 2800 | 7.5 | 72 | 0.85 | 5.2 | 4.5 | 2.0 | 1.9 | 40 | 18.3 | **FD 15** | 26 | 600 | 900 | 44 | 25 | **AFD 15** | 26 | 900 | 44 | 24.4 | **FA 15** | 26 | 900 | 44 | 25 | **BA 100** | 50 | 750 | 51 | 29 |
| 1.5 | 4 | 1410 | 10.2 | 73 | 0.79 | 3.8 | 4.7 | 2.0 | 2.0 | | | | | 1300 | 2300 | | | | | 2300 | | | | | 2300 | | | | | 1900 | | |
| 3.5 | **BN 100LB** 2 | 2850 | 11.7 | 80 | 0.84 | 7.5 | 5.4 | 2.2 | 2.1 | 61 | 25 | **FD 15** | 40 | 500 | 900 | 65 | 31 | **AFD 15** | 40 | 900 | 65 | 30 | **FA 15** | 40 | 900 | 65 | 32 | **BA 100** | 50 | 750 | 72 | 35 |
| 2.5 | 4 | 1420 | 16.8 | 82 | 0.80 | 5.5 | 5.2 | 2.2 | 2.2 | | | | | 1000 | 2100 | | | | | 2100 | | | | | 2100 | | | | | 1800 | | |
| 4 | **BN 112M** 2 | 2880 | 13.3 | 79 | 0.83 | 8.8 | 6.1 | 2.4 | 2.0 | 98 | 30 | **FD 06S** | 60 | — | 700 | 107 | 40 | **AFD 06S** | 60 | 700 | 107 | 39 | **FA 06S** | 60 | 700 | 107 | 42 | **BA 110** | 75 | 600 | 114 | 43 |
| 3.3 | 4 | 1420 | 22.2 | 80 | 0.80 | 7.4 | 5.1 | 2.1 | 2.0 | | | | | — | 1200 | | | | | 1200 | | | | | 1200 | | | | | 1100 | | |
| 5.5 | **BN 132S** 2 | 2890 | 18.2 | 80 | 0.87 | 11.4 | 5.9 | 2.4 | 2.0 | 213 | 44 | **FD 56** | 75 | — | 350 | 223 | 57 | **AFD 06** | 75 | 350 | 223 | 56 | **FA 06** | 75 | 350 | 223 | 58 | **BA 140** | 150 | 300 | 263 | 76 |
| 4.4 | 4 | 1440 | 29 | 82 | 0.84 | 9.2 | 5.3 | 2.2 | 2.0 | | | | | — | 900 | | | | | 900 | | | | | 900 | | | | | 750 | | |
| 7.5 | **BN 132MA** 2 | 2900 | 25 | 82 | 0.87 | 15.2 | 6.5 | 2.4 | 2.0 | 270 | 53 | **FD 06** | 100 | — | 350 | 280 | 66 | **AFD 06** | 100 | 350 | 280 | 65 | **FA 07** | 100 | 350 | 293 | 71 | **BA 140** | 150 | 300 | 320 | 85 |
| 6 | 4 | 1430 | 40 | 84 | 0.85 | 12.1 | 5.8 | 2.3 | 2.1 | | | | | — | 900 | | | | | 900 | | | | | 900 | | | | | 800 | | |
| 9.2 | **BN 132MB** 2 | 2920 | 30 | 83 | 0.86 | 18.6 | 6.0 | 2.6 | 2.2 | 319 | 59 | **FD 07** | 150 | — | 300 | 342 | 75 | **AFD 07** | 150 | 300 | 342 | 73 | **FA 07** | 150 | 300 | 342 | 77 | **BA 140** | 150 | 300 | 369 | 91 |
| 7.3 | 4 | 1440 | 48 | 85 | 0.85 | 14.6 | 5.5 | 2.3 | 2.1 | | | | | — | 800 | | | | | 800 | | | | | 800 | | | | | 750 | | |

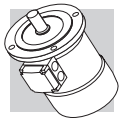
## 2/6P — 3000/1000 min$^{-1}$ - S3 60/40% — 50 Hz

| | | | | | | | | | | | | freno c.c. | | | | | | freno c.a. | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | |
| $P_n$ | | n | $M_n$ | η | cosφ | In 400V | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | max. Nm | | kgm$^2$ | Kg |
| 0.25 | **BN 71A** **2** | 2850 | 0.84 | 60 | 0.82 | 0.73 | 4.3 | 1.9 | 1.8 | 6.9 | 5.9 | **FD 03** | 1.75 | 1500 | 1700 | 8.0 | 8.6 | **AFD 03** | 2.5 | 1700 | 8.0 | 8.3 | **FA 03** | 2.5 | 1700 | 8.0 | 8.3 | **BA 70** | 8.0 | 1500 | 8.9 | 9.8 |
| 0.08 | **6** | 910 | 0.84 | 43 | 0.70 | 0.38 | 2.1 | 1.4 | 1.5 | | | | | 10000 | 13000 | | | | | 13000 | | | | | 13000 | | | | | 11000 | | |
| 0.37 | **BN 71B** **2** | 2880 | 1.23 | 62 | 0.80 | 1.08 | 4.4 | 1.9 | 1.8 | 9.1 | 7.3 | **FD 03** | 3.5 | 1000 | 1300 | 10.2 | 10.0 | **AFD 03** | 5 | 1300 | 10.2 | 9.7 | **FA 03** | 3.5 | 1300 | 10.2 | 9.7 | **BA 70** | 8.0 | 1200 | 11.1 | 11.2 |
| 0.12 | **6** | 900 | 1.27 | 44 | 0.73 | 0.54 | 2.4 | 1.4 | 1.5 | | | | | 9000 | 11000 | | | | | 11000 | | | | | 11000 | | | | | 10000 | | |
| 0.55 | **BN 80A** **2** | 2800 | 1.88 | 63 | 0.86 | 1.47 | 4.5 | 1.9 | 1.7 | 20 | 9.9 | **FD 04** | 5.0 | 1500 | 1800 | 22 | 13.8 | **AFD 04** | 5 | 1800 | 22 | 13.4 | **FA 04** | 5.0 | 1800 | 22 | 13.7 | **BA 80** | 18 | 1700 | 23 | 15.2 |
| 0.18 | **6** | 930 | 1.85 | 52 | 0.65 | 0.77 | 3.3 | 2.0 | 1.9 | | | | | 4100 | 6300 | | | | | 6300 | | | | | 6300 | | | | | 6000 | | |
| 0.75 | **BN 80B** **2** | 2800 | 2.6 | 66 | 0.87 | 1.89 | 4.3 | 1.8 | 1.6 | 25 | 11.3 | **FD 04** | 5.0 | 1700 | 1900 | 27 | 15.2 | **AFD 04** | 5 | 1900 | 27 | 14.8 | **FA 04** | 5.0 | 1900 | 27 | 15.1 | **BA 80** | 18 | 1800 | 28 | 16.6 |
| 0.25 | **6** | 930 | 2.6 | 54 | 0.67 | 1.00 | 3.2 | 1.7 | 1.8 | | | | | 3800 | 6000 | | | | | 6000 | | | | | 6000 | | | | | 5600 | | |
| 1.10 | **BN 90L** **2** | 2860 | 3.7 | 67 | 0.84 | 2.82 | 4.7 | 2.1 | 1.9 | 28 | 14.0 | **FD 05** | 13 | 1400 | 1600 | 32 | 20 | **AFD 05** | 13 | 1600 | 32 | 19.4 | **FA 05** | 13 | 1600 | 32 | 21 | **BA 90** | 35 | 1500 | 35 | 21 |
| 0.37 | **6** | 920 | 3.8 | 59 | 0.71 | 1.27 | 3.3 | 1.6 | 1.6 | | | | | 3400 | 5200 | | | | | 5200 | | | | | 5200 | | | | | 4700 | | |
| 1.5 | **BN 100LA** **2** | 2880 | 5 | 73 | 0.84 | 3.53 | 5.1 | 1.9 | 2.0 | 40 | 18.3 | **FD 15** | 13 | 1000 | 1200 | 44 | 24 | **AFD 15** | 13 | 1200 | 44 | 23.4 | **FA 15** | 13 | 1200 | 44 | 25 | **BA 100** | 50 | 1050 | 51 | 29 |
| 0.55 | **6** | 940 | 5.6 | 64 | 0.67 | 1.85 | 3.5 | 1.7 | 1.8 | | | | | 2900 | 4000 | | | | | 4000 | | | | | 4000 | | | | | 3500 | | |
| 2.2 | **BN 100LB** **2** | 2900 | 7.2 | 77 | 0.85 | 4.9 | 5.9 | 2.0 | 2.0 | 61 | 25 | **FD 15** | 26 | 700 | 900 | 65 | 31 | **AFD 15** | 26 | 900 | 65 | 30 | **FA 15** | 26 | 900 | 65 | 32 | **BA 100** | 50 | 800 | 72 | 36 |
| 0.75 | **6** | 950 | 7.5 | 67 | 0.64 | 2.5 | 3.3 | 1.9 | 1.8 | | | | | 2100 | 3000 | | | | | 3000 | | | | | 3000 | | | | | 2700 | | |
| 3 | **BN 112M** **2** | 2900 | 9.9 | 78 | 0.87 | 6.4 | 6.3 | 2.0 | 2.1 | 98 | 30 | **FD 06S** | 40 | — | 1000 | 107 | 40 | **AFD 06S** | 40 | 1000 | 107 | 39 | **FA 06S** | 40 | 1000 | 107 | 32 | **BA 110** | 75 | 930 | 114 | 43 |
| 1.1 | **6** | 950 | 11.1 | 72 | 0.64 | 3.4 | 3.9 | 1.8 | 1.8 | | | | | — | 2600 | | | | | 2600 | | | | | 2600 | | | | | 2400 | | |
| 4.5 | **BN 132S** **2** | 2910 | 14.8 | 78 | 0.84 | 9.9 | 5.8 | 1.9 | 1.8 | 213 | 44 | **FD 56** | 37 | — | 500 | 223 | 57 | **AFD 06** | 37 | 500 | 223 | 56 | **FA 06** | 37 | 500 | 223 | 58 | **BA 140** | 150 | 400 | 263 | 76 |
| 1.5 | **6** | 960 | 14.9 | 74 | 0.67 | 4.4 | 4.2 | 1.9 | 2.0 | | | | | — | 2100 | | | | | 2100 | | | | | 2100 | | | | | 1700 | | |
| 5.5 | **BN 132M** **2** | 2920 | 18.0 | 78 | 0.87 | 11.7 | 6.2 | 2.1 | 1.9 | 270 | 53 | **FD 56** | 50 | — | 400 | 280 | 66 | **AFD 06** | 62 | 400 | 280 | 65 | **FA 06** | 50 | 400 | 280 | 67 | **BA 140** | 150 | 350 | 320 | 85 |
| 2.2 | **6** | 960 | 22 | 77 | 0.71 | 5.8 | 4.3 | 2.1 | 2.0 | | | | | — | 1900 | | | | | 1900 | | | | | 1900 | | | | | 1600 | | |





## 2/8P — 3000/750 min$^{-1}$ - S3 60/40% — 50 Hz

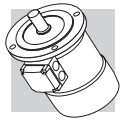


| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | | BA | | | | |
| $P_n$ | | n | $M_n$ | η | cosφ | In | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | % | | 400V A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | max. Nm | | kgm$^2$ | Kg |
| 0.25 | **BN 71A** **2** | 2790 | 0.86 | 61 | 0.87 | 0.68 | 3.9 | 1.8 | 1.9 | 10.9 | 6.7 | **FD 03** | 1.75 | 1300 | 1400 | 12 | 9.4 | **AFD 03** | 2.5 | 1400 | 12 | 9.1 | **FA 03** | 2.5 | 1400 | 12 | 9.1 | **BA 70** | 8.0 | 1300 | 12.9 | 10.6 |
| 0.06 | **8** | 680 | 0.84 | 31 | 0.61 | 0.46 | 2.0 | 1.8 | 1.9 | | | | | 10000 | 13000 | | | | | 13000 | | | | | 13000 | | | | | 12000 | | |
| 0.37 | **BN 71B** **2** | 2800 | 1.26 | 63 | 0.86 | 0.99 | 3.9 | 1.8 | 1.9 | 12.9 | 7.7 | **FD 03** | 3.5 | 1200 | 1300 | 14 | 10.4 | **AFD 03** | 5 | 1300 | 14 | 10.1 | **FA 03** | 3.5 | 1300 | 14 | 10.1 | **BA 70** | 8.0 | 1200 | 14.9 | 11.6 |
| 0.09 | **8** | 670 | 1.28 | 34 | 0.75 | 0.51 | 1.8 | 1.4 | 1.5 | | | | | 9500 | 13000 | | | | | 13000 | | | | | 13000 | | | | | 12000 | | |
| 0.55 | **BN 80A** **2** | 2830 | 1.86 | 66 | 0.86 | 1.40 | 4.4 | 2.1 | 2.0 | 20 | 9.9 | **FD 04** | 5.0 | 1500 | 1800 | 22 | 13.8 | **AFD 04** | 5 | 1800 | 22 | 13.4 | **FA 04** | 5.0 | 1800 | 22 | 13.7 | **BA 80** | 18 | 1700 | 23 | 15.2 |
| 0.13 | **8** | 690 | 1.80 | 41 | 0.64 | 0.72 | 2.3 | 1.6 | 1.7 | | | | | 5600 | 8000 | | | | | 8000 | | | | | 8000 | | | | | 7500 | | |
| 0.75 | **BN 80B** **2** | 2800 | 2.6 | 68 | 0.88 | 1.81 | 4.6 | 2.1 | 2.0 | 25 | 11.3 | **FD 04** | 10 | 1700 | 1900 | 27 | 15.2 | **AFD 04** | 10 | 1900 | 27 | 14.8 | **FA 04** | 10 | 1900 | 27 | 15.1 | **BA 80** | 18 | 1800 | 28 | 16.6 |
| 0.18 | **8** | 690 | 2.5 | 43 | 0.66 | 0.92 | 2.3 | 1.6 | 1.7 | | | | | 4800 | 7300 | | | | | 7300 | | | | | 7300 | | | | | 7000 | | |
| 1.10 | **BN 90L** **2** | 2830 | 3.7 | 63 | 0.84 | 3.00 | 4.5 | 2.1 | 1.9 | 28 | 14.0 | **FD 05** | 13 | 1400 | 1600 | 32 | 20 | **AFD 05** | 13 | 1600 | 32 | 19.4 | **FA 05** | 13 | 1600 | 32 | 21 | **BA 90** | 35 | 1400 | 35 | 21 |
| 0.28 | **8** | 690 | 3.9 | 48 | 0.63 | 1.34 | 2.4 | 1.8 | 1.9 | | | | | 3400 | 5100 | | | | | 5100 | | | | | 5100 | | | | | 4500 | | |
| 1.5 | **BN 100LA** **2** | 2880 | 5.0 | 69 | 0.85 | 3.69 | 4.7 | 1.9 | 1.8 | 40 | 18.3 | **FD 15** | 13 | 1000 | 1200 | 44 | 25 | **AFD 15** | 13 | 1200 | 44 | 14.4 | **FA 15** | 13 | 1200 | 44 | 25 | **BA 100** | 50 | 1000 | 52 | 29 |
| 0.37 | **8** | 690 | 5.1 | 46 | 0.63 | 1.84 | 2.1 | 1.6 | 1.6 | | | | | 3300 | 5000 | | | | | 5000 | | | | | 5000 | | | | | 4200 | | |
| 2.4 | **BN 100LB** **2** | 2900 | 7.9 | 75 | 0.82 | 5.6 | 5.4 | 2.1 | 2.0 | 61 | 25 | **FD 15** | 26 | 550 | 700 | 65 | 31 | **AFD 15** | 26 | 700 | 65 | 30 | **FA 15** | 26 | 700 | 65 | 32 | **BA 100** | 50 | 600 | 72 | 36 |
| 0.55 | **8** | 700 | 7.5 | 54 | 0.58 | 2.5 | 2.6 | 1.8 | 1.8 | | | | | 2000 | 3500 | | | | | 3500 | | | | | 3500 | | | | | 3100 | | |
| 3 | **BN 112M** **2** | 2900 | 9.9 | 76 | 0.87 | 6.5 | 6.3 | 2.1 | 1.9 | 98 | 30 | **FD 06S** | 40 | — | 900 | 107 | 40 | **AFD 06S** | 40 | 900 | 107 | 39 | **FA 06S** | 40 | 900 | 107 | 42 | **BA 110** | 75 | 800 | 114 | 43 |
| 0.75 | **8** | 690 | 10.4 | 60 | 0.65 | 2.8 | 2.5 | 1.6 | 1.6 | | | | | — | 2900 | | | | | 2900 | | | | | 2900 | | | | | 2700 | | |
| 4 | **BN 132S** **2** | 2870 | 13.3 | 73 | 0.84 | 9.4 | 5.6 | 2.3 | 2.4 | 213 | 44 | **FD 56** | 37 | — | 500 | 223 | 57 | **AFD 06** | 37 | 500 | 223 | 56 | **FA 06** | 37 | 500 | 223 | 58 | **BA 140** | 150 | 400 | 263 | 76 |
| 1 | **8** | 690 | 13.8 | 66 | 0.62 | 3.5 | 2.9 | 1.9 | 1.8 | | | | | — | 3500 | | | | | 3500 | | | | | 3500 | | | | | 3000 | | |
| 5.5 | **BN 132M** **2** | 2870 | 18.3 | 75 | 0.84 | 12.6 | 6.1 | 2.4 | 2.5 | 270 | 53 | **FD 06** | 50 | — | 400 | 280 | 66 | **AFD 06** | 62 | 400 | 280 | 65 | **FA 06** | 50 | 400 | 280 | 67 | **BA 140** | 150 | 350 | 320 | 85 |
| 1.5 | **8** | 690 | 21 | 68 | 0.63 | 5.1 | 2.9 | 1.9 | 1.9 | | | | | — | 2400 | | | | | 2400 | | | | | 2400 | | | | | 2100 | | |

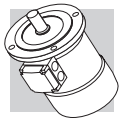
## 2/12P — 3000/500 min$^{-1}$ - S3 60/40% — 50 Hz

| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | | BA | | | | |
| $P_n$ kW | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | Is/In | Ms/Mn | Ma/Mn | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb max. Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.55 | **BN 80B 2** | 2820 | 1.86 | 64 | 0.89 | 1.39 | 4.2 | 1.6 | 1.7 | 25 | 11.3 | **FD 04** | 5.0 | 1000 | 1300 | 27 | 15.2 | **AFD 04** | 5 | 1300 | 27 | 14.8 | **FA 04** | 5.0 | 1300 | 27 | 15.1 | **BA 80** | 18 | 1200 | 28 | 16.6 |
| 0.09 | **12** | 430 | 2.0 | 30 | 0.63 | 0.69 | 1.8 | 1.9 | 1.8 | | | | | 8000 | 12000 | | | | | 12000 | | | | | 12000 | | | | | 11000 | | |
| 0.75 | **BN 90L 2** | 2790 | 2.6 | 56 | 0.89 | 2.17 | 4.2 | 1.8 | 1.7 | 26 | 12.6 | **FD 05** | 13 | 1000 | 1150 | 30 | 18.6 | **AFD 05** | 13 | 1150 | 30 | 18.0 | **FA 05** | 13 | 1150 | 30 | 19.3 | **BA 90** | 35 | 1050 | 33 | 19.9 |
| 0.12 | **12** | 430 | 2.7 | 26 | 0.63 | 1.06 | 1.7 | 1.4 | 1.6 | | | | | 4600 | 6300 | | | | | 6300 | | | | | 6300 | | | | | 5700 | | |
| 1.10 | **BN 100LA 2** | 2850 | 3.7 | 65 | 0.85 | 2.87 | 4.5 | 1.6 | 1.8 | 40 | 18.3 | **FD 15** | 13 | 700 | 900 | 44 | 25 | **AFD 15** | 13 | 900 | 44 | 24.4 | **FA 15** | 13 | 900 | 44 | 25 | **BA 100** | 50 | 750 | 52 | 29 |
| 0.18 | **12** | 430 | 4.0 | 26 | 0.54 | 1.85 | 1.5 | 1.3 | 1.5 | | | | | 4000 | 6000 | | | | | 6000 | | | | | 6000 | | | | | 5000 | | |
| 1.5 | **BN 100LB 2** | 2900 | 4.9 | 67 | 0.86 | 3.76 | 5.6 | 1.9 | 1.9 | 54 | 22 | **FD 15** | 13 | 700 | 900 | 58 | 28 | **AFD 15** | 13 | 900 | 58 | 27 | **FA 15** | 13 | 900 | 58 | 29 | **BA 100** | 50 | 800 | 66 | 32 |
| 0.25 | **12** | 440 | 5.4 | 36 | 0.46 | 2.18 | 1.8 | 1.7 | 1.8 | | | | | 3800 | 5000 | | | | | 5000 | | | | | 5000 | | | | | 4300 | | |
| 2 | **BN 112M 2** | 2900 | 6.6 | 74 | 0.88 | 4.43 | 6.5 | 2.1 | 2.0 | 98 | 30 | **FD 06S** | 20 | — | 800 | 107 | 40 | **AFD 06S** | 20 | 800 | 107 | 39 | **FA 06S** | 20 | 800 | 107 | 42 | **BA 110** | 75 | 750 | 114 | 43 |
| 0.3 | **12** | 460 | 6.2 | 46 | 0.43 | 2.19 | 2.0 | 2.1 | 2.0 | | | | | — | 3400 | | | | | 3400 | | | | | 3400 | | | | | 3200 | | |
| 3 | **BN 132S 2** | 2920 | 9.8 | 74 | 0.87 | 6.7 | 6.8 | 2.3 | 1.9 | 213 | 44 | **FD 56** | 37 | — | 450 | 223 | 57 | **AFD 06** | 37 | 450 | 223 | 56 | **FA 06** | 37 | 450 | 223 | 58 | **BA 140** | 150 | 380 | 263 | 76 |
| 0.5 | **12** | 470 | 10.2 | 51 | 0.43 | 3.3 | 2.0 | 1.7 | 1.6 | | | | | — | 3000 | | | | | 3000 | | | | | 3000 | | | | | 2500 | | |
| 4 | **BN 132M 2** | 2920 | 13.1 | 75 | 0.89 | 8.6 | 5.9 | 2.4 | 2.3 | 270 | 53 | **FD 56** | 37 | — | 400 | 280 | 66 | **AFD 06** | 37 | 400 | 280 | 65 | **FA 06** | 37 | 400 | 280 | 67 | **BA 140** | 150 | 350 | 320 | 85 |
| 0.7 | **12** | 460 | 14.5 | 53 | 0.44 | 4.3 | 1.9 | 1.7 | 1.6 | | | | | — | 2800 | | | | | 2800 | | | | | 2800 | | | | | 2500 | | |





## 4/6P — 1500/1000 min$^{-1}$ - S1 — 50 Hz

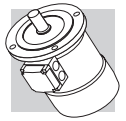


| | | | | | | | | | | | | freno c.c. | | | | | | freno c.a. | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | | |
| $P_n$ | | n | $M_n$ | η | cosφ | In | Is/In | Ms/Mn | Ma/Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | |
| kW | | min$^{-1}$ | Nm | % | | 400V A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg | | max. Nm | | kgm$^2$ | Kg | |
| 0.22 | **BN 71B** 4 | 1410 | 1.5 | 64 | 0.74 | 0.67 | 3.9 | 1.8 | 1.9 | 9.1 | 7.3 | **FD 03** | 3.5 | 2500 | 3500 | 10.2 | 10.0 | **AFD 03** | 5 | 3500 | 10.2 | 9.7 | **FA 03** | 3.5 | 3500 | 10.2 | 9.7 | **BA 70** | 8.0 | 3200 | 11.1 | 11.2 | |
| 0.13 | **6** | 920 | 1.4 | 43 | 0.67 | 0.65 | 2.3 | 1.6 | 1.7 | | | | | 5000 | 9000 | | | | | 9000 | | | | | 9000 | | | | | 8200 | | | |
| 0.30 | **BN 80A** 4 | 1410 | 2.0 | 61 | 0.82 | 0.87 | 3.5 | 1.3 | 1.5 | 15 | 8.2 | **FD 04** | 5.0 | 2500 | 3100 | 16.6 | 12.1 | **AFD 04** | 5 | 3100 | 16.6 | 11.7 | **FA 04** | 5.0 | 3100 | 16.6 | 12.0 | **BA 80** | 18 | 2800 | 18 | 13.5 | |
| 0.20 | **6** | 930 | 2.1 | 54 | 0.66 | 0.81 | 3.2 | 1.9 | 2.0 | | | | | 4000 | 6000 | | | | | 6000 | | | | | 6000 | | | | | 5500 | | | |
| 0.40 | **BN 80B** 4 | 1430 | 2.7 | 63 | 0.75 | 1.22 | 3.9 | 1.8 | 1.8 | 20 | 9.9 | **FD 04** | 10 | 1800 | 2300 | 22 | 13.8 | **AFD 04** | 10 | 2300 | 22 | 13.4 | **FA 04** | 10 | 2300 | 22 | 13.7 | **BA 80** | 18 | 2200 | 23 | 15.2 | |
| 0.26 | **6** | 930 | 2.7 | 55 | 0.70 | 0.97 | 2.7 | 1.5 | 1.6 | | | | | 3600 | 5500 | | | | | 5500 | | | | | 5500 | | | | | 5200 | | | |
| 0.55 | **BN 90S** 4 | 1420 | 3.7 | 70 | 0.78 | 1.45 | 4.5 | 2.0 | 1.9 | 21 | 12.2 | **FD 14** | 10 | 1500 | 2100 | 23 | 16.1 | **AFD 14** | 10 | 2100 | 23 | 15.7 | **FA 14** | 10 | 2100 | 23 | 16.3 | **BA 90** | 35 | 1700 | 28 | 19.5 | |
| 0.33 | **6** | 930 | 3.4 | 62 | 0.70 | 1.10 | 3.7 | 2.3 | 2.0 | | | | | 2500 | 4100 | | | | | 4100 | | | | | 4100 | | | | | 3300 | | | |
| 0.75 | **BN 90L** 4 | 1420 | 5.0 | 74 | 0.78 | 1.88 | 4.3 | 1.9 | 1.8 | 28 | 14 | **FD 05** | 13 | 1400 | 2000 | 32 | 20 | **AFD 05** | 13 | 2000 | 32 | 19.4 | **FA 05** | 13 | 2000 | 32 | 21 | **BA 90** | 35 | 1800 | 35 | 21 | |
| 0.45 | **6** | 920 | 4.7 | 66 | 0.71 | 1.39 | 3.3 | 2.0 | 1.9 | | | | | 2300 | 3600 | | | | | 3600 | | | | | 3600 | | | | | 3300 | | | |
| 1.1 | **BN 100LA** 4 | 1450 | 7.2 | 74 | 0.79 | 2.72 | 5.0 | 1.7 | 1.9 | 82 | 22 | **FD 15** | 26 | 1400 | 2000 | 86 | 28 | **AFD 15** | 26 | 2000 | 86 | 27 | **FA 15** | 26 | 2000 | 86 | 29 | **BA 100** | 50 | 1800 | 94 | 32 | |
| 0.8 | **6** | 950 | 8.0 | 65 | 0.69 | 2.57 | 4.1 | 1.9 | 2.1 | | | | | 2100 | 3300 | | | | | 3300 | | | | | 3300 | | | | | 3000 | | | |
| 1.5 | **BN 100LB** 4 | 1450 | 9.9 | 75 | 0.79 | 3.65 | 5.1 | 1.7 | 1.9 | 95 | 25 | **FD 15** | 26 | 1300 | 1800 | 99 | 31 | **AFD 15** | 26 | 1800 | 99 | 30 | **FA 15** | 26 | 1800 | 99 | 32 | **BA 100** | 50 | 1600 | 107 | 34 | |
| 1.1 | **6** | 950 | 11.1 | 72 | 0.68 | 3.24 | 4.3 | 2.0 | 2.1 | | | | | 2000 | 3000 | | | | | 3000 | | | | | 3000 | | | | | 2800 | | | |
| 2.3 | **BN 112M** 4 | 1450 | 15.2 | 75 | 0.78 | 5.7 | 5.2 | 1.8 | 1.9 | 168 | 32 | **FD 06S** | 40 | — | 1600 | 177 | 42 | **AFD 06S** | 40 | 1600 | 177 | 41 | **FA 06S** | 40 | 1600 | 177 | 44 | **BA 110** | 75 | 1500 | 184 | 45 | |
| 1.5 | **6** | 960 | 14.9 | 73 | 0.72 | 4.1 | 4.9 | 2.0 | 2.0 | | | | | — | 2400 | | | | | 2400 | | | | | 2400 | | | | | 2300 | | | |
| 3.1 | **BN 132S** 4 | 1460 | 20 | 83 | 0.83 | 6.5 | 5.9 | 2.1 | 2.0 | 213 | 44 | **FD 56** | 37 | — | 1200 | 223 | 57 | **AFD 06** | 62 | 1200 | 223 | 56 | **FA 06** | 37 | 1200 | 223 | 58 | **BA 140** | 150 | 1000 | 263 | 76 | |
| 2 | **6** | 960 | 20 | 77 | 0.75 | 4.9 | 4.5 | 2.1 | 2.1 | | | | | — | 1900 | | | | | 1900 | | | | | 1900 | | | | | 1600 | | | |
| 4.2 | **BN 132MA** 4 | 1460 | 27 | 84 | 0.82 | 8.8 | 5.9 | 2.1 | 2.2 | 270 | 53 | **FD 06** | 50 | — | 900 | 280 | 66 | **AFD 06** | 62 | 900 | 280 | 65 | **FA 06** | 50 | 900 | 280 | 67 | **BA 140** | 150 | 800 | 320 | 85 | |
| 2.6 | **6** | 960 | 26 | 79 | 0.72 | 6.6 | 4.3 | 2.0 | 2.0 | | | | | — | 1500 | | | | | 1500 | | | | | 1500 | | | | | 1300 | | | |

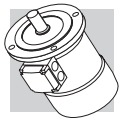
## 4/8P — 1500/750 min$^{-1}$ - S1 — 50 Hz

| | | | | | | | | | | | | | freno c.c. | | | | | | freno c.a. entrehierro fijo | | | | | | freno c.a. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | | | BA | | | | |
| $P_n$ kW | | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | Is/In | Ms/Mn | Ma/Mn | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb max. Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.37 | **BN 80A** | **4** | 1400 | 2.5 | 63 | 0.82 | 1.03 | 3.3 | 1.4 | 1.4 | 15 | 8.2 | **FD 04** | 10 | 2300 | 3500 | 16.6 | 12.1 | **AFD 04** | 10 | 3500 | 16.6 | 11.7 | **FA 04** | 10 | 3500 | 16.6 | 12.0 | **BA 80** | 18 | 3200 | 18 | 13.5 |
| 0.18 | | **8** | 690 | 2.5 | 44 | 0.60 | 0.98 | 2.2 | 1.5 | 1.6 | | | | | 4500 | 7000 | | | | | 7000 | | | | | 7000 | | | | | 6500 | | | |
| 0.55 | **BN 80B** | **4** | 1390 | 3.8 | 65 | 0.86 | 1.42 | 3.8 | 1.7 | 1.6 | 20 | 9.9 | **FD 04** | 10 | 2200 | 2900 | 22 | 13.8 | **AFD 04** | 10 | 2900 | 22 | 13.4 | **FA 04** | 10 | 2900 | 22 | 13.7 | **BA 80** | 18 | 2500 | 23 | 15.2 |
| 0.30 | | **8** | 670 | 4.3 | 49 | 0.65 | 1.36 | 2.3 | 1.7 | 1.8 | | | | | 4200 | 6500 | | | | | 6500 | | | | | 6500 | | | | | 5600 | | | |
| 0.65 | **BN 90S** | **4** | 1390 | 4.5 | 73 | 0.85 | 1.51 | 4.0 | 1.9 | 1.9 | 28 | 13.6 | **FD 14** | 15 | 2300 | 2800 | 30 | 17.8 | **AFD 14** | 15 | 2800 | 30 | 17.4 | **FA 14** | 15 | 2800 | 30 | 17.7 | **BA 90** | 35 | 2400 | 35 | 21 |
| 0.35 | | **8** | 690 | 4.8 | 49 | 0.57 | 1.81 | 2.5 | 2.1 | 2.2 | | | | | 3500 | 6000 | | | | | 6000 | | | | | 6000 | | | | | 5100 | | | |
| 0.9 | **BN 90L** | **4** | 1370 | 6.3 | 73 | 0.87 | 2.05 | 3.8 | 1.8 | 1.8 | 30 | 15.1 | **FD 05** | 26 | 1700 | 2100 | 34 | 21 | **AFD 05** | 26 | 2100 | 34 | 20.4 | **FA 05** | 26 | 2100 | 34 | 22 | **BA 90** | 35 | 1900 | 37 | 22 |
| 0.5 | | **8** | 670 | 7.1 | 57 | 0.62 | 2.04 | 2.4 | 2.1 | 2.0 | | | | | 2500 | 4200 | | | | | 4200 | | | | | 4200 | | | | | 3800 | | | |
| 1.30 | **BN 100LA** | **4** | 1420 | 8.7 | 72 | 0.83 | 3.14 | 4.3 | 1.7 | 1.8 | 82 | 22 | **FD 15** | 40 | 1300 | 1700 | 86 | 28 | **AFD 15** | 40 | 1700 | 86 | 27 | **FA 15** | 40 | 1700 | 86 | 29 | **BA 100** | 50 | 1500 | 94 | 32 |
| 0.70 | | **8** | 700 | 9.6 | 58 | 0.64 | 2.72 | 2.8 | 1.8 | 1.8 | | | | | 2000 | 3400 | | | | | 3400 | | | | | 3400 | | | | | 3100 | | | |
| 1.8 | **BN 100LB** | **4** | 1420 | 12.1 | 69 | 0.87 | 4.3 | 4.2 | 1.6 | 1.7 | 95 | 25 | **FD 15** | 40 | 1200 | 1700 | 99 | 31 | **AFD 15** | 40 | 1700 | 99 | 30 | **FA 15** | 40 | 1700 | 99 | 32 | **BA 100** | 50 | 1500 | 107 | 34 |
| 0.9 | | **8** | 700 | 12.3 | 62 | 0.63 | 3.3 | 3.2 | 1.7 | 1.8 | | | | | 1600 | 2600 | | | | | 2600 | | | | | 2600 | | | | | 2400 | | | |
| 2.2 | **BN 112M** | **4** | 1440 | 14.6 | 77 | 0.85 | 4.9 | 5.3 | 1.8 | 1.8 | 168 | 32 | **FD 06S** | 60 | — | 1200 | 177 | 42 | **AFD 06S** | 60 | 1200 | 177 | 41 | **FA 06S** | 60 | 1200 | 177 | 43 | **BA 110** | 75 | 1100 | 184 | 45 |
| 1.2 | | **8** | 710 | 16.1 | 70 | 0.63 | 3.9 | 3.3 | 1.9 | 1.8 | | | | | — | 2000 | | | | | 2000 | | | | | 2000 | | | | | 1900 | | | |
| 3.6 | **BN 132S** | **4** | 1440 | 24 | 80 | 0.82 | 7.9 | 6.5 | 2.1 | 1.9 | 295 | 45 | **FD 56** | 75 | — | 1000 | 305 | 58 | **AFD 06** | 75 | 1000 | 305 | 57 | **FA 06** | 75 | 1000 | 305 | 59 | **BA 140** | 150 | 900 | 345 | 77 |
| 1.8 | | **8** | 720 | 24 | 72 | 0.55 | 6.6 | 4.6 | 1.9 | 2.0 | | | | | — | 1400 | | | | | 1400 | | | | | 1400 | | | | | 1200 | | | |
| 4.6 | **BN 132M** | **4** | 1450 | 30 | 81 | 0.83 | 9.9 | 6.5 | 2.2 | 1.9 | 383 | 56 | **FD 06** | 100 | — | 1000 | 393 | 69 | **AFD 06** | 100 | 1000 | 393 | 68 | **FA 07** | 100 | 1000 | 406 | 74 | **BA 140** | 150 | 900 | 433 | 88 |
| 2.3 | | **8** | 720 | 31 | 73 | 0.54 | 8.4 | 4.4 | 2.3 | 2.0 | | | | | — | 1300 | | | | | 1300 | | | | | 1300 | | | | | 1200 | | | |





## 2P — 3000 min$^{-1}$ - S1 — 50 Hz



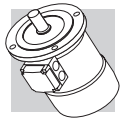
| | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is / In | Ms / Mn | Ma / Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.18 | **M 05A 2** | 2730 | 0.63 | ○ | 59.9 | 56.9 | 51.9 | 0.77 | 0.56 | 3.0 | 2.1 | 2.0 | 2.0 | 3.2 | **FD 02** | 1.75 | 3900 | 4800 | 2.6 | 4.9 | **AFD 02** | 1.75 | 4800 | 2.6 | 4.7 | **FA 02** | 1.75 | 4800 | 2.6 | 4.7 |
| 0.25 | **M 05B 2** | 2740 | 0.87 | ○ | 66.0 | 64.8 | 64.8 | 0.76 | 0.72 | 3.3 | 2.3 | 2.3 | 2.3 | 3.6 | **FD 02** | 1.75 | 3900 | 4800 | 3.0 | 5.3 | **AFD 02** | 1.75 | 4800 | 3.0 | 5.1 | **FA 02** | 1.75 | 4800 | 3.0 | 5.1 |
| 0.37 | **M 05C 2** | 2800 | 1.26 | ○ | 69.1 | 66.8 | 66.8 | 0.78 | 0.99 | 3.9 | 2.6 | 2.6 | 3.3 | 4.8 | **FD 02** | 3.5 | 3600 | 4500 | 3.9 | 6.5 | **AFD 02** | 3.5 | 4500 | 3.9 | 6.3 | **FA 02** | 3.5 | 4500 | 3.9 | 6.3 |
| 0.55 | **M 1SD 2** | 2820 | 1.86 | ○ | 76.0 | 75.8 | 74.8 | 0.76 | 1.37 | 5.0 | 2.9 | 2.8 | 4.1 | 5.8 | **FD 03** | 5 | 2900 | 4200 | 5.3 | 8.5 | **AFD 03** | 5 | 4200 | 5.3 | 8.2 | **FA 03** | 5 | 4200 | 5.3 | 8.2 |
| 0.75 | **M 1LA 2** | 2810 | 2.6 | ○ | 76.6 | 76.2 | 76.2 | 0.76 | 1.86 | 5.1 | 3.1 | 2.8 | 5.0 | 6.9 | **FD 03** | 5 | 1900 | 3300 | 6.1 | 9.6 | **AFD 03** | 7.5 | 3300 | 6.1 | 9.3 | **FA 03** | 5 | 3300 | 6.1 | 9.3 |
| 1.1 | **M 2SA 2** | 2800 | 3.8 | • | 76.4 | 76.2 | 75.0 | 0.81 | 2.57 | 4.8 | 2.8 | 2.4 | 9.0 | 8.8 | **FD 04** | 10 | 1500 | 3000 | 10.6 | 11.9 | **AFD 04** | 10 | 3000 | 10.6 | 11.5 | **FA 04** | 10 | 3000 | 10.6 | 12.6 |
| 1.5 | **M 2SB 2** | 2800 | 5.1 | • | 79.1 | 79.5 | 77.2 | 0.81 | 3.4 | 4.9 | 2.7 | 2.4 | 11.4 | 10.6 | **FD 04** | 15 | 1300 | 2600 | 13.0 | 9.9 | **AFD 04** | 15 | 2600 | 13.0 | 9.5 | **FA 04** | 15 | 2600 | 13.0 | 14.4 |
| 2.2 | **M 3SA 2** | 2880 | 7.3 | • | 82.7 | 82.1 | 81.0 | 0.80 | 4.8 | 6.3 | 2.9 | 2.7 | 24 | 15.5 | **FD 15** | 26 | 1100 | 2400 | 28 | 22 | **AFD 15** | 26 | 2400 | 28 | 21.4 | **FA 15** | 26 | 2400 | 28 | 23 |
| 3 | **M 3LA 2** | 2860 | 10.0 | • | 81.5 | 81.3 | 77.4 | 0.79 | 6.7 | 5.6 | 2.6 | 2.2 | 31 | 18.7 | **FD 15** | 26 | 700 | 1600 | 35 | 25 | **AFD 15** | 26 | 1600 | 35 | 24.4 | **FA 15** | 26 | 1600 | 35 | 26 |
| 4 | **M 3LB 2** | 2870 | 13.3 | • | 83.1 | 83.0 | 77.8 | 0.80 | 8.7 | 5.8 | 2.7 | 2.5 | 39 | 22 | **FD 15** | 40 | 450 | 900 | 43 | 28 | **AFD 15** | 40 | 900 | 43 | 27 | **FA 15** | 40 | 900 | 43 | 29 |
| 5.5 | **M 4SA 2** | 2890 | 18.2 | • | 84.7 | 84.5 | 81.2 | 0.84 | 11.2 | 5.9 | 2.6 | 2.2 | 101 | 33 | **FD 06** | 50 | — | 600 | 112 | 46 | **AFD 06** | 62 | 600 | 112 | 45 | **FA 06** | 50 | 600 | 112 | 47 |
| 7.5 | **M 4SB 2** | 2900 | 25 | • | 86.5 | 86.3 | 84.4 | 0.85 | 14.7 | 6.4 | 2.6 | 2.2 | 145 | 40 | **FD 06** | 50 | — | 550 | 154 | 53 | **AFD 06** | 62 | 550 | 154 | 52 | **FA 06** | 50 | 550 | 154 | 54 |
| 9.2 | **M 4LA 2** | 2930 | 30 | • | 87.0 | 86.5 | 83.6 | 0.86 | 17.7 | 6.7 | 2.8 | 2.3 | 178 | 51 | **FD 56** | 75 | — | 430 | 189 | 64 | **AFD 06** | 75 | 430 | 189 | 63 | **FA 06** | 75 | 430 | 189 | 65 |
| 11 | **M 4LC 2** | 2920 | 36 | • | 87.6 | 87.0 | 86.0 | 0.88 | 20.6 | 6.9 | 2.9 | 2.5 | 210 | 60 | | | | | | | | | | | | | | | | |
| 15 | **M 5SB 2** | 2930 | 49 | • | 89.6 | 89.4 | 88.0 | 0.86 | 28.1 | 7.1 | 2.6 | 2.3 | 340 | 70 | | | | | | | | | | | | | | | | |
| 18.5 | **M 5SC 2** | 2930 | 60 | • | 90.4 | 90.1 | 89.0 | 0.86 | 34 | 7.6 | 2.7 | 2.3 | 420 | 83 | | | | | | | | | | | | | | | | |
| 22 | **M 5LA 2** | 2930 | 72 | • | 89.9 | 89.7 | 89.5 | 0.88 | 40 | 7.8 | 2.6 | 2.4 | 490 | 95 | | | | | | | | | | | | | | | | |

○ = n.a. • = IE1

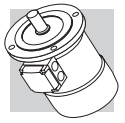
## 4P — 1500 min$^{-1}$ - S1 — 50 Hz

| | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | | FA | | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is / In | Ms / Mn | Ma / Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.09 | **M 0B 4** | 1350 | 0.64 | ○ | 51.7 | 47.6 | 42.9 | 0.60 | 0.42 | 2.6 | 2.5 | 2.4 | 1.5 | 2.9 | | | | | | | | | | | | | | | | | |
| 0.12 | **M 05A 4** | 1350 | 0.85 | ○ | 59.8 | 56.2 | 47.0 | 0.62 | 0.47 | 2.6 | 1.9 | 1.8 | 2.0 | 3.2 | **FD 02** | 1.75 | 10000 | 13000 | 2.6 | 4.9 | **AFD 02** | 1.75 | 13000 | 2.6 | 4.7 | **FA 02** | 1.75 | 13000 | 2.6 | 4.7 |
| 0.18 | **M 05B 4** | 1320 | 1.30 | ○ | 54.8 | 52.9 | 52.5 | 0.67 | 0.71 | 2.6 | 2.2 | 2.0 | 2.3 | 3.6 | **FD 02** | 3.5 | 10000 | 13000 | 3.0 | 5.3 | **AFD 02** | 3.5 | 13000 | 3.0 | 5.1 | **FA 02** | 3.5 | 13000 | 3.0 | 5.1 |
| 0.25 | **M 05C 4** | 1340 | 1.78 | ○ | 65.3 | 65.0 | 57.9 | 0.69 | 0.80 | 2.7 | 2.1 | 1.9 | 3.3 | 4.8 | **FD 02** | 3.5 | 7800 | 10000 | 3.9 | 6.5 | **AFD 02** | 3.5 | 10000 | 3.9 | 6.3 | **FA 02** | 3.5 | 10000 | 3.9 | 6.3 |
| 0.37 | **M 1SD 4** | 1370 | 2.6 | ○ | 66.8 | 66.7 | 63.0 | 0.76 | 1.05 | 3.7 | 2.0 | 1.9 | 6.9 | 5.5 | **FD 03** | 5 | 6000 | 9400 | 8.0 | 8.2 | **AFD 03** | 7.5 | 9400 | 8.0 | 7.9 | **FA 03** | 5 | 9400 | 8.0 | 7.9 |
| 0.55 | **M 1LA 4** | 1380 | 3.8 | ○ | 69.0 | 68.9 | 68.8 | 0.74 | 1.55 | 4.1 | 2.3 | 2.3 | 9.1 | 6.9 | **FD 53** | 7.5 | 4300 | 8700 | 10.2 | 9.6 | **AFD 03** | 7.5 | 8700 | 10.2 | 9.3 | **FA 03** | 7.5 | 8700 | 10.2 | 9.3 |
| 0.75 | **M 2SA 4** | 1400 | 5.1 | • | 75.0 | 74.5 | 69.3 | 0.78 | 1.85 | 4.9 | 2.7 | 2.5 | 20 | 9.2 | **FD 04** | 15 | 4100 | 7800 | 22 | 13.1 | **AFD 04** | 15 | 7800 | 22 | 12.7 | **FA 04** | 15 | 7800 | 22 | 13.0 |
| 1.1 | **M 2SB 4** | 1400 | 7.5 | • | 76.4 | 76.2 | 70.4 | 0.78 | 2.66 | 5.1 | 2.8 | 2.5 | 25 | 10.6 | **FD 04** | 15 | 2600 | 5300 | 27 | 14.5 | **AFD 04** | 15 | 5300 | 27 | 14.1 | **FA 04** | 15 | 5300 | 27 | 14.4 |
| 1.5 | **M 3SA 4** | 1410 | 10.2 | • | 79.6 | 80.5 | 79.3 | 0.77 | 3.5 | 4.6 | 2.1 | 2.1 | 34 | 15.5 | **FD 15** | 26 | 2800 | 4900 | 38 | 22 | **AFD 15** | 26 | 4900 | 38 | 21.4 | **FA 15** | 26 | 4900 | 38 | 23 |
| 2.2 | **M 3LA 4** | 1410 | 14.9 | • | 81.1 | 81.4 | 79.9 | 0.75 | 5.2 | 4.5 | 2.2 | 2.0 | 40 | 17 | **FD 15** | 40 | 2600 | 4700 | 44 | 24 | **AFD 15** | 40 | 4700 | 44 | 23.4 | **FA 15** | 40 | 4700 | 44 | 24 |
| 3 | **M 3LB 4** | 1410 | 20 | • | 82.6 | 83.8 | 83.7 | 0.77 | 6.8 | 5.0 | 2.3 | 2.2 | 54 | 21 | **FD 15** | 40 | 2400 | 4400 | 58 | 27 | **AFD 15** | 40 | 4400 | 58 | 26 | **FA 15** | 40 | 4400 | 58 | 28 |
| 4 | **M 3LC 4** | 1400 | 27 | ○ | 82.7 | 83.1 | 80.5 | 0.78 | 9.0 | 4.7 | 2.3 | 2.2 | 61 | 23 | **FD 55** | 55 | — | 1300 | 65 | 29 | **—** | — | — | — | — | **FA 15** | 40 | 1300 | 65 | 30 |
| 5.5 | **M 4SA 4** | 1440 | 36 | • | 84.7 | 84.8 | 82.5 | 0.81 | 11.6 | 5.5 | 2.3 | 2.2 | 213 | 42 | **FD 56** | 75 | — | 1050 | 223 | 55 | **AFD 06** | 75 | 1050 | 223 | 54 | **FA 06** | 75 | 1050 | 223 | 56 |
| 7.5 | **M 4LA 4** | 1440 | 50 | • | 86.0 | 86.3 | 85.3 | 0.81 | 15.5 | 5.7 | 2.5 | 2.4 | 270 | 51 | **FD 06** | 100 | — | 950 | 280 | 64 | **AFD 06** | 100 | 950 | 280 | 63 | **FA 07** | 100 | 950 | 280 | 65 |
| 9.2 | **M 4LB 4** | 1440 | 61 | • | 88.4 | 88.6 | 87.5 | 0.81 | 18.8 | 5.9 | 2.7 | 2.5 | 319 | 57 | **FD 07** | 150 | — | 900 | 342 | 73 | **AFD 07** | 150 | 900 | 342 | 71 | **FA 07** | 150 | 900 | 342 | 75 |
| 11 | **M 4LC 4** | 1440 | 73 | • | 87.6 | 87.8 | 86.0 | 0.81 | 22.4 | 6.0 | 2.7 | 2.5 | 360 | 65 | **FD 07** | 150 | — | 850 | 382 | 81 | **AFD 07** | 150 | 850 | 382 | 79 | **FA 07** | 150 | 850 | 382 | 83 |
| 15 | **M 5SB 4** | 1460 | 98 | • | 88.7 | 88.5 | 88.4 | 0.81 | 30.1 | 6.0 | 2.3 | 2.1 | 650 | 85 | **FD 08** | 200 | — | 750 | 725 | 115 | | | | | | **FA 08** | 200 | 750 | 710 | 114 |
| 18.5 | **M 5LA 4** | 1460 | 121 | • | 89.3 | 89.5 | 89.2 | 0.81 | 37 | 6.2 | 2.6 | 2.5 | 790 | 101 | **FD 08** | 250 | — | 700 | 865 | 131 | | | | | | **FA 08** | 250 | 700 | 850 | 130 |

○ = n.a. • = IE1



## 6P — 1000 min$^{-1}$ - S1 — 50 Hz

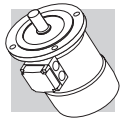


| | | | | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ | | n | $M_n$ | IE1 | η (100%) | η (75%) | η (50%) | cosφ | In 400V | Is / In | Ms / Mn | Ma / Mn | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 | Mod | Mb | $Z_o$ 1/h | $J_m$ x $10^{-4}$ | IM B5 |
| kW | | min$^{-1}$ | Nm | | % | % | % | | A | | | | kgm$^2$ | Kg | | Nm | NB | SB | kgm$^2$ | Kg | | Nm | SB | kgm$^2$ | Kg | | Nm | | kgm$^2$ | Kg |
| 0.09 | **M 05A 6** | 880 | 0.98 | ○ | 41.0 | 41.0 | 32.9 | 0.53 | 0.60 | 2.1 | 2.1 | 1.8 | 3.4 | 4.3 | **FD 02** | 3.5 | 9000 | 14000 | 4.0 | 6.0 | **AFD 02** | 3.5 | 14000 | 4.0 | 5.8 | **FA 02** | 3.5 | 14000 | 4.0 | 5.8 |
| 0.12 | **M 05B 6** | 870 | 1.32 | ○ | 45.0 | 44.0 | 41.8 | 0.60 | 0.64 | 2.1 | 1.9 | 1.7 | 3.7 | 4.6 | **FD 02** | 3.5 | 9000 | 14000 | 4.3 | 6.3 | **AFD 02** | 3.5 | 14000 | 4.3 | 6.1 | **FA 02** | 3.5 | 14000 | 4.3 | 6.1 |
| 0.18 | **M 1SC 6** | 900 | 1.91 | ○ | 55.0 | 55.5 | 51.0 | 0.69 | 0.68 | 2.6 | 1.9 | 1.7 | 8.4 | 5.1 | **FD 03** | 5 | 8100 | 13500 | 9.5 | 7.8 | **AFD 03** | 5 | 13500 | 9.5 | 7.5 | **FA 03** | 5 | 13500 | 9.5 | 7.5 |
| 0.25 | **M 1SD 6** | 900 | 2.7 | ○ | 62.0 | 58.5 | 51.4 | 0.71 | 0.82 | 2.6 | 1.9 | 1.7 | 10.9 | 6.3 | **FD 03** | 5 | 7800 | 13000 | 12 | 9.0 | **AFD 03** | 7.5 | 13000 | 12 | 8.7 | **FA 03** | 5 | 13000 | 12 | 8.7 |
| 0.37 | **M 1LA 6** | 910 | 3.9 | ○ | 66.0 | 60.0 | 53.3 | 0.69 | 1.17 | 3.0 | 2.4 | 2.0 | 12.9 | 7.3 | **FD 53** | 7.5 | 5100 | 9500 | 14 | 10.0 | **AFD 03** | 7.5 | 9500 | 14 | 9.7 | **FA 03** | 7.5 | 9500 | 14 | 9.7 |
| 0.55 | **M 2SA 6** | 920 | 5.7 | ○ | 70.0 | 69.8 | 64.3 | 0.68 | 1.67 | 3.9 | 2.6 | 2.2 | 25 | 10.6 | **FD 04** | 15 | 4800 | 7200 | 27 | 14.5 | **AFD 04** | 15 | 7200 | 27 | 14.1 | **FA 04** | 15 | 7200 | 27 | 14.4 |
| 0.75 | **M 2SB 6** | 920 | 7.8 | • | 70.0 | 70.0 | 64.4 | 0.65 | 2.38 | 3.8 | 2.5 | 2.2 | 28 | 11.5 | **FD 04** | 15 | 3400 | 6400 | 30 | 15.4 | **AFD 04** | 15 | 6400 | 30 | 15 | **FA 04** | 15 | 6400 | 30 | 15.3 |
| 1.1 | **M 3SA 6** | 920 | 11.4 | • | 75.0 | 74.0 | 72.0 | 0.72 | 2.9 | 4.3 | 2.0 | 1.8 | 33 | 17 | **FD 15** | 26 | 2700 | 5000 | 37 | 23 | **AFD 15** | 26 | 5000 | 37 | 22.4 | **FA 15** | 26 | 5000 | 37 | 24 |
| 1.5 | **M 3LA 6** | 940 | 15.2 | • | 75.2 | 74.2 | 70.3 | 0.72 | 4.0 | 4.1 | 2.1 | 2.0 | 82 | 21 | **FD 15** | 40 | 1900 | 4100 | 86 | 27 | **AFD 15** | 40 | 4100 | 86 | 26 | **FA 15** | 40 | 4100 | 86 | 28 |
| 1.85 | **M 3LB 6** | 930 | 19.0 | • | 76.6 | 72.8 | 62.6 | 0.73 | 4.8 | 4.6 | 2.1 | 2.0 | 95 | 23 | **FD 15** | 40 | 1700 | 3600 | 99 | 29 | **AFD 15** | 40 | 3600 | 99 | 28 | **FA 15** | 40 | 3600 | 99 | 30 |
| 2.2 | **M 3LC 6** | 930 | 23 | • | 77.7 | 76.8 | 72.4 | 0.71 | 5.8 | 4.7 | 2.3 | 2.1 | 95 | 23 | **FD 55** | 55 | — | 1900 | 99 | 29 | **—** | — | — | — | — | **FA 15** | 55 | 1900 | 99 | 30 |
| 3 | **M 4SA 6** | 940 | 30 | • | 79.7 | 77.0 | 75.1 | 0.76 | 7.1 | 5.1 | 1.9 | 1.8 | 216 | 34 | **FD 56** | 75 | — | 1400 | 226 | 47 | **AFD 06** | 75 | 1400 | 226 | 46 | **FA 06** | 75 | 1400 | 226 | 48 |
| 4 | **M 4LA 6** | 950 | 40 | • | 81.4 | 81.5 | 79.5 | 0.77 | 9.2 | 5.5 | 2.0 | 1.8 | 295 | 43 | **FD 06** | 100 | — | 1200 | 305 | 56 | **AFD 06** | 100 | 1200 | 305 | 55 | **FA 07** | 100 | 1200 | 305 | 57 |
| 5.5 | **M 4LB 6** | 945 | 56 | • | 83.1 | 80.9 | 79.1 | 0.78 | 12.2 | 6.1 | 2.1 | 1.9 | 383 | 54 | **FD 07** | 150 | — | 1050 | 406 | 70 | **AFD 07** | 150 | 1050 | 406 | 68 | **FA 07** | 150 | 1050 | 406 | 72 |
| 7.5 | **M 5SA 6** | 955 | 75 | • | 85.0 | 85.0 | 84.8 | 0.81 | 15.7 | 5.9 | 2.2 | 2.0 | 740 | 69 | **FD 08** | 170 | — | 900 | 815 | 98 | | | | | | **FA 08** | 170 | 900 | 800 | 98 |
| 11 | **M 5SB 6** | 960 | 109 | • | 86.4 | 86.5 | 85.9 | 0.81 | 22.7 | 6.6 | 2.5 | 2.3 | 970 | 89 | **FD 08** | 200 | — | 800 | 1045 | 119 | | | | | | **FA 08** | 200 | 800 | 1030 | 118 |

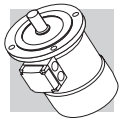
○ = n.a. • = IE1

## 2/4P — 3000/1500 min$^{-1}$ - S1 — 50 Hz

| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ kW | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | Is / In | Ms / Mn | Ma / Mn | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.20 | **M 05A 2** | 2700 | 0.71 | 55 | 0.82 | 0.64 | 3.5 | 2.1 | 1.9 | 2.9 | 4.1 | **FD 02** | 3.5 | 2200 | 2600 | 3.5 | 5.8 | **AFD 02** | 3.5 | 2600 | 3.5 | 5.6 | **FA 02** | 3.5 | 2600 | 3.5 | 5.6 |
| 0.15 | **4** | 1350 | 1.06 | 49 | 0.67 | 0.66 | 2.6 | 1.8 | 1.7 | | | | | 4000 | 5100 | | | | | 5100 | | | | | 5100 | | |
| 0.28 | **M 1SB 2** | 2700 | 0.99 | 56 | 0.82 | 0.88 | 2.9 | 1.9 | 1.7 | 4.7 | 4.0 | **FD 03** | 3.5 | 2100 | 2400 | 5.8 | 6.7 | **AFD 03** | 5 | 2400 | 5.8 | 6.4 | **FA 03** | 3.5 | 2400 | 5.8 | 6.4 |
| 0.20 | **4** | 1370 | 1.39 | 59 | 0.68 | 1.02 | 3.1 | 1.8 | 1.7 | | | | | 3800 | 4800 | | | | | 4800 | | | | | 4800 | | |
| 0.37 | **M 1SC 2** | 2740 | 1.29 | 56 | 0.82 | 1.16 | 3.5 | 1.8 | 1.8 | 5.8 | 4.7 | **FD 03** | 5 | 1400 | 2100 | 6.9 | 7.4 | **AFD 03** | 5 | 2100 | 6.9 | 7.1 | **FA 03** | 5 | 2100 | 6.9 | 7.1 |
| 0.25 | **4** | 1390 | 1.72 | 60 | 0.73 | 0.82 | 3.3 | 2.0 | 1.9 | | | | | 2900 | 4200 | | | | | 4200 | | | | | 4200 | | |
| 0.45 | **M 1SD 2** | 2780 | 1.55 | 63 | 0.85 | 1.21 | 3.8 | 1.8 | 1.8 | 6.9 | 5.5 | **FD 03** | 5 | 1400 | 2100 | 8.0 | 8.2 | **AFD 03** | 5 | 2100 | 8.0 | 7.9 | **FA 03** | 5 | 2100 | 8.0 | 7.9 |
| 0.30 | **4** | 1400 | 2.0 | 63 | 0.74 | 0.93 | 3.8 | 2.1 | 1.9 | | | | | 2900 | 4200 | | | | | 4200 | | | | | 4200 | | |
| 0.55 | **M 1LA 2** | 2800 | 1.9 | 73 | 0.79 | 1.38 | 4.2 | 2.0 | 1.8 | 9.1 | 6.9 | **FD 03** | 5 | 1600 | 2200 | 10.2 | 9.6 | **AFD 03** | 5 | 2200 | 10.2 | 9.3 | **FA 03** | 5 | 2200 | 10.2 | 9.3 |
| 0.37 | **4** | 1400 | 2.5 | 68 | 0.72 | 1.09 | 3.9 | 2.2 | 2.0 | | | | | 3300 | 4600 | | | | | 4600 | | | | | 4600 | | |
| 0.75 | **M 2SA 2** | 2780 | 2.6 | 65 | 0.85 | 1.96 | 3.8 | 1.9 | 1.8 | 20 | 9.2 | **FD 04** | 10 | 1400 | 1600 | 22 | 13.1 | **AFD 04** | 10 | 1600 | 22 | 12.7 | **FA 04** | 10 | 1600 | 22 | 13.0 |
| 0.55 | **4** | 1400 | 3.8 | 68 | 0.81 | 1.44 | 3.9 | 1.7 | 1.7 | | | | | 2700 | 3600 | | | | | 3600 | | | | | 3600 | | |
| 1.1 | **M 2SB 2** | 2730 | 3.9 | 65 | 0.86 | 2.84 | 3.9 | 2.0 | 1.9 | 25 | 10.7 | **FD 04** | 10 | 1200 | 1500 | 27 | 14.5 | **AFD 04** | 10 | 1500 | 27 | 14.1 | **FA 04** | 10 | 1500 | 27 | 14.5 |
| 0.75 | **4** | 1410 | 5.1 | 75 | 0.81 | 1.78 | 4.5 | 2.1 | 2.0 | | | | | 2300 | 3100 | | | | | 3100 | | | | | 3100 | | |
| 1.5 | **M 3SA 2** | 2830 | 5.1 | 74 | 0.83 | 3.5 | 4.7 | 2.1 | 2.0 | 34 | 15.5 | **FD 15** | 26 | 700 | 1000 | 38 | 22 | **AFD 15** | 26 | 1000 | 38 | 21.4 | **FA 15** | 26 | 1000 | 38 | 23 |
| 1.1 | **4** | 1420 | 7.4 | 77 | 0.78 | 2.6 | 4.3 | 2.1 | 2.0 | | | | | 1600 | 2600 | | | | | 2600 | | | | | 2600 | | |
| 2.2 | **M 3LA 2** | 2800 | 7.5 | 72 | 0.85 | 5.2 | 4.5 | 2.0 | 1.9 | 40 | 17 | **FD 15** | 26 | 600 | 900 | 44 | 24 | **AFD 15** | 26 | 900 | 44 | 23.4 | **FA 15** | 26 | 900 | 44 | 24 |
| 1.5 | **4** | 1410 | 10.2 | 73 | 0.79 | 3.8 | 4.7 | 2.0 | 2.0 | | | | | 1300 | 2300 | | | | | 2300 | | | | | 2300 | | |
| 3.5 | **M 3LB 2** | 2850 | 11.7 | 80 | 0.84 | 7.5 | 5.4 | 2.2 | 2.1 | 61 | 23 | **FD 15** | 40 | 500 | 900 | 65 | 29 | **AFD 15** | 40 | 900 | 65 | 28 | **FA 15** | 40 | 900 | 65 | 30 |
| 2.5 | **4** | 1420 | 16.8 | 82 | 0.80 | 5.5 | 5.2 | 2.2 | 2.2 | | | | | 1000 | 2100 | | | | | 2100 | | | | | 2100 | | |
| 4.8 | **M 4 SA 2** | 2900 | 15.8 | 81 | 0.88 | 9.7 | 6.0 | 2.0 | 1.9 | 213 | 42 | **FD 06** | 50 | — | 400 | 233 | 55 | **AFD 06** | 62 | 400 | 233 | 54 | **FA 06** | 50 | 400 | 233 | 56 |
| 3.8 | **4** | 1430 | 25.4 | 81 | 0.84 | 8.1 | 5.2 | 2.1 | 2.1 | | | | | — | 950 | | | | | 950 | | | | | 950 | | |
| 5.5 | **M 4SB 2** | 2890 | 18.2 | 80 | 0.87 | 11.4 | 5.9 | 2.4 | 2.0 | 213 | 42 | **FD 56** | 75 | — | 350 | 223 | 55 | **AFD 06** | 75 | 350 | 223 | 54 | **FA 06** | 75 | 350 | 223 | 56 |
| 4.4 | **4** | 1440 | 29 | 82 | 0.84 | 9.2 | 5.3 | 2.2 | 2.0 | | | | | — | 900 | | | | | 900 | | | | | 900 | | |
| 7.5 | **M 4LA 2** | 2900 | 25 | 82 | 0.87 | 15.2 | 6.5 | 2.4 | 2.0 | 270 | 51 | **FD 06** | 100 | — | 350 | 280 | 64 | **AFD 06** | 100 | 350 | 280 | 63 | **FA 07** | 100 | 350 | 280 | 65 |
| 6 | **4** | 1430 | 40 | 84 | 0.85 | 12.1 | 5.8 | 2.3 | 2.1 | | | | | — | 950 | | | | | 950 | | | | | 950 | | |
| 9.2 | **M 4LB 2** | 2920 | 30 | 83 | 0.86 | 18.6 | 6.0 | 2.6 | 2.2 | 319 | 57 | **FD 07** | 150 | — | 300 | 342 | 73 | **AFD 07** | 150 | 300 | 342 | 71 | **FA 07** | 150 | 300 | 342 | 75 |
| 7.3 | **4** | 1440 | 48 | 85 | 0.85 | 14.6 | 5.5 | 2.3 | 2.1 | | | | | — | 800 | | | | | 800 | | | | | 800 | | |



## 2/6P — 3000/1000 min$^{-1}$ - S3 60/40% — 50 Hz

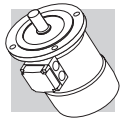


| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ kW | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | Is/In | Ms/Mn | Ma/Mn | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.25 | **M 1SA 2** | 2850 | 0.84 | 60 | 0.82 | 0.73 | 4.3 | 1.9 | 1.8 | 6.9 | 5.5 | **FD 03** | 1.75 | 1500 | 1700 | 8.0 | 8.2 | **AFD 03** | 2.5 | 1700 | 8.0 | 7.9 | **FA 03** | 1.75 | 1700 | 8.0 | 7.9 |
| 0.08 | **6** | 910 | 0.84 | 43 | 0.70 | 0.38 | 2.1 | 1.4 | 1.5 | | | | | 10000 | 13000 | | | | | 13000 | | | | | 13000 | | |
| 0.37 | **M 1LA 2** | 2880 | 1.23 | 62 | 0.80 | 1.08 | 4.4 | 1.9 | 1.8 | 9.1 | 6.9 | **FD 03** | 3.5 | 1000 | 1300 | 10.2 | 9.6 | **AFD 03** | 5 | 1300 | 10.2 | 9.3 | **FA 03** | 3.5 | 1300 | 10.2 | 9.3 |
| 0.12 | **6** | 900 | 1.27 | 44 | 0.73 | 0.54 | 2.4 | 1.4 | 1.5 | | | | | 9000 | 11000 | | | | | 11000 | | | | | 11000 | | |
| 0.55 | **M 2SA 2** | 2800 | 1.88 | 63 | 0.86 | 1.47 | 4.5 | 1.9 | 1.7 | 20 | 9.2 | **FD 04** | 5 | 1500 | 1800 | 22 | 13.1 | **AFD 04** | 5 | 1800 | 22 | 12.7 | **FA 04** | 5 | 1800 | 22 | 13.0 |
| 0.18 | **6** | 930 | 1.85 | 52 | 0.65 | 0.77 | 3.3 | 2.0 | 1.9 | | | | | 4100 | 6300 | | | | | 6300 | | | | | 6300 | | |
| 0.75 | **M 2SB 2** | 2800 | 2.6 | 66 | 0.87 | 1.89 | 4.3 | 1.8 | 1.6 | 25 | 10.6 | **FD 04** | 5 | 1700 | 1900 | 27 | 14.5 | **AFD 04** | 5 | 1900 | 27 | 14.1 | **FA 04** | 5 | 1900 | 27 | 14.4 |
| 0.25 | **6** | 930 | 2.6 | 54 | 0.67 | 1.00 | 3.2 | 1.7 | 1.8 | | | | | 3800 | 6000 | | | | | 6000 | | | | | 6000 | | |
| 1.1 | **M 3SA 2** | 2870 | 3.7 | 71 | 0.82 | 2.73 | 4.9 | 1.8 | 1.9 | 34 | 15.5 | **FD 15** | 13 | 1000 | 1300 | 38 | 22 | **AFD 15** | 13 | 1300 | 38 | 21.4 | **FA 15** | 13 | 1300 | 38 | 23 |
| 0.37 | **6** | 930 | 3.8 | 63 | 0.70 | 1.21 | 3.1 | 1.5 | 1.8 | | | | | 3500 | 5000 | | | | | 5000 | | | | | 5000 | | |
| 1.5 | **M 3LA 2** | 2880 | 5.0 | 73 | 0.84 | 3.53 | 5.1 | 1.9 | 2.0 | 40 | 17 | **FD 15** | 13 | 1000 | 1200 | 44 | 24 | **AFD 15** | 13 | 1200 | 44 | 23.4 | **FA 15** | 13 | 1200 | 44 | 24 |
| 0.55 | **6** | 940 | 5.6 | 64 | 0.67 | 1.85 | 3.5 | 1.7 | 1.8 | | | | | 2900 | 4000 | | | | | 4000 | | | | | 4000 | | |
| 2.2 | **M 3LB 2** | 2900 | 7.2 | 77 | 0.85 | 4.9 | 5.9 | 2.0 | 2.0 | 61 | 23 | **FD 15** | 26 | 700 | 900 | 65 | 29 | **AFD 15** | 26 | 900 | 65 | 28 | **FA 15** | 26 | 900 | 65 | 30 |
| 0.75 | **6** | 950 | 7.5 | 67 | 0.64 | 2.5 | 3.3 | 1.9 | 1.8 | | | | | 2100 | 3000 | | | | | 3000 | | | | | 3000 | | |
| 3 | **M 4SA 2** | 2910 | 9.9 | 74 | 0.88 | 6.6 | 5.6 | 2.0 | 2.1 | 170 | 36 | **FD 56** | 37 | — | 600 | 182 | 48 | **AFD 06** | 37 | 600 | 182 | 47 | **FA 06** | 37 | 600 | 182 | 50 |
| 1.1 | **6** | 960 | 10.9 | 73 | 0.68 | 3.2 | 4.5 | 2.2 | 2.0 | | | | | — | 2200 | | | | | 2200 | | | | | 2200 | | |
| 4.5 | **M 4SB 2** | 2910 | 14.8 | 78 | 0.84 | 9.9 | 5.8 | 1.9 | 1.8 | 213 | 42 | **FD 56** | 37 | — | 500 | 223 | 55 | **AFD 06** | 37 | 500 | 223 | 54 | **FA 06** | 37 | 500 | 223 | 56 |
| 1.5 | **6** | 960 | 14.9 | 74 | 0.67 | 4.4 | 4.2 | 1.9 | 2.0 | | | | | — | 2100 | | | | | 2100 | | | | | 2100 | | |
| 5.5 | **M 4LA 2** | 2920 | 18.0 | 78 | 0.87 | 11.7 | 6.2 | 2.1 | 1.9 | 270 | 51 | **FD 06** | 50 | — | 400 | 280 | 64 | **AFD 06** | 62 | 400 | 280 | 63 | **FA 06** | 50 | 400 | 280 | 65 |
| 2.2 | **6** | 960 | 22 | 77 | 0.71 | 5.8 | 4.3 | 2.1 | 2.0 | | | | | — | 1900 | | | | | 1900 | | | | | 1900 | | |

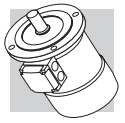
## 2/8P — 3000/750 min$^{-1}$ - S3 60/40% — 50 Hz

| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ kW | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | Is / In | Ms / Mn | Ma / Mn | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.37 | **M 1LA 2** | 2800 | 1.26 | 63 | 0.86 | 0.99 | 3.9 | 1.8 | 1.9 | 12.9 | 7.3 | **FD 03** | 3.5 | 1200 | 1300 | 14 | 10.0 | **AFD 03** | 5 | 1300 | 14 | 9.7 | **FA 03** | 3.5 | 1300 | 14 | 9.7 |
| 0.09 | **8** | 670 | 1.28 | 34 | 0.75 | 0.51 | 1.8 | 1.4 | 1.5 | | | | | 9500 | 13000 | | | | | 13000 | | | | | 13000 | | |
| 0.55 | **M 2SA 2** | 2830 | 1.86 | 66 | 0.86 | 1.40 | 4.4 | 2.1 | 2.0 | 20 | 9.2 | **FD 04** | 5 | 1500 | 1800 | 22 | 13.1 | **AFD 04** | 5 | 1800 | 22 | 12.7 | **FA 04** | 5 | 1800 | 22 | 13.0 |
| 0.13 | **8** | 690 | 1.80 | 41 | 0.64 | 0.72 | 2.3 | 1.6 | 1.7 | | | | | 5600 | 8000 | | | | | 8000 | | | | | 8000 | | |
| 0.75 | **M 2SB 2** | 2800 | 2.6 | 68 | 0.88 | 1.81 | 4.6 | 2.1 | 2.0 | 25 | 10.6 | **FD 04** | 10 | 1700 | 1900 | 27 | 14.5 | **AFD 04** | 10 | 1900 | 27 | 14.1 | **FA 04** | 10 | 1900 | 27 | 14.4 |
| 0.18 | **8** | 690 | 2.5 | 43 | 0.66 | 0.92 | 2.3 | 1.6 | 1.7 | | | | | 4800 | 7300 | | | | | 7300 | | | | | 7300 | | |
| 1.1 | **M 3SA 2** | 2870 | 3.7 | 69 | 0.84 | 2.74 | 4.6 | 1.8 | 1.7 | 34 | 15.5 | **FD 15** | 13 | 1000 | 1300 | 38 | 22 | **AFD 15** | 13 | 1300 | 38 | 21.4 | **FA 15** | 13 | 1300 | 38 | 23 |
| 0.28 | **8** | 690 | 3.9 | 44 | 0.56 | 1.64 | 2.3 | 1.4 | 1.7 | | | | | 3400 | 5000 | | | | | 5000 | | | | | 5000 | | |
| 1.5 | **M 3LA 2** | 2880 | 5.0 | 69 | 0.85 | 3.69 | 4.7 | 1.9 | 1.8 | 40 | 17 | **FD 15** | 13 | 1000 | 1200 | 44 | 24 | **AFD 15** | 13 | 1200 | 44 | 23.4 | **FA 15** | 13 | 1200 | 44 | 24 |
| 0.37 | **8** | 690 | 5.1 | 46 | 0.63 | 1.84 | 2.1 | 1.6 | 1.6 | | | | | 3300 | 5000 | | | | | 5000 | | | | | 5000 | | |
| 2.4 | **M 3LB 2** | 2900 | 7.9 | 75 | 0.82 | 5.6 | 5.4 | 2.1 | 2.0 | 61 | 23 | **FD 15** | 26 | 550 | 700 | 65 | 29 | **AFD 15** | 26 | 700 | 65 | 28 | **FA 15** | 26 | 700 | 65 | 30 |
| 0.55 | **8** | 700 | 7.5 | 54 | 0.58 | 2.5 | 2.6 | 1.8 | 1.8 | | | | | 2000 | 3500 | | | | | 3500 | | | | | 3500 | | |
| 3 | **M 4SA 2** | 2920 | 9.8 | 72 | 0.85 | 7.1 | 5.6 | 2.0 | 1.8 | 162 | 36 | **FD 56** | 37 | — | 600 | 182 | 48 | **AFD 06** | 37 | 600 | 182 | 47 | **FA 06** | 37 | 600 | 182 | 50 |
| 0.75 | **8** | 710 | 10.1 | 61 | 0.64 | 2.8 | 3.0 | 1.7 | 1.8 | | | | | — | 3400 | | | | | 3400 | | | | | 3400 | | |
| 4 | **M 4SB 2** | 2870 | 13.3 | 73 | 0.84 | 9.4 | 5.6 | 2.3 | 2.4 | 213 | 42 | **FD 56** | 37 | — | 500 | 223 | 55 | **AFD 06** | 37 | 500 | 223 | 54 | **FA 06** | 37 | 500 | 223 | 56 |
| 1 | **8** | 690 | 13.8 | 66 | 0.62 | 3.5 | 2.9 | 1.9 | 1.8 | | | | | — | 3500 | | | | | 3500 | | | | | 3500 | | |
| 5.5 | **M 4LA 2** | 2870 | 18.3 | 75 | 0.84 | 12.6 | 6.1 | 2.4 | 2.5 | 270 | 51 | **FD 06** | 50 | — | 400 | 280 | 64 | **AFD 06** | 62 | 400 | 280 | 63 | **FA 06** | 50 | 400 | 280 | 65 |
| 1.5 | **8** | 690 | 21 | 68 | 0.63 | 5.1 | 2.9 | 1.9 | 1.9 | | | | | — | 2400 | | | | | 2400 | | | | | 2400 | | |



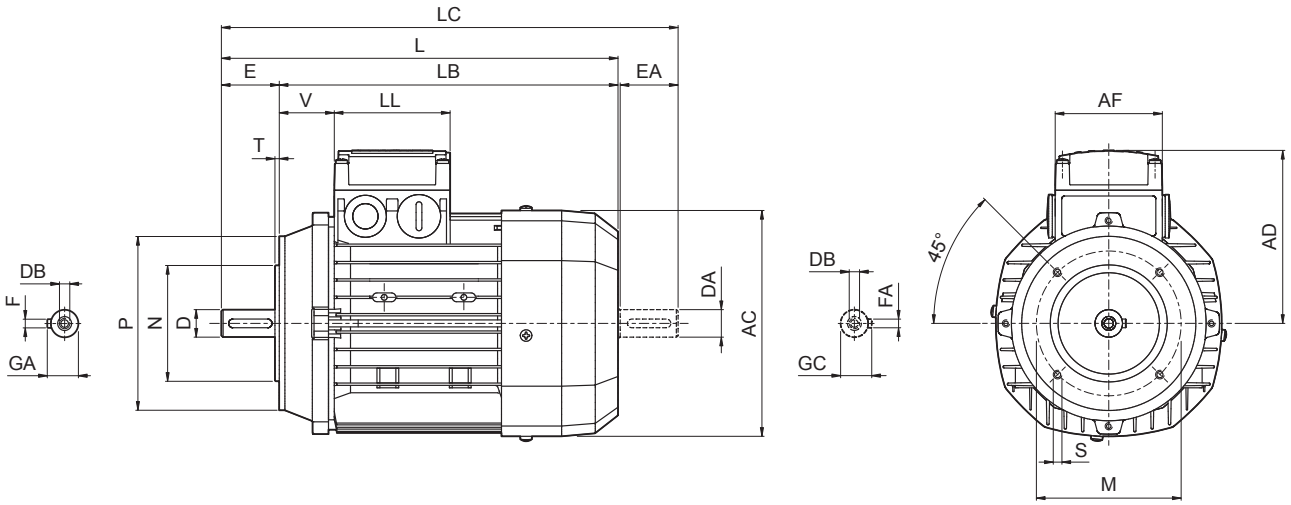


## 2/12P — 3000/500 min$^{-1}$ - S3 60/40% — 50 Hz

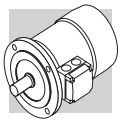


| | | | | | | | | | | | | freno c.c. | | | | | | freno c.c. a entrehierro fijo | | | | | freno c.a. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | FD | | | | | | AFD | | | | | FA | | | | |
| $P_n$ kW | | n min$^{-1}$ | $M_n$ Nm | η % | cosφ | In 400V A | $\frac{Is}{In}$ | $\frac{Ms}{Mn}$ | $\frac{Ma}{Mn}$ | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h NB | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h SB | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg | Mod | Mb Nm | $Z_o$ 1/h | $J_m$ x 10$^{-4}$ kgm$^2$ | IM B5 Kg |
| 0.55 | **M 2SA 2** | 2820 | 1.86 | 64 | 0.89 | 1.39 | 4.2 | 1.6 | 1.7 | 25 | 10.6 | **FD 04** | 5 | 1000 | 1300 | 27 | 14.5 | **AFD 04** | 5 | 1300 | 27 | 14.1 | **FA 04** | 5 | 1300 | 27 | 14.4 |
| 0.09 | **12** | 430 | 2.0 | 30 | 0.63 | 0.69 | 1.8 | 1.9 | 1.8 | | | | | 8000 | 12000 | | | | | 12000 | | | | | 12000 | | |
| 0.75 | **M 3SA 2** | 2900 | 2.5 | 65 | 0.81 | 2.06 | 5.2 | 1.9 | 2.1 | 34 | 15.5 | **FD 15** | 13 | 700 | 900 | 38 | 22 | **AFD 15** | 13 | 900 | 38 | 21.4 | **FA 15** | 13 | 900 | 38 | 23 |
| 0.12 | **12** | 460 | 2.5 | 33 | 0.43 | 1.22 | 1.9 | 1.3 | 1.6 | | | | | 5000 | 7000 | | | | | 7000 | | | | | 7000 | | |
| 1.1 | **M 3LA 2** | 2850 | 3.7 | 65 | 0.85 | 2.87 | 4.5 | 1.6 | 1.8 | 40 | 17 | **FD 15** | 13 | 700 | 900 | 44 | 24 | **AFD 15** | 13 | 900 | 44 | 23.4 | **FA 15** | 13 | 900 | 44 | 24 |
| 0.18 | **12** | 430 | 4.0 | 26 | 0.54 | 1.85 | 1.5 | 1.3 | 1.5 | | | | | 4000 | 6000 | | | | | 6000 | | | | | 6000 | | |
| 1.5 | **M 3LB 2** | 2900 | 4.9 | 67 | 0.86 | 3.76 | 5.6 | 1.9 | 1.9 | 54 | 21 | **FD 15** | 13 | 700 | 900 | 58 | 27 | **AFD 15** | 13 | 900 | 58 | 26 | **FA 15** | 13 | 900 | 58 | 28 |
| 0.25 | **12** | 440 | 5.4 | 36 | 0.46 | 2.18 | 1.8 | 1.7 | 1.8 | | | | | 3800 | 5000 | | | | | 5000 | | | | | 5000 | | |
| 2 | **M 3LC 2** | 2850 | 6.7 | 70 | 0.84 | 4.9 | 4.9 | 1.8 | 1.7 | 61 | 23 | **FD 55** | 18 | — | 700 | 65 | 29 | **AFD 15** | 26 | 700 | 65 | 28 | **FA 15** | 18 | 700 | 65 | 30 |
| 0.3 | **12** | 450 | 6.4 | 38 | 0.47 | 2.4 | 1.7 | 1.6 | 1.7 | | | | | — | 3500 | | | | | 3500 | | | | | 3500 | | |
| 3 | **M 4SA 2** | 2920 | 9.8 | 74 | 0.87 | 6.7 | 6.8 | 2.3 | 1.9 | 213 | 42 | **FD 56** | 37 | — | 450 | 223 | 55 | **AFD 06** | 37 | 450 | 223 | 54 | **FA 06** | 37 | 450 | 223 | 56 |
| 0.5 | **12** | 470 | 10.2 | 51 | 0.43 | 3.3 | 2.0 | 1.7 | 1.6 | | | | | — | 3000 | | | | | 3000 | | | | | 3000 | | |
| 4 | **M 4LA 2** | 2920 | 13.1 | 75 | 0.89 | 8.6 | 5.9 | 2.4 | 2.3 | 270 | 51 | **FD 56** | 37 | — | 400 | 280 | 64 | **AFD 06** | 37 | 400 | 280 | 63 | **FA 06** | 37 | 400 | 280 | 65 |
| 0.7 | **12** | 460 | 14.5 | 53 | 0.44 | 4.3 | 1.9 | 1.7 | 1.6 | | | | | — | 2800 | | | | | 2800 | | | | | 2800 | | |

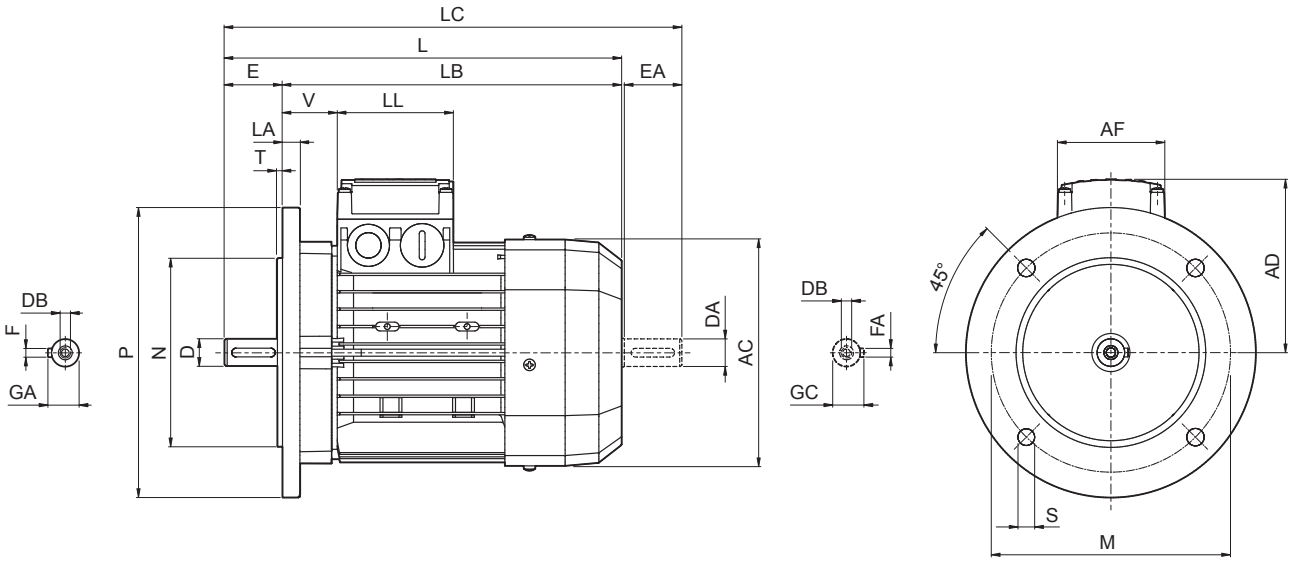
# BN - IM B14




| | Eje | | | | | Brida | | | | | Motor | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D DA** | **E EA** | **DB** | **GA GC** | **F FA** | **M** | **N** | **P** | **S** | **T** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** |
| **BN 56** | 9 | 20 | M3 | 10.2 | 3 | 65 | 50 | 80 | M5 | 2.5 | 110 | 185 | 165 | 207 | 91 | 74 | 80 | 34 |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 75 | 60 | 90 | M5 | 2.5 | 121 | 207 | 184 | 232 | 95 | 74 | 80 | 26 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 85 | 70 | 105 | M6 | 2.5 | 138 | 249 | 219 | 281 | 108 | 74 | 80 | 37 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 100 | 80 | 120 | M6 | 3 | 156 | 274 | 234 | 315 | 119 | 74 | 80 | 38 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 115 | 95 | 140 | M8 | 3 | 176 | 326 | 276 | 378 | 133 | 98 | 98 | 44 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 195 | 367 | 307 | 429 | 142 | 98 | 98 | 50 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 219 | 385 | 325 | 448 | 157 | 98 | 98 | 52 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 165 | 130 | 200 | M10 | 4 | 258 | 493 | 413 | 576 | 193 | 118 | 118 | 58 |



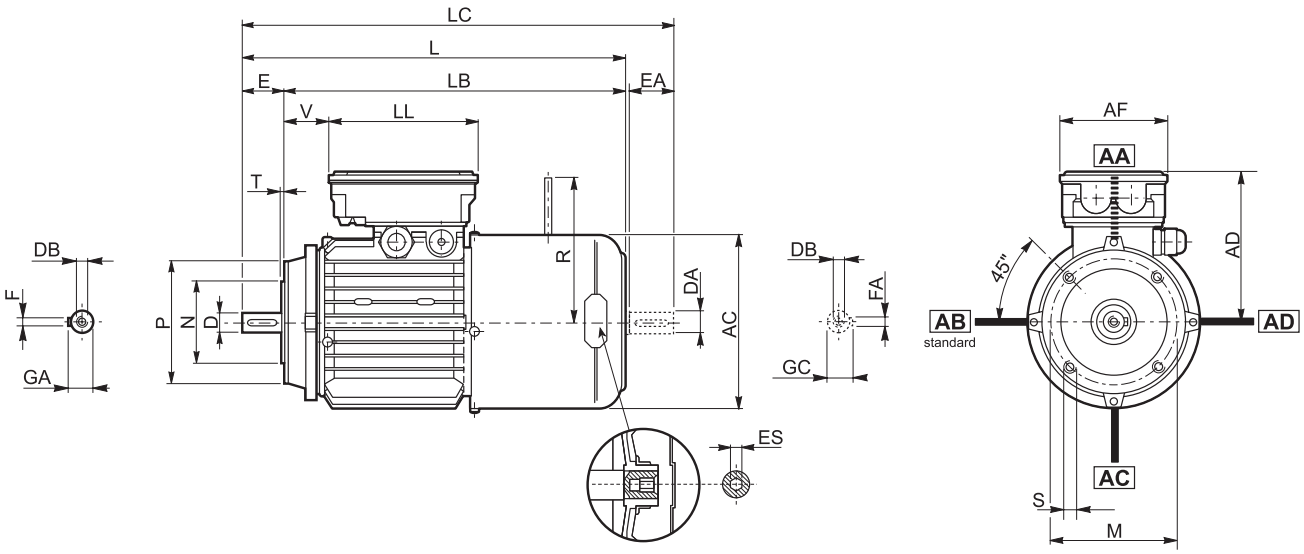
# BN - IM B5




| | Eje | | | | | Brida | | | | | | Motor | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D<br>DA** | **E<br>EA** | **DB** | **GA<br>GC** | **F<br>FA** | **M** | **N** | **P** | **S** | **T** | **LA** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** |
| **BN 56** | 9 | 20 | M3 | 10.2 | 3 | 100 | 80 | 120 | 7 | 3 | 8 | 110 | 185 | 165 | 207 | 91 | 74 | 80 | 34 |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 115 | 95 | 140 | 9.5 | 3 | 10 | 121 | 207 | 184 | 232 | 95 | 74 | 80 | 26 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 130 | 110 | 160 | 9.5 | 3 | 10 | 138 | 249 | 219 | 281 | 108 | 74 | 80 | 37 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 156 | 274 | 234 | 315 | 119 | 74 | 80 | 38 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 176 | 326 | 276 | 378 | 133 | 98 | 98 | 44 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 14 | 195 | 367 | 307 | 429 | 142 | 98 | 98 | 50 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 15 | 219 | 385 | 325 | 448 | 157 | 98 | 98 | 52 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 265 | 230 | 300 | 14 | 4 | 20 | 258 | 493 | 413 | 576 | 193 | 118 | 118 | 58 |
| **BN 160 MR** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 258 | 562 | 452 | 645 | 193 | 118 | 118 | 218 |
| **BN 160 M** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 596 | 486 | 680 | 245 | 187 | 187 | 51 |
| **BN 160 L** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 596 | 486 | 680 | 245 | 187 | 187 | 51 |
| **BN 180 M** | 48<br>38 (1) | 110<br>110 (1) | M16<br>M12 (1) | 51.5<br>41 (1) | 14<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 640 | 530 | 724 | 245 | 187 | 187 | 51 |
| **BN 180 L** | 48<br>42 (1) | 110<br>110 (1) | M16<br>M16 (1) | 51.5<br>45 (1) | 14<br>12 (1) | 300 | 250 | 350 | 18.5 | 5 | 18 | 348 | 708 | 598 | 823 | 261 | 187 | 187 | 52 |
| **BN 200 L** | 55<br>42 (1) | 110<br>110 (1) | M20<br>M16 (1) | 59<br>45 (1) | 16<br>12 (1) | 350 | 300 | 400 | 18.5 | 5 | 18 | 348 | 722 | 612 | 837 | 261 | 187 | 187 | 66 |

N.B.:
1) Estas dimensiones están referidas a la segunda extremidad del eje.

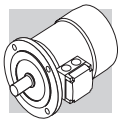
# BN_FD ; BN_AFD - IM B14



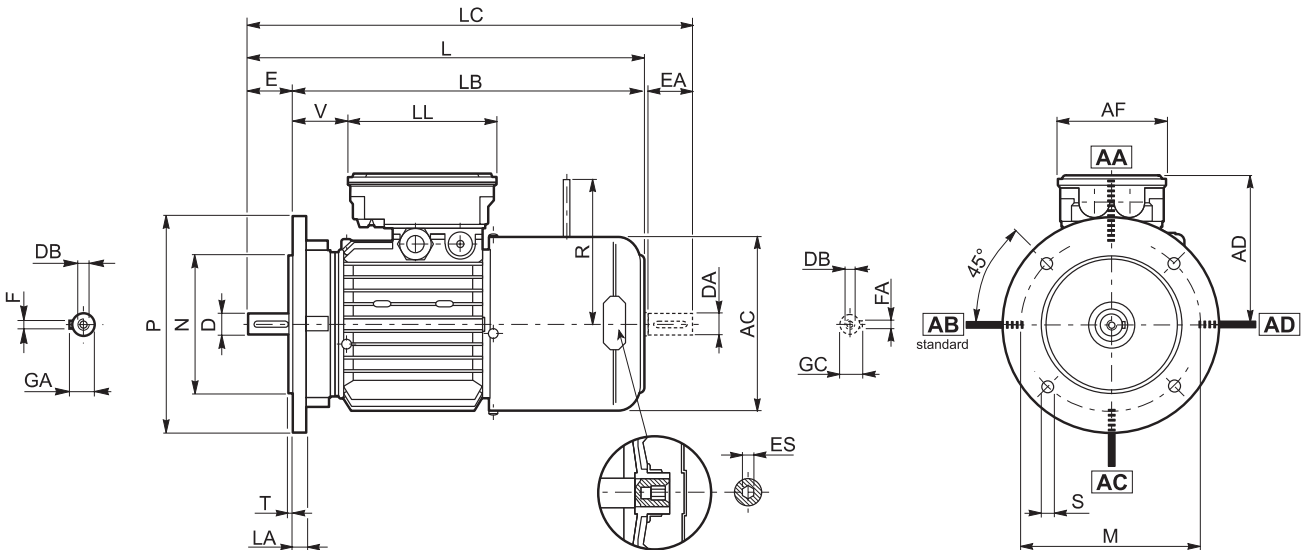

| | Eje | | | | | Brida | | | | | Motor | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D DA** | **E EA** | **DB** | **GA GC** | **F FA** | **M** | **N** | **P** | **S** | **T** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** | **R** | **ES** |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 75 | 60 | 90 | M5 | 2.5 | 121 | 272 | 249 | 297 | 122 | 98 | 133 | 14 | 96 | 5 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 85 | 70 | 105 | M6 | 2.5 | 138 | 310 | 280 | 342 | 135 | 98 | 133 | 25 | 103 | 5 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 100 | 80 | 120 | M6 | 3 | 156 | 346 | 306 | 388 | 146 | 98 | 133 | 41 | 129 | 5 |
| **BN 90 S** | 24 | 50 | M8 | 27 | 8 | 115 | 95 | 140 | M8 | 3 | 176 | 409 | 359 | 461 | 149 | 110 | 165 | 39 | 129 | 6 |
| **BN 90 L** | 24 | 50 | M8 | 27 | 8 | 115 | 95 | 140 | M8 | 3 | 176 | 409 | 359 | 461 | 146 | 110 | 165 | 39 | 160 | 6 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 195 | 458 | 398 | 521 | 158 | 110 | 165 | 62 | 160 | 6 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 219 | 484 | 424 | 547 | 173 | 110 | 165 | 73 | 199 | 6 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 165 | 130 | 200 | M10 | 4 | 258 | 603 | 523 | 686 | 210 | 140 | 188 | 122 | 204 (1) | 6 |

N.B.:
1) Para el freno FD07 la cota R = 226

El taladro hexagonal ES no está presente en la opción PS.



# BN_FD ; BN_AFD - IM B5

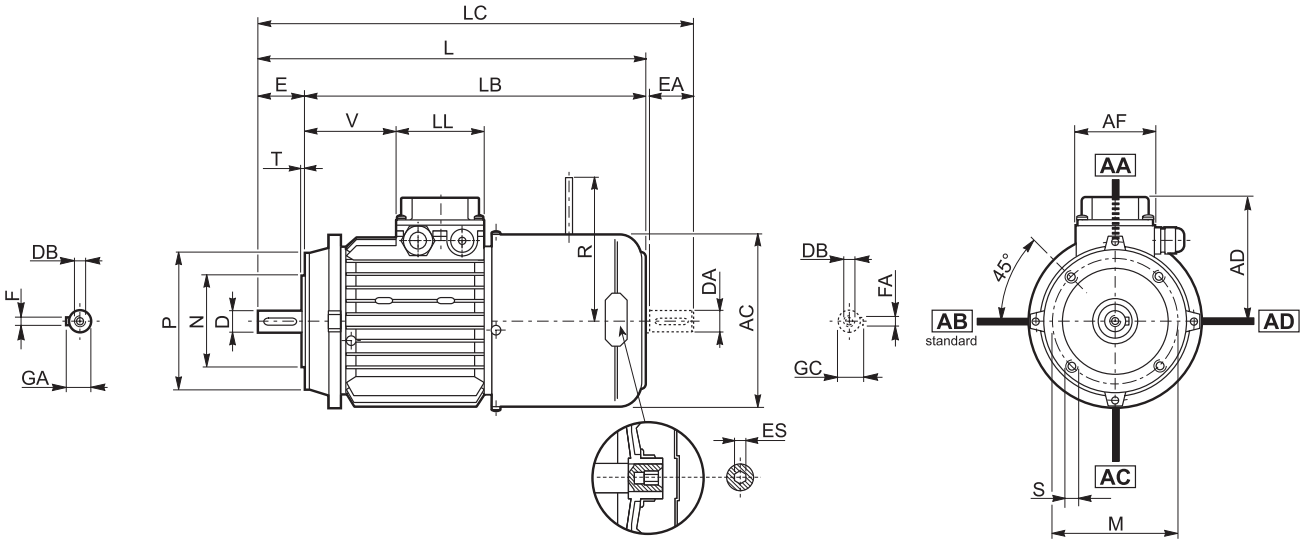



| | Eje | | | | | Brida | | | | | | Motor | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D<br>DA | E<br>EA | DB | GA<br>GC | F<br>FA | M | N | P | S | T | LA | AC | L | LB | LC | AD | AF | LL | V | R | ES |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 115 | 95 | 140 | 9.5 | 3 | 10 | 121 | 272 | 249 | 297 | 122 | 98 | 133 | 14 | 96 | 5 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 130 | 110 | 160 | 9.5 | 3.5 | 10 | 138 | 310 | 280 | 342 | 135 | 98 | 133 | 25 | 103 | 5 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 156 | 346 | 306 | 388 | 146 | 98 | 133 | 41 | 129 | 5 |
| **BN 90 S** | 24 | 50 | M8 | 27 | 8 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 176 | 409 | 359 | 461 | 149 | 110 | 165 | 39 | 129 | 6 |
| **BN 90 L** | 24 | 50 | M8 | 27 | 8 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 176 | 409 | 359 | 461 | 146 | 110 | 165 | 39 | 160 | 6 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 14 | 195 | 458 | 398 | 521 | 158 | 110 | 165 | 62 | 160 | 6 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 15 | 219 | 484 | 424 | 547 | 173 | 110 | 165 | 73 | 199 | 6 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 265 | 230 | 300 | 14 | 4 | 20 | 258 | 603 | 523 | 686 | 210 | 140 | 188 | 122 | 204 (2) | 6 |
| **BN 160 MR** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 258 | 672 | 562 | 755 | 210 | 140 | 188 | 161 | 226 | 6 |
| **BN 160 M** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 736 | 626 | 820 | 245 | 187 | 187 | 51 | 266 | — |
| **BN 160 L** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 736 | 626 | 820 | 245 | 187 | 187 | 51 | 266 | — |
| **BN 180 M** | 48<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 51.5<br>41 (1) | 14<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 780 | 670 | 864 | 245 | 187 | 187 | 51 | 266 | — |
| **BN 180 L** | 48<br>42 (1) | 110<br>110 (1) | M16<br>M16 (1) | 51.5<br>45 (1) | 14<br>12 (1) | 300 | 250 | 350 | 18.5 | 5 | 18 | 348 | 866 | 756 | 981 | 261 | 187 | 187 | 52 | 305 | — |
| **BN 200 L** | 55<br>42 (1) | 110<br>110 (1) | M20<br>M16 (1) | 59<br>45 (1) | 16<br>12 (1) | 350 | 300 | 400 | 18.5 | 5 | 18 | 348 | 878 | 768 | 993 | 261 | 187 | 187 | 64 | 305 | — |

N.B.:
1) Estas dimensiones están referidas a la segunda extremidad del eje
2) Para el freno FD07 la cota R = 226

El taladro hexagonal ES no está presente en la opción PS.

# BN_FA - IM B14

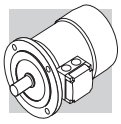



| | Eje | | | | | Brida | | | | | Motor | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D DA** | **E EA** | **DB** | **GA GC** | **F FA** | **M** | **N** | **P** | **S** | **T** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** | **R** | **ES** |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 75 | 60 | 90 | M5 | 2.5 | 121 | 272 | 249 | 119 | 95 | 74 | 80 | 26 | 116 | 5 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 85 | 70 | 105 | M6 | 2.5 | 138 | 310 | 280 | 342 | 108 | 74 | 80 | 68 | 124 | 5 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 100 | 80 | 120 | M6 | 3 | 156 | 346 | 306 | 388 | 119 | 74 | 80 | 83 | 134 | 5 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 115 | 95 | 140 | M8 | 3 | 176 | 409 | 359 | 461 | 133 | 98 | 98 | 95 | 160 | 6 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 195 | 458 | 398 | 521 | 142 | 98 | 98 | 119 | 160 | 6 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 219 | 484 | 424 | 547 | 157 | 98 | 98 | 128 | 198 | 6 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 165 | 130 | 200 | M10 | 4 | 258 | 603 | 523 | 686 | 193 | 118 | 118 | 180 | 200 (1) | 6 |

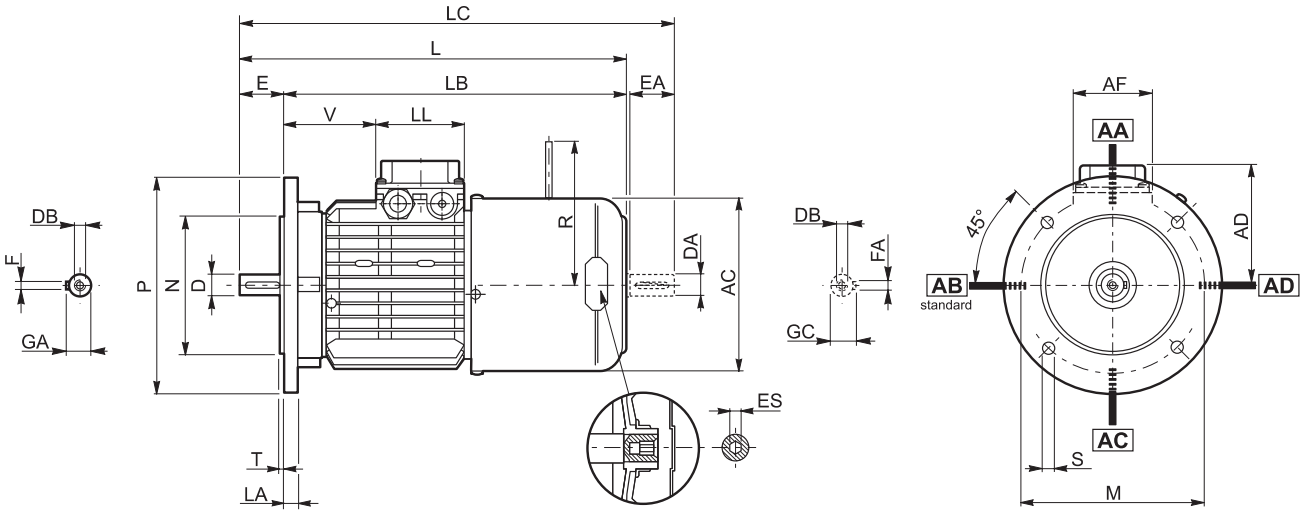
N.B.:
1) Para el freno FA07 la cota R = 217

Para las versiones BN...FA, las dimensiones de la caja de bornes AD, AF, LL, V. son iguales a las del tipo BN...FD.

El alojamiento hexagonal no está presente en la opción PS.



# BN_FA - IM B5



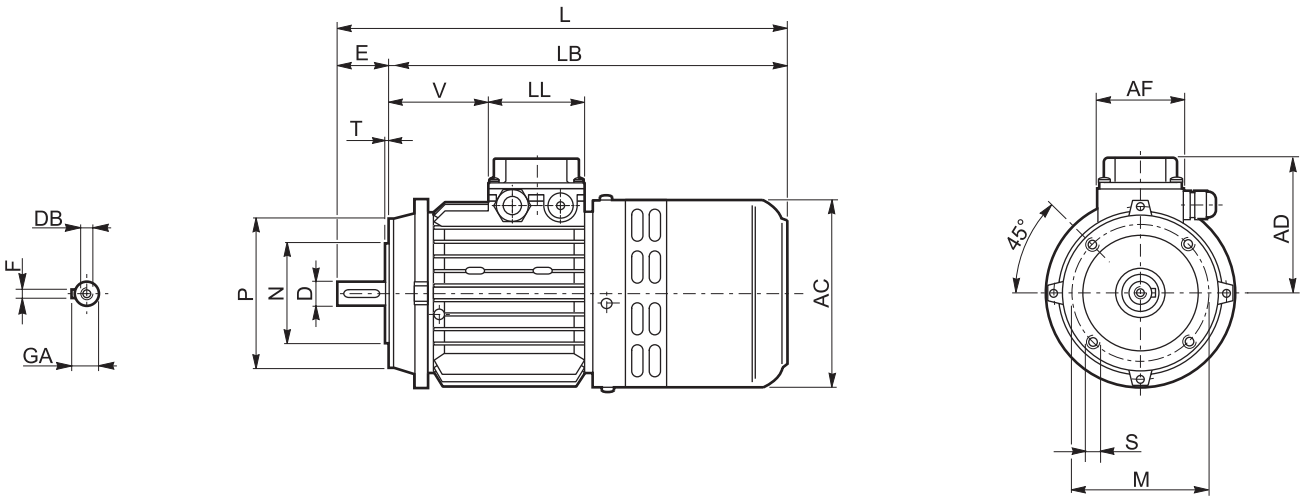

| | Eje | | | | | Brida | | | | | | Motor | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | D<br>DA | E<br>EA | DB | GA<br>GC | F<br>FA | M | N | P | S | T | LA | AC | L | LB | LC | AD | AF | LL | V | R | ES |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 115 | 95 | 140 | 9.5 | 3 | 10 | 121 | 272 | 249 | 297 | 95 | 74 | 80 | 26 | 116 | 5 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 130 | 110 | 160 | 9.5 | 3.5 | 10 | 138 | 310 | 280 | 342 | 108 | 74 | 80 | 68 | 124 | 5 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 156 | 346 | 306 | 388 | 119 | 74 | 80 | 83 | 134 | 5 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 176 | 409 | 359 | 461 | 133 | 98 | 98 | 95 | 160 | 6 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 14 | 195 | 458 | 398 | 521 | 142 | 98 | 98 | 119 | 160 | 6 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 15 | 219 | 484 | 424 | 547 | 157 | 98 | 98 | 128 | 198 | 6 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 265 | 230 | 300 | 14 | 4 | 20 | 258 | 603 | 523 | 686 | 193 | 118 | 118 | 180 | 200 (2) | 6 |
| **BN 160 MR** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 258 | 672 | 562 | 755 | 193 | 118 | 118 | 218 | 217 | 6 |
| **BN 160 M** | 42<br>38 (1) | 110-80<br>(1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 736 | 626 | 820 | 245 | 187 | 187 | 51 | 247 | — |
| **BN 160 L** | 42<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 45<br>41 (1) | 12<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 736 | 626 | 820 | 245 | 187 | 187 | 51 | 247 | — |
| **BN 180 M** | 48<br>38 (1) | 110<br>80 (1) | M16<br>M12 (1) | 51.5<br>41 (1) | 14<br>10 (1) | 300 | 250 | 350 | 18.5 | 5 | 15 | 310 | 780 | 670 | 864 | 245 | 187 | 187 | 51 | 247 | — |

N.B.:
1) Estas dimensiones están referidas a la segunda extremidad del eje
2) Para el freno FA07 la cota R = 217

Las dimensiones AD, AF, LL y V relativas a la caja de bornes de los motores BN..FA con alimentación separada (opción SA) son iguales a las de los motores BN..FD del mismo tamaño.

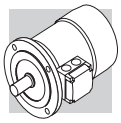
El alojamiento hexagonal no está presente en la opción PS.

# BN_BA - IM B14

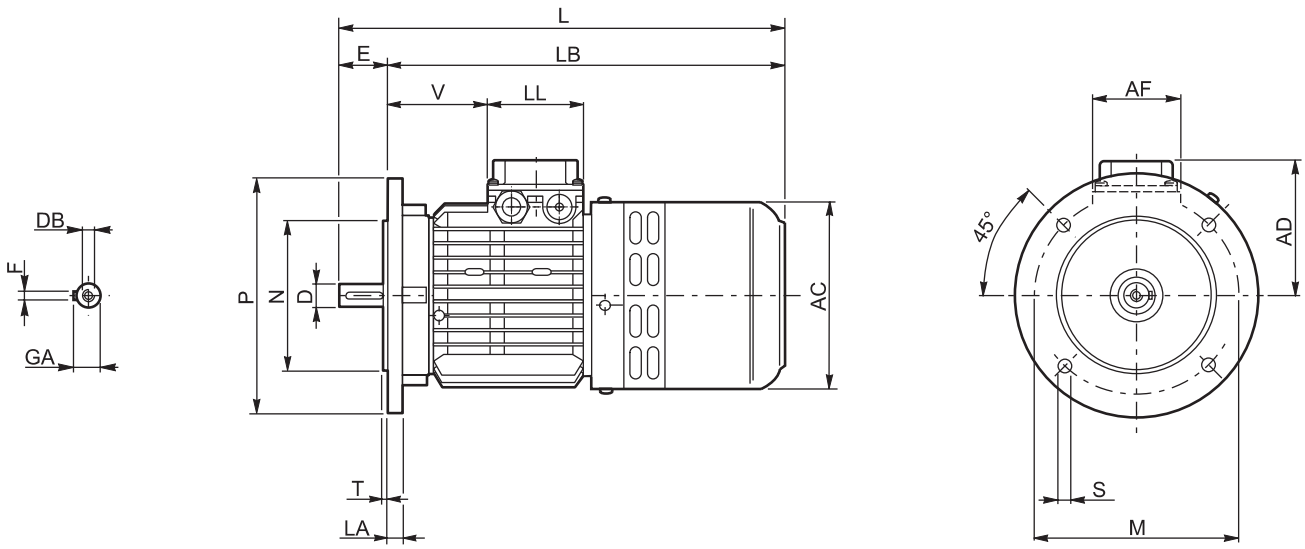



| | Eje | | | | | Brida | | | | | Motor | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D** | **E** | **DB** | **GA** | **F** | **M** | **N** | **P** | **S** | **T** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 75 | 60 | 90 | M5 | 2.5 | 124 | 298 | 275 | 95 | 74 | 80 | 28 | 34 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 85 | 70 | 105 | M6 | 2.5 | 138 | 327 | 297 | 108 | 74 | 80 | 68 | 26 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 100 | 80 | 120 | M6 | 3 | 156 | 372 | 332 | 119 | 74 | 80 | 83 | 37 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 115 | 95 | 140 | M8 | 3 | 176 | 425 | 375 | 133 | 98 | 98 | 95 | 38 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 195 | 477 | 417 | 142 | 98 | 98 | 119 | 44 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 130 | 110 | 160 | M8 | 3.5 | 219 | 500 | 440 | 157 | 98 | 98 | 128 | 50 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 165 | 130 | 200 | M10 | 4 | 258 | 638 | 558 | 193 | 118 | 118 | 180 | 52 |

N.B.:
Las dimensiones AD, AF, LL y V relativas a la caja de bornes de los motores BN..FA con alimentación separada (opción SA) son iguales a las de los motores BN...FD del mismo tamaño.

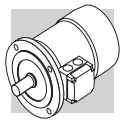


# BN_BA - IM B5

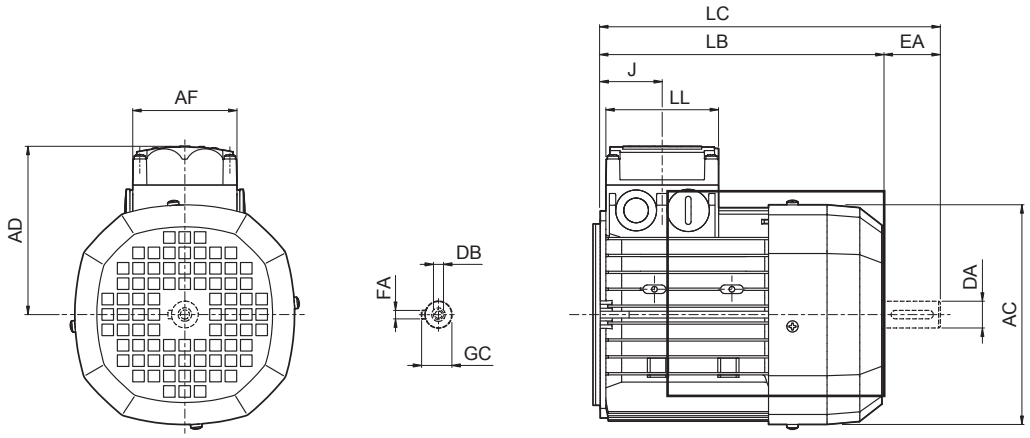



| | Eje | | | | | Brida | | | | | | Motor | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **D** | **E** | **DB** | **GA** | **F** | **M** | **N** | **P** | **S** | **T** | **LA** | **AC** | **L** | **LB** | **LC** | **AD** | **AF** | **LL** | **V** |
| **BN 63** | 11 | 23 | M4 | 12.5 | 4 | 115 | 95 | 140 | 9.5 | 3 | 10 | 124 | 298 | 275 | 95 | 74 | 80 | 28 | 34 |
| **BN 71** | 14 | 30 | M5 | 16 | 5 | 130 | 110 | 160 | 9.5 | 3.5 | 10 | 138 | 327 | 297 | 108 | 74 | 80 | 68 | 26 |
| **BN 80** | 19 | 40 | M6 | 21.5 | 6 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 156 | 372 | 332 | 119 | 74 | 80 | 83 | 37 |
| **BN 90** | 24 | 50 | M8 | 27 | 8 | 165 | 130 | 200 | 11.5 | 3.5 | 11.5 | 176 | 425 | 375 | 133 | 98 | 98 | 95 | 38 |
| **BN 100** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 14 | 195 | 477 | 417 | 142 | 98 | 98 | 119 | 44 |
| **BN 112** | 28 | 60 | M10 | 31 | 8 | 215 | 180 | 250 | 14 | 4 | 15 | 219 | 500 | 440 | 157 | 98 | 98 | 128 | 50 |
| **BN 132** | 38 | 80 | M12 | 41 | 10 | 265 | 230 | 300 | 14 | 4 | 20 | 258 | 638 | 558 | 193 | 118 | 118 | 180 | 52 |

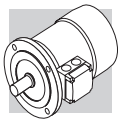
N.B.:
Las dimensiones AD, AF, LL y V relativas a la caja de bornes de los motores BN..FA con alimentación separada (opción SA) son iguales a las de los motores BN...FD del mismo tamaño.



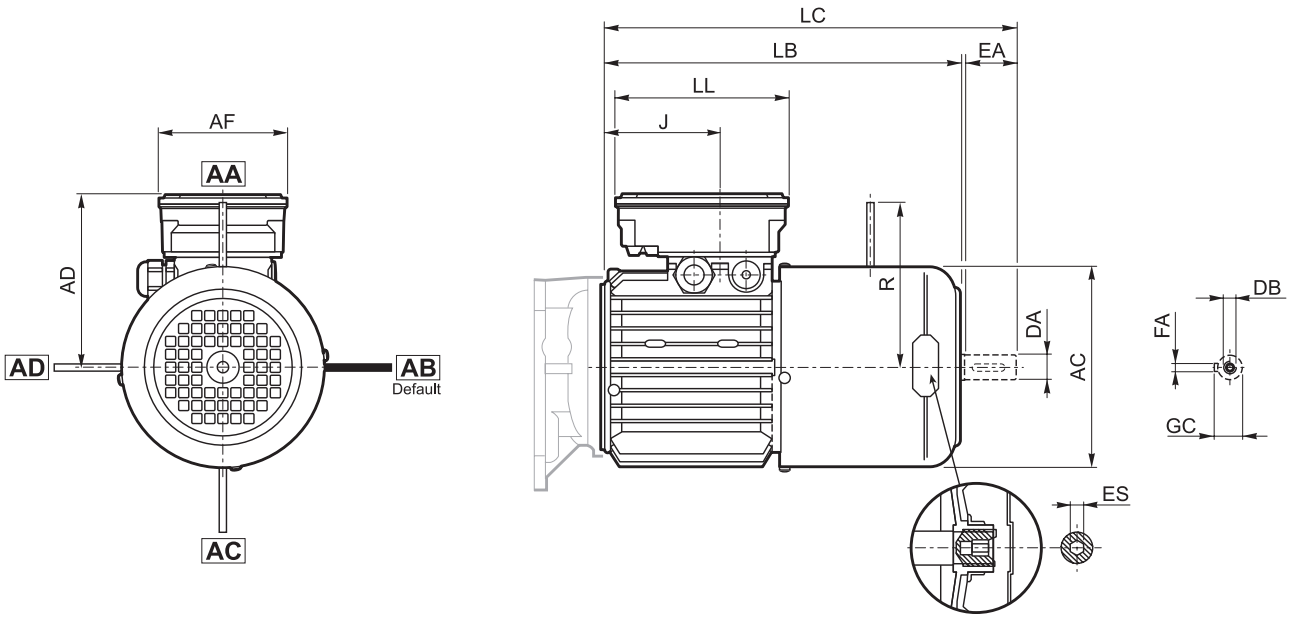
# M




| | Segunda extremidad del eje | | | | | Motor | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **DA** | **EA** | **DB** | **FA** | **GC** | **AC** | **LB** | **LC** | **AF** | **LL** | **J** | **AD** |
| **M 0** | 9 | 20 | M3 | 3 | 10.2 | 110 | 133 | 155 | 74 | 80 | 42 | 91 |
| **M 05** | 11 | 23 | M4 | 4 | 12.5 | 121 | 165 | 191 | 74 | 80 | 48 | 95 |
| **M 1** | 14 | 30 | M5 | 5 | 16 | 138 | 187 | 219 | 74 | 80 | 45 | 108 |
| **M 2 S** | 19 | 40 | M6 | 6 | 21.5 | 156 | 202 | 245 | 74 | 80 | 44 | 119 |
| **M 3 S** | 28 | 60 | M10 | 8 | 31 | 195 | 230 | 293 | 98 | 98 | 53.5 | 142 |
| **M 3 L** | 28 | 60 | M10 | 8 | 31 | 195 | 262 | 325 | 98 | 98 | 53.5 | 142 |
| **M 4** | 38 | 80 | M12 | 10 | 41 | 258 | 361 | 444 | 118 | 118 | 64.5 | 193 |
| **M 4 LC** | 38 | 80 | M12 | 10 | 41 | 258 | 396 | 479 | 118 | 118 | 64.5 | 193 |
| **M 5 S** | 38 | 80 | M12 | 10 | 41 | 310 | 418 | 502 | 187 | 187 | 77 | 245 |
| **M 5 L** | 38 | 80 | M12 | 10 | 41 | 310 | 462 | 546 | 187 | 187 | 77 | 245 |



# M_FD ; M_AFD

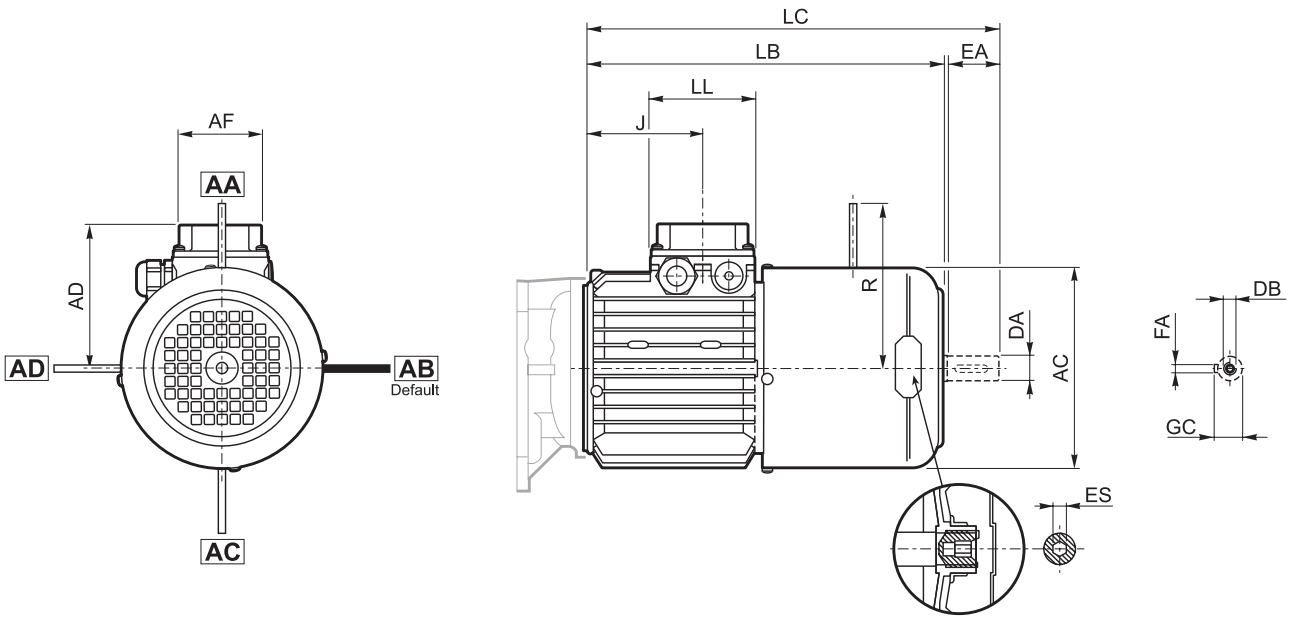



| | Segunda extremidad del eje | | | | | Motor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **DA** | **EA** | **DB** | **FA** | **GC** | **AC** | **LB** | **LC** | **AF** | **LL** | **J** | **AD** | **R** | **ES** |
| **M 05** | 11 | 23 | M4 | 4 | 12.5 | 121 | 231 | 256 | 98 | 133 | 48 | 122 | 96 | 5 |
| **M 1** | 14 | 30 | M5 | 5 | 16 | 138 | 248 | 280 | 98 | 133 | 73 | 135 | 103 | 5 |
| **M 2 S** | 19 | 40 | M6 | 6 | 21.5 | 156 | 272 | 314 | 98 | 133 | 88 | 146 | 129 | 5 |
| **M 3 S** | 28 | 60 | M10 | 8 | 31 | 195 | 326 | 389 | 110 | 165 | 124.5 | 158 | 160 | 6 |
| **M 3 L** | 28 | 60 | M10 | 8 | 31 | 195 | 353 | 416 | 110 | 165 | 124.5 | 158 | 160 | 6 |
| **M 4** | 38 | 80 | M12 | 10 | 41 | 258 | 470 | 553 | 140 | 188 | 185.5 | 210 | 204 (1) | 6 |
| **M 4 LC** | 38 | 80 | M12 | 10 | 41 | 258 | 495 | 578 | 140 | 188 | 64.5 | 210 | 226 | 6 |
| **M 5 S** | 38 | 80 | M12 | 10 | 41 | 310 | 558 | 642 | 187 | 187 | 77 | 245 | 266 | — |
| **M 5 L** | 38 | 80 | M12 | 10 | 41 | 310 | 602 | 686 | 187 | 187 | 77 | 245 | 266 | — |

N.B.:
1) Para el freno FD07 la cota R = 226

El taladro hexagonal ES no está presente en la opción PS.

# M_FA




| | Segunda extremidad del eje | | | | | Motor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **DA** | **EA** | **DB** | **FA** | **GC** | **AC** | **LB** | **LC** | **AF** | **LL** | **J** | **AD** | **R** | **ES** |
| **M 05** | 11 | 23 | M4 | 4 | 12.5 | 121 | 231 | 256 | 74 | 80 | 48 | 95 | 116 | 5 |
| **M 1** | 14 | 30 | M5 | 5 | 16 | 138 | 248 | 280 | 74 | 80 | 73 | 108 | 124 | 5 |
| **M 2 S** | 19 | 40 | M6 | 6 | 21.5 | 156 | 272 | 314 | 74 | 80 | 88 | 119 | 134 | 5 |
| **M 3 S** | 28 | 60 | M10 | 8 | 31 | 195 | 326 | 389 | 98 | 98 | 124.5 | 142 | 160 | 6 |
| **M 3 L** | 28 | 60 | M10 | 8 | 31 | 195 | 353 | 416 | 98 | 98 | 124.5 | 142 | 160 | 6 |
| **M 4** | 38 | 80 | M14 | 10 | 41 | 258 | 470 | 553 | 118 | 118 | 185.5 | 193 | 200 (1) | 6 |
| **M 4 LC** | 38 | 80 | M14 | 10 | 41 | 258 | 495 | 578 | 118 | 118 | 64.5 | 193 | 217 | 6 |
| **M 5 S** | 38 | 80 | M12 | 10 | 41 | 310 | 558 | 642 | 187 | 187 | 77 | 245 | 247 | — |
| **M 5 L** | 38 | 80 | M12 | 10 | 41 | 310 | 602 | 686 | 187 | 187 | 77 | 245 | 247 | — |

N.B.:
1) Para el freno FA07 la cota R = 217

Las dimensiones AD, AF, LL y V relativas a la caja de bornes de los motores M..FA con alimentación separada (opción SA) son iguales a las de los motores BN...FD, AFD del mismo tamaño.

El taladro hexagonal ES no está presente en la opción PS.

## ÍNDICE DE REVISIONES

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| 36 | Añadida disponibilidad de la opción retenes de tipo Taconite. |
| 187, 188 | Actualizado las secciones “Datos técnicos reductor angular 300 R”. |
| 339, 349, 434, 446,448, 450, 452 | Actualizado las secciones “Dimensiones”. |
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