



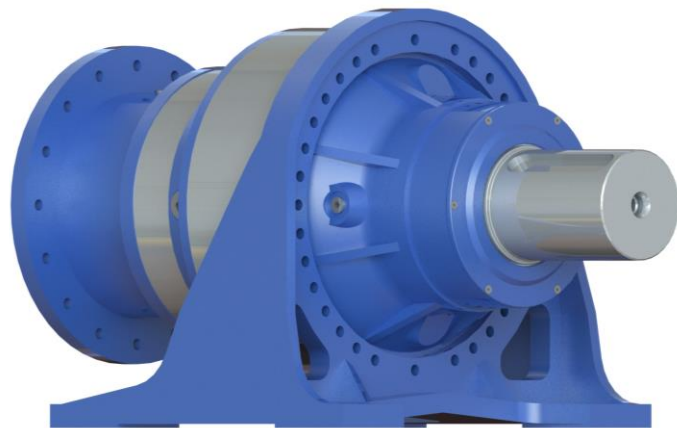
Planetary Gearbox

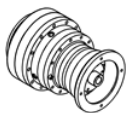
گیربکس خورشیدی

توکا طرح صفاهان

TOOKATARH
SAFAHAN

DESIGNING & ENGINEERING
OF GEAR BOX PRODUCTS





About us

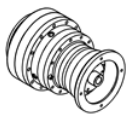
The technical group of TOOKATARH began activates in 1374 in the factory an area of 1500 m² located at AMIRKABIR Esfahan industrial area. TOOKATARH groups caps that arouse interest of customers effectively with technical knowledge experience use of specialists and brilliant empires, progressive machines and convenient technology and product are market for customers, the group has production of planetary gearbox. the company's commitment to global standard in 1384 has been awarded the certificate ISO 9001:2000. consumption products company in iron and steel industry, copper, cement, power plant production factors (brick, lime, rock), and paper industry, carton factory and etc.

درباره توکا طرح

گروه فنی مهندسی توکا طرح در سال ۱۳۷۴ کار خود را در کارخانه ای به مساحت ۱۵۰۰ متر مربع، واقع در منطقه صنعتی امیرکبیر اصفهان آغاز نمود. این مجموعه پس از سال ها تولید گیربکس های هلیکال شافت مستقیم با کوله باری از تجربه و دانش فنی و نیز بهره گیری از متخصصان و کارشناسان کارآزموده، ماشین آلات پیشرفته و تکنولوژی روز اقدام به تولید گیربکس های خورشیدی نیز نموده است و قصد دارد محصولی از هر حیث کارا و مطمئن را به مشتریان خود عرضه نماید.

این شرکت با تعهد به استاندارد های جهانی در سال ۱۳۸۴ موفق به دریافت گواهینامه ISO 9001:2000 نیز شده است. تولیدات شرکت در صنایع آهن و فولاد، مس، سیمان، نیروگاهها، کارخانجات تولید آجر، آهک و سنگ، صنایع کاغذ سازی و کارتن سازی و غیره مورد استفاده قرار می گیرد.





Planetary gearboxes

The gears in these gearboxes consists of at least one sun gear, several planetary gears, a ring gear and a retaining case. Solar gearboxes are used for power transmission and usually reduce the output speed. These gearboxes can be directly or indirectly connected to a variety of motors (electric and hydraulic).

In the above figure, a planetary set with the direction of rotation of the parts is shown.

Advantages of planetary gearbox

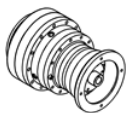
- ✓ Suitable volume relative to other types of gearboxes
- ✓ Solar gearboxes occupy about half the size of other gearboxes needed volume. This is very important in the installation process and the stylish design of the power transmission system.
- ✓ Other advantages of the low lightness of the solar gearboxes are the convenience of replacing the parts according to the appropriate space
- ✓ Lower weight than other types of gearboxes, which is effective in smaller and lighter supporting structures.
- ✓ The proper weight allows direct connection to the drive shaft
- ✓ The higher efficiency, the efficiency of 90 to 95 percent of the solar gearboxes is very significant compared to the low efficiency of other gearboxes (even at a higher than 1:2000 ratio).
- ✓ Long life and easy maintenance
- ✓ The correct implementation of the installation process ensures long life of the gearbox.

گیربکس خورشیدی یا سیاره ای

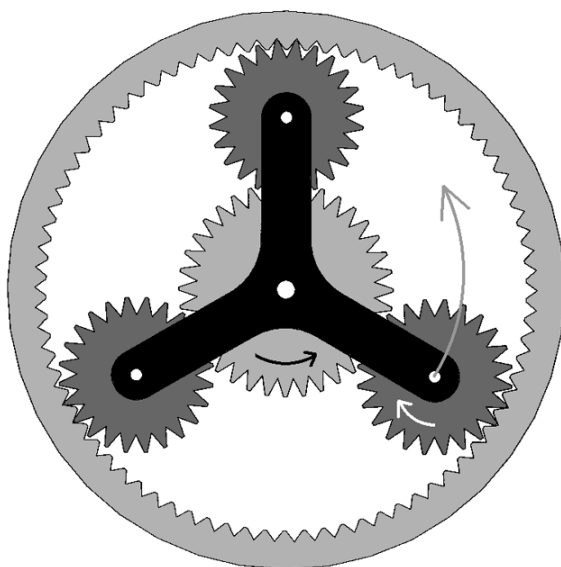
مجموعه ی چرخدنده در این گیربکس ها حداقل از یک چرخدنده خورشیدی ، چند چرخدنده سیاره ای ، یک چرخدنده رینگی و یک محفظه نگهدارنده تشکیل شده است. گیربکس های خورشیدی برای انتقال قدرت و معمولا کاهش دور خروجی نسبت به دور ورودی استفاده می شوند. این گیربکس ها می توانند به طور مستقیم یا غیر مستقیم به انواع موتورها (الکتریکی و هیدرولیکی) متصل شوند. در شکل زیر یک مجموعه سیاره ای به همراه جهت چرخش قطعات نشان داده شده است.

مزایای گیربکس خورشیدی

- ✓ حجم مناسب نسبت به دیگر انواع گیربکس ها
- ✓ گیربکس های خورشیدی تقریبا نصف حجم گیربکس های دیگر، فضا اشغال می کنند. این امر در فرآیند نصب و شکل دادن طراحی سیستم انتقال قدرت بسیار حائز اهمیت است.
- ✓ امتیاز دیگر کم حجم بودن گیربکس های خورشیدی راحتی در تعویض قطعات با توجه به فضای مناسب موجود است.
- ✓ وزن کمتر نسبت به دیگر انواع گیربکس ها که در کوچک تر و سبک تر شدن سازه پشتیبان موثر است.
- ✓ وزن مناسب امکان اتصال مستقیم به محور محرک را فراهم می کند.
- ✓ راندمان بالاتر، راندمان ۹۰ تا ۹۵ درصدی گیربکس های خورشیدی در مقایسه با راندمان پایین برخی گیربکس ها دیگر بسیار قابل توجه است (حتی در نسبت دورهای بالاتر از ۱:۲۰۰۰).
- ✓ عمر طولانی و تعمیر و نگهداری آسان
- ✓ اجرای صحیح فرآیند نصب تضمین کننده عمر طولانی مجموعه است.
- ✓ گشتاور ۶۵۰ الی ۵۰۰۰۰ نیوتن متر
- ✓ سر و صدای کم
- ✓ تنوع دور خروجی ۰٫۲ تا ۵۰۰ دور در دقیقه
- ✓ تحمل بار عمودی و افقی بسیار زیاد بر روی شافت



- ✓ Torque 650 to 500,000 Nm
- ✓ Low noise
- ✓ Output speed from 0.2 to 500 rpm
 - ✓ Tolerance extremely high
- vertical and horizontal load on the shaft

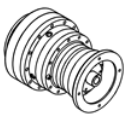


Applications

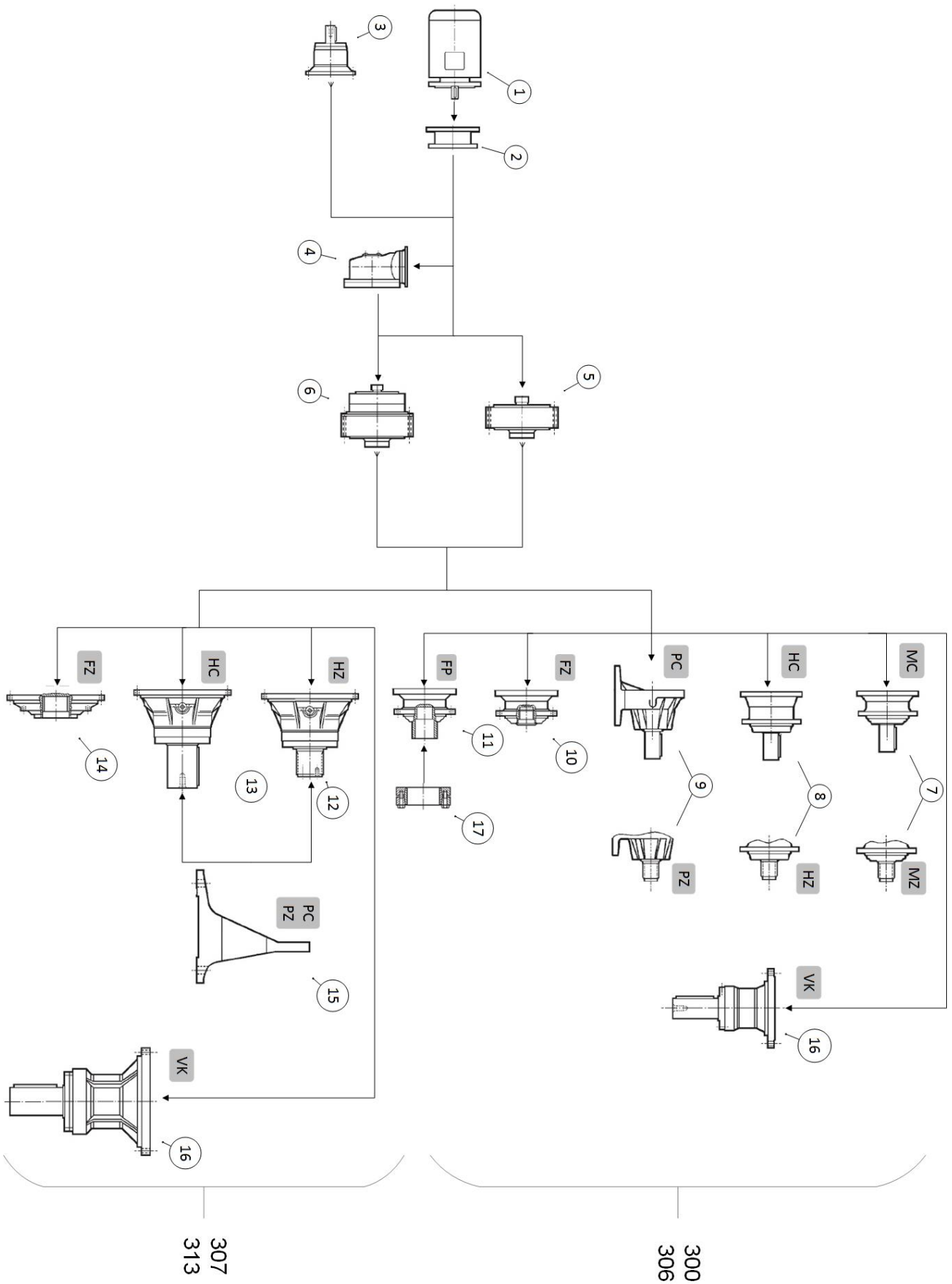
- ❖ Food industry, chemical industry and plastic
- ❖ Turbines and generators
- ❖ Wood, Ceramic and Tile industries
- ❖ Material handling equipment (crane, conveyor ...)
- ❖ Metal forming and packaging equipment
- ❖ Batching machines and crusher

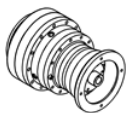
کاربرد

- ❖ صنایع غذایی ، صنایع شیمیایی و پلاستیک
- ❖ توربین ها و ژنراتور ها
- ❖ صنایع چوب، کاشی و سرامیک
- ❖ تجهیزات انتقال مواد (جرثقیل ، نوار نقاله و ...)
- ❖ تجهیزات فرم دهی فلزات و بسته بندی
- ❖ دستگاه های بچینگ و سنگ شکن ها

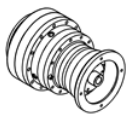


Assembly system





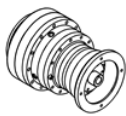
- | | |
|---|---|
| 1) IEC electric motor | (۱) موتور الکتریکی IEC |
| 2) Adapter for electric motor | (۲) آداپتور موتور الکتریکی |
| 3) Solid input shaft | (۳) شافت ورودی |
| 4) Right-angle reduction stage | (۴) استیج کاهش زاویه |
| 5) Single planetary reduction stage | (۵) کاهش یک مرحله ای |
| 6) Two or more planetary reduction stages | (۶) کاهش دو یا چند مرحله ای |
| 7) MC/MZ - Keyed or splined solid shaft output | (۷) MC / MZ - شافت خروجی تک خار یا هزار خار |
| 8) HC/HZ - Keyed or splined heavy duty solid output shaft | (۸) HC / HZ - شافت خروجی سنگین تک خار یا هزار خار |
| 9) PC/PZ - Output with support bracket and keyed or splined solid shaft | (۹) PC / PZ - شافت خروجی پایه دار تک خار یا هزار خار |
| 10) FZ - Splined hollow output shaft | (۱۰) FZ - شافت خروجی توخالی هزار خار |
| 11) FP - Hollow output shaft for shrink disc | (۱۱) FP - شافت خروجی توخالی برای شیرینک دیسک |
| 12) HC - Parallel solid output shaft | (۱۲) HC - شافت خروجی تک خار |
| 13) HZ - Splined solid output shaft | (۱۳) HZ - شافت خروجی هزار خار |
| 14) FZ - Splined hollow output shaft | (۱۴) FZ - شافت خروجی توخالی هزار خار |
| 15) PC - Foot mount | (۱۵) PC - پایه |
| 16) VK - Reinforced output with parallel shaft for stirrers and mixers | (۱۶) VK - خروجی تقویت شده با شافت موازی برای همزن ها و میکسر ها |



SYMBOLS AND UNITS

نماد ها و واحد ها

Symb.		Description	شرح
Ac2	[N]	Calculated thrust load at gearbox output shaft	بار محوری محاسبه شده در شفت خروجی گیربکس
Ar2	[N]	Thrust load at gearbox output shaft	بار محوری در شفت خروجی گیربکس
An2	[N]	Rated thrust load at gearbox output shaft	بار محوری مجاز در شفت خروجی گیربکس
fL		Lifetime factor	ضریب طول عمر
fm		Adjusting factor	فاکتور تنظیم کننده
fn1, fn2		Speed factor referred to input and output shaft loading	فاکتور سرعت در مواجهه با بار ورودی و خروجی محور
fs		Service factor	فاکتور خدمات
ft		Thermal factor	فاکتور حرارتی
fh1, fh2		Load corrective factor on shafts	فاکتور اصلاح بار در شفت
h	[h]	Lifetime in hours	طول عمر در ساعت
i		Gear ratio	نسبت دنده
Ka		Axial load duty factor	فاکتور وظیفه بار محوری
Kr		Radial load factor	فاکتور بار شعاعی
l		Intermittence factor	عامل وقفه
Mb	[Nm]	Rated brake torque	نرخ گشتاور ترمز
Mc2	[Nm]	Calculated output torque	گشتاور خروجی محاسبه شده
M2	[Nm]	Torque delivered to output shaft	گشتاور تحویل داده شده به شفت خروجی
Mn2	[Nm]	Gearbox rated output torque	گشتاور خروجی مجاز گیربکس
M2max	[Nm]	Gearbox max. output torque	حداکثر گشتاور خروجی گیربکس
Mr1	[Nm]	Required torque at input shaft	گشتاور مورد نیاز در شفت ورودی
Mr2	[Nm]	Required torque at output shaft	گشتاور مورد نیاز در شفت خروجی
n1	[min-1]	Speed of input shaft	سرعت شفت ورودی
n2	[min-1]	Speed of output shaft	سرعت شفت خروجی
P1	[kW]	Max. power that can be applied to input shaft	حداکثر قدرتی که می تواند به شفت ورودی اعمال شود
P2	[kW]	Power delivered to output shaft	قدرت تحویلی به شفت خروجی
Pn	[kW]	Motor rated power	قدرت موتور مجاز
Pr1	[kW]	Required input power	قدرت ورودی مورد نیاز
Pr2	[kW]	Output power at n2 max	قدرت خروجی در حداکثر دور خروجی
Ps	[kW]	Power to be dissipated	توان منجر به تخریب
Pt	[kW]	Gearbox thermal capacity	ظرفیت حرارتی گیربکس
Rc1	[N]	Calculated radial load at gearbox input shaft	بار شعاعی محاسبه شده در شفت ورودی گیربکس
Rc2	[N]	Calculated radial load at gearbox output shaft	بار شعاعی محاسبه شده در شفت خروجی گیربکس
Rn1, Rn2	[N]	Rated radial load at shaft mid-point, input and output	بار شعاعی در محور شفت، ورودی و خروجی
Rx2	[N]	Admissible overhung load for forces applying off the shaft midpoint	بارهای باربری مجاز برای نیروهایی که از نقطه اوج شفت استفاده می کنند
S		Safety factor	ضریب ایمنی
ta	[°C]	Ambient temperature	دمای محیط
X	[mm]	Load application distance from shaft shoulder	فاصله بار کاربردی از شانه شفت
d		Dynamic efficiency	کارایی دینامیکی
Z		Starts per hour	استارت ها در ساعت



معرفی پارامتر های مورد نیاز

Introduction of required parameters

1. Output torque

- Gearbox delivered torque M_2 [Nm]

This is the net torque delivered to the output shaft, with installed power P_n , safety factor S , which will yield a theoretical lifetime of 10000 hours. This torque value takes gearbox efficiency into consideration.

- Rated output torque M_{n2} [Nm]

This is the torque output the gearbox can deliver safely, based on:

- uniform loading and safety factor $S=1$

- The theoretical lifetime of 10,000 hours, the M_{n2} values are in accordance with production standards.

- Maximum torque M_{2max} [Nm]

This is the output torque that the gearbox can withstand under static or almost static conditions. It is generally meant as a momentary peak load or starting- up torque under load. The values in the tables are valid only in versions with output splined shaft.

- Required torque M_{r2} [Nm]

The torque drawn by the application. It must always be equal to or less than rated output torque M_{n2} for the gearbox under study.

- Calculated torque M_{c2} [Nm]

Computational torque value to be used when selecting the gearbox, considering required torque M_{r2} and service factor f_s . It is obtained through the equation:

$$M_{c2} = M_{r2} \times f_s \leq M_{n2}$$

۱. گشتاور خروجی

- گشتاور تحویلی گیربکس M_2 [Nm]

این گشتاور خالصی است که به شفت خروجی، با قدرت P_n نصب شده، فاکتور ایمنی S و طول عمر نظری آن ۱۰۰۰۰ ساعت خواهد بود، تحویل داده می شود. این مقدار گشتاور در بهره وری گیربکس باید در نظر گرفته شود.

- گشتاور خروجی مجاز M_{n2} [Nm]

این خروجی گشتاور گیربکس می تواند با خیال راحت بر اساس:

- بارگذاری یکنواخت و با فاکتور ایمنی $S = 1$

- طول عمر تئوری ۱۰۰۰۰ ساعت، مقادیر M_{n2} مطابق با استانداردهای تولید می باشد.

- حداکثر گشتاور M_{2max} [Nm]

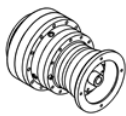
این گشتاور خروجی است که گیربکس می تواند در شرایط ایستا یا تقریباً ایستا مقاومت کند. به طور کلی به معنای حداکثر بار لحظه ای یا گشتاور راه اندازی تحت بار است. مقادیر در جداول فقط در نسخه های با شفت خروجی هزارخار معتبر است.

- گشتاور مورد نیاز M_{r2} [Nm]

گشتاور کاربردی در نظر گرفته شده. این باید همیشه برابر یا کمتر از گشتاور خروجی مجاز M_{n2} برای گیربکس مورد نظر باشد.

- گشتاور محاسبه شده M_{c2} [Nm]

مقدار گشتاور محاسباتی که به هنگام انتخاب گیربکس استفاده می شود، با توجه به گشتاور مورد نیاز M_{r2} و فاکتور خدمات f_s . از طریق معادله زیر به دست آمده است:



2. POWER

• Rated input power P_{n1} [kW]
 P_{n1} is the maximum power that can be safely applied to the gearbox when the same is operated:

- at a $n1$ drive speed
- under a safety factor $S=1$
- yielding a theoretical lifetime of 10000 hours.

• Output power P_2 [kW]

This value is the net power delivered to the output shaft. It can be calculated through the following formulas:

$$P_2 = P_1 \times \eta_d$$

$$P = \frac{M_{r2} \times n_2}{9550}$$

Efficiency values are listed in table (A2).

3. THERMAL CAPACITY P_t [kW]

This parameter is linked to the gearbox thermal limit.

Values for the thermal capacity are listed within the rating charts of gearboxes and gearmotors and represent the mechanical power that can be transmitted continuously at an input speed $n1$ and at an ambient temperature of 20°C , without the lubricant exceeding the temperature of $85-90^\circ\text{C}$ and the gear case the temperature of $75-80^\circ\text{C}$, without the use a supplementary cooling system.

When the duty cycle is formed by short operating periods and rest time is long enough for the unit to cool down, the thermal capacity is hardly significant and it may be omitted from calculation. Should the ambient temperature be different from 20°C

۲. توان

• توان ورودی مجاز P_{n1} [kW]

P_{n1} حداکثر توانی است که می توان به صورت ایمن به گیربکس اعمال کرد، وقتی که همزمان به صورت زیر راه اندازی می شود:

- در سرعت درایو $n1$

- تحت فاکتور ایمنی $S = 1$

- ارزیابی در یک طول عمر تئوری ۱۰۰۰۰ ساعت

• توان خروجی P_2 [kW]

این مقدار توان خالصی است که به شافت خروجی تحویل داده می شود. این را می توان از طریق فرمول های زیر محاسبه کرد:

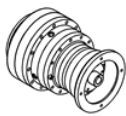
مقادیر کارایی در جدول (A2) ذکر شده است.

۳. ظرفیت گرمایشی P_t [kW]

این پارامتر به محدودیت حرارتی گیربکس مرتبط است. مقادیر ظرفیت حرارتی در نمودارهای طبقه بندی شده گیربکس ها ذکر شده و نشان دهنده قدرت مکانیکی است که می تواند به طور مداوم با سرعت ورودی $n1$ و در دمای محیط 20°C درجه سانتیگراد، بدون روان کننده بیش از دمای $85-90^\circ\text{C}$ سانتی گراد و برای دنده دمای $75-80^\circ\text{C}$ درجه سانتیگراد، بدون استفاده از یک سیستم خنک کننده مکمل استفاده شود.

زمانی که سیکل کاری از فعالیت های کوتاه مدت متناوب و زمان استراحت به اندازه کافی بلند تا واحد خنک شود تشکیل شده، ظرفیت حرارتی به سختی قابل توجه است و ممکن است از محاسبه حذف شود. اگر دمای محیط از 20°C درجه سانتیگراد متفاوت باشد و یا وظیفه متناوب باشد، ظرفیت حرارتی P_t باید از طریق فاکتور حرارتی f_t مطابق جدول ذکر شده (A1) تنظیم شود.

در نهایت، اطمینان حاصل کنید که شرایط زیر همیشه برقرار است:



and/or duty be intermittent, the thermal capacity P_t is to be adjusted through thermal factor f_t as listed in table (A1).

Finally, make sure that the following condition is always satisfied:

$$P_{r1} \leq P_t \times f_t$$

A1جدول

ta [°C]	Continuous duty کارکرد پیوسته	ft			
		کارکرد متناوب Intermittent duty			
		Cyclic duration factor فاکتور طول سیکل			
		80%	60%	40%	20%
10	1.2	1.3	1.6	1.8	2
20	1	1.1	1.3	1.5	1.7
30	0.9	1	1.2	1.3	1.5
40	0.7	0.8	0.9	1	1.2
50	0.5	0.6	0.7	0.8	0.9

Cyclic duration factor is the relationship of operating time under load t_f to total cycle time ($t_f + t_r$, where t_r stands for time at rest), expressed as a percentage.

فاکتور طول سیکل که رابطه زمان عملیاتی زیر بار t_f به زمان کل چرخه ($t_f + t_r$ ، که t_r زمان استراحت گیربکس می باشد) است، که به صورت درصد تعریف می شود.

$$l = \frac{t_f}{t_f + t_r} \times 100$$

4. EFFICIENCY

- Dynamic efficiency [η_d]

The parameter is defined as the relationship of the net power delivered to the output shaft P2 to the power applied to the input shaft P1:

$$\eta_d = \frac{P_1}{P_2}$$

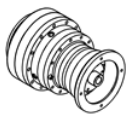
Indicative values for the efficiency are listed in the table A2.

۴. بازده

- بازده دینامیکی

پارامتری به عنوان رابطه توان خالص، که به شافت خروجی P_2 تحویل داده شده، به قدرت اعمال شده به شافت ورودی P_1 تعریف می شود:

مقادیر شاخص برای بازده در نمودار A2 ذکر شده است.



جدول A2

No. of reductions تعداد کاهش	Planetary خورشیدی
1	0.97
2	0.94
3	0.91
4	0.88

5. GEAR RATIO « i »

It is defined as the relationship of the speed the input shaft is driven at and the speed delivered at the output shaft of a gearbox.

$$i = \frac{n_1}{n_2}$$

6. OPERATING SPEED

• Input speed n_1 [RPM]

The speed the gearbox is driven at. The value is coincident with the motor speed if this is directly connected to the gearbox.

In case the gearbox is driven through an external transmission, the gearbox input speed is the speed of the motor divided by the reduction of the external transmission.

In this case, it is recommended that the input speed be lower than 1400 RPM.

Input speed should never exceed the value listed in the gearbox rating chart.

• Output speed n_2 [RPM]

It is calculated from drive speed n_1 and gear ratio i , as per the following equation:

$$n_2 = \frac{n_1}{i}$$

۵. نسبت گیربکس i

این تعریف به عنوان رابطه سرعت شافت ورودی به سرعت تحویلی در شافت خروجی یک گیربکس است.

۶. سرعت عملیاتی

• سرعت ورودی گیربکس

سرعت گیربکس وابسته به راننده است.

اگر موتور به طور مستقیم به گیربکس متصل شود،

سرعت گیربکس با موتور همخوانی دارد.

در صورتی که گیربکس از طریق انتقال خارجی هدایت

شود، سرعت ورودی گیربکس، سرعت موتور به کاهش انتقال

خارجی می باشد.

در این مورد، توصیه می شود که سرعت ورودی کمتر از

۱۴۰۰ دور بر دقیقه باشد.

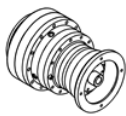
سرعت ورودی نباید بیش از مقدار ذکر شده در جدول

مجاز گیربکس باشد.

• سرعت خروجی گیربکس

این مقدار از سرعت ورودی n_1 به نسبت دنده i محاسبه

می شود، همانطور که در معادله زیر است:



SERVICE FACTOR [fs]

عامل خدمات [fs]

A parameter representing the severity of the application. This factor takes into account, although approximately, the type of load the gearbox operates with, the specific duty as well as the operating daily hours. The table (A3) is of reference when determining the appropriate service factor.

یک پارامتر که نشان دهنده شدت برنامه است. این عامل، اگر چه تقریباً، نوع بار بار گیربکس با کار، وظیفه خاص و همچنین ساعات های کاری روزانه را در نظر می گیرد. جدول (A3) هنگام تعیین فاکتور خدمات مناسب مرجع است.

جدول (A3)

Service factor (fs)						
فاکتور خدمات						
Type of load	Number of starts/hour تعداد استارت در ساعت Z	Total operating hours (h) مجموع ساعات کاری				
		≤5000	10000	15000	25000	50000
		Daily operating hours (h) ساعات کاری روزانه				
		h < 10	4 < h < 8	8 < h < 12	12 < h < 16	16 < h < 24
Uniform load	Z < 10	0.9	1	1.15	1.3	1.6
	10 < Z < 30	0.95	1.15	1.3	1.5	1.8
	30 < Z < 100	1	1.25	1.45	1.6	2
Moderate shock load	Z < 10	1	1.25	1.45	1.6	2
	10 < Z < 30	1.1	1.4	1.6	1.8	2.2
	30 < Z < 100	1.2	1.5	1.7	2	2.4
Heavy shock load	Z < 10	1.2	1.5	1.7	2	2.4
	10 < Z < 30	1.3	1.6	1.8	2.1	2.6
	30 < Z < 100	1.4	1.75	2	2.3	2.8

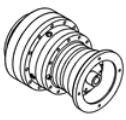
SAFETY FACTOR [S]

ضریب ایمنی [S]

This is the relationship of the gear unit rated power to the power of the electric motor actually driving the unit.

این رابطه قدرت مجاز گیربکس به قدرت موتور الکتریکی در واقع همان راننده است.

$$S = \frac{P_{n1}}{P_1}$$



Selecting a gearmotor

Consider the specific application and establish on beforehand:

- a) service factor f_s according to type of load, number of starts per hour and expected lifetime (tab. A3.);
- b) Required drive power:

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta_d}$$

Table (A2) lists the indicative values of efficiency η_d for the different types of gearboxes.

- c) After required power P_{r1} and output speed n_2 are known, locate the gearmotor rating charts and select the one relevant to normalized power P_n equal to or greater than P_{r1} :

$$P_n \geq P_{r1}$$

For the output speed n_2 , or closest to, select the gearmotor that yields a safety factor S meeting the following condition:

$$S \geq f_s$$

Selecting a gearbox

Examine the application and establish:

- a) service factor f_s according to type of load, number of starts per hour and required lifetime (tab. A4);
- b) Determine calculated torque according to required output torque M_{r2} as follows:

$$M_{c2} = M_{r2} \times f_s$$

انتخاب یک گیرموتور

کاربرد خاصی را در نظر گرفته و قبل از آن ایجاد کنید:

- (a) فاکتور خدمات f_s با توجه به نوع بار، تعداد شروع در ساعت و طول عمر مورد انتظار از جدول A3 بخوانید.
- (b) قدرت درایو مورد نیاز:

در جدول (A2) لیست مقادیر بازده η_d برای انواع مختلف گیربکس مشخص شده است.

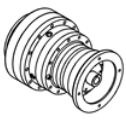
- (c) پس از نیروی مورد نیاز P_{r1} و سرعت خروجی n_2 که شناخته شده است، به جدول گیربکس ها رفته و یک مورد مربوط به توان P_n برابر یا بیشتر از P_{r1} را انتخاب کنید:

برای سرعت خروجی n_2 ، یا نزدیکترین به آن، گیرموتوری را انتخاب کنید که فاکتور ایمنی S مطابق با شرایط زیر باشد:

انتخاب یک گیربکس

بررسی کاربرد و ایجاد آن:

- (a) فاکتور خدمات f_s با توجه به نوع بار، تعداد شروع در ساعت و طول عمر مورد انتظار از جدول A3 بخوانید.
- (b) گشتاور محاسبه شده را با توجه به گشتاور خروجی مورد نظر M_{r2} به صورت زیر تعیین کنید:



Determine gear ratio from required output speed n_2 and drive speed n_1 :

$$i = \frac{n_1}{n_2}$$

Once M_{c2} and i are determined, locate the gearbox rating chart for the drive speed n_1 and select a gearbox featuring the ratio i nearest to calculated ratio that also satisfies the condition:

$$M_{n2} \geq M_{c2}$$

VERIFICATIONS

After the gearbox has been selected check the following:

a) Thermal capacity

Make sure that the thermal capacity of the gearbox is equal to or greater than the mechanical power required by the application, as per equation at page 6. If this is not the case provide a supplementary cooling system (see chap. 29) or select a larger gearbox.

b) Maximum torque

Make sure that neither the momentary peak torque nor the starting torque under load ever exceed the M_{2max} value that the gearbox is rated for (see figure).

مقدار نسبت گیربکس را از سرعت خروجی مورد نیاز n_2 و سرعت درایو n_1 تعیین کنید:

هنگامی که M_{c2} و i تعیین می شود، به جدول انتخاب گیربکس سرعت درایو n_1 رفته و یک گیربکس با نسبت نزدیکترین به محاسبه را انتخاب می کنیم که همچنین شرایط را رعایت کند:

تاییدیه

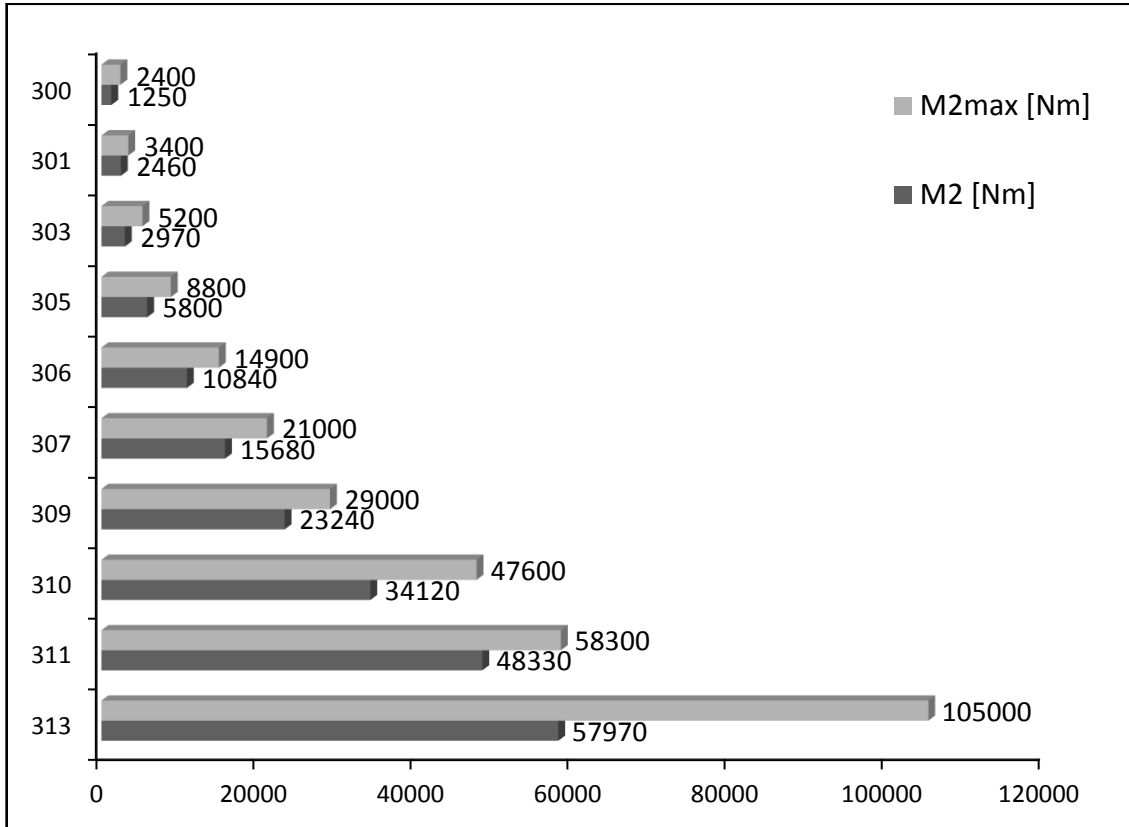
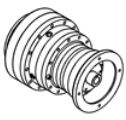
پس از انتخاب گیربکس، موارد زیر را بررسی کنید:

(a) ظرفیت گرمایی

اطمینان حاصل کنید که ظرفیت حرارتی گیربکس برابر یا بیشتر از قدرت مکانیکی مورد نیاز کاربرد باشد، همانطور که در معادله صفحه ۶ آمده. اگر این مورد نیست، یک سیستم خنک کننده مکمل فراهم شود یا یک گیربکس بزرگتر را انتخاب کنید.

(b) بیشترین گشتاور

اطمینان حاصل کنید که نه گشتاور اوج لحظه ای و نه گشتاور شروع تحت بار از مقدار M_{2max} که برای گیربکس مجاز است فراتر نرود (به نمودار نگاه کنید).



Overhung load

Examine the application and establish:

overhung load applying to input and/or output shaft through the following formula:

$$R_{c1-2} = \frac{2000 \times M_{c1-2} \times K_r}{d}$$

R_{c1-2} overhung load (N)

1 = for input shaft

2 = for output shaft

M_{r1-2} Torque at the shaft (Nm)

d P.C.D (mm) of transmission element (sprocket, gear, pulley, etc.)

$K_r = 1$ chain transmission

$K_r = 1.25$ gear transmission

$K_r = 1.5-2.5$ V-belt transmission

بار معلق

کاربرد را بررسی و ایجاد کنید:

بار معلق وارده به شافت ورودی و / یا خروجی از طریق

فرمول زیر محاسبه می شود:

R_{c1-2} بار معلق (N)

۱ = برای شفت ورودی

۲ = برای شفت خروجی

M_{r1-2} گشتاور در شافت (Nm)

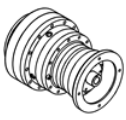
d . P.C.D (میلی متر) عنصر انتقال (زنجیر، چرخ دنده،

قرقره و غیره)

$K_r = 1$ انتقال با زنجیره

$K_r = 1.25$ انتقال با دنده

$K_r = 1.5-2.5$ V انتقال با تسمه



I. output shaft

Define the trust load position X onto shaft. Check this value with the chart indicating the load R_{x2} bearable by the gearbox. Check that the following is satisfied:

$$R_{c2} \leq R_{x2} \times fh$$

a) input shaft

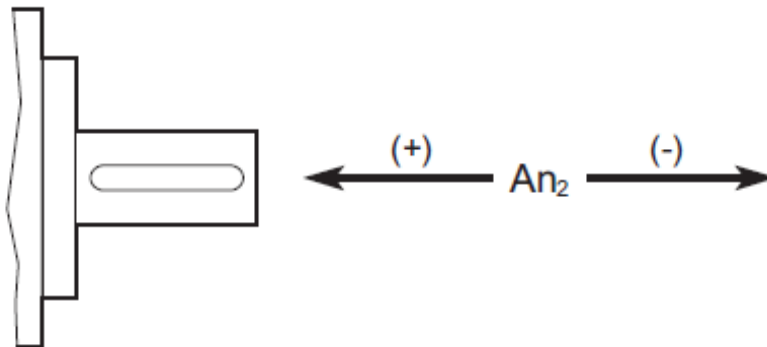
Define the trust load position X onto shaft. Check this value with the chart indicating the load R_{x1} bearable by the gearbox. Check that the following is satisfied:

$$R_{c1} \leq R_{x1} \times fh$$

Thrust loads

Check the thrust load, when exerted onto the output shaft, as specified for the radial load. The following should be satisfied:

$$\pm A_{c2} \leq \pm A_{n2} \times fh_2$$



SELECTING THE MOTOR

a) Through the formula here after calculate the power required to gearbox input shaft. The following parameters must be determined on beforehand:

- required torque M_{r2}
- output speed n_2
- efficiency η_d

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta_d}$$

I. شافت خروجی

تعریف موقعیت بار محوری X بر روی شافت. این مقدار را با جدول که R_{x2} بار قابل تحمل گیربکس است چک می کنیم. از اجرای موارد زیر اطمینان حاصل کنید:

II. شافت ورودی

موقعیت بار محوری X بر روی شافت را تعیین کنید. این مقدار را با جدول که R_{x1} بار قابل تحمل گیربکس است چک می کنیم. از اجرای موارد زیر اطمینان حاصل کنید:

بار محوری

هنگام بارگذاری بر روی محور خروجی، همانطور که برای بار شعاعی مشخص شده است، بار محوری را باید بررسی کنید. از حصول شرط زیر اطمینان حاصل کنید:

انتخاب موتور

a) از طریق فرمول زیر توان مورد نیاز برای شافت ورودی گیربکس را محاسبه می کنیم. پارامترهای زیر باید قبل از آن مشخص شوند:

- گشتاور مورد نیاز M_{r2}
- سرعت خروجی n_2
- بهره وری η_d

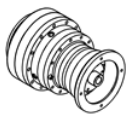


Table (A2) lists the efficiency values η_d for the various types of gearboxes.

- i. select a motor that is sufficiently rated, as per the following condition:

$$P_n \geq P_{r1}$$

INSTALLATION

Observing a few rules for correct installation is essential to the reliable and proper operation of the gearbox. The rules set out here are intended as a preliminary guide to selecting gearbox. Following is a brief outline of installation rules:

i. Fastening

Place the gearbox on a surface providing adequate rigidity. Mating surfaces should be machined and flat.

This applies specially to flange-mounted gearboxes with splined hollow output shafts.

In applications that involve high radial loads at the output end, flange mounting is recommended for some gearboxes as this mounting pattern benefits from the double pilot diameters provided on these gearboxes.

Make sure the gearbox is suitable for the required mounting position.

Use bolts of grade 8.8 or greater to secure the gearbox. Tighten the bolts to the rated values specified in the relevant charts. With transmitted torque greater than or equal to 70% of the given M_{2max} , and with frequent reversals, use bolts with minimum grade 10.9. Some gearboxes can be fastened using both bolts and pins. If a pin is used, the portion of the pin inserted into the structure the gearbox is being installed to should be at least 1.5 times its diameter.

جدول (A2) مقادیر بازده η_d برای انواع مختلف گیربکس ها را فهرست می کند.
b) یک موتور را انتخاب کنید که در آن شرط زیر اجرا شود:

نصب

رعایت چند قاعده برای نصب صحیح و عملکرد قابل اطمینان و مناسب گیربکس ضروری است. قوانین مندرج در اینجا به عنوان راهنمایی اولیه برای انتخاب گیربکس می باشد. در زیر شرح مختصری از قوانین نصب است:

i. بست

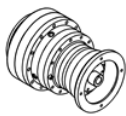
گیربکس را در یک سطح با استحکام کافی قرار داده. سطوحی که با گیربکس تماس مستقیم دارند باید ماشینکاری شده و مسطح باشند.

این به ویژه برای گیربکس های هالو شافت هزار خار فلنچدار صادق می باشد.

در کاربرد هایی که دارای بارهای شعاعی بالایی در خروجی هستند، برای برخی از گیربکس ها، نصب فلنچ توصیه می شود، زیرا این الگوی نصب از دو قطر دوگانه در این گیربکس ها استفاده می کند.

اطمینان حاصل کنید که گیربکس برای موقعیت نصب مورد نیاز مناسب است.

از پیچ و مهره های با درجه ۸،۸ یا بیشتر برای ایمن کردن گیربکس استفاده کنید. پیچ ها را به مقادیر مشخص شده در جدول مربوطه سفت کنید. برای گشتاور های بزرگتر یا مساوی ۷۰٪ از M_{2max} داده شده و با معکوس کردن دور مکرر، از پیچ و مهره با حداقل درجه ۱۰،۹ استفاده شود. برخی از گیربکس ها می توانند با استفاده از هر دوی پیچ و پین بسته شوند. اگر از پین استفاده شود، قسمت پین وارد شده به ساختار گیربکس نصب شده باید حداقل ۱،۵ برابر قطر آن باشد.



ii. Connections

When fitting transmission elements onto the gearbox do not tap them with hammers or similar tools. To slide these parts in, use the service screws and taps provided at the shaft ends. Be sure to clean off any grease or rust preventative from the shafts before fitting any parts.

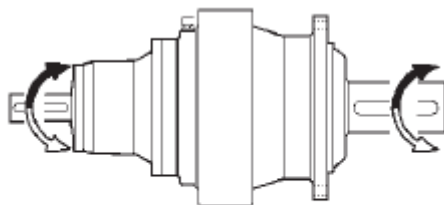
Direction of rotation Before wiring the motor please note the input/output shaft arrangement, as described in the diagram here after:

ii. اتصالات

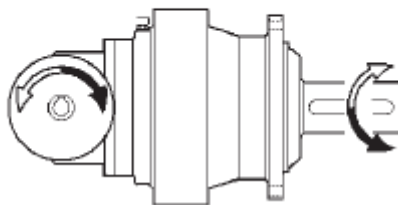
هنگامیکه اتصالات انتقال را روی گیربکس قرار دهید، آنها را با چکش یا ابزار مشابهی متصل نکنید. برای کشیدن این قسمت ها، از پیچ ها و خزینه های ارائه شده روی شافت استفاده کنید. قبل از نصب هر بخش، مطمئن شوید که گریس یا زنگ زدگی را از روی شافت تمیز کرده باشید.

لطفا به جهت چرخش قبل از سیم کشی موتور برای شافت ورودی / خروجی، همانطور که در شکل زیر شرح داده شده توجه داشته باشید:

In line (L)



Right angle (R)

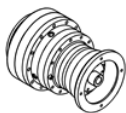


iii. Lubrication

Prior to commissioning, fill the gearbox with the recommended type and quantity of oil (see: Lubrication (prior to start-up)). The level is to be checked through the appropriate plug, or sight glass, each gearbox is provided with, and located according to the mounting position originally specified.

iii. روانکاری

قبل از راه اندازی، گیربکس را با نوع و مقدار توصیه شده روغن پر کنید (به روانکاری (در زمان راه اندازی) مراجعه شود). سطح باید از طریق درپوش مناسب یا شیشه بینایی، برای هر گیربکس با توجه به موقعیت نصب شده که باید در ابتدا مشخص شده باشد، مورد بررسی قرار گیرد.



MAINTENANCE

Check the tightness of mounting bolts after the initial 50 hours of operation. Change the oil first after 100-150 hours operation.

Subsequently, change the oil every 2000 - 3000 hours operation, depending on the application. Alternatively change oil once a year.

However, oil level should be checked at regular intervals and topped up as required.

Check monthly if unit operates under intermittent duty, more frequently if duty is continuous.

نگهداری

بعد از ۵۰ ساعت اول کاری، سفتی پیچ و مهره های نصب را بررسی کنید. برای اولین بار بعد از ۱۰۰-۱۵۰ ساعت، روغن را تعویض کنید.

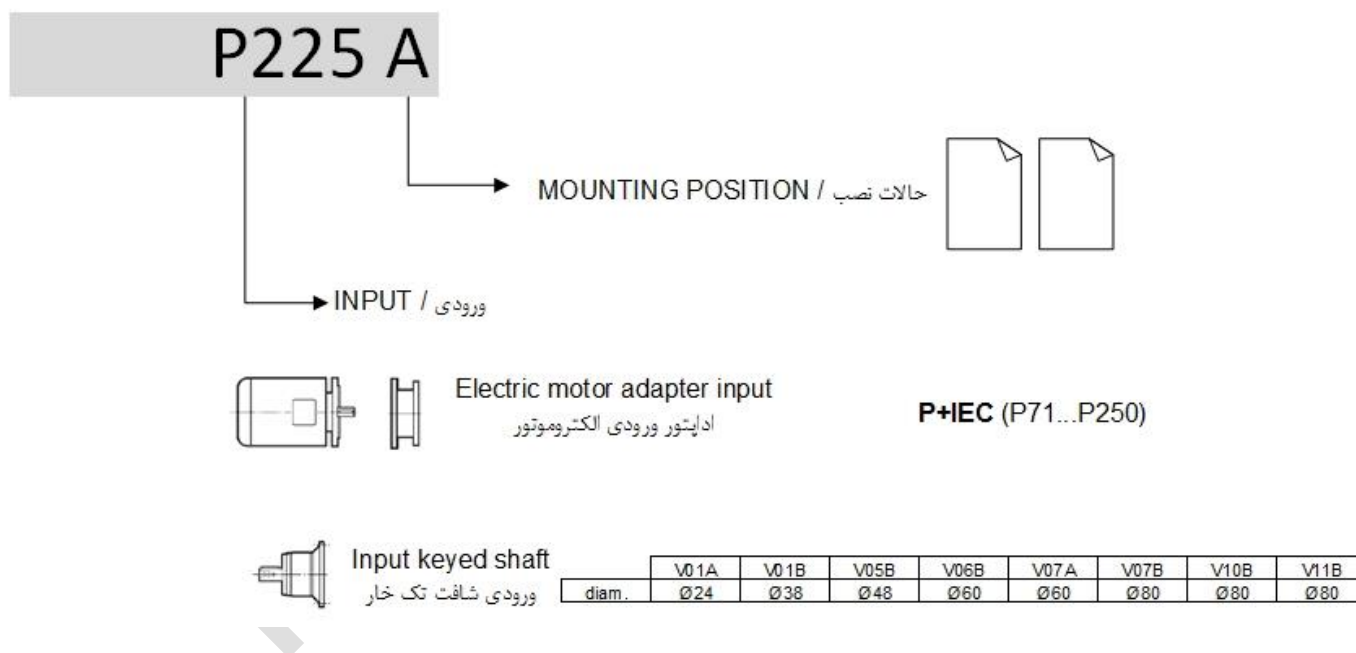
پس از آن، بسته به کاربرد، هر ۲۰۰۰ تا ۳۰۰۰ ساعت عملیات را تغییر دهید. به نوبت روغن را یک بار در سال تغییر دهید.

با این حال، سطح روغن باید در فواصل منظم بررسی شود و در صورت لزوم اضافه شود.

در صورت کارکرد متناوب، سطح روغن را به طور ماهانه چک کنید، اگر کارکرد مستمر باشد، بیشتر بکار می رود.

GEARBOX DESIGNATION

نامگذاری گیربکس

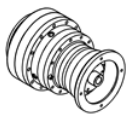


MOUNTING POSITION

The product designation is only complete when the mounting position is also specified. Please refer to table (A4) for in-line gear units and to (A5) for right angle drives.

حالات نصب

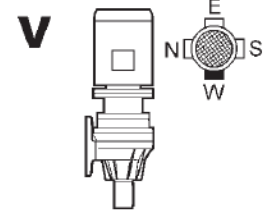
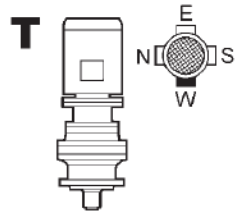
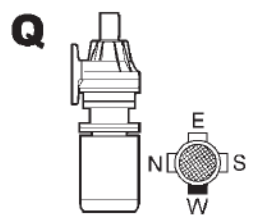
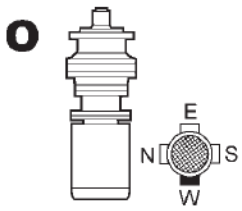
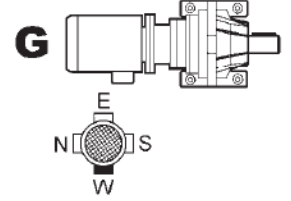
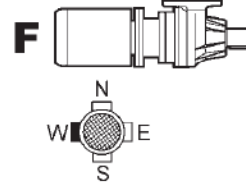
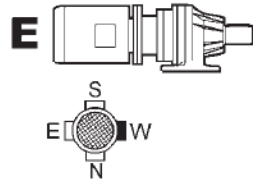
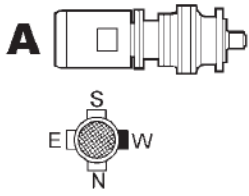
تعیین محصول زمانی کامل می شود که موقعیت نصب نیز مشخص شود. لطفاً به جدول (A4) برای گیربکس های مستقیم و (A5) برای گیربکس های زاویه راست مراجعه شود.



I. In-line units

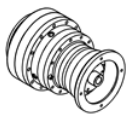
1. گیربکس های مستقیم

جدول (A4)

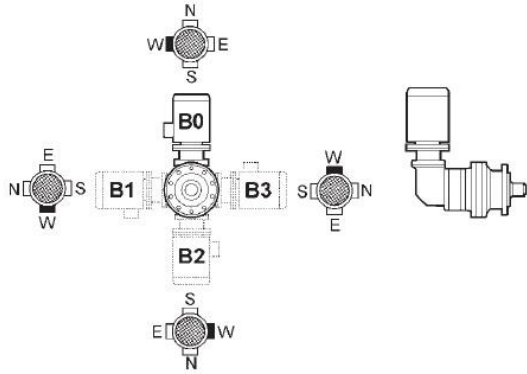


جدول (A6)

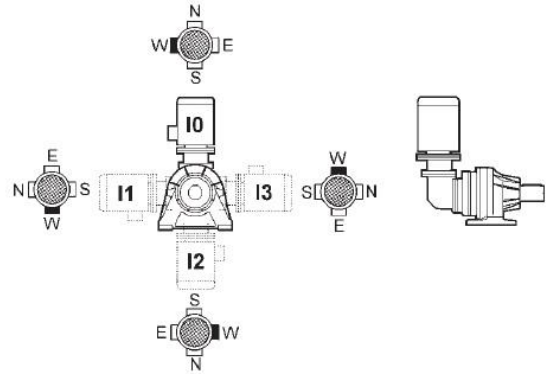
TOOKATA



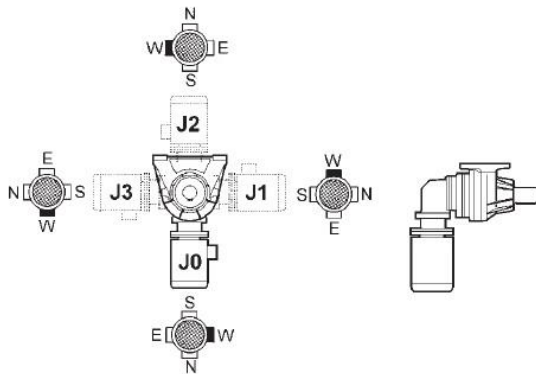
B0 - B1 - B2 - B3



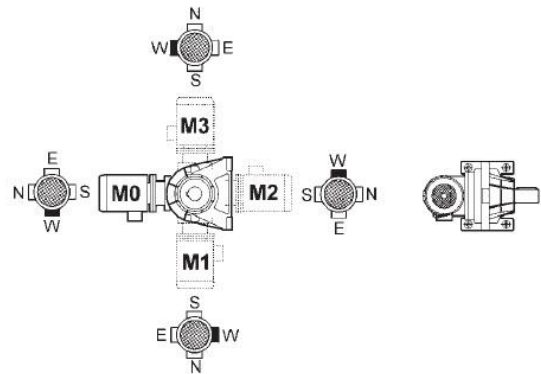
I0 - I1 - I2 - I3



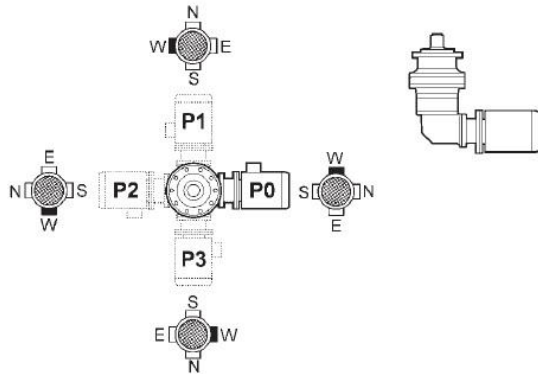
J0 - J1 - J2 - J3



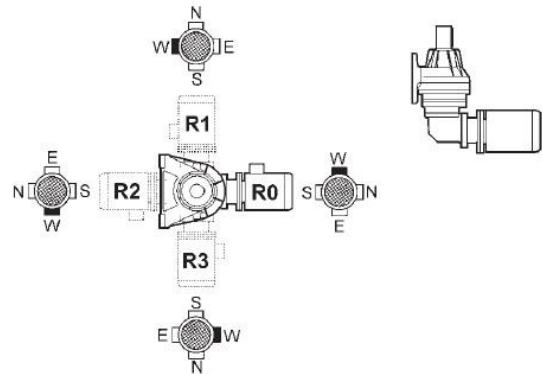
M0 - M1 - M2 - M3



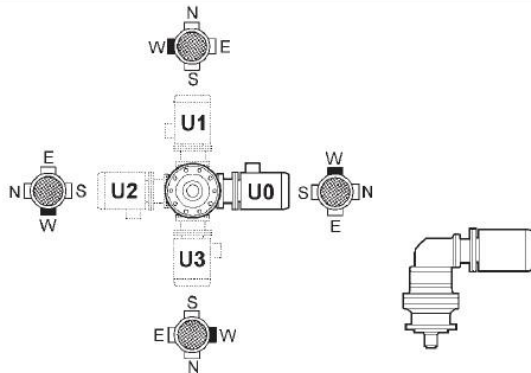
P0 - P1 - P2 - P3



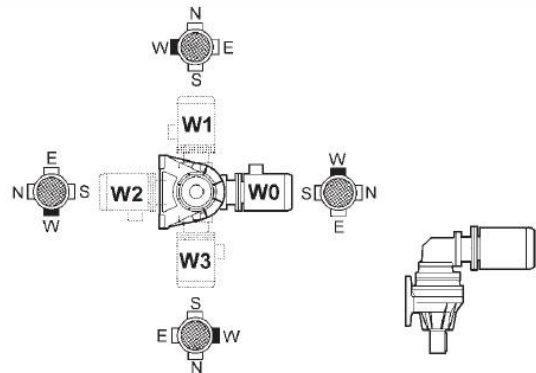
R0 - R1 - R2 - R3

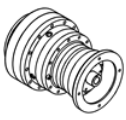


U0 - U1 - U2 - U3



W0 - W1 - W2 - W3





LUBRICATION (prior to start-up)

Gear units are oil lubricated. For gearboxes specified for vertical installation, whereas the oil coverage may not be sufficient to ensure proper lubrication of the uppermost bearings, extra lubrication provisions are used.

Operation of gear units is permitted at ambient temperatures between -20°C and $+40^{\circ}\text{C}$. However, for temperatures between -20°C and -10°C unit may only start up after it has been progressively and evenly pre-heated, or otherwise initially operated unloaded. Load may then be connected to the output shaft when the gear unit has reached the temperature of -10°C , or higher.

Prior to starting-up, fill the gearbox with the appropriate quantity of oil, selecting the viscosity as per table (A14).

The table (A14) lists the most common brands of lubricant and the types recommended for normal applications.

- Note: For applications with non-routine operating conditions, consult factory with complete information.
- Oil temperature must not exceed $85-90^{\circ}\text{C}$ in operation.
- The oil capacities listed for the various types of unit are indicative only. Fill the gearbox up to the level plug, located as per the mounting position specified.
- Should transmitted power exceed the thermal capacity of the unit a supplementary cooling unit must be provided.

روانکاری (قبل از راه اندازی)

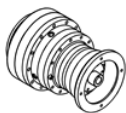
گیربکس روغن کاری شده است. برای گیربکس تعیین شده برای نصب عمودی، در حالی که پوشش روغن ممکن است برای اطمینان از روغنکاری مناسب بالاترین یاطاقان کافی نباشد، مقررات روانکاری اضافی استفاده می شود

عملکرد گیربکس در دماهای محیط بین -20 درجه سانتی گراد و $+40$ درجه سانتیگراد مجاز است. با این حال، برای درجه حرارت بین -20°C و -10°C واحد ممکن است تنها پس از آن که به طور مداوم و به طور مساوی قبل از شروع به کار گرم شود، یا در غیر این صورت در ابتدا بارگیری نشود. سپس بار می تواند به شفت خروجی متصل شود، هنگامی که دستگاه گیربکس به دمای -10 درجه سانتیگراد یا بالاتر رسیده باشد.

قبل از راه اندازی، گیربکس را با مقدار مناسب روغن پر کنید، برای انتخاب ویسکوزیته به جدول (A7) مراجعه کنید.

جدول (A7) لیستی از رایج ترین مارک های روان کننده و انواع توصیه شده برای کاربردهای معمول را نشان می دهد.

- توجه: برای کاربردهای با شرایط عملیاتی غیر معمول، برای اطلاعات کامل با کارخانه مشورت کنید.
- دمای روغن نباید بیش از $85-90$ درجه سانتیگراد در عمل باشد.
- ظرفیت های واسکازین ذکر شده برای انواع مختلف گیربکس تنها اخباری است. گیربکس را تا سطح پلاگین پر کنید، همانطور که در موقعیت مکانی مشخص شده است.
- اگر قدرت ورودی از ظرفیت حرارتی واحد فراتر رود، واحد خنک کننده مکمل باید ارائه شود.



ISO standard 3448 EP grade			
Ta	-10°C / +30°C	+10°C / +45°C	-20°C / +60°C
	ISO VG 150	ISO VG 220	ISO VG 150-220
SHELL	OMALA S4 WE 150	OMALA S4 WE 220	OMALA S4 WE
TOTAL	CARTER EP 1500	CARTER EP 2200	CARTER SH 150-220
بهران بردبار	بهران بردبار ۱۵۰	بهران بردبار ۲۲۰	

The temperature of the gear case should never exceed 80-85°C at the hottest point.

دمای پوسته گیربکس هرگز نباید بیش از ۸۰-۸۵ درجه سانتیگراد در داغترین نقطه باشد.

Oil plug positions

موقعیت درپوش های روغن

ALL UNITS

تمام واحد ها

- 1 Filler/breather oil plug
- 2 Oil level plug
- 3 Oil draining plug

- ۱ درپوش پرکننده روغن
- ۲ درپوش سطح روغن
- ۳ درپوش تخلیه روغن

1 STAGE IN-LINE GEAR UNITS

۱ استیج مستقیم

- 1A Filler/breather oil plug
- 3A Oil draining plug

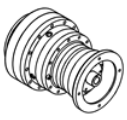
- A۱ درپوش پرکننده روغن
- A۳ درپوش تخلیه روغن

2 STAGE RIGHT ANGLE GEAR UNITS

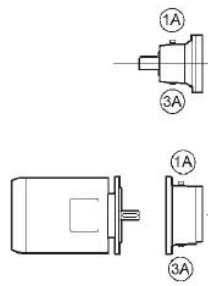
۲ استیج راست زاویه

- 1B Filler/breather oil plug
- 3B Oil draining plug

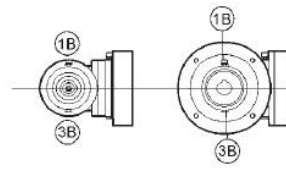
- B۱ درپوش پرکننده روغن
- B۳ درپوش تخلیه روغن



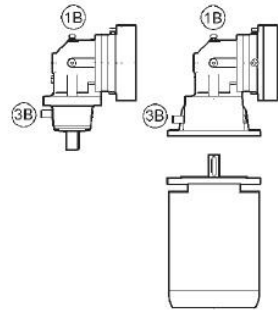
300-313 **A - E**



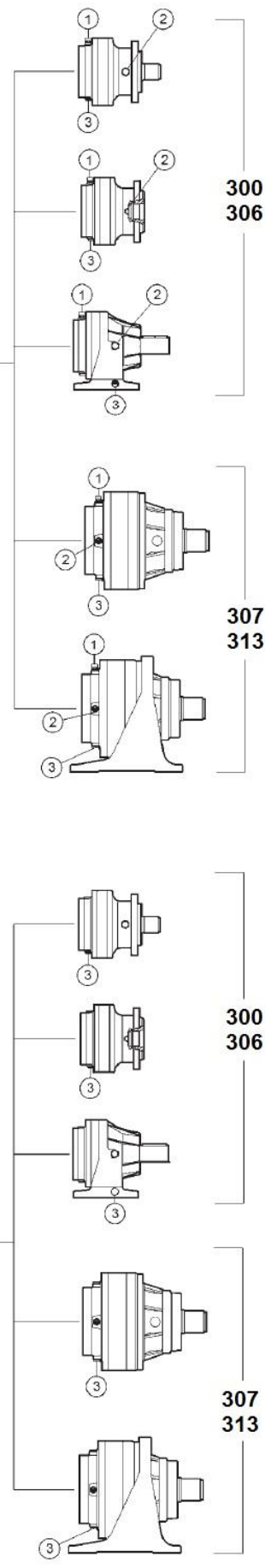
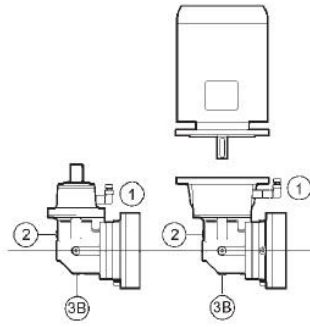
300-313 **B1 - B3 - I1 - I3**



300-313 **B2 - I2**



300-313 **B0 - I0**



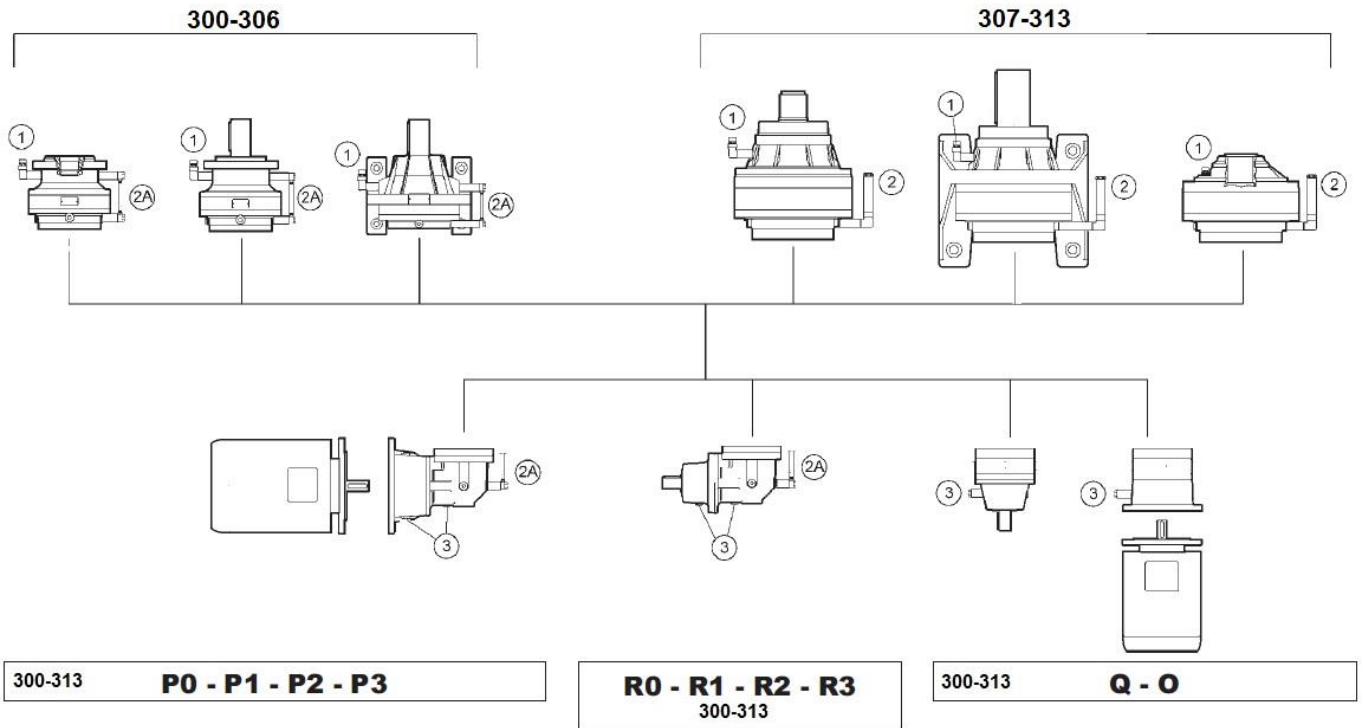
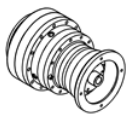
300
306

307
313

300
306

307
313



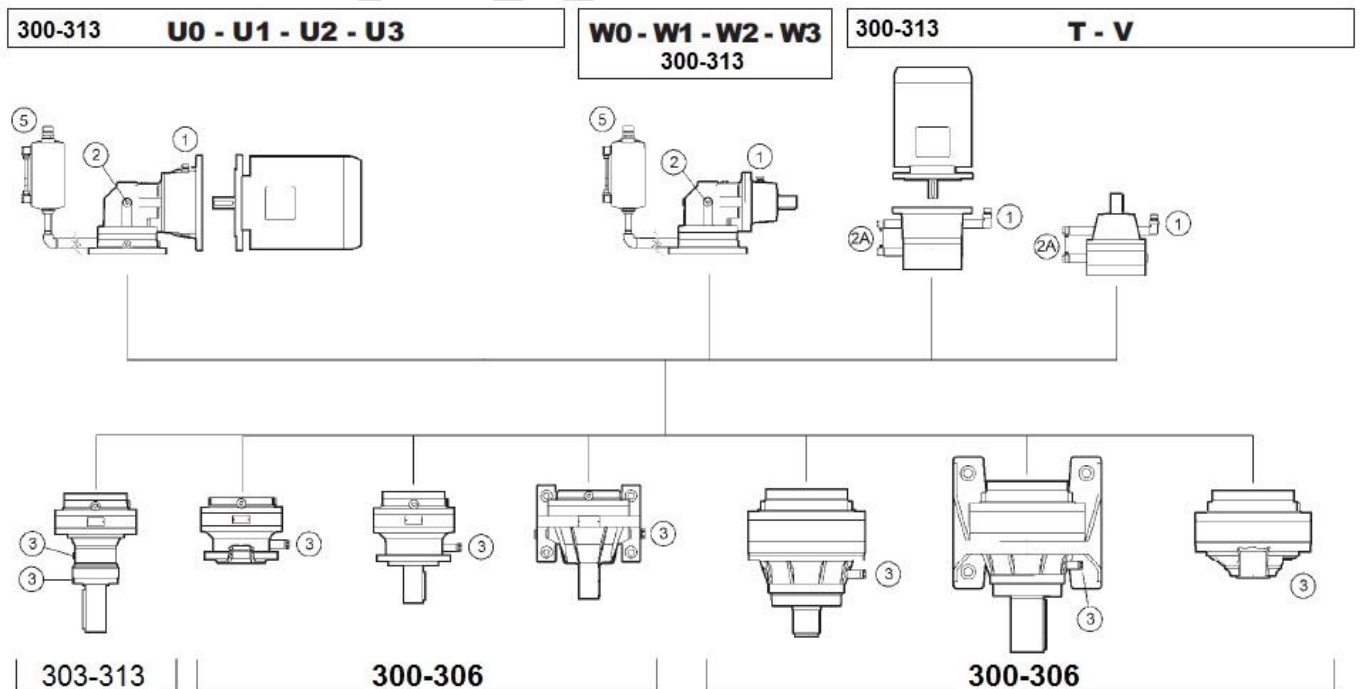


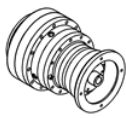
ALL GEARBOXES

- 1 Filler/breather oil plug
- 2 Oil level plug
- 3 Transparent oil level pipe
- 4 Oil draining plug
- 5 Expansion tank for continuous duty

همه گیربکس ها

- ۱ درپوش پرکننده روغن
- ۲ درپوش سطح روغن
- ۳ لوله سطح شفاف
- ۴ درپوش تخلیه روغن
- ۵ مخزن انبساط برای وظیفه مستمر





Oil quantity (l) 3_L Series

		Mounting position موقعیت نصب		
		A	T	O
300	L1	0.6	1	0.9
	L2	0.9	1.3	1.2
	L3	1.2	1.6	1.5
	L4	1.5	1.9	1.8
301	L1	0.8	1.2	1.1
	L2	1.1	1.5	1.4
	L3	1.4	1.8	1.7
	L4	1.7	2.1	2
303	L1	1.3	2.3	2
	L2	1.6	2.6	2.3
	L3	1.9	2.9	2.6
	L4	2.2	3.2	2.9
305	L1	1.6	2.6	2.4
	L2	2.1	3.1	2.9
	L3	2.4	3.4	3.2
	L4	2.7	3.7	3.5
306	L1	2.5	3.5	3.2
	L2	3.3	4.3	4
	L3	3.6	4.6	4.3
	L4	3.9	4.9	4.6

مقدار روغن (l) سری 3_L

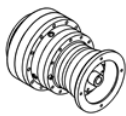
		Mounting position موقعیت نصب		
		A	T	O
307	L1	3.5	5	4.5
	L2	4.5	6	5.5
	L3	5	6.5	6
	L4	5.3	6.8	6.3
309	L1	4	5.5	5
	L2	5	6.5	6
	L3	5.5	7	6.5
	L4	5.8	7.3	6.8
310	L1	5	6.5	6
	L2	6.3	7.8	7.3
	L3	7.1	8.6	8.1
	L4	7.4	8.9	8.4
311	L1	7	12	10
	L2	9	14	12
	L3	10	15	13
	L4	11	16	14
313	L1	9	14	12
	L2	12	17	15
	L3	13	18	16
	L4	13	18	16

Oil quantity (l) 3_R Series

		Mounting position موقعیت نصب		
		B0	U_	P_
300	R2	1.2	1.7	1.5
	R3	1.5	2	1.8
	R4	1.8	2.3	2.1
301	R2	1.6	2.1	1.9
	R3	1.9	2.4	2.2
	R4	2.2	2.7	2.5
303	R2	2.2	2.8	2.6
	R3	2.5	3.1	2.9
	R4	2.8	3.4	3.2
305	R2	2.5	3.1	2.9
	R3	3	3.6	3.4
	R4	3.3	3.9	3.7
306	R2	4	5	4.8
	R3	4.8	5.8	5.6
	R4	5.1	6.1	5.9

مقدار روغن (l) سری 3_R

		Mounting position موقعیت نصب		
		B0	U_	P_
307	R2	6	8	7
	R3	7	9	8
	R4	7.5	9.5	8.5
309	R2	6.5	8.5	7.5
	R3	7.5	9.5	8.5
	R4	8	10	9
310	R2	13	15	14
	R3	11	13	12
	R4	12	14	13
311	R2	14	19	17
	R3	16	21	19
	R4	17	22	20
313	R2	16	21	19
	R3	19	24	22
	R4	20	25	23





N.B. Oil quantities are indicative. Check actual level after filling through the appropriate plug.

توجه شود مقادیر روغن اخباری هستند. پس از پر کردن از طریق درپوش مناسب، سطح واقعی را بررسی کنید.

3_ L - 3_ R GEARMOTOR RATING CHARTS

جدول گیرموتور سری 3_ L - 3_ R بر اساس نسبت آن

P ₁ = 18.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
9.7	16649	2.7	151	18	313 L3	—	—	—	99400	117600	38100	↔ Page
10	16186	2	147	18	311 L3	—	—	—	79700	99300	30700	
10	16149	1.7	147	40	—	311 R3	—	—	79700	99300	30600	

1. Rating of electric motor connected to the gearbox
2. Gearbox output speed
3. Torque delivered at output shaft
4. Safety factor
5. Gear ratio
6. Gearbox thermal capacity
7. Frame size of the in-line gear unit
8. Frame size of the right-angled gear unit

۱. توان موتور الکتریکی متصل به گیربکس
۲. سرعت خروجی گیربکس
۳. گشتاور تحویلی در شافت خروجی
۴. ضریب ایمنی
۵. نسبت گیربکس
۶. ظرفیت حرارتی گیربکس
۷. سایز گیربکس مستقیم
۸. سایز گیربکس راست زاویه

NOTE: Suffix (B) or (C) alongside the frame size refer to different bevel gear sets. See installation drawings for reference

نکته: علامت (B) یا (C) در کنار اندازه قاب، به مجموعه های مختلف چرخ دنده اشاره دارد. نقشه های نصب را برای مرجع مشاهده کنید.

9. Permitted overhung loading on output shaft, based on:
 - safety factor S=1
 - 10000 hrs. theoretical lifetime

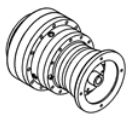
۹. حد مجاز بارگذاری بر روی شافت خروجی، بر اساس:
 - فاکتور ایمنی S = 1
 - ۱۰۰۰۰ ساعت عمر نظری

For forces not applying at shaft midpoint, see diagrams provided in the pages following dimensions of the specific gearbox



برای نیروهایی که در نقطه مرکزی شافت قرار ندارند، نمودارهای را که در صفحات بعد از ابعاد گیربکس ارائه شده است، مشاهده کنید

10. gearbox dimensions page

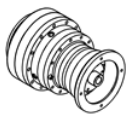
۱۰. شماره صفحه ابعاد گیربکس







P₁ = 0.25 kW n₁=1400 rpm

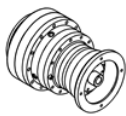
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.47	4439	1.6	2916	6	306 L4	—	45000	51000	101000	119000	35000	147
0.57	3688	3	2423	7.5	307 L4	—	—	—	109000	145000	45000	152
0.59	3557	2	2337	6	306 L4	—	45000	51000	101000	119000	35000	147
0.62	3415	1.1	2243	6	305 L4	—	36000	42000	64000	74000	24000	142
0.67	3157	2.2	2074	6	306 L4	—	45000	51000	101000	119000	35000	147
0.69	3031	0.9	1991	6	303 L4	—	36000	42000	64000	74000	24000	137
0.69	3031	1.8	1991	6	305 L4	—	36000	42000	64000	74000	24000	142
0.74	2823	1.7	1854	6	305 L4	—	36000	42000	64000	74000	24000	142
0.87	2415	0.9	1586	6	303 L4	—	36000	42000	64000	74000	24000	137
0.87	2415	2	1586	6	305 L4	—	36000	42000	64000	74000	24000	142
1	2086	1.2	1370	6	303 L4	—	36000	42000	62200	74000	23800	137
1	2086	2.2	1370	6	305 L4	—	36000	42000	62200	74000	23800	142
1.1	1946	1.4	1278	6	303 L4	—	36000	41900	60900	73300	23300	137
1.1	1946	2.8	1278	6	305 L4	—	36000	41900	60900	73300	23300	142
1.1	1941	1.2	1275	6	301 L4	—	11800	11800	29800	34000	7750	132
1.2	1687	1	1108	6	301 L4	—	11300	11300	28600	32900	7400	132
1.3	1671	1.4	1098	6	303 L4	—	34500	39800	58200	70000	22100	137
1.3	1671	2.7	1098	6	305 L4	—	34500	39800	58200	70000	22100	142
1.4	1555	1.5	1022	6	301 L4	—	11000	11000	27900	32100	7200	132
1.4	1551	1.8	1018	6	303 L4	—	33600	38800	56900	68500	21600	137
1.5	1434	1.6	942	6	301 L4	—	10700	10700	27200	31300	7010	132
1.5	1364	1.6	896	6	303 L4	—	32200	37200	54800	65900	20700	137
1.7	1254	1.8	824	12	—	303 R4	31300	36200	53400	64300	20100	138
1.7	1246	0.9	819	6	300 L4	—	9940	9940	25600	29400	6540	127
1.7	1246	1.8	819	6	301 L4	—	10200	10200	26100	30000	6690	132
1.7	1242	2.2	816	6	303 L4	—	31300	36100	53300	64100	20000	137
1.7	1213	1.5	797	12	—	303 R4	31000	35800	52900	63600	19900	138
1.7	1213	2.8	797	12	—	305 R4	31000	35800	52900	63600	19900	143
1.8	1167	1.3	766	10	—	301 R4	9950	9950	25600	29400	6540	133
1.8	1149	1	755	6	300 L4	—	9680	9680	25000	28700	6360	127
1.8	1149	1.9	755	6	301 L4	—	9900	9900	25500	29300	6510	132
1.9	1093	2	718	6	303 L4	—	29900	34600	51300	61700	19200	137
2.1	1003	2.1	659	12	—	303 R4	29100	33600	50000	60100	18700	138
2.1	989	2.3	649	6	303 L4	—	29000	33400	49700	59800	18600	137
2.2	938	1.1	616	6	300 L4	—	9260	9260	24000	27600	6090	127
2.2	938	2.3	616	6	301 L4	—	9260	9260	24000	27600	6090	132
2.3	933	1.6	613	10	—	301 R4	9240	9240	23900	27500	6080	133
2.4	863	2.8	567	12	—	303 R4	27700	32000	47700	57400	17800	138
2.5	849	1.2	558	6	300 L4	—	8950	8950	23300	26700	5890	127
2.5	849	2.5	558	6	301 L4	—	8950	8950	23300	26700	5890	132
2.6	804	2.5	528	12	—	303 R4	27000	31200	46700	56200	17300	138
2.8	752	1.4	494	6	300 L4	—	8600	8600	22400	25800	5650	127
2.8	752	2.8	494	6	301 L4	—	8600	8600	22400	25800	5650	132







P₁ = 0.25 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.8	748	0.9	491	10	—	300 R4	8580	8580	22400	25700	5640	128
2.8	748	1.9	491	10	—	301 R4	8580	8580	22400	25700	5640	133
3	690	1.5	453	10	—	300 R4	8350	8350	21900	25100	5490	128
3	690	2.8	453	10	—	301 R4	8350	8350	21900	25100	5490	133
3.1	681	1.5	447	6	300 L4	—	8320	8320	21800	25000	5470	127
3.1	681	3	447	6	301 L4	—	8320	8320	21800	25000	5470	132
3.4	614	1.1	403	6	300 L4	—	8040	8040	21100	24300	5280	127
3.4	614	2.2	403	6	301 L4	—	8040	8040	21100	24300	5280	132
3.5	599	1.1	394	10	—	300 R4	7970	7970	21000	24100	5240	128
3.5	599	2.3	394	10	—	301 R4	7970	7970	21000	24100	5240	133
3.5	612	2.8	389	7.5	303 L3	—	24400	28200	42600	51300	15700	137
3.7	589	1.1	374	7.5	300 L3	—	7840	7840	20600	23700	5150	127
3.7	589	2.3	374	7.5	301 L3	—	7840	7840	20600	23700	5150	132
3.8	553	1.8	363	10	—	300 R4	7760	7760	20500	23500	5100	128
4.2	503	1.9	330	6	300 L4	—	7520	7520	19900	22900	4940	127
4.6	471	1.4	299	7.5	300 L3	—	7270	7270	19300	22200	4780	127
4.6	471	2.8	299	7.5	301 L3	—	7270	7270	19300	22200	4780	132
4.7	443	2.1	291	10	—	300 R4	7210	7210	19100	22000	4740	128
5.1	408	2.3	268	10	—	300 R4	7020	7020	18700	21500	4610	128
5.8	377	1.7	240	7.5	300 L3	—	6760	6760	18100	20800	4440	127
5.8	361	1.8	237	10	—	300 R4	6740	6740	18000	20700	4430	128
6.2	348	2.6	221	7.5	300 L3	—	6580	6580	17600	20300	4320	127
6.4	327	2.8	215	10	—	300 R4	6520	6520	17500	20100	4280	128
7.2	302	2.2	192	7.5	300 L3	—	6280	6280	16900	19400	4130	127
9.6	218	3	143	10	—	300 R4	5690	5690	15500	17800	3740	128
10.4	209	2.6	133	12	—	300 R3	5550	5550	15100	17400	3650	128

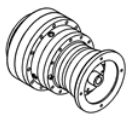
P₁ = 0.37 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.47	6672	1	2916	6	306 L4	—	45000	51000	101000	119000	35000	147
0.57	5543	2	2423	7.5	307 L4	—	—	—	109000	145000	45000	152
0.59	5346	1.3	2337	6	306 L4	—	45000	51000	101000	119000	35000	147
0.66	4744	1.5	2074	6	306 L4	—	45000	51000	101000	119000	35000	147
0.69	4555	1.2	1991	6	305 L4	—	36000	42000	64000	74000	24000	142
0.74	4243	1.1	1854	6	305 L4	—	36000	42000	64000	74000	24000	142
0.74	4217	2.4	1843	6	306 L4	—	45000	51000	101000	119000	35000	147
0.86	3653	2.4	1597	6	306 L4	—	45000	51000	101000	119000	35000	147
0.86	3629	1.3	1586	6	305 L4	—	36000	42000	64000	74000	24000	142





$P_1 = 0.37 \text{ kW}$ $n_1=1400 \text{ rpm}$

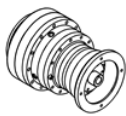
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.93	3374	3	1475	6	306 L4	—	45000	51000	101000	119000	35000	147
1	3135	1.5	1370	6	305 L4	—	36000	42000	62200	74000	23800	142
1.1	2927	2.9	1279	6	306 L4	—	45000	51000	99700	116100	34000	147
1.1	2924	1	1278	6	303 L4	—	36000	41900	60900	73300	23300	137
1.1	2924	1.9	1278	6	305 L4	—	36000	41900	60900	73300	23300	142
1.2	2512	0.9	1098	6	303 L4	—	33700	38900	57000	68600	21600	137
1.2	2512	1.8	1098	6	305 L4	—	34500	39800	58200	70000	22100	142
1.3	2338	1	1022	6	301 L4	—	10700	10700	27300	31400	7040	132
1.3	2330	1.2	1018	6	303 L4	—	33600	38800	56900	68500	21600	137
1.3	2330	2.3	1018	6	305 L4	—	33600	38800	56900	68500	21600	142
1.5	2156	1.1	942	6	301 L4	—	10700	10700	27200	31300	7010	132
1.5	2051	1.1	896	6	303 L4	—	32200	37200	54800	65900	20700	137
1.5	2051	2.1	896	6	305 L4	—	32200	37200	54800	65900	20700	142
1.7	1884	1.2	824	12	—	303 R4	31300	36200	53400	64300	20100	138
1.7	1884	2.2	824	12	—	305 R4	31300	36200	53400	64300	20100	143
1.7	1873	1.2	819	6	301 L4	—	10200	10200	26100	30000	6690	132
1.7	1867	1.5	816	6	303 L4	—	31300	36100	53300	64100	20000	137
1.7	1867	2.9	816	6	305 L4	—	31300	36100	53300	64100	20000	142
1.7	1824	1	797	12	—	303 R4	31000	35800	52900	63600	19900	138
1.7	1824	1.9	797	12	—	305 R4	31000	35800	52900	63600	19900	143
1.8	1727	1.3	755	6	301 L4	—	9900	9900	25500	29300	6510	132
1.9	1643	1.3	718	6	303 L4	—	29900	34600	51300	61700	19200	137
1.9	1643	2.5	718	6	305 L4	—	29900	34600	51300	61700	19200	142
2.1	1508	1.4	659	12	—	303 R4	29100	33600	50000	60100	18700	138
2.1	1508	2.7	659	12	—	305 R4	29100	33600	50000	60100	18700	143
2.1	1486	1.6	649	6	303 L4	—	29000	33400	49700	59800	18600	137
2.2	1410	1.5	616	6	301 L4	—	9260	9260	24000	27600	6090	132
2.2	1403	1	613	10	—	301 R4	9240	9240	23900	27500	6080	133
2.4	1297	1.9	567	12	—	303 R4	27700	32000	47700	57400	17800	138
2.5	1276	1.7	558	6	301 L4	—	8950	8950	23300	26700	5890	132
2.5	1272	2.2	556	6	303 L4	—	27500	31700	47500	57100	17600	137
2.6	1208	1.7	528	12	—	303 R4	27000	31200	46700	56200	17300	138
2.8	1130	0.9	494	6	300 L4	—	8400	8400	22000	25300	5520	127
2.8	1130	1.8	494	6	301 L4	—	8600	8600	22400	25800	5650	132
2.8	1126	2.4	492	6	303 L4	—	26400	30500	45800	55100	16900	137
2.8	1124	1.3	491	10	—	301 R4	8580	8580	22400	25700	5640	133
3	1037	1	453	10	—	300 R4	8350	8350	21900	25100	5490	128
3	1037	1.9	453	10	—	301 R4	8350	8350	21900	25100	5490	133
3	1033	2.2	452	12	—	303 R4	25700	29600	44600	53700	16500	138
3.1	1023	1	447	6	300 L4	—	8320	8320	21800	25000	5470	127
3.1	1023	2	447	6	301 L4	—	8320	8320	21800	25000	5470	132
3.1	1020	2.8	446	6	303 L4	—	25500	29500	44400	53400	16400	137
3.3	945	2.5	413	6	303 L4	—	24900	28800	43400	52200	16000	137







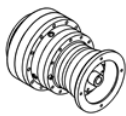
$P_1 = 0.37 \text{ kW}$ $n_1=1400 \text{ rpm}$

n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
3.4	922	1.5	403	6	301 L4	—	8040	8040	21100	24300	5280	132
3.4	951	2	402	7.5	303 L3	—	24700	28500	43100	51800	15800	137
3.5	901	1.5	394	10	—	301 R4	7970	7970	21000	24100	5240	133
3.5	893	2.2	390	12	—	303 R4	24400	28200	42700	51400	15700	138
3.5	920	1.8	389	7.5	303 L3	—	24400	28200	42600	51300	15700	137
3.7	885	1.5	374	7.5	301 L3	—	7840	7840	20600	23700	5150	132
3.8	833	2.8	364	12	—	303 R4	23900	27600	41800	50300	15300	138
3.8	831	1.2	363	10	—	300 R4	7760	7760	20500	23500	5100	128
3.8	831	2.4	363	10	—	301 R4	7760	7760	20500	23500	5100	133
4.1	768	3	336	12	—	303 R4	23200	26800	40800	49100	14900	138
4.1	756	1.3	330	6	300 L4	—	7520	7520	19900	22900	4940	127
4.1	756	2.5	330	6	301 L4	—	7520	7520	19900	22900	4940	132
4.3	760	2.4	321	7.5	303 L3	—	22900	26400	40300	48500	14700	137
4.4	715	2.6	313	12	—	303 R4	22700	26200	39900	48100	14600	138
4.6	708	0.9	299	7.5	300 L3	—	7270	7270	19300	22200	4780	127
4.6	708	1.8	299	7.5	301 L3	—	7270	7270	19300	22200	4780	132
4.7	666	1.4	291	10	—	300 R4	7210	7210	19100	22000	4740	128
4.7	666	2.8	291	10	—	301 R4	7210	7210	19100	22000	4740	133
5.1	614	1.5	268	10	—	300 R4	7020	7020	18700	21500	4610	128
5.7	567	1.1	240	7.5	300 L3	—	6760	6760	18100	20800	4440	127
5.7	567	2.3	240	7.5	301 L3	—	6760	6760	18100	20800	4440	132
5.8	543	1.2	237	10	—	300 R4	6740	6740	18000	20700	4430	128
5.8	543	2.4	237	10	—	301 R4	6740	6740	18000	20700	4430	133
6.2	523	1.7	221	7.5	300 L3	—	6580	6580	17600	20300	4320	127
6.4	492	1.9	215	10	—	300 R4	6520	6520	17500	20100	4280	128
7.1	454	1.4	192	7.5	300 L3	—	6280	6280	16900	19400	4130	127
7.1	454	2.9	192	7.5	301 L3	—	6280	6280	16900	19400	4130	132
7.7	419	2.1	177	7.5	300 L3	—	6110	6110	16500	19000	4020	127
7.8	401	2.2	175	10	—	300 R4	6090	6090	16500	18900	4000	128
8.6	363	2.4	159	10	—	300 R4	5890	5890	16000	18300	3870	128
9.6	328	2	143	10	—	300 R4	5690	5690	15500	17800	3740	128
9.7	336	2.6	142	7.5	300 L3	—	5670	5670	15400	17700	3730	127
10.3	314	1.7	133	12	—	300 R3	5550	5550	15100	17400	3650	128
10.5	310	2.8	131	7.5	300 L3	—	5520	5520	15100	17300	3630	127
10.6	297	2.9	130	10	—	300 R4	5510	5510	15000	17300	3620	128
11.8	274	2.4	116	7.5	300 L3	—	5300	5300	14500	16700	3490	127
12.9	252	2.6	106	12	—	300 R3	5160	5160	14200	16300	3390	128





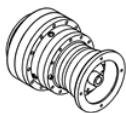
$P_1 = 0.55 \text{ kW}$ $n_1=1400 \text{ rpm}$



n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.57	8101	1.4	2423	7.5	307 L4	—	—	—	109000	145000	45000	152
0.57	8101	2.1	2423	7.5	309 L4	—	—	—	110000	145000	36000	157
0.67	6934	1	2074	6	306 L4	—	45000	51000	101000	119000	35000	147
0.68	6826	2.1	2041	7.5	307 L4	—	—	—	109000	145000	45000	152
0.69	6697	2.5	2003	7.5	309 L4	—	—	—	110000	145000	36000	157
0.75	6164	1.6	1843	6	306 L4	—	45000	51000	101000	119000	35000	147
0.79	5910	2.7	1767	7.5	307 L4	—	—	—	109000	145000	45000	152
0.81	5761	3	1723	7.5	309 L4	—	—	—	110000	145000	36000	157
0.87	5339	1.6	1597	6	306 L4	—	45000	51000	101000	119000	35000	147
0.87	5319	2.8	1591	7.5	307 L4	—	—	—	109000	145000	45000	152
0.94	4931	2	1475	6	306 L4	—	45000	51000	101000	119000	35000	147
1	4582	1	1370	6	305 L4	—	36000	42000	62200	74000	23800	142
1.1	4278	2	1279	6	306 L4	—	45000	51000	99700	116100	34000	147
1.1	4274	1.3	1278	6	305 L4	—	36000	41900	60900	73300	23300	142
1.1	4262	2.9	1274	7.5	307 L4	—	—	—	107100	140400	43600	152
1.3	3671	1.2	1098	6	305 L4	—	34500	39800	58200	70000	22100	142
1.3	3660	2.1	1095	6	306 L4	—	42900	48600	95200	110800	32200	147
1.4	3406	1.6	1018	6	305 L4	—	33600	38800	56900	68500	21600	142
1.4	3394	2.8	1015	6	306 L4	—	41900	47400	93000	108300	31400	147
1.6	2997	1.4	896	6	305 L4	—	32200	37200	54800	65900	20700	142
1.6	2933	2.6	877	6	306 L4	—	39900	45200	89000	103700	29900	147
1.7	2776	2.3	830	12	—	306 R4	39100	44300	87600	102000	29400	148
1.7	2754	1.5	824	12	—	305 R4	31300	36200	53400	64300	20100	143
1.7	2729	1	816	6	303 L4	—	31300	36100	53300	64100	20000	137
1.7	2729	2	816	6	305 L4	—	31300	36100	53300	64100	20000	142
1.7	2705	2.8	809	6	306 L4	—	38800	44000	86900	101200	29200	147
1.7	2665	1.3	797	12	—	305 R4	31000	35800	52900	63600	19900	143
1.9	2401	1.7	718	6	305 L4	—	29900	34600	51300	61700	19200	142
2.1	2225	2.7	665	12	—	306 R4	36400	41200	82000	95400	27300	148
2.1	2203	1	659	12	—	303 R4	29100	33600	50000	60100	18700	138
2.1	2203	1.8	659	12	—	305 R4	29100	33600	50000	60100	18700	143
2.1	2172	1.1	649	6	303 L4	—	29000	33400	49700	59800	18600	137
2.1	2172	2.1	649	6	305 L4	—	29000	33400	49700	59800	18600	142
2.3	2061	1	616	6	301 L4	—	9260	9260	24000	27600	6090	132
2.5	1895	1.3	567	12	—	303 R4	27700	32000	47700	57400	17800	138
2.5	1895	2.6	567	12	—	305 R4	27700	32000	47700	57400	17800	143
2.5	1865	1.1	558	6	301 L4	—	8950	8950	23300	26700	5890	132
2.5	1860	1.5	556	6	303 L4	—	27500	31700	47500	57100	17600	137
2.5	1860	3	556	6	305 L4	—	27500	31700	47500	57100	17600	142
2.6	1765	1.1	528	12	—	303 R4	27000	31200	46700	56200	17300	138
2.6	1765	2.2	528	12	—	305 R4	27000	31200	46700	56200	17300	143
2.8	1651	1.3	494	6	301 L4	—	8600	8600	22400	25800	5650	132
2.8	1646	1.6	492	6	303 L4	—	26400	30500	45800	55100	16900	137





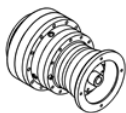
$P_1 = 0.55 \text{ kW}$ $n_1=1400 \text{ rpm}$

n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
3.1	1515	1.3	453	10	—	301 R4	8350	8350	21900	25100	5490	133
3.1	1510	1.5	452	12	—	303 R4	25700	29600	44600	53700	16500	138
3.1	1495	1.4	447	6	301 L4	—	8320	8320	21800	25000	5470	132
3.1	1490	1.9	446	6	303 L4	—	25500	29500	44400	53400	16400	137
3.4	1382	1.7	413	6	303 L4	—	24900	28800	43400	52200	16000	137
3.4	1348	1	403	6	301 L4	—	8040	8040	21100	24300	5280	132
3.5	1389	1.4	402	7.5	303 L3	—	24700	28500	43100	51800	15800	137
3.5	1389	2.7	402	7.5	305 L3	—	24700	28500	43100	51800	15800	142
3.5	1316	1	394	10	—	301 R4	7970	7970	21000	24100	5240	133
3.6	1305	1.5	390	12	—	303 R4	24400	28200	42700	51400	15700	138
3.6	1305	2.9	390	12	—	305 R4	24400	28200	42700	51400	15700	143
3.6	1344	1.3	389	7.5	303 L3	—	24400	28200	42600	51300	15700	137
3.6	1344	2.4	389	7.5	305 L3	—	24400	28200	42600	51300	15700	142
3.7	1293	1	374	7.5	301 L3	—	7840	7840	20600	23700	5150	132
3.8	1217	1.9	364	12	—	303 R4	23900	27600	41800	50300	15300	138
3.8	1214	1.6	363	10	—	301 R4	7760	7760	20500	23500	5100	133
4.1	1180	2.1	341	7.5	304 L3	—	23400	27000	41000	49300	15000	call
4.1	1122	2	336	12	—	303 R4	23200	26800	40800	49100	14900	138
4.2	1105	1.7	330	6	301 L4	—	7520	7520	19900	22900	4940	132
4.3	1111	1.7	321	7.5	303 L3	—	22900	26400	40300	48500	14700	137
4.4	1045	1.8	313	12	—	303 R4	22700	26200	39900	48100	14600	138
4.6	1034	1.3	299	7.5	301 L3	—	7270	7270	19300	22200	4780	132
4.8	973	1	291	10	—	300 R4	7210	7210	19100	22000	4740	128
4.8	973	1.9	291	10	—	301 R4	7210	7210	19100	22000	4740	133
4.8	970	2.7	290	12	—	303 R4	22100	25600	39100	47000	14200	138
5	956	2.3	276	7.5	303 L3	—	21800	25200	38500	46300	14000	137
5.2	897	1	268	10	—	300 R4	7020	7020	18700	21500	4610	128
5.2	897	2.1	268	10	—	301 R4	7020	7020	18700	21500	4610	133
5.4	891	2.1	258	7.5	303 L3	—	21300	24600	37700	45300	13600	137
5.4	853	2.2	255	12	—	303 R4	21200	24500	37600	45200	13600	138
5.8	829	1.6	240	7.5	301 L3	—	6760	6760	18100	20800	4440	132
5.9	794	1.6	237	10	—	301 R4	6740	6740	18000	20700	4430	133
6	772	2.4	231	12	—	303 R4	20500	23700	36500	43900	13200	138
6.3	764	1.2	221	7.5	300 L3	—	6580	6580	17600	20300	4320	127
6.3	764	2.3	221	7.5	301 L3	—	6580	6580	17600	20300	4320	132
6.3	762	3	220	7.5	303 L3	—	20200	23300	36000	43300	13000	137
6.5	719	1.3	215	10	—	300 R4	6520	6520	17500	20100	4280	128
6.5	719	2.5	215	10	—	301 R4	6520	6520	17500	20100	4280	133
7.2	664	1	192	7.5	300 L3	—	6280	6280	16900	19400	4130	127
7.2	664	2	192	7.5	301 L3	—	6280	6280	16900	19400	4130	132
7.3	658	2.8	190	7.5	303 L3	—	19200	22200	34400	41400	12300	137
7.8	612	1.4	177	7.5	300 L3	—	6110	6110	16500	19000	4020	127
7.8	612	2.9	177	7.5	301 L3	—	6110	6110	16500	19000	4020	132





P₁ = 0.55 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
7.9	587	1.5	175	10	—	300 R4	6090	6090	16500	18900	4000	128
8.8	531	1.6	159	10	—	300 R4	5890	5890	16000	18300	3870	128
9.7	479	1.4	143	10	—	300 R4	5690	5690	15500	17800	3740	128
9.7	479	2.7	143	10	—	301 R4	5690	5690	15500	17800	3740	133
9.8	491	1.8	142	7.5	300 L3	—	5670	5670	15400	17700	3730	127
10.5	459	1.2	133	12	—	300 R3	5420	5420	14800	17000	3570	128
10.5	459	2.5	133	12	—	301 R3	5550	5550	15100	17400	3650	133
10.6	453	1.9	131	7.5	300 L3	—	5520	5520	15100	17300	3630	127
10.7	434	2	130	10	—	300 R4	5510	5510	15000	17300	3620	128
12	401	1.6	116	7.5	300 L3	—	5300	5300	14500	16700	3490	127
13.1	368	1.8	106	12	—	300 R3	5160	5160	14200	16300	3390	128
13.1	354	2.4	106	10	—	300 R4	5150	5150	14100	16200	3380	128
13.3	363	2.4	105	7.5	300 L3	—	5130	5130	14100	16200	3370	127
16.2	296	2.9	85.6	7.5	300 L3	—	4790	4790	13300	15200	3150	127
16.3	294	2.2	85.2	12	—	300 R3	4790	4790	13200	15200	3150	128
19.9	242	2.7	69.9	7.5	300 L3	—	4480	4480	12500	14300	2950	127
20.4	236	2.8	68.2	12	—	300 R3	4440	4440	12400	14200	2920	128
21.5	231	2.4	64.8	7.5	300 L2	—	4370	4370	12200	14000	2870	127

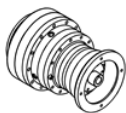
P₁ = 0.75 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.57	11103	2.3	2523	11	310 L4	—	—	—	133000	166000	65000	call
0.59	10659	1	2423	7.5	307 L4	—	—	—	109000	145000	45000	152
0.59	10659	1.6	2423	7.5	309 L4	—	—	—	110000	145000	36000	157
0.7	8981	1.6	2041	7.5	307 L4	—	—	—	109000	145000	45000	152
0.71	8897	2.9	2022	11	310 L4	—	—	—	133000	166000	65000	call
0.71	8812	1.9	2003	7.5	309 L4	—	—	—	110000	145000	36000	157
0.78	8110	1.2	1843	6	306 L4	—	45000	51000	101000	119000	35000	147
0.81	7776	2	1767	7.5	307 L4	—	—	—	109000	145000	45000	152
0.83	7580	2.2	1723	7.5	309 L4	—	—	—	110000	145000	36000	157
0.89	7061	2.4	1605	7.5	309 L4	—	—	—	110000	145000	36000	157
0.9	7026	1.2	1597	6	306 L4	—	45000	51000	101000	119000	35000	147
0.9	6998	2.1	1591	7.5	307 L4	—	—	—	109000	145000	45000	152
0.97	6488	1.6	1475	6	306 L4	—	45000	51000	101000	119000	35000	147
1	6196	2.5	1408	7.5	307 L4	—	—	—	109000	144700	45000	152
1	6074	2.7	1380	7.5	309 L4	—	—	—	110000	143800	35800	157
1.1	5657	2.9	1286	7.5	309 L4	—	—	—	109200	140800	35000	157





P₁ = 0.75 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.1	5630	1.5	1279	6	306 L4	—	45000	51000	99700	116100	34000	147
1.1	5624	1	1278	6	305 L4	—	36000	41900	60900	73300	23300	142
1.1	5608	2.2	1274	7.5	307 L4	—	—	—	107100	140400	43600	152
1.2	5089	2.8	1157	7.5	307 L4	—	—	—	104100	136400	42200	152
1.3	4831	0.9	1098	6	305 L4	—	33700	38900	57000	68600	21600	142
1.3	4816	1.6	1095	6	306 L4	—	42900	48600	95200	110800	32200	147
1.4	4481	1.2	1018	6	305 L4	—	33600	38800	56900	68500	21600	142
1.4	4466	2.1	1015	6	306 L4	—	41900	47400	93000	108300	31400	147
1.6	3943	1.1	896	6	305 L4	—	32200	37200	54800	65900	20700	142
1.6	3859	2	877	6	306 L4	—	39900	45200	89000	103700	29900	147
1.7	3653	1.7	830	12	—	306 R4	39100	44300	87600	102000	29400	148
1.7	3624	1.2	824	12	—	305 R4	31300	36200	53400	64300	20100	143
1.8	3591	1.5	816	6	305 L4	—	31300	36100	53300	64100	20000	142
1.8	3559	2.2	809	6	306 L4	—	38800	44000	86900	101200	29200	147
1.8	3507	1	797	12	—	305 R4	31000	35800	52900	63600	19900	143
2	3160	1.3	718	6	305 L4	—	29900	34600	51300	61700	19200	142
2.1	2927	2.1	665	12	—	306 R4	36400	41200	82000	95400	27300	148
2.2	2899	1.4	659	12	—	305 R4	29100	33600	50000	60100	18700	143
2.2	2858	1.6	649	6	305 L4	—	29000	33400	49700	59800	18600	142
2.5	2494	1	567	12	—	303 R4	27700	32000	47700	57400	17800	138
2.5	2494	1.9	567	12	—	305 R4	27700	32000	47700	57400	17800	143
2.6	2447	1.1	556	6	303 L4	—	27500	31700	47500	57100	17600	137
2.6	2447	2.2	556	6	305 L4	—	27500	31700	47500	57100	17600	142
2.7	2323	1.7	528	12	—	305 R4	27000	31200	46700	56200	17300	143
2.9	2173	1	494	6	301 L4	—	8400	8400	22000	25300	5520	132
2.9	2166	1.2	492	6	303 L4	—	26400	30500	45800	55100	16900	137
2.9	2166	2.5	492	6	305 L4	—	26400	30500	45800	55100	16900	142
3.2	1993	1	453	10	—	301 R4	8350	8350	21900	25100	5490	133
3.2	1987	1.1	452	12	—	303 R4	25700	29600	44600	53700	16500	138
3.2	1987	2.4	452	12	—	305 R4	25700	29600	44600	53700	16500	143
3.2	1967	1	447	6	301 L4	—	8320	8320	21800	25000	5470	132
3.2	1961	1.4	446	6	303 L4	—	25500	29500	44400	53400	16400	137
3.2	1961	2.8	446	6	305 L4	—	25500	29500	44400	53400	16400	142
3.5	1818	1.3	413	6	303 L4	—	24900	28800	43400	52200	16000	137
3.5	1818	2.6	413	6	305 L4	—	24900	28800	43400	52200	16000	142
3.6	1828	1.1	402	7.5	303 L3	—	24700	28500	43100	51800	15800	137
3.6	1828	2.1	402	7.5	305 L3	—	24700	28500	43100	51800	15800	142
3.7	1717	1.1	390	12	—	303 R4	24400	28200	42700	51400	15700	138
3.7	1717	2.2	390	12	—	305 R4	24400	28200	42700	51400	15700	143
3.7	1769	1	389	7.5	303 L3	—	24400	28200	42600	51300	15700	137
3.7	1769	1.8	389	7.5	305 L3	—	24400	28200	42600	51300	15700	142
3.9	1601	1.4	364	12	—	303 R4	23900	27600	41800	50300	15300	138
3.9	1601	2.9	364	12	—	305 R4	23900	27600	41800	50300	15300	143

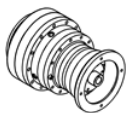








$P_1 = 0.75 \text{ kW}$ $n_1=1400 \text{ rpm}$

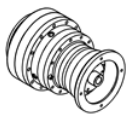
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
3.9	1597	1.2	363	10	—	301 R4	7760	7760	20500	23500	5100	133
4.3	1477	1.5	336	12	—	303 R4	23200	26800	40800	49100	14900	138
4.3	1453	1.3	330	6	301 L4	—	7520	7520	19900	22900	4940	132
4.4	1462	1.3	321	7.5	303 L3	—	22900	26400	40300	48500	14700	137
4.4	1462	2.5	321	7.5	305 L3	—	22900	26400	40300	48500	14700	142
4.6	1375	1.3	313	12	—	303 R4	22700	26200	39900	48100	14600	138
4.6	1375	2.6	313	12	—	305 R4	22700	26200	39900	48100	14600	143
4.8	1361	1	299	7.5	301 L3	—	7270	7270	19300	22200	4780	132
4.9	1280	1.5	291	10	—	301 R4	7210	7210	19100	22000	4740	133
4.9	1276	2.1	290	12	—	303 R4	22100	25600	39100	47000	14200	138
5.2	1258	1.8	276	7.5	303 L3	—	21800	25200	38500	46300	14000	137
5.3	1180	1.6	268	10	—	301 R4	7020	7020	18700	21500	4610	133
5.6	1172	1.6	258	7.5	303 L3	—	21300	24600	37700	45300	13600	137
5.6	1123	1.6	255	12	—	303 R4	21200	24500	37600	45200	13600	138
6	1090	1.2	240	7.5	301 L3	—	6760	6760	18100	20800	4440	132
6	1045	1.2	237	10	—	301 R4	6740	6740	18000	20700	4430	133
6.2	1016	1.8	231	12	—	303 R4	20500	23700	36500	43900	13200	138
6.5	1006	0.9	221	7.5	300 L3	—	6430	6430	17300	19800	4230	127
6.5	1006	1.8	221	7.5	301 L3	—	6580	6580	17600	20300	4320	132
6.5	1002	2.2	220	7.5	303 L3	—	20200	23300	36000	43300	13000	137
6.7	946	1	215	10	—	300 R4	6370	6370	17100	19700	4190	128
6.7	946	1.9	215	10	—	301 R4	6520	6520	17500	20100	4280	133
6.7	943	2.9	214	12	—	303 R4	20000	23100	35700	42900	12800	138
7.4	874	1.5	192	7.5	301 L3	—	6280	6280	16900	19400	4130	132
7.5	866	2.1	190	7.5	303 L3	—	19200	22200	34400	41400	12300	137
7.7	814	2.8	185	12	—	303 R4	19100	22000	34100	41100	12200	138
8.1	808	2.7	178	7.5	303 L3	—	18800	21700	33700	40600	12100	137
8.1	806	1.1	177	7.5	300 L3	—	6110	6110	16500	19000	4020	127
8.1	806	2.2	177	7.5	301 L3	—	6110	6110	16500	19000	4020	132
8.1	772	1.1	175	10	—	300 R4	6090	6090	16500	18900	4000	128
8.1	772	2.3	175	10	—	301 R4	6090	6090	16500	18900	4000	133
8.7	745	3	164	7.5	303 L3	—	18300	21100	32900	39600	11700	137
9	699	1.2	159	10	—	300 R4	5890	5890	16000	18300	3870	128
9	699	2.5	159	10	—	301 R4	5890	5890	16000	18300	3870	133
9.4	694	2.6	152	7.5	303 L3	—	17900	20600	32200	38700	11500	137
10	630	1	143	10	—	300 R4	5690	5690	15500	17800	3740	128
10	630	2.1	143	10	—	301 R4	5690	5690	15500	17800	3740	133
10.1	646	1.3	142	7.5	300 L3	—	5670	5670	15400	17700	3730	127
10.1	646	2.7	142	7.5	301 L3	—	5670	5670	15400	17700	3730	132
10.8	604	0.9	133	12	—	300 R3	5420	5420	14800	17000	3570	128
10.8	604	1.9	133	12	—	301 R3	5550	5550	15100	17400	3650	133
10.9	595	1.4	131	7.5	300 L3	—	5520	5520	15100	17300	3630	127
10.9	595	2.9	131	7.5	301 L3	—	5520	5520	15100	17300	3630	132







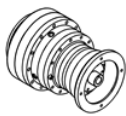
P₁ = 0.75 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
11	570	1.5	130	10	—	300 R4	5510	5510	15000	17300	3620	128
12.3	527	1.2	116	7.5	300 L3	—	5300	5300	14500	16700	3490	127
12.3	527	2.5	116	7.5	301 L3	—	5300	5300	14500	16700	3490	132
13.4	484	1.3	106	12	—	300 R3	5160	5160	14200	16300	3390	128
13.4	484	2.7	106	12	—	300 R3	5160	5160	14200	16300	3390	128
13.5	466	1.8	106	10	—	300 R4	5150	5150	14100	16200	3380	128
13.6	477	1.8	105	7.5	300 L3	—	5130	5130	14100	16200	3370	127
16.7	389	2.2	85.6	7.5	300 L3	—	4790	4790	13300	15200	3150	127
16.8	387	1.7	85.2	12	—	300 R3	4790	4790	13200	15200	3150	128
18.2	358	2.4	78.7	12	—	300 R3	4660	4660	12900	14900	3060	128
18.5	353	2.4	77.5	7.5	300 L3	—	4640	4640	12900	14800	3050	127
20.5	318	2	69.9	7.5	300 L3	—	4480	4480	12500	14300	2950	127
21	310	2.1	68.2	12	—	300 R3	4440	4440	12400	14200	2920	128
22.1	305	1.8	64.8	7.5	300 L2	—	4370	4370	12200	14000	2870	127
22.6	288	3	63.2	7.5	300 L3	—	4330	4330	12100	13900	2850	127
22.7	286	3	62.9	12	—	300 R3	4330	4330	12100	13900	2840	128
27.5	244	2.7	51.9	7.5	300 L2	—	4060	4060	11400	13100	2670	127



P₁ = 1.1 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.57	16433	1.6	2523	11	310 L4	—	—	—	133000	166000	65000	call
0.59	15775	1.1	2423	7.5	309 L4	—	—	—	110000	145000	36000	157
0.68	13652	2.5	2096	11	311 L4	—	—	—	157000	195000	65000	call
0.7	13292	1.1	2041	7.5	307 L4	—	—	—	109000	145000	45000	152
0.71	13167	2	2022	11	310 L4	—	—	—	133000	166000	65000	call
0.71	13041	1.3	2003	7.5	309 L4	—	—	—	110000	145000	36000	157
0.8	11686	2.2	1794	11	310 L4	—	—	—	133000	166000	65000	call
0.81	11508	1.4	1767	7.5	307 L4	—	—	—	109000	145000	45000	152
0.83	11218	1.5	1723	7.5	309 L4	—	—	—	110000	145000	36000	157
0.86	10885	2.4	1672	11	310 L4	—	—	—	133000	166000	65000	call
0.89	10450	1.6	1605	7.5	309 L4	—	—	—	110000	145000	36000	157
0.9	10358	1.4	1591	7.5	307 L4	—	—	—	109000	145000	45000	152
0.97	9602	1.1	1475	6	306 L4	—	45000	51000	101000	119000	35000	147
0.99	9363	2.8	1438	11	310 L4	—	—	—	133000	166000	65000	call
1	9171	1.7	1408	7.5	307 L4	—	—	—	109000	144700	45000	152
1	8989	1.9	1380	7.5	309 L4	—	—	—	110000	143800	35800	157
1.1	8373	2	1286	7.5	309 L4	—	—	—	109200	140800	35000	157
1.1	8332	1	1279	6	306 L4	—	45000	51000	99700	116100	34000	147



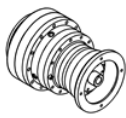
$P_1 = 1.1 \text{ kW}$ $n_1 = 1400 \text{ rpm}$															
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page			
							MC	MZ	HC/PC	HZ/PZ	FZ				
1.1	8299	1.5	1274	7.5	307 L4	—	—	—	107100	140400	43600	152			
1.2	7532	1.9	1157	7.5	307 L4	—	—	—	104100	136400	42200	152			
1.2	7485	2.2	1149	7.5	309 L4	—	—	—	105500	136100	33700	157			
1.3	7128	1.1	1095	6	306 L4	—	—	42900	48600	95200	110800	32200	147		
1.4	6610	1.4	1015	6	306 L4	—	—	41900	47400	93000	108300	31400	147		
1.4	6506	2.1	999	7.5	307 L4	—	—	—	—	99600	130500	40200	152		
1.4	6506	2.8	999	7.5	309 L4	—	—	—	—	101200	130500	32200	157		
1.6	5902	2.6	906	7.5	307 L4	—	—	—	—	96700	126800	38900	152		
1.6	5711	1.3	877	6	306 L4	—	—	39900	45200	89000	103700	29900	147		
1.7	5407	1.2	830	12	—	306 R4	—	—	39100	44300	87600	102000	29400	148	
1.8	5314	1	816	6	305 L4	—	—	—	—	31300	36100	53300	64100	20000	142
1.8	5267	1.5	809	6	306 L4	—	—	—	—	38800	44000	86900	101200	29200	147
1.8	5213	2.6	801	7.5	307 L4	—	—	—	—	93200	122100	37400	152		
2	4556	2.1	700	6	306 L4	—	—	37000	41900	83200	96900	27800	147		
2.1	4492	2.2	690	15	—	307 R4	—	—	—	89100	116800	35500	153		
2.1	4332	1.4	665	12	—	306 R4	—	—	36400	41200	82000	95400	27300	148	
2.2	4291	0.9	659	12	—	305 R4	—	—	29100	33600	50000	60100	18700	143	
2.2	4229	1.1	649	6	305 L4	—	—	29000	33400	49700	59800	18600	142		
2.3	4139	2.3	636	6	306 L4	—	—	35800	40600	80800	94100	26900	147		
2.4	3845	2.2	590	12	—	306 R4	—	—	34900	39600	79100	92100	26200	148	
2.4	3838	2.4	589	6	306 L4	—	—	34900	39600	79000	92000	26200	147		
2.5	3691	1.3	567	12	—	305 R4	—	—	27700	32000	47700	57400	17800	143	
2.6	3622	1.5	556	6	305 L4	—	—	27500	31700	47500	57100	17600	142		
2.6	3581	2	550	12	—	306 R4	—	—	34100	38700	77400	90100	25600	148	
2.7	3438	1.1	528	12	—	305 R4	—	—	27000	31200	46700	56200	17300	143	
2.8	3316	2.8	509	6	306 L4	—	—	33300	37700	75600	88100	25000	147		
2.9	3206	1.7	492	6	305 L4	—	—	26400	30500	45800	55100	16900	142		
2.9	3194	2.9	490	15	—	307 R4	—	—	—	80500	105400	31700	153		
2.9	3178	2.8	488	12	—	306 R4	—	—	32800	37100	74700	87000	24600	148	
3.1	2961	2.4	455	12	—	306 R4	—	—	32000	36300	73100	85100	24100	148	
3.2	2941	1.6	452	12	—	305 R4	—	—	25700	29600	44600	53700	16500	143	
3.2	2902	1	446	6	303 L4	—	—	25500	29500	44400	53400	16400	137		
3.2	2902	1.9	446	6	305 L4	—	—	25500	29500	44400	53400	16400	142		
3.5	2691	1.8	413	6	305 L4	—	—	24900	28800	43400	52200	16000	142		
3.5	2727	2.1	405	7.5	306 L3	—	—	30800	34900	70600	82200	23100	147		
3.6	2705	1.4	402	7.5	305 L3	—	—	24700	28500	43100	51800	15800	142		
3.7	2546	2.7	391	6	306 L4	—	—	30400	34500	69900	81400	22900	147		
3.7	2541	1.5	390	12	—	305 R4	—	—	24400	28200	42700	51400	15700	143	
3.7	2533	3	389	12	—	306 R4	—	—	30400	34400	69800	81200	22800	148	
3.7	2618	1.2	389	7.5	305 L3	—	—	24400	28200	42600	51300	15700	142		
3.9	2370	1	364	12	—	303 R4	—	—	23900	27600	41800	50300	15300	138	
3.9	2370	1.9	364	12	—	305 R4	—	—	23900	27600	41800	50300	15300	143	
4.3	2185	1	336	12	—	303 R4	—	—	23200	26800	40800	49100	14900	138	









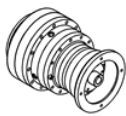
$P_1 = 1.1 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
4.3	2185	2.1	336	12	—	305 R4	23200	26800	40800	49100	14900	143
4.4	2185	2.5	325	7.5	306 L3	—	28600	32400	66100	76900	21500	147
4.4	2164	1.7	321	7.5	305 L3	—	22900	26400	40300	48500	14700	142
4.6	2036	0.9	313	12	—	303 R4	22200	25600	39100	47100	14200	138
4.6	2036	1.8	313	12	—	305 R4	22700	26200	39900	48100	14600	143
4.9	1894	1	291	10	—	301 R4	7210	7210	19100	22000	4740	133
4.9	1888	1.4	290	12	—	303 R4	22100	25600	39100	47000	14200	138
4.9	1888	2.8	290	12	—	305 R4	22100	25600	39100	47000	14200	143
5	1939	2.8	288	7.5	306 L3	—	27500	31200	63700	74200	20700	147
5.2	1862	1.2	276	7.5	303 L3	—	21800	25200	38500	46300	14000	137
5.2	1862	2.4	276	7.5	305 L3	—	21800	25200	38500	46300	14000	142
5.3	1747	1.1	268	10	—	301 R4	7020	7020	18700	21500	4610	133
5.6	1734	1.1	258	7.5	303 L3	—	21300	24600	37700	45300	13600	137
5.6	1734	2.1	258	7.5	305 L3	—	21300	24600	37700	45300	13600	142
5.6	1662	1.1	255	12	—	303 R4	21200	24500	37600	45200	13600	138
5.6	1662	2.2	255	12	—	305 R4	21200	24500	37600	45200	13600	143
6.2	1504	1.2	231	12	—	303 R4	20500	23700	36500	43900	13200	138
6.2	1504	2.4	231	12	—	305 R4	20500	23700	36500	43900	13200	143
6.5	1488	1.2	221	7.5	301 L3	—	6580	6580	17600	20300	4320	132
6.5	1484	1.5	220	7.5	303 L3	—	20200	23300	36000	43300	13000	137
6.7	1400	1.3	215	10	—	301 R4	6520	6520	17500	20100	4280	133
6.7	1395	2	214	12	—	303 R4	20000	23100	35700	42900	12800	138
7.4	1293	1	192	7.5	301 L3	—	6280	6280	16900	19400	4130	132
7.5	1282	1.4	190	7.5	303 L3	—	19200	22200	34400	41400	12300	137
7.5	1282	2.8	190	7.5	305 L3	—	19200	22200	34400	41400	12300	142
7.7	1204	1.9	185	12	—	303 R4	19100	22000	34100	41100	12200	138
8.1	1195	1.8	178	7.5	303 L3	—	18800	21700	33700	40600	12100	137
8.1	1192	1.5	177	7.5	301 L3	—	6110	6110	16500	19000	4020	132
8.1	1143	1.5	175	10	—	301 R4	6090	6090	16500	18900	4000	133
8.7	1102	2	164	7.5	303 L3	—	18300	21100	32900	39600	11700	137
9	1034	1.7	159	10	—	301 R4	5890	5890	16000	18300	3870	133
9	1031	2.6	158	12	—	303 R4	18100	20900	32600	39200	11600	138
9.4	1027	1.8	152	7.5	303 L3	—	17900	20600	32200	38700	11500	137
9.7	965	2.4	148	12	—	303 R4	17700	20400	31900	38400	11400	138
10	933	1.4	143	10	—	301 R4	5690	5690	15500	17800	3740	133
10.1	956	0.9	142	7.5	300 L3	—	5540	5540	15100	17400	3650	127
10.1	956	1.8	142	7.5	301 L3	—	5670	5670	15400	17700	3730	132
10.1	953	2.7	141	7.5	303 L3	—	17400	20100	31500	37900	11200	137
10.8	895	1.3	133	12	—	301 R3	5550	5550	15100	17400	3650	133
10.9	881	1	131	7.5	300 L3	—	5520	5520	15100	17300	3630	127
10.9	881	2	131	7.5	301 L3	—	5520	5520	15100	17300	3630	132
11	844	1	130	10	—	300 R4	5510	5510	15000	17300	3620	128
11	844	2	130	10	—	301 R4	5510	5510	15000	17300	3620	133







P₁ = 1.1 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
11.5	838	2.2	124	7.5	303 L3	—	16700	19300	30300	36500	10700	137
12.3	780	1.7	116	7.5	301 L3	—	5300	5300	14500	16700	3490	132
12.5	770	2.4	114	14	—	303 R3	16200	18700	29500	35500	10400	138
12.7	759	2.4	113	7.5	303 L3	—	16200	18600	29400	35400	10400	137
13.4	717	0.9	106	12	—	300 R3	5040	5040	13900	15900	3310	128
13.4	717	1.8	106	12	—	301 R3	5160	5160	14200	16300	3390	133
13.5	689	1.2	106	10	—	300 R4	5150	5150	14100	16200	3380	128
13.5	689	2.5	106	10	—	301 R4	5150	5150	14100	16200	3380	133
13.6	706	1.2	105	7.5	300 L3	—	5130	5130	14100	16200	3370	127
13.6	706	2.4	105	7.5	301 L3	—	5130	5130	14100	16200	3370	132
15.6	616	3	91.5	14	—	303 R3	15100	17400	27600	33200	9670	138
16.7	576	1.5	85.6	7.5	300 L3	—	4790	4790	13300	15200	3150	127
16.7	576	2.9	85.6	7.5	301 L3	—	4790	4790	13300	15200	3150	132
16.8	573	1.1	85.2	12	—	300 R3	4790	4790	13200	15200	3150	128
16.8	573	2.3	85.2	12	—	301 R3	4790	4790	13200	15200	3150	133
18.2	530	1.6	78.7	12	—	300 R3	4660	4660	12900	14900	3060	128
18.2	530	3	78.7	12	—	301 R3	4660	4660	12900	14900	3060	133
18.5	522	1.6	77.5	7.5	300 L3	—	4640	4640	12900	14800	3050	127
20.5	470	1.4	69.9	7.5	300 L3	—	4480	4480	12500	14300	2950	127
20.5	470	2.8	69.9	7.5	301 L3	—	4480	4480	12500	14300	2950	132
21	459	1.4	68.2	12	—	300 R3	4440	4440	12400	14200	2920	128
21	459	2.8	68.2	12	—	301 R3	4440	4440	12400	14200	2920	133
22.1	451	1.2	64.8	7.5	300 L2	—	4370	4370	12200	14000	2870	127
22.1	451	2.6	64.8	7.5	301 L2	—	4370	4370	12200	14000	2870	132
22.6	426	2	63.2	7.5	300 L3	—	4330	4330	12100	13900	2850	127
22.7	424	2	62.9	12	—	300 R3	4330	4330	12100	13900	2840	128
27.5	361	1.8	51.9	7.5	300 L2	—	4060	4060	11400	13100	2670	127
27.7	348	2.4	51.6	7.5	300 L3	—	4050	4050	11400	13100	2660	127
28.4	340	2.5	50.4	12	—	300 R3	4020	4020	11300	13000	2640	128
34	289	2.2	41.5	7.5	300 L2	—	3770	3770	10700	12300	2480	127
35	277	2.3	41.2	12	—	300 R3	3760	3760	10600	12200	2470	128
43	232	2.8	33.3	7.5	300 L2	—	3500	3500	9990	11500	2300	127
78	128	2.9	18.5	12	—	300 R2	2870	2870	8370	9620	1890	128

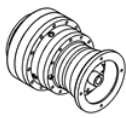
P₁ = 1.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.57	22206	1.2	2523	11	310 L4	—	—	—	133000	166000	65000	call
0.65	19246	2.5	2187	11	313 L4	—	—	—	192000	231000	80000	call





P₁ = 1.5 kW n₁=1400 rpm

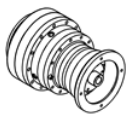
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.68	18448	1.8	2096	11	311 L4	—	—	—	157000	195000	65000	call
0.71	17794	1.5	2022	11	310 L4	—	—	—	133000	166000	65000	call
0.71	17623	1	2003	7.5	309 L4	—	—	—	110000	145000	36000	157
0.8	15791	1.6	1794	11	310 L4	—	—	—	133000	166000	65000	call
0.81	15552	1	1767	7.5	307 L4	—	—	—	109000	145000	45000	152
0.81	15545	2.8	1766	11	311 L4	—	—	—	157000	195000	65000	call
0.83	15160	1.1	1723	7.5	309 L4	—	—	—	110000	145000	36000	157
0.85	14782	2.3	1680	11	311 L4	—	—	—	157000	195000	65000	call
0.86	14709	1.8	1672	11	310 L4	—	—	—	133000	166000	65000	call
0.89	14121	1.2	1605	7.5	309 L4	—	—	—	110000	145000	36000	157
0.9	13997	1.1	1591	7.5	307 L4	—	—	—	109000	145000	45000	152
0.99	12653	2	1438	11	310 L4	—	—	—	133000	166000	65000	call
1	12393	1.3	1408	7.5	307 L4	—	—	—	109000	144700	45000	152
1	12147	1.4	1380	7.5	309 L4	—	—	—	110000	143800	35800	157
1.1	11315	1.5	1286	7.5	309 L4	—	—	—	109200	140800	35000	157
1.1	11215	1.1	1274	7.5	307 L4	—	—	—	107100	140400	43600	152
1.1	11079	2.5	1259	11	310 L4	—	—	—	128500	161600	62700	call
1.2	10246	2.9	1164	11	310 L4	—	—	—	125500	157900	61100	call
1.2	10179	1.4	1157	7.5	307 L4	—	—	—	104100	136400	42200	152
1.2	10114	1.6	1149	7.5	309 L4	—	—	—	105500	136100	33700	157
1.4	8932	1.1	1015	6	306 L4	—	41900	47400	93000	108300	31400	147
1.4	8792	1.6	999	7.5	307 L4	—	—	—	99600	130500	40200	152
1.4	8792	2.1	999	7.5	309 L4	—	—	—	101200	130500	32200	157
1.6	7975	1.9	906	7.5	307 L4	—	—	—	96700	126800	38900	152
1.6	7975	2.2	906	7.5	309 L4	—	—	—	98300	126800	31100	157
1.6	7903	2.9	898	15	—	310 R4	—	—	116100	146000	56100	call
1.6	7718	1	877	6	306 L4	—	39900	45200	89000	103700	29900	147
1.8	7117	1.1	809	6	306 L4	—	38800	44000	86900	101200	29200	147
1.8	7045	1.9	801	7.5	307 L4	—	—	—	93200	122100	37400	152
1.8	7045	2.6	801	7.5	309 L4	—	—	—	94700	122100	29900	157
2	6355	2.4	722	7.5	307 L4	—	—	—	90400	118400	36100	152
2	6156	1.5	700	6	306 L4	—	37000	41900	83200	96900	27800	147
2.1	6070	1.6	690	15	—	307 R4	—	—	89100	116800	35500	153
2.1	6070	2.4	690	15	—	309 R4	—	—	90600	116800	28400	158
2.1	5854	1	665	12	—	306 R4	36400	41200	82000	95400	27300	148
2.2	5751	2.2	654	7.5	307 L4	—	—	—	87700	114900	34900	152
2.3	5593	1.7	636	6	306 L4	—	35800	40600	80800	94100	26900	147
2.4	5196	1.6	590	12	—	306 R4	34900	39600	79100	92100	26200	148
2.4	5186	1.8	589	6	306 L4	—	34900	39600	79000	92000	26200	147
2.5	5114	2.5	581	15	—	307 R4	38600	48500	84700	110900	33600	153
2.5	5092	2.9	579	7.5	307 L4	—	—	—	84500	110800	33500	152
2.5	4988	1	567	12	—	305 R4	27700	32000	47700	57400	17800	143
2.6	4894	1.1	556	6	305 L4	—	27500	31700	47500	57100	17600	142







$P_1 = 1.5 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.6	4840	1.5	550	12	—	306 R4	34100	38700	77400	90100	25600	148
2.8	4481	2.1	509	6	306 L4	—	33300	37700	75600	88100	25000	147
2.9	4332	1.2	492	6	305 L4	—	26400	30500	45800	55100	16900	142
2.9	4316	2.2	490	15	—	307 R4	—	—	80500	105400	31700	153
2.9	4295	2.1	488	12	—	306 R4	32800	37100	74700	87000	24600	148
3.1	4091	3	465	7.5	307 L4	—	—	—	79200	103700	31200	152
3.1	4001	1.8	455	12	—	306 R4	32000	36300	73100	85100	24100	148
3.2	3975	1.2	452	12	—	305 R4	25700	29600	44600	53700	16500	143
3.2	3922	1.4	446	6	305 L4	—	25500	29500	44400	53400	16400	142
3.2	3909	2.5	444	6	306 L4	—	31800	36000	72600	84500	23900	147
3.4	3695	2.4	420	12	—	306 R4	31200	35300	71400	83100	23400	148
3.5	3636	1.3	413	6	305 L4	—	24900	28800	43400	52200	16000	142
3.5	3686	1.5	405	7.5	306 L3	—	30800	34900	70600	82200	23100	147
3.6	3656	1	402	7.5	305 L3	—	24700	28500	43100	51800	15800	142
3.7	3440	2	391	6	306 L4	—	30400	34500	69900	81400	22900	147
3.7	3433	1.1	390	12	—	305 R4	24400	28200	42700	51400	15700	143
3.7	3423	2.2	389	12	—	306 R4	30400	34400	69800	81200	22800	148
3.9	3202	1.4	364	12	—	305 R4	23900	27600	41800	50300	15300	143
4.3	3062	2.9	336	11	307 L3	—	—	—	71900	94200	28000	152
4.3	2953	1.5	336	12	—	305 R4	23200	26800	40800	49100	14900	143
4.4	2953	1.9	325	7.5	306 L3	—	28600	32400	66100	76900	21500	147
4.4	2925	1.2	321	7.5	305 L3	—	22900	26400	40300	48500	14700	142
4.6	2751	1.3	313	12	—	305 R4	22700	26200	39900	48100	14600	143
4.6	2742	2.8	312	12	—	306 R4	28200	32000	65300	76000	21200	148
4.9	2552	1	290	12	—	303 R4	22100	25600	39100	47000	14200	138
4.9	2552	2.1	290	12	—	305 R4	22100	25600	39100	47000	14200	143
5	2621	2.1	288	7.5	306 L3	—	27500	31200	63700	74200	20700	147
5.2	2516	1.8	276	7.5	305 L3	—	21800	25200	38500	46300	14000	142
5.3	2441	2.3	268	7.5	306 L3	—	26900	30400	62400	72700	20200	147
5.6	2344	1.5	258	7.5	305 L3	—	21300	24600	37700	45300	13600	142
5.6	2246	1.6	255	12	—	305 R4	21200	24500	37600	45200	13600	143
6.2	2033	0.9	231	12	—	303 R4	20100	23100	35700	43000	12900	138
6.2	2033	1.8	231	12	—	305 R4	20500	23700	36500	43900	13200	143
6.5	2005	1.1	220	7.5	303 L3	—	20200	23300	36000	43300	13000	137
6.5	2005	2.4	220	7.5	305 L3	—	20200	23300	36000	43300	13000	142
6.7	1892	1	215	10	—	301 R4	6520	6520	17500	20100	4280	133
6.7	1886	1.4	214	12	—	303 R4	20000	23100	35700	42900	12800	138
6.7	1886	2.9	214	12	—	305 R4	19600	22600	34900	42000	12500	143
7.5	1732	1.1	190	7.5	303 L3	—	19200	22200	34400	41400	12300	137
7.5	1732	2.1	190	7.5	305 L3	—	19200	22200	34400	41400	12300	142
7.7	1627	1.4	185	12	—	303 R4	19100	22000	34100	41100	12200	138
7.7	1627	2.8	185	12	—	305 R4	19100	22000	34100	41100	12200	143
8.1	1615	1.4	178	7.5	303 L3	—	18800	21700	33700	40600	12100	137

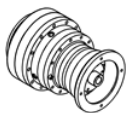








P₁ = 1.5 kW n₁=1400 rpm

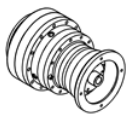
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
8.1	1615	2.7	178	7.5	305 L3	—	18800	21700	33700	40600	12100	142
8.1	1611	1.1	177	7.5	301 L3	—	6110	6110	16500	19000	4020	132
8.1	1544	1.1	175	10	—	301 R4	6090	6090	16500	18900	4000	133
8.7	1490	1.5	164	7.5	303 L3	—	18300	21100	32900	39600	11700	137
8.7	1490	3	164	7.5	305 L3	—	18300	21100	32900	39600	11700	142
9	1398	1.2	159	10	—	301 R4	5890	5890	16000	18300	3870	133
9	1393	1.9	158	12	—	303 R4	18100	20900	32600	39200	11600	138
9.4	1388	1.3	152	7.5	303 L3	—	17900	20600	32200	38700	11500	137
9.4	1388	2.6	152	7.5	305 L3	—	17900	20600	32200	38700	11500	142
9.7	1304	1.8	148	12	—	303 R4	17700	20400	31900	38400	11400	138
10	1260	1	143	10	—	301 R4	5690	5690	15500	17800	3740	133
10.1	1291	1.3	142	7.5	301 L3	—	5670	5670	15400	17700	3730	132
10.1	1287	2	141	7.5	303 L3	—	17400	20100	31500	37900	11200	137
10.8	1209	1	133	12	—	301 R3	5550	5550	15100	17400	3650	133
10.9	1191	1.4	131	7.5	301 L3	—	5520	5520	15100	17300	3630	132
11	1141	1.5	130	10	—	301 R4	5510	5510	15000	17300	3620	133
11.1	1137	2.3	129	12	—	303 R4	16900	19500	30600	36900	10800	138
11.5	1133	1.6	124	7.5	303 L3	—	16700	19300	30300	36500	10700	137
12.3	1054	1.2	116	7.5	301 L3	—	5300	5300	14500	16700	3490	132
12.5	1041	1.7	114	14	—	303 R3	16200	18700	29500	35500	10400	138
12.7	1025	1.8	113	7.5	303 L3	—	16200	18600	29400	35400	10400	137
13.4	969	1.3	106	12	—	301 R3	5160	5160	14200	16300	3390	133
13.5	931	0.9	106	10	—	300 R4	5030	5030	13800	15900	3310	128
13.5	931	1.8	106	10	—	301 R4	5150	5150	14100	16200	3380	133
13.6	954	0.9	105	7.5	300 L3	—	5010	5010	13800	15900	3300	127
13.6	954	1.8	105	7.5	301 L3	—	5130	5130	14100	16200	3370	132
13.7	951	2.7	105	7.5	303 L3	—	15800	18200	28800	34600	10100	137
15.6	833	2.2	91.5	14	—	303 R3	15100	17400	27600	33200	9670	138
15.9	821	2.7	90.2	7.5	303 L3	—	15000	17300	27500	33100	9620	137
16.7	779	1.1	85.6	7.5	300 L3	—	4790	4790	13300	15200	3150	127
16.7	779	2.2	85.6	7.5	301 L3	—	4790	4790	13300	15200	3150	132
16.8	775	1.7	85.2	12	—	301 R3	4790	4790	13200	15200	3150	133
18.2	716	1.2	78.7	12	—	300 R3	4660	4660	12900	14900	3060	128
18.2	716	2.2	78.7	12	—	301 R3	4660	4660	12900	14900	3060	133
18.5	705	1.2	77.5	7.5	300 L3	—	4640	4640	12900	14800	3050	127
18.5	705	2.4	77.5	7.5	301 L3	—	4640	4640	12900	14800	3050	132
19.5	667	2.7	73.3	14	—	303 R3	14000	16200	25900	31100	8980	138
20.5	636	1	69.9	7.5	300 L3	—	4480	4480	12500	14300	2950	127
20.5	636	2	69.9	7.5	301 L3	—	4480	4480	12500	14300	2950	132
21	621	1	68.2	12	—	300 R3	4440	4440	12400	14200	2920	128
21	621	2.1	68.2	12	—	301 R3	4440	4440	12400	14200	2920	133
22.1	609	0.9	64.8	7.5	300 L2	—	4270	4270	12000	13700	2810	127
22.1	609	1.9	64.8	7.5	301 L2	—	4370	4370	12200	14000	2870	132





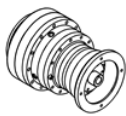





P₁ = 1.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
22.6	576	1.5	63.2	7.5	300 L3	—	4330	4330	12100	13900	2850	127
22.6	576	2.9	63.2	7.5	301 L3	—	4330	4330	12100	13900	2850	132
22.7	573	1.5	62.9	12	—	300 R3	4330	4330	12100	13900	2840	128
22.7	573	2.9	62.9	12	—	301 R3	4330	4330	12100	13900	2840	133
27.5	488	1.3	51.9	7.5	300 L2	—	4060	4060	11400	13100	2670	127
27.5	488	2.7	51.9	7.5	301 L2	—	4060	4060	11400	13100	2670	132
27.7	470	1.8	51.6	7.5	300 L3	—	4050	4050	11400	13100	2660	127
28.4	459	1.9	50.4	12	—	300 R3	4020	4020	11300	13000	2640	128
34	390	1.7	41.5	7.5	300 L2	—	3770	3770	10700	12300	2480	127
35	375	1.7	41.2	12	—	300 R3	3760	3760	10600	12200	2470	128
37	361	2.3	38.4	7.5	300 L2	—	3670	3670	10400	12000	2410	127
38	339	2.5	37.3	12	—	300 R3	3630	3630	10300	11900	2390	128
43	313	2.1	33.3	7.5	300 L2	—	3500	3500	9990	11500	2300	127
47	289	2.9	30.7	7.5	300 L2	—	3410	3410	9750	11200	2240	127
78	173	2.1	18.5	12	—	300 R2	2870	2870	8370	9620	1890	128

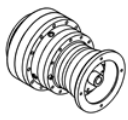
P₁ = 2.2 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.65	28291	1.7	2187	11	313 L4	—	—	—	192000	231000	80000	call
0.68	27119	1.3	2096	11	311 L4	—	—	—	157000	195000	65000	call
0.71	26157	1	2022	11	310 L4	—	—	—	133000	166000	65000	call
0.79	23503	2.5	1817	11	313 L4	—	—	—	192000	231000	80000	call
0.8	23213	1.1	1794	11	310 L4	—	—	—	133000	166000	65000	call
0.81	22850	1.9	1766	11	311 L4	—	—	—	157000	195000	65000	call
0.85	21730	1.6	1680	11	311 L4	—	—	—	157000	195000	65000	call
0.86	21623	1.2	1672	11	310 L4	—	—	—	133000	166000	65000	call
0.95	19429	3	1502	11	313 L4	—	—	—	192000	231000	80000	call
0.99	18600	1.4	1438	11	310 L4	—	—	—	133000	166000	65000	call
1	18310	2.3	1415	11	311 L4	—	—	—	157000	195000	65000	call
1	18032	2.9	1394	11	313 L4	—	—	—	192000	229000	79900	call
1	17856	0.9	1380	7.5	309 L4	—	—	—	110000	143800	35800	157
1.1	16633	1	1286	7.5	309 L4	—	—	—	109200	140800	35000	157
1.1	16286	1.7	1259	11	310 L4	—	—	—	128500	161600	62700	call
1.2	15916	2.8	1230	11	311 L4	—	—	—	150800	187900	62300	call
1.2	15061	1.9	1164	11	310 L4	—	—	—	125500	157900	61100	call
1.2	14963	0.9	1157	7.5	307 L4	—	—	—	101900	133600	41300	152
1.2	14868	1.1	1149	7.5	309 L4	—	—	—	105500	136100	33700	157
1.4	13202	2.2	1021	11	310 L4	—	—	—	120700	151800	58500	call





$P_1 = 2.2 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.4	12925	1.1	999	7.5	307 L4	—	—	—	99600	130500	40200	152
1.4	12925	1.4	999	7.5	309 L4	—	—	—	101200	130500	32200	157
1.5	12145	2.7	939	11	310 L4	—	—	—	117700	148000	56900	call
1.6	11724	1.3	906	7.5	307 L4	—	—	—	96700	126800	38900	152
1.6	11724	1.5	906	7.5	309 L4	—	—	—	98300	126800	31100	157
1.6	11618	2	898	15	—	310 R4	—	—	116100	146000	56100	call
1.7	10579	2.6	818	11	310 L4	—	—	—	112900	142000	54300	call
1.8	10356	1.3	801	7.5	307 L4	—	—	—	93200	122100	37400	152
1.8	10356	1.8	801	7.5	309 L4	—	—	—	94700	122100	29900	157
1.9	9789	2.7	757	15	—	310 R4	—	—	110300	138700	52900	call
2	9388	2.9	726	11	310 L4	—	—	—	108900	137000	52200	call
2	9342	1.6	722	7.5	307 L4	—	—	—	90400	118400	36100	152
2	9342	2.3	722	7.5	309 L4	—	—	—	91800	118400	28900	157
2	9050	1	700	6	306 L4	—	37000	41900	83200	96900	27800	147
2.1	8923	1.1	690	15	—	307 R4	—	—	89100	116800	35500	153
2.1	8923	1.7	690	15	—	309 R4	—	—	90600	116800	28400	158
2.2	8454	1.5	654	7.5	307 L4	—	—	—	87700	114900	34900	152
2.2	8454	2.1	654	7.5	309 L4	—	—	—	89100	114900	27900	157
2.2	8262	2.6	639	15	—	310 R4	—	—	104800	131800	50000	call
2.3	8221	1.1	636	6	306 L4	—	35800	40600	80800	94100	26900	147
2.4	7637	1.1	590	12	—	306 R4	34900	39600	79100	92100	26200	148
2.4	7628	2.9	590	15	—	310 R4	—	—	102400	128700	48700	call
2.4	7624	1.2	589	6	306 L4	—	34900	39600	79000	92000	26200	147
2.5	7518	1.7	581	15	—	307 R4	—	—	84700	110900	33600	153
2.5	7518	2.1	581	15	—	309 R4	—	—	86000	110900	26900	158
2.5	7486	2	579	7.5	307 L4	—	—	—	84500	110800	33500	152
2.5	7486	2.8	579	7.5	309 L4	—	—	—	85900	110800	26800	157
2.6	7114	1	550	12	—	306 R4	34100	38700	77400	90100	25600	148
2.8	6588	1.4	509	6	306 L4	—	33300	37700	75600	88100	25000	147
2.8	6587	2.1	509	7.5	307 L4	—	—	—	81400	106600	32100	152
2.8	6587	2.2	509	7.5	309 L4	—	—	—	82700	106600	25700	157
2.9	6345	1.5	490	15	—	307 R4	—	—	80500	105400	31700	153
2.9	6345	2.2	490	15	—	309 R4	—	—	81700	105400	25400	158
2.9	6314	1.4	488	12	—	306 R4	32800	37100	74700	87000	24600	148
3.1	6013	2	465	7.5	307 L4	—	35800	45000	79200	103700	31200	152
3.1	5910	2.3	457	15	—	309 R4	—	—	80000	103200	24800	158
3.1	5881	1.2	455	12	—	306 R4	32000	36300	73100	85100	24100	148
3.2	5858	2.3	453	15	—	307 R4	—	—	78600	102900	30900	153
3.2	5765	1	446	6	305 L4	—	25500	29500	44400	53400	16400	142
3.2	5747	1.7	444	6	306 L4	—	31800	36000	72600	84500	23900	147
3.4	5431	1.6	420	12	—	306 R4	31200	35300	71400	83100	23400	148
3.5	5346	2.2	413	15	—	307 R4	—	—	76400	100100	30000	153
3.5	5246	2.3	406	7.5	307 L4	—	—	—	76000	99600	29800	152



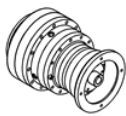
$P_1 = 2.2 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					 Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
3.5	5418	1	405	7.5	306 L3	—	30800	34900	70600	82200	23100	147
3.7	5057	1.4	391	6	306 L4	—	30400	34500	69900	81400	22900	147
3.7	5031	1.5	389	12	—	306 R4	30400	34400	69800	81200	22800	148
3.8	4843	3	374	15	—	309 R4	—	—	75400	97200	23200	158
3.9	4707	1	364	12	—	305 R4	23900	27600	41800	50300	15300	143
3.9	4694	2.6	363	15	—	307 R4	—	—	73500	96300	28700	153
4.3	4501	2	336	11	307 L3	—	—	—	71900	94200	28000	152
4.3	4501	2.9	336	11	309 L3	—	—	—	73000	94200	22400	157
4.3	4341	1.1	336	12	—	305 R4	23200	26800	40800	49100	14900	143
4.3	4284	2.7	331	15	—	307 R4	—	—	71500	93700	27800	153
4.4	4341	1.3	325	7.5	306 L3	—	28600	32400	66100	76900	21500	147
4.6	4031	1.9	312	12	—	306 R4	28200	32000	65300	76000	21200	148
4.9	3751	1.4	290	12	—	305 R4	22100	25600	39100	47000	14200	143
4.9	3738	2.2	289	12	—	306 R4	27500	31200	63800	74300	20700	148
5	3853	1.4	288	7.5	306 L3	—	27500	31200	63700	74200	20700	147
5	3792	3	284	11	307 L3	—	—	—	68300	89400	26400	152
5.2	3698	1.2	276	7.5	305 L3	—	21800	25200	38500	46300	14000	142
5.3	3589	1.5	268	7.5	306 L3	—	26900	30400	62400	72700	20200	147
5.6	3445	1	258	7.5	305 L3	—	21300	24600	37700	45300	13600	142
5.6	3301	1.1	255	12	—	305 R4	21200	24500	37600	45200	13600	143
5.8	3216	2.5	249	12	—	306 R4	26200	29700	61000	71000	19700	148
6	3201	2.7	239	11	307 L3	—	—	—	64900	85000	25000	152
6	3185	2.6	238	7.5	306 L3	—	25800	29200	60200	70100	19400	147
6.2	2988	1.2	231	12	—	305 R4	20500	23700	36500	43900	13200	143
6.2	2979	2.5	230	12	—	306 R4	25500	28900	59600	69400	19200	148
6.4	2967	2.2	222	7.5	306 L3	—	25200	28600	58900	68600	18900	147
6.5	2947	1.6	220	7.5	305 L3	—	20200	23300	36000	43300	13000	142
6.7	2772	1	214	12	—	303 R4	20000	23100	35700	42900	12800	138
6.7	2772	1.9	214	12	—	305 R4	20000	23100	35700	42900	12800	143
7	2740	3	205	7.5	306 L3	—	24500	27800	57600	67000	18400	147
7.5	2546	1.4	190	7.5	305 L3	—	19200	22200	34400	41400	12300	142
7.5	2538	2.6	190	7.5	306 L3	—	23900	27100	56200	65500	18000	147
7.7	2392	1	185	12	—	303 R4	18600	21500	33400	40200	11900	138
7.7	2392	1.9	185	12	—	305 R4	19100	22000	34100	41100	12200	143
8.1	2375	0.9	178	7.5	303 L3	—	18800	21700	33700	40600	12100	137
8.1	2375	1.9	178	7.5	305 L3	—	18800	21700	33700	40600	12100	142
8.7	2190	1	164	7.5	303 L3	—	18300	21100	32900	39600	11700	137
8.7	2190	2	164	7.5	305 L3	—	18300	21100	32900	39600	11700	142
9	2048	1.3	158	12	—	303 R4	18100	20900	32600	39200	11600	138
9	2048	2.6	158	12	—	305 R4	18100	20900	32600	39200	11600	143
9.4	2040	1.8	152	7.5	305 L3	—	17900	20600	32200	38700	11500	142
9.7	1917	1.2	148	12	—	303 R4	17700	20400	31900	38400	11400	138
9.7	1917	2.3	148	12	—	305 R4	17700	20400	31900	38400	11400	143







P₁ = 2.2 kW n₁=1400 rpm

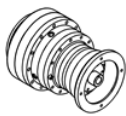
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
9.9	1928	2.8	144	14	—	306 R3	21800	24700	51800	60300	16400	148
10.1	1898	0.9	142	7.5	301 L3	—	5540	5540	15100	17400	3650	132
10.1	1892	1.4	141	7.5	303 L3	—	17400	20100	31500	37900	11200	137
10.1	1892	2.7	141	7.5	305 L3	—	17400	20100	31500	37900	11200	142
10.9	1750	1	131	7.5	301 L3	—	5520	5520	15100	17300	3630	132
11	1677	1	130	10	—	301 R4	5510	5510	15000	17300	3620	133
11.1	1672	1.6	129	12	—	303 R4	16900	19500	30600	36900	10800	138
11.5	1665	1.1	124	7.5	303 L3	—	16700	19300	30300	36500	10700	137
11.5	1665	2.2	124	7.5	305 L3	—	16700	19300	30300	36500	10700	142
12.5	1530	1.2	114	14	—	303 R3	16200	18700	29500	35500	10400	138
12.5	1530	2.3	114	14	—	305 R3	16200	18700	29500	35500	10400	143
12.7	1507	1.2	113	7.5	303 L3	—	16200	18600	29400	35400	10400	137
12.7	1507	2.4	113	7.5	305 L3	—	16200	18600	29400	35400	10400	142
13.4	1424	0.9	106	12	—	301 R3	5160	5160	14200	16300	3390	133
13.5	1369	1.2	106	10	—	301 R4	5150	5150	14100	16200	3380	133
13.6	1403	1.2	105	7.5	301 L3	—	5130	5130	14100	16200	3370	132
13.7	1398	1.8	105	7.5	303 L3	—	15800	18200	28800	34600	10100	137
15.6	1224	1.5	91.5	14	—	303 R3	15100	17400	27600	33200	9670	138
15.6	1224	2.9	91.5	14	—	305 R3	15100	17400	27600	33200	9670	143
15.9	1207	1.9	90.2	7.5	303 L3	—	15000	17300	27500	33100	9620	137
16.7	1145	1.5	85.6	7.5	301 L3	—	4790	4790	13300	15200	3150	132
16.8	1139	1.1	85.2	12	—	301 R3	4790	4790	13200	15200	3150	133
18.2	1053	2.1	78.7	14	—	303 R3	14300	16500	26400	31800	9190	138
18.2	1052	1.5	78.7	12	—	301 R3	4660	4660	12900	14900	3060	133
18.5	1036	1.6	77.5	7.5	301 L3	—	4640	4640	12900	14800	3050	132
18.5	1033	2.4	77.2	7.5	303 L3	—	14200	16400	26300	31600	9140	137
19.5	981	1.9	73.3	14	—	303 R3	14000	16200	25900	31100	8980	138
19.8	967	2.3	72.3	7.5	303 L3	—	13900	16100	25700	31000	8940	137
20.5	935	1.4	69.9	7.5	301 L3	—	4480	4480	12500	14300	2950	132
21	913	1.4	68.2	12	—	301 R3	4440	4440	12400	14200	2920	133
22.1	895	1.3	64.8	7.5	301 L2	—	4370	4370	12200	14000	2870	132
22.6	846	1	63.2	7.5	300 L3	—	4330	4330	12100	13900	2850	127
22.6	846	2	63.2	7.5	301 L3	—	4330	4330	12100	13900	2850	132
22.7	844	2.6	63.1	14	—	303 R3	13300	15400	24700	29700	8540	138
22.7	843	3	63.1	7.5	303 L3	—	13300	15400	24700	29700	8540	137
22.7	842	1	62.9	12	—	300 R3	4330	4330	12100	13900	2840	128
22.7	842	2	62.9	12	—	301 R3	4330	4330	12100	13900	2840	133
25.6	771	2.4	55.8	9	303 L2	—	12800	14800	23800	28700	8200	137
26.4	725	2.5	54.2	14	—	303 R3	12700	14600	23600	28400	8120	138
27.5	717	0.9	51.9	7.5	300 L2	—	3970	3970	11200	12900	2610	127
27.5	717	1.8	51.9	7.5	301 L2	—	4060	4060	11400	13100	2670	132
27.7	691	1.2	51.6	7.5	300 L3	—	4050	4050	11400	13100	2660	127
27.7	691	2.4	51.6	7.5	301 L3	—	4050	4050	11400	13100	2660	132







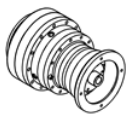
P₁ = 2.2 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
28.4	674	1.3	50.4	12	—	300 R3	4020	4020	11300	13000	2640	128
28.4	674	2.4	50.4	12	—	301 R3	4020	4020	11300	13000	2640	133
32	617	3	44.6	9	303 L2	—	11900	13700	22300	26800	7610	137
34	574	1.1	41.5	7.5	300 L2	—	3770	3770	10700	12300	2480	127
34	574	2.3	41.5	7.5	301 L2	—	3770	3770	10700	12300	2480	132
35	551	1.2	41.2	12	—	300 R3	3760	3760	10600	12200	2470	128
35	551	2.4	41.2	12	—	301 R3	3760	3760	10600	12200	2470	133
37	530	1.6	38.4	7.5	300 L2	—	3670	3670	10400	12000	2410	127
37	530	2.9	38.4	7.5	301 L2	—	3670	3670	10400	12000	2410	132
38	498	1.7	37.3	12	—	300 R3	3630	3630	10300	11900	2390	128
43	460	1.4	33.3	7.5	300 L2	—	3500	3500	9990	11500	2300	127
43	460	2.8	33.3	7.5	301 L2	—	3500	3500	9990	11500	2300	132
47	424	2	30.7	7.5	300 L2	—	3410	3410	9750	11200	2240	127
47	407	2.1	30.4	12	—	300 R3	3400	3400	9730	11200	2230	128
58	332	2.2	24.8	12	—	300 R3	3170	3170	9150	10500	2090	128
58	342	2.5	24.8	18	—	303 R2	9750	11300	18700	22500	6250	138
58	340	2.4	24.6	7.5	300 L2	—	3160	3160	9130	10500	2080	127
71	277	2.3	20.1	7.5	300 L2	—	2960	2960	8590	9870	1940	127
78	255	1.5	18.5	12	—	300 R2	2870	2870	8370	9620	1890	128
78	255	2.9	18.5	12	—	301 R2	2870	2870	8370	9620	1890	133
79	251	3	18.2	7.5	300 L2	—	2860	2860	8330	9580	1880	127
97	204	2.5	14.8	12	—	300 R2	2670	2670	7830	9000	1750	128
159	128	2.5	9	7.5	300 L1	—	2260	2260	6750	7750	1490	127

P₁ = 3 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.65	38491	1.3	2187	11	313 L4	—	—	—	192000	231000	80000	call
0.68	36897	0.9	2096	11	311 L4	—	—	—	157000	195000	65000	call
0.78	31977	1.8	1817	11	313 L4	—	—	—	192000	231000	80000	call
0.8	31089	1.4	1766	11	311 L4	—	—	—	157000	195000	65000	call
0.85	29565	1.2	1680	11	311 L4	—	—	—	157000	195000	65000	call
0.95	26435	2.2	1502	11	313 L4	—	—	—	192000	231000	80000	call
0.99	25307	1	1438	11	310 L4	—	—	—	133000	166000	65000	call
1	24911	1.7	1415	11	311 L4	—	—	—	157000	195000	65000	call
1	24533	2.1	1394	11	313 L4	—	—	—	192000	229000	79900	call
1.1	22274	2.5	1266	11	313 L4	—	—	—	188000	222500	77400	call
1.1	22158	1.2	1259	11	310 L4	—	—	—	128500	161600	62700	call
1.2	21655	2	1230	11	311 L4	—	—	—	150800	187900	62300	call





$P_1 = 3 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.2	20491	1.4	1164	11	310 L4	—	—	—	125500	157900	61100	call
1.3	19658	2.7	1117	11	313 L4	—	—	—	181100	214300	74200	call
1.3	18628	2.3	1058	11	311 L4	—	—	—	144200	179600	59200	call
1.4	17963	1.6	1021	11	310 L4	—	—	—	120700	151800	58500	call
1.4	17584	1	999	7.5	309 L4	—	—	—	101200	130500	32200	157
1.4	17352	2.4	986	11	311 L4	—	—	—	141100	175800	57800	call
1.5	16524	2	939	11	310 L4	—	—	—	117700	148000	56900	call
1.6	15951	1	906	7.5	307 L4	—	—	—	94700	124200	38000	152
1.6	15951	1.1	906	7.5	309 L4	—	—	—	98300	126800	31100	157
1.6	15905	2.9	904	11	311 L4	—	—	—	137500	171300	56200	call
1.6	15807	1.5	898	15	—	310 R4	—	—	116100	146000	56100	call
1.7	14393	1.9	818	11	310 L4	—	—	—	112900	142000	54300	call
1.8	14090	0.9	801	7.5	307 L4	—	—	—	91300	119600	36500	152
1.8	14090	1.3	801	7.5	309 L4	—	—	—	94700	122100	29900	157
1.9	13319	2	757	15	—	310 R4	—	—	110300	138700	52900	call
1.9	13132	2.3	746	22	—	311 R4	—	—	129800	161700	52700	call
2	12773	2.1	726	11	310 L4	—	—	—	108900	137000	52200	call
2	12711	1.2	722	7.5	307 L4	—	—	—	90400	118400	36100	152
2	12711	1.7	722	7.5	309 L4	—	—	—	91800	118400	28900	157
2.1	12140	1.2	690	15	—	309 R4	—	—	90600	116800	28400	158
2.2	11502	1.1	654	7.5	307 L4	—	—	—	87700	114900	34900	152
2.2	11502	1.6	654	7.5	309 L4	—	—	—	89100	114900	27900	157
2.2	11240	1.9	639	15	—	310 R4	—	—	104800	131800	50000	call
2.2	11205	2.4	637	11	310 L4	—	—	—	104700	131700	50000	call
2.4	10378	2.1	590	15	—	310 R4	—	—	102400	128700	48700	call
2.4	10229	1.2	581	15	—	307 R4	—	—	84700	110900	33600	153
2.4	10229	1.5	581	15	—	309 R4	—	—	86000	110900	26900	158
2.5	10185	1.5	579	7.5	307 L4	—	—	—	84500	110800	33500	152
2.5	10185	2.1	579	7.5	309 L4	—	—	—	85900	110800	26800	157
2.7	9102	2.8	517	15	—	310 R4	—	—	98400	123800	46600	call
2.8	8963	1.1	509	6	306 L4	—	33300	37700	75600	88100	25000	147
2.8	8962	1.6	509	7.5	307 L4	—	—	—	81400	106600	32100	152
2.8	8962	1.6	509	7.5	309 L4	—	—	—	82700	106600	25700	157
2.8	8929	2.9	507	11	310 L4	—	—	—	97900	123000	46300	call
2.9	8633	1.1	490	15	—	307 R4	—	—	80500	105400	31700	153
2.9	8633	1.6	490	15	—	309 R4	—	—	81700	105400	25400	158
2.9	8590	1.1	488	12	—	306 R4	32800	37100	74700	87000	24600	148
3.1	8181	1.5	465	7.5	307 L4	—	—	—	79200	103700	31200	152
3.1	8181	2.2	465	7.5	309 L4	—	—	—	80400	103700	24900	157
3.1	8041	1.7	457	15	—	309 R4	—	—	80000	103200	24800	158
3.1	7993	2.5	454	15	—	310 R4	—	—	94700	119000	44700	call
3.1	7970	1.7	453	15	—	307 R4	—	—	78600	102900	30900	153
3.2	7819	1.3	444	6	306 L4	—	31800	36000	72600	84500	23900	147

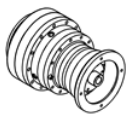






P₁ = 3 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
3.4	7389	1.2	420	12	—	306 R4	31200	35300	71400	83100	23400	148
3.4	7274	1.6	413	15	—	307 R4	—	—	76400	100100	30000	153
3.4	7274	2.5	413	15	—	309 R4	—	—	77700	100100	24000	158
3.5	7137	1.7	406	7.5	307 L4	—	—	—	76000	99600	29800	152
3.5	7137	2.5	406	7.5	309 L4	—	—	—	77200	99600	23800	157
3.6	6893	2.8	392	11	310 L4	—	—	—	90500	113900	42500	call
3.6	6880	1	391	6	306 L4	—	30400	34500	69900	81400	22900	147
3.7	6845	1.1	389	12	—	306 R4	30400	34400	69800	81200	22800	148
3.8	6589	2.2	374	15	—	309 R4	—	—	75400	97200	23200	158
3.9	6387	1.9	363	15	—	307 R4	—	—	73500	96300	28700	153
4.1	6144	2.4	349	7.5	307 L4	—	—	—	72700	95200	28300	152
4.2	6124	1.4	336	11	307 L3	—	—	—	71900	94200	28000	152
4.2	6124	2.2	336	11	309 L3	—	—	—	73000	94200	22400	157
4.3	5828	2	331	15	—	307 R4	—	—	71500	93700	27800	153
4.3	5828	3	331	15	—	309 R4	—	—	72700	93700	22300	158
4.4	5906	0.9	325	7.5	306 L3	—	28600	32400	66100	76900	21500	147
4.6	5485	1.4	312	12	—	306 R4	28200	32000	65300	76000	21200	148
4.7	5280	2.7	300	15	—	307 R4	—	—	69400	91000	26900	153
4.9	5104	1	290	12	—	305 R4	22100	25600	39100	47000	14200	143
4.9	5086	1.6	289	12	—	306 R4	27500	31200	63800	74300	20700	148
4.9	5242	1	288	7.5	306 L3	—	27500	31200	63700	74200	20700	147
5	5007	2.3	284	15	—	307 R4	—	—	68300	89500	26500	153
5	5160	2.2	284	11	307 L3	—	—	—	68300	89400	26400	152
5.3	4883	1.1	268	7.5	306 L3	—	26900	30400	62400	72700	20200	147
5.7	4375	1.9	249	12	—	306 R4	26200	29700	61000	71000	19700	148
5.9	4355	2	239	11	307 L3	—	—	—	64900	85000	25000	152
5.9	4355	3	239	11	309 L3	—	—	—	65900	85000	20000	157
6	4333	1.9	238	7.5	306 L3	—	25800	29200	60200	70100	19400	147
6.1	4087	2.7	232	15	—	307 R4	—	—	64300	84200	24700	153
6.2	4053	1.9	230	12	—	306 R4	25500	28900	59600	69400	19200	148
6.4	4036	1.6	222	7.5	306 L3	—	25200	28600	58900	68600	18900	147
6.4	4010	1.2	220	7.5	305 L3	—	20200	23300	36000	43300	13000	142
6.6	3771	1.4	214	12	—	305 R4	20000	23100	35700	42900	12800	143
6.6	3760	2.6	214	12	—	306 R4	24900	28200	58300	67900	18700	148
6.9	3727	2.2	205	7.5	306 L3	—	24500	27800	57600	67000	18400	147
7	3669	3	202	11	307 L3	—	—	—	61600	80700	23600	152
7.5	3464	1	190	7.5	305 L3	—	19200	22200	34400	41400	12300	142
7.5	3453	1.9	190	7.5	306 L3	—	23900	27100	56200	65500	18000	147
7.7	3254	1.4	185	12	—	305 R4	19100	22000	34100	41100	12200	143
7.8	3185	3	181	12	—	306 R4	23600	26700	55500	64600	17700	148
8	3231	1.4	178	7.5	305 L3	—	18800	21700	33700	40600	12100	142
8.5	2953	2.6	168	12	—	306 R4	23000	26000	54200	63100	17300	148
8.7	2979	1.5	164	7.5	305 L3	—	18300	21100	32900	39600	11700	142

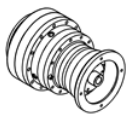








P₁ = 3 kW n₁=1400 rpm

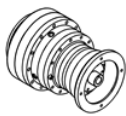
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
9	2787	1	158	12	—	303 R4	18100	20900	32600	39200	11600	138
9	2787	1.9	158	12	—	305 R4	18100	20900	32600	39200	11600	143
9.3	2775	1.3	152	7.5	305 L3	—	17900	20600	32200	38700	11500	142
9.3	2767	2.7	152	7.5	306 L3	—	22200	25200	52600	61300	16700	147
9.6	2608	1.7	148	12	—	305 R4	17700	20400	31900	38400	11400	143
9.9	2623	2.1	144	14	—	306 R3	21800	24700	51800	60300	16400	148
10	2575	1	141	7.5	303 L3	—	17400	20100	31500	37900	11200	137
10	2575	2	141	7.5	305 L3	—	17400	20100	31500	37900	11200	142
11	2275	1.2	129	12	—	303 R4	16900	19500	30600	36900	10800	138
11	2275	2.3	129	12	—	305 R4	16900	19500	30600	36900	10800	143
11.4	2265	1.6	124	7.5	305 L3	—	16700	19300	30300	36500	10700	142
11.9	2169	3	119	14	—	306 R3	20500	23200	48900	57000	15400	148
12.4	2082	1.7	114	14	—	305 R3	16200	18700	29500	35500	10400	143
12.6	2051	1.8	113	7.5	305 L3	—	16200	18600	29400	35400	10400	142
13.4	1863	0.9	106	10	—	301 R4	5030	5030	13800	15900	3310	133
13.6	1902	1.4	105	7.5	303 L3	—	15800	18200	28800	34600	10100	137
13.6	1902	2.6	105	7.5	305 L3	—	15800	18200	28800	34600	10100	142
15.5	1666	1.1	91.5	14	—	303 R3	15100	17400	27600	33200	9670	138
15.5	1666	2.1	91.5	14	—	305 R3	15100	17400	27600	33200	9670	143
15.7	1642	1.4	90.2	7.5	303 L3	—	15000	17300	27500	33100	9620	137
15.7	1642	2.6	90.2	7.5	305 L3	—	15000	17300	27500	33100	9620	142
16.6	1558	1.1	85.6	7.5	301 L3	—	4790	4790	13300	15200	3150	132
18	1433	1.5	78.7	14	—	303 R3	14300	16500	26400	31800	9190	138
18.1	1432	1.1	78.7	12	—	301 R3	14300	16500	26400	31800	9190	133
18.3	1410	1.2	77.5	7.5	301 L3	—	4640	4640	12900	14800	3050	132
18.4	1406	1.8	77.2	7.5	303 L3	—	14200	16400	26300	31600	9140	137
19.4	1335	1.4	73.3	14	—	303 R3	14000	16200	25900	31100	8980	138
19.4	1335	2.7	73.3	14	—	305 R3	14000	16200	25900	31100	8980	143
19.6	1315	1.7	72.3	7.5	303 L3	—	13900	16100	25700	31000	8940	137
20.3	1272	1	69.9	7.5	301 L3	—	4480	4480	12500	14300	2950	132
20.8	1242	1	68.2	12	—	301 R3	4440	4440	12400	14200	2920	133
21.9	1218	0.9	64.8	7.5	301 L2	—	4370	4370	12200	14000	2870	132
22.5	1151	1.4	63.2	7.5	301 L3	—	4330	4330	12100	13900	2850	132
22.5	1148	1.9	63.1	14	—	303 R3	13300	15400	24700	29700	8540	138
22.5	1148	2.2	63.1	7.5	303 L3	—	13300	15400	24700	29700	8540	137
22.6	1145	1.4	62.9	12	—	301 R3	4330	4330	12100	13900	2840	133
25.4	1049	1.7	55.8	9	303 L2	—	12800	14800	23800	28700	8200	137
26.2	986	1.8	54.2	14	—	303 R3	12700	14600	23600	28400	8120	138
26.6	972	2.2	53.4	7.5	303 L3	—	12600	14500	23500	28300	8080	137
27.3	976	1.3	51.9	7.5	301 L2	—	4060	4060	11400	13100	2670	132
27.5	940	0.9	51.6	7.5	300 L3	—	3960	3960	11200	12800	2600	127
27.5	940	1.7	51.6	7.5	301 L3	—	4050	4050	11400	13100	2660	132
28.2	918	0.9	50.4	12	—	300 R3	3930	3930	11100	12700	2580	128







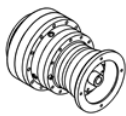
P₁ = 3 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
28.2	918	1.8	50.4	12	—	301 R3	4020	4020	11300	13000	2640	133
28.3	915	2.6	50.3	14	—	303 R3	12300	14200	23100	27800	7920	138
30	848	2.5	46.6	14	—	303 R3	12000	13900	22600	27200	7720	138
32	839	2.2	44.6	9	303 L2	—	11900	13700	22300	26800	7610	137
33	775	2.7	42.6	14	—	303 R3	11700	13500	22000	26400	7490	138
34	781	1.7	41.5	7.5	301 L2	—	3770	3770	10700	12300	2480	132
35	749	1.7	41.2	12	—	301 R3	3760	3760	10600	12200	2470	133
37	722	3	38.4	9	303 L2	—	11300	13000	21300	25600	7240	137
37	721	1.2	38.4	7.5	300 L2	—	3670	3670	10400	12000	2410	127
37	721	2.1	38.4	7.5	301 L2	—	3670	3670	10400	12000	2410	132
38	678	1.2	37.3	12	—	300 R3	3630	3630	10300	11900	2390	128
38	678	2.4	37.3	12	—	301 R3	3630	3630	10300	11900	2390	133
40	672	2.7	35.8	9	303 L2	—	10800	12400	20400	24600	6910	137
43	626	1	33.3	7.5	300 L2	—	3420	3420	9790	11200	2250	127
43	626	2.1	33.3	7.5	301 L2	—	3420	3420	9790	11200	2250	132
46	577	1.5	30.7	7.5	300 L2	—	3330	3330	9550	11000	2190	127
46	577	2.7	30.7	7.5	301 L2	—	3410	3410	9750	11200	2240	132
47	554	1.5	30.4	12	—	300 R3	3400	3400	9730	11200	2230	128
47	554	2.9	30.4	12	—	301 R3	3400	3400	9730	11200	2230	133
57	452	1.6	24.8	12	—	300 R3	3170	3170	9150	10500	2090	128
57	466	1.8	24.8	18	—	303 R2	9750	11300	18700	22500	6250	138
58	462	1.7	24.6	7.5	300 L2	—	3160	3160	9130	10500	2080	127
71	377	1.7	20.1	7.5	300 L2	—	2960	2960	8590	9870	1940	127
77	347	1.1	18.5	12	—	300 R2	2870	2870	8370	9620	1890	128
77	347	2.1	18.5	12	—	301 R2	2870	2870	8370	9620	1890	133
78	342	2.2	18.2	7.5	300 L2	—	2860	2860	8330	9580	1880	127
96	279	2.6	14.8	7.5	300 L2	—	2670	2670	7840	9010	1760	127
96	277	1.8	14.8	12	—	300 R2	2670	2670	7830	9000	1750	128
117	228	3	12.1	7.5	300 L2	—	2500	2500	7380	8480	1640	127
120	222	2.7	11.8	12	—	300 R2	2480	2480	7330	8420	1630	128
158	175	1.8	9	7.5	300 L1	—	2260	2260	6750	7750	1490	127
197	140	2.9	7.2	7.5	300 L1	—	2100	2100	6310	7250	1380	127

P₁ = 4 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.66	51963	0.9	2187	11	313 L4	—	—	—	192000	231000	80000	call
0.79	43169	1.3	1817	11	313 L4	—	—	—	192000	231000	80000	call
0.82	41970	1	1766	11	311 L4	—	—	—	157000	195000	65000	call





P₁ = 4 kW n₁=1400 rpm

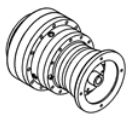
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.96	35687	1.6	1502	11	313 L4	—	—	—	192000	231000	80000	call
1	33630	1.3	1415	11	311 L4	—	—	—	157000	195000	65000	call
1	33119	1.6	1394	11	313 L4	—	—	—	192000	229000	79900	call
1.1	30069	1.9	1266	11	313 L4	—	—	—	188000	222500	77400	call
1.1	29913	0.9	1259	11	310 L4	—	—	—	128500	161600	62700	call
1.2	29234	1.5	1230	11	311 L4	—	—	—	150800	187900	62300	call
1.2	27663	1.1	1164	11	310 L4	—	—	—	125500	157900	61100	call
1.3	26538	2	1117	11	313 L4	—	—	—	181100	214300	74200	call
1.4	25148	1.7	1058	11	311 L4	—	—	—	144200	179600	59200	call
1.4	24249	1.2	1021	11	310 L4	—	—	—	120700	151800	58500	call
1.4	24094	2.3	1014	11	313 L4	—	—	—	175900	208200	71800	call
1.5	23425	1.8	986	11	311 L4	—	—	—	141100	175800	57800	call
1.5	22307	1.5	939	11	310 L4	—	—	—	117700	148000	56900	call
1.6	21472	2.2	904	11	311 L4	—	—	—	137500	171300	56200	call
1.6	21339	1.1	898	15	—	310 R4	—	—	116100	146000	56100	call
1.6	21130	2.5	889	11	313 L4	—	—	—	169100	200100	68800	call
1.7	19596	2.3	825	11	311 L4	—	—	—	133800	166600	54500	call
1.8	19431	1.4	818	11	310 L4	—	—	—	112900	142000	54300	call
1.8	19022	1	801	7.5	309 L4	—	—	—	94700	122100	29900	157
1.8	18768	2.8	790	11	313 L4	—	—	—	163200	193100	66100	call
1.9	18494	2.4	778	22	—	313 R4	—	—	162500	192300	65800	call
1.9	17980	1.5	757	15	—	310 R4	—	—	110300	138700	52900	call
1.9	17728	1.7	746	22	—	311 R4	—	—	129800	161700	52700	call
2	17244	1.6	726	11	310 L4	—	—	—	108900	137000	52200	call
2	17205	2.7	724	11	311 L4	—	—	—	128700	160300	52200	call
2	17160	1.2	722	7.5	309 L4	—	—	—	91800	118400	28900	157
2.1	16388	0.9	690	15	—	309 R4	—	—	90600	116800	28400	158
2.2	15527	1.2	654	7.5	309 L4	—	—	—	89100	114900	27900	157
2.3	15174	1.4	639	15	—	310 R4	—	—	104800	131800	50000	call
2.3	15126	1.8	637	11	310 L4	—	—	—	104700	131700	50000	call
2.3	14937	2.7	629	22	—	311 R4	—	—	123300	153600	49800	call
2.3	14890	2.7	627	11	311 L4	—	—	—	123200	153500	49700	call
2.4	14010	1.6	590	15	—	310 R4	—	—	102400	128700	48700	call
2.5	13809	0.9	581	15	—	307 R4	—	—	82900	108700	32800	153
2.5	13809	1.1	581	15	—	309 R4	—	—	86000	110900	26900	158
2.5	13750	1.1	579	7.5	307 L4	—	—	—	82800	108500	32800	152
2.5	13750	1.5	579	7.5	309 L4	—	—	—	85900	110800	26800	157
2.6	13208	2.4	556	11	310 L4	—	—	—	100600	126500	47800	call
2.8	12287	2.1	517	15	—	310 R4	—	—	98400	123800	46600	call
2.8	12099	1.2	509	7.5	307 L4	—	—	—	81400	106600	32100	152
2.8	12099	1.2	509	7.5	309 L4	—	—	—	82700	106600	25700	157
2.8	12054	2.1	507	11	310 L4	—	—	—	97900	123000	46300	call
2.9	11654	1.2	490	15	—	309 R4	—	—	81700	105400	25400	158





$P_1 = 4 \text{ kW}$ $n_1=1400 \text{ rpm}$

n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.9	11639	3	490	22	—	311 R4	—	—	114400	142500	45800	call
3.1	11045	1.1	465	7.5	307 L4	—	—	—	79200	103700	31200	152
3.1	11045	1.7	465	7.5	309 L4	—	—	—	80400	103700	24900	157
3.2	10856	1.3	457	15	—	309 R4	—	—	80000	103200	24800	158
3.2	10791	1.9	454	15	—	310 R4	—	—	94700	119000	44700	call
3.2	10760	1.2	453	15	—	307 R4	—	—	78600	102900	30900	153
3.2	10708	2.8	451	11	310 L4	—	—	—	94400	118700	44500	call
3.2	10555	0.9	444	6	306 L4	—	31100	35200	71100	82800	23300	147
3.4	9963	2.9	419	15	—	310 R4	—	—	92400	116200	43500	call
3.5	9820	1.2	413	15	—	307 R4	—	—	76400	100100	30000	153
3.5	9820	1.8	413	15	—	309 R4	—	—	77700	100100	24000	158
3.6	9635	1.2	406	7.5	307 L4	—	—	—	76000	99600	29800	152
3.6	9635	1.8	406	7.5	309 L4	—	—	—	77200	99600	23800	157
3.7	9306	2.1	392	11	310 L4	—	—	—	90500	113900	42500	call
3.8	8895	1.6	374	15	—	309 R4	—	—	75400	97200	23200	158
4	8630	2.8	363	15	—	310 R4	—	—	88500	111300	41500	call
4	8622	1.4	363	15	—	307 R4	—	—	73500	96300	28700	153
4.1	8294	1.8	349	7.5	307 L4	—	—	—	72700	95200	28300	152
4.1	8294	2.6	349	7.5	309 L4	—	—	—	73800	95200	22700	157
4.3	8267	1.1	336	11	307 L3	—	—	—	71900	94200	28000	152
4.3	8267	1.6	336	11	309 L3	—	—	—	73000	94200	22400	157
4.3	7868	1.5	331	15	—	307 R4	—	—	71500	93700	27800	153
4.3	7868	2.2	331	15	—	309 R4	—	—	72700	93700	22300	158
4.6	7405	1	312	12	—	306 R4	28200	32000	65300	76000	21200	148
4.8	7127	2	300	15	—	307 R4	—	—	69400	91000	26900	153
5	6866	1.2	289	12	—	306 R4	27500	31200	63800	74300	20700	148
5.1	6759	1.7	284	15	—	307 R4	—	—	68300	89500	26500	153
5.1	6759	2.5	284	15	—	309 R4	—	—	69400	89500	21200	158
5.1	6966	1.6	284	11	307 L3	—	—	—	68300	89400	26400	152
5.1	6966	2.3	284	11	309 L3	—	—	—	69400	89400	21100	157
5.6	6131	2.4	258	15	—	307 R4	—	—	66400	87000	25600	153
5.6	6131	2.8	258	15	—	309 R4	—	—	67400	87000	20500	158
5.8	5906	1.4	249	12	—	306 R4	26200	29700	61000	71000	19700	148
6	5879	1.5	239	11	307 L3	—	—	—	64900	85000	25000	152
6	5879	2.2	239	11	309 L3	—	—	—	65900	85000	20000	157
6	5850	1.4	238	7.5	306 L3	—	25800	29200	60200	70100	19400	147
6.2	5517	2	232	15	—	307 R4	—	—	64300	84200	24700	153
6.3	5472	1.4	230	12	—	306 R4	25500	28900	59600	69400	19200	148
6.5	5476	2.4	223	11	309 L3	—	—	—	64500	83200	19500	157
6.5	5449	1.2	222	7.5	306 L3	—	25200	28600	58900	68600	18900	147
6.5	5428	2.3	221	11	307 L3	—	—	—	63300	83000	24300	152
6.7	5091	1.1	214	12	—	305 R4	20000	23100	35700	42900	12800	143
6.7	5076	1.9	214	12	—	306 R4	24900	28200	58300	67900	18700	148

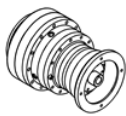






P₁ = 4 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
7	4886	2.9	206	15	—	307 R4	—	—	62000	81200	23700	153
7	5032	1.6	205	7.5	306 L3	—	24500	27800	57600	67000	18400	147
7.1	4953	2.2	202	11	307 L3	—	—	—	61600	80700	23600	152
7.6	4661	1.4	190	7.5	306 L3	—	23900	27100	56200	65500	18000	147
7.8	4394	1	185	12	—	305 R4	19100	22000	34100	41100	12200	143
8	4299	2.2	181	12	—	306 R4	23600	26700	55500	64600	17700	148
8.1	4362	1	178	7.5	305 L3	—	18800	21700	33700	40600	12100	142
8.1	4349	2.8	177	11	307 L3	—	—	—	59300	77700	22600	152
8.6	3987	1.9	168	12	—	306 R4	23000	26000	54200	63100	17300	148
8.8	4022	1.1	164	7.5	305 L3	—	18300	21100	32900	39600	11700	142
8.9	3969	2.7	162	11	307 L3	—	—	—	57700	75600	21900	152
9.1	3762	1.4	158	12	—	305 R4	18100	20900	32600	39200	11600	143
9.1	3751	2.6	158	12	—	306 R4	22500	25500	53200	62000	16900	148
9.4	3747	1	152	7.5	305 L3	—	17900	20600	32200	38700	11500	142
9.5	3735	2	152	7.5	306 L3	—	22200	25200	52600	61300	16700	147
9.7	3520	1.3	148	12	—	305 R4	17700	20400	31900	38400	11400	143
10	3542	1.6	144	14	—	306 R3	21800	24700	51800	60300	16400	148
10.2	3476	1.5	141	7.5	305 L3	—	17400	20100	31500	37900	11200	142
10.2	3464	2.3	141	7.5	306 L3	—	21700	24600	51500	59900	16300	147
11.1	3071	1.7	129	12	—	305 R4	16900	19500	30600	36900	10800	143
11.6	3058	1.2	124	7.5	305 L3	—	16700	19300	30300	36500	10700	142
11.9	2979	2.6	121	7.5	306 L3	—	20600	23400	49200	57300	15500	147
12	2942	2.9	120	22	—	307 R3	—	—	52700	69100	19800	153
12.1	2928	2.2	119	14	—	306 R3	20500	23200	48900	57000	15400	148
12.6	2811	1.3	114	14	—	305 R3	16200	18700	29500	35500	10400	143
12.8	2769	1.3	113	7.5	305 L3	—	16200	18600	29400	35400	10400	142
12.8	2760	2.7	112	7.5	306 L3	—	20100	22800	48100	56000	15100	147
13.8	2568	1	105	7.5	303 L3	—	15800	18200	28800	34600	10100	137
13.8	2568	2	105	7.5	305 L3	—	15800	18200	28800	34600	10100	142
14.6	2420	2.7	98.5	14	—	306 R3	19200	21800	46200	53800	14400	148
15.7	2248	1.6	91.5	14	—	305 R3	15100	17400	27600	33200	9670	143
16	2216	1	90.2	7.5	303 L3	—	15000	17300	27500	33100	9620	137
16	2216	1.9	90.2	7.5	305 L3	—	15000	17300	27500	33100	9620	142
18.3	1934	1.1	78.7	14	—	303 R3	14300	16500	26400	31800	9190	138
18.3	1934	2.2	78.7	14	—	305 R3	14300	16500	26400	31800	9190	143
18.6	1898	1.3	77.2	7.5	303 L3	—	14200	16400	26300	31600	9140	137
18.6	1898	2.5	77.2	7.5	305 L3	—	14200	16400	26300	31600	9140	142
19.6	1802	1	73.3	14	—	303 R3	14000	16200	25900	31100	8980	138
19.6	1802	2	73.3	14	—	305 R3	14000	16200	25900	31100	8980	143
19.9	1776	1.3	72.3	7.5	303 L3	—	13900	16100	25700	31000	8940	137
19.9	1776	2.3	72.3	7.5	305 L3	—	13900	16100	25700	31000	8940	142
22.8	1554	1.1	63.2	7.5	301 L3	—	4330	4330	12100	13900	2850	132
22.8	1550	1.4	63.1	14	—	303 R3	13300	15400	24700	29700	8540	138

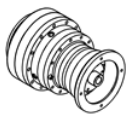








$P_1 = 4 \text{ kW}$ $n_1=1400 \text{ rpm}$

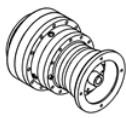
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
22.8	1550	2.8	63.1	14	—	305 R3	13300	15400	24700	29700	8540	143
22.8	1549	1.6	63.1	7.5	303 L3	—	13300	15400	24700	29700	8540	137
22.9	1546	1.1	62.9	12	—	301 R3	4330	4330	12100	13900	2840	133
25.8	1416	1.3	55.8	9	303 L2	—	12800	14800	23800	28700	8200	137
25.8	1416	2.5	55.8	9	305 L2	—	12800	14800	23800	28700	8200	142
26.6	1331	1.4	54.2	14	—	303 R3	12700	14600	23600	28400	8120	138
26.6	1331	2.7	54.2	14	—	305 R3	12700	14600	23600	28400	8120	143
27	1312	1.7	53.4	7.5	303 L3	—	12600	14500	23500	28300	8080	137
27.7	1318	1	51.9	7.5	301 L2	—	4060	4060	11400	13100	2670	132
27.9	1269	1.3	51.6	7.5	301 L3	—	4050	4050	11400	13100	2660	132
28.6	1239	1.3	50.4	12	—	301 R3	4020	4020	11300	13000	2640	133
28.6	1235	1.9	50.3	14	—	303 R3	12300	14200	23100	27800	7920	138
31	1145	1.9	46.6	14	—	303 R3	12000	13900	22600	27200	7720	138
32	1133	1.6	44.6	9	303 L2	—	11900	13700	22300	26800	7610	137
34	1046	2	42.6	14	—	303 R3	11700	13500	22000	26400	7490	138
35	1054	1.2	41.5	7.5	301 L2	—	3770	3770	10700	12300	2480	132
35	1011	1.3	41.2	12	—	301 R3	3760	3760	10600	12200	2470	133
38	975	2.2	38.4	9	303 L2	—	11300	13000	21300	25600	7240	137
38	974	1.6	38.4	7.5	301 L2	—	3670	3670	10400	12000	2410	132
39	915	0.9	37.3	12	—	300 R3	3550	3550	10100	11600	2330	128
39	915	1.7	37.3	12	—	301 R3	3630	3630	10300	11900	2390	133
39	913	2.6	37.1	14	—	303 R3	11200	12900	21100	25400	7160	138
40	908	2	35.8	9	303 L2	—	11000	12700	20800	25100	7070	137
43	845	1.5	33.3	7.5	301 L2	—	3500	3500	9990	11500	2300	132
46	773	2.7	31.5	14	—	303 R3	10600	12200	20100	24100	6770	138
47	781	2.7	30.8	9	303 L2	—	10500	12100	19900	24000	6720	137
47	779	1.1	30.7	7.5	300 L2	—	3410	3410	9750	11200	2240	127
47	779	2	30.7	7.5	301 L2	—	3410	3410	9750	11200	2240	132
47	747	1.1	30.4	12	—	300 R3	3400	3400	9730	11200	2230	128
47	747	2.1	30.4	12	—	301 R3	3400	3400	9730	11200	2230	133
54	671	2.7	26.4	9	303 L2	—	9960	11500	19000	22900	6390	137
58	610	1.2	24.8	12	—	300 R3	3170	3170	9150	10500	2090	128
58	610	2.3	24.8	12	—	301 R3	3170	3170	9150	10500	2090	133
58	629	1.4	24.8	18	—	303 R2	9750	11300	18700	22500	6250	138
59	624	1.3	24.6	7.5	300 L2	—	3160	3160	9130	10500	2080	127
59	624	2.4	24.6	7.5	301 L2	—	3160	3160	9130	10500	2080	132
72	510	1.3	20.1	7.5	300 L2	—	2960	2960	8590	9870	1940	127
72	510	2.5	20.1	7.5	301 L2	—	2960	2960	8590	9870	1940	132
78	468	1.6	18.5	12	—	301 R2	2870	2870	8370	9620	1890	133
79	461	1.6	18.2	7.5	300 L2	—	2860	2860	8330	9580	1880	127
79	461	2.9	18.2	7.5	301 L2	—	2860	2860	8330	9580	1880	132
97	377	1.9	14.8	7.5	300 L2	—	2670	2670	7840	9010	1760	127
98	375	1.4	14.8	12	—	300 R2	2670	2670	7830	9000	1750	128







P₁ = 4 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
98	375	2.5	14.8	12	—	301 R2	2670	2670	7830	9000	1750	133
119	307	2.2	12.1	7.5	300 L2	—	2500	2500	7380	8480	1640	127
122	300	2	11.8	12	—	300 R2	2480	2480	7330	8420	1630	128
160	236	1.4	9	7.5	300 L1	—	2260	2260	6750	7750	1490	127
160	236	2.7	9	7.5	301 L1	—	2260	2260	6750	7750	1490	132
165	222	2.8	8.74	12	—	300 R2	2240	2240	6690	7690	1470	128
200	189	2.2	7.2	7.5	300 L1	—	2100	2100	6310	7250	1380	127

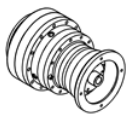
P₁ = 5.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.8	57559	1	1817	11	313 L4	—	—	—	192000	231000	80000	call
0.81	57190	1.5	1805	18	315 L4	—	—	—	206000	243000	90000	call
0.81	56908	1.2	1796	15	314 L4	—	—	—	206000	243000	90000	call
0.97	47582	1.2	1502	11	313 L4	—	—	—	192000	231000	80000	call
0.98	47277	1.8	1492	18	315 L4	—	—	—	206000	243000	90000	call
0.98	47044	1.4	1485	15	314 L4	—	—	—	206000	243000	90000	call
1	44840	1	1415	11	311 L4	—	—	—	157000	195000	65000	call
1	44159	1.2	1394	11	313 L4	—	—	—	192000	229000	79900	call
1.1	40669	2.4	1284	18	315 L4	—	—	—	201500	236600	87400	call
1.1	40468	1.9	1277	15	314 L4	—	—	—	201200	236300	87300	call
1.2	40092	1.4	1266	11	313 L4	—	—	—	188000	222500	77400	call
1.2	38979	1.1	1230	11	311 L4	—	—	—	150800	187900	62300	call
1.3	35384	1.5	1117	11	313 L4	—	—	—	181100	214300	74200	call
1.3	34984	2.7	1104	18	315 L4	—	—	—	192600	226200	83200	call
1.3	34811	2.2	1099	15	314 L4	—	—	—	192400	225800	83000	call
1.4	33530	1.3	1058	11	311 L4	—	—	—	144200	179600	59200	call
1.4	32869	2.5	1038	15	314 L4	—	—	—	189100	222000	81400	call
1.4	32125	1.7	1014	11	313 L4	—	—	—	175900	208200	71800	call
1.5	31233	1.4	986	11	311 L4	—	—	—	141100	175800	57800	call
1.6	29743	1.1	939	11	310 L4	—	—	—	115300	145000	55600	call
1.6	29331	2.5	926	15	314 L4	—	—	—	182700	214500	78400	call
1.6	28807	2.7	909	40	—	315 R4	—	—	181700	213400	77900	call
1.6	28630	1.6	904	11	311 L4	—	—	—	137500	171300	56200	call
1.6	28174	1.9	889	11	313 L4	—	—	—	169100	200100	68800	call
1.7	27172	3	858	15	314 L4	—	—	—	178600	209700	76400	call
1.8	26127	1.7	825	11	311 L4	—	—	—	133800	166600	54500	call
1.8	25908	1.1	818	11	310 L4	—	—	—	112900	142000	54300	call
1.8	25024	2.1	790	11	313 L4	—	—	—	163200	193100	66100	call







P₁ = 5.5 kW n₁=1400 rpm

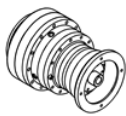
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.9	24658	1.8	778	22	—	313 R4	—	—	162500	192300	65800	call
1.9	23973	1.1	757	15	—	310 R4	—	—	110300	138700	52900	call
2	23637	1.3	746	22	—	311 R4	—	—	129800	161700	52700	call
2	22992	1.2	726	11	310 L4	—	—	—	108900	137000	52200	call
2	22941	2	724	11	311 L4	—	—	—	128700	160300	52200	call
2	22879	0.9	722	7.5	309 L4	—	—	—	89900	116000	28200	157
2.1	22021	2.3	695	11	313 L4	—	—	—	157000	185900	63300	call
2.3	20485	2.5	647	22	—	313 R4	—	—	153700	181900	61800	call
2.3	20233	1.1	639	15	—	310 R4	—	—	104800	131800	50000	call
2.3	20168	1.3	637	11	310 L4	—	—	—	104700	131700	50000	call
2.3	20051	2.6	633	11	313 L4	—	—	—	152700	180700	61400	call
2.3	19916	2	629	22	—	311 R4	—	—	123300	153600	49800	call
2.3	19853	2	627	11	311 L4	—	—	—	123200	153500	49700	call
2.4	19443	3	614	22	—	314 R4	—	—	161500	189600	68400	call
2.5	18681	1.2	590	15	—	310 R4	—	—	102400	128700	48700	call
2.5	18333	1.2	579	7.5	309 L4	—	—	—	85900	110800	26800	157
2.6	17984	2.4	568	11	311 L4	—	—	—	119600	149000	48100	call
2.6	17611	1.8	556	11	310 L4	—	—	—	100600	126500	47800	call
2.7	16935	2.9	535	22	—	313 R4	—	—	145100	171800	58000	call
2.8	16464	2.3	520	22	—	311 R4	—	—	116500	145100	46700	call
2.8	16383	1.6	517	15	—	310 R4	—	—	98400	123800	46600	call
2.8	16273	3	514	11	313 L4	—	—	—	143400	169700	57300	call
2.9	16224	2.7	512	11	311 L4	—	—	—	116000	144500	46500	call
2.9	16072	1.6	507	11	310 L4	—	—	—	97900	123000	46300	call
3	15539	0.9	490	15	—	309 R4	—	—	80100	103300	24800	158
3	15519	2.2	490	22	—	311 R4	—	—	114400	142500	45800	call
3.1	14726	1.2	465	7.5	309 L4	—	—	—	80400	103700	24900	157
3.2	14474	1	457	15	—	309 R4	—	—	80000	103200	24800	158
3.2	14388	1.4	454	15	—	310 R4	—	—	94700	119000	44700	call
3.2	14277	2.1	451	11	310 L4	—	—	—	94400	118700	44500	call
3.3	13873	2.7	438	22	—	311 R4	—	—	110600	137800	44100	call
3.5	13284	2.2	419	15	—	310 R4	—	—	92400	116200	43500	call
3.5	13093	1.4	413	15	—	309 R4	—	—	77700	100100	24000	158
3.6	12847	1.4	406	7.5	309 L4	—	—	—	77200	99600	23800	157
3.7	12407	1.6	392	11	310 L4	—	—	—	90500	113900	42500	call
3.9	11860	1.2	374	15	—	309 R4	—	—	75400	97200	23200	158
4	11507	2.1	363	15	—	310 R4	—	—	88500	111300	41500	call
4.2	11482	1.7	350	18	310 L3	—	—	—	87600	110100	41000	call
4.2	11058	1.9	349	7.5	309 L4	—	—	—	73800	95200	22700	157
4.3	11022	1.2	336	11	309 L3	—	—	—	73000	94200	22400	157
4.4	10586	2.6	334	15	—	310 R4	—	—	86300	108600	40300	call
4.4	10491	1.6	331	15	—	309 R4	—	—	72700	93700	22300	158
4.8	9660	2.4	305	15	—	310 R4	—	—	84000	105600	39100	call







P ₁ = 5.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
4.9	9674	2.4	295	18	310 L3	—	—	—	83200	104600	38700	call
5	9539	2.8	291	18	311 L3	—	—	—	97900	121900	38500	call
5.1	9012	1.9	284	15	—	309 R4	—	—	69400	89500	21200	158
5.1	9287	1.7	284	11	309 L3	—	—	—	69400	89400	21100	157
5.2	8967	2.9	283	15	—	310 R4	—	—	82100	103300	38100	call
5.7	8183	2.8	258	15	—	310 R4	—	—	79900	100500	37000	call
5.7	8175	2.1	258	15	—	309 R4	—	—	67400	87000	20500	158
5.9	8165	2.3	249	18	310 L3	—	—	—	79100	99400	36600	call
6.1	7838	1.7	239	11	309 L3	—	—	—	65900	85000	20000	157
6.3	7356	2.3	232	15	—	309 R4	—	—	65300	84200	19800	158
6.3	7539	2.8	230	18	310 L3	—	—	—	77200	97100	35600	call
6.6	7301	1.8	223	11	309 L3	—	—	—	64500	83200	19500	157
7.2	6604	2.5	202	11	309 L3	—	—	—	62600	80700	18900	157
7.7	6041	2.9	191	15	—	309 R4	—	—	61600	79400	18500	158
8	5983	2.4	183	11	309 L3	—	—	—	60800	78400	18300	157
23.1	2066	1.1	63.1	14	—	303 R3	13300	15400	24700	29700	8540	138
26.9	1775	1	54.2	14	—	303 R3	12700	14600	23600	28400	8120	138
29	1652	1	50.4	12	—	301 R3	3930	3930	11100	12700	2580	133
29	1647	1.4	50.3	14	—	303 R3	12300	14200	23100	27800	7920	138
31	1527	1.4	46.6	14	—	303 R3	12000	13900	22600	27200	7720	138
34	1395	1.5	42.6	14	—	303 R3	11700	13500	22000	26400	7490	138
35	1348	1	41.2	12	—	301 R3	3760	3760	10600	12200	2470	133
39	1221	1.3	37.3	12	—	301 R3	3630	3630	10300	11900	2390	133
39	1217	2	37.1	14	—	303 R3	11200	12900	21100	25400	7160	138
46	1031	2	31.5	14	—	303 R3	10600	12200	20100	24100	6770	138
48	996	1.6	30.4	12	—	301 R3	3400	3400	9730	11200	2230	133
57	841	2.4	25.7	14	—	303 R3	9870	11400	18900	22700	6330	138
59	813	1.7	24.8	12	—	301 R3	3170	3170	9150	10500	2090	133

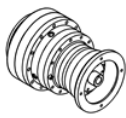
P ₁ = 7.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.77	81609	1.9	1893	18	317 L4	—	—	—	442000	470000	150000	call
0.81	77842	1.1	1805	18	315 L4	—	—	—	206000	243000	90000	call
0.92	68763	2.5	1595	18	317 L4	—	—	—	442000	470000	150000	call
0.98	64350	1.3	1492	18	315 L4	—	—	—	206000	243000	90000	call
0.98	64032	1	1485	15	314 L4	—	—	—	206000	243000	90000	call
1.1	56844	3	1318	18	317 L4	—	—	—	434300	462400	147000	call
1.1	55354	1.8	1284	18	315 L4	—	—	—	201500	236600	87400	call





P₁ = 7.5 kW n₁=1400 rpm

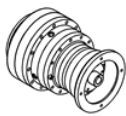
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page	
							MC	MZ	HC/PC	HZ/PZ	FZ		
1.1	55081	1.4	1277	15	314 L4	—	—	—	—	201200	236300	87300	call
1.2	54570	1	1266	11	313 L4	—	—	—	—	188000	222500	77400	call
1.2	53360	2.3	1237	18	316 L4	—	—	—	—	331400	368600	144000	call
1.3	48161	1.1	1117	11	313 L4	—	—	—	—	181100	214300	74200	call
1.3	47617	2	1104	18	315 L4	—	—	—	—	192600	226200	83200	call
1.3	47382	1.6	1099	15	314 L4	—	—	—	—	192400	225800	83000	call
1.4	45638	0.9	1058	11	311 L4	—	—	—	—	141200	175900	57900	call
1.4	44960	2.3	1043	18	315 L4	—	—	—	—	189400	222300	81600	call
1.4	44960	2.9	1043	18	316 L4	—	—	—	—	314800	350100	136000	call
1.4	44738	1.8	1038	15	314 L4	—	—	—	—	189100	222000	81400	call
1.4	43726	1.2	1014	11	313 L4	—	—	—	—	175900	208200	71800	call
1.5	42512	1	986	11	311 L4	—	—	—	—	141100	175800	57800	call
1.6	40096	2.3	930	18	315 L4	—	—	—	—	183000	214800	78500	call
1.6	39923	1.9	926	15	314 L4	—	—	—	—	182700	214500	78400	call
1.6	39209	2	909	40	—	315 R4	—	—	—	181700	213400	77900	call
1.6	38968	1.2	904	11	311 L4	—	—	—	—	137500	171300	56200	call
1.6	38348	1.4	889	11	313 L4	—	—	—	—	169100	200100	68800	call
1.7	37167	2.7	862	18	315 L4	—	—	—	—	178800	210000	76600	call
1.7	36984	2.2	858	15	314 L4	—	—	—	—	178600	209700	76400	call
1.8	35562	1.3	825	11	311 L4	—	—	—	—	133800	166600	54500	call
1.8	34060	1.5	790	11	313 L4	—	—	—	—	163200	193100	66100	call
1.9	33729	2.7	782	40	—	315 R4	—	—	—	173700	203900	74100	call
1.9	33563	1.3	778	22	—	313 R4	—	—	—	162500	192300	65800	call
2	32173	0.9	746	22	—	311 R4	—	—	—	129800	161700	52700	call
2	31814	2.5	738	15	314 L4	—	—	—	—	170700	200400	72700	call
2	31225	1.5	724	11	311 L4	—	—	—	—	128700	160300	52200	call
2.1	29974	1.7	695	11	313 L4	—	—	—	—	157000	185900	63300	call
2.2	28818	2.8	668	15	314 L4	—	—	—	—	165700	194500	70300	call
2.3	27883	1.8	647	22	—	313 R4	—	—	—	153700	181900	61800	call
2.3	27452	1	637	11	310 L4	—	—	—	—	104700	131700	50000	call
2.3	27291	1.9	633	11	313 L4	—	—	—	—	152700	180700	61400	call
2.3	27108	1.5	629	22	—	311 R4	—	—	—	123300	153600	49800	call
2.3	27023	1.5	627	11	311 L4	—	—	—	—	123200	153500	49700	call
2.4	26465	2.2	614	22	—	314 R4	—	—	—	161500	189600	68400	call
2.6	24478	1.8	568	11	311 L4	—	—	—	—	119600	149000	48100	call
2.6	24309	2.3	564	11	313 L4	—	—	—	—	147500	174500	59100	call
2.6	23971	1.3	556	11	310 L4	—	—	—	—	100600	126500	47800	call
2.7	23050	2.1	535	22	—	313 R4	—	—	—	145100	171800	58000	call
2.8	22410	1.7	520	22	—	311 R4	—	—	—	116500	145100	46700	call
2.8	22299	1.1	517	15	—	310 R4	—	—	—	98400	123800	46600	call
2.8	22149	2.2	514	11	313 L4	—	—	—	—	143400	169700	57300	call
2.9	22082	2	512	11	311 L4	—	—	—	—	116000	144500	46500	call
2.9	21875	1.2	507	11	310 L4	—	—	—	—	97900	123000	46300	call







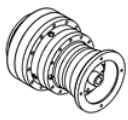
$P_1 = 7.5 \text{ kW}$ $n_1=1400 \text{ rpm}$

n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.9	21392	2.4	496	22	—	313 R4	—	—	141900	168000	56600	call
3	21123	1.6	490	22	—	311 R4	—	—	114400	142500	45800	call
3.1	20044	0.9	465	7.5	309 L4	—	—	—	78800	101600	24400	157
3.2	19583	1	454	15	—	310 R4	—	—	94700	119000	44700	call
3.2	19479	2.8	452	11	313 L4	—	—	—	138000	163300	54900	call
3.2	19432	1.5	451	11	310 L4	—	—	—	94400	118700	44500	call
3.2	19422	2.5	450	22	—	313 R4	—	—	137900	163200	54800	call
3.3	18882	2	438	22	—	311 R4	—	—	110600	137800	44100	call
3.5	18081	1.6	419	15	—	310 R4	—	—	92400	116200	43500	call
3.5	17821	1	413	15	—	309 R4	—	—	77700	100100	24000	158
3.5	17798	2.3	413	22	—	311 R4	—	—	108700	135400	43300	call
3.6	17694	2.3	410	11	311 L4	—	—	—	108500	135200	43200	call
3.6	17486	1	406	7.5	309 L4	—	—	—	77200	99600	23800	157
3.7	16888	1.1	392	11	310 L4	—	—	—	90500	113900	42500	call
3.8	16707	2.8	387	22	—	313 R4	—	—	131800	156000	52100	call
4	15663	1.5	363	15	—	310 R4	—	—	88500	111300	41500	call
4.2	15628	1.2	350	18	310 L3	—	—	—	87600	110100	41000	call
4.2	15052	1	349	7.5	307 L4	—	—	—	71200	93300	27700	152
4.2	15052	1.4	349	7.5	309 L4	—	—	—	73800	95200	22700	157
4.2	14988	2.7	348	11	311 L4	—	—	—	103200	128600	40900	call
4.3	14713	2.7	341	22	—	311 R4	—	—	102700	127900	40600	call
4.4	14408	1.9	334	15	—	310 R4	—	—	86300	108600	40300	call
4.4	14279	1.2	331	15	—	309 R4	—	—	72700	93700	22300	158
4.5	13869	2.8	322	22	—	311 R4	—	—	100900	125600	39800	call
4.8	13149	1.8	305	15	—	310 R4	—	—	84000	105600	39100	call
4.8	13544	2.9	304	18	313 L3	—	—	—	122500	145000	48100	call
4.9	12935	1.1	300	15	—	307 R4	—	—	69400	91000	26900	153
4.9	13168	1.8	295	18	310 L3	—	—	—	83200	104600	38700	call
5	12983	2.1	291	18	311 L3	—	—	—	97900	121900	38500	call
5.1	12266	0.9	284	15	—	307 R4	—	—	66900	87700	25900	153
5.1	12266	1.4	284	15	—	309 R4	—	—	69400	89500	21200	158
5.1	12641	1.2	284	11	309 L3	—	—	—	69400	89400	21100	157
5.2	12205	2.1	283	15	—	310 R4	—	—	82100	103300	38100	call
5.7	11138	2	258	15	—	310 R4	—	—	79900	100500	37000	call
5.7	11127	1.3	258	15	—	307 R4	—	—	66400	87000	25600	153
5.7	11127	1.6	258	15	—	309 R4	—	—	67400	87000	20500	158
5.9	11113	1.7	249	18	310 L3	—	—	—	79100	99400	36600	call
6.1	10669	1.2	239	11	309 L3	—	—	—	65900	85000	20000	157
6.2	10089	2.4	234	15	—	310 R4	—	—	77600	97600	35800	call
6.3	10013	1.1	232	15	—	307 R4	—	—	64300	84200	24700	153
6.3	10013	1.7	232	15	—	309 R4	—	—	65300	84200	19800	158
6.3	10261	2.1	230	18	310 L3	—	—	—	77200	97100	35600	call
6.6	9938	1.3	223	11	309 L3	—	—	—	64500	83200	19500	157





$P_1 = 7.5 \text{ kW}$ $n_1=1400 \text{ rpm}$

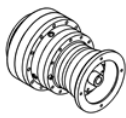
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
6.6	9850	1.3	221	11	307 L3	—	—	63300	83000	24300	152	
6.8	9211	1.1	214	12	—	306 R4	24900	28200	58300	67900	18700	148
7.1	8876	2.5	206	15	—	310 R4	—	—	74700	93900	34300	call
7.1	8867	1.6	206	15	—	307 R4	—	—	62000	81200	23700	153
7.1	8867	2.2	206	15	—	309 R4	—	—	63000	81200	19000	158
7.2	8999	2.4	202	18	310 L3	—	—	—	74200	93300	34100	call
7.2	8989	1.2	202	11	307 L3	—	—	—	61600	80700	23600	152
7.2	8989	1.8	202	11	309 L3	—	—	—	62600	80700	18900	157
7.7	8222	1.7	191	15	—	307 R4	—	—	60600	79400	23200	153
7.7	8222	2.1	191	15	—	309 R4	—	—	61600	79400	18500	158
7.7	8165	2.8	189	15	—	310 R4	—	—	72800	91500	33400	call
8	8143	1.8	183	11	309 L3	—	—	—	60800	78400	18300	157
8.1	7803	1.2	181	12	—	306 R4	23600	26700	55500	64600	17700	148
8.2	7903	2.3	177	18	310 L3	—	—	—	71400	89800	32600	call
8.2	7893	1.6	177	11	307 L3	—	—	—	59300	77700	22600	152
8.7	7235	1	168	12	—	306 R4	23000	26000	54200	63100	17300	148
8.8	7122	2.3	165	15	—	309 R4	—	—	59000	76100	17700	158
9	7203	1.5	162	11	307 L3	—	—	—	57700	75600	21900	152
9	7203	2.3	162	11	309 L3	—	—	—	58600	75600	17500	157
9.2	6807	1.4	158	12	—	306 R4	22500	25500	53200	62000	16900	148
9.6	6779	1.1	152	7.5	306 L3	—	22200	25200	52600	61300	16700	147
9.6	6552	2.8	152	15	—	309 R4	—	—	57500	74200	17200	158
10	6525	2.1	146	11	307 L3	—	—	—	56000	73300	21200	152
10.4	6286	1.3	141	7.5	306 L3	—	21700	24600	51500	59900	16300	147
10.5	6188	1.7	139	11	307 L3	—	—	—	55100	72200	20800	152
10.5	6188	2.6	139	11	309 L3	—	—	—	56000	72200	16700	157
11.3	5574	0.9	129	12	—	305 R4	16900	19500	30600	36900	10800	143
11.6	5613	2.3	126	11	307 L3	—	—	—	53500	70100	20200	152
11.6	5613	2.9	126	11	309 L3	—	—	—	54400	70100	16100	157
11.8	5348	2	124	15	—	307 R4	—	—	56900	74500	21600	153
12	5407	1.4	121	7.5	306 L3	—	20600	23400	49200	57300	15500	147
12.2	5340	1.6	120	22	—	307 R3	—	—	52700	69100	19800	153
12.2	5340	2.4	120	22	—	309 R3	—	—	53600	69100	15900	158
12.3	5313	1.2	119	14	—	306 R3	20500	23200	48900	57000	15400	148
12.9	5051	2.1	113	11	307 L3	—	—	—	51800	67900	19500	152
13	5009	1.5	112	7.5	306 L3	—	20100	22800	48100	56000	15100	147
13.9	4530	3	105	15	—	307 R4	—	—	55400	72700	21000	153
14	4661	1.1	105	7.5	305 L3	—	15800	18200	28800	34600	10100	142
14	4647	1.9	104	7.5	306 L3	—	19600	22200	47000	54700	14700	147
14.6	4473	2.8	100	11	307 L3	—	—	—	50000	65500	18700	152
14.7	4414	1.9	99	22	—	307 R3	—	—	49800	65200	18600	153
14.7	4414	2.9	99	22	—	309 R3	—	—	50600	65200	14900	158
14.8	4392	1.5	98.5	14	—	306 R3	19200	21800	46200	53800	14400	148







P₁ = 7.5 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
15.7	4148	2.9	93	11	307 L3	—	—	—	48900	64000	18200	152
16.2	4022	1.1	90.2	7.5	305 L3	—	15000	17300	27500	33100	9620	142
16.5	3936	2.2	88.3	7.5	306 L3	—	18500	21000	44700	52100	13900	147
17.2	3778	2	84.7	14	—	306 R3	18300	20700	44200	51400	13700	148
17.5	3719	2.7	83.4	22	—	307 R3	20200	25400	47300	62000	17600	153
17.8	3650	1.9	81.9	7.5	306 L3	—	18100	20500	43700	50900	13600	147
18.1	3593	2.8	80.6	11	307 L3	—	—	—	46800	61300	17400	152
18.5	3510	1.2	78.7	14	—	305 R3	14300	16500	26400	31800	9190	143
18.9	3444	1.4	77.2	7.5	305 L3	—	14200	16400	26300	31600	9140	142
19	3434	2.4	77	7.5	306 L3	—	17700	20100	42900	50000	13300	147
19.9	3270	1.1	73.3	14	—	305 R3	14000	16200	25900	31100	8980	143
20	3250	2.3	72.9	14	—	306 R3	17400	19700	42200	49200	13100	148
20.1	3339	1.6	72.5	13	306 L2	—	17400	19700	42100	49100	13000	147
20.2	3223	1.3	72.3	7.5	305 L3	—	13900	16100	25700	31000	8940	142
21.6	3011	2.4	67.5	14	—	306 R3	17000	19200	41300	48000	12700	148
22.4	2908	2.6	65.2	7.5	306 L3	—	16800	19000	40800	47500	12600	147
23.1	2813	1.5	63.1	14	—	305 R3	13300	15400	24700	29700	8540	143
23.2	2811	1.7	63.1	7.5	305 L3	—	13300	15400	24700	29700	8540	142
25.1	2590	2.9	58.1	14	—	306 R3	16100	18300	39400	45900	12100	148
26	2591	2	56.3	13	306 L2	—	16000	18100	39100	45500	12000	147
26.2	2570	1.4	55.8	9	305 L2	—	12800	14800	23800	28700	8200	142
26.9	2416	1.5	54.2	14	—	305 R3	12700	14600	23600	28400	8120	143
27.3	2382	0.9	53.4	7.5	303 L3	—	—	—	—	—	—	137
27.3	2382	1.7	53.4	7.5	305 L3	—	12600	14500	23500	28300	8080	142
27.4	2374	3	53.2	7.5	306 L3	—	15700	17800	38400	44700	11800	147
29	2241	1.1	50.3	14	—	303 R3	12300	14200	23100	27800	7920	138
29	2241	2	50.3	14	—	305 R3	12300	14200	23100	27800	7920	143
31	2078	1	46.6	14	—	303 R3	12000	13900	22600	27200	7720	138
31	2078	2.1	46.6	14	—	305 R3	12000	13900	22600	27200	7720	143
33	2056	1.7	44.6	9	305 L2	—	11900	13700	22300	26800	7610	142
34	1899	1.1	42.6	14	—	303 R3	11700	13500	22000	26400	7490	138
34	1899	2	42.6	14	—	305 R3	11700	13500	22000	26400	7490	143
38	1769	1.2	38.4	9	303 L2	—	11300	13000	21300	25600	7240	137
38	1769	2.4	38.4	9	305 L2	—	11300	13000	21300	25600	7240	142
39	1661	1	37.3	12	—	301 R3	3550	3550	10100	11600	2330	133
39	1656	1.4	37.1	14	—	303 R3	11200	12900	21100	25400	7160	138
39	1656	2.6	37.1	14	—	305 R3	11200	12900	21100	25400	7160	143
41	1648	1.1	35.8	9	303 L2	—	11000	12700	20800	25100	7070	137
41	1648	2.2	35.8	9	305 L2	—	11000	12700	20800	25100	7070	142
46	1403	1.5	31.5	14	—	303 R3	10600	12200	20100	24100	6770	138
46	1403	2.7	31.5	14	—	305 R3	10600	12200	20100	24100	6770	143
47	1417	1.5	30.8	9	303 L2	—	10500	12100	19900	24000	6720	137
48	1414	1.1	30.7	7.5	301 L2	—	3410	3410	9750	11200	2240	132

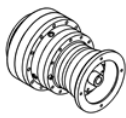






P₁ = 7.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
48	1356	1.2	30.4	12	—	301 R3	3400	3400	9730	11200	2230	133
55	1217	1.5	26.4	9	303 L2	—	9960	11500	19000	22900	6390	137
55	1217	2.9	26.4	9	305 L2	—	9960	11500	19000	22900	6390	142
57	1145	1.8	25.7	14	—	303 R3	9870	11400	18900	22700	6330	138
59	1107	1.3	24.8	12	—	301 R3	3170	3170	9150	10500	2090	133
59	1133	1.3	24.6	7.5	301 L2	—	3160	3160	9130	10500	2080	132
60	1129	1.9	24.5	9	303 L2	—	9720	11200	18600	22400	6230	137
64	1047	2	22.7	9	303 L2	—	9470	10900	18200	21900	6080	137
70	957	1.9	20.8	9	303 L2	—	9190	10600	17700	21300	5900	137
73	925	1.4	20.1	7.5	301 L2	—	2960	2960	8590	9870	1940	132
76	885	1.8	19.2	18	—	303 R2	8960	10300	17300	20800	5750	138
80	837	1.6	18.2	7.5	301 L2	—	2860	2860	8330	9580	1880	132
81	835	2.4	18.1	9	303 L2	—	8780	10100	17000	20400	5630	137
92	732	2.5	15.9	18	—	303 R2	8410	9710	16300	19700	5390	138
95	707	2.4	15.3	9	303 L2	—	8310	9590	16200	19500	5330	137
98	683	1.1	14.8	7.5	300 L2	—	2610	2610	7680	8820	1720	127
98	683	1.9	14.8	7.5	301 L2	—	2670	2670	7840	9010	1760	132
99	680	1.4	14.8	12	—	301 R2	2670	2670	7830	9000	1750	133
117	577	2.8	12.5	9	303 L2	—	7770	8970	15200	18300	4980	137
121	558	1.2	12.1	7.5	300 L2	—	2500	2500	7380	8480	1640	127
121	558	2.2	12.1	7.5	301 L2	—	2500	2500	7380	8480	1640	132
123	545	1.1	11.8	12	—	300 R2	2480	2480	7330	8420	1630	128
123	545	2.1	11.8	12	—	301 R2	2480	2480	7330	8420	1630	133
151	459	1.6	9.67	11	303 L1	—	7120	8220	14100	16900	4570	137
162	428	1.5	9	7.5	301 L1	—	2260	2260	6750	7750	1490	132
167	403	1.5	8.74	12	—	300 R2	2240	2240	6690	7690	1470	128
167	403	2.7	8.74	12	—	301 R2	2240	2240	6690	7690	1470	133
203	342	1.2	7.2	7.5	300 L1	—	2100	2100	6310	7250	1380	127
203	342	2.2	7.2	7.5	301 L1	—	2100	2100	6310	7250	1380	132
205	329	1.8	7.13	12	—	300 R2	2090	2090	6300	7230	1380	128
253	274	1.7	5.77	7.5	300 L1	—	1950	1950	5910	6790	1280	127
342	203	2.4	4.26	7.5	300 L1	—	1760	1760	5390	6200	1160	127
420	165	2.8	3.48	7.5	300 L1	—	1610	1610	4970	5710	1060	127

P₁ = 11 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.77	119915	1.3	1893	18	317 L4	—	—	—	442000	470000	150000	call
0.92	101039	1.7	1595	18	317 L4	—	—	—	442000	470000	150000	call

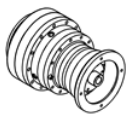






P₁ = 11 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.1	83526	2	1318	18	317 L4	—	—	—	434300	462400	147000	call
1.1	81337	1.2	1284	18	315 L4	—	—	—	201500	236600	87400	call
1.1	80935	1	1277	15	314 L4	—	—	—	201200	236300	87300	call
1.2	78406	1.6	1237	18	316 L4	—	—	—	331400	368600	144000	call
1.3	71850	2.3	1134	18	317 L4	—	—	—	415100	442000	139800	call
1.3	69967	1.4	1104	18	315 L4	—	—	—	192600	226200	83200	call
1.3	69622	1.1	1099	15	314 L4	—	—	—	192400	225800	83000	call
1.4	66064	1.6	1043	18	315 L4	—	—	—	189400	222300	81600	call
1.4	66064	2	1043	18	316 L4	—	—	—	314800	350100	136000	call
1.4	65738	1.3	1038	15	314 L4	—	—	—	189100	222000	81400	call
1.4	65408	2.8	1032	18	317 L4	—	—	—	403600	429700	135500	call
1.5	60402	2.4	953	50	—	317 R4	—	—	394100	419600	132000	call
1.6	58917	1.6	930	18	315 L4	—	—	—	183000	214800	78500	call
1.6	58663	1.3	926	15	314 L4	—	—	—	182700	214500	78400	call
1.6	57614	1.3	909	40	—	315 R4	—	—	181700	213400	77900	call
1.6	57256	2.9	904	18	317 L4	—	—	—	387800	412900	129600	call
1.6	56347	0.9	889	11	313 L4	—	—	—	169100	200100	68800	call
1.7	54613	1.9	862	18	315 L4	—	—	—	178800	210000	76600	call
1.7	54613	2.4	862	18	316 L4	—	—	—	297400	330700	127600	call
1.7	54343	1.5	858	15	314 L4	—	—	—	178600	209700	76400	call
1.8	51479	2.5	812	18	316 L4	—	—	—	292100	324900	125100	call
1.9	50047	1	790	11	313 L4	—	—	—	163200	193100	66100	call
1.9	49560	1.8	782	40	—	315 R4	—	—	173700	203900	74100	call
2	46950	2.2	741	18	315 L4	—	—	—	170900	200700	72800	call
2	46950	2.7	741	18	316 L4	—	—	—	284200	316100	121400	call
2	46747	1.7	738	15	314 L4	—	—	—	170700	200400	72700	call
2	46017	2.8	726	18	316 L4	—	—	—	282500	314100	120500	call
2	45881	1	724	11	311 L4	—	—	—	128700	160300	52200	call
2.1	44043	1.2	695	11	313 L4	—	—	—	157000	185900	63300	call
2.1	43375	2.9	685	18	316 L4	—	—	—	277500	308600	118200	call
2.2	42556	2.4	672	18	315 L4	—	—	—	165900	194800	70500	call
2.2	42346	1.9	668	15	314 L4	—	—	—	165700	194500	70300	call
2.2	41759	2.1	659	40	—	315 R4	—	—	165000	193700	70000	call
2.3	40971	1.2	647	22	—	313 R4	—	—	153700	181900	61800	call
2.3	40102	1.3	633	11	313 L4	—	—	—	152700	180700	61400	call
2.3	39833	1	629	22	—	311 R4	—	—	123300	153600	49800	call
2.3	39707	1	627	11	311 L4	—	—	—	123200	153500	49700	call
2.4	39493	2.5	623	40	—	315 R4	—	—	162300	190500	68700	call
2.4	39493	2.9	623	45	—	316 R4	—	—	269800	300100	114500	call
2.4	38887	1.5	614	22	—	314 R4	—	—	161500	189600	68400	call
2.5	37436	2.7	591	18	315 L4	—	—	—	159700	187500	67500	call
2.5	37252	2.1	588	15	314 L4	—	—	—	159500	187200	67400	call
2.6	35968	1.2	568	11	311 L4	—	—	—	119600	149000	48100	call

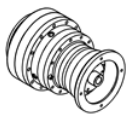






P₁ = 11 kW n₁=1400 rpm

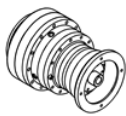
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.6	35720	1.5	564	11	313 L4	—	—	—	147500	174500	59100	call
2.6	35113	2.3	554	15	314 L4	—	—	—	156600	183900	66100	call
2.7	33869	1.4	535	22	—	313 R4	—	—	145100	171800	58000	call
2.7	33799	2.9	533	18	315 L4	—	—	—	154900	181800	65200	call
2.8	33451	2.1	528	22	—	314 R4	—	—	154400	181300	65000	call
2.8	33277	3	525	40	—	315 R4	—	—	154100	181000	64900	call
2.8	32928	1.2	520	22	—	311 R4	—	—	116500	145100	46700	call
2.9	32545	1.5	514	11	313 L4	—	—	—	143400	169700	57300	call
2.9	32447	1.4	512	11	311 L4	—	—	—	116000	144500	46500	call
3	31433	1.7	496	22	—	313 R4	—	—	141900	168000	56600	call
3	31334	2.5	495	15	314 L4	—	—	—	151400	177700	63600	call
3	31039	1.1	490	22	—	311 R4	—	—	114400	142500	45800	call
3.2	29027	2.7	458	15	314 L4	—	—	—	148000	173700	62000	call
3.2	28622	1.9	452	11	313 L4	—	—	—	138000	163300	54900	call
3.3	28553	1	451	11	310 L4	—	—	—	92500	116300	43500	call
3.3	28538	1.7	450	22	—	313 R4	—	—	137900	163200	54800	call
3.3	28186	2.4	445	22	—	314 R4	—	—	146700	172200	61400	call
3.3	27745	1.4	438	22	—	311 R4	—	—	110600	137800	44100	call
3.5	26656	3	421	22	—	314 R4	—	—	144200	169300	60300	call
3.5	26568	1.1	419	15	—	310 R4	—	—	92400	116200	43500	call
3.5	26153	1.6	413	22	—	311 R4	—	—	108700	135400	43300	call
3.6	25999	1.6	410	11	311 L4	—	—	—	108500	135200	43200	call
3.7	24969	2.2	394	11	313 L4	—	—	—	132500	156800	52400	call
3.8	24549	1.9	387	22	—	313 R4	—	—	131800	156000	52100	call
4	23015	1	363	15	—	310 R4	—	—	88500	111300	41500	call
4.2	22303	2.4	352	11	313 L4	—	—	—	128000	151500	50500	call
4.2	22117	1	349	7.5	309 L4	—	—	—	72300	93300	22100	157
4.2	22023	1.8	348	11	311 L4	—	—	—	103200	128600	40900	call
4.2	21894	2.4	346	22	—	313 R4	—	—	127300	150700	50200	call
4.3	21620	1.8	341	22	—	311 R4	—	—	102700	127900	40600	call
4.4	21171	1.3	334	15	—	310 R4	—	—	86300	108600	40300	call
4.6	20379	1.9	322	22	—	311 R4	—	—	100900	125600	39800	call
4.7	19562	2.3	309	22	—	313 R4	—	—	123100	145700	48300	call
4.8	19321	1.2	305	15	—	310 R4	—	—	84000	105600	39100	call
4.8	19902	2	304	18	313 L3	—	—	—	122500	145000	48100	call
5	19349	1.2	295	18	310 L3	—	—	—	83200	104600	38700	call
5	18598	2	294	22	—	311 R4	—	—	98100	122200	38600	call
5	19077	1.4	291	18	311 L3	—	—	—	97900	121900	38500	call
5.1	18024	0.9	284	15	—	309 R4	—	—	68000	87700	20700	158
5.2	17933	1.5	283	15	—	310 R4	—	—	82100	103300	38100	call
5.2	17812	2.7	281	22	—	313 R4	—	—	119700	141700	46800	call
5.5	16847	2.2	266	22	—	311 R4	—	—	95300	118700	37400	call
5.7	16366	1.4	258	15	—	310 R4	—	—	79900	100500	37000	call







P₁ = 11 kW n₁=1400 rpm

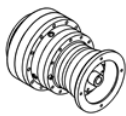
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
5.7	16350	1.1	258	15	—	309 R4	—	—	67400	87000	20500	158
5.8	16534	2.7	252	18	313 L3	—	—	—	115900	137100	45200	call
5.9	16330	1.1	249	18	310 L3	—	—	—	79100	99400	36600	call
6	16074	2.1	245	18	311 L3	—	—	—	93000	115800	36400	call
6.2	15008	2.7	237	22	—	313 R4	—	—	113700	134600	44200	call
6.3	14825	1.7	234	15	—	310 R4	—	—	77600	97600	35800	call
6.3	14713	1.1	232	15	—	309 R4	—	—	65300	84200	19800	158
6.4	15077	1.4	230	18	310 L3	—	—	—	77200	97100	35600	call
6.4	14492	2.4	229	22	—	311 R4	—	—	91100	113400	35500	call
7.1	13042	1.7	206	15	—	310 R4	—	—	74700	93900	34300	call
7.1	13029	1.1	206	15	—	307 R4	—	—	62000	81200	23700	153
7.1	13029	1.5	206	15	—	309 R4	—	—	63000	81200	19000	158
7.2	13288	2.5	203	18	311 L3	—	—	—	87800	109400	34100	call
7.3	13223	1.7	202	18	310 L3	—	—	—	74200	93300	34100	call
7.3	13209	1.2	202	11	309 L3	—	—	—	62600	80700	18900	157
7.3	12713	2.7	201	22	—	313 R4	—	—	108200	128000	41900	call
7.4	12553	2.7	198	22	—	311 R4	—	—	87200	108600	33900	call
7.7	12526	2.6	191	18	311 L3	—	—	—	86300	107500	33500	call
7.7	12081	1.2	191	15	—	307 R4	—	—	60600	79400	23200	153
7.7	12081	1.4	191	15	—	309 R4	—	—	61600	79400	18500	158
7.7	11997	1.9	189	15	—	310 R4	—	—	72800	91500	33400	call
7.9	11695	2.7	185	22	—	313 R4	—	—	105500	124900	40700	call
8	11965	1.2	183	11	309 L3	—	—	—	60800	78400	18300	157
8	11548	2.7	182	22	—	311 R4	—	—	85100	106000	32900	call
8.3	11612	1.6	177	18	310 L3	—	—	—	71400	89800	32600	call
8.3	11598	1.1	177	11	307 L3	—	—	—	59300	77700	22600	152
8.6	11197	2.9	171	18	311 L3	—	—	—	83400	103900	32200	call
8.9	10466	1.6	165	15	—	309 R4	—	—	59000	76100	17700	158
9	10721	2.1	164	18	310 L3	—	—	—	69700	87600	31800	call
9.1	10584	1	162	11	307 L3	—	—	—	57700	75600	21900	152
9.1	10584	1.5	162	11	309 L3	—	—	—	58600	75600	17500	157
9.1	10162	2.2	160	15	—	310 R4	—	—	69300	87100	31600	call
9.3	10002	1	158	12	—	306 R4	22000	24900	52100	60700	16500	148
9.5	9782	2.7	154	22	—	311 R4	—	—	80900	100800	31200	call
9.6	9627	1.9	152	15	—	309 R4	—	—	57500	74200	17200	158
10	9609	2.8	147	40	—	311 R3	—	—	79700	99300	30600	call
10	9587	1.4	146	11	307 L3	—	—	—	56000	73300	21200	152
10.3	9287	2.2	142	18	310 L3	—	—	—	66700	83900	30300	call
10.6	9092	1.2	139	11	307 L3	—	—	—	55100	72200	20800	152
10.6	9092	1.8	139	11	309 L3	—	—	—	56000	72200	16700	157
10.8	8608	2.4	136	15	—	310 R4	—	—	65900	82900	29900	call
11.2	8544	2.4	130	18	310 L3	—	—	—	65100	81900	29500	call
11.6	8247	1.6	126	11	307 L3	—	—	—	53500	70100	20200	152





P₁ = 11 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page	
							MC	MZ	HC/PC	HZ/PZ	FZ		
11.6	8247	2	126	11	309 L3	—	—	—	—	54400	70100	16100	157
11.8	7859	1.4	124	15	—	307 R4	—	—	—	56900	74500	21600	153
12.1	7945	1	121	7.5	306 L3	—	20600	23400	—	49200	57300	15500	147
12.2	7846	1.1	120	22	—	307 R3	—	—	—	52700	69100	19800	153
12.2	7846	1.6	120	22	—	309 R3	—	—	—	53600	69100	15900	158
12.2	7846	2.2	120	22	—	310 R3	—	—	—	63500	79800	28600	call
12.3	7797	2.5	119	18	310 L3	—	—	—	—	63300	79600	28600	call
12.9	7422	1.4	113	11	307 L3	—	—	—	—	51800	67900	19500	152
12.9	7422	2.1	113	11	309 L3	—	—	—	—	52700	67900	15600	157
13	7360	1	112	7.5	306 L3	—	20100	22800	—	48100	56000	15100	147
13.3	7237	2.7	110	18	310 L3	—	—	—	—	61900	77900	27900	call
13.9	6657	2	105	15	—	307 R4	—	—	—	55400	72700	21000	153
14.1	6828	1.3	104	7.5	306 L3	—	19600	22200	—	47000	54700	14700	147
14.5	6604	2.8	101	18	310 L3	—	—	—	—	60300	75800	27000	call
14.6	6572	1.9	100	11	307 L3	—	—	—	—	50000	65500	18700	152
14.6	6572	2.5	100	11	309 L3	—	—	—	—	50800	65500	15000	call
14.8	6486	1.3	99	22	—	307 R3	—	—	—	49800	65200	18600	153
14.8	6486	2	99	22	—	309 R3	—	—	—	50600	65200	14900	158
14.8	6486	2.5	99	22	—	310 R3	—	—	—	59900	75400	26900	call
14.9	6454	1	98.5	14	—	306 R3	19200	21800	—	46200	53800	14400	148
15.8	6094	2	93	11	307 L3	—	—	—	—	48900	64000	18200	152
15.8	6094	2.5	93	11	309 L3	—	—	—	—	49600	64000	14600	157
16.6	5783	1.5	88.3	7.5	306 L3	—	18500	21000	—	44700	52100	13900	147
17.3	5552	1.4	84.7	14	—	306 R3	18300	20700	—	44200	51400	13700	148
17.6	5465	1.9	83.4	22	—	307 R3	—	—	—	47300	62000	17600	153
17.6	5465	2.6	83.4	22	—	309 R3	—	—	—	48000	62000	14100	158
17.6	5465	2.7	83.4	22	—	310 R3	—	—	—	56900	71600	25400	call
17.9	5363	1.3	81.9	7.5	306 L3	—	18100	20500	—	43700	50900	13600	147
18.2	5279	1.9	80.6	11	307 L3	—	—	—	—	46800	61300	17400	152
18.2	5279	2.8	80.6	11	309 L3	—	—	—	—	47600	61300	13900	157
18.6	5151	2.7	78.6	22	—	310 R3	—	—	—	55900	70300	24900	
18.6	5151	2.2	78.6	22	—	307 R3	—	—	—	46500	60900	17200	153
19	5061	1	77.2	7.5	305 L3	—	13900	16100	—	25700	30900	8930	142
19	5045	1.7	77	7.5	306 L3	—	17700	20100	—	42900	50000	13300	147
19.8	4856	2.4	74.1	11	307 L3	—	—	—	—	45600	59800	16900	152
20.1	4776	1.6	72.9	14	—	306 R3	17400	19700	—	42200	49200	13100	148
20.2	4907	1.1	72.5	13	306 L2	—	17400	19700	—	42100	49100	13000	147
20.4	4701	2.1	71.8	22	—	307 R3	—	—	—	45200	59200	16700	153
20.4	4701	2.7	71.8	22	—	309 R3	—	—	—	45900	59200	13400	158
20.4	4701	2.7	71.8	22	—	310 R3	—	—	—	54400	68400	24100	call
21.7	4424	1.6	67.5	14	—	306 R3	17000	19200	—	41300	48000	12700	148
22.5	4274	1.8	65.2	7.5	306 L3	—	16800	19000	—	40800	47500	12600	147
22.5	4258	2.7	65	22	—	310 R3	—	—	—	52800	66400	23400	

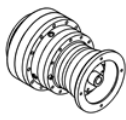








P₁ = 11 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
22.5	4258	2.6	65	22	—	307 R3	—	—	43900	57500	16200	153
22.5	4258	2.6	65	22	—	309 R3	—	—	44600	57500	12900	158
23.2	4131	1.1	63.1	7.5	305 L3	—	13000	15000	24200	29100	8340	142
24.2	3964	2.8	60.5	11	307 L3	—	—	—	42900	56300	15800	152
25.2	3806	2	58.1	14	—	306 R3	16100	18300	39400	45900	12100	148
26	3807	1.4	56.3	13	306 L2	—	16000	18100	39100	45500	12000	147
26.2	3663	2.7	55.9	22	—	310 R3	17700	22200	41900	55000	15400	call
26.2	3663	2.7	55.9	22	—	307 R3	—	—	42600	55000	12300	153
26.2	3663	2.7	55.9	22	—	309 R3	—	—	50500	63500	22200	158
26.3	3777	0.9	55.8	9	305 L2	—	12500	14400	23300	28100	8010	142
27.4	3499	1.1	53.4	7.5	305 L3	—	12600	14500	23500	28300	8080	142
27.5	3489	2	53.2	7.5	306 L3	—	15700	17800	38400	44700	11800	147
31	3163	2.6	46.7	18	307 L2	—	—	—	39700	52100	14500	152
32	3147	2.1	46.5	13	306 L2	—	15000	17000	36900	43000	11300	147
32	3033	2.5	46.3	14	—	306 R3	15000	16900	36800	42900	11200	148
33	3021	1.2	44.6	9	305 L2	—	11900	13700	22300	26800	7610	142
33	2919	2.7	44.6	22	—	310 R3	—	—	47200	59300	20600	call
33	2919	2.7	44.6	22	—	307 R3	—	—	39200	51300	14300	153
33	2919	2.7	44.6	22	—	309 R3	—	—	39800	51300	11400	158
37	2569	2.5	39.2	14	—	306 R3	14100	16000	35000	40800	10600	148
38	2602	2.5	38.4	13	306 L2	—	14100	15900	34800	40600	10600	147
38	2599	1.7	38.4	9	305 L2	—	11300	13000	21300	25600	7240	142
39	2473	2.7	37.7	22	—	310 R3	—	—	44900	56400	19500	call
39	2473	2.7	37.7	22	—	307 R3	—	—	37300	48800	13500	153
39	2473	2.7	37.7	22	—	309 R3	—	—	37900	48800	10800	158
41	2421	1.5	35.8	9	305 L2	—	11000	12700	20800	25100	7070	142
44	2176	2.7	33.2	14	—	306 R3	13400	15200	33300	38800	10100	148
46	2072	2.7	31.6	22	—	307 R3	—	—	35400	46300	12700	153
46	2072	2.7	31.6	22	—	309 R3	—	—	35900	46300	10200	158
48	2082	1	30.8	9	303 L2	—	10500	12100	19900	24000	6720	137
48	2082	2.1	30.8	9	305 L2	—	10500	12100	19900	24000	6720	142
55	1789	1	26.4	9	303 L2	—	9960	11500	19000	22900	6390	137
55	1789	2	26.4	9	305 L2	—	9960	11500	19000	22900	6390	142
60	1659	1.3	24.5	9	303 L2	—	9720	11200	18600	22400	6230	137
60	1659	2.3	24.5	9	305 L2	—	9720	11200	18600	22400	6230	142
64	1539	1.4	22.7	9	303 L2	—	9470	10900	18200	21900	6080	137
64	1539	2.6	22.7	9	305 L2	—	9470	10900	18200	21900	6080	142
71	1406	1.3	20.8	9	303 L2	—	9190	10600	17700	21300	5900	137
71	1406	2.3	20.8	9	305 L2	—	9190	10600	17700	21300	5900	142
76	1301	2.7	19.2	18	—	306 R2	11200	12600	28300	33000	8380	148
81	1226	1.6	18.1	9	303 L2	—	8780	10100	17000	20400	5630	137
81	1226	3	18.1	9	305 L2	—	8780	10100	17000	20400	5630	142
92	1075	2.7	15.9	18	—	306 R2	10500	11900	26700	31100	7870	148

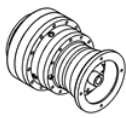






P ₁ = 11 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
95	1039	1.6	15.3	9	303 L2	—	8310	9590	16200	19500	5330	137
95	1039	2.9	15.3	9	305 L2	—	8310	9590	16200	19500	5330	142
107	925	2.7	13.7	18	—	306 R2	9960	11300	25500	29700	7480	148
117	848	1.9	12.5	9	303 L2	—	7770	8970	15200	18300	4980	137
135	737	2.7	10.9	18	—	306 R2	9230	10500	23900	27800	6930	148
152	675	1.1	9.67	11	303 L1	—	7120	8220	14100	16900	4570	137
159	624	2.7	9.23	18	—	306 R2	8730	9900	22700	26400	6560	148
195	524	2.3	7.5	11	303 L1	—	2260	2260	6750	7750	1490	137

P ₁ = 15 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.77	163217	1	1893	18	317 L4	—	—	—	442000	470000	150000	call
0.92	137526	1.2	1595	18	317 L4	—	—	—	442000	470000	150000	call
1.1	113688	1.5	1318	18	317 L4	—	—	—	434300	462400	147000	call
1.2	106719	1.1	1237	18	316 L4	—	—	—	331400	368600	144000	call
1.3	97796	1.7	1134	18	317 L4	—	—	—	415100	442000	139800	call
1.3	95233	1	1104	18	315 L4	—	—	—	192600	226200	83200	call
1.4	89921	1.1	1043	18	315 L4	—	—	—	189400	222300	81600	call
1.4	89921	1.5	1043	18	316 L4	—	—	—	314800	350100	136000	call
1.4	89477	0.9	1038	15	314 L4	—	—	—	189100	222000	81400	call
1.4	89028	2	1032	18	317 L4	—	—	—	403600	429700	135500	call
1.5	82213	1.8	953	50	—	317 R4	—	—	394100	419600	132000	call
1.6	80193	1.2	930	18	315 L4	—	—	—	183000	214800	78500	call
1.6	79847	0.9	926	15	314 L4	—	—	—	182700	214500	78400	call
1.6	78419	1	909	40	—	315 R4	—	—	181700	213400	77900	call
1.6	77931	2.1	904	18	317 L4	—	—	—	387800	412900	129600	call
1.7	74334	1.4	862	18	315 L4	—	—	—	178800	210000	76600	call
1.7	74334	1.7	862	18	316 L4	—	—	—	297400	330700	127600	call
1.7	73967	1.1	858	15	314 L4	—	—	—	178600	209700	76400	call
1.8	70068	1.9	812	18	316 L4	—	—	—	292100	324900	125100	call
1.8	69272	2.4	803	50	—	317 R4	—	—	374300	398500	124600	call
1.8	68302	2.7	792	18	317 L4	—	—	—	372700	396900	124100	call
1.9	67457	1.3	782	40	—	315 R4	—	—	173700	203900	74100	call
2	63904	1.6	741	18	315 L4	—	—	—	170900	200700	72800	call
2	63904	2	741	18	316 L4	—	—	—	284200	316100	121400	call
2	63628	1.3	738	15	314 L4	—	—	—	170700	200400	72700	call
2	62634	2.1	726	18	316 L4	—	—	—	282500	314100	120500	call
2	62012	2.9	719	18	317 L4	—	—	—	362100	385500	120100	call

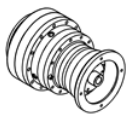






P₁ = 15 kW n₁=1400 rpm

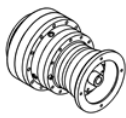
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.1	59039	2.2	685	18	316 L4	—	—	—	277500	308600	118200	call
2.2	58368	2.8	677	50	—	317 R4	—	—	355600	378600	117700	call
2.2	57923	1.7	672	18	315 L4	—	—	—	165900	194800	70500	call
2.2	57637	1.4	668	15	314 L4	—	—	—	165700	194500	70300	call
2.2	56839	1.6	659	40	—	315 R4	—	—	165000	193700	70000	call
2.3	55766	0.9	647	22	—	313 R4	—	—	150500	178100	60400	call
2.3	54583	1	633	11	313 L4	—	—	—	152700	180700	61400	call
2.3	53978	2.9	626	50	—	317 R4	—	—	347300	369800	114700	call
2.3	53845	2.3	624	18	316 L4	—	—	—	270000	300300	114600	call
2.4	53755	1.9	623	40	—	315 R4	—	—	162300	190500	68700	call
2.4	53755	2.1	623	45	—	316 R4	—	—	269800	300100	114500	call
2.4	52929	1.1	614	22	—	314 R4	—	—	161500	189600	68400	call
2.5	50955	2	591	18	315 L4	—	—	—	159700	187500	67500	call
2.5	50955	2.4	591	18	316 L4	—	—	—	265500	295300	112500	call
2.5	50703	1.6	588	15	314 L4	—	—	—	159500	187200	67400	call
2.6	48805	2.5	566	18	316 L4	—	—	—	262100	291500	110900	call
2.6	48619	1.1	564	11	313 L4	—	—	—	147500	174500	59100	call
2.6	47793	1.7	554	15	314 L4	—	—	—	156600	183900	66100	call
2.7	46100	1.1	535	22	—	313 R4	—	—	145100	171800	58000	call
2.7	46004	2.2	533	18	315 L4	—	—	—	154900	181800	65200	call
2.7	46004	2.6	533	18	316 L4	—	—	—	257500	286400	108700	call
2.8	45531	1.5	528	22	—	314 R4	—	—	154400	181300	65000	call
2.8	45293	2.2	525	40	—	315 R4	—	—	154100	181000	64900	call
2.8	45293	2.6	525	45	—	316 R4	—	—	256300	285000	108200	call
2.9	44298	1.1	514	11	313 L4	—	—	—	143400	169700	57300	call
2.9	44164	1	512	11	311 L4	—	—	—	116000	144500	46500	call
3	42783	1.2	496	22	—	313 R4	—	—	141900	168000	56600	call
3	42650	1.9	495	15	314 L4	—	—	—	151400	177700	63600	call
3	41983	2.4	487	18	315 L4	—	—	—	150700	176900	63300	call
3	41983	2.8	487	18	316 L4	—	—	—	250500	278600	105500	call
3.2	39509	2	458	15	314 L4	—	—	—	148000	173700	62000	call
3.2	38957	1.4	452	11	313 L4	—	—	—	138000	163300	54900	call
3.3	38843	1.2	450	22	—	313 R4	—	—	137900	163200	54800	call
3.3	38364	1.8	445	22	—	314 R4	—	—	146700	172200	61400	call
3.3	38030	2.6	441	18	315 L4	—	—	—	146300	171700	61200	call
3.3	37764	1	438	22	—	311 R4	—	—	110600	137800	44100	call
3.5	36282	2.2	421	22	—	314 R4	—	—	144200	169300	60300	call
3.5	35597	1.1	413	22	—	311 R4	—	—	108700	135400	43300	call
3.6	35388	1.2	410	11	—	311 L4	—	—	108500	135200	43200	call
3.6	35294	2.8	409	40	—	315 R4	—	—	143000	167900	59700	call
3.7	33985	1.6	394	11	313 L4	—	—	—	132500	156800	52400	call
3.8	33467	2.3	388	15	314 L4	—	—	—	140800	165300	58700	call
3.8	33414	1.4	387	22	—	313 R4	—	—	131800	156000	52100	call







P₁ = 15 kW n₁=1400 rpm

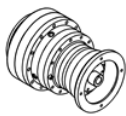
n ₂ min ⁻¹	M ₂ Nm	S	i	P _t kW			R _{n2} [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
4.1	30571	2.6	354	22	—	314 R4	—	—	137000	160800	56900	call
4.2	30356	1.7	352	11	313 L4	—	—	—	128000	151500	50500	call
4.2	29976	1.3	348	11	311 L4	—	—	—	103200	128600	40900	call
4.2	29801	1.8	346	22	—	313 R4	—	—	127300	150700	50200	call
4.3	29427	1.3	341	22	—	311 R4	—	—	102700	127900	40600	call
4.4	28817	1	334	15	—	310 R4	—	—	84600	106300	39400	call
4.6	27738	1.4	322	22	—	311 R4	—	—	100900	125600	39800	call
4.7	27083	2.9	314	15	314 L4	—	—	—	132100	155100	54700	call
4.7	26627	1.7	309	22	—	313 R4	—	—	123100	145700	48300	call
4.8	27088	1.4	304	18	313 L3	—	—	—	122500	145000	48100	call
5	25313	1.5	294	22	—	311 R4	—	—	98100	122200	38600	call
5	25966	1	291	18	311 L3	—	—	—	97900	121900	38500	call
5.2	24409	1.1	283	15	—	310 R4	—	—	82100	103300	38100	call
5.2	24244	2	281	22	—	313 R4	—	—	119700	141700	46800	call
5.5	22930	1.6	266	22	—	311 R4	—	—	95300	118700	37400	call
5.7	22276	1	258	15	—	310 R4	—	—	79900	100500	37000	call
5.8	22504	2	252	18	313 L3	—	—	—	115900	137100	45200	call
6	21879	1.6	245	18	311 L3	—	—	—	93000	115800	36400	call
6.1	21360	2.4	240	25	314 L3	—	—	—	119300	140100	48800	call
6.2	20428	2	237	22	—	313 R4	—	—	113700	134600	44200	call
6.3	20178	1.2	234	15	—	310 R4	—	—	77600	97600	35800	call
6.4	20522	1	230	18	310 L3	—	—	—	77200	97100	35600	call
6.4	19725	1.8	229	22	—	311 R4	—	—	91100	113400	35500	call
7	18603	2.4	209	18	313 L3	—	—	—	109400	129500	42400	call
7.1	17751	1.2	206	15	—	310 R4	—	—	74700	93900	34300	call
7.1	17733	1.1	206	15	—	309 R4	—	—	63000	81200	19000	158
7.2	18087	1.8	203	18	311 L3	—	—	—	87800	109400	34100	call
7.3	17997	1.2	202	18	310 L3	—	—	—	74200	93300	34100	call
7.3	17979	0.9	202	11	309 L3	—	—	—	61300	79100	18400	157
7.3	17304	2	201	22	—	313 R4	—	—	108200	128000	41900	call
7.4	17087	2	198	22	—	311 R4	—	—	87200	108600	33900	call
7.6	17265	2.8	194	18	313 L3	—	—	—	107000	126700	41400	call
7.7	17049	1.9	191	18	311 L3	—	—	—	86300	107500	33500	call
7.7	16444	1.1	191	15	—	309 R4	—	—	61600	79400	18500	158
7.7	16329	1.4	189	15	—	310 R4	—	—	72800	91500	33400	call
7.9	15918	2	185	22	—	313 R4	—	—	105500	124900	40700	call
8	15718	2	182	22	—	311 R4	—	—	85100	106000	32900	call
8	16231	2.4	182	18	313 L3	—	—	—	105100	124300	40500	call
8.3	15805	1.2	177	18	310 L3	—	—	—	71400	89800	32600	call
8.3	15675	2.9	176	18	313 L3	—	—	—	104000	123000	40100	call
8.6	15240	2.1	171	18	311 L3	—	—	—	83400	103900	32200	call
8.9	14245	1.1	165	15	—	309 R4	—	—	59000	76100	17700	158
9	14593	1.5	164	18	310 L3	—	—	—	69700	87600	31800	call





P₁ = 15 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
9.1	14406	1.1	162	11	309 L3	—	—	—	58600	75600	17500	157
9.1	14365	2.2	161	18	311 L3	—	—	—	82000	102100	31600	call
9.1	13832	1.6	160	15	—	310 R4	—	—	69300	87100	31600	call
9.5	13314	2	154	22	—	311 R4	—	—	80900	100800	31200	call
9.6	13645	2.9	153	40	—	313 R3	—	—	99700	118000	38200	call
9.6	13104	1.4	152	15	—	309 R4	—	—	57500	74200	17200	158
10	13109	2.4	147	18	311 L3	—	—	—	79700	99300	30700	call
10	13079	2.1	147	40	—	311 R3	—	—	79700	99300	30600	call
10	13050	1	146	11	307 L3	—	—	—	56000	73300	21200	152
10.3	12641	1.6	142	18	310 L3	—	—	—	66700	83900	30300	call
10.6	12375	1.3	139	11	309 L3	—	—	—	56000	72200	16700	157
10.8	11716	1.8	136	15	—	310 R4	—	—	65900	82900	29900	call
11	11875	2.5	133	18	311 L3	—	—	—	77400	96400	29700	call
11.2	11629	1.8	130	18	310 L3	—	—	—	65100	81900	29500	call
11.6	11225	1.2	126	11	307 L3	—	—	—	53500	70100	20200	152
11.6	11225	1.5	126	11	309 L3	—	—	—	54400	70100	16100	157
11.7	11194	2.6	126	18	311 L3	—	—	—	76100	94700	29100	call
11.8	10697	1	124	15	—	307 R4	—	—	56900	74500	21600	153
11.9	11021	2.7	124	40	—	311 R3	—	—	75700	94300	28900	call
12.2	10679	1.2	120	22	—	309 R3	—	—	53600	69100	15900	158
12.2	10679	1.6	120	22	—	310 R3	—	—	63500	79800	28600	call
12.3	10612	1.9	119	18	310 L3	—	—	—	63300	79600	28600	call
12.8	10215	2.8	115	18	311 L3	—	—	—	74000	92200	28200	call
12.9	10102	1	113	11	307 L3	—	—	—	51800	67900	19500	152
12.9	10102	1.5	113	11	309 L3	—	—	—	52700	67900	15600	157
13.3	9850	2	110	18	310 L3	—	—	—	61900	77900	27900	call
13.9	9061	1.5	105	15	—	307 R4	—	—	55400	72700	21000	153
14.1	9293	1	104	7.5	306 L3	—	19200	21700	46000	53600	14400	147
14.5	8989	2.1	101	18	310 L3	—	—	—	60300	75800	27000	call
14.6	8945	1.4	100	11	307 L3	—	—	—	50000	65500	18700	152
14.6	8945	1.8	100	11	309 L3	—	—	—	50800	65500	15000	157
14.8	8828	1	99	22	—	307 R3	—	—	49800	65200	18600	153
14.8	8828	1.4	99	22	—	309 R3	—	—	50600	65200	14900	158
14.8	8828	1.9	99	22	—	310 R3	—	—	59900	75400	26900	call
15.8	8295	1.5	93	11	307 L3	—	—	—	48900	64000	18200	152
15.8	8295	1.8	93	11	309 L3	—	—	—	49600	64000	14600	157
16	8143	2.3	91.3	18	310 L3	—	—	—	58500	73600	26200	call
16.6	7872	1.1	88.3	7.5	306 L3	—	18100	20500	43800	51000	13600	147
17.3	7557	1	84.7	14	—	306 R3	18300	20700	44200	51400	13700	148
17.6	7438	1.4	83.4	22	—	307 R3	—	—	47300	62000	17600	153
17.6	7438	1.9	83.4	22	—	309 R3	—	—	48000	62000	14100	158
17.6	7438	2	83.4	22	—	310 R3	—	—	56900	71600	25400	call
17.9	7300	0.9	81.9	7.5	306 L3	—	17700	20000	42800	49900	13300	147

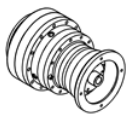








P₁ = 15 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
18.2	7186	1.4	80.6	11	307 L3	—	—	46800	61300	17400	152	
18.2	7186	2.1	80.6	11	309 L3	—	—	47600	61300	13900	157	
18.2	7163	2.4	80.3	18	310 L3	—	—	56300	70800	25100	call	
18.6	7012	2	78.6	22	—	310 R3	—	—	55900	70300	24900	call
18.6	7012	1.6	78.6	22	—	307 R3	—	—	46500	60900	17200	153
19	6867	1.2	77	7.5	306 L3	—	17700	20100	42900	50000	13300	147
19.8	6610	1.8	74.1	11	307 L3	—	—	—	45600	59800	16900	152
19.8	6610	2.3	74.1	11	309 L3	—	—	—	46400	59800	13500	157
19.8	6590	2.7	73.9	18	310 L3	—	—	—	54900	69000	24400	call
20.1	6500	1.1	72.9	14	—	306 R3	17400	19700	42200	49200	13100	148
20.4	6399	1.6	71.8	22	—	307 R3	—	—	45200	59200	16700	153
20.4	6399	2	71.8	22	—	309 R3	—	—	45900	59200	13400	158
20.4	6399	2	71.8	22	—	310 R3	—	—	54400	68400	24100	call
21.7	6022	1.2	67.5	14	—	306 R3	17000	19200	41300	48000	12700	148
22.5	5817	1.3	65.2	7.5	306 L3	—	16800	19000	40800	47500	12600	147
22.5	5796	2	65	22	—	310 R3	—	—	52800	66400	23400	call
22.5	5796	1.9	65	22	—	307 R3	—	—	43900	57500	16200	153
22.5	5796	1.9	65	22	—	309 R3	—	—	44600	57500	12900	158
23.4	5582	3	62.6	18	310 L3	—	—	—	52200	65700	23100	call
24.2	5396	2.1	60.5	11	307 L3	—	—	—	42900	56300	15800	152
24.2	5396	2.6	60.5	11	309 L3	—	—	—	43600	56300	12600	157
25.2	5180	1.5	58.1	14	—	306 R3	16100	18300	39400	45900	12100	148
26	5182	1	56.3	13	306 L2	—	16000	18100	39100	45500	12000	147
26.2	4986	2	55.9	22	—	310 R3	—	—	50500	63500	22200	call
26.2	4986	2	55.9	22	—	307 R3	—	—	41900	55000	15400	153
26.2	4986	2	55.9	22	—	309 R3	—	—	42600	55000	12300	158
27.5	4748	1.5	53.2	7.5	306 L3	—	15700	17800	38400	44700	11800	147
28.6	4571	2.3	51.3	11	307 L3	—	—	—	40900	53500	14900	152
28.6	4571	2.9	51.3	11	309 L3	—	—	—	41500	53500	12000	157
31	4305	1.9	46.7	18	307 L2	—	—	—	39700	52100	14500	152
31	4305	2.9	46.7	18	309 L2	—	—	—	40400	52100	11600	157
32	4284	1.5	46.5	13	306 L2	—	15000	17000	36900	43000	11300	147
32	4128	1.8	46.3	14	—	306 R3	15000	16900	36800	42900	11200	148
33	3973	2	44.6	22	—	310 R3	—	—	47200	59300	20600	call
33	3973	2	44.6	22	—	307 R3	—	—	39200	51300	14300	153
33	3973	2	44.6	22	—	309 R3	—	—	39800	51300	11400	158
37	3497	1.9	39.2	14	—	306 R3	14100	16000	35000	40800	10600	148
38	3559	2.3	38.6	18	307 L2	—	—	—	37500	49200	13600	152
38	3541	1.8	38.4	13	306 L2	—	14100	15900	34800	40600	10600	147
38	3537	1.2	38.4	9	305 L2	—	11300	13000	21300	25600	7240	142
39	3366	2	37.7	22	—	310 R3	—	—	44900	56400	19500	call
39	3366	2	37.7	22	—	307 R3	—	—	37300	48800	13500	153
39	3366	2	37.7	22	—	309 R3	—	—	37900	48800	10800	158

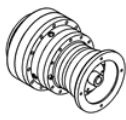






P₁ = 15 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
41	3295	1.1	35.8	9	305 L2	—	11000	12700	20800	25100	7070	142
44	2962	2	33.2	14	—	306 R3	13400	15200	33300	38800	10100	148
44	3046	2.3	33.1	13	306 L2	—	13400	15100	33300	38800	10000	147
46	2821	2	31.6	22	—	307 R3	—	—	35400	46300	12700	153
46	2821	2	31.6	22	—	309 R3	—	—	35900	46300	10200	158
48	2834	1.5	30.8	9	305 L2	—	10500	12100	19900	24000	6720	142
52	2620	2.6	28.4	13	306 L2	—	12700	14400	31800	37100	9550	147
55	2435	1.4	26.4	9	305 L2	—	9960	11500	19000	22900	6390	142
56	2427	2.6	26.4	13	306 L2	—	12400	14000	31100	36200	9310	147
60	2259	1	24.5	9	303 L2	—	9490	11000	18200	21900	6090	137
60	2259	1.7	24.5	9	305 L2	—	9720	11200	18600	22400	6230	142
64	2095	1	22.7	9	303 L2	—	9470	10900	18200	21900	6080	137
64	2095	1.9	22.7	9	305 L2	—	9470	10900	18200	21900	6080	142
65	2088	2.9	22.7	13	306 L2	—	11800	13400	29700	34600	8850	147
71	1913	1	20.8	9	303 L2	—	8980	10400	17300	20900	5760	137
71	1913	1.7	20.8	9	305 L2	—	9190	10600	17700	21300	5900	142
76	1771	2	19.2	18	—	306 R2	11200	12600	28300	33000	8380	148
81	1669	1.2	18.1	9	303 L2	—	8780	10100	17000	20400	5630	137
81	1669	2.2	18.1	9	305 L2	—	8780	10100	17000	20400	5630	142
92	1464	2	15.9	18	—	306 R2	10500	11900	26700	31100	7870	148
95	1414	1.2	15.3	9	303 L2	—	8310	9590	16200	19500	5330	137
95	1414	2.2	15.3	9	305 L2	—	8310	9590	16200	19500	5330	142
107	1259	2	13.7	18	—	306 R2	9960	11300	25500	29700	7480	148
117	1154	1.4	12.5	9	303 L2	—	7770	8970	15200	18300	4980	137
117	1154	2.5	12.5	9	305 L2	—	7770	8970	15200	18300	4980	142
135	1003	2	10.9	18	—	306 R2	9230	10500	23900	27800	6930	148
159	850	2	9.23	18	—	306 R2	8730	9900	22700	26400	6560	148
195	713	1.7	7.5	11	303 L1	—	6550	7560	13000	15700	4200	137
236	589	2.4	6.2	11	303 L1	—	6140	7090	12300	14800	3940	137
275	507	2.9	5.33	11	303 L1	—	5840	6750	11800	14200	3750	137

P₁ = 18.5 kW n ₁ =1400 rpm												
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
0.92	169802	1	1595	18	317 L4	—	—	—	442000	470000	150000	call
1.1	147863	2.4	1389	30	319 L4	—	—	—	636100	700800	199500	call
1.1	140370	1.2	1318	18	317 L4	—	—	—	434300	462400	147000	call
1.2	131765	0.9	1237	18	316 L4	—	—	—	331400	368600	144000	call
1.2	127194	2.8	1195	30	319 L4	—	—	—	608000	669900	189700	call

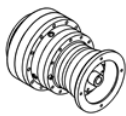






P₁ = 18.5 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	P _t kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.3	120748	1.4	1134	18	317 L4	—	—	415100	442000	139800	call	
1.4	112771	2.4	1059	22	318 L4	—	—	503000	520700	182200	call	
1.4	111025	0.9	1043	18	315 L4	—	—	189400	222300	81600	call	
1.4	111025	1.2	1043	18	316 L4	—	—	314800	350100	136000	call	
1.4	109922	1.6	1032	18	317 L4	—	—	403600	429700	135500	call	
1.5	101508	1.4	953	50	—	317 R4	—	—	394100	419600	132000	call
1.6	99014	0.9	930	18	315 L4	—	—	183000	214800	78500	call	
1.6	97007	2.8	911	22	318 L4	—	—	487700	497700	173300	call	
1.6	96221	1.7	904	18	317 L4	—	—	387800	412900	129600	call	
1.7	91780	1.1	862	18	315 L4	—	—	178800	210000	76600	call	
1.7	91780	1.4	862	18	316 L4	—	—	297400	330700	127600	call	
1.8	86513	1.5	812	18	316 L4	—	—	292100	324900	125100	call	
1.8	85530	1.9	803	50	—	317 R4	—	—	374300	398500	124600	call
1.8	84332	2.2	792	18	317 L4	—	—	372700	396900	124100	call	
1.9	83289	1.1	782	40	—	315 R4	—	—	173700	203900	74100	call
2	78901	1.3	741	18	315 L4	—	—	170900	200700	72800	call	
2	78901	1.6	741	18	316 L4	—	—	284200	316100	121400	call	
2	78561	1	738	15	314 L4	—	—	170700	200400	72700	call	
2	77333	1.7	726	18	316 L4	—	—	282500	314100	120500	call	
2	76565	2.3	719	18	317 L4	—	—	362100	385500	120100	call	
2.1	72895	1.8	685	18	316 L4	—	—	277500	308600	118200	call	
2.2	72067	2.3	677	50	—	317 R4	—	—	355600	378600	117700	call
2.2	71517	1.4	672	18	315 L4	—	—	165900	194800	70500	call	
2.2	71164	1.1	668	15	314 L4	—	—	165700	194500	70300	call	
2.2	70179	1.3	659	40	—	315 R4	—	—	165000	193700	70000	call
2.3	66647	2.3	626	50	—	317 R4	—	—	347300	369800	114700	call
2.3	66482	1.9	624	18	316 L4	—	—	270000	300300	114600	call	
2.4	66371	1.5	623	40	—	315 R4	—	—	162300	190500	68700	call
2.4	66371	1.7	623	45	—	316 R4	—	—	269800	300100	114500	call
2.4	65863	2.7	619	18	317 L4	—	—	346100	368500	114200	call	
2.5	62914	1.6	591	18	315 L4	—	—	159700	187500	67500	call	
2.5	62914	1.9	591	18	316 L4	—	—	265500	295300	112500	call	
2.5	62603	1.3	588	15	314 L4	—	—	159500	187200	67400	call	
2.6	60260	2.1	566	18	316 L4	—	—	262100	291500	110900	call	
2.6	59010	1.4	554	15	314 L4	—	—	156600	183900	66100	call	
2.7	58741	3	552	18	317 L4	—	—	334400	356100	110000	call	
2.7	56801	1.8	533	18	315 L4	—	—	154900	181800	65200	call	
2.7	56801	2.1	533	18	316 L4	—	—	257500	286400	108700	call	
2.8	55924	1.8	525	40	—	315 R4	—	—	154100	181000	64900	call
2.8	55924	2.1	525	45	—	316 R4	—	—	256300	285000	108200	call
2.8	55368	3	520	50	—	317 R4	—	—	328500	349800	107800	call
3	52659	1.5	495	15	314 L4	—	—	151400	177700	63600	call	
3	51836	1.9	487	18	315 L4	—	—	150700	176900	63300	call	

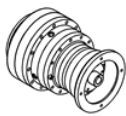






P₁ = 18.5 kW n₁=1400 rpm

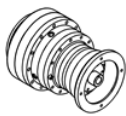
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page	
							MC	MZ	HC/PC	HZ/PZ	FZ		
3	51836	2.3	487	18	316 L4	—	—	—	—	250500	278600	105500	call
3.2	48782	1.6	458	15	314 L4	—	—	—	—	148000	173700	62000	call
3.3	47121	2.5	443	45	—	316 R4	—	—	—	243500	270800	102200	call
3.3	46956	2.1	441	18	315 L4	—	—	—	—	146300	171700	61200	call
3.3	46956	2.5	441	18	316 L4	—	—	—	—	243200	270500	102100	call
3.6	43577	2.3	409	40	—	315 R4	—	—	—	143000	167900	59700	call
3.6	43577	2.6	409	45	—	316 R4	—	—	—	237800	264500	99600	call
3.8	41321	1.9	388	15	314 L4	—	—	—	—	140800	165300	58700	call
4	39353	2.5	370	18	315 L4	—	—	—	—	138700	162900	57700	call
4	39353	2.8	370	18	316 L4	—	—	—	—	230600	256500	96200	call
4.2	36717	2.6	345	40	—	315 R4	—	—	—	135900	159500	56400	call
4.2	36717	2.9	345	45	—	316 R4	—	—	—	225900	251200	94000	call
4.7	33439	2.3	314	15	314 L4	—	—	—	—	132100	155100	54700	call
4.8	33446	1.2	304	18	313 L3	—	—	—	—	122500	145000	48100	call
5.5	28611	2.9	269	40	—	315 R4	—	—	—	126100	148000	51900	call
5.8	27786	1.6	252	18	313 L3	—	—	—	—	115900	137100	45200	call
6	27014	1.3	245	18	311 L3	—	—	—	—	93000	115800	36400	call
6.1	26503	2.5	241	30	315 L3	—	—	—	—	122000	143200	50000	call
6.1	26373	2	240	25	314 L3	—	—	—	—	121800	143000	50000	call
7	22970	2	209	18	313 L3	—	—	—	—	109400	129500	42400	call
7.1	22686	2.8	206	25	314 L3	—	—	—	—	116400	136700	47500	call
7.2	22332	1.5	203	18	311 L3	—	—	—	—	87800	109400	34100	call
7.3	22221	1	202	18	310 L3	—	—	—	—	74200	93300	34100	call
7.6	21317	2.2	194	18	313 L3	—	—	—	—	107000	126700	41400	call
7.7	21050	1.5	191	18	311 L3	—	—	—	—	86300	107500	33500	call
8	20040	1.9	182	18	313 L3	—	—	—	—	105100	124300	40500	call
8.3	19515	0.9	177	18	310 L3	—	—	—	—	71400	89800	32600	call
8.3	19354	2.3	176	18	313 L3	—	—	—	—	104000	123000	40100	call
8.6	18816	1.7	171	18	311 L3	—	—	—	—	83400	103900	32200	call
9	18018	1.2	164	18	310 L3	—	—	—	—	69700	87600	31800	call
9	17962	2.6	163	18	313 L3	—	—	—	—	101700	120300	39100	call
9.1	17736	1.8	161	18	311 L3	—	—	—	—	82000	102100	31600	call
9.6	16847	2.3	153	40	—	313 R3	—	—	—	99700	118000	38200	call
9.7	16649	2.7	151	18	313 L3	—	—	—	—	99400	117600	38100	call
10	16186	2	147	18	311 L3	—	—	—	—	79700	99300	30700	call
10	16149	1.7	147	40	—	311 R3	—	—	—	79700	99300	30600	call
10.2	15745	2.8	143	18	313 L3	—	—	—	—	97700	115700	37400	call
10.3	15608	1.3	142	18	310 L3	—	—	—	—	66700	83900	30300	call
10.9	14848	3	135	18	313 L3	—	—	—	—	96000	113600	36700	call
11	14662	2	133	18	311 L3	—	—	—	—	77400	96400	29700	call
11.2	14358	1.4	130	18	310 L3	—	—	—	—	65100	81900	29500	call
11.5	13996	2.9	127	40	—	313 R3	—	—	—	94300	111600	36000	call
11.7	13821	2.1	126	18	311 L3	—	—	—	—	76100	94700	29100	call







P₁ = 18.5 kW n₁=1400 rpm

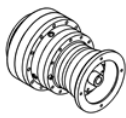
n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
11.9	13607	2.2	124	40	—	311 R3	—	—	75700	94300	28900	call
12.3	13103	1.5	119	18	310 L3	—	—	—	63300	79600	28600	call
12.8	12613	2.3	115	18	311 L3	—	—	—	74000	92200	28200	call
13.3	12162	1.6	110	18	310 L3	—	—	—	61900	77900	27900	call
14.1	11465	2.5	104	40	—	311 R3	—	—	71900	89600	27300	call
14.1	11425	2.4	104	18	311 L3	—	—	—	71800	89500	27300	call
14.5	11099	1.7	101	18	310 L3	—	—	—	60300	75800	27000	call
15.2	10603	2.6	96.3	40	—	311 R3	—	—	70200	87500	26600	call
16	10054	1.9	91.3	18	310 L3	—	—	—	58500	73600	26200	call
16.4	9828	2.7	89.3	18	311 L3	—	—	—	68100	84900	25700	call
18.1	8934	2.9	81.1	40	—	311 R3	—	—	66700	83100	25200	call
18.2	8845	2	80.3	18	310 L3	—	—	—	56300	70800	25100	call
18.9	8514	3	77.3	18	311 L3	—	—	—	65800	81900	24800	call
19.8	8136	2.2	73.9	18	310 L3	—	—	—	54900	69000	24400	call
23.4	6892	2.4	62.6	18	310 L3	—	—	—	52200	65700	23100	call
27.6	5838	2.7	53	18	310 L3	—	—	—	49700	62500	21800	call
31	5315	1.6	46.7	18	307 L2	—	—	—	39700	52100	14500	152
31	5315	2.4	46.7	18	309 L2	—	—	—	40400	52100	11600	157
31	5315	2.7	46.7	22	310 L2	—	—	—	47800	60200	20900	call
32	5289	1.2	46.5	13	306 L2	—	15000	17000	36900	43000	11300	147
38	4394	1.9	38.6	18	307 L2	—	—	—	37500	49200	13600	152
38	4394	2.8	38.6	18	309 L2	—	—	—	38100	49200	10900	157
38	4372	1.5	38.4	13	306 L2	—	14100	15900	34800	40600	10600	147
44	3761	1.8	33.1	13	306 L2	—	13400	15100	33300	38800	10000	147
45	3702	2.5	32.6	18	307 L2	—	—	—	35700	46700	12800	152
48	3490	2.7	30.7	18	307 L2	—	—	—	35000	45900	12600	152
52	3235	2.1	28.4	13	306 L2	—	12700	14400	31800	37100	9550	147
52	3185	2.9	28	18	307 L2	—	—	—	34100	44700	12200	152
56	2997	2.1	26.4	13	306 L2	—	12400	14000	31100	36200	9310	147
62	2677	3	23.5	35	—	307 R2	13300	16600	32400	42400	11500	153
65	2578	2.4	22.7	13	306 L2	—	11800	13400	29700	34600	8850	147
81	2054	2.9	18.1	13	306 L2	—	10900	12400	27800	32300	8210	147
96	1740	2.9	15.3	13	306 L2	—	10300	11700	26400	30800	7770	147
195	880	1.4	7.5	11	303 L1	—	6550	7560	13000	15700	4200	137
195	880	2.6	7.5	13	305 L1	—	6550	7560	13000	15700	4200	142
236	728	1.9	6.2	11	303 L1	—	6140	7090	12300	14800	3940	137
275	626	2.4	5.33	11	303 L1	—	5840	6750	11800	14200	3750	137
345	499	2.9	4.25	11	303 L1	—	5420	6250	11000	13200	3480	137





P₁ = 22 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	P _t kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
1.1	174748	2	1389	30	319 L4	—	—	—	636100	700800	199500	call
1.1	165892	1	1318	18	317 L4	—	—	—	425400	452900	143700	call
1.2	150321	2.4	1195	30	319 L4	—	—	—	608000	669900	189700	call
1.3	142703	1.2	1134	18	317 L4	—	—	—	415100	442000	139800	call
1.4	133274	2.1	1059	22	318 L4	—	—	—	503000	520700	182200	call
1.4	131211	1	1043	18	316 L4	—	—	—	314800	350100	136000	call
1.4	129908	1.4	1032	18	317 L4	—	—	—	403600	429700	135500	call
1.5	126659	2.7	1007	30	319 L4	—	—	—	577600	636300	179200	call
1.5	119964	1.2	953	50	—	317 R4	—	—	394100	419600	132000	call
1.6	114733	2.9	912	30	319 L4	—	—	—	560700	617700	173400	call
1.6	114645	2.4	911	22	318 L4	—	—	—	487700	497700	173300	call
1.6	114053	2.9	906	115	—	319 R4 (C)	—	—	559700	616600	173000	call
1.6	113716	1.5	904	18	317 L4	—	—	—	387800	412900	129600	call
1.7	108468	0.9	862	18	315 L4	—	—	—	178800	210000	76600	call
1.7	108468	1.2	862	18	316 L4	—	—	—	297400	330700	127600	call
1.8	102242	1.3	812	18	316 L4	—	—	—	292100	324900	125100	call
1.8	101081	1.6	803	50	—	317 R4	—	—	374300	398500	124600	call
1.8	99665	1.9	792	18	317 L4	—	—	—	372700	396900	124100	call
1.9	98432	0.9	782	40	—	315 R4	—	—	173700	203900	74100	call
1.9	96599	2.8	768	22	318 L4	—	—	—	463300	472800	163700	call
2	93247	1.1	741	18	315 L4	—	—	—	170900	200700	72800	call
2	93247	1.4	741	18	316 L4	—	—	—	284200	316100	121400	call
2	91394	1.4	726	18	316 L4	—	—	—	282500	314100	120500	call
2	91357	2.9	726	22	318 L4	—	—	—	455600	464900	160700	call
2	90486	2	719	18	317 L4	—	—	—	362100	385500	120100	call
2.1	86149	1.5	685	18	316 L4	—	—	—	277500	308600	118200	call
2.2	85170	1.9	677	50	—	317 R4	—	—	355600	378600	117700	call
2.2	84520	1.2	672	18	315 L4	—	—	—	165900	194800	70500	call
2.2	84103	1	668	15	314 L4	—	—	—	165700	194500	70300	call
2.2	82938	1.1	659	40	—	315 R4	—	—	165000	193700	70000	call
2.3	78764	2	626	50	—	317 R4	—	—	347300	369800	114700	call
2.3	78569	1.6	624	18	316 L4	—	—	—	270000	300300	114600	call
2.4	78438	1.3	623	40	—	315 R4	—	—	162300	190500	68700	call
2.4	78438	1.5	623	45	—	316 R4	—	—	269800	300100	114500	call
2.4	77838	2.3	619	18	317 L4	—	—	—	346100	368500	114200	call
2.5	74353	1.3	591	18	315 L4	—	—	—	159700	187500	67500	call
2.5	74353	1.6	591	18	316 L4	—	—	—	265500	295300	112500	call
2.5	73986	1.1	588	15	314 L4	—	—	—	159500	187200	67400	call
2.6	71216	1.7	566	18	316 L4	—	—	—	262100	291500	110900	call
2.6	69739	1.1	554	15	314 L4	—	—	—	156600	183900	66100	call
2.7	69421	2.5	552	18	317 L4	—	—	—	334400	356100	110000	call
2.7	67129	1.5	533	18	315 L4	—	—	—	154900	181800	65200	call
2.7	67129	1.8	533	18	316 L4	—	—	—	257500	286400	108700	call

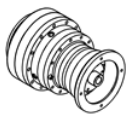






P₁ = 22 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	P _t kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
2.8	66091	1.5	525	40	—	315 R4	—	—	154100	181000	64900	call
2.8	66091	1.8	525	45	—	316 R4	—	—	256300	285000	108200	call
2.8	65435	2.5	520	50	—	317 R4	—	—	328500	349800	107800	call
3	62234	1.3	495	15	314 L4	—	—	—	151400	177700	63600	call
3	62027	2.7	493	18	317 L4	—	—	—	323300	344200	105900	call
3	61261	1.6	487	18	315 L4	—	—	—	150700	176900	63300	call
3	61261	1.9	487	18	316 L4	—	—	—	250500	278600	105500	call
3.2	57651	1.4	458	15	314 L4	—	—	—	148000	173700	62000	call
3.3	56477	2.9	449	18	317 L4	—	—	—	314300	334700	102700	call
3.3	55688	2.1	443	45	—	316 R4	—	—	243500	270800	102200	call
3.3	55493	1.8	441	18	315 L4	—	—	—	146300	171700	61200	call
3.3	55493	2.1	441	18	316 L4	—	—	—	243200	270500	102100	call
3.3	55135	2.8	438	50	—	317 R4	—	—	312100	332300	101800	call
3.6	51500	1.9	409	40	—	315 R4	—	—	143000	167900	59700	call
3.6	51500	2.2	409	45	—	316 R4	—	—	237800	264500	99600	call
3.7	50201	2.9	399	50	—	317 R4	—	—	303400	323100	98700	call
3.8	48834	1.6	388	15	314 L4	—	—	—	140800	165300	58700	call
4	46509	2.1	370	18	315 L4	—	—	—	138700	162900	57700	call
4	46509	2.4	370	18	316 L4	—	—	—	230600	256500	96200	call
4.2	43393	2.2	345	40	—	315 R4	—	—	135900	159500	56400	call
4.2	43393	2.5	345	45	—	316 R4	—	—	225900	251200	94000	call
4.4	42299	2.9	336	50	—	317 R4	—	—	288200	306900	93200	call
4.5	41351	2.6	329	18	316 L4	—	—	—	222700	247600	92500	call
4.7	39519	2	314	15	314 L4	—	—	—	132100	155100	54700	call
4.8	39527	1	304	18	313 L3	—	—	—	122500	145000	48100	call
4.8	38040	2.5	302	18	315 L4	—	—	—	130600	153300	54000	call
4.8	38040	2.7	302	18	316 L4	—	—	—	217100	241500	90000	call
5.1	36368	2.9	289	45	—	316 R4	—	—	214200	238300	88700	call
5.5	33813	2.4	269	40	—	315 R4	—	—	126100	148000	51900	call
5.5	33813	2.9	269	45	—	316 R4	—	—	209600	233100	86500	call
5.6	32961	2.9	262	50	—	317 R4	—	—	267500	284800	85800	call
5.8	32838	1.4	252	18	313 L3	—	—	—	115900	137100	45200	call
6	31926	1.1	245	18	311 L3	—	—	—	93000	115800	36400	call
6.1	31322	2.1	241	30	315 L3	—	—	—	122000	143200	50000	call
6.1	31168	1.7	240	25	314 L3	—	—	—	121800	143000	50000	call
6.5	28339	2.7	225	40	—	315 R4	—	—	119600	140400	48900	call
6.7	27624	2.9	220	50	—	317 R4	—	—	253600	270100	80900	call
7	27146	1.7	209	18	313 L3	—	—	—	109400	129500	42400	call
7.1	26944	3	207	30	315 L3	—	—	—	116600	136900	47600	call
7.1	26811	2.4	206	25	314 L3	—	—	—	116400	136700	47500	call
7.2	26392	1.3	203	18	311 L3	—	—	—	87800	109400	34100	call
7.6	25193	1.9	194	18	313 L3	—	—	—	107000	126700	41400	call
7.7	24877	1.3	191	18	311 L3	—	—	—	86300	107500	33500	call

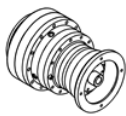






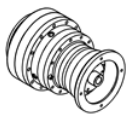
P₁ = 22 kW n₁=1400 rpm

n ₂ min ⁻¹	M ₂ Nm	S	i	P _t kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
8	23684	1.6	182	18	313 L3	—	—	—	105100	124300	40500	call
8.3	22873	2	176	18	313 L3	—	—	—	104000	123000	40100	call
8.4	22591	2.8	174	25	314 L3	—	—	—	110600	129800	44900	call
8.6	22238	1.5	171	18	311 L3	—	—	—	83400	103900	32200	call
9	21294	1	164	18	310 L3	—	—	—	69700	87600	31800	call
9	21227	2.2	163	18	313 L3	—	—	—	101700	120300	39100	call
9.1	20961	1.5	161	18	311 L3	—	—	—	82000	102100	31600	call
9.3	20443	2.5	157	55	—	314 R3 (C)	—	—	107300	126000	43400	call
9.6	19910	2	153	40	—	313 R3	—	—	99700	118000	38200	call
9.7	19676	2.3	151	18	313 L3	—	—	—	99400	117600	38100	call
10	19129	1.7	147	18	311 L3	—	—	—	79700	99300	30700	call
10	19085	1.4	147	40	—	311 R3	—	—	79700	99300	30600	call
10.2	18608	2.4	143	18	313 L3	—	—	—	97700	115700	37400	call
10.3	18446	1.1	142	18	310 L3	—	—	—	66700	83900	30300	call
10.9	17548	2.5	135	18	313 L3	—	—	—	96000	113600	36700	call
11	17328	1.7	133	18	311 L3	—	—	—	77400	96400	29700	call
11.2	16969	1.2	130	18	310 L3	—	—	—	65100	81900	29500	call
11.5	16541	2.5	127	40	—	313 R3	—	—	94300	111600	36000	call
11.7	16333	1.8	126	18	311 L3	—	—	—	76100	94700	29100	call
11.9	16081	1.9	124	40	—	311 R3	—	—	75700	94300	28900	call
12.2	15679	2.7	120	18	313 L3	—	—	—	92800	109900	35300	call
12.3	15485	1.3	119	18	310 L3	—	—	—	63300	79600	28600	call
12.8	14906	1.9	115	18	311 L3	—	—	—	74000	92200	28200	call
13.3	14373	1.4	110	18	310 L3	—	—	—	61900	77900	27900	call
13.4	14276	2.9	110	18	313 L3	—	—	—	90300	106800	34200	call
13.7	13937	2.8	107	40	—	313 R3	—	—	89600	106000	34000	call
14.1	13550	2.1	104	40	—	311 R3	—	—	71900	89600	27300	call
14.1	13502	2.1	104	18	311 L3	—	—	—	71800	89500	27300	call
14.5	13117	1.4	101	18	310 L3	—	—	—	60300	75800	27000	call
15	12690	2.9	97.5	40	—	313 R3	—	—	87100	103100	32900	call
15.2	12531	2.2	96.3	40	—	311 R3	—	—	70200	87500	26600	call
16	11882	1.6	91.3	18	310 L3	—	—	—	58500	73600	26200	call
16.4	11615	2.3	89.3	18	311 L3	—	—	—	68100	84900	25700	call
17.8	10692	2.9	82.2	40	—	313 R3	—	—	82800	97900	31100	call
18.1	10558	2.5	81.1	40	—	311 R3	—	—	66700	83100	25200	call
18.2	10453	1.7	80.3	18	310 L3	—	—	—	56300	70800	25100	call
18.9	10061	2.5	77.3	18	311 L3	—	—	—	65800	81900	24800	call
19.8	9616	1.8	73.9	18	310 L3	—	—	—	54900	69000	24400	call
20.6	9256	2.7	71.1	18	311 L3	—	—	—	64100	79900	24100	call
20.9	9102	2.9	69.9	40	—	313 R3	—	—	78900	93300	29500	call
21.5	8849	2.7	68	40	—	311 R3	—	—	63300	78800	23700	call
22.9	8332	2.9	64	40	—	313 R3	—	—	76800	90900	28600	call
23.2	8227	2.9	63.2	40	—	311 R3	—	—	61900	77100	23100	call







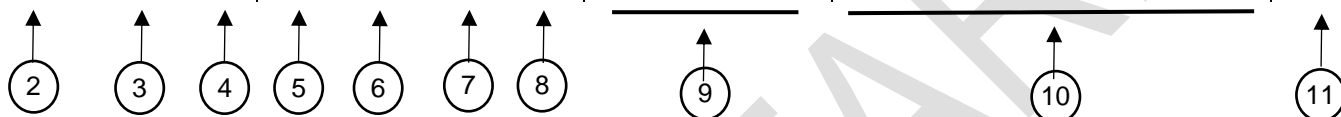
$P_1 = 22 \text{ kW}$ $n_1 = 1400 \text{ rpm}$												
n2 min ⁻¹	M2 Nm	S	i	Pt kW			Rn ₂ [N]					↔ Page
							MC	MZ	HC/PC	HZ/PZ	FZ	
23.4	8145	2	62.6	18	310 L3	—	—	—	52200	65700	23100	call
27.3	6983	2.9	53.7	40	—	313 R3	—	—	72800	86200	27000	call
27.6	6899	2.3	53	18	310 L3	—	—	—	49700	62500	21800	call
27.6	6895	2.9	53	40	—	311 R3	—	—	58700	73100	21800	call
31	6282	1.3	46.7	18	307 L2	—	—	—	39700	52100	14500	152
31	6282	2	46.7	18	309 L2	—	—	—	40400	52100	11600	157
31	6282	2.3	46.7	22	310 L2	—	—	—	47800	60200	20900	call
32	6251	1	46.5	13	306 L2	—	15000	17000	36900	43000	11300	147
38	5193	1.6	38.6	18	307 L2	—	—	—	37500	49200	13600	152
38	5193	2.4	38.6	18	309 L2	—	—	—	38100	49200	10900	157
38	5193	2.6	38.6	22	310 L2	—	—	—	45200	56800	19600	call
38	5167	1.3	38.4	13	306 L2	—	14100	15900	34800	40600	10600	147
44	4445	1.5	33.1	13	306 L2	—	13400	15100	33300	38800	10000	147
45	4375	2.2	32.6	18	307 L2	—	—	—	35700	46700	12800	152
45	4375	3	32.6	18	309 L2	—	—	—	36200	46700	10300	157
48	4124	2.3	30.7	18	307 L2	—	—	—	35000	45900	12600	152
52	3824	1.8	28.4	13	306 L2	—	12700	14400	31800	37100	9550	147
52	3764	2.4	28	18	307 L2	—	—	—	34100	44700	12200	152
56	3542	1.8	26.4	13	306 L2	—	12400	14000	31100	36200	9310	147
58	3409	2.7	25.4	18	307 L2	—	—	—	33100	43400	11800	152
62	3164	2.9	23.5	35	—	309 R2	—	—	32900	42400	9220	158
62	3164	2.5	23.5	35	—	307 R2	—	—	32400	42400	11500	153
65	3047	2	22.7	13	306 L2	—	11800	13400	29700	34600	8850	147
67	2933	3	21.8	18	307 L2	—	—	—	31600	41400	11200	152
74	2666	2.9	19.8	35	—	309 R2	—	—	31200	40300	8710	158
74	2666	2.9	19.8	35	—	307 R2	—	—	30700	40300	10900	153
81	2428	2.4	18.1	13	306 L2	—	10900	12400	27800	32300	8210	147
95	2077	2.9	15.5	35	—	309 R2	—	—	29000	37400	8020	158
95	2077	2.9	15.5	35	—	307 R2	—	—	28500	37400	10000	153
96	2057	2.4	15.3	13	306 L2	—	10300	11700	26400	30800	7770	147
113	1742	2.8	13	13	306 L2	—	9780	11100	25100	29300	7350	147
113	1741	2.9	13	35	—	309 R2	—	—	27500	35400	7560	158
113	1741	2.9	13	35	—	307 R2	—	—	27000	35400	9450	153
195	1040	1.2	7.5	11	303 L1	—	6550	7560	13000	15700	4200	137
195	1040	2.2	7.5	13	305 L1	—	6550	7560	13000	15700	4200	142
236	860	1.6	6.2	11	303 L1	—	6140	7090	12300	14800	3940	137
275	740	2	5.33	11	303 L1	—	5840	6750	11800	14200	3750	137
345	590	2.4	4.25	11	303 L1	—	5420	6250	11000	13200	3480	137
407	499	2.8	3.6	11	303 L1	—	5010	5780	10300	12300	3210	137



RATING CHARTS FOR IN-LINE UNITS 3__L

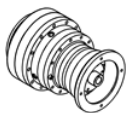
نمودار طبقه بندی شده برای گیربکس های
مستقیم 3__L

301 L							2460 Nm							
n_1 min ⁻¹		i	n_2 min ⁻¹	M_{n2} Nm	P_{n1} kW	P_t kW	P (IEC)		R_{n2} [N]					$M_{2\ max}$ Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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 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





1. Reference torque
 2. Gearbox drive speed
 3. Frame size of the in-line gear unit
 4. Gear ratio
 5. Gearbox output speed
 6. Gearbox rated output torque based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime
 7. Gearbox rated input power, based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime
 8. Gearbox thermal capacity
 9. Frame size of available IEC motor
 10. Permitted overhung loading on output shaft, based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime.
- For forces applying off midpoint of the shaft, see diagrams provided in the pages following dimensions of the specific gearbox
11. Maximum torque
 12. Page installation drawing can be found at

۱. گشتاور مرجع
 ۲. سرعت درایو گیربکس
 ۳. سایز گیربکس مستقیم
 ۴. نسبت گیربکس
 ۵. سرعت خروجی گیربکس
 ۶. گشتاور خروجی مجاز بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری
 ۷. قدرت ورودی مجاز گیربکس بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری
 ۸. ظرفیت حرارتی گیربکس
 ۹. اندازه قاب موتور IEC در دسترس
 ۱۰. حد مجاز بارگذاری بر روی شافت خروجی، بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری.
- برای نیروهایی که در نقطه مرکزی شافت قرار ندارند، نمودارهای را که در صفحات بعد از ابعاد گیربکس ارائه شده است، مشاهده کنید
۱۱. حداکثر گشتاور
 ۱۲. شماره صفحه ابعاد گیربکس

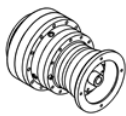


300 L

1250 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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	7.2	208	410	9.2	7.5	71-80-90-100-112-132	2050	2050	6180	7100	1350	2400	
	300 L1	9	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	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	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	650	0.37	7.5	71-80-90-100-112-132	7110	7110	18900	21700	4670	2400	
	300 L3	374	4	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	71-80-90-100-112-132	7350	7350	19500	22400	4830	2400	
	300 L4	403	3.7	680	0.3	6	71-80-90-100-112-132	7850	7850	20700	23800	5160	2400	
300 L4	447	3.4	1020	0.4	6	71-80-90-100-112-132	8130	8130	21300	24500	5340	2400		
300 L4	494	3	1030	0.37	6	71-80-90-100-112-132	8400	8400	22000	25300	5520	2400		
300 L4	558	2.7	1060	0.34	6	71-80-90-100-112-132	8750	8750	22800	26200	5750	2400		
300 L4	616	2.4	1070	0.31	6	71-80-90-100-112-132	9050	9050	23500	27000	5950	2400		
300 L4	755	2	1110	0.26	6	71-80-90-100-112-132	9680	9680	25000	28700	6360	2400		
300 L4	819	1.8	1130	0.24	6	71-80-90-100-112-132	9940	9940	25600	29400	6540	2400		
300 L4	942	1.6	1160	0.22	6	71-80-90-100-112-132	10400	10400	26700	30700	6850	2400		







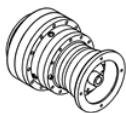
300 L

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1250 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	300 L4	1022	1.5	1170	0.2	6	71-80-90-100-112-132	10700	10700	27300	31400	7040	2400	
	300 L4	1108	1.4	810	0.13	6	71-80-90-100-112-132	11000	11000	28000	32200	7230	2400	
	300 L4	1275	1.2	1220	0.17	6	71-80-90-100-112-132	11500	11500	29200	33600	7580	2400	
	300 L4	1383	1.1	850	0.11	6	71-80-90-100-112-132	11800	11800	29900	34000	7790	2400	
	300 L4	1591	0.94	1250	0.14	6	71-80-90-100-112-132	12000	12400	31000	34000	8000	2400	
	300 L4	1725	0.87	860	0.09	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	2400	
	300 L4	2153	0.7	860	0.07	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	2400	
	300 L4	2692	0.56	1000	0.07	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	2400	
1000	300 L1	3.48	287	530	16.5	9	71-80-90-100-112-132	1840	1840	5610	6450	1210	2000	
	300 L1	4.26	235	560	14.1	9	71-80-90-100-112-132	1970	1970	5970	6860	1300	2400	
	300 L1	5.77	173	530	10	9	71-80-90-100-112-132	2180	2180	6530	7510	1430	2400	
	300 L1	7.2	139	460	6.9	9	71-80-90-100-112-132	2350	2350	6980	8020	1540	2400	
	300 L1	9	111	360	4.3	9	71-80-90-100-112-132	2530	2530	7470	8580	1660	2400	
	300 L2	12.1	83	730	6.7	9	71-80-90-100-112-132	2790	2790	8160	9380	1840	2000	
	300 L2	14.8	67	790	5.9	9	71-80-90-100-112-132	2990	2990	8670	9970	1970	2000	
	300 L2	18.2	55	820	5	9	71-80-90-100-112-132	3200	3200	9220	10600	2100	2400	
	300 L2	20.1	50	650	3.6	9	71-80-90-100-112-132	3310	3310	9500	10900	2170	2000	
	300 L2	24.6	41	840	3.8	9	71-80-90-100-112-132	3540	3540	10100	11600	2330	2400	
	300 L2	30.7	33	850	3.1	9	71-80-90-100-112-132	3810	3810	10800	12400	2500	2400	
	300 L2	33.3	30	650	2.2	9	71-80-90-100-112-132	3910	3910	11100	12700	2570	2400	
	300 L2	38.4	26.1	850	2.5	9	71-80-90-100-112-132	4100	4100	11500	13300	2700	2400	
	300 L2	41.5	24.1	650	1.7	9	71-80-90-100-112-132	4210	4210	11800	13600	2770	2400	
	300 L2	51.9	19.3	650	1.4	9	71-80-90-100-112-132	4540	4540	12600	14500	2980	2400	
	300 L2	64.8	15.4	550	0.94	9	71-80-90-100-112-132	4890	4890	13500	15500	3210	2400	
	300 L3	51.6	19.4	850	1.9	9	71-80-90-100-112-132	4530	4530	12600	14500	2980	2000	
	300 L3	63.2	15.8	850	1.5	9	71-80-90-100-112-132	4850	4850	13400	15400	3190	2400	
	300 L3	69.9	14.3	650	1.1	9	71-80-90-100-112-132	5010	5010	13800	15900	3290	2000	
	300 L3	77.5	12.9	860	1.3	9	71-80-90-100-112-132	5190	5190	14200	16400	3410	2400	
	300 L3	85.6	11.7	860	1.2	9	71-80-90-100-112-132	5360	5360	14700	16900	3530	2400	
	300 L3	105	9.5	870	0.95	9	71-80-90-100-112-132	5740	5740	15600	17900	3770	2400	
	300 L3	116	8.6	650	0.64	9	71-80-90-100-112-132	5930	5930	16100	18500	3900	2400	
	300 L3	131	7.6	890	0.78	9	71-80-90-100-112-132	6180	6180	16700	19200	4060	2400	
	300 L3	142	7	900	0.73	9	71-80-90-100-112-132	6350	6350	17100	19600	4170	2400	
	300 L3	177	5.6	930	0.6	9	71-80-90-100-112-132	6830	6830	18300	21000	4490	2400	
	300 L3	192	5.2	650	0.39	9	71-80-90-100-112-132	7020	7020	18700	21500	4620	2400	
	300 L3	221	4.5	970	0.5	9	71-80-90-100-112-132	7360	7360	19500	22400	4840	2400	
	300 L3	240	4.2	670	0.32	9	71-80-90-100-112-132	7560	7560	20000	23000	4970	2400	
	300 L3	299	3.3	700	0.27	9	71-80-90-100-112-132	8140	8140	21400	24500	5350	2400	
	300 L3	374	2.7	720	0.22	9	71-80-90-100-112-132	8770	8770	22800	26200	5760	2400	







300 L

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1250 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	300 L4	330	3	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	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	0.9	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	

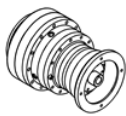
301 L

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2460 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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	7.2	208	750	17	7.5	71-80-90-100-112-132		2050	2050	6180	7100	1350	3400
	301 L1	9	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	7.5	71-80-90-100-112-132		4270	4270	12000	13700	2810	3400



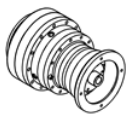


301 L

2460 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	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	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	1300	0.75	7.5	71-80-90-100-112-132	7110	7110	18900	21700	4670	3400	
	301 L3	374	4	1350	0.62	7.5	71-80-90-100-112-132	7660	7660	20200	23200	5030	3400	
	301 L4	330	4.5	1920	1	6	71-80-90-100-112-132	7350	7350	19500	22400	4830	3400	
	301 L4	403	3.7	1370	0.6	6	71-80-90-100-112-132	7850	7850	20700	23800	5160	3400	
	301 L4	447	3.4	2030	0.81	6	71-80-90-100-112-132	8130	8130	21300	24500	5340	3400	
	301 L4	494	3	2070	0.74	6	71-80-90-100-112-132	8400	8400	22000	25300	5520	3400	
	301 L4	558	2.7	2110	0.67	6	71-80-90-100-112-132	8750	8750	22800	26200	5750	3400	
	301 L4	616	2.4	2150	0.62	6	71-80-90-100-112-132	9050	9050	23500	27000	5950	3400	
	301 L4	755	2	2220	0.52	6	71-80-90-100-112-132	9680	9680	25000	28700	6360	3400	
	301 L4	819	1.8	2240	0.49	6	71-80-90-100-112-132	9940	9940	25600	29400	6540	3400	
	301 L4	942	1.6	2290	0.43	6	71-80-90-100-112-132	10400	10400	26700	30700	6850	3400	
	301 L4	1022	1.5	2320	0.4	6	71-80-90-100-112-132	10700	10700	27300	31400	7040	3400	
	301 L4	1108	1.4	1630	0.26	6	71-80-90-100-112-132	11000	11000	28000	32200	7230	3400	
	301 L4	1275	1.2	2400	0.33	6	71-80-90-100-112-132	11500	11500	29200	33600	7580	3400	
	301 L4	1383	1.1	1700	0.22	6	71-80-90-100-112-132	11800	11800	29900	34000	7790	3400	
	301 L4	1591	0.94	2000	0.22	6	71-80-90-100-112-132	12000	12400	31000	34000	8000	3400	
	301 L4	1725	0.87	1720	0.18	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	3400	
	301 L4	2153	0.7	1720	0.14	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	3400	
	301 L4	2692	0.56	1720	0.11	6	71-80-90-100-112-132	12000	12500	31000	34000	8000	3400	
	1000	301 L1	3.48	287	950	29	9	71-80-90-100-112-132	1840	1840	5610	6450	1210	3400
301 L1		4.26	235	990	25	9	71-80-90-100-112-132	1970	1970	5970	6860	1300	3400	
301 L1		5.77	173	1050	19.7	9	71-80-90-100-112-132	2180	2180	6530	7510	1430	3400	
301 L1		7.2	139	850	12.8	9	71-80-90-100-112-132	2350	2350	6980	8020	1540	3400	
301 L1		9	111	710	8.5	9	71-80-90-100-112-132	2530	2530	7470	8580	1660	3400	
301 L2		12.1	83	1330	12.3	9	71-80-90-100-112-132	2790	2790	8160	9380	1840	3400	
301 L2		14.8	67	1440	10.8	9	71-80-90-100-112-132	2990	2990	8670	9970	1970	3400	
301 L2	18.2	55	1530	9.4	9	71-80-90-100-112-132	3200	3200	9220	10600	2100	3400		







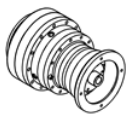
301 L

Page 132

2460 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	301 L2	20.1	50	1300	7.2	9	71-80-90-100-112-132	3310	3310	9500	10900	2170	3400	
	301 L2	24.6	41	1600	7.2	9	71-80-90-100-112-132	3540	3540	10100	11600	2330	3400	
	301 L2	30.7	33	1620	5.9	9	71-80-90-100-112-132	3810	3810	10800	12400	2500	3400	
	301 L2	33.3	30	1300	4.3	9	71-80-90-100-112-132	3910	3910	11100	12700	2570	3400	
	301 L2	38.4	26.1	1550	4.5	9	71-80-90-100-112-132	4100	4100	11500	13300	2700	3400	
	301 L2	41.5	24.1	1300	3.5	9	71-80-90-100-112-132	4210	4210	11800	13600	2770	3400	
	301 L2	51.9	19.3	1300	2.8	9	71-80-90-100-112-132	4540	4540	12600	14500	2980	3400	
	301 L2	64.8	15.4	1150	2	9	71-80-90-100-112-132	4890	4890	13500	15500	3210	3400	
	301 L3	51.6	19.4	1670	3.7	9	71-80-90-100-112-132	4530	4530	12600	14500	2980	3400	
	301 L3	63.2	15.8	1690	3.1	9	71-80-90-100-112-132	4850	4850	13400	15400	3190	3400	
	301 L3	69.9	14.3	1300	2.1	9	71-80-90-100-112-132	5010	5010	13800	15900	3290	3400	
	301 L3	77.5	12.9	1710	2.5	9	71-80-90-100-112-132	5190	5190	14200	16400	3410	3400	
	301 L3	85.6	11.7	1710	2.3	9	71-80-90-100-112-132	5360	5360	14700	16900	3530	3400	
	301 L3	105	9.5	1740	1.9	9	71-80-90-100-112-132	5740	5740	15600	17900	3770	3400	
	301 L3	116	8.6	1300	1.3	9	71-80-90-100-112-132	5930	5930	16100	18500	3900	3400	
	301 L3	131	7.6	1790	1.6	9	71-80-90-100-112-132	6180	6180	16700	19200	4060	3400	
	301 L3	142	7	1810	1.5	9	71-80-90-100-112-132	6350	6350	17100	19600	4170	3400	
	301 L3	177	5.6	1860	1.2	9	71-80-90-100-112-132	6830	6830	18300	21000	4490	3400	
	301 L3	192	5.2	1300	0.78	9	71-80-90-100-112-132	7020	7020	18700	21500	4620	3400	
	301 L3	221	4.5	1850	0.96	9	71-80-90-100-112-132	7360	7360	19500	22400	4840	3400	
	301 L3	240	4.2	1340	0.64	9	71-80-90-100-112-132	7560	7560	20000	23000	4970	3400	
	301 L3	299	3.3	1390	0.53	9	71-80-90-100-112-132	8140	8140	21400	24500	5350	3400	
	301 L3	374	2.7	1440	0.44	9	71-80-90-100-112-132	8770	8770	22800	26200	5760	3400	
	301 L4	330	3	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	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	0.9	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		
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		



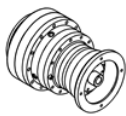


303 L

2970 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	303 L1	3.6	417	1380	40	11	132-160-180-200	5010	5780	10300	12300	3210	5200	
	303 L1	4.25	353	1430	40	11	132-160-180-200	5290	6110	10800	13000	3400	5200	
	303 L1	5.33	281	1490	40	11	132-160-180-200	5710	6590	11500	13900	3660	5200	
	303 L1	6.2	242	1400	36	11	132-160-180-200	6000	6930	12100	14500	3850	5200	
	303 L1	7.5	200	1220	26	11	132-160-180-200	6400	7390	12800	15400	4100	5200	
	303 L1	9.67	155	750	12.6	11	132-160-180-200	6960	8040	13800	16600	4470	5200	
	303 L2	12.5	120	1640	20	9	71-80-90-100-112-132-160	7590	8760	14900	17900	4870	5200	
	303 L2	15.3	98	1710	18.6	9	71-80-90-100-112-132-160	8120	9380	15800	19100	5210	5200	
	303 L2	18.1	83	2020	18.6	9	71-80-90-100-112-132-160	8580	9910	16600	20000	5510	5200	
	303 L2	20.8	72	1820	14.6	9	71-80-90-100-112-132-160	8980	10400	17300	20900	5760	5200	
	303 L2	22.7	66	2100	15.4	9	71-80-90-100-112-132-160	9260	10700	17800	21400	5940	5200	
	303 L2	24.5	61	2150	14.6	9	71-80-90-100-112-132-160	9490	11000	18200	21900	6090	5200	
	303 L2	26.4	57	1820	11.5	9	71-80-90-100-112-132-160	9740	11200	18600	22400	6250	5200	
	303 L2	30.8	49	2140	11.6	9	71-80-90-100-112-132-160	10200	11800	19500	23500	6570	5200	
	303 L2	35.8	42	1820	8.5	9	71-80-90-100-112-132-160	10800	12400	20400	24600	6910	5200	
	303 L2	38.4	39	2150	9.3	9	71-80-90-100-112-132-160	11000	12700	20900	25100	7070	5200	
	303 L2	44.6	34	1820	6.8	9	71-80-90-100-112-132-160	11600	13400	21800	26300	7440	5200	
	303 L2	55.8	26.9	1820	5.4	9	71-80-90-100-112-132-160	12500	14400	23300	28100	8010	5200	
	303 L3	53.4	28.1	2170	7	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	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	6	71-80-90-100-112-132-160	24300	28100	42500	51200	15600	5200		
303 L4	446	3.4	2810	1.1	6	71-80-90-100-112-132-160	25000	28800	43500	52400	16000	5200		
303 L4	492	3	2690	0.97	6	71-80-90-100-112-132-160	25800	29800	44800	53900	16600	5200		



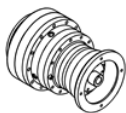


303 L

2970 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	303 L4	556	2.7	2810	0.9	6	71-80-90-100-112-132-160	26900	31000	46500	55900	17200	5200	
	303 L4	649	2.3	2320	0.63	6	71-80-90-100-112-132-160	28300	32700	48700	58600	18200	5200	
	303 L4	718	2.1	2150	0.53	6	71-80-90-100-112-132-160	29300	33800	50200	60400	18800	5200	
	303 L4	816	1.8	2720	0.59	6	71-80-90-100-112-132-160	30500	35300	52200	62800	19600	5200	
	303 L4	896	1.7	2230	0.44	6	71-80-90-100-112-132-160	31500	36400	53700	64600	20200	5200	
	303 L4	1018	1.5	2740	0.48	6	71-80-90-100-112-132-160	32900	38000	55800	67100	21100	5200	
	303 L4	1098	1.4	2310	0.37	6	71-80-90-100-112-132-160	33700	38900	57000	68600	21600	5200	
	303 L4	1278	1.2	2790	0.39	6	71-80-90-100-112-132-160	35500	40900	59700	71800	22800	5200	
	303 L4	1370	1.1	2400	0.31	6	71-80-90-100-112-132-160	36000	41900	60900	73300	23300	5200	
	303 L4	1586	0.95	2250	0.25	6	71-80-90-100-112-132-160	36000	42000	63700	74000	24000	5200	
	303 L4	1854	0.81	2440	0.23	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	1991	0.75	2850	0.25	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	2243	0.67	2000	0.16	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	2799	0.54	2000	0.13	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
1000	303 L1	3.6	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	6.2	161	1580	27	13.2	132-160-180-200	6870	7930	13600	16400	4410	5200	
	303 L1	7.5	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	
	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	10.8	71-80-90-100-112-132-160	9300	10700	17900	21500	5960	5200	
	303 L2	18.1	55	2280	14	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	1820	5.7	10.8	71-80-90-100-112-132-160	12300	14200	23100	27700	7910	5200	
	303 L2	38.4	26	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	71-80-90-100-112-132-160	14100	16300	26000	31300	9040	5200	
	303 L3	63.1	15.9	2570	4.7	9	71-80-90-100-112-132-160	14900	17200	27300	32900	9550	5200	
	303 L3	72.3	13.8	2270	3.6	9	71-80-90-100-112-132-160	15600	18000	28500	34300	10000	5200	
	303 L3	77.2	12.9	2600	3.9	9	71-80-90-100-112-132-160	15900	18400	29000	34900	10200	5200	
	303 L3	90.2	11.1	2300	2.9	9	71-80-90-100-112-132-160	16800	19400	30400	36600	10800	5200	
	303 L3	105	9.6	2660	2.9	9	71-80-90-100-112-132-160	17600	20300	31800	38300	11300	5200	
	303 L3	113	8.9	1820	1.9	9	71-80-90-100-112-132-160	18100	20900	32500	39100	11600	5200	
	303 L3	124	8	1830	1.7	9	71-80-90-100-112-132-160	18700	21600	33500	40300	12000	5200	







303 L

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2970 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	303 L4	556	2.7	2810	0.9	6	71-80-90-100-112-132-160	26900	31000	46500	55900	17200	5200	
	303 L4	649	2.3	2320	0.63	6	71-80-90-100-112-132-160	28300	32700	48700	58600	18200	5200	
	303 L4	718	2.1	2150	0.53	6	71-80-90-100-112-132-160	29300	33800	50200	60400	18800	5200	
	303 L4	816	1.8	2720	0.59	6	71-80-90-100-112-132-160	30500	35300	52200	62800	19600	5200	
	303 L4	896	1.7	2230	0.44	6	71-80-90-100-112-132-160	31500	36400	53700	64600	20200	5200	
	303 L4	1018	1.5	2740	0.48	6	71-80-90-100-112-132-160	32900	38000	55800	67100	21100	5200	
	303 L4	1098	1.4	2310	0.37	6	71-80-90-100-112-132-160	33700	38900	57000	68600	21600	5200	
	303 L4	1278	1.2	2790	0.39	6	71-80-90-100-112-132-160	35500	40900	59700	71800	22800	5200	
	303 L4	1370	1.1	2400	0.31	6	71-80-90-100-112-132-160	36000	41900	60900	73300	23300	5200	
	303 L4	1586	0.95	2250	0.25	6	71-80-90-100-112-132-160	36000	42000	63700	74000	24000	5200	
	303 L4	1854	0.81	2440	0.23	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	1991	0.75	2850	0.25	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	2243	0.67	2000	0.16	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	
	303 L4	2799	0.54	2000	0.13	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	5200	

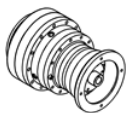
305 L

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5800 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	305 L1	3.6	417	2370	60	13	132-160-180-200	5010	5780	10300	12300	3210	8800	
	305 L1	4.25	353	2450	60	13	132-160-180-200	5290	6110	10800	13000	3400	8800	
	305 L1	5.33	281	2560	60	13	132-160-180-200	5710	6590	11500	13900	3660	8800	
	305 L1	6.2	242	2650	60	13	132-160-180-200	6000	6930	12100	14500	3850	8800	
	305 L1	7.5	200	2270	49	13	132-160-180-200	6400	7390	12800	15400	4100	8800	
	305 L2	12.5	120	2930	30	9	71-80-90-100-112-132-160	7590	8760	14900	17900	4870	8800	



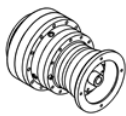


305 L

5800 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	305 L2	15.3	98	3060	30	9	71-80-90-100-112-132-160	8120	9380	15800	19100	5210	8800	
	305 L2	18.1	83	3620	30	9	71-80-90-100-112-132-160	8580	9910	16600	20000	5510	8800	
	305 L2	20.8	72	3250	26	9	71-80-90-100-112-132-160	8980	10400	17300	20900	5760	8800	
	305 L2	22.7	66	3940	29	9	71-80-90-100-112-132-160	9260	10700	17800	21400	5940	8800	
	305 L2	24.5	61	3830	26	9	71-80-90-100-112-132-160	9490	11000	18200	21900	6090	8800	
	305 L2	26.4	57	3530	22	9	71-80-90-100-112-132-160	9740	11200	18600	22400	6250	8800	
	305 L2	30.8	49	4280	23	9	71-80-90-100-112-132-160	10200	11800	19500	23500	6570	8800	
	305 L2	35.8	42	3560	16.6	9	71-80-90-100-112-132-160	10800	12400	20400	24600	6910	8800	
	305 L2	38.4	39	4300	18.7	9	71-80-90-100-112-132-160	11000	12700	20900	25100	7070	8800	
	305 L2	44.6	34	3560	13.3	9	71-80-90-100-112-132-160	11600	13400	21800	26300	7440	8800	
	305 L2	55.8	26.9	3540	10.6	9	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	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	6	71-80-90-100-112-132-160	24300	28100	42500	51200	15600	8800	
	305 L4	446	3.4	5490	2.2	6	71-80-90-100-112-132-160	25000	28800	43500	52400	16000	8800	
	305 L4	492	3	5340	1.9	6	71-80-90-100-112-132-160	25800	29800	44800	53900	16600	8800	
	305 L4	556	2.7	5500	1.8	6	71-80-90-100-112-132-160	26900	31000	46500	55900	17200	8800	
	305 L4	649	2.3	4510	1.2	6	71-80-90-100-112-132-160	28300	32700	48700	58600	18200	8800	
	305 L4	718	2.1	4130	1	6	71-80-90-100-112-132-160	29300	33800	50200	60400	18800	8800	
	305 L4	816	1.8	5410	1.2	6	71-80-90-100-112-132-160	30500	35300	52200	62800	19600	8800	
	305 L4	896	1.7	4290	0.85	6	71-80-90-100-112-132-160	31500	36400	53700	64600	20200	8800	
	305 L4	1018	1.5	5450	0.95	6	71-80-90-100-112-132-160	32900	38000	55800	67100	21100	8800	
	305 L4	1098	1.4	4440	0.72	6	71-80-90-100-112-132-160	33700	38900	57000	68600	21600	8800	
	305 L4	1278	1.2	5500	0.76	6	71-80-90-100-112-132-160	35500	40900	59700	71800	22800	8800	



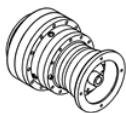


305 L

5800 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	305 L4	1370	1.1	4620	0.6	6	71-80-90-100-112-132-160	36000	41900	60900	73300	23300	8800	
	305 L4	1586	0.95	4750	0.53	6	71-80-90-100-112-132-160	36000	42000	63700	74000	24000	8800	
	305 L4	1854	0.81	4690	0.45	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	8800	
	305 L4	1991	0.75	5600	0.5	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	8800	
	305 L4	2243	0.67	3800	0.3	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	8800	
	305 L4	2799	0.54	3800	0.24	6	71-80-90-100-112-132-160	36000	42000	64000	74000	24000	8800	
1000	305 L1	3.6	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	6.2	161	3000	52	15.6	132-160-180-200	6870	7930	13600	16400	4410	8800	
	305 L1	7.5	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	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	3570	11.1	10.8	71-80-90-100-112-132-160	12300	14200	23100	27700	7910	8800	
	305 L2	38.4	26	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	9	71-80-90-100-112-132-160	14100	16300	26000	31300	9040	8800	
	305 L3	63.1	15.9	4980	9.1	9	71-80-90-100-112-132-160	14900	17200	27300	32900	9550	8800	
	305 L3	72.3	13.8	4340	6.9	9	71-80-90-100-112-132-160	15600	18000	28500	34300	10000	8800	
	305 L3	77.2	12.9	5110	7.6	9	71-80-90-100-112-132-160	15900	18400	29000	34900	10200	8800	
	305 L3	90.2	11.1	4440	5.7	9	71-80-90-100-112-132-160	16800	19400	30400	36600	10800	8800	
	305 L3	105	9.6	5310	5.8	9	71-80-90-100-112-132-160	17600	20300	31800	38300	11300	8800	
	305 L3	113	8.9	3600	3.7	9	71-80-90-100-112-132-160	18100	20900	32500	39100	11600	8800	
	305 L3	124	8	3600	3.3	9	71-80-90-100-112-132-160	18700	21600	33500	40300	12000	8800	
	305 L3	141	7.1	5260	4.3	9	71-80-90-100-112-132-160	19500	22500	34800	41900	12500	8800	
	305 L3	152	6.6	3600	2.7	9	71-80-90-100-112-132-160	20000	23100	35600	42900	12800	8800	
	305 L3	164	6.1	4450	3.1	9	71-80-90-100-112-132-160	20500	23600	36400	43800	13100	8800	
	305 L3	178	5.6	4460	2.9	9	71-80-90-100-112-132-160	21000	24300	37300	44900	13500	8800	
	305 L3	190	5.3	3600	2.2	9	71-80-90-100-112-132-160	21500	24800	38100	45800	13800	8800	
	305 L3	220	4.5	4750	2.5	9	71-80-90-100-112-132-160	22600	26100	39800	47900	14500	8800	
	305 L3	258	3.9	3740	1.7	9	71-80-90-100-112-132-160	23800	27500	41700	50200	15300	8800	
305 L3	276	3.6	4670	1.9	9	71-80-90-100-112-132-160	24400	28100	42600	51200	15600	8800		
305 L3	321	3.1	3870	1.4	9	71-80-90-100-112-132-160	25600	29600	44600	53600	16400	8800		







305 L

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5800 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	305 L3	389	2.6	3290	0.97	9	71-80-90-100-112-132-160		27300	31500	47200	56800	17500	8800
	305 L3	402	2.5	4000	1.1	9	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	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	0.8	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	0.4	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	0.3	7.2	71-80-90-100-112-132-160		36000	42000	64000	74000	24000	8800
	305 L4	1991	0.5	5600	0.33	7.2	71-80-90-100-112-132-160		36000	42000	64000	74000	24000	8800
	305 L4	2243	0.45	3800	0.2	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

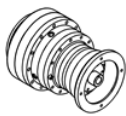
306 L

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10840 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	306 L1	3.6	417	3760	75	18	160-180-200-225-250		6240	7070	16800	19500	4690	14900
	306 L1	4.25	353	3890	75	18	160-180-200-225-250		6590	7470	17600	20500	4950	14900
	306 L1	5.33	281	4060	75	18	160-180-200-225-250		7110	8060	18900	22000	5340	14900
	306 L1	6.2	242	4200	75	18	160-180-200-225-250		7480	8470	19700	23000	5620	14900
	306 L1	7.5	200	4090	75	18	160-180-200-225-250		7970	9030	20900	24300	5980	14900
	306 L2	13	116	4820	40	13	132-160-180-200		9560	10800	24600	28700	7180	14900
	306 L2	15.3	98	4990	40	13	132-160-180-200		10100	11400	25900	30100	7590	14900
	306 L2	18.1	83	5890	40	13	132-160-180-200		10700	12100	27200	31700	8020	14900
	306 L2	22.7	66	6140	40	13	132-160-180-200		11500	13000	29100	33900	8650	14900
	306 L2	26.4	57	6370	40	13	132-160-180-200		12100	13700	30500	35500	9100	14900
	306 L2	28.4	53	6700	39	13	132-160-180-200		12400	14100	31200	36300	9330	14900
	306 L2	33.1	45	6870	35	13	132-160-180-200		13100	14800	32600	38000	9810	14900
	306 L2	38.4	39	6470	28	13	132-160-180-200		13700	15600	34100	39700	10300	14900
	306 L2	46.5	32	6470	23	13	132-160-180-200		14600	16600	36100	42100	11000	14900
	306 L2	56.3	26.7	5210	15.5	13	132-160-180-200		15600	17700	38300	44500	11700	14900



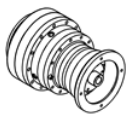


306 L

10840 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	306 L2	72.5	20.7	5290	12.2	13	132-160-180-200	17000	19200	41300	48100	12700	14900	
	306 L3	53.2	28.2	7100	20	7.5	71-80-90-100-112-132-160	15300	17300	37600	43800	11500	14900	
	306 L3	65.2	23	7480	19.7	7.5	71-80-90-100-112-132-160	16400	18600	40000	46600	12300	14900	
	306 L3	77	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	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	71-80-90-100-112-132-160	29800	33700	68400	79700	22400	14900	
	306 L4	444	3.4	9850	3.9	6	71-80-90-100-112-132-160	31100	35200	71100	82800	23300	14900	
	306 L4	509	2.9	9450	3.3	6	71-80-90-100-112-132-160	32500	36800	74100	86300	24400	14900	
	306 L4	589	2.5	9320	2.8	6	71-80-90-100-112-132-160	34100	38700	77400	90100	25600	14900	
	306 L4	636	2.4	9450	2.6	6	71-80-90-100-112-132-160	35000	39600	79200	92200	26300	14900	
	306 L4	700	2.1	9470	2.4	6	71-80-90-100-112-132-160	36100	40900	81500	94900	27100	14900	
	306 L4	809	1.9	7690	1.7	6	71-80-90-100-112-132-160	37900	43000	85100	99100	28500	14900	
	306 L4	877	1.7	7710	1.6	6	71-80-90-100-112-132-160	39000	44100	87200	101600	29300	14900	
	306 L4	1015	1.5	9460	1.7	6	71-80-90-100-112-132-160	40900	46300	91100	106100	30700	14900	
	306 L4	1095	1.4	7790	1.3	6	71-80-90-100-112-132-160	41900	47500	93200	108500	31500	14900	
	306 L4	1279	1.2	8400	1.2	6	71-80-90-100-112-132-160	44200	50100	97700	113700	33200	14900	
	306 L4	1475	1	10100	1.2	6	71-80-90-100-112-132-160	45000	51000	101000	118700	34800	14900	
	306 L4	1597	0.94	8630	0.96	6	71-80-90-100-112-132-160	45000	51000	101000	119000	35000	14900	
306 L4	1843	0.81	10100	0.97	6	71-80-90-100-112-132-160	45000	51000	101000	119000	35000	14900		
306 L4	2074	0.72	7000	0.6	6	71-80-90-100-112-132-160	45000	51000	101000	119000	35000	14900		
306 L4	2337	0.64	7000	0.53	6	71-80-90-100-112-132-160	45000	51000	101000	119000	35000	14900		
306 L4	2916	0.51	7000	0.43	6	71-80-90-100-112-132-160	45000	51000	101000	119000	35000	14900		
1000	306 L1	3.6	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	6.2	161	4750	75	22	160-180-200-225-250	8560	9700	22300	26000	6430	14900	



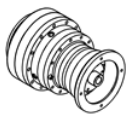


306 L

10840 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	306 L1	7.5	133	4620	67	22	160-180-200-225-250	9120	10300	23600	27500	6850	14900	
	306 L2	13	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	
	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	9	71-80-90-100-112-132-160	17500	19900	42500	49500	13200	14900	
	306 L3	65.2	15.3	8320	14.6	9	71-80-90-100-112-132-160	18800	21200	45200	52600	14100	14900	
	306 L3	77	13	9090	13.5	9	71-80-90-100-112-132-160	19800	22500	47500	55300	14900	14900	
	306 L3	81.9	12.2	7310	10.2	9	71-80-90-100-112-132-160	20200	22900	48400	56300	15200	14900	
	306 L3	88.3	11.3	9230	12	9	71-80-90-100-112-132-160	20700	23500	49500	57600	15600	14900	
	306 L3	104	9.6	9610	10.6	9	71-80-90-100-112-132-160	21900	24800	52000	60500	16500	14900	
	306 L3	112	8.9	7590	7.8	9	71-80-90-100-112-132-160	22500	25500	53200	61900	16900	14900	
	306 L3	121	8.2	8050	7.6	9	71-80-90-100-112-132-160	23100	26100	54400	63300	17300	14900	
	306 L3	141	7.1	8120	6.6	9	71-80-90-100-112-132-160	24200	27500	56900	66300	18200	14900	
	306 L3	152	6.6	7590	5.7	9	71-80-90-100-112-132-160	24900	28200	58200	67800	18700	14900	
	306 L3	190	5.3	6530	3.9	9	71-80-90-100-112-132-160	26800	30300	62200	72500	20100	14900	
	306 L3	205	4.9	8330	4.7	9	71-80-90-100-112-132-160	27500	31100	63700	74100	20600	14900	
	306 L3	222	4.5	6650	3.4	9	71-80-90-100-112-132-160	28200	31900	65200	75900	21200	14900	
	306 L3	238	4.2	8550	4.1	9	71-80-90-100-112-132-160	28900	32700	66600	77600	21700	14900	
	306 L3	268	3.7	5670	2.4	9	71-80-90-100-112-132-160	30000	34000	69000	80400	22600	14900	
	306 L3	288	3.5	5710	2.3	9	71-80-90-100-112-132-160	30800	34900	70500	82100	23100	14900	
	306 L3	325	3.1	5780	2	9	71-80-90-100-112-132-160	32000	36300	73100	85100	24100	14900	
	306 L3	405	2.5	5910	1.7	9	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	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 L

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10840 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	306 L4	1279	0.78	8630	0.8	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	0.4	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	

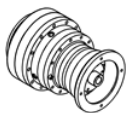
307 L

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15680 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	307 L1	3.43	438	5110	115	22	180-200-225-250	—	—	17800	23300	5930	18600	
	307 L1	4.09	367	5260	115	22	180-200-225-250	—	—	18700	24600	6290	21000	
	307 L1	5.25	286	5540	115	22	180-200-225-250	—	—	20200	26500	6830	21000	
	307 L1	6.23	241	5750	115	22	180-200-225-250	—	—	21300	27900	7230	21000	
	307 L2	12.3	122	7510	60	18	132-160-180-200	—	—	26100	34200	9080	18600	
	307 L2	14.7	102	7730	60	18	132-160-180-200	—	—	27500	36100	9640	21000	
	307 L2	17.4	86	8120	60	18	132-160-180-200	—	—	28900	37900	10200	21000	
	307 L2	21.8	69	8690	60	18	132-160-180-200	—	—	31000	40600	11000	21000	
	307 L2	25.4	59	9090	60	18	132-160-180-200	—	—	32400	42500	11600	21000	
	307 L2	28	54	9150	55	18	132-160-180-200	—	—	33400	43700	11900	21000	
	307 L2	30.7	49	9590	52	18	132-160-180-200	—	—	34300	45000	12300	21000	
	307 L2	32.6	46	9410	48	18	132-160-180-200	—	—	34900	45800	12600	21000	
	307 L2	38.6	39	8310	36	18	132-160-180-200	—	—	36800	48200	13300	21000	
	307 L2	46.7	32	8360	30	18	132-160-180-200	—	—	38900	51000	14200	21000	
	307 L3	51.3	29.3	10700	30	11	71-80-90-100-112-132-160	—	—	40000	52400	14600	21000	
	307 L3	60.5	24.8	11100	30	11	71-80-90-100-112-132-160	—	—	42100	55100	15400	21000	
	307 L3	74.1	20.2	11600	27	11	71-80-90-100-112-132-160	—	—	44700	58600	16500	21000	
	307 L3	80.6	18.6	10200	22	11	71-80-90-100-112-132-160	—	—	45800	60100	17000	21000	
	307 L3	93	16.1	12200	23	11	71-80-90-100-112-132-160	—	—	47900	62700	17800	21000	
307 L3	100	15	12400	21	11	71-80-90-100-112-132-160	—	—	49000	64100	18300	21000		
307 L3	113	13.2	10500	16	11	71-80-90-100-112-132-160	—	—	50800	66500	19000	21000		
307 L3	126	11.9	13000	17.8	11	71-80-90-100-112-132-160	—	—	52400	68700	19700	21000		
307 L3	139	10.8	10700	13.3	11	71-80-90-100-112-132-160	—	—	54000	70700	20400	21000		
307 L3	146	10.3	13400	15.8	11	71-80-90-100-112-132-160	—	—	54800	71800	20700	21000		
307 L3	162	9.3	10800	11.6	11	71-80-90-100-112-132-160	—	—	56500	74000	21400	21000		
307 L3	177	8.5	12300	12	11	71-80-90-100-112-132-160	—	—	58000	76100	22100	21000		



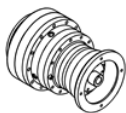


307 L

15680 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	307 L3	202	7.4	11000	9.4	11	71-80-90-100-112-132-160	—	—	60400	79100	23100	21000	
	307 L3	221	6.8	12700	9.9	11	71-80-90-100-112-132-160	—	—	62000	81300	23800	21000	
	307 L3	239	6.3	8700	6.3	11	71-80-90-100-112-132-160	—	—	63500	83300	24400	21000	
	307 L3	284	5.3	11300	6.8	11	71-80-90-100-112-132-160	—	—	66900	87600	25800	21000	
	307 L3	336	4.5	8840	4.5	11	71-80-90-100-112-132-160	—	—	70400	92200	27300	21000	
	307 L4	349	4.3	14900	7.6	7.5	71-80-90-100-112-132-160	—	—	71200	93300	27700	21000	
	307 L4	406	3.7	11900	5.2	7.5	71-80-90-100-112-132-160	—	—	74400	97500	29100	21000	
	307 L4	465	3.2	12200	4.6	7.5	71-80-90-100-112-132-160	—	—	77500	101600	30500	21000	
	307 L4	509	2.9	14000	4.9	7.5	71-80-90-100-112-132-160	—	—	79700	104400	31400	21000	
	307 L4	579	2.6	14900	4.6	7.5	71-80-90-100-112-132-160	—	—	82800	108500	32800	21000	
	307 L4	654	2.3	12900	3.5	7.5	71-80-90-100-112-132-160	—	—	85900	112600	34100	21000	
	307 L4	722	2.1	15000	3.7	7.5	71-80-90-100-112-132-160	—	—	88500	116000	35300	21000	
	307 L4	801	1.9	13300	3	7.5	71-80-90-100-112-132-160	—	—	91300	119600	36500	21000	
	307 L4	906	1.7	15200	3	7.5	71-80-90-100-112-132-160	—	—	94700	124200	38000	21000	
	307 L4	999	1.5	13800	2.5	7.5	71-80-90-100-112-132-160	—	—	97600	127800	39300	21000	
	307 L4	1157	1.3	14200	2.2	7.5	71-80-90-100-112-132-160	—	—	101900	133600	41300	21000	
	307 L4	1274	1.2	12300	1.7	7.5	71-80-90-100-112-132-160	—	—	104900	137500	42600	21000	
	307 L4	1408	1.1	15600	2	7.5	71-80-90-100-112-132-160	—	—	108100	141700	44100	21000	
	307 L4	1591	0.94	15000	1.7	7.5	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	1767	0.85	15700	1.6	7.5	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
307 L4	2041	0.73	14300	1.2	7.5	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000		
307 L4	2423	0.62	11000	0.81	7.5	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000		
1000	307 L1	3.43	292	5770	115	26	180-200-225-250	—	—	20100	26300	6790	18600	
	307 L1	4.09	244	5940	115	26	180-200-225-250	—	—	21200	27700	7200	21000	
	307 L1	5.25	190	6260	115	26	180-200-225-250	—	—	22800	29900	7820	21000	
	307 L1	6.23	160	6500	113	26	180-200-225-250	—	—	24000	31500	8280	21000	
	307 L2	12.3	81	8060	60	22	132-160-180-200	—	—	29500	38600	10400	18600	
	307 L2	14.7	68	8720	60	22	132-160-180-200	—	—	31100	40700	11000	21000	
	307 L2	17.4	58	9170	59	22	132-160-180-200	—	—	32700	42800	11700	21000	
	307 L2	21.8	46	9740	50	22	132-160-180-200	—	—	35000	45800	12600	21000	
	307 L2	25.4	39	10100	44	22	132-160-180-200	—	—	36600	48000	13200	21000	
	307 L2	28	36	9630	38	22	132-160-180-200	—	—	37700	49400	13700	21000	
	307 L2	30.7	33	10200	37	22	132-160-180-200	—	—	38800	50800	14100	21000	
	307 L2	32.6	31	9760	33	22	132-160-180-200	—	—	39400	51700	14400	21000	
	307 L2	38.6	25.9	8430	24	22	132-160-180-200	—	—	41500	54400	15200	21000	
	307 L2	46.7	21.4	8480	20	22	132-160-180-200	—	—	44000	57600	16200	21000	
	307 L3	51.3	19.5	11700	26	13.2	71-80-90-100-112-132-160	—	—	45200	59200	16700	21000	
	307 L3	60.5	16.5	12100	23	13.2	71-80-90-100-112-132-160	—	—	47500	62300	17700	21000	
	307 L3	74.1	13.5	12700	19.6	13.2	71-80-90-100-112-132-160	—	—	50500	66200	18900	21000	







307 L

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15680 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	307 L3	80.6	12.4	10600	15.1	13.2	71-80-90-100-112-132-160	—	—	51800	67800	19400	21000	
	307 L3	93	10.8	13300	16.4	13.2	71-80-90-100-112-132-160	—	—	54000	70800	20400	21000	
	307 L3	100	10	13500	15.5	13.2	71-80-90-100-112-132-160	—	—	55300	72400	20900	21000	
	307 L3	113	8.8	10900	11	13.2	71-80-90-100-112-132-160	—	—	57300	75100	21800	21000	
	307 L3	126	7.9	14000	12.7	13.2	71-80-90-100-112-132-160	—	—	59200	77600	22600	21000	
	307 L3	139	7.2	11000	9.1	13.2	71-80-90-100-112-132-160	—	—	60900	79900	23300	21000	
	307 L3	146	6.8	13800	10.8	13.2	71-80-90-100-112-132-160	—	—	61900	81100	23700	21000	
	307 L3	162	6.2	11100	7.9	13.2	71-80-90-100-112-132-160	—	—	63800	83600	24500	21000	
	307 L3	177	5.6	12300	8	13.2	71-80-90-100-112-132-160	—	—	65600	85900	25300	21000	
	307 L3	202	5	11300	6.4	13.2	71-80-90-100-112-132-160	—	—	68200	89300	26400	21000	
	307 L3	221	4.5	13000	6.8	13.2	71-80-90-100-112-132-160	—	—	70100	91800	27200	21000	
	307 L3	239	4.2	8920	4.3	13.2	71-80-90-100-112-132-160	—	—	71800	94000	27900	21000	
	307 L3	284	3.5	12000	4.8	13.2	71-80-90-100-112-132-160	—	—	75500	98900	29600	21000	
	307 L3	336	3	9370	3.2	13.2	71-80-90-100-112-132-160	—	—	79500	104200	31300	21000	
	307 L4	349	2.9	14900	5	9	71-80-90-100-112-132-160	—	—	80400	105300	31700	21000	
	307 L4	406	2.5	12700	3.7	9	71-80-90-100-112-132-160	—	—	84100	110200	33300	21000	
	307 L4	465	2.2	13000	3.3	9	71-80-90-100-112-132-160	—	—	87600	114800	34900	21000	
	307 L4	509	2	14300	3.3	9	71-80-90-100-112-132-160	—	—	90000	117900	35900	21000	
	307 L4	579	1.7	15200	3.1	9	71-80-90-100-112-132-160	—	—	93500	122600	37500	21000	
	307 L4	654	1.5	13800	2.5	9	71-80-90-100-112-132-160	—	—	97000	127100	39100	21000	
	307 L4	722	1.4	15400	2.5	9	71-80-90-100-112-132-160	—	—	100000	131000	40400	21000	
	307 L4	801	1.2	14300	2.1	9	71-80-90-100-112-132-160	—	—	103100	135100	41800	21000	
	307 L4	906	1.1	15600	2	9	71-80-90-100-112-132-160	—	—	107000	140200	43500	21000	
	307 L4	999	1	14800	1.8	9	71-80-90-100-112-132-160	—	—	109000	144400	45000	21000	
	307 L4	1157	0.86	14800	1.5	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	1274	0.78	12300	1.1	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	1408	0.71	15700	1.3	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	1591	0.63	15000	1.1	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	1767	0.57	15700	1	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	2041	0.49	14300	0.83	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	
	307 L4	2423	0.41	11000	0.54	9	71-80-90-100-112-132-160	—	—	109000	145000	45000	21000	

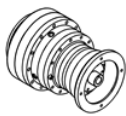
309 L

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23240 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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	



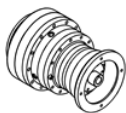


309 L

23240 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	309 L1	6.23	241	7900	150	25	180-200-225-250	—	—	21600	27900	5790	29000	
	309 L2	12.3	122	7890	60	18	132-160-180-200	—	—	26500	34200	7270	27900	
	309 L2	14.7	102	9410	60	18	132-160-180-200	—	—	28000	36100	7710	29000	
	309 L2	17.4	86	9730	60	18	132-160-180-200	—	—	29400	37900	8150	29000	
	309 L2	21.8	69	10100	60	18	132-160-180-200	—	—	31500	40600	8790	29000	
	309 L2	25.4	59	10500	60	18	132-160-180-200	—	—	32900	42500	9240	29000	
	309 L2	28	54	12500	60	18	132-160-180-200	—	—	33900	43700	9550	29000	
	309 L2	32.6	46	13000	60	18	132-160-180-200	—	—	35500	45800	10000	29000	
	309 L2	38.6	39	12500	54	18	132-160-180-200	—	—	37400	48200	10600	29000	
	309 L2	46.7	32	12500	45	18	132-160-180-200	—	—	39600	51000	11300	29000	
	309 L3	51.3	29.3	13400	30	11	71-80-90-100-112-132-160	—	—	40700	52400	11700	29000	
	309 L3	60.5	24.8	14100	30	11	71-80-90-100-112-132-160	—	—	42700	55100	12300	29000	
	309 L3	74.1	20.2	15000	30	11	71-80-90-100-112-132-160	—	—	45400	58600	13200	29000	
	309 L3	80.6	18.6	14800	30	11	71-80-90-100-112-132-160	—	—	46600	60100	13600	29000	
	309 L3	93	16.1	15100	28	11	71-80-90-100-112-132-160	—	—	48600	62700	14200	29000	
	309 L3	100	15	16500	28	11	71-80-90-100-112-132-160	—	—	49700	64100	14600	29000	
	309 L3	113	13.2	15500	24	11	71-80-90-100-112-132-160	—	—	51600	66500	15200	29000	
	309 L3	126	11.9	16400	22	11	71-80-90-100-112-132-160	—	—	53200	68700	15800	29000	
	309 L3	139	10.8	16000	19.9	11	71-80-90-100-112-132-160	—	—	54800	70700	16300	29000	
	309 L3	162	9.3	16300	17.3	11	71-80-90-100-112-132-160	—	—	57400	74000	17100	29000	
	309 L3	183	8.2	14300	13.5	11	71-80-90-100-112-132-160	—	—	59500	76800	17800	29000	
	309 L3	202	7.4	16500	14.1	11	71-80-90-100-112-132-160	—	—	61300	79100	18400	29000	
	309 L3	223	6.7	13000	10	11	71-80-90-100-112-132-160	—	—	63200	81500	19100	29000	
	309 L3	239	6.3	13000	9.4	11	71-80-90-100-112-132-160	—	—	64600	83300	19500	29000	
	309 L3	284	5.3	15700	9.6	11	71-80-90-100-112-132-160	—	—	67900	87600	20700	29000	
	309 L3	336	4.5	13200	6.8	11	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	7.5	71-80-90-100-112-132-160	—	—	78800	101600	24400	29000	
	309 L4	509	2.9	14300	5	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	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	



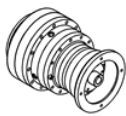


309 L

23240 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	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	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 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	10.8	16800	21	13.2	71-80-90-100-112-132-160	—	—	54900	70800	16300	29000	
	309 L3	100	10	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	13.2	71-80-90-100-112-132-160	—	—	67200	86700	20400	29000	
	309 L3	202	5	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	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	71-80-90-100-112-132-160	—	—	81700	105300	25300	29000	
	309 L4	406	2.5	19100	5.6	9	71-80-90-100-112-132-160	—	—	85400	110200	26600	29000	
	309 L4	465	2.2	19500	5	9	71-80-90-100-112-132-160	—	—	89000	114800	27900	29000	
	309 L4	509	2	14400	3.3	9	71-80-90-100-112-132-160	—	—	91500	117900	28700	29000	
309 L4	579	1.7	21400	4.4	9	71-80-90-100-112-132-160	—	—	95000	122600	30000	29000		
309 L4	654	1.5	18200	3.3	9	71-80-90-100-112-132-160	—	—	98600	127100	31200	29000		
309 L4	722	1.4	21500	3.5	9	71-80-90-100-112-132-160	—	—	101600	131000	32300	29000		







309 L

Page 157



23240 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	309 L4	801	1.2	18300	2.7	9	71-80-90-100-112-132-160	—	—	104700	135100	33400	29000	
	309 L4	906	1.1	18400	2.4	9	71-80-90-100-112-132-160	—	—	108700	140200	34800	29000	
	309 L4	999	1	18300	2.2	9	71-80-90-100-112-132-160	—	—	110000	144400	36000	29000	
	309 L4	1149	0.87	17000	1.7	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	1286	0.78	17000	1.6	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	1380	0.72	17000	1.5	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	1605	0.62	17000	1.3	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	1723	0.58	17000	1.2	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	2003	0.5	17000	1	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	
	309 L4	2423	0.41	17000	0.83	9	71-80-90-100-112-132-160	—	—	110000	145000	36000	29000	

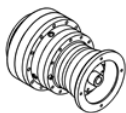
310 L

call

34120 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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	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	28.3	15800	40	18	132-160-180-200	—	—	48700	61200	21300	47600	
	310 L3	62.6	24	16600	40	18	132-160-180-200	—	—	51200	64300	22500	47600	
	310 L3	73.9	20.3	17500	40	18	132-160-180-200	—	—	53800	67600	23800	47600	
	310 L3	80.3	18.7	17500	37	18	132-160-180-200	—	—	55100	69300	24500	47600	
	310 L3	91.3	16.4	18600	35	18	132-160-180-200	—	—	57300	72100	25600	47600	
	310 L3	101	14.9	18700	32	18	132-160-180-200	—	—	59000	74200	26400	47600	
	310 L3	110	13.6	19700	31	18	132-160-180-200	—	—	60700	76300	27200	47600	
	310 L3	119	12.6	19700	28	18	132-160-180-200	—	—	62000	78000	27900	47600	
	310 L3	130	11.5	20700	27	18	132-160-180-200	—	—	63800	80200	28800	47600	
	310 L3	142	10.6	20700	25	18	132-160-180-200	—	—	65400	82200	29600	47600	
	310 L3	164	9.2	22200	23	18	132-160-180-200	—	—	68300	85800	31100	47600	

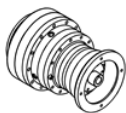




310 L	call	34120 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	310 L3	177	8.5	18300	17.7	18	132-160-180-200	—	—	69900	87900	31900	47600	
	310 L3	202	7.4	22000	18.8	18	132-160-180-200	—	—	72700	91400	33300	47600	
	310 L3	230	6.5	21200	15.8	18	132-160-180-200	—	—	75600	95100	34800	47600	
	310 L3	249	6	18400	12.7	18	132-160-180-200	—	—	77400	97400	35700	47600	
	310 L3	295	5.1	23300	13.6	18	132-160-180-200	—	—	81500	102500	37800	47600	
	310 L3	350	4.3	19000	9.3	18	132-160-180-200	—	—	85800	107900	40000	47600	
	310 L4	392	3.8	19400	8.8	11	71-80-90-100-112-132-160	—	—	88700	111500	41500	47600	
	310 L4	451	3.3	29800	11.7	11	71-80-90-100-112-132-160	—	—	92500	116300	43500	47600	
	310 L4	507	3	25500	8.9	11	71-80-90-100-112-132-160	—	—	95800	120500	45300	47600	
	310 L4	556	2.7	31600	10.1	11	71-80-90-100-112-132-160	—	—	98500	123900	46700	47600	
	310 L4	637	2.4	26500	7.4	11	71-80-90-100-112-132-160	—	—	102600	129000	48800	47600	
	310 L4	726	2.1	27100	6.6	11	71-80-90-100-112-132-160	—	—	106700	134200	51000	47600	
	310 L4	818	1.8	27600	6	11	71-80-90-100-112-132-160	—	—	110600	139100	53100	47600	
	310 L4	939	1.6	33200	6.3	11	71-80-90-100-112-132-160	—	—	115300	145000	55600	47600	
	310 L4	1021	1.5	28700	5	11	71-80-90-100-112-132-160	—	—	118200	148600	57200	47600	
	310 L4	1164	1.3	29300	4.5	11	71-80-90-100-112-132-160	—	—	123000	154600	59700	47600	
	310 L4	1259	1.2	27600	3.9	11	71-80-90-100-112-132-160	—	—	125900	158300	61300	47600	
	310 L4	1438	1	25800	3.2	11	71-80-90-100-112-132-160	—	—	131000	164700	64100	47600	
	310 L4	1672	0.9	26000	2.8	11	71-80-90-100-112-132-160	—	—	133000	166000	65000	47600	
	310 L4	1794	0.84	26000	2.6	11	71-80-90-100-112-132-160	—	—	133000	166000	65000	47600	
310 L4	2022	0.74	26000	2.3	11	71-80-90-100-112-132-160	—	—	133000	166000	65000	47600		
310 L4	2523	0.59	26000	1.8	11	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	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	18.9	17800	39	22	132-160-180-200	—	—	55000	69100	24400	47600	
	310 L3	62.6	16	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	21000	26	22	132-160-180-200	—	—	64700	81400	29300	47600	





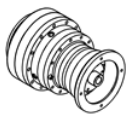
310 L	call	34120 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	310 L3	101	9.9	21100	24	22	132-160-180-200	—	—	66700	83800	30300	47600	
	310 L3	110	9.1	22200	23	22	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	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	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	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	27300	6.4	13.2	71-80-90-100-112-132-160	—	—	108200	136100	51800	47600		
310 L4	556	1.8	33000	7	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	0.7	26000	2.1	13.2	71-80-90-100-112-132-160	—	—	133000	166000	65000	47600		
310 L4	1672	0.6	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	0.4	26000	1.2	13.2	71-80-90-100-112-132-160	—	—	133000	166000	65000	47600		

311 L	call	48330 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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	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	

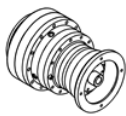




311 L	call	48330 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	311 L2	18	83	16900	115	26	180-200-225-250	—	—	41600	51800	14900	58300	
	311 L2	21.5	70	17400	115	26	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	132-160-180-200	—	—	56700	70600	21000	58300	
	311 L3	60.2	24.9	23700	60	18	132-160-180-200	—	—	59800	74500	22300	58300	
	311 L3	71.1	21.1	24900	60	18	132-160-180-200	—	—	62800	78300	23500	58300	
	311 L3	77.3	19.4	25500	57	18	132-160-180-200	—	—	64400	80200	24200	58300	
	311 L3	89.3	16.8	26600	51	18	132-160-180-200	—	—	67300	83800	25400	58300	
	311 L3	104	14.5	27800	46	18	132-160-180-200	—	—	70400	87600	26700	58300	
	311 L3	115	13.1	28700	43	18	132-160-180-200	—	—	72500	90300	27600	58300	
	311 L3	126	12	29500	40	18	132-160-180-200	—	—	74500	92800	28400	58300	
	311 L3	133	11.3	30000	39	18	132-160-180-200	—	—	75800	94500	29000	58300	
	311 L3	147	10.2	31800	37	18	132-160-180-200	—	—	78100	97300	30000	58300	
	311 L3	161	9.3	31800	34	18	132-160-180-200	—	—	80300	100000	30900	58300	
	311 L3	171	8.8	32600	33	18	132-160-180-200	—	—	81700	101800	31500	58300	
	311 L3	191	7.8	32200	29	18	132-160-180-200	—	—	84500	105300	32700	58300	
	311 L3	203	7.4	33400	28	18	132-160-180-200	—	—	86000	107200	33400	58300	
	311 L3	245	6.1	34300	24	18	132-160-180-200	—	—	91100	113500	35500	58300	
	311 L3	291	5.2	27000	16	18	132-160-180-200	—	—	95900	119400	37600	58300	
	311 L4	348	4.3	39800	20	11	71-80-90-100-112-132-160	—	—	101100	126000	39900	58300	
	311 L4	410	3.7	41500	18	11	71-80-90-100-112-132-160	—	—	106300	132400	42200	58300	
	311 L4	512	2.9	44000	15.2	11	71-80-90-100-112-132-160	—	—	113600	141500	45400	58300	
	311 L4	568	2.6	43000	13.4	11	71-80-90-100-112-132-160	—	—	117200	145900	47000	58300	
	311 L4	627	2.4	39800	11.3	11	71-80-90-100-112-132-160	—	—	120700	150300	48600	58300	
	311 L4	724	2.1	46300	11.4	11	71-80-90-100-112-132-160	—	—	126000	157000	51000	58300	
	311 L4	825	1.8	44600	9.6	11	71-80-90-100-112-132-160	—	—	131000	163200	53300	58300	
	311 L4	904	1.7	46900	9.2	11	71-80-90-100-112-132-160	—	—	134700	167800	54900	58300	
	311 L4	986	1.5	42500	7.7	11	71-80-90-100-112-132-160	—	—	138300	172200	56500	58300	
	311 L4	1058	1.4	43000	7.2	11	71-80-90-100-112-132-160	—	—	141200	175900	57900	58300	
	311 L4	1230	1.2	43900	6.3	11	71-80-90-100-112-132-160	—	—	147800	184000	60800	58300	
311 L4	1415	1.1	42800	5.4	11	71-80-90-100-112-132-160	—	—	154100	191900	63800	58300		
311 L4	1680	0.89	34000	3.6	11	71-80-90-100-112-132-160	—	—	157000	195000	65000	58300		
311 L4	1766	0.85	43000	4.3	11	71-80-90-100-112-132-160	—	—	157000	195000	65000	58300		
311 L4	2096	0.72	34000	2.9	11	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	

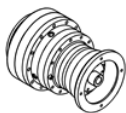




311 L	call	48330 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	311 L2	14	71	17300	115	31	180-200-225-250	—	—	43600	54300	15700	58300	
	311 L2	16.7	60	18200	115	31	180-200-225-250	—	—	46000	57300	16600	58300	
	311 L2	18	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	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	22	132-160-180-200	—	—	97200	121000	38200	58300	
	311 L3	245	4.1	36400	17	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	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	46500	10.7	13.2	71-80-90-100-112-132-160	—	—	128300	159800	52000	58300	
	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	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	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	0.6	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		

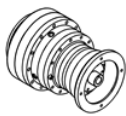




313 L	call	57970 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	313 L2	14.2	106	22600	150	30	180-200-225-250	—	—	47900	56700	16900	105000	
	313 L2	16.9	89	23500	150	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	132-160-180-200	—	—	70300	83200	25900	105000	
	313 L3	61	24.6	34500	60	18	132-160-180-200	—	—	74100	87700	27500	105000	
	313 L3	72	20.8	36300	60	18	132-160-180-200	—	—	77900	92200	29100	105000	
	313 L3	78.3	19.2	37300	60	18	132-160-180-200	—	—	79900	94600	29900	105000	
	313 L3	92.4	16.2	39300	60	18	132-160-180-200	—	—	84000	99400	31600	105000	
	313 L3	110	13.7	41200	60	18	132-160-180-200	—	—	88400	104600	33500	105000	
	313 L3	120	12.4	42100	60	18	132-160-180-200	—	—	90900	107600	34500	105000	
	313 L3	135	11.1	44000	56	18	132-160-180-200	—	—	94100	111300	35800	105000	
	313 L3	143	10.5	44400	53	18	132-160-180-200	—	—	95700	113300	36500	105000	
	313 L3	151	9.9	45000	51	18	132-160-180-200	—	—	97300	115200	37200	105000	
	313 L3	163	9.2	46000	49	18	132-160-180-200	—	—	99600	117800	38200	105000	
	313 L3	176	8.5	45000	44	18	132-160-180-200	—	—	101800	120500	39100	105000	
	313 L3	182	8.2	39000	37	18	132-160-180-200	—	—	102900	121800	39600	105000	
	313 L3	194	7.7	47600	42	18	132-160-180-200	—	—	104800	124100	40400	105000	
	313 L3	209	7.2	45000	37	18	132-160-180-200	—	—	107200	126900	41400	105000	
	313 L3	252	5.9	45000	31	18	132-160-180-200	—	—	113500	134300	44200	105000	
	313 L3	304	4.9	39100	22	18	132-160-180-200	—	—	120000	142000	47000	105000	
	313 L4	352	4.3	52500	26	11	71-80-90-100-112-132-160	—	—	125400	148400	49300	105000	
	313 L4	394	3.8	55000	25	11	71-80-90-100-112-132-160	—	—	129700	153500	51200	105000	
	313 L4	452	3.3	54000	21	11	71-80-90-100-112-132-160	—	—	135200	160000	53600	105000	
	313 L4	514	2.9	48600	16.8	11	71-80-90-100-112-132-160	—	—	140500	166300	56000	105000	
	313 L4	564	2.7	54800	17.2	11	71-80-90-100-112-132-160	—	—	144500	171000	57700	105000	
	313 L4	633	2.4	52000	14.6	11	71-80-90-100-112-132-160	—	—	149600	177000	60000	105000	
	313 L4	695	2.2	51000	13	11	71-80-90-100-112-132-160	—	—	153800	182100	61900	105000	
	313 L4	790	1.9	52200	11.7	11	71-80-90-100-112-132-160	—	—	159800	189200	64600	105000	
313 L4	889	1.7	53100	10.6	11	71-80-90-100-112-132-160	—	—	165600	196000	67200	105000		
313 L4	1014	1.5	54300	9.5	11	71-80-90-100-112-132-160	—	—	172300	203900	70200	105000		
313 L4	1117	1.3	52500	8.3	11	71-80-90-100-112-132-160	—	—	177300	209900	72500	105000		
313 L4	1266	1.2	56300	7.9	11	71-80-90-100-112-132-160	—	—	184100	217900	75600	105000		
313 L4	1394	1.1	52700	6.7	11	71-80-90-100-112-132-160	—	—	189500	224300	78100	105000		
313 L4	1502	1	58000	6.8	11	71-80-90-100-112-132-160	—	—	192000	229400	80000	105000		
313 L4	1817	0.83	58000	5.7	11	71-80-90-100-112-132-160	—	—	192000	231000	80000	105000		
313 L4	2187	0.69	49000	4	11	71-80-90-100-112-132-160	—	—	192000	231000	80000	105000		

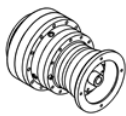




313 L	call	57970 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	313 L2	14.2	70	25600	150	36	180-200-225-250	—	—	54100	64000	19400	105000	
	313 L2	16.9	59	26500	150	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	16.4	39000	60	22	132-160-180-200	—	—	83700	99100	31500	105000	
	313 L3	72	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	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	
	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	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	0.9	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		





RATING CHARTS FOR RIGHT-ANGLE UNITS 3__R

نمودار طبقه بندی شده برای گیربکس های راست زاویه 3__R

301 L							2460 Nm							
n_1 min ⁻¹		i	n_2 min ⁻¹	M_{n2} Nm	P_{n1} kW	P_t kW	P (IEC)		R_{n2} [N]					$M_{2\ max}$ Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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 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

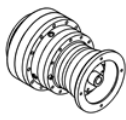
1. Reference torque
2. Gearbox drive speed
3. Frame size of the right-angle gear unit.

NOTE: letters (B) (C) near size indication identify different angle reduction dimensions. See pages relevant to dimensions.

4. Gear ratio
5. Gearbox output speed
6. Gearbox rated output torque based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime
7. Gearbox rated input power, based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime
8. Gearbox thermal capacity
9. Frame size of available IEC motor
10. Permitted overhung loading on output shaft, based on:
 - safety factor $S=1$
 - 10000 h theoretical lifetime.

For forces applying off midpoint of the shaft, see diagrams provided in the

۱. گشتاور مرجع
 ۲. سرعت درایو گیربکس
 ۳. سایز گیربکس راست زاویه
- نکته: حروف (B) (C) در کنار اندازه، نشانگر ابعاد قسمت R میباشد. صفحات مربوط به ابعاد را ببینید.
۴. نسبت گیربکس
 ۵. سرعت خروجی گیربکس
 ۶. گشتاور خروجی مجاز بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری
 ۷. قدرت ورودی مجاز گیربکس بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری
 ۸. ظرفیت حرارتی گیربکس
 ۹. اندازه قاب موتور IEC در دسترس
 ۱۰. حد مجاز بارگذاری بر روی شافت خروجی، بر اساس:
 - فاکتور ایمنی $S = 1$
 - ۱۰۰۰۰ ساعت عمر نظری.
- برای نیروهایی که در نقطه مرکزی شافت قرار ندارند، نمودارهای را که در صفحات بعد از ابعاد گیربکس ارائه شده است، مشاهده کنید





pages following dimensions of the specific gearbox

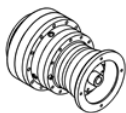
11. Maximum torque

12. Page installation drawing can be found at

۱۱. حداکثر گشتاور

۱۲. شماره صفحه ابعاد گیربکس



300 R							Page 128	1250 Nm						
n_1 min ⁻¹		i	n_2 min ⁻¹	M_{n2} Nm	P_{n1} kW	P_t kW	P (IEC)		MC	MZ	R_{n2} [N]			M_2 max Nm
									HC/PC	HZ/PZ	FZ			
1500	300 R2	7.13	210	580	13.7	12	71-80-90-100-112-132		2050	2050	6170	7080	1350	2000
	300 R2	8.74	172	610	11.7	12	71-80-90-100-112-132		2190	2190	6550	7530	1440	2400
	300 R2	11.8	127	590	8.3	12	71-80-90-100-112-132		2420	2420	7180	8240	1590	2400
	300 R2	14.8	102	510	5.7	12	71-80-90-100-112-132		2610	2610	7670	8810	1710	2400
	300 R2	18.5	81	370	3.3	12	71-80-90-100-112-132		2810	2810	8200	9420	1850	2400
	300 R3	24.8	60	730	5.1	12	71-80-90-100-112-132		3100	3100	8960	10300	2040	2000
	300 R3	30.4	49	840	4.8	12	71-80-90-100-112-132		3320	3320	9530	10900	2180	2400
	300 R3	37.3	40	840	3.9	12	71-80-90-100-112-132		3550	3550	10100	11600	2330	2400
	300 R3	41.2	36	650	2.7	12	71-80-90-100-112-132		3670	3670	10400	12000	2410	2400
	300 R3	50.4	29.8	850	2.9	12	71-80-90-100-112-132		3930	3930	11100	12700	2580	2400
	300 R3	62.9	23.8	850	2.3	12	71-80-90-100-112-132		4230	4230	11800	13600	2780	2400
	300 R3	68.2	22	650	1.6	12	71-80-90-100-112-132		4340	4340	12100	13900	2860	2400
	300 R3	78.7	19.1	850	1.9	12	71-80-90-100-112-132		4550	4550	12700	14600	2990	2400
	300 R3	85.2	17.6	650	1.3	12	71-80-90-100-112-132		4680	4680	13000	14900	3070	2400
	300 R3	106	14.1	650	1.1	12	71-80-90-100-112-132		5040	5040	13900	15900	3310	2400
	300 R3	133	11.3	550	0.71	12	71-80-90-100-112-132		5420	5420	14800	17000	3570	2400
	300 R4	106	14.2	860	1.4	10	71-80-90-100-112-132		5030	5030	13800	15900	3310	2400
	300 R4	130	11.6	860	1.2	10	71-80-90-100-112-132		5380	5380	14700	16900	3540	2400
	300 R4	143	10.5	650	0.81	10	71-80-90-100-112-132		5560	5560	15200	17400	3660	2400
	300 R4	159	9.4	870	0.97	10	71-80-90-100-112-132		5760	5760	15600	18000	3780	2400
	300 R4	175	8.5	880	0.89	10	71-80-90-100-112-132		5950	5950	16100	18500	3910	2400
	300 R4	215	7	910	0.75	10	71-80-90-100-112-132		6370	6370	17100	19700	4190	2400
	300 R4	237	6.3	650	0.49	10	71-80-90-100-112-132		6580	6580	17600	20300	4330	2400
	300 R4	268	5.6	930	0.62	10	71-80-90-100-112-132		6860	6860	18300	21000	4510	2400
	300 R4	291	5.2	950	0.58	10	71-80-90-100-112-132		7040	7040	18800	21500	4630	2400
	300 R4	363	4.1	980	0.48	10	71-80-90-100-112-132		7580	7580	20000	23000	4990	2400
	300 R4	394	3.8	680	0.31	10	71-80-90-100-112-132		7790	7790	20500	23600	5120	2400
	300 R4	453	3.3	1020	0.4	10	71-80-90-100-112-132		8160	8160	21400	24600	5370	2400
	300 R4	491	3.1	710	0.25	10	71-80-90-100-112-132		8390	8390	21900	25200	5510	2400
	300 R4	613	2.4	730	0.21	10	71-80-90-100-112-132		9030	9030	23500	27000	5940	2400
	300 R4	766	2	760	0.18	10	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
300 R2		8.74	114	690	8.8	14.4	71-80-90-100-112-132		2510	2510	7400	8500	1650	2400



300 R

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1250 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	300 R2	11.8	85	630	6	14.4	71-80-90-100-112-132	2770	2770	8100	9310	1820	2400	
	300 R2	14.8	68	530	4	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	0.7	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	71-80-90-100-112-132	5760	5760	15600	18000	3780	2400	
	300 R4	130	7.7	890	0.81	12	71-80-90-100-112-132	6160	6160	16600	19100	4050	2400	
	300 R4	143	7	650	0.54	12	71-80-90-100-112-132	6370	6370	17100	19700	4190	2400	
	300 R4	159	6.3	920	0.68	12	71-80-90-100-112-132	6590	6590	17700	20300	4330	2400	
	300 R4	175	5.7	930	0.63	12	71-80-90-100-112-132	6810	6810	18200	20900	4480	2400	
	300 R4	215	4.7	960	0.53	12	71-80-90-100-112-132	7290	7290	19300	22200	4790	2400	
300 R4	237	4.2	670	0.33	12	71-80-90-100-112-132	7540	7540	19900	22900	4950	2400		
300 R4	268	3.7	1000	0.44	12	71-80-90-100-112-132	7850	7850	20700	23800	5160	2400		
300 R4	291	3.4	1010	0.41	12	71-80-90-100-112-132	8060	8060	21200	24300	5300	2400		
300 R4	363	2.8	1050	0.34	12	71-80-90-100-112-132	8680	8680	22600	26000	5710	2400		
300 R4	394	2.5	730	0.22	12	71-80-90-100-112-132	8920	8920	23200	26600	5860	2400		
300 R4	453	2.2	1090	0.29	12	71-80-90-100-112-132	9350	9350	24200	27800	6140	2400		
300 R4	491	2	760	0.18	12	71-80-90-100-112-132	9600	9600	24800	28500	6310	2400		
300 R4	613	1.6	790	0.15	12	71-80-90-100-112-132	10300	10300	26500	30400	6800	2400		
300 R4	766	1.3	820	0.13	12	71-80-90-100-112-132	11100	11100	28300	32500	7320	2400		

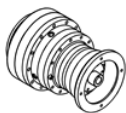
301 R

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2060 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	301 R2	7.13	210	1040	15	12	71-80-90-100-112-132	2050	2050	6170	7080	1350	3200	
	301 R2	8.74	172	1090	15	12	71-80-90-100-112-132	2190	2190	6550	7530	1440	3200	
	301 R2	11.8	127	1150	15	12	71-80-90-100-112-132	2420	2420	7180	8240	1590	3200	
	301 R2	14.8	102	940	10.6	12	71-80-90-100-112-132	2610	2610	7670	8810	1710	3200	
	301 R2	18.5	81	740	6.7	12	71-80-90-100-112-132	2810	2810	8200	9420	1850	3200	



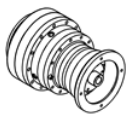


301 R

2060 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	301 R3	24.8	60	1390	9.7	12	71-80-90-100-112-132	3100	3100	8960	10300	2040	3400	
	301 R3	30.4	49	1580	8.9	12	71-80-90-100-112-132	3320	3320	9530	10900	2180	3400	
	301 R3	37.3	40	1600	7.4	12	71-80-90-100-112-132	3550	3550	10100	11600	2330	3400	
	301 R3	41.2	36	1300	5.4	12	71-80-90-100-112-132	3670	3670	10400	12000	2410	3400	
	301 R3	50.4	29.8	1630	5.6	12	71-80-90-100-112-132	3930	3930	11100	12700	2580	3400	
	301 R3	62.9	23.8	1650	4.5	12	71-80-90-100-112-132	4230	4230	11800	13600	2780	3400	
	301 R3	68.2	22	1300	3.3	12	71-80-90-100-112-132	4340	4340	12100	13900	2860	3400	
	301 R3	78.7	19.1	1570	3.4	12	71-80-90-100-112-132	4550	4550	12700	14600	2990	3400	
	301 R3	85.2	17.6	1300	2.6	12	71-80-90-100-112-132	4680	4680	13000	14900	3070	3400	
	301 R3	106	14.1	1300	2.1	12	71-80-90-100-112-132	5040	5040	13900	15900	3310	3400	
	301 R3	133	11.3	1150	1.5	12	71-80-90-100-112-132	5420	5420	14800	17000	3570	3400	
	301 R4	106	14.2	1700	2.8	10	71-80-90-100-112-132	5030	5030	13800	15900	3310	3400	
	301 R4	130	11.6	1720	2.3	10	71-80-90-100-112-132	5380	5380	14700	16900	3540	3400	
	301 R4	143	10.5	1300	1.6	10	71-80-90-100-112-132	5560	5560	15200	17400	3660	3400	
	301 R4	159	9.4	1740	1.9	10	71-80-90-100-112-132	5760	5760	15600	18000	3780	3400	
	301 R4	175	8.5	1770	1.8	10	71-80-90-100-112-132	5950	5950	16100	18500	3910	3400	
	301 R4	215	7	1820	1.5	10	71-80-90-100-112-132	6370	6370	17100	19700	4190	3400	
	301 R4	237	6.3	1300	0.97	10	71-80-90-100-112-132	6580	6580	17600	20300	4330	3400	
	301 R4	268	5.6	1870	1.2	10	71-80-90-100-112-132	6860	6860	18300	21000	4510	3400	
	301 R4	291	5.2	1890	1.2	10	71-80-90-100-112-132	7040	7040	18800	21500	4630	3400	
	301 R4	363	4.1	1960	0.96	10	71-80-90-100-112-132	7580	7580	20000	23000	4990	3400	
	301 R4	394	3.8	1360	0.61	10	71-80-90-100-112-132	7790	7790	20500	23600	5120	3400	
	301 R4	453	3.3	1930	0.76	10	71-80-90-100-112-132	8160	8160	21400	24600	5370	3400	
	301 R4	491	3.1	1410	0.51	10	71-80-90-100-112-132	8390	8390	21900	25200	5510	3400	
	301 R4	613	2.4	1470	0.42	10	71-80-90-100-112-132	9030	9030	23500	27000	5940	3400	
	301 R4	766	2	1530	0.35	10	71-80-90-100-112-132	9730	9730	25100	28800	6400	3400	
	1000	301 R2	7.13	140	1170	15	14.4	71-80-90-100-112-132	2340	2340	6960	8000	1540	3200
		301 R2	8.74	114	1230	15	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	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 R

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2060 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	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	71-80-90-100-112-132	5760	5760	15600	18000	3780	3400	
	301 R4	130	7.7	1790	1.6	12	71-80-90-100-112-132	6160	6160	16600	19100	4050	3400	
	301 R4	143	7	1300	1.1	12	71-80-90-100-112-132	6370	6370	17100	19700	4190	3400	
	301 R4	159	6.3	1840	1.4	12	71-80-90-100-112-132	6590	6590	17700	20300	4330	3400	
	301 R4	175	5.7	1870	1.3	12	71-80-90-100-112-132	6810	6810	18200	20900	4480	3400	
	301 R4	215	4.7	1920	1.1	12	71-80-90-100-112-132	7290	7290	19300	22200	4790	3400	
	301 R4	237	4.2	1340	0.67	12	71-80-90-100-112-132	7540	7540	19900	22900	4950	3400	
	301 R4	268	3.7	2000	0.88	12	71-80-90-100-112-132	7850	7850	20700	23800	5160	3400	
	301 R4	291	3.4	2030	0.82	12	71-80-90-100-112-132	8060	8060	21200	24300	5300	3400	
	301 R4	363	2.8	2100	0.69	12	71-80-90-100-112-132	8680	8680	22600	26000	5710	3400	
	301 R4	394	2.5	1460	0.44	12	71-80-90-100-112-132	8920	8920	23200	26600	5860	3400	
	301 R4	453	2.2	2000	0.52	12	71-80-90-100-112-132	9350	9350	24200	27800	6140	3400	
	301 R4	491	2	1510	0.36	12	71-80-90-100-112-132	9600	9600	24800	28500	6310	3400	
	301 R4	613	1.6	1580	0.3	12	71-80-90-100-112-132	10300	10300	26500	30400	6800	3400	
	301 R4	766	1.3	1640	0.25	12	71-80-90-100-112-132	11100	11100	28300	32500	7320	3400	

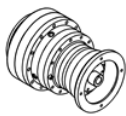
303 R

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2970 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	303 R2	9.23	163	1680	30	18	71-80-90-100-112-132	6850	7910	13600	16400	4400	5200	
	303 R2	10.9	138	1900	29	18	71-80-90-100-112-132	7240	8360	14300	17200	4650	5200	
	303 R2	13.7	110	1970	24	18	71-80-90-100-112-132	7810	9020	15300	18400	5010	5200	
	303 R2	15.9	94	1820	19.1	18	71-80-90-100-112-132	8220	9480	16000	19300	5270	5200	
	303 R2	19.2	78	1550	13.5	18	71-80-90-100-112-132	8750	10100	16900	20400	5620	5200	
	303 R2	24.8	61	860	5.8	18	71-80-90-100-112-132	9530	11000	18300	22000	6110	5200	
	303 R3	25.7	58	2030	13.6	14	71-80-90-100-112-132	9640	11100	18500	22200	6190	5200	
	303 R3	31.5	48	2110	11.5	14	71-80-90-100-112-132	10300	11900	19600	23600	6620	5200	
	303 R3	37.1	40	2390	11.1	14	71-80-90-100-112-132	10900	12600	20600	24800	7000	5200	
	303 R3	42.6	35	2070	8.4	14	71-80-90-100-112-132	11400	13200	21500	25900	7320	5200	
	303 R3	46.6	32	2160	8	14	71-80-90-100-112-132	11800	13600	22100	26600	7550	5200	
	303 R3	50.3	29.8	2380	8.2	14	71-80-90-100-112-132	12100	13900	22600	27200	7740	5200	
	303 R3	54.2	27.7	1820	5.8	14	71-80-90-100-112-132	12400	14300	23100	27800	7930	5200	
	303 R3	63.1	23.8	2170	5.9	14	71-80-90-100-112-132	13000	15000	24200	29100	8350	5200	
	303 R3	73.3	20.5	1820	4.3	14	71-80-90-100-112-132	13700	15800	25300	30500	8780	5200	
	303 R3	78.7	19.1	2180	4.8	14	71-80-90-100-112-132	14000	16200	25900	31100	8990	5200	
	303 R3	91.5	16.4	1820	3.4	14	71-80-90-100-112-132	14700	17000	27100	32600	9450	5200	



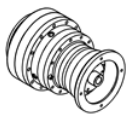


303 R

2970 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	303 R3	114	13.1	1820	2.7	14	71-80-90-100-112-132	15900	18300	28900	34800	10200	5200	
	303 R4	129	11.6	2620	3.6	12	71-80-90-100-112-132	16500	19100	30000	36100	10600	5200	
	303 R4	148	10.1	2310	2.8	12	71-80-90-100-112-132	17300	20000	31300	37600	11100	5200	
	303 R4	158	9.5	2660	3	12	71-80-90-100-112-132	17700	20400	31900	38400	11300	5200	
	303 R4	185	8.1	2310	2.2	12	71-80-90-100-112-132	18600	21500	33400	40200	11900	5200	
	303 R4	214	7	2730	2.3	12	71-80-90-100-112-132	19600	22600	34900	42000	12500	5200	
	303 R4	231	6.5	1830	1.4	12	71-80-90-100-112-132	20100	23100	35700	43000	12900	5200	
	303 R4	255	5.9	1840	1.3	12	71-80-90-100-112-132	20700	23900	36800	44300	13300	5200	
	303 R4	290	5.2	2650	1.6	12	71-80-90-100-112-132	21600	25000	38300	46000	13900	5200	
	303 R4	313	4.8	1850	1.1	12	71-80-90-100-112-132	22200	25600	39100	47100	14200	5200	
	303 R4	336	4.5	2270	1.2	12	71-80-90-100-112-132	22700	26200	40000	48100	14600	5200	
	303 R4	364	4.1	2310	1.1	12	71-80-90-100-112-132	23300	26900	40900	49300	15000	5200	
	303 R4	390	3.8	1930	0.88	12	71-80-90-100-112-132	23900	27600	41800	50300	15300	5200	
	303 R4	452	3.3	2250	0.88	12	71-80-90-100-112-132	25100	28900	43700	52600	16100	5200	
	303 R4	528	2.8	2030	0.68	12	71-80-90-100-112-132	26400	30500	45800	55100	16900	5200	
	303 R4	567	2.6	2430	0.76	12	71-80-90-100-112-132	27000	31200	46800	56300	17400	5200	
	303 R4	659	2.3	2110	0.57	12	71-80-90-100-112-132	28400	32800	48900	58900	18200	5200	
	303 R4	797	1.9	1820	0.41	12	71-80-90-100-112-132	30300	35000	51800	62300	19400	5200	
	303 R4	824	1.8	2200	0.47	12	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	
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	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 R

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2970 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC) 	R _{n2} [N]					M _{2 max} Nm
								MC	MZ	HC/PC	HZ/PZ	FZ	
1000	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	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

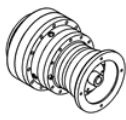
305 R

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5600 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC) 	R _{n2} [N]					M _{2 max} Nm
								MC	MZ	HC/PC	HZ/PZ	FZ	
1500	305 R2	9.23	163	1680	30	18	71-80-90-100-112-132	6850	7910	13600	16400	4400	7700
	305 R2	10.9	138	1980	30	18	71-80-90-100-112-132	7240	8360	14300	17200	4650	7700
	305 R2	13.7	110	2490	30	18	71-80-90-100-112-132	7810	9020	15300	18400	5010	7700
	305 R2	15.9	94	2890	30	18	71-80-90-100-112-132	8220	9480	16000	19300	5270	7700
	305 R2	19.2	78	2860	25	18	71-80-90-100-112-132	8750	10100	16900	20400	5620	7700
	305 R3	25.7	58	3630	15	14	71-80-90-100-112-132	9640	11100	18500	22200	6190	8800
	305 R3	31.5	48	3770	15	14	71-80-90-100-112-132	10300	11900	19600	23600	6620	8800
	305 R3	37.1	40	4340	15	14	71-80-90-100-112-132	10900	12600	20600	24800	7000	8800
	305 R3	42.6	35	3790	15	14	71-80-90-100-112-132	11400	13200	21500	25900	7320	8800
	305 R3	46.6	32	4310	15	14	71-80-90-100-112-132	11800	13600	22100	26600	7550	8800
	305 R3	50.3	29.8	4410	15	14	71-80-90-100-112-132	12100	13900	22600	27200	7740	8800
	305 R3	54.2	27.7	3570	11.3	14	71-80-90-100-112-132	12400	14300	23100	27800	7930	8800
	305 R3	63.1	23.8	4330	11.8	14	71-80-90-100-112-132	13000	15000	24200	29100	8350	8800
	305 R3	73.3	20.5	3580	8.4	14	71-80-90-100-112-132	13700	15800	25300	30500	8780	8800
	305 R3	78.7	19.1	4350	9.5	14	71-80-90-100-112-132	14000	16200	25900	31100	8990	8800
	305 R3	91.5	16.4	3580	6.7	14	71-80-90-100-112-132	14700	17000	27100	32600	9450	8800
305 R3	114	13.1	3580	5.4	14	71-80-90-100-112-132	15900	18300	28900	34800	10200	8800	



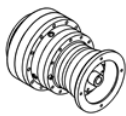


305 R

5600 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	305 R4	129	11.6	5200	7.1	12	71-80-90-100-112-132	16500	19100	30000	36100	10600	8800	
	305 R4	148	10.1	4480	5.4	12	71-80-90-100-112-132	17300	20000	31300	37600	11100	8800	
	305 R4	158	9.5	5310	6	12	71-80-90-100-112-132	17700	20400	31900	38400	11300	8800	
	305 R4	185	8.1	4490	4.3	12	71-80-90-100-112-132	18600	21500	33400	40200	11900	8800	
	305 R4	214	7	5390	4.5	12	71-80-90-100-112-132	19600	22600	34900	42000	12500	8800	
	305 R4	231	6.5	3600	2.8	12	71-80-90-100-112-132	20100	23100	35700	43000	12900	8800	
	305 R4	255	5.9	3600	2.5	12	71-80-90-100-112-132	20700	23900	36800	44300	13300	8800	
	305 R4	290	5.2	5300	3.2	12	71-80-90-100-112-132	21600	25000	38300	46000	13900	8800	
	305 R4	313	4.8	3620	2.1	12	71-80-90-100-112-132	22200	25600	39100	47100	14200	8800	
	305 R4	336	4.5	4560	2.4	12	71-80-90-100-112-132	22700	26200	40000	48100	14600	8800	
	305 R4	364	4.1	4620	2.3	12	71-80-90-100-112-132	23300	26900	40900	49300	15000	8800	
	305 R4	390	3.8	3750	1.7	12	71-80-90-100-112-132	23900	27600	41800	50300	15300	8800	
	305 R4	452	3.3	4750	1.9	12	71-80-90-100-112-132	25100	28900	43700	52600	16100	8800	
	305 R4	528	2.8	3920	1.3	12	71-80-90-100-112-132	26400	30500	45800	55100	16900	8800	
	305 R4	567	2.6	4860	1.5	12	71-80-90-100-112-132	27000	31200	46800	56300	17400	8800	
	305 R4	659	2.3	4070	1.1	12	71-80-90-100-112-132	28400	32800	48900	58900	18200	8800	
	305 R4	797	1.9	3450	0.77	12	71-80-90-100-112-132	30300	35000	51800	62300	19400	8800	
305 R4	824	1.8	4230	0.91	12	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	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	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	14.4	71-80-90-100-112-132	22400	25800	39500	47500	14400	8800		







305 R

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5600 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	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	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	
	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	

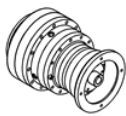
306 R

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7300 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	306 R2	9.23	163	1680	30	18	71-80-90-100-112-132-160	8540	9670	22200	25900	6410	12000	
	306 R2	10.9	138	1980	30	18	71-80-90-100-112-132-160	9020	10200	23400	27200	6780	12000	
	306 R2	13.7	110	2490	30	18	71-80-90-100-112-132-160	9730	11000	25000	29100	7310	12000	
	306 R2	15.9	94	2890	30	18	71-80-90-100-112-132-160	10200	11600	26200	30500	7690	12000	
	306 R2	19.2	78	3490	30	18	71-80-90-100-112-132-160	10900	12400	27700	32300	8190	12000	
	306 R3	33.2	45	5810	30	14	71-80-90-100-112-132-160	13100	14800	32700	38000	9830	14900	
	306 R3	39.2	38	6550	29	14	71-80-90-100-112-132-160	13800	15700	34300	40000	10400	14900	
	306 R3	46.3	32	7510	28	14	71-80-90-100-112-132-160	14600	16600	36100	42000	11000	14900	
	306 R3	58.1	25.8	7580	22	14	71-80-90-100-112-132-160	15800	17900	38600	45000	11800	14900	
	306 R3	67.5	22.2	7090	18.1	14	71-80-90-100-112-132-160	16600	18800	40400	47100	12500	14900	
	306 R3	72.9	20.6	7420	17.5	14	71-80-90-100-112-132-160	17000	19300	41300	48100	12800	14900	
	306 R3	84.7	17.7	7530	15.3	14	71-80-90-100-112-132-160	17900	20300	43300	50400	13400	14900	
	306 R3	98.5	15.2	6490	11.3	14	71-80-90-100-112-132-160	18800	21300	45300	52700	14100	14900	
306 R3	119	12.6	6490	9.4	14	71-80-90-100-112-132-160	20000	22700	47900	55800	15000	14900		
306 R3	144	10.4	5490	6.6	14	71-80-90-100-112-132-160	21300	24200	50700	59100	16000	14900		
306 R4	158	9.5	9620	10.8	12	71-80-90-100-112-132-160	22000	24900	52100	60700	16500	14900		
306 R4	168	8.9	7560	8	12	71-80-90-100-112-132-160	22400	25400	53100	61800	16900	14900		
306 R4	181	8.3	9450	9.3	12	71-80-90-100-112-132-160	23000	26100	54300	63200	17300	14900		
306 R4	214	7	9730	8.1	12	71-80-90-100-112-132-160	24300	27600	57100	66500	18300	14900		
306 R4	230	6.5	7590	5.8	12	71-80-90-100-112-132-160	24900	28300	58400	68000	18700	14900		
306 R4	249	6	8200	5.9	12	71-80-90-100-112-132-160	25600	29000	59700	69600	19200	14900		



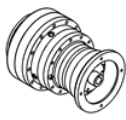


306 R

7300 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	306 R4	289	5.2	8280	5.1	12	71-80-90-100-112-132-160	26900	30500	62500	72800	20200	14900	
	306 R4	312	4.8	7590	4.3	12	71-80-90-100-112-132-160	27600	31300	63900	74500	20700	14900	
	306 R4	389	3.9	7590	3.5	12	71-80-90-100-112-132-160	29700	33700	68300	79600	22300	14900	
	306 R4	420	3.6	8790	3.7	12	71-80-90-100-112-132-160	30500	34500	69900	81400	22900	14900	
	306 R4	455	3.3	7020	2.7	12	71-80-90-100-112-132-160	31300	35500	71600	83400	23500	14900	
	306 R4	488	3.1	9020	3.3	12	71-80-90-100-112-132-160	32000	36300	73200	85200	24100	14900	
	306 R4	550	2.7	7260	2.3	12	71-80-90-100-112-132-160	33300	37800	75800	88300	25100	14900	
	306 R4	590	2.5	8480	2.5	12	71-80-90-100-112-132-160	34100	38700	77400	90200	25600	14900	
	306 R4	665	2.3	6010	1.6	12	71-80-90-100-112-132-160	35500	40300	80300	93500	26700	14900	
	306 R4	830	1.8	6270	1.3	12	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	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	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	14.4	71-80-90-100-112-132-160	35800	40600	80900	94200	26900	14900	
	306 R4	488	2	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 R

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7300 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	306 R4	830	1.2	6760	0.96	14.4	71-80-90-100-112-132-160		43800	49600	96900	112800	32900	14900

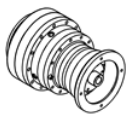
307 R

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14000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	307 R2	13	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	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	10200	21	22	71-80-90-100-112-132-160		19800	24800	46300	60700	17200	21000
	307 R3	99	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	15	71-80-90-100-112-132-160		24100	30300	55400	72700	21000	21000
	307 R4	165	9.1	10900	11.7	15	71-80-90-100-112-132-160		24800	31100	56900	74500	21600	21000
	307 R4	191	7.9	14000	13	15	71-80-90-100-112-132-160		26000	32700	59400	77800	22600	21000
	307 R4	206	7.3	14100	12.2	15	71-80-90-100-112-132-160		26700	33500	60700	79600	23200	21000
	307 R4	232	6.5	11100	8.5	15	71-80-90-100-112-132-160		27800	34900	63000	82500	24200	21000
	307 R4	258	5.8	14600	10	15	71-80-90-100-112-132-160		28800	36100	65000	85200	25000	21000
307 R4	284	5.3	11300	7	15	71-80-90-100-112-132-160		29700	37300	66900	87700	25900	21000	
307 R4	300	5	14000	8.3	15	71-80-90-100-112-132-160		30300	38000	68000	89100	26300	21000	
307 R4	331	4.5	11500	6.2	15	71-80-90-100-112-132-160		31300	39300	70000	91800	27200	21000	
307 R4	363	4.1	12300	6	15	71-80-90-100-112-132-160		32300	40500	72000	94300	28000	21000	
307 R4	413	3.6	11900	5.1	15	71-80-90-100-112-132-160		33700	42300	74900	98100	29300	21000	
307 R4	453	3.3	13400	5.3	15	71-80-90-100-112-132-160		34700	43600	76900	100800	30200	21000	
307 R4	490	3.1	9330	3.4	15	71-80-90-100-112-132-160		35700	44700	78800	103300	31000	21000	
307 R4	581	2.6	12600	3.9	15	71-80-90-100-112-132-160		37700	47400	82900	108700	32800	21000	
307 R4	690	2.2	9800	2.5	15	71-80-90-100-112-132-160		40000	50100	87300	114400	34700	21000	
1000	307 R2	13	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 R

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14000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	307 R2	23.5	42	8290	39	42	132-160-180-200	14800	18600	35800	46900	12900	21000	
	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	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	10600	14.6	26	71-80-90-100-112-132-160	22600	28400	52300	68500	19700	21000	
	307 R3	99	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	71-80-90-100-112-132-160	27600	34700	62600	82100	24000	21000	
	307 R4	165	6.1	11200	8	18	71-80-90-100-112-132-160	28400	35600	64200	84100	24700	21000	
	307 R4	191	5.2	14800	9.2	18	71-80-90-100-112-132-160	29800	37400	67000	87800	25900	21000	
	307 R4	206	4.9	14900	8.6	18	71-80-90-100-112-132-160	30600	38300	68600	89900	26600	21000	
	307 R4	232	4.3	11600	5.9	18	71-80-90-100-112-132-160	31800	39900	71100	93200	27700	21000	
	307 R4	258	3.9	14900	6.8	18	71-80-90-100-112-132-160	33000	41400	73400	96200	28600	21000	
	307 R4	284	3.5	12000	5	18	71-80-90-100-112-132-160	34000	42700	75600	99000	29600	21000	
	307 R4	300	3.3	14000	5.5	18	71-80-90-100-112-132-160	34700	43500	76800	100600	30100	21000	
	307 R4	331	3	12300	4.4	18	71-80-90-100-112-132-160	35800	44900	79100	103700	31100	21000	
	307 R4	363	2.8	12300	4	18	71-80-90-100-112-132-160	36900	46300	81300	106500	32100	21000	
	307 R4	413	2.4	12800	3.7	18	71-80-90-100-112-132-160	38600	48400	84500	110800	33500	21000	
	307 R4	453	2.2	14000	3.6	18	71-80-90-100-112-132-160	39800	49900	86900	113900	34600	21000	
	307 R4	490	2	9900	2.4	18	71-80-90-100-112-132-160	40800	51200	89000	116600	35500	21000	
	307 R4	581	1.7	13300	2.7	18	71-80-90-100-112-132-160	43200	54200	93600	122700	37600	21000	
	307 R4	690	1.4	10400	1.8	18	71-80-90-100-112-132-160	45700	57400	98600	129200	39800	21000	

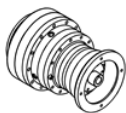
309 R

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16460 Nm



n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	309 R2	13	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	



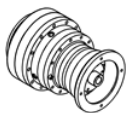


309 R

16460 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
309 R3	55.9		26.8	9860	30	22	71-80-90-100-112-132-160	—	—	41700	53800	12000	29000	
309 R3	65		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	14000	29	22	71-80-90-100-112-132-160	—	—	47100	60700	13700	29000	
309 R3	99		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	15	71-80-90-100-112-132-160	—	—	56300	72700	16800	29000	
309 R4	165		9.1	16300	15	15	71-80-90-100-112-132-160	—	—	57800	74500	17300	29000	
309 R4	191		7.9	17300	15	15	71-80-90-100-112-132-160	—	—	60300	77800	18100	29000	
309 R4	206		7.3	19800	15	15	71-80-90-100-112-132-160	—	—	61700	79600	18600	29000	
309 R4	232		6.5	16700	12.7	15	71-80-90-100-112-132-160	—	—	64000	82500	19300	29000	
309 R4	258		5.8	17400	12	15	71-80-90-100-112-132-160	—	—	66000	85200	20000	29000	
309 R4	284		5.3	16900	10.5	15	71-80-90-100-112-132-160	—	—	68000	87700	20700	29000	
309 R4	331		4.5	17200	9.2	15	71-80-90-100-112-132-160	—	—	71200	91800	21800	29000	
309 R4	374		4	14300	6.8	15	71-80-90-100-112-132-160	—	—	73800	95200	22700	29000	
309 R4	413		3.6	17900	7.7	15	71-80-90-100-112-132-160	—	—	76100	98100	23400	29000	
309 R4	457		3.3	13800	5.4	15	71-80-90-100-112-132-160	—	—	78400	101100	24200	29000	
309 R4	490		3.1	14000	5.1	15	71-80-90-100-112-132-160	—	—	80100	103300	24800	29000	
309 R4	581		2.6	15800	4.8	15	71-80-90-100-112-132-160	—	—	84300	108700	26200	29000	
309 R4	690		2.2	14800	3.8	15	71-80-90-100-112-132-160	—	—	88700	114400	27800	29000	
1000	309 R2	13	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	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	15500	21	26	71-80-90-100-112-132-160	—	—	53100	68500	15700	29000	
	309 R3	99	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	18	71-80-90-100-112-132-160	—	—	63600	82100	19200	29000	
	309 R4	165	6.1	16700	12	18	71-80-90-100-112-132-160	—	—	65200	84100	19800	29000	
	309 R4	191	5.2	17500	10.8	18	71-80-90-100-112-132-160	—	—	68100	87800	20700	29000	
	309 R4	206	4.9	21300	12.2	18	71-80-90-100-112-132-160	—	—	69700	89900	21200	29000	
	309 R4	232	4.3	17200	8.8	18	71-80-90-100-112-132-160	—	—	72300	93200	22100	29000	
	309 R4	258	3.9	17500	8	18	71-80-90-100-112-132-160	—	—	74600	96200	22900	29000	







309 R

Page 158



16460 Nm

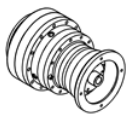
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	309 R4	284	3.5	17500	7.3	18	71-80-90-100-112-132-160	—	—	76800	99000	23700	29000	
	309 R4	331	3	18500	6.6	18	71-80-90-100-112-132-160	—	—	80400	103700	24900	29000	
	309 R4	374	2.7	14300	4.5	18	71-80-90-100-112-132-160	—	—	83400	107500	25900	29000	
	309 R4	413	2.4	19200	5.5	18	71-80-90-100-112-132-160	—	—	85900	110800	26800	29000	
	309 R4	457	2.2	14800	3.8	18	71-80-90-100-112-132-160	—	—	88500	114200	27700	29000	
	309 R4	490	2	14900	3.6	18	71-80-90-100-112-132-160	—	—	90400	116600	28400	29000	
	309 R4	581	1.7	15800	3.2	18	71-80-90-100-112-132-160	—	—	95200	122700	30000	29000	
	309 R4	690	1.4	15900	2.7	18	71-80-90-100-112-132-160	—	—	100200	129200	31800	29000	

310 R

call

34120 Nm

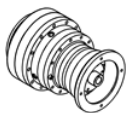
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	310 R2 (B)	12	125	10100	130	55	180-200-225	—	—	31200	39200	13000	47600	
	310 R2 (B)	15.4	97	10700	115	55	180-200-225	—	—	33600	42300	14100	47600	
	310 R2 (B)	18.3	82	11100	101	55	180-200-225	—	—	35400	44500	15000	47600	
	310 R2 (C)	16.6	90	11200	112	55	180-200-225-250	—	—	34400	43200	14500	47600	
	310 R2 (C)	21.3	70	11800	92	55	180-200-225-250	—	—	37100	46600	15800	47600	
	310 R2 (C)	25.3	59	12200	81	55	180-200-225-250	—	—	39000	49000	16700	47600	
1500	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	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	14700	30	22	71-80-90-100-112-132-160	—	—	55800	70100	24800	47600	
	310 R3	99	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	21000	27	15	71-80-90-100-112-132-160	—	—	64600	81200	29200	47600	
	310 R4	160	9.4	22000	24	15	71-80-90-100-112-132-160	—	—	67800	85300	30900	47600	
	310 R4	189	7.9	23200	22	15	71-80-90-100-112-132-160	—	—	71300	89700	32600	47600	
	310 R4	206	7.3	22100	19	15	71-80-90-100-112-132-160	—	—	73100	91900	33500	47600	
	310 R4	234	6.4	24700	18.7	15	71-80-90-100-112-132-160	—	—	76000	95600	35000	47600	
	310 R4	258	5.8	22800	15.7	15	71-80-90-100-112-132-160	—	—	78300	98400	36200	47600	
	310 R4	283	5.3	26100	16.4	15	71-80-90-100-112-132-160	—	—	80500	101200	37300	47600	
	310 R4	305	4.9	23400	13.6	15	71-80-90-100-112-132-160	—	—	82300	103500	38200	47600	
	310 R4	334	4.5	27400	14.6	15	71-80-90-100-112-132-160	—	—	84600	106300	39400	47600	
	310 R4	363	4.1	24100	11.8	15	71-80-90-100-112-132-160	—	—	86700	109000	40500	47600	
	310 R4	419	3.6	29000	12.3	15	71-80-90-100-112-132-160	—	—	90500	113800	42500	47600	



310 R	call	34120 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	310 R4	454	3.3	20000	7.8	15	71-80-90-100-112-132-160	—	—	92700	116600	43600	47600	
	310 R4	517	2.9	25600	8.8	15	71-80-90-100-112-132-160	—	—	96400	121200	45600	47600	
	310 R4	590	2.5	21800	6.6	15	71-80-90-100-112-132-160	—	—	100300	126100	47600	47600	
	310 R4	639	2.3	21500	6	15	71-80-90-100-112-132-160	—	—	102700	129100	48900	47600	
	310 R4	757	2	26400	6.2	15	71-80-90-100-112-132-160	—	—	108100	135900	51700	47600	
	310 R4	898	1.7	23200	4.6	15	71-80-90-100-112-132-160	—	—	113800	143100	54800	47600	
1000	310 R2 (B)	12	83	11400	106	66	180-200-225	—	—	35200	44300	14900	47600	
	310 R2 (B)	15.4	65	12000	87	66	180-200-225	—	—	38000	47700	16200	47600	
	310 R2 (B)	18.3	55	12500	76	66	180-200-225	—	—	40000	50200	17100	47600	
	310 R2 (C)	16.6	60	12600	84	66	180-200-225-250	—	—	38800	48800	16600	47600	
	310 R2 (C)	21.3	47	13300	69	66	180-200-225-250	—	—	41800	52600	18000	47600	
	310 R2 (C)	25.3	39	13500	59	66	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	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	16600	23	26	71-80-90-100-112-132-160	—	—	63000	79200	28400	47600	
	310 R3	99	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	71-80-90-100-112-132-160	—	—	72900	91700	33400	47600	
	310 R4	160	6.2	24900	18.3	18	71-80-90-100-112-132-160	—	—	76600	96400	35300	47600	
	310 R4	189	5.3	26100	16.3	18	71-80-90-100-112-132-160	—	—	80500	101300	37300	47600	
	310 R4	206	4.9	23500	13.5	18	71-80-90-100-112-132-160	—	—	82600	103800	38400	47600	
	310 R4	234	4.3	27800	14	18	71-80-90-100-112-132-160	—	—	85800	107900	40100	47600	
	310 R4	258	3.9	24400	11.2	18	71-80-90-100-112-132-160	—	—	88400	111200	41400	47600	
	310 R4	283	3.5	29300	12.3	18	71-80-90-100-112-132-160	—	—	90900	114300	42700	47600	
	310 R4	305	3.3	25100	9.7	18	71-80-90-100-112-132-160	—	—	92900	116800	43800	47600	
	310 R4	334	3	30700	10.9	18	71-80-90-100-112-132-160	—	—	95500	120100	45100	47600	
	310 R4	363	2.8	25800	8.4	18	71-80-90-100-112-132-160	—	—	97900	123100	46400	47600	
	310 R4	419	2.4	32000	9	18	71-80-90-100-112-132-160	—	—	102200	128600	48700	47600	
	310 R4	454	2.2	21800	5.7	18	71-80-90-100-112-132-160	—	—	104700	131700	50000	47600	
	310 R4	517	1.9	27400	6.3	18	71-80-90-100-112-132-160	—	—	108900	136900	52200	47600	
	310 R4	590	1.7	21800	4.4	18	71-80-90-100-112-132-160	—	—	113200	142400	54500	47600	
	310 R4	639	1.6	23500	4.4	18	71-80-90-100-112-132-160	—	—	116000	145800	56000	47600	

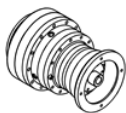




311 R	call	48330 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	311 R2 (B)	12	125	11900	150	75	180-200-225-250	—	—	36900	45900	13000	58300	
	311 R2 (B)	15.4	97	15400	150	75	180-200-225-250	—	—	39700	49500	14100	58300	
	311 R2 (A)	17.7	85	8400	74	75	132-160-180-200	—	—	42300	52600	15200	58300	
	311 R2 (B)	18.3	82	16000	146	75	180-200-225-250	—	—	41800	52100	15000	58300	
	311 R2 (A)	22.8	66	10800	74	75	132-160-180-200	—	—	45600	56700	16500	58300	
	311 R2 (A)	27	55	12800	74	75	132-160-180-200	—	—	48000	59600	17400	58300	
	311 R3	53	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	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	30500	7.3	22	71-80-90-100-112-132-160	—	—	127200	158400	51500	58300	
1000	311 R2 (B)	12	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 (A)	17.7	56	9600	54	90	132-160-180-200	—	—	48300	60000	17600	58300	
	311 R2 (B)	18.3	55	18100	110	90	180-200-225-250	—	—	47200	58800	17100	58300	
	311 R2 (A)	22.8	44	12300	54	90	132-160-180-200	—	—	52100	64700	19100	58300	
	311 R2 (A)	27	37	14600	54	90	132-160-180-200	—	—	54800	68100	20200	58300	
	311 R3	53	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	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	





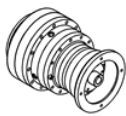
311 R	call	48330 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1000	311 R3	104	9.6	32200	35	48	132-160-180-200	—	—	79500	99100	30600	58300	
	311 R3	124	8.1	33000	31	48	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	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 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	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		

313 R	call	57970 Nm
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
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 (A)	18	83	8500	74	75	132-160-180-200	—	—	52000	62500	18700	86300	
	313 R2 (B)	19.1	79	19100	150	75	180-200-225-250	—	—	52300	61900	18700	86300	
	313 R2 (A)	23.4	64	11100	74	75	132-160-180-200	—	—	56300	67700	20500	86300	
	313 R2 (A)	28.2	53	13300	74	75	132-160-180-200	—	—	59500	71600	21800	86300	
	313 R3	53.7	28	20500	66	40	132-160-180-200	—	—	71300	84400	26400	105000	
	313 R3	64	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	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 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	







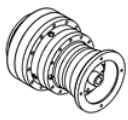
313 R

call

57970 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	P _t kW	P (IEC)		R _{n2} [N]					M _{2 max} Nm
									MC	MZ	HC/PC	HZ/PZ	FZ	
1500	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	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 (A)	18	55	9700	54	90	132-160-180-200	—	—	59300	71400	21700	86300	
	313 R2 (B)	19.1	52	21800	127	90	180-200-225-250	—	—	59100	69900	21400	86300	
	313 R2 (A)	23.4	43	12700	54	90	132-160-180-200	—	—	64200	77300	23700	86300	
	313 R2 (A)	28.2	35	15200	54	90	132-160-180-200	—	—	67900	81700	25200	86300	
	313 R3	53.7	18.6	23200	50	48	132-160-180-200	—	—	80600	95300	30200	105000	
	313 R3	64	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	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	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	

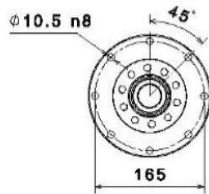
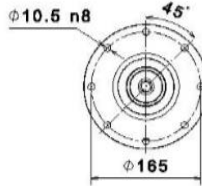
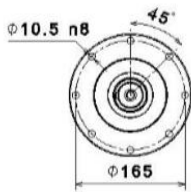
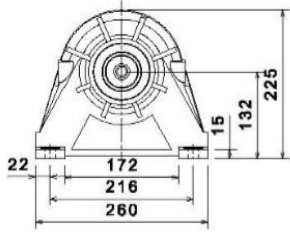




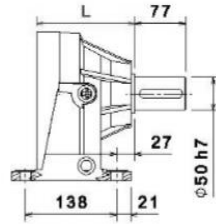
DIMENSIONS

اندازه ها

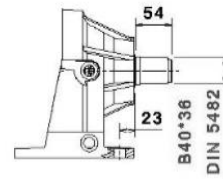
300 L



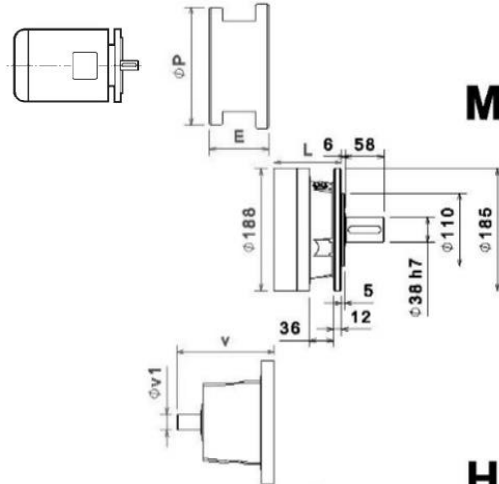
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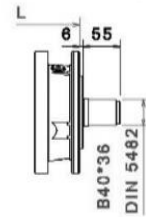
PZ



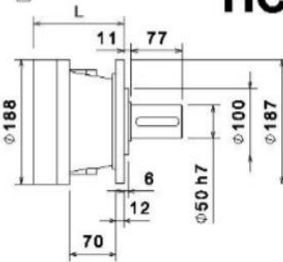
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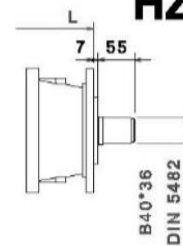
MZ



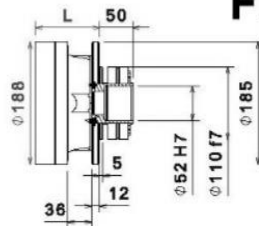
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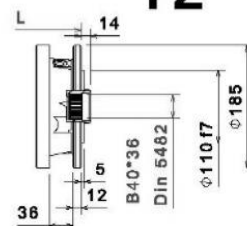
HZ



FP



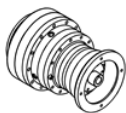
FZ



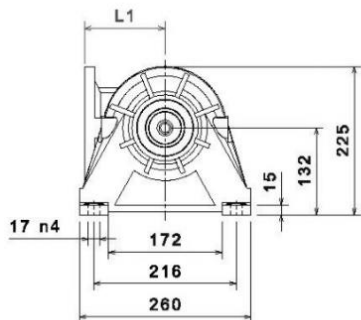
	L				Wight (kg)				V	V ₁	W(kg)	V	V ₁	W(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ						
300 L1	75	121	109	75	18	23	20	16	137.5	24	6	158	38	7
300 L2	128	173	162	128	22	27	24	20	137.5	24	6	158	38	7
300 L3	181	226	215	181	26	31	28	24	137.5	24	6	158	38	7
300 L4	234	279	268	234	30	38	33	30	137.5	24	6	158	38	7

	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
300 L1	106	160	126	200	126	200	136	250	136	250	183	300
300 L2	106	160	126	200	126	200	136	250	136	250	183	300
300 L3	106	160	126	200	126	200	136	250	136	250	183	300
300 L4	106	160	126	200	126	200	136	250	136	250	183	300

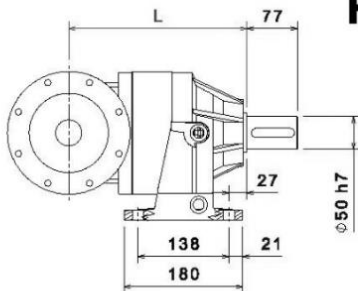




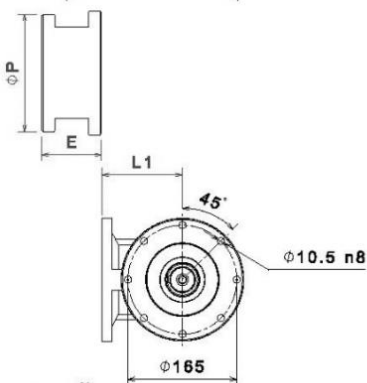
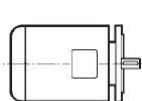
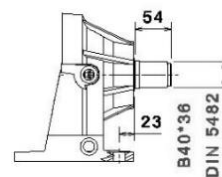
300 R



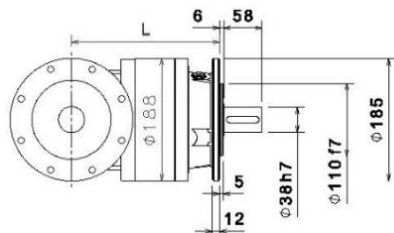
PC



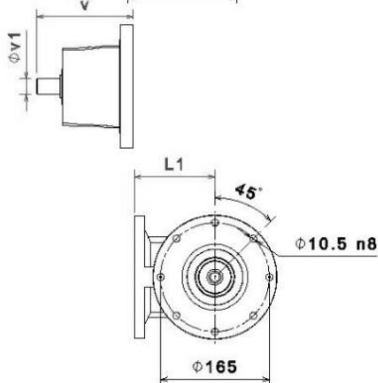
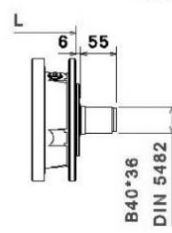
PZ



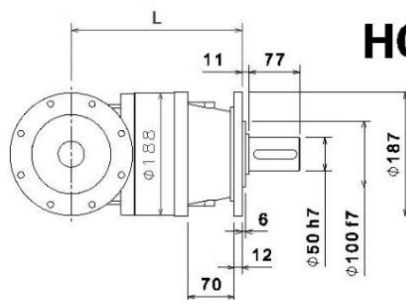
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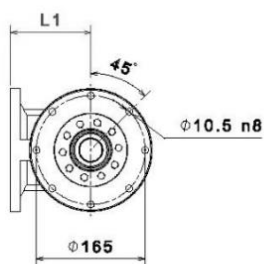
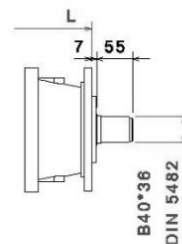
MZ



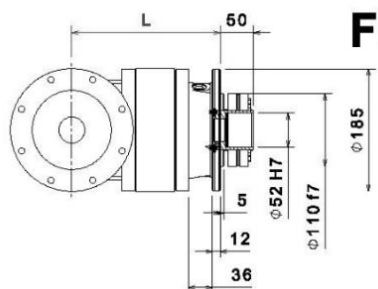
HC



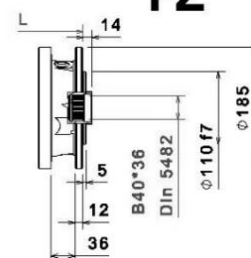
HZ



FP



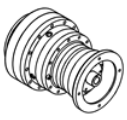
FZ



	L				L1	Wight (kg)				V	V1	(kg)	V	V1	(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ						
300 R2	172	217	205	172	122	32	37	34	30	137.5	24	6	158	38	7
300 R3	225	270	258	225	122	36	41	38	34	137.5	24	6	158	38	7
300 R4	278	323	311	278	122	40	45	42	38	137.5	24	6	158	38	7

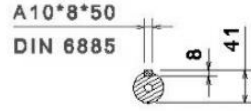
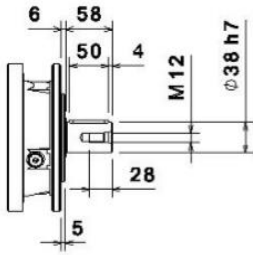
	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
300 R2	106	160	126	200	126	200	136	250	136	250	183	300
300 R3	106	160	126	200	126	200	136	250	136	250	183	300
300 R4	106	160	126	200	126	200	136	250	136	250	183	300



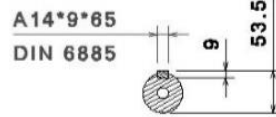
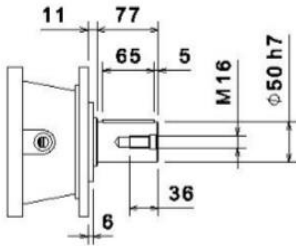


300 L - 300 R

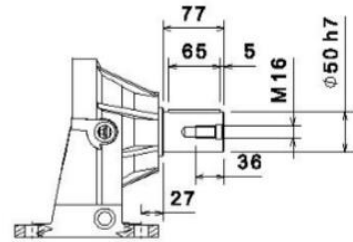
MC



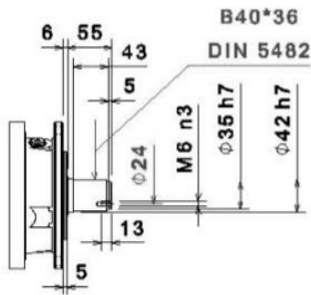
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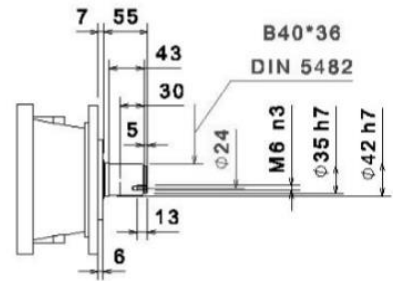
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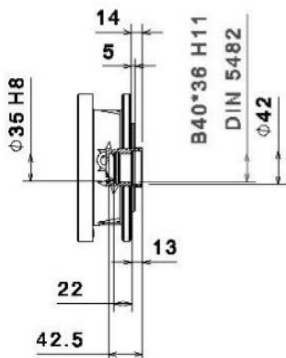
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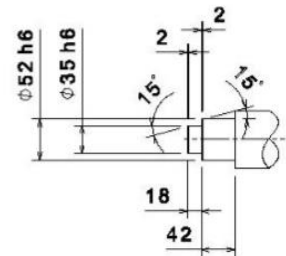
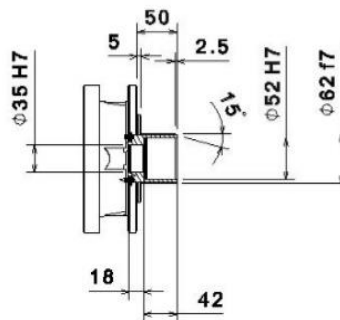
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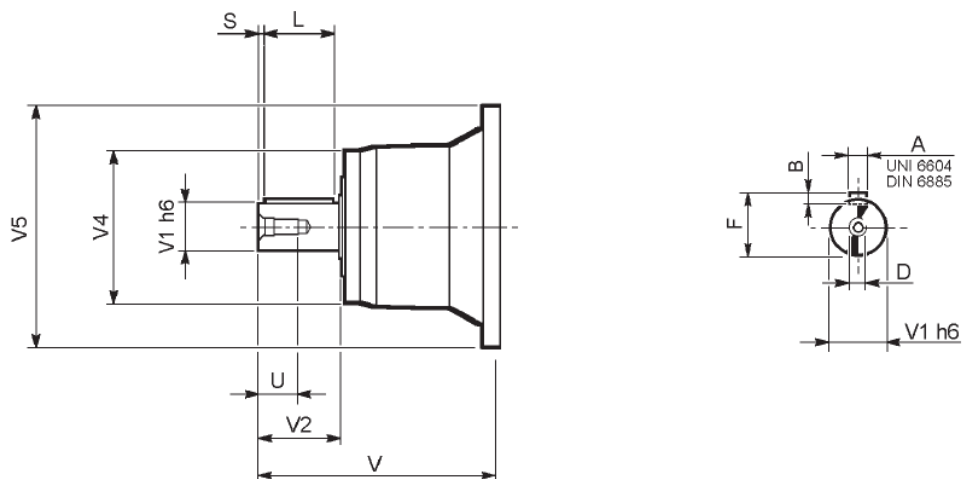
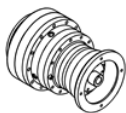


FZ



FP

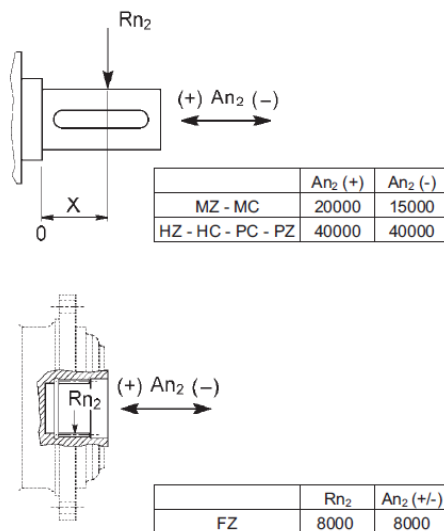
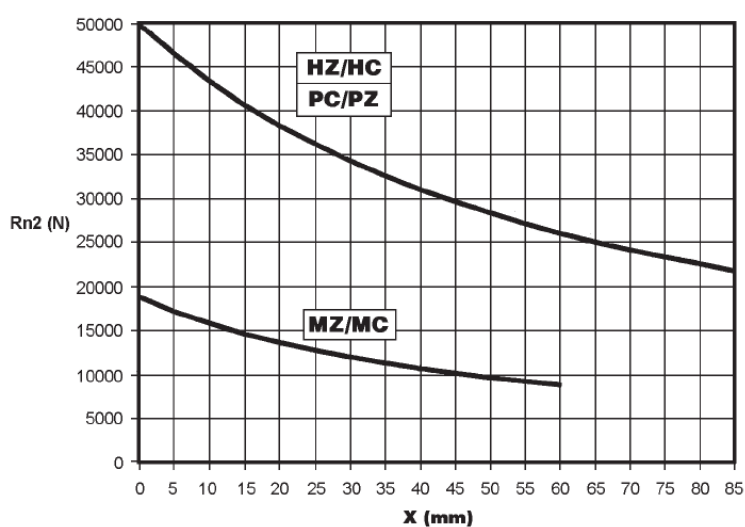




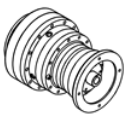
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
300 L1	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
300 L2	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
300 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000, F_{h2}: n_2 \cdot h = 10$

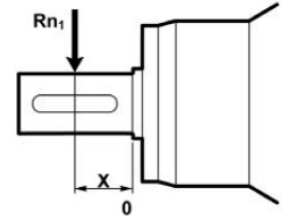
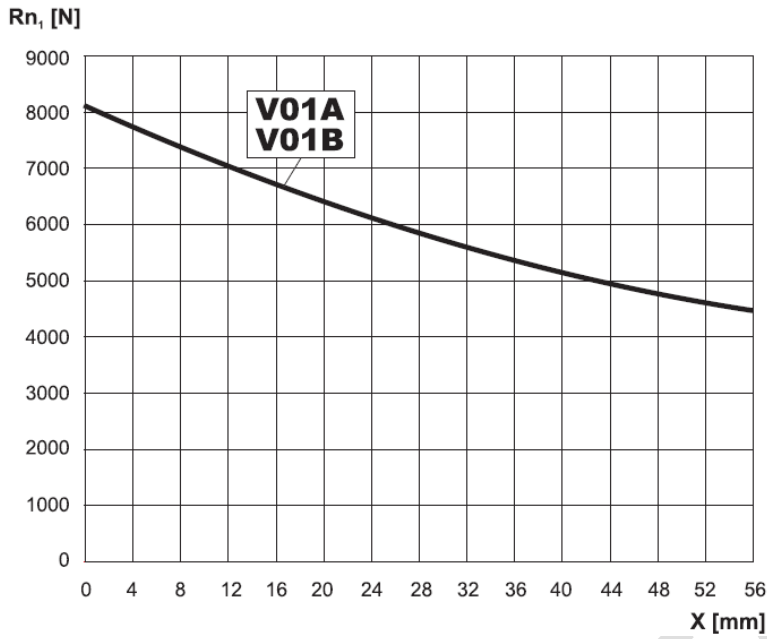


Load correction factor f_{h2} on shafts فاکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$		10000	25000	50000	100000	500000	1000000
	f_{h2}	MZ - MC - FZ	HZ - HC - PC - PZ	1	0.74	0.58	0.46	0.27
			1	0.76	0.61	0.5	0.31	0.25

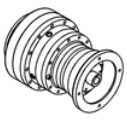


Permissible radial loads on input shaft with $F_{h1}: n1. h = 250000$

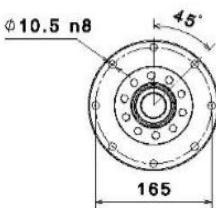
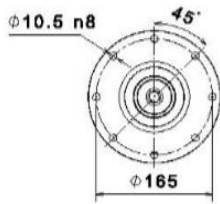
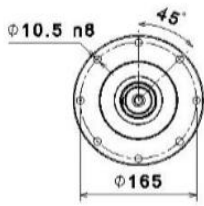
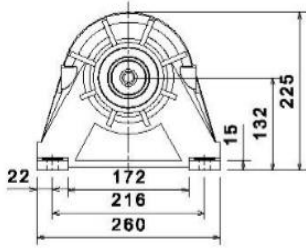
بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n1. h = 250000$



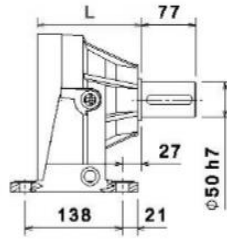
Load correction factor fh_1 on shafts فاکتور اصلاح بار fh_1 بر روی شافت	$F_{h1} = n1. h$	250000	500000	1000000	2000000	5000000	10000000
	fh_1		1	0.79	0.63	0.5	0.37



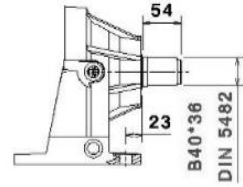
301 L



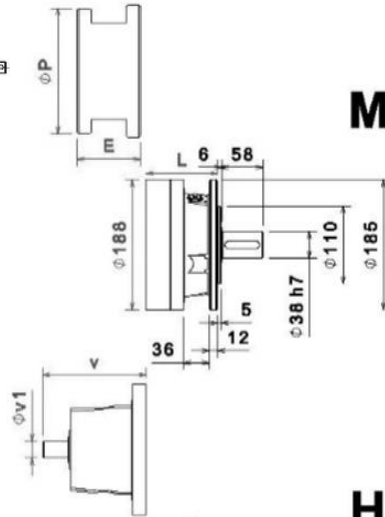
PC



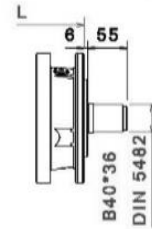
PZ



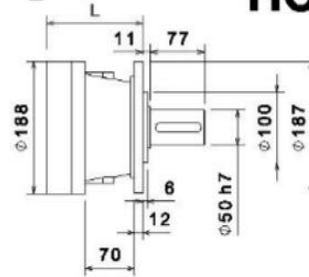
MC



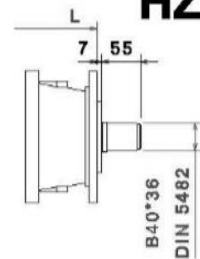
MZ



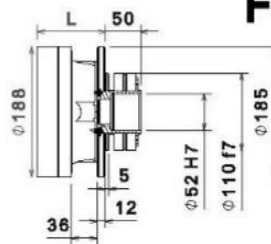
HC



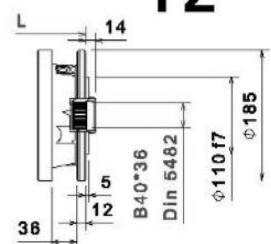
HZ



FP



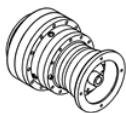
FZ



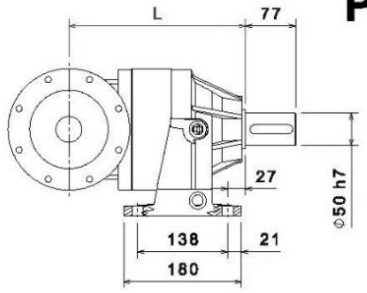
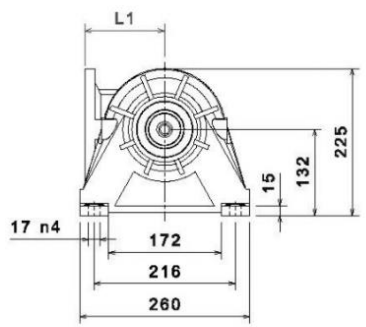
	L				Wight (kg)				V	V ₁	W(kg)	V	V ₁	W(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ						
301 L1	88	134	122	88	21	26	23	19	137.5	24	6	158	38	7
301 L2	141	187	175	141	25	30	27	23	137.5	24	6	158	38	7
301 L3	193	239	227	193	29	34	31	27	137.5	24	6	158	38	7
301 L4	247	293	281	247	33	38	35	31	137.5	24	6	158	38	7

	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
301 L1	106	160	126	200	126	200	136	250	136	250	183	300
301 L2	106	160	126	200	126	200	136	250	136	250	183	300
301 L3	106	160	126	200	126	200	136	250	136	250	183	300
301 L4	106	160	126	200	126	200	136	250	136	250	183	300



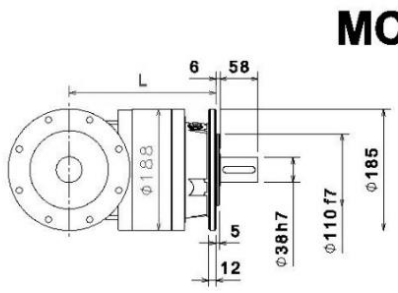
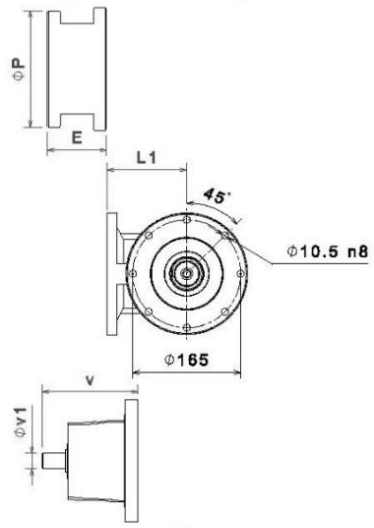
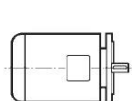
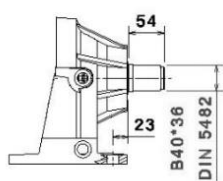


301 R



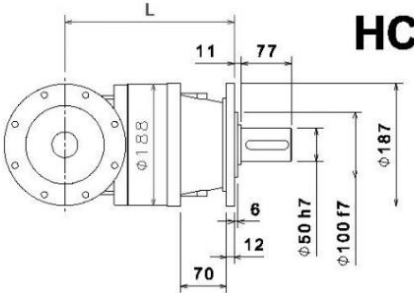
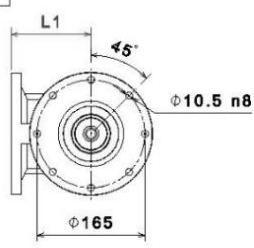
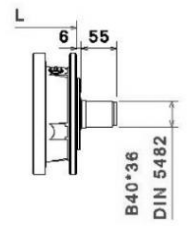
PC

PZ



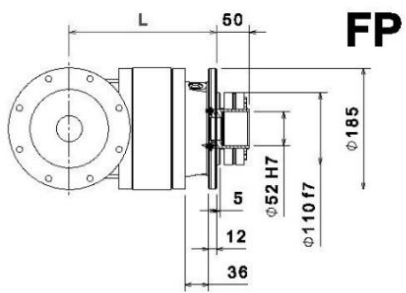
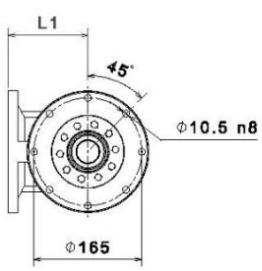
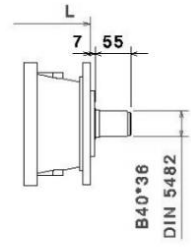
MC

MZ



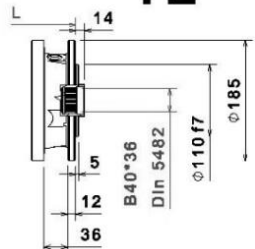
HC

HZ



FP

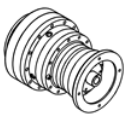
FZ



	L				L1	Wight (kg)				V	V1	(kg)	V	V1	(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ						
301 R2	184	230	218	184	122	35	42	37	33	137.5	24	6	158	38	7
301 R3	237	283	271	237	122	39	46	41	37	137.5	24	6	158	38	7
301 R4	290	336	324	290	122	43	50	45	41	137.5	24	6	158	38	7

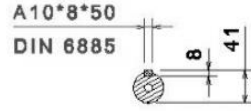
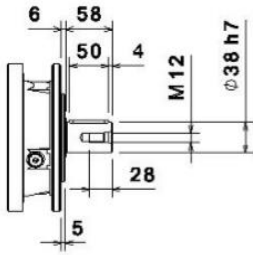
	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
301 R2	106	160	126	200	126	200	136	250	136	250	183	300
301 R3	106	160	126	200	126	200	136	250	136	250	183	300
301 R4	106	160	126	200	126	200	136	250	136	250	183	300



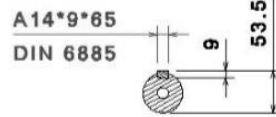
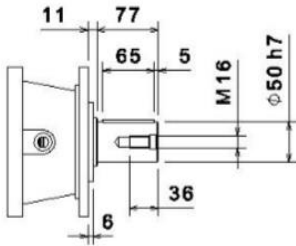


301 L - 301 R

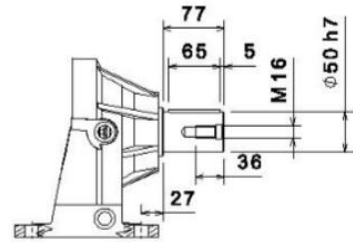
MC



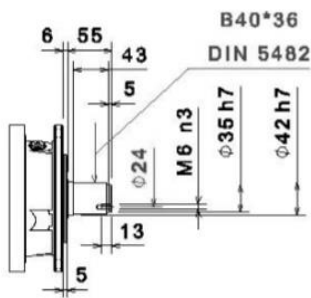
HC



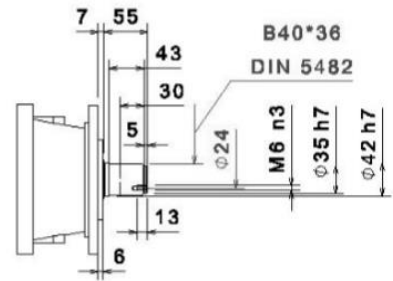
PC



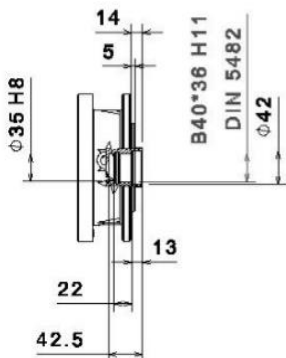
MZ



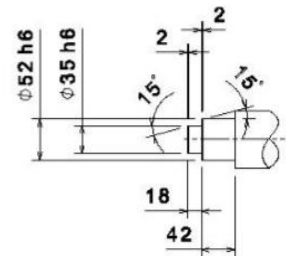
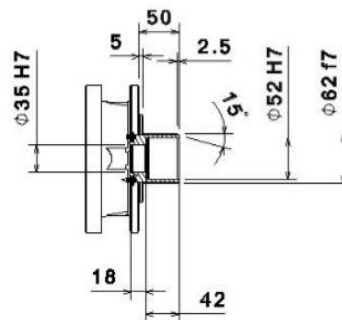
HZ

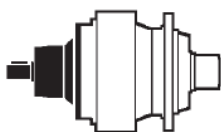
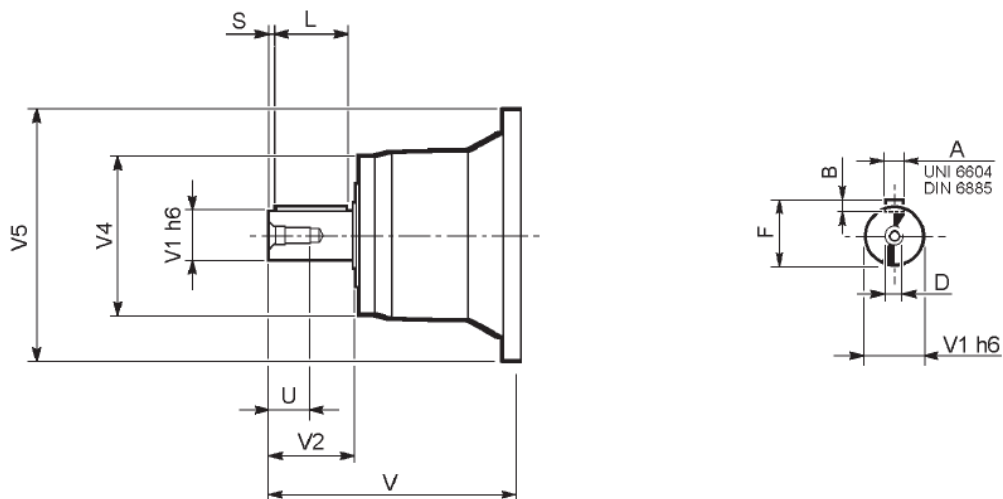
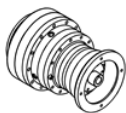


FZ



FP

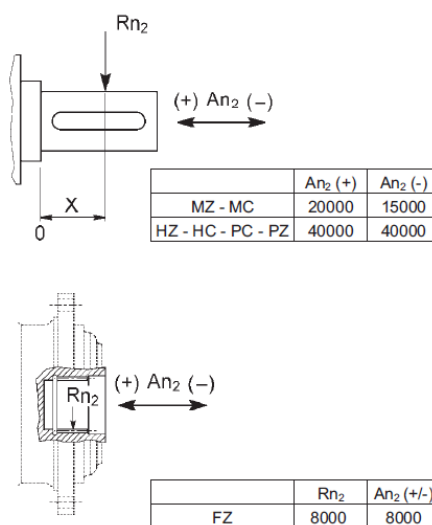
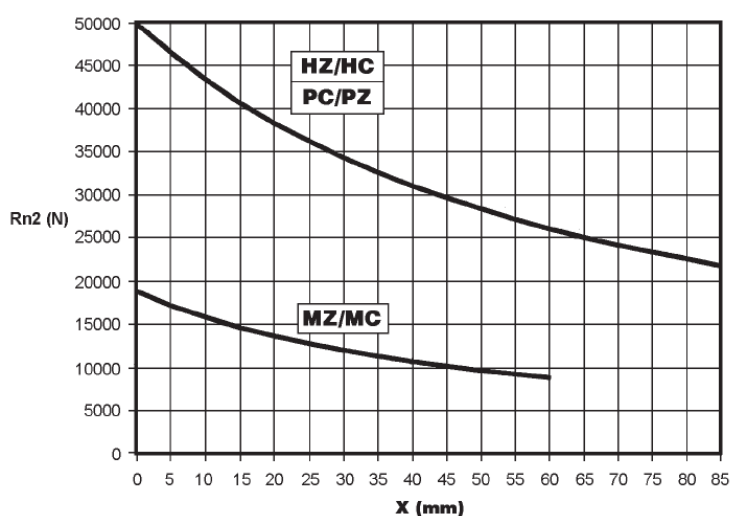




	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
301 L1	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
301 L2	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
301 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8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

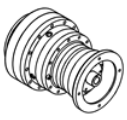
Permissible radial and axial loads on output shaft with $F_{h2}: n_2. h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000, F_{h2}: n_2. h = 10$



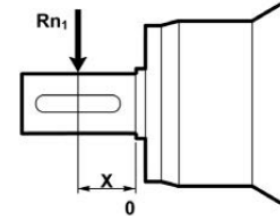
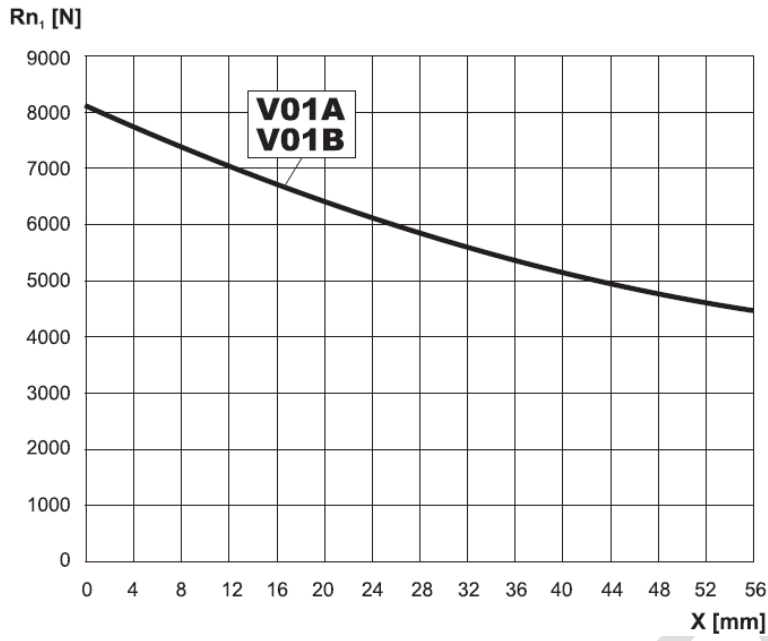
Load correction factor f_{h2} on shafts فاکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2. h$						
		10000	25000	50000	100000	500000	1000000
	f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25



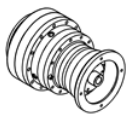


Permissible radial loads on input shaft with $F_{h1}: n1. h = 250000$

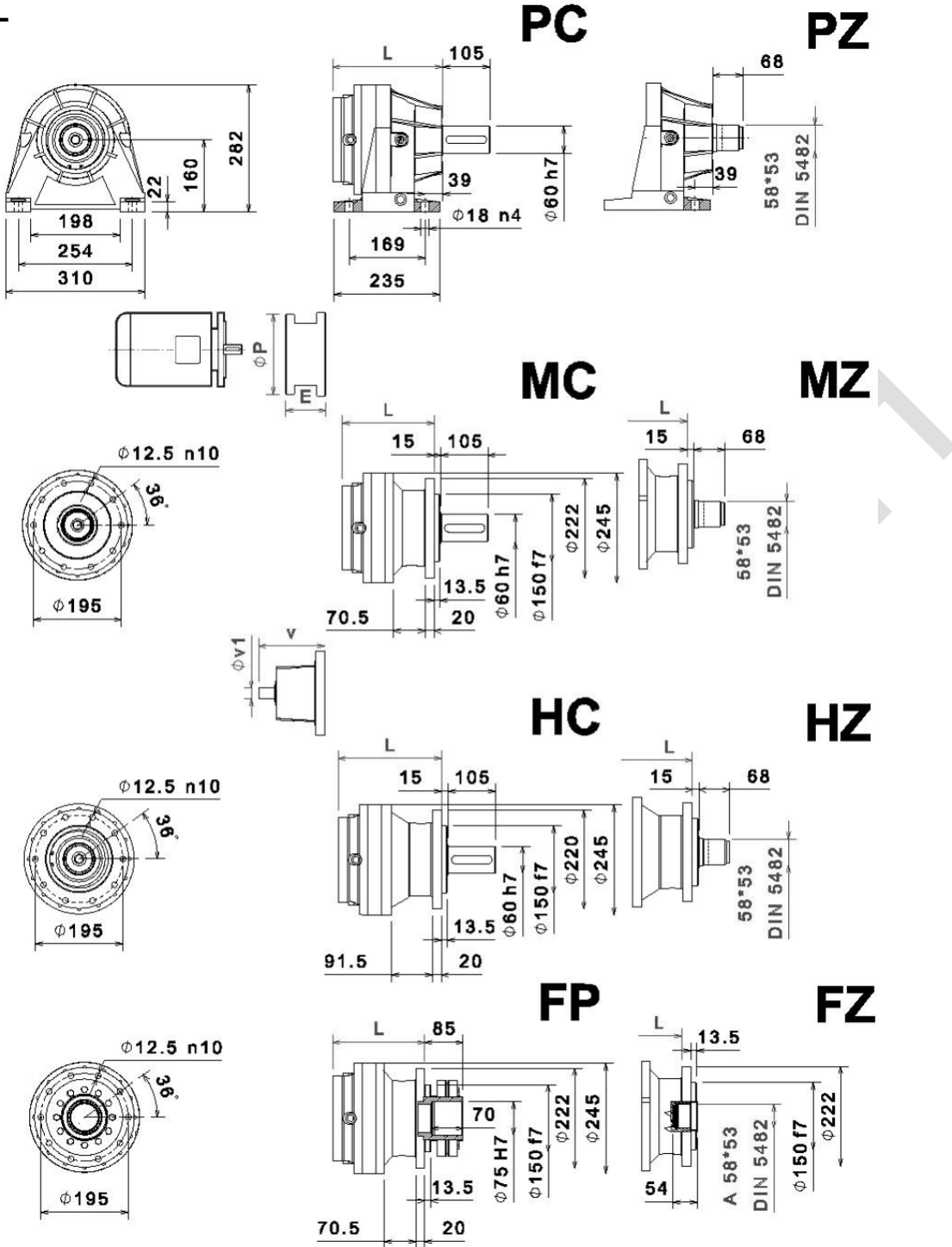
بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n1. h = 250000$



Load correction factor fh_1 on shafts فاکتور اصلاح بار fh_1 بر روی شافت	$F_{h1} = n1. h$	250000	500000	1000000	2000000	5000000	10000000
	fh_1		1	0.79	0.63	0.5	0.37



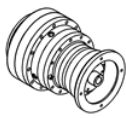
303 L



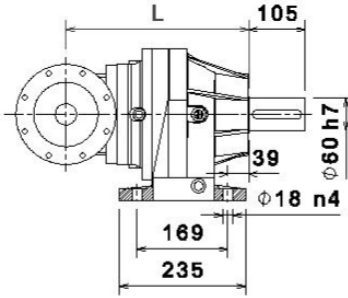
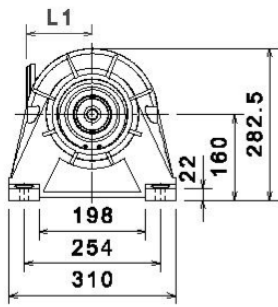
	L				Wight (kg)				V	V ₁	W(kg)	V	V ₁	W(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ						
303 L1	120	160	145	120	31	40	35	31	239	48	15	-	-	-
303 L2	171	211	196	171	35	44	39	35	137.5	24	6	158	38	7
303 L3	224	262	247	224	39	48	43	39	137.5	24	6	158	38	7
303 L4	275	315	300	275	43	52	47	43	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
303 L1	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400
303 L2	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
303 L3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
303 L4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-

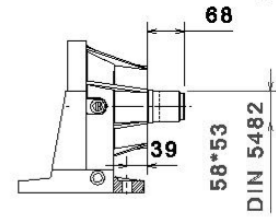




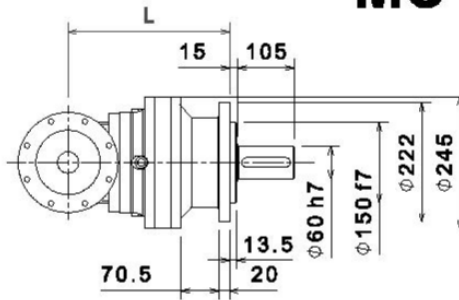
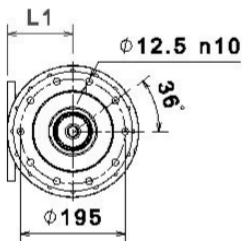
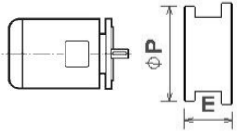
303 R



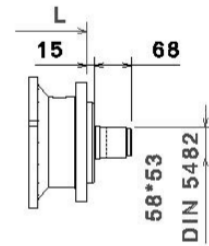
PC



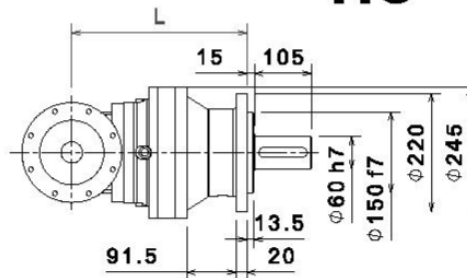
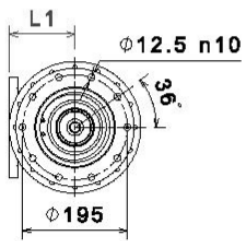
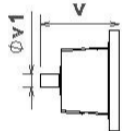
PZ



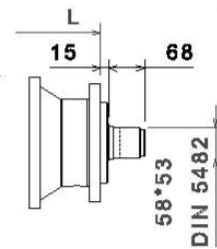
MC



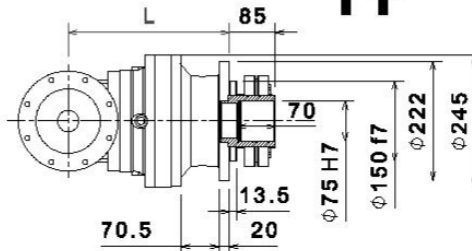
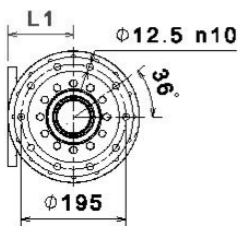
MZ



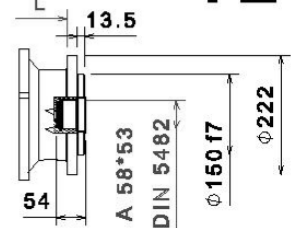
HC



HZ



FP

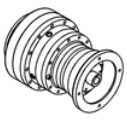


FZ

	L				L1	Wight (kg)				V	V1	(kg)	V	V1	(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ						
303 R2	216	256	241	216	140	35	42	37	33	137.5	24	6	158	38	7
303 R3	267	307	292	267	122	39	46	41	37	137.5	24	6	158	38	7
303 R4	320	360	345	320	122	43	50	45	41	137.5	24	6	158	38	7

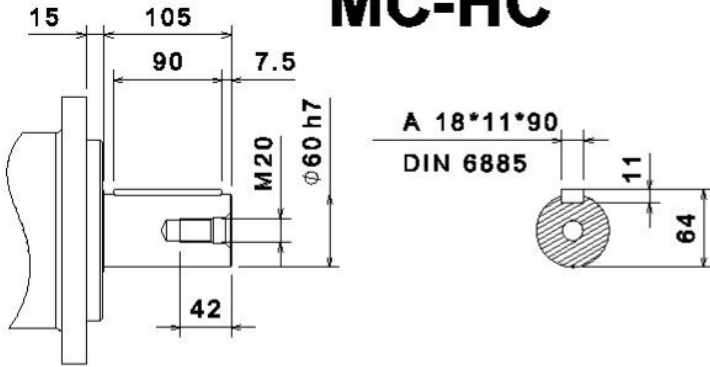
	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
303 R2	106	160	126	200	126	200	136	250	136	250	183	300
303 R3	106	160	126	200	126	200	136	250	136	250	183	300
303 R4	106	160	126	200	126	200	136	250	136	250	183	300



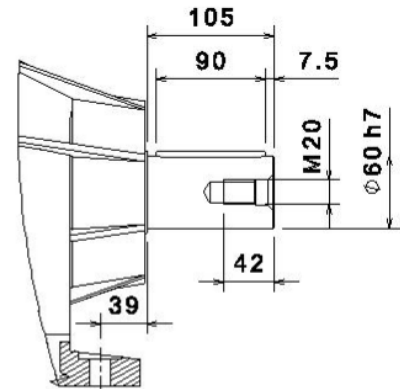


303 L - 303 R

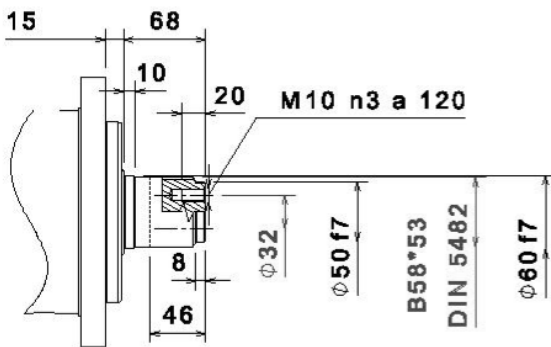
MC-HC



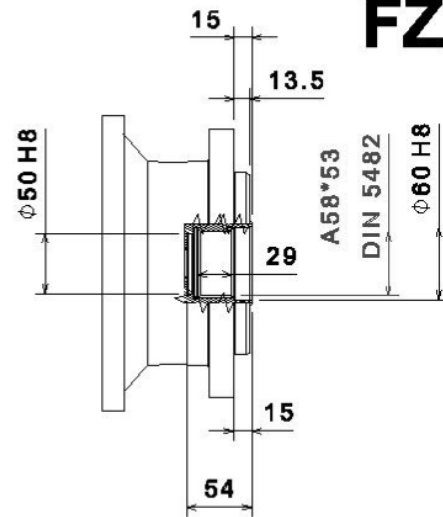
PC



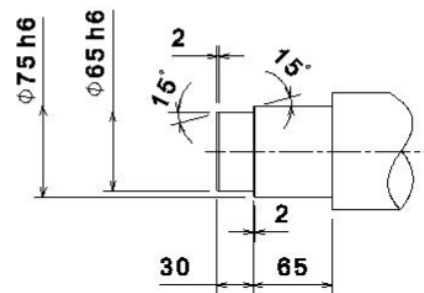
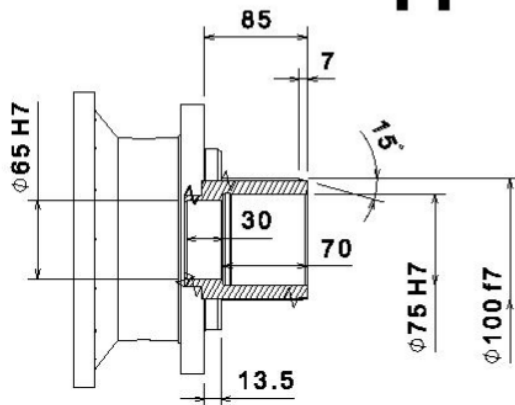
MZ-HZ

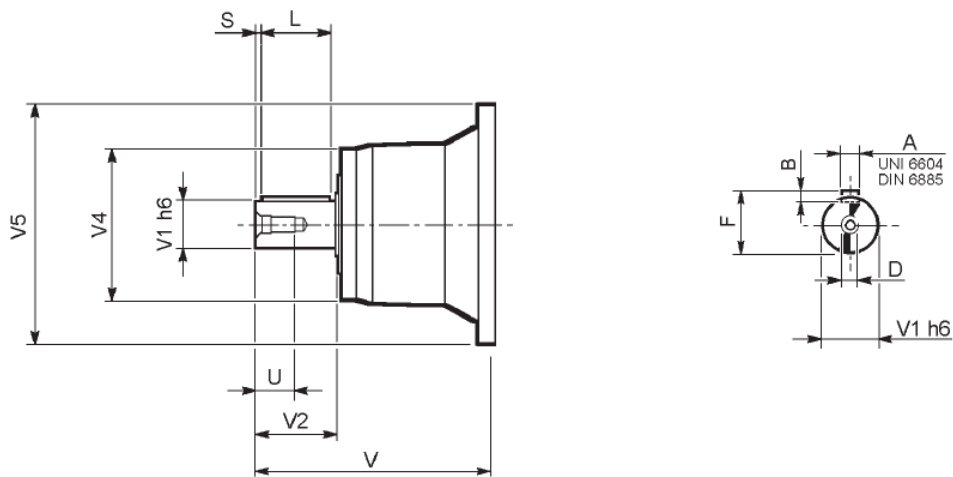
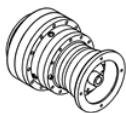


FZ



FP

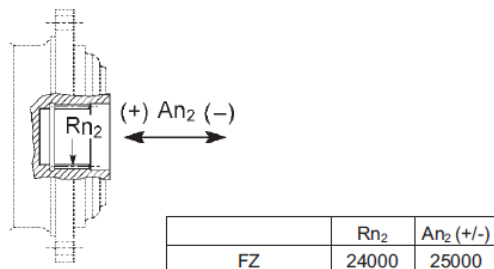
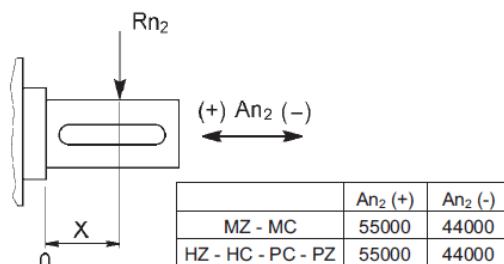
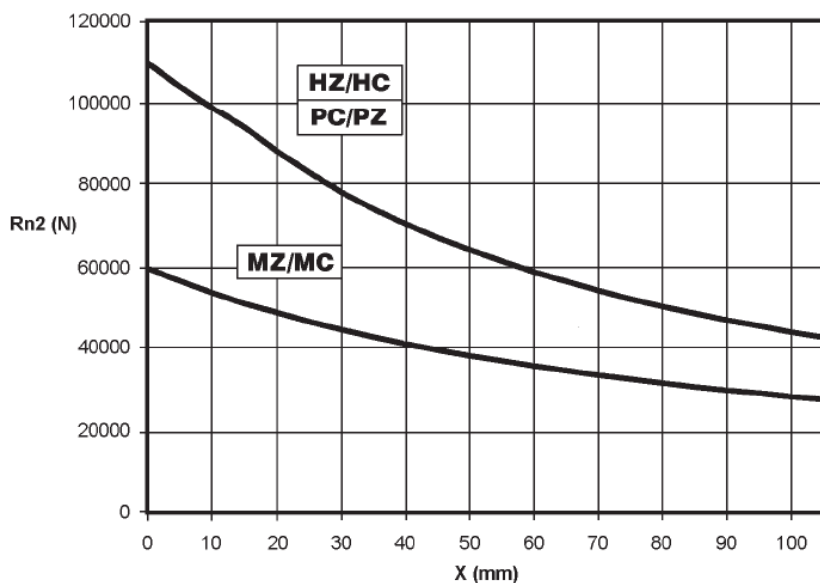




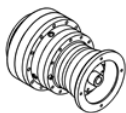
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
303 L1	V05B	239	48	82	155	245	14	9	51.5	70	6	M16	36
303 L2	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
303 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
303 L4	V01A	137.5	24	36	120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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000 \cdot F_{h2}: n_2 \cdot h = 10$

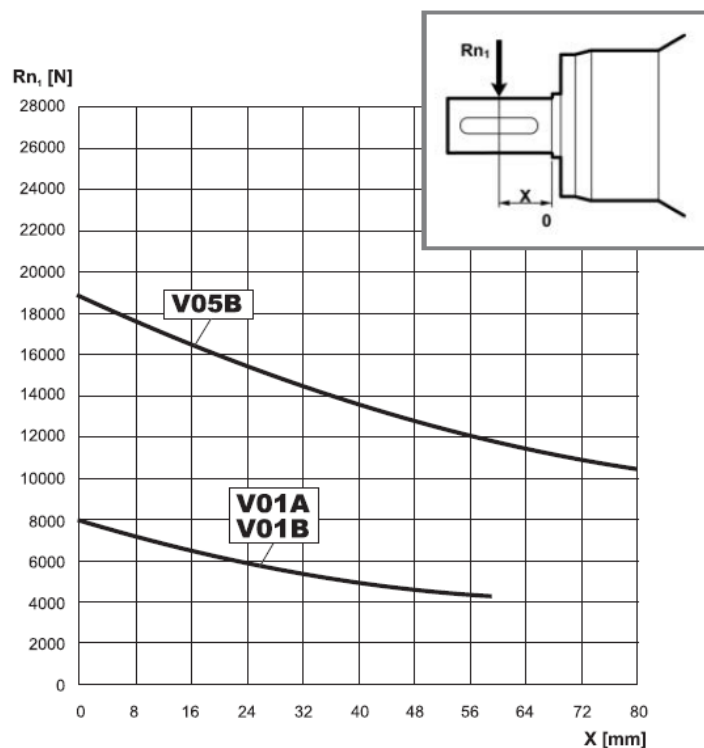


Load correction factor f_{h2} on shafts فکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$						
		10000	25000	50000	100000	500000	1000000
	f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25

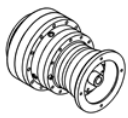


Permissible radial loads on input shaft with $F_{h1}: n1. h = 250000$

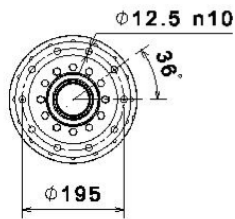
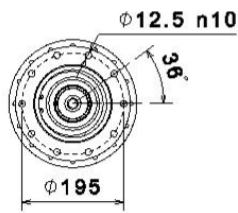
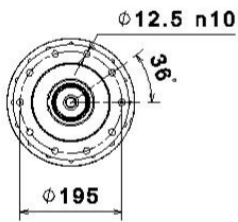
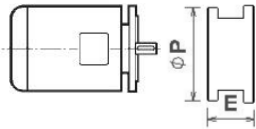
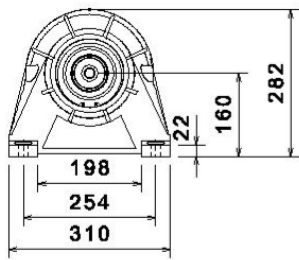
بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n1. h = 250000$



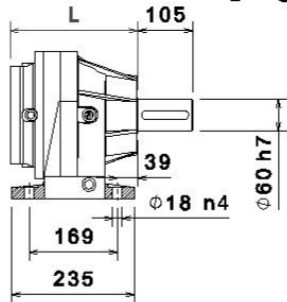
Load correction factor fh_1 on shafts فاکتور اصلاح بار fh_1 بر روی شافت	$F_{h1} = n1. h$	250000	500000	1000000	2000000	5000000	10000000
	fh_1		1	0.79	0.63	0.5	0.37



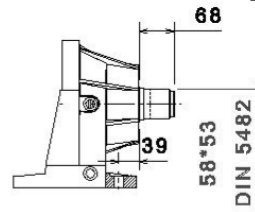
305 L



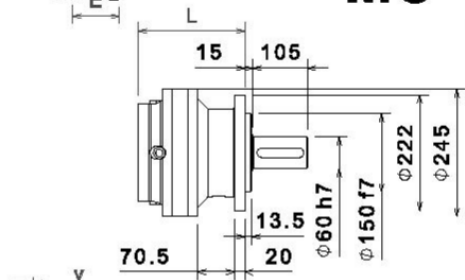
PC



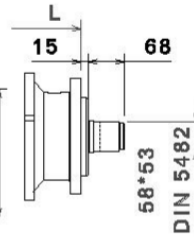
PZ



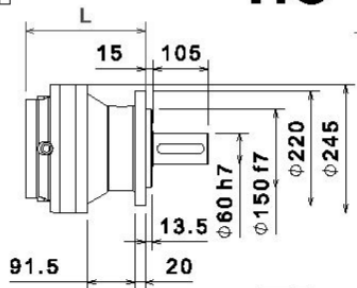
MC



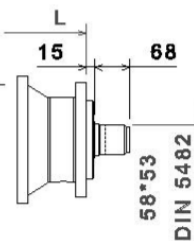
MZ



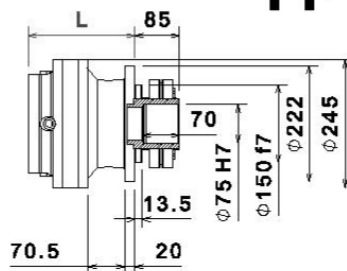
HC



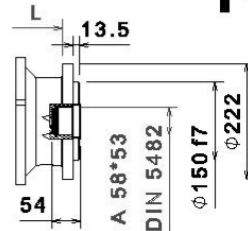
HZ



FP



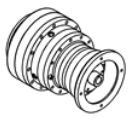
FZ



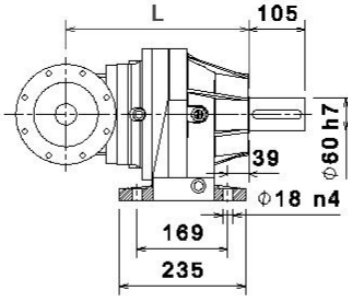
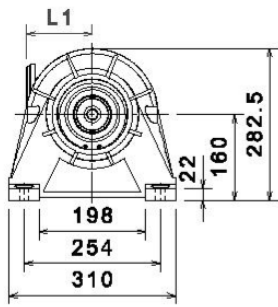
	L				Wight (kg)				V	V ₁	W(kg)	V	V ₁	W(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ						
305 L1	140	180	165	140	36	45	40	36	239	48	15	-	-	-
305 L2	205	245	230	205	43	52	47	43	137.5	24	6	158	38	7
305 L3	256	296	281	256	47	56	51	47	137.5	24	6	158	38	7
305 L4	309	349	334	309	51	60	55	51	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
305 L1	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400
305 L2	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
305 L3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
305 L4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-



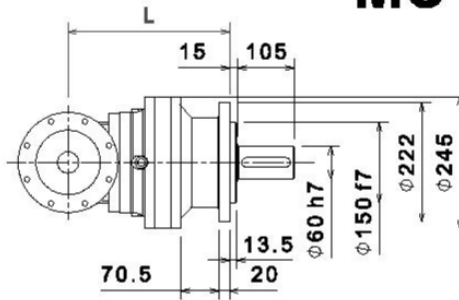
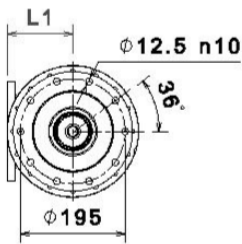
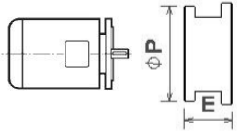
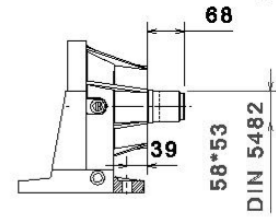


305 R



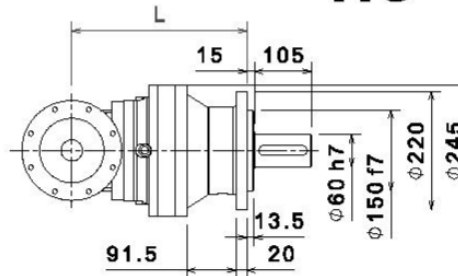
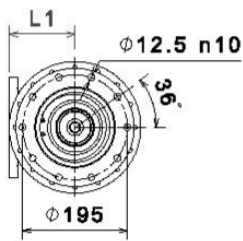
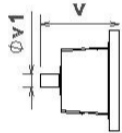
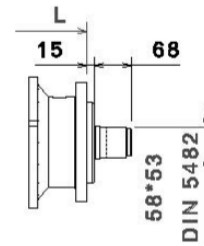
PC

PZ



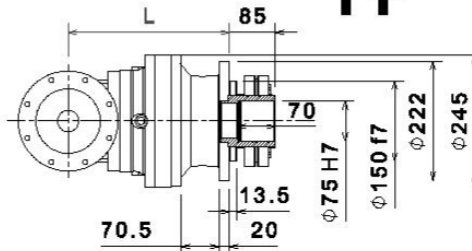
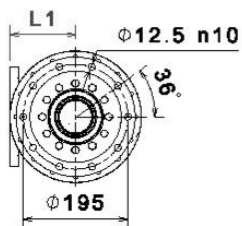
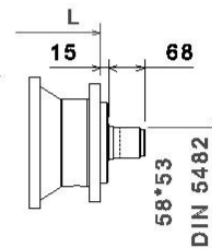
MC

MZ



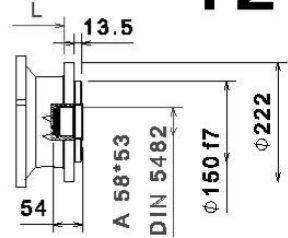
HC

HZ



FP

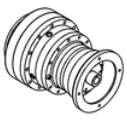
FZ



	L				L1	Wight (kg)				V	V1	(kg)	V	V1	(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ						
305 R2	236	376	261	236	140	56	65	60	56	137.5	24	6	158	38	7
305 R3	301	341	326	301	122	57	66	61	57	137.5	24	6	158	38	7
305 R4	352	392	377	352	122	61	70	65	61	137.5	24	6	158	38	7

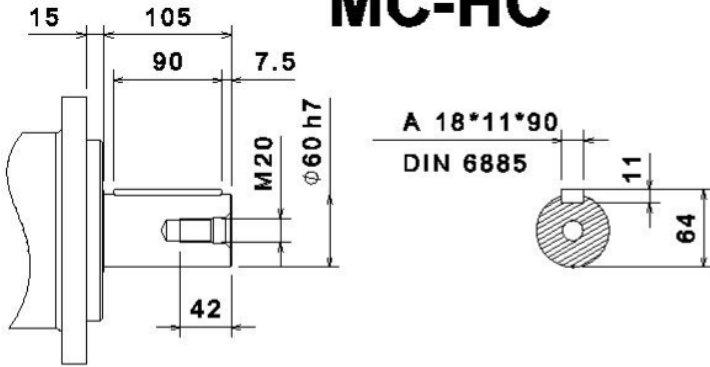
	P71		P80		P90		P100		P112		P132	
	E	P	E	P	E	P	E	P	E	P	E	P
305 R2	106	160	126	200	126	200	136	250	136	250	183	300
305 R3	106	160	126	200	126	200	136	250	136	250	183	300
305 R4	106	160	126	200	126	200	136	250	136	250	183	300



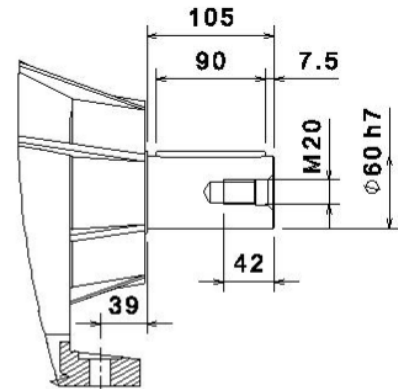


305 L - 305 R

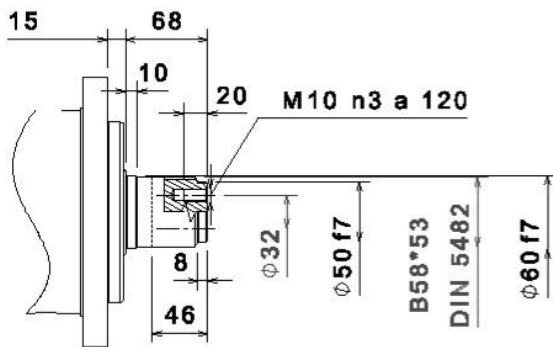
MC-HC



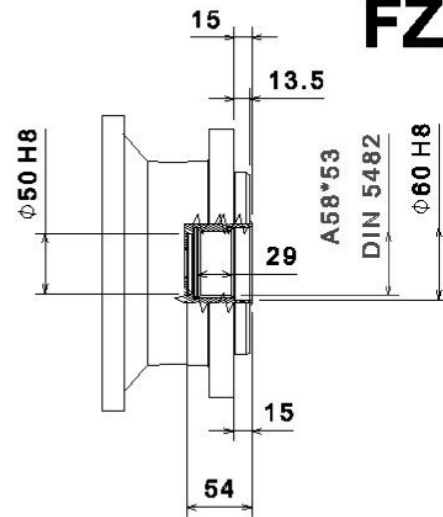
PC



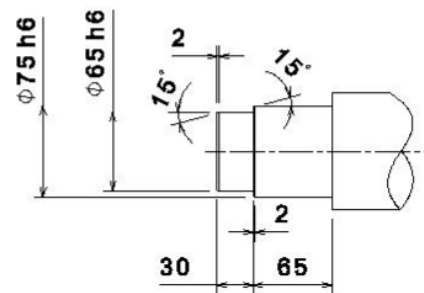
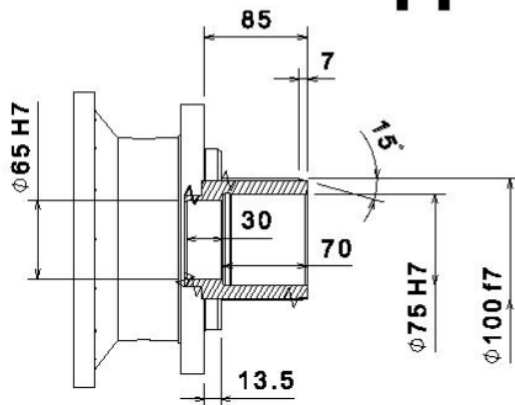
MZ-HZ

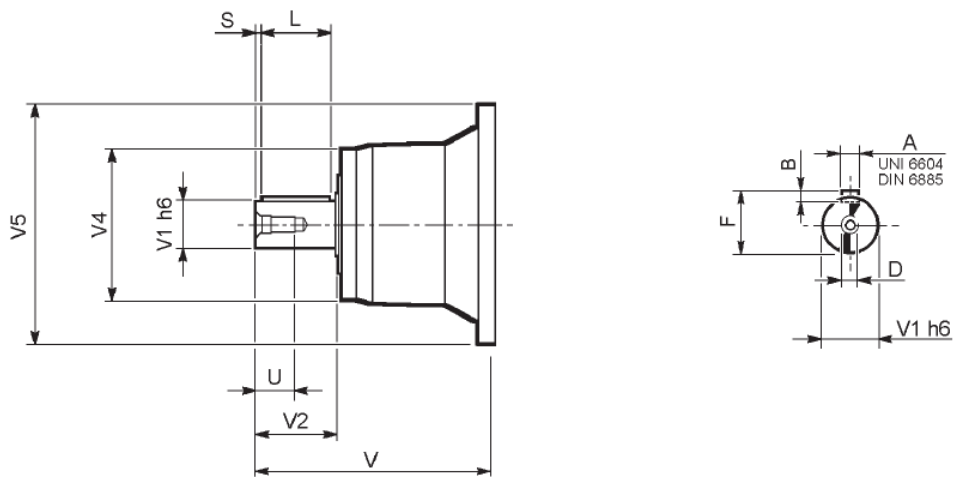
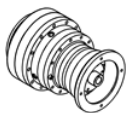


FZ



FP

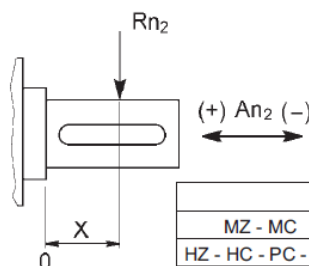
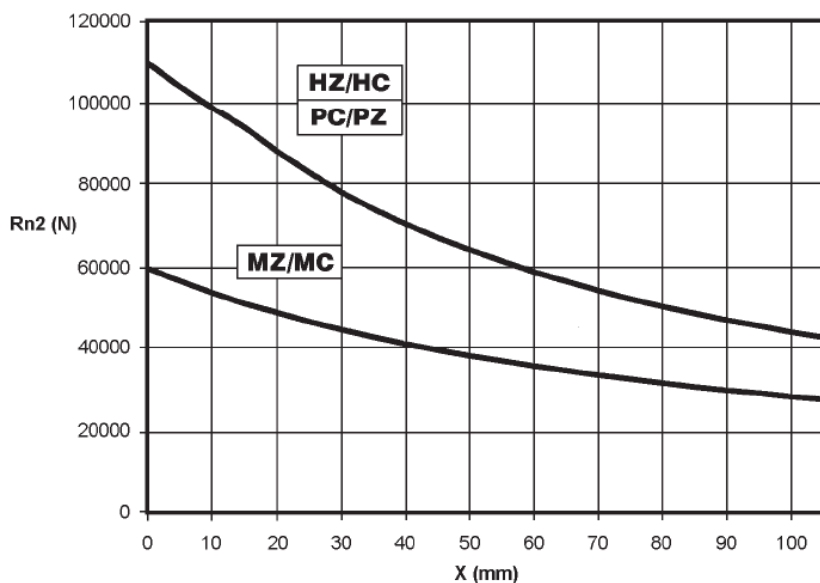




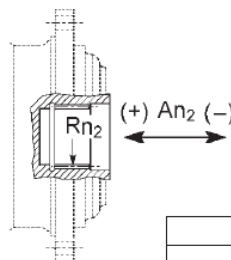
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
305 L1	V05B	239	48	82	155	245	14	9	51.5	70	6	M16	36
305 L2	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
305 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
305 L4	V01A	137.5	24	36	120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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000 \cdot F_{h2}: n_2 \cdot h = 10$

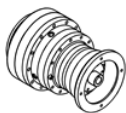


	An ₂ (+)	An ₂ (-)
MZ - MC	55000	44000
HZ - HC - PC - PZ	55000	44000



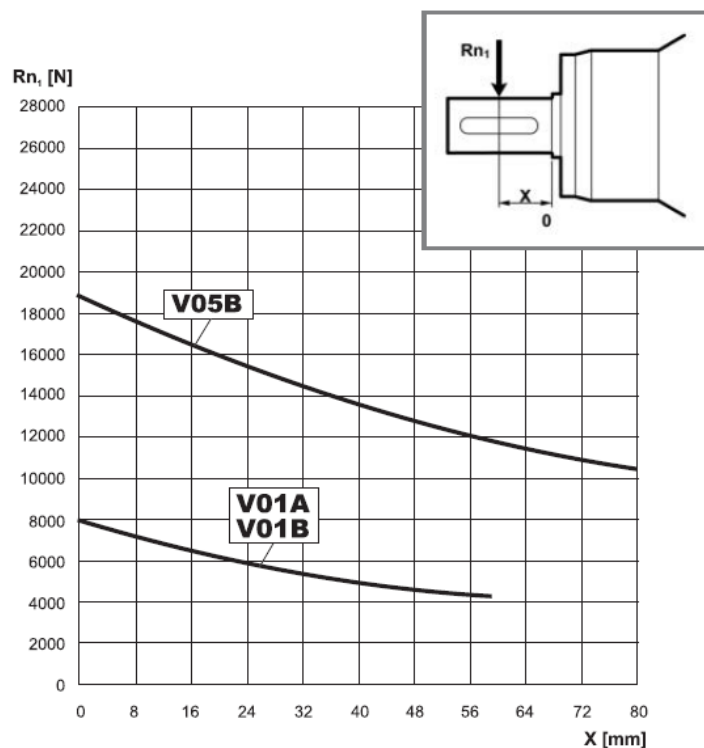
	Rn ₂	An ₂ (+/-)
FZ	24000	25000

Load correction factor f_{h2} on shafts فکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$						
		10000	25000	50000	100000	500000	1000000
	f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25

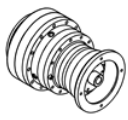


Permissible radial loads on input shaft with $Fh_1: n_1 \cdot h = 250000$

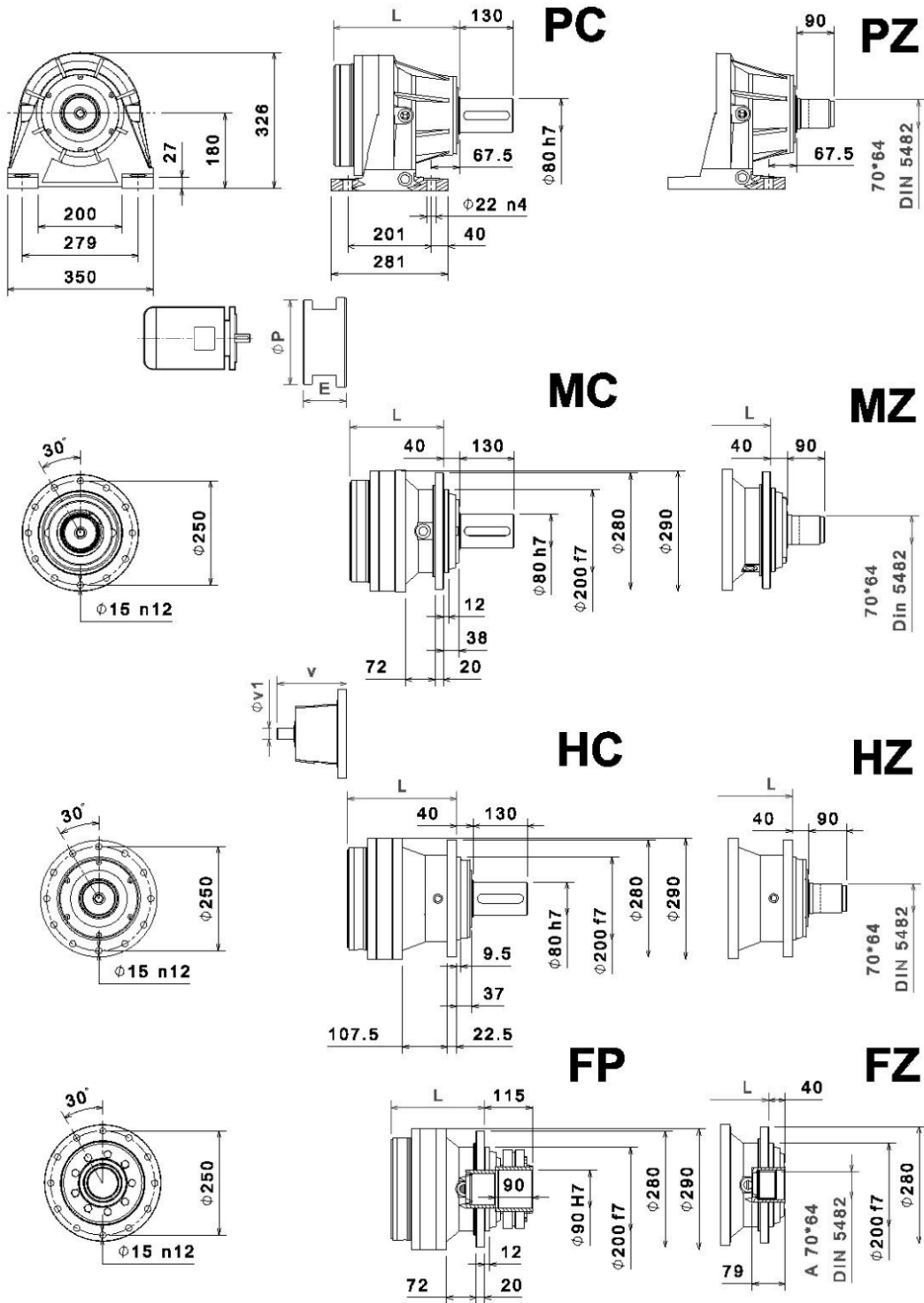
بارهای شعاعی مجاز بر روی شفت ورودی با $Fh_1: n_1 \cdot h = 250000$



Load correction factor fh_1 on shafts فکتور اصلاح بار fh_1 بر روی شافت	$Fh_1 = n_1 \cdot h$	250000	500000	1000000	2000000	5000000	10000000
	fh_1		1	0.79	0.63	0.5	0.37



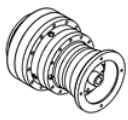
306 L



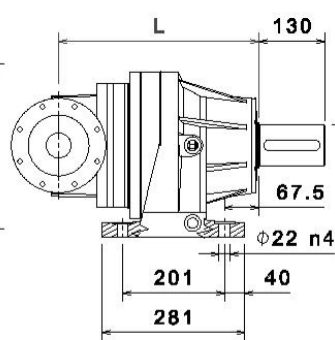
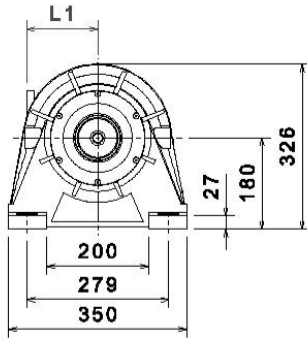
	L				Wight (kg)				V	V ₁	W(kg)	V	V ₁	W(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ						
306 L1	156	234	194	156	65	85	70	65	307	60	23	-	-	-
306 L2	221	299	259	221	74	95	79	74	239	48	15	-	-	-
306 L3	268	346	306	268	78	98	83	78	137.5	24	6	158	38	7
306 L4	325	403	363	325	82	103	87	82	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
306 L1	-	-	-	-	-	-	-	-	-	-	-	-	212	350	212	350	242	400	272	450	252	550
306 L2	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400	-	-	-	-
306 L3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-
306 L4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-

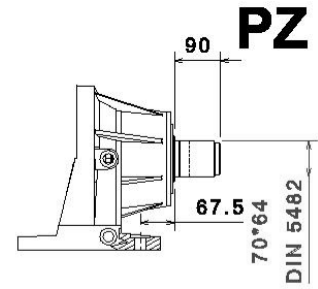




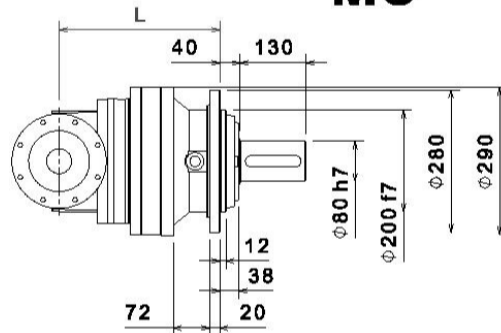
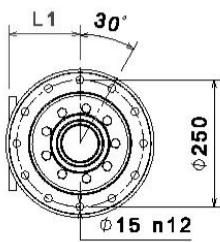
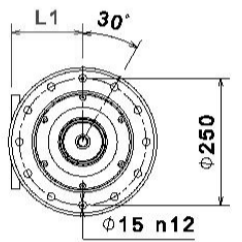
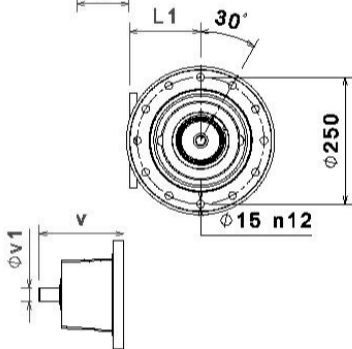
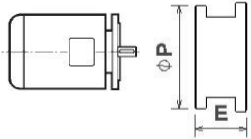
306 R



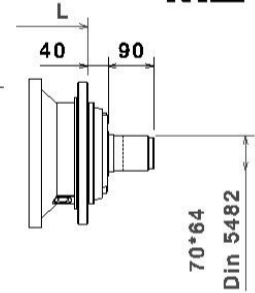
PC



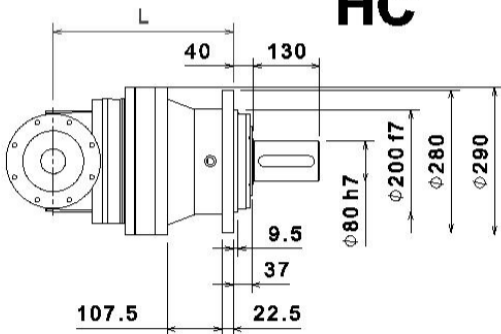
PZ



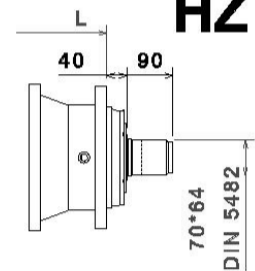
MC



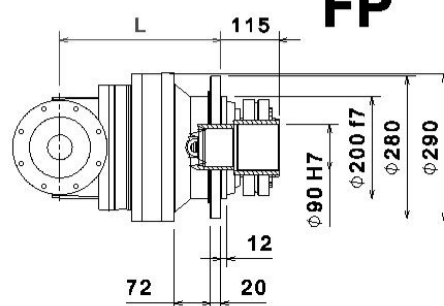
MZ



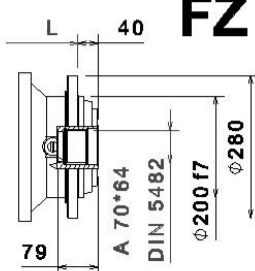
HC



HZ



FP

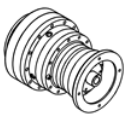


FZ

	L				L1	Wight (kg)				V	V1	(kg)	V	V1	(kg)
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ						
306 R2	297	375	335	297	140	89	105	94	89	137.5	24	6	158	38	7
306 R3	317	395	355	317	140	85	100	90	85	137.5	24	6	158	38	7
306 R4	364	442	402	364	122	79	95	84	79	137.5	24	6	158	38	7

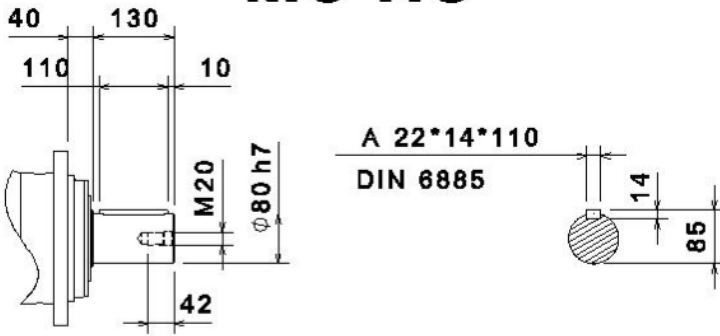
	P71		P80		P90		P100		P112		P132		P160	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P
306 R2	106	160	126	200	126	200	136	250	136	250	183	300	213	350
306 R3	106	160	126	200	126	200	136	250	136	250	183	300	213	350
306 R4	106	160	126	200	126	200	136	250	136	250	183	300	213	350



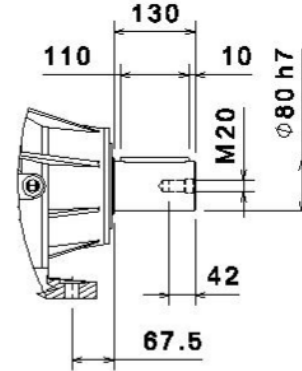


306 L - 306 R

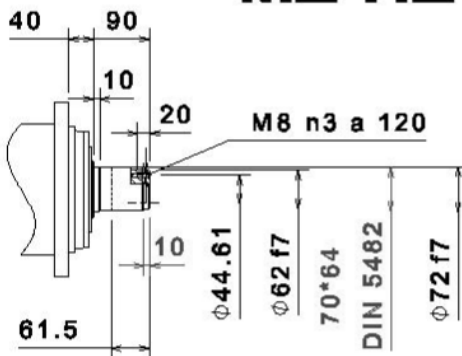
MC-HC



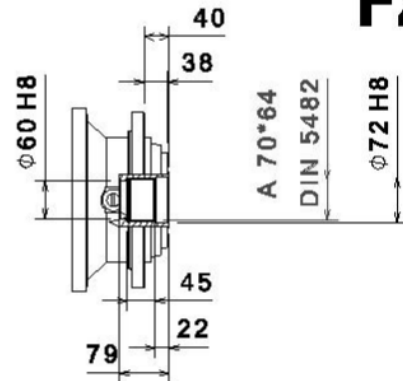
PC



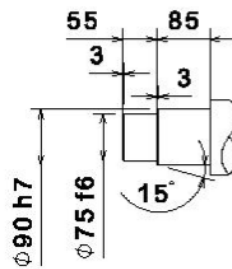
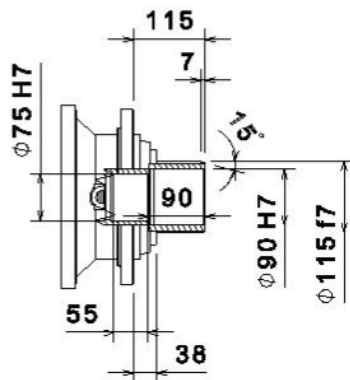
MZ-HZ

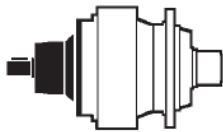
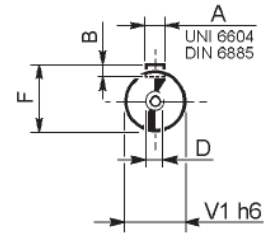
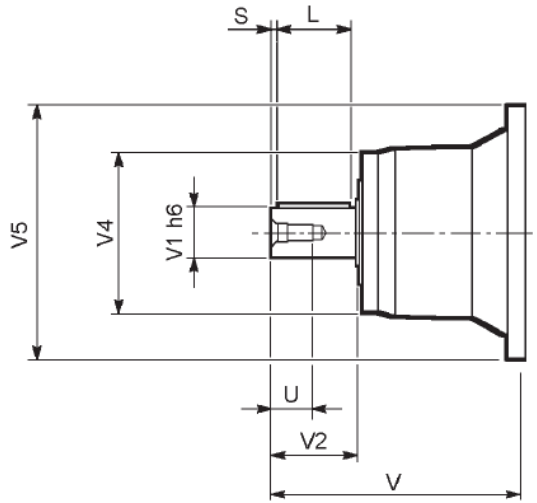
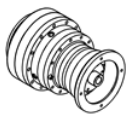


FZ



FP

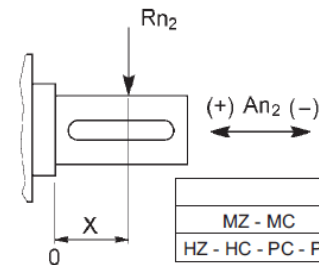
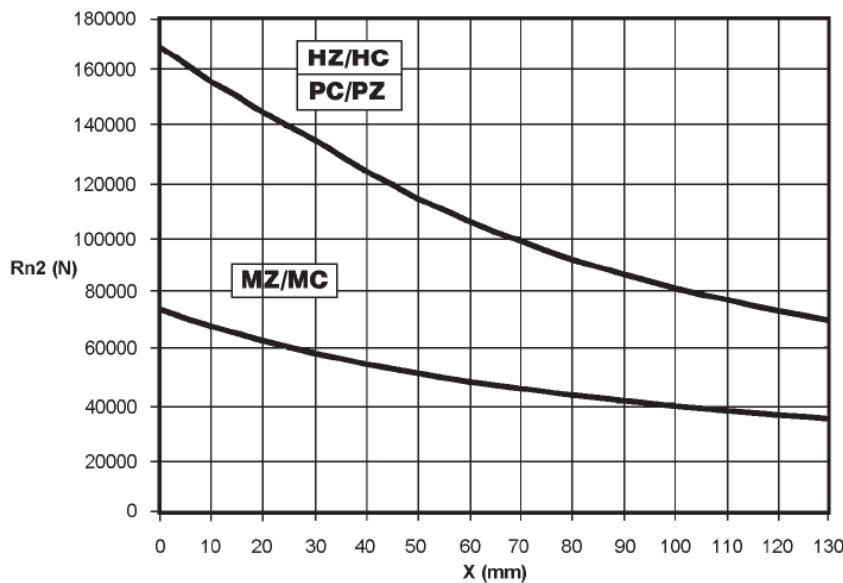




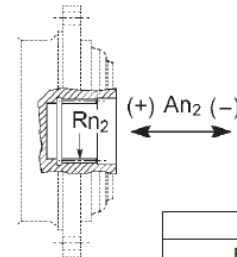
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
306 L1	V06B	307	60	105	155	292	18	11	64	90	7.5	M16	36
306 L2	V05B	239	48	82	155	245	14	9	51.5	70	6	M16	36
306 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
306 L4	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000 \cdot F_{h2}: n_2 \cdot h = 10$

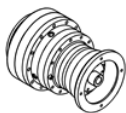


	An ₂ (+)	An ₂ (-)
MZ - MC	70000	44000
HZ - HC - PC - PZ	120000	60000



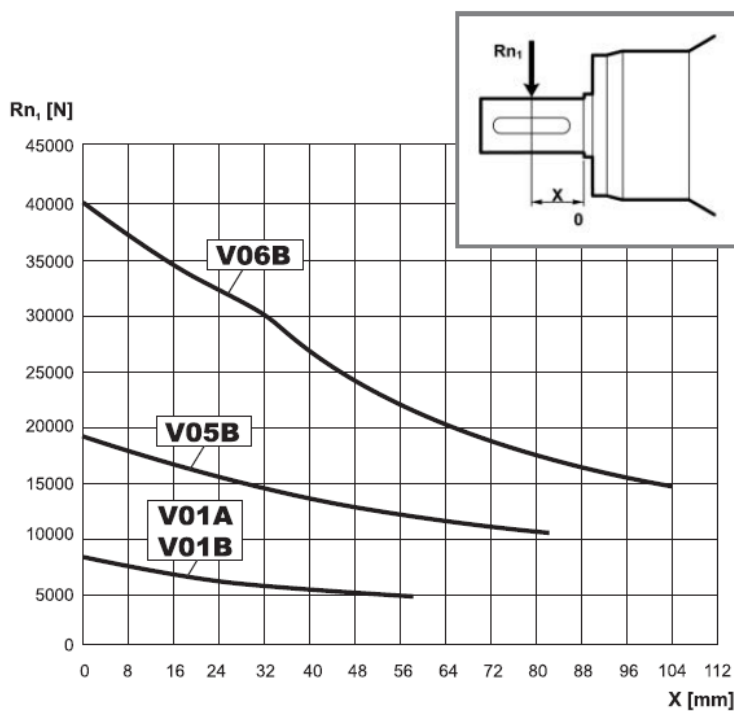
	Rn ₂	An ₂ (+/-)
FZ	35000	35000

Load correction factor f_{h2} on shafts فاکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$						
	10000	25000	50000	100000	500000	1000000	
f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27	0.21
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25

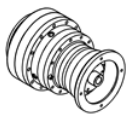


Permissible radial loads on input shaft with $F_{h1}: n1. h = 250000$

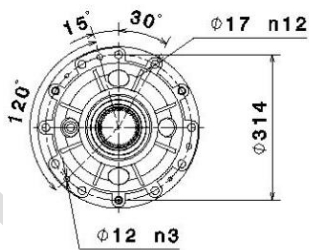
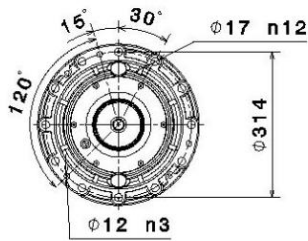
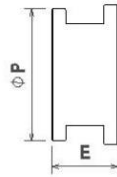
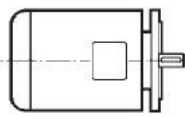
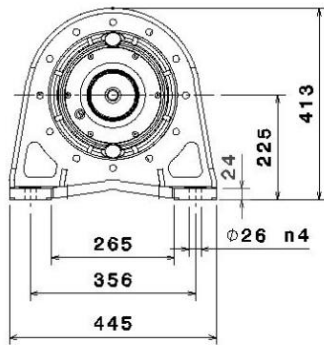
بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n1. h = 250000$



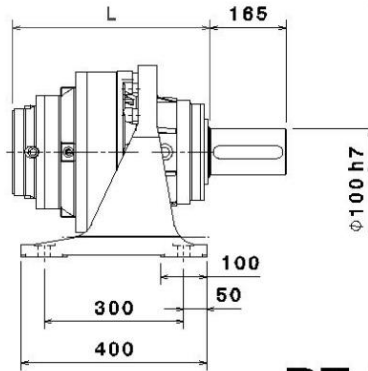
Load correction factor fh_1 on shafts فاکتور اصلاح بار fh_1 بر روی شافت	$F_{h1} = n1. h$	250000	500000	1000000	2000000	5000000	10000000
	fh_1	1	0.79	0.63	0.5	0.37	0.29



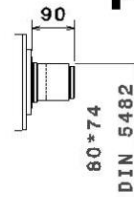
307 L



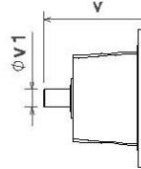
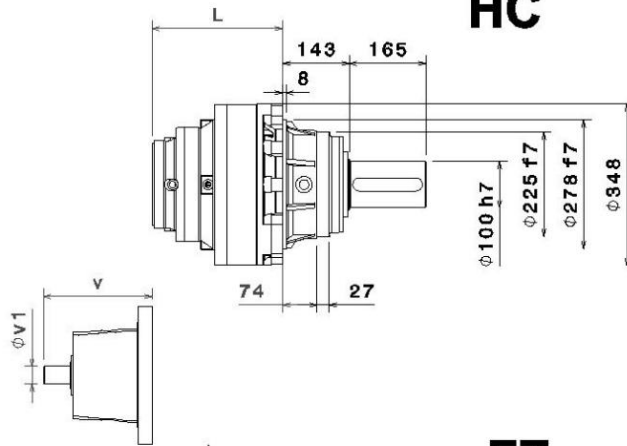
PC



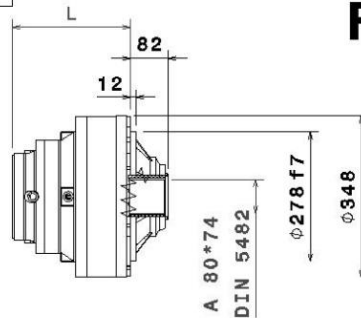
PZ-HZ



HC



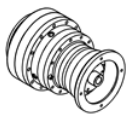
FZ



	L			Wight (kg)			V	V ₁	W(kg)	V	V ₁	W(kg)
	PC - PZ	HC - HZ	FZ	PC - PZ	HC - HZ	FZ						
307 L1	241	98	71	123	108	88	315	80	35	313	60	28
307 L2	333	190	163	135	120	100	239	48	15	-	-	-
307 L3	397	254	227	142	127	107	137.5	24	6	158	38	7
307 L4	450	307	280	146	131	111	137.5	24	6	158	38	7

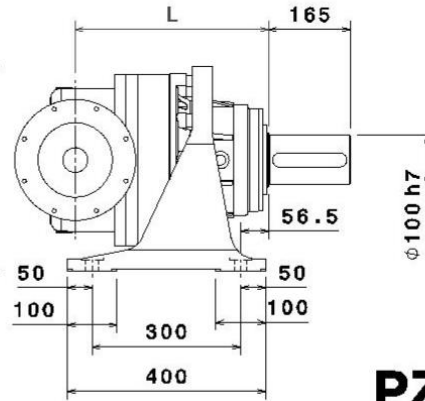
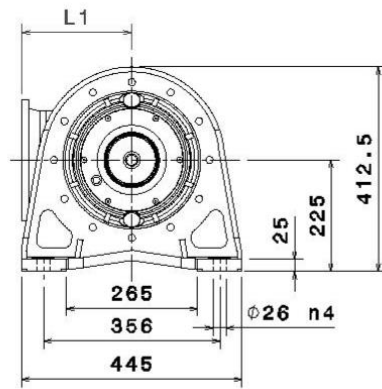
	P71		P80		P90		P100		P112		P132		P160		P180		P200		P225		P250	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
307 L1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	350	186	400	216	450	216	550
307 L2	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400	-	-	-	-
307 L3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-
307 L4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-



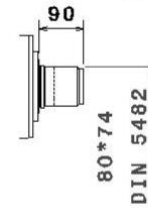
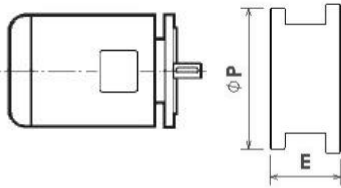


307 R

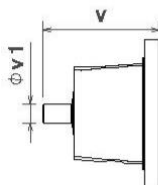
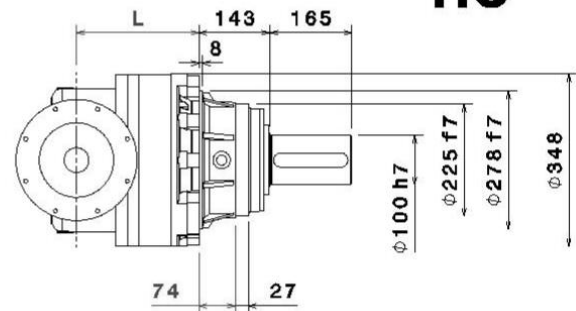
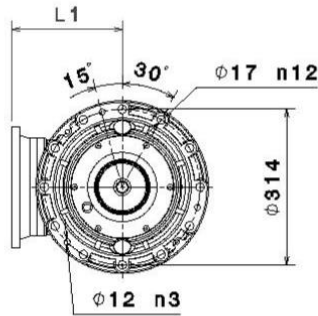
PC



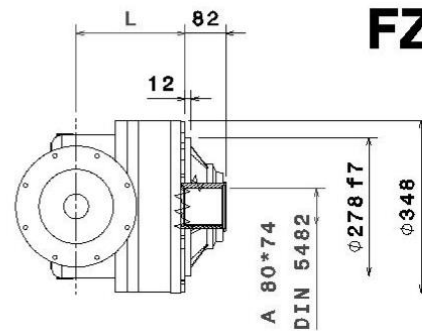
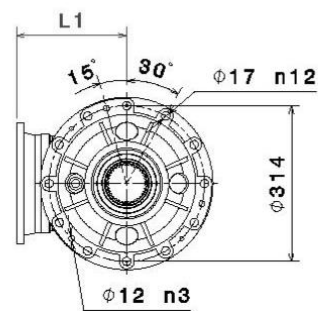
PZ-HZ



HC



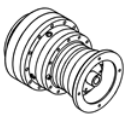
FZ



	L			L1	Wight (kg)			V	V1	(kg)	V	V1	(kg)
	PC - PZ	HC - HZ	FZ		PC - PZ	HC - HZ	FZ						
307 R2	367	224	197	225	173	158	138	239	48	15	-	-	-
307 R3	467	286	259	140	155	140	120	137.5	24	6	158	38	7
307 R4	493	350	323	122	156	141	121	137.5	24	6	158	38	7

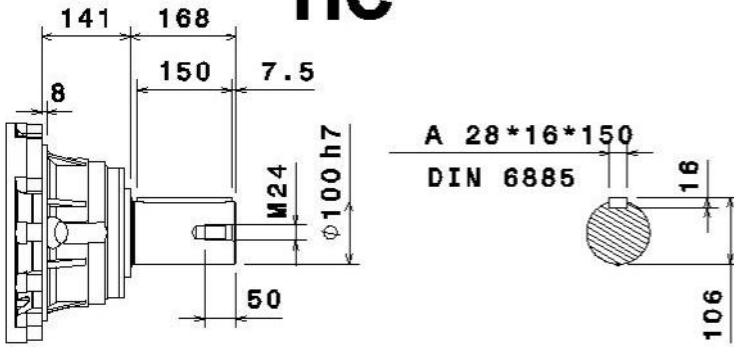
	P71		P80		P90		P100		P112		P132		P160		P180		P200	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
307 R2	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400
307 R3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
307 R4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-



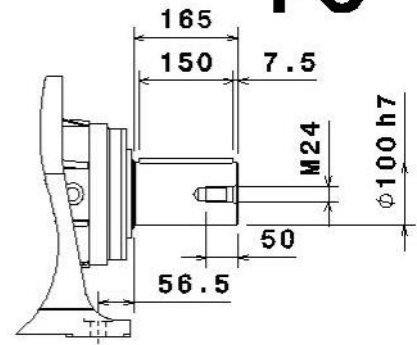


307 L - 307 R

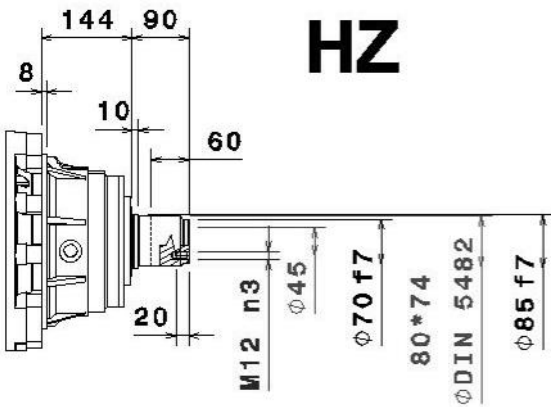
HC



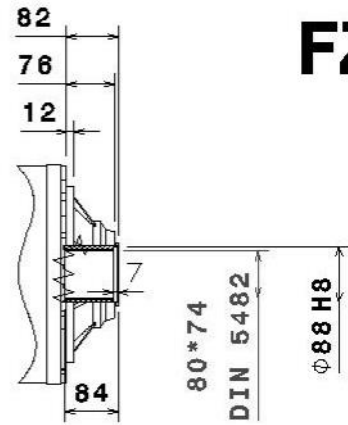
PC



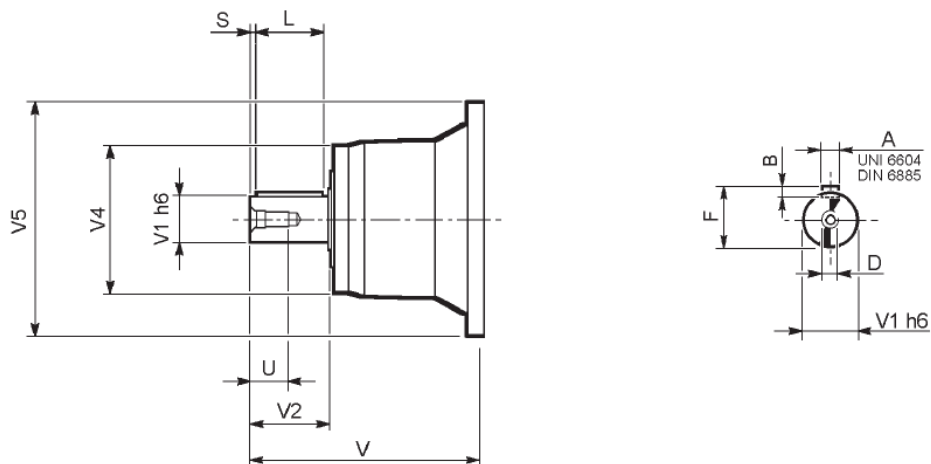
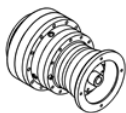
HZ



FZ



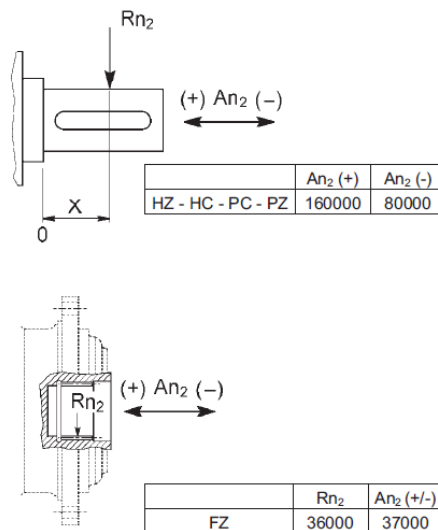
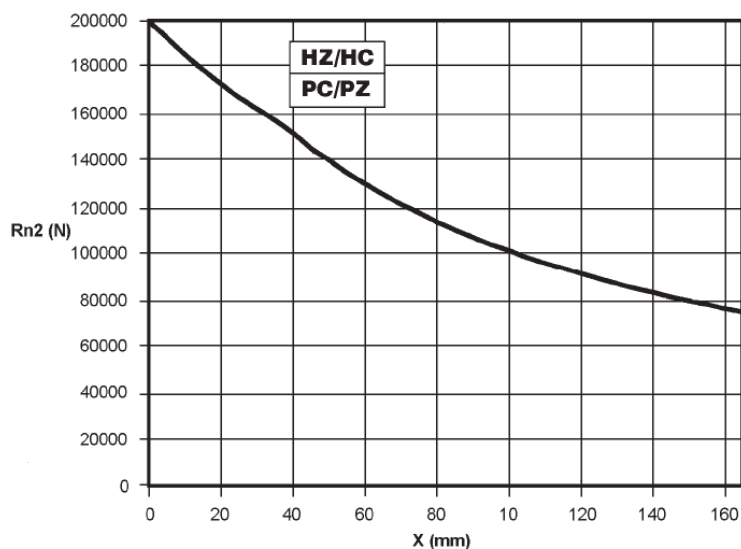
TOOL



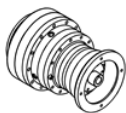
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
307 L1	V07B	315	80	130	200	345	22	14	85	110	10	M16	36
	V07A	313	60	105	155	345	18	11	64	90	7.5	M16	36
307 L2	V05B	239	48	82	155	245	14	9	51.5	70	6	M16	36
307 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
307 L4	V01A	137.5	24	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
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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000 \cdot F_{h2}: n_2 \cdot h = 10$

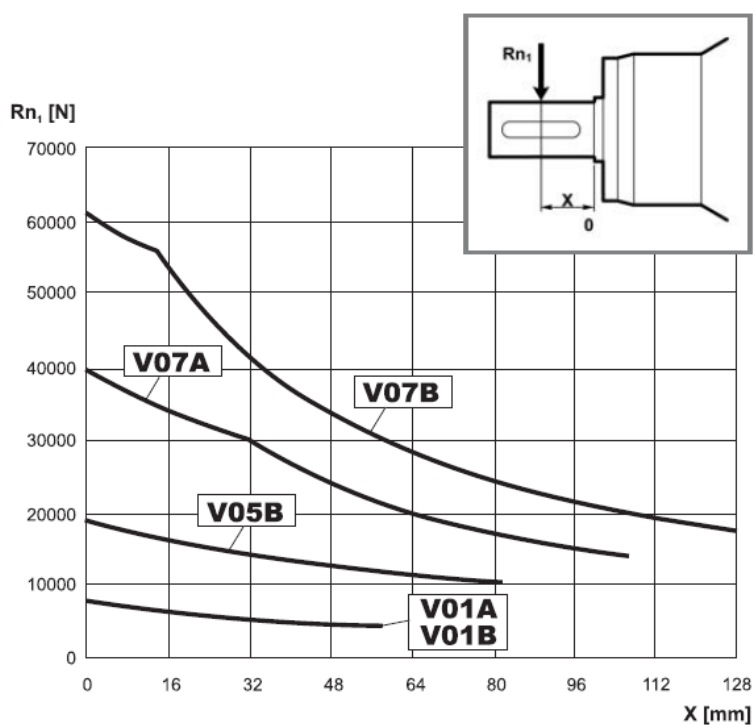


Load correction factor f_{h2} on shafts فکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$						
		10000	25000	50000	100000	500000	1000000
f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27	0.21
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25

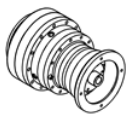


Permissible radial loads on input shaft with $F_{h1}: n_1 \cdot h = 250000$

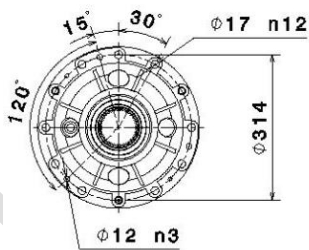
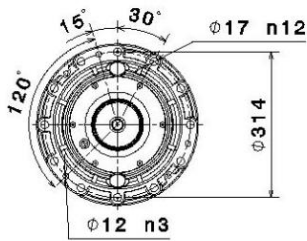
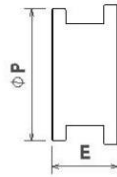
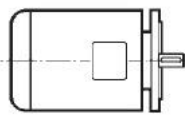
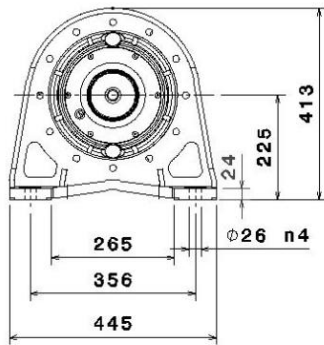
بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n_1 \cdot h = 250000$



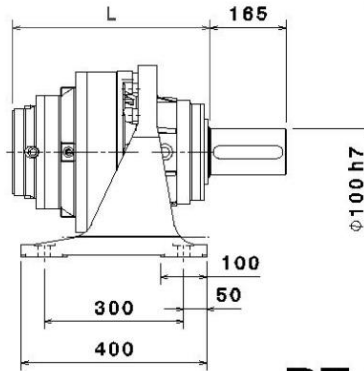
Load correction factor f_{h1} on shafts فاکتور اصلاح بار f_{h1} بر روی شافت	$F_{h1} = n_1 \cdot h$	250000	500000	1000000	2000000	5000000	10000000
	f_{h1}		1	0.79	0.63	0.5	0.37



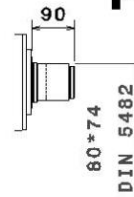
309 L



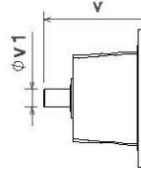
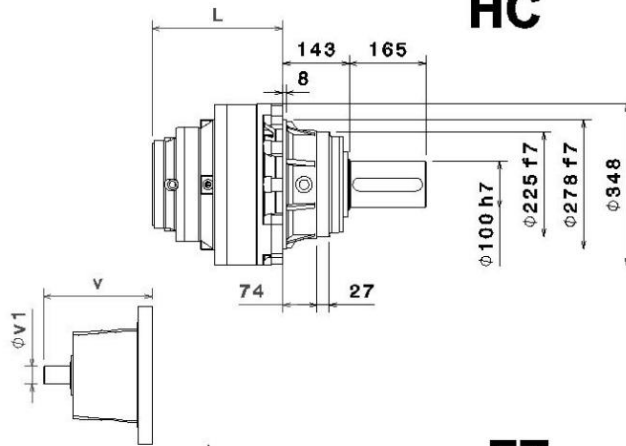
PC



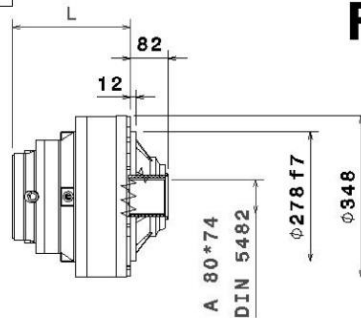
PZ-HZ



HC



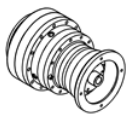
FZ



	L			Wight (kg)			V	V ₁	W(kg)	V	V ₁	W(kg)
	PC - PZ	HC - HZ	FZ	PC - PZ	HC - HZ	FP - FZ						
309 L1	267	122	96	130	115	95	315	80	35	313	60	28
309 L2	356	215	188	142	127	107	239	48	15	-	-	-
309 L3	421	278	252	149	134	114	137.5	24	6	158	38	7
309 L4	474	331	305	153	138	118	137.5	24	6	158	38	7

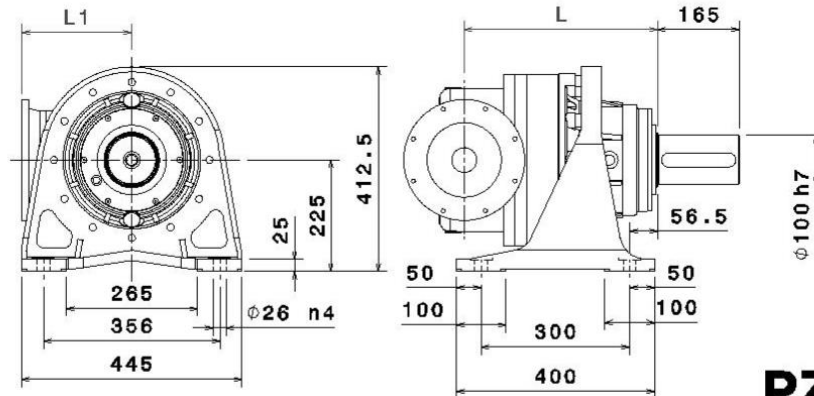
	P71		P80		P90		P100		P112		P132		P160		P180		P200		P225		P250	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
309 L1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	195	350	186	400	216	450	216	550
309 L2	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400	-	-	-	-
309 L3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-
309 L4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-	-	-	-	-



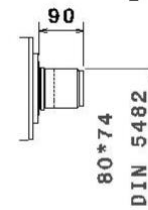
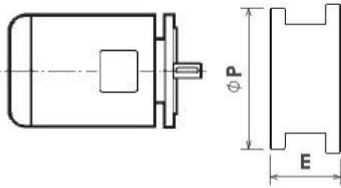


309 R

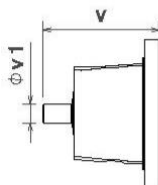
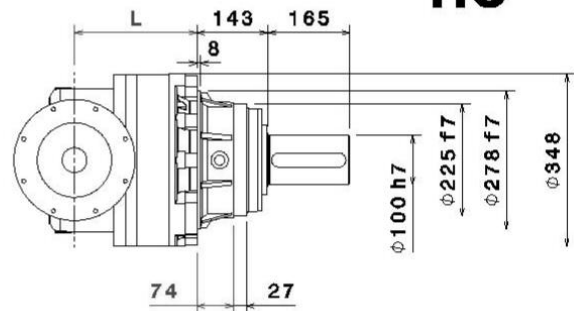
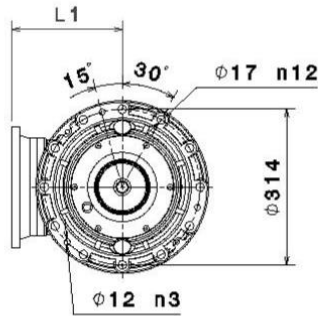
PC



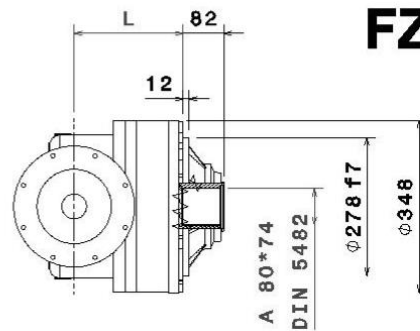
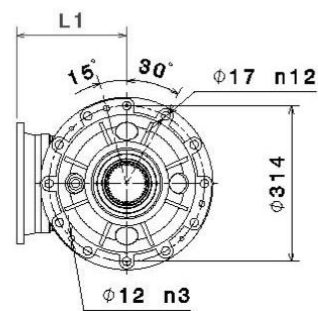
PZ-HZ



HC



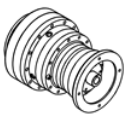
FZ



	L			L1	Wight (kg)			V	V1	(kg)	V	V1	(kg)
	PC - PZ	HC - HZ	FZ		PC - PZ	HC - HZ	FZ						
309 R2	390	247	220	225	180	165	145	239	48	15	-	-	-
309 R3	452	309	282	140	162	147	127	137.5	24	6	158	38	7
309 R4	516	373	346	122	163	148	128	137.5	24	6	158	38	7

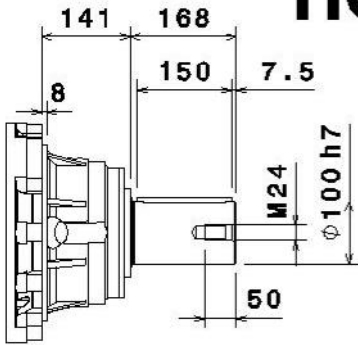
	P71		P80		P90		P100		P112		P132		P160		P180		P200	
	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
309 R2	-	-	-	-	-	-	-	-	-	-	174	300	204	350	206	350	236	400
309 R3	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-
309 R4	106	160	126	200	126	200	136	250	136	250	183	300	183	350	-	-	-	-



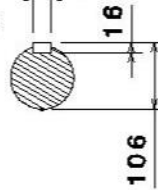


309 L - 309 R

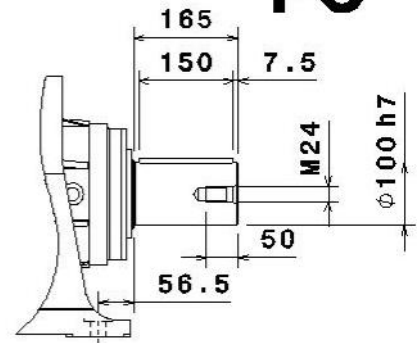
HC



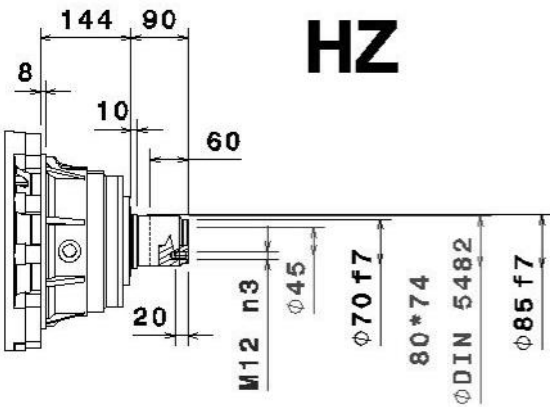
A 28*16*150
DIN 6885



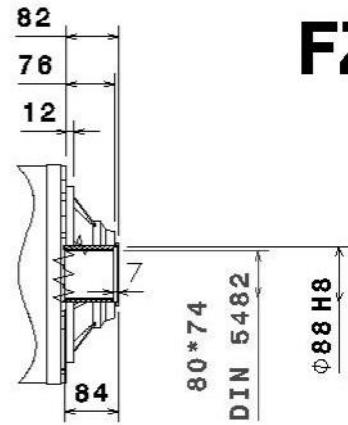
PC



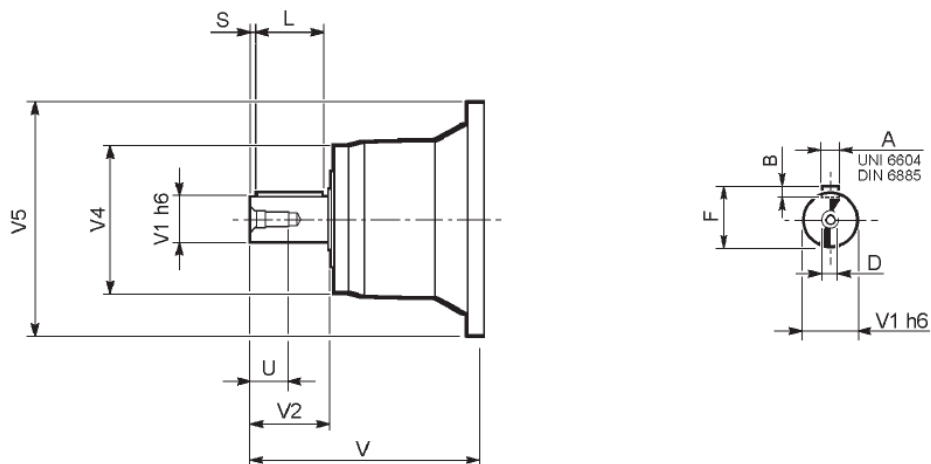
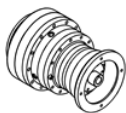
HZ



FZ



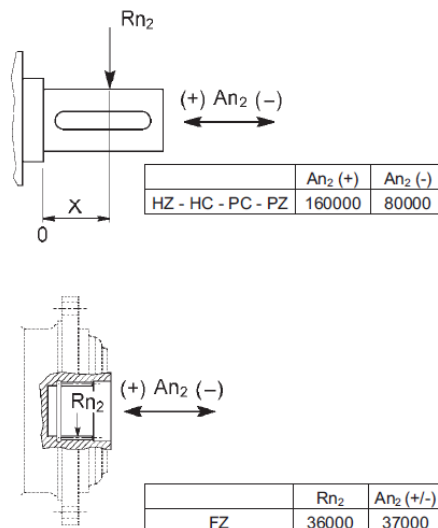
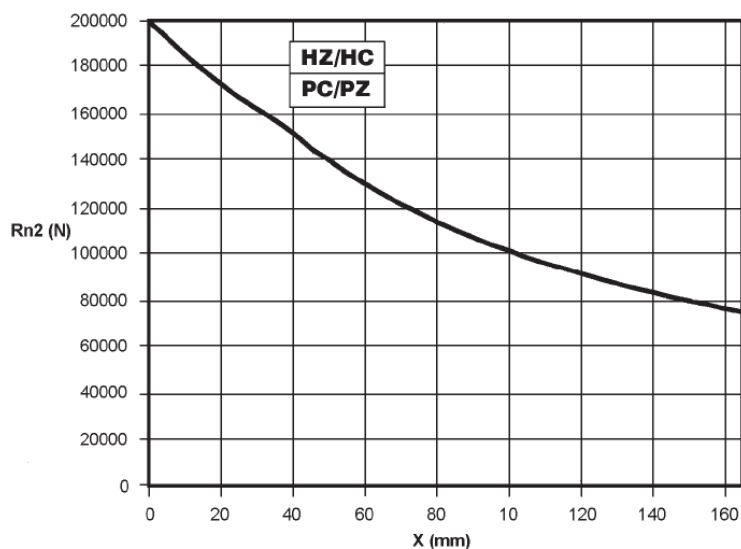
TOOL



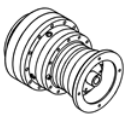
	input	V	V1	V2	V4	V5	A	B	F	L	S	D	U
309 L1	V07B	315	80	130	200	345	22	14	85	110	10	M16	36
	V07A	313	60	105	155	345	18	11	64	90	7.5	M16	36
309 L2	V05B	239	48	82	155	245	14	9	51.5	70	6	M16	36
309 L3	V01A	137.5	24	36	120	186	8	7	27	30	3	M8	19
	V01B	158	38	58	120	186	10	8	41	50	4	M12	28
309 L4	V01A	137.5	24	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
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

Permissible radial and axial loads on output shaft with $F_{h2}: n_2 \cdot h = 10,000$

بارهای شعاعی و محوری مجاز بر روی شافت خروجی با $000 \cdot F_{h2}: n_2 \cdot h = 10$

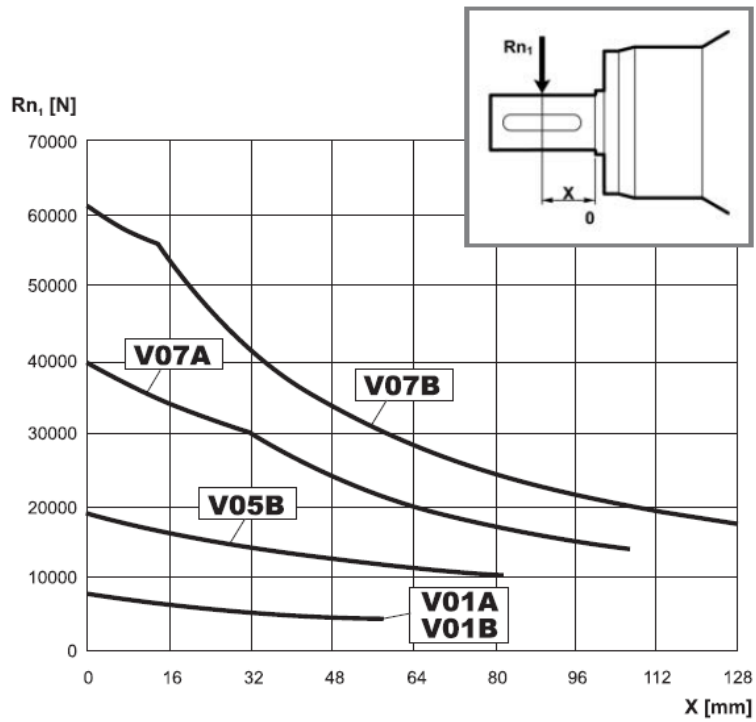


Load correction factor f_{h2} on shafts فکتور اصلاح بار f_{h2} بر روی شافت	$F_{h2} = n_2 \cdot h$						
		10000	25000	50000	100000	500000	1000000
f_{h2}	MZ - MC - FZ	1	0.74	0.58	0.46	0.27	0.21
	HZ - HC - PC - PZ	1	0.76	0.61	0.5	0.31	0.25



Permissible radial loads on input shaft with $F_{h1}: n1 \cdot h = 250000$

بارهای شعاعی مجاز بر روی شفت ورودی با $F_{h1}: n1 \cdot h = 250000$



Load correction factor f_{h1} on shafts فاکتور اصلاح بار f_{h1} بر روی شافت	$F_{h1} = n1 \cdot h$	250000	500000	1000000	2000000	5000000	10000000
	f_{h1}	1	0.79	0.63	0.5	0.37	0.29



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