

Industrial applications

300





INFORMAZIONI GENERALI
GENERAL INFORMATION
ALLGEMEINE INFORMATIONEN
INFORMATIONS GENERALES

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SERIES 300 MODULAR PLANETARY GEARBOXES
PLANETENGETRIEBEN DER SERIE 300
REDUCTEURS EPICYCLOIDaux MODULAIRE SERIE 300

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MOTORI ELETTRICI
ELECTRIC MOTORS
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Revisioni
L'indice di revisione del catalogo è riportato a pag. 404.
Al sito www.bonfiglioli.com sono disponibili i cataloghi con le revisioni aggiornate.

Revisions
Refer to page 404 for the catalogue revision index.
Visit www.bonfiglioli.com to search for catalogues with up-to-date revisions.

Änderungen
Das Revisionsverzeichnis des Katalogs wird auf Seite 404 wiedergegeben. Auf unserer Website www.bonfiglioli.com werden die Kataloge in ihrer letzten, überarbeiteten Version angeboten.

Révisions
Le sommaire de révision du catalogue est indiqué à la page 404.
Sur le site www.bonfiglioli.com des catalogues avec les dernières révisions sont disponibles.



1.0 - CARATTERISTICHE

La serie 300 è una gamma di riduttori epicicloidali multimpiego.

Caratteristiche salienti sono:

- 16 grandezze di costruzione modulare
- configurazione:
 - in linea, da 1 a 4 stadi di riduzione
 - angolare (primo stadio con coppia conica Gleason) da 2 a 4 stadi
- combinazioni con:
 - riduttori a vite senza fine
 - riduttori ad assi ortogonali
- esecuzioni per montaggio con flangia, con piede, pendolare
- alberi lenti: con linguetta, scanalati, scanalati femmina, cavi per montaggio tramite giunto calettatore
- predisposizioni motore per:
 - motori elettrici normalizzati IEC
 - motori compatti per le esecuzioni in linea fino alla grandezza 307
- albero cilindrico in entrata
- motoriduttori
- accessori per albero lento:
 - flangie
 - pignoni
 - barre scanalate
 - giunti ad attrito

1.0 - SPECIFICATIONS

The 300 series consists of a range of multi-purpose planetary gearboxes.

Key features are:

- 16 frame sizes of modular design
- versions:
 - in-line with 1 to 4 reductions
 - right angle (spiral bevel gear set into first stage) with 2 to 4 reductions
- combinations with:
 - worm gear units
 - bevel-helical gear units
- flange, foot and shaft mounting arrangements
- keyed output shaft, splined male shaft, splined hollow shaft, hollow shaft with shrink disc
- input adaptors for:
 - IEC-normalised electric motors
 - integral motor for in-line units up to size 307 and for units combined with bevel helical and worm gears
- parallel input shafts
- gearmotors
- mounting accessories:
 - flanges
 - pinions
 - splined bars
 - shrink discs

1.0 - KONSTRUKTIONSMERKMALE

Die Serie 300 ist eine Reihe an vielseitig einsetzbaren Planetengetrieben.

Ihre Gundmerkmale sind:

- 16 Baugrößen Modularbauweise
- Ausführung:
 - In Reihenanzordnung mit 1 bis 4 Stufen
 - auf Winkel (erste Stufe mit Kegelradpaarung realisiert) In Winkelanzordnung (erste Stufe mit Kegelradpaar) mit 2 bis 4 Stufen
- Kombiniert mit:
 - Schneckengetrieben
 - Kegelradgetrieben
- Abtriebsversionen für Montage mit Flansch, mit Fuß, in Aufsteckversion
- Abtriebswellen: mit Passfeder, Vielkeil, Vielkeilhohlwelle, zylindrischer Hohlwelle für Schrumpfscheibenmontage
- Vorbereitet für:
 - Elektromotoren, gemäß IEC Form B5
 - kompakte Elektromotoren für Reihenanzordnung bis zur Größe 307 und für mit Kegelradgetrieben kombinierte Ausführungen
- Schnelle Wellen am Antrieb
- Getriebemotoren
- Zubehör für Abtriebswellen:
 - Flanschen
 - Ritzel
 - Keilstäbe
 - Schrumpfscheiben

1.0 - CARACTERISTIQUES

La série 300 est une gamme de réducteurs épicycloïdaux polyvalents.

Ses principales caractéristiques sont :





- 16 tailles de construction modulaire
- exécutions:
 - en ligne de 1 à 4 étages de réduction
 - angulaire (premier étage réalisé avec un couple conique Gleason) de 2 à 4 étages de réduction
- Associés à :
 - réducteurs à vis sans fin
 - réducteurs à axes orthogonaux
- versions pour assemblage par bride, à pattes, ou pendulaire
- arbres de sortie clavetés; mâles cannelés; femelles cannelés; creux cylindriques pour assemblage avec frette de serrage
- prédispositions d'entrée pour:
 - moteurs électriques, selon CEI
 - moteurs électriques compacts pour les exécutions en ligne jusqu'à la taille 307
- arbres rapides d'entrée
- motoréducteurs
- accessoires pour arbre de sortie:
 - brides
 - pignons
 - barres cannelées
 - frettes de serrage

ESECUZIONI

CONFIGURATIONS

AUSFÜHRUNGEN

EXECUTIONS

Esecuzione / Configuration Ausführung / Execution	Potenza Power Leistung Puissance	Coppia Torque Drehmomente Couple	Rapporti Ratios Übersetzungen Rapports	Rendimento Efficiency Wirkungsgrad Rendement	Rumorosità Noise level Geräuschpegel Niveau de bruit
 In linea In line Linear Coaxiale	$0.25 \leq P_n \text{ [kW]} \leq 20$	$M_n \leq 520000 \text{ Nm}$	$3.4 \leq i \leq 290$	Elevato High Hoch Elevé	Media Medium Mittel Moyen
 Angolare Right-angle Rechtwinklig A renvoi d'angle	$0.25 \leq P_n \text{ [kW]} \leq 7$	$M_n \leq 400000 \text{ Nm}$	$7 \leq i \leq 95$	Elevato High Hoch Elevé	Media Medium Mittel Moyen
 Combinato con riduttore vite senza fine Combined with worm gear unit Kombiniert mit Schneckengetriebe Combinée avec réducteur à vis sans fin	$0.12 \leq P_n \text{ [kW]} \leq 7$	$M_n \leq 520000 \text{ Nm}$	$370 \leq i \leq 5150$	Media Medium Mittel Moyen	Bassa Low Niedrig Faible
 Combinato con riduttore ad assi ortogonali Combined with helical bevel gear unit Kombiniert mit Kegelradgetriebe Combinée avec réducteur à axes orthogonaux	$0.12 \leq P_n \text{ [kW]} \leq 3$	$M_n \leq 11100 \text{ Nm}$	$19 \leq i \leq 73$	Elevato High Hoch Elevé	Bassa Low Niedrig Faible



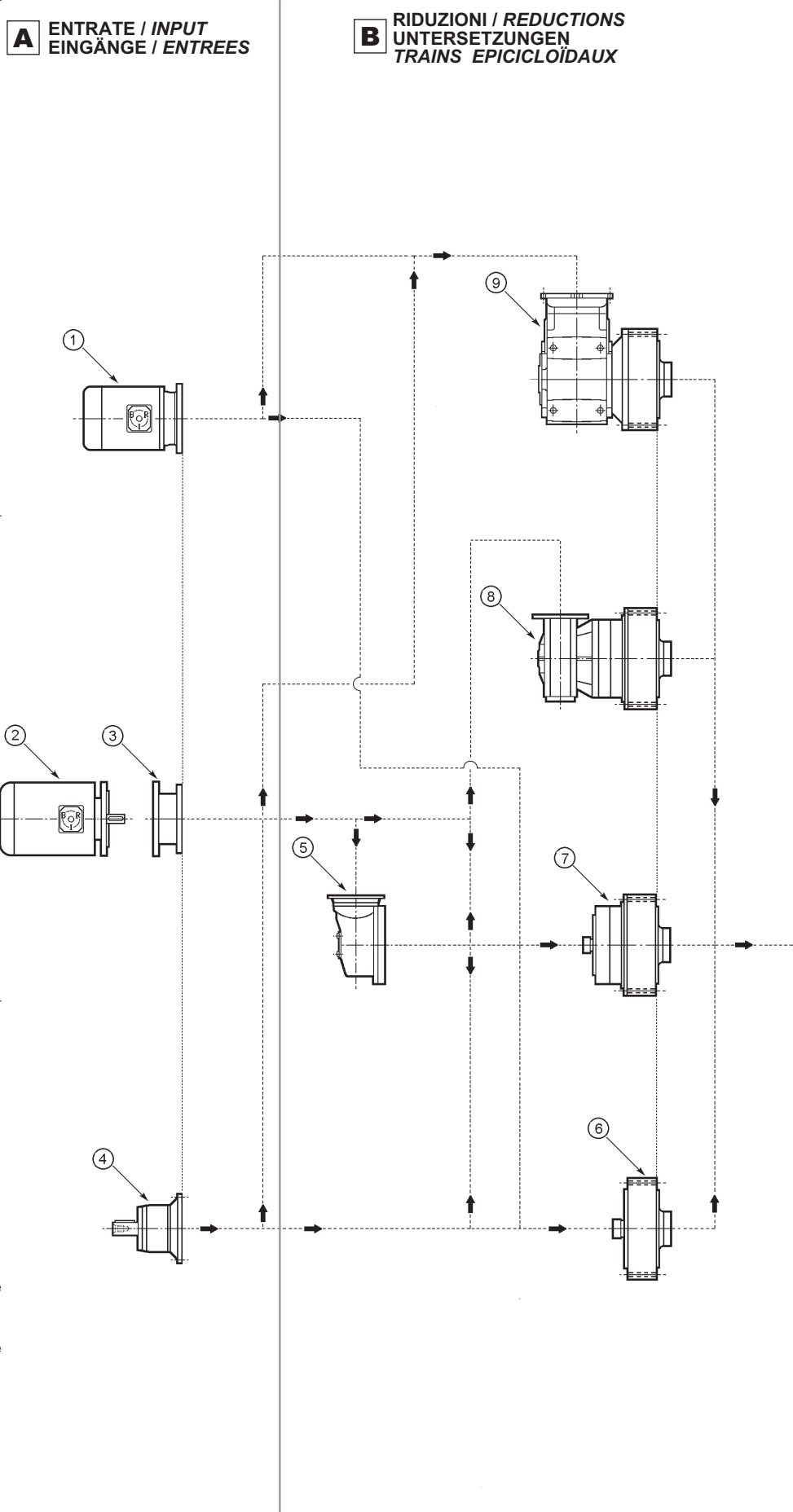
Altre caratteristiche costruttive sono:	<i>More design features:</i>	Andere Konstruktionsmerkmale lassen sich folgendermaßen zusammenfassen:	<i>D'autres caractéristiques de construction sont :</i>
– elevata densità di coppia	– <i>high torque density</i>	– hohes übertragbares Drehmoment/ Verhältnis zu den Aussenmaßen	– <i>apport de couple transmissible/dimensions d'encombrement, élevé</i>
– elevata supportazione radiale e assiale grazie all'utilizzo, sulle versioni H e P, di cuscinetti a rulli conici	– <i>high overhung and axial load capacity due to heavy duty tapered roller bearings featured on H and P versions</i>	– hohe Belastungskapazität für Radial- und Axialkräfte an den Abtriebswellen, dank des Einsatzes von Kegelrollenlager bei den Versionen H und P.	– <i>capacité élevée à supporter les charges radiales et axiales, grâce à l'utilisation, sur les versions H et P, de roulements à rouleaux coniques</i>
– rendimento elevato	– <i>high efficiency</i>	– hohe Wirkungsgrade	– <i>rendement élevé</i>
– collegamenti fra gli organi interni tramite profili scanalati, non tramite linguette	– <i>inner parts are coupled through splined connections rather than keys</i>	– Verbindungen zwischen den inneren Organen mittels Nutprofilen, es werden keine Passfedern verwendet	– <i>raccordements entre les organes intérieurs par le biais de profils cannelés, et non pas de clavettes</i>
– stadi di riduzione con porta-planetari flottanti per la ottimale ripartizione dei carichi fra gli ingranaggi planetari	– <i>planetary gears mounted onto self-centering carriers to ensure the most even load distribution among planetary gears</i>	– Untersetzungsstufen mit schwimmenden Planetenradträgern zur Belastungsverteilung auf die Planetenräder	– <i>étages de réduction avec porte-planétaires flottants pour obtenir une meilleure répartition des charges dans le train d'engrenages épicycloïdaux</i>
– carcasse in ghisa sferoidale.	– <i>housing from ductile cast iron.</i>	– Gehäuse aus Sphäroguss.	– <i>carter en fonte G.S.</i>

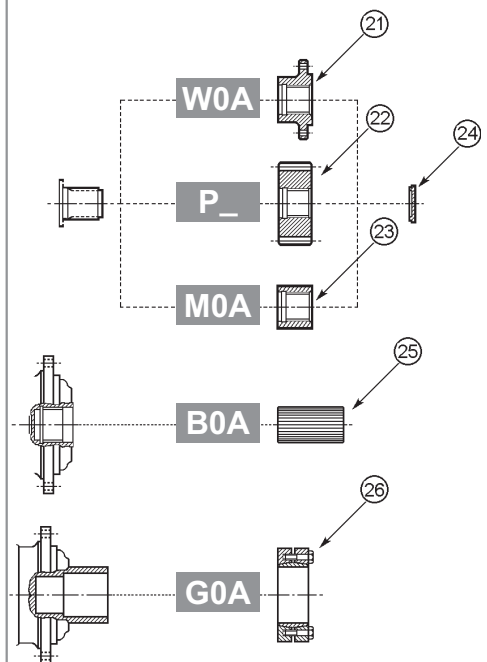
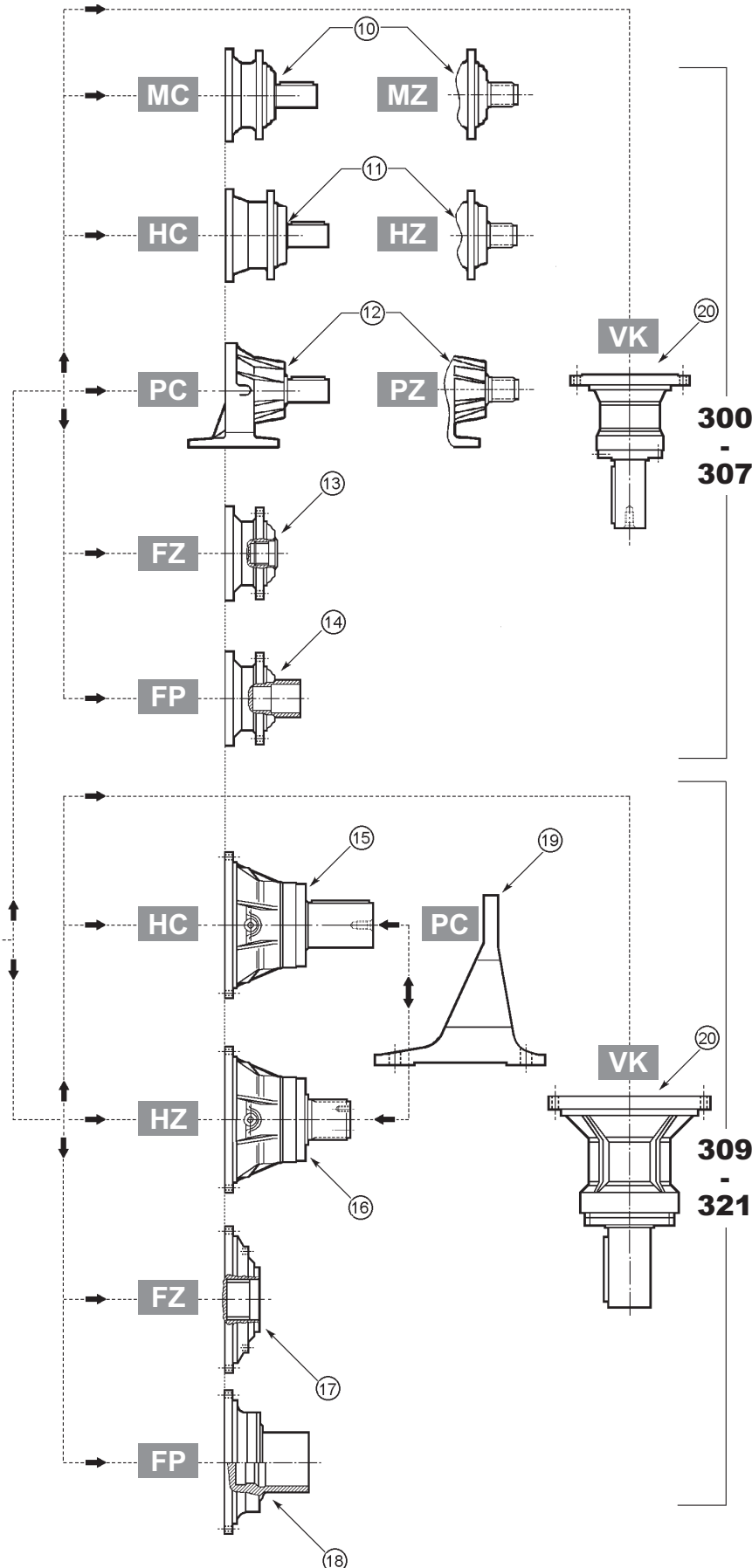
**2.0 - FORME COSTRUTTIVE****2.0 - VERSIONS****2.0 - BAUFORMEN****2.0 - FORMES DE CONSTRUCTION**

- A** 1 Motore elettrico compatto
- 2 Motore elettrico IEC
- 3 Predisposizione motore elettrico
- 4 Albero veloce
- 5 Stadio riduzione angolare
- 6 Uno stadio di riduzione epicicloidale
- B** 7 Due o più stadi di riduzione epicicloidale
- 8 Stadio di riduzione epicicloidale combinato con riduttore a vite senza fine
- 9 Stadio di riduzione epicicloidale combinato con riduttore ad assi ortogonali
- 10 **MC/MZ** - Uscita albero maschio cilindrico o scanalato
- 11 **HC/HZ** - Uscita rinforzata albero maschio cilindrico o scanalato
- 12 **PC/PZ** - Uscita con piede di supporto ed albero maschio cilindrico o scanalato
- C** 13 **FZ** - Uscita albero femmina scanalato
- 14 **FP** - Uscita albero femmina per giunto ad attrito
- 15 **HC** - Uscita albero maschio cilindrico
- 16 **HZ** - Uscita albero maschio scanalato
- 17 **FZ** - Uscita albero femmina scanalato
- 18 **FP** - Uscita albero femmina per giunto ad attrito
- 19 **PC** - Piede di supporto
- 20 **VK** - Uscita rinforzata con albero cilindrico per agitatori / miscelatori
- 21 **W0A** - Flangia
- 22 **P** - Pignone
- 23 **M0A** - Manicotto liscio
- D** 24 Fondello d'arresto
- 25 **B0A** - Barra scanalata
- 26 **G0A** - Giunto ad attrito

- A** 1 Compact electric motor
- 2 IEC electric motor
- 3 Adapter for electric motor
- 4 Solid input shaft
- 5 Right-angle reduction stage
- 6 Single planetary reduction stage
- B** 7 Two or more planetary reduction stages
- 8 Planetary reduction combined with worm gear unit
- 9 Planetary reduction stage combined with helical bevel gear unit
- 10 **MC/MZ** - Keyed or splined solid shaft output
- 11 **HC/HZ** - Keyed or splined heavy duty solid output shaft
- 12 **PC/PZ** - Output with support bracket and keyed or splined solid shaft
- C** 13 **FZ** - Splined hollow output shaft
- 14 **FP** - Hollow output shaft for shrink disc
- 15 **HC** - Parallel solid output shaft
- 16 **HZ** - Splined solid output shaft
- 17 **FZ** - Splined hollow output shaft
- 18 **FP** - Hollow output shaft for shrink disc
- 19 **PC** - Foot mount
- 20 **VK** - Reinforced output with parallel shaft for stirrers and mixers
- 21 **W0A** - Flange
- 22 **P** - Pinion
- 23 **M0A** - Sleeve coupling
- D** 24 End plate
- 25 **B0A** - Splined bar
- 26 **G0A** - Shrink disc

- A** 1 Kompakter Elektromotor
- 2 IEC-Elektromotor
- 3 Vorbereitung für Elektromotor
- 4 Antriebswelle
- 5 Winkelübersetzungsstufe
- 6 Eine Planetenübersetzungsstufe
- B** 7 Zwei oder mehr Planetenübersetzungsstufen
- 8 Planetenübersetzungsstufe kombiniert mit Schneckengetriebe
- 9 Planetenübersetzungsstufe kombiniert mit Kegelradgetriebe
- 10 **MC/MZ** - Abtrieb an Einsteckwelle oder Keilwelle
- 11 **HC/HZ** - Abtrieb an Einsteckwelle oder Verstärkter Abtrieb
- 12 **PC/PZ** - Abtrieb mit Stützfuß und Einsteckwelle oder Keilwelle
- C** 13 **FZ** - Abtrieb mit Keilaufsteckwelle
- 14 **FP** - Abtrieb mit Aufsteckwelle für Schrumpfscheibe
- 15 **HC** - Abtrieb mit zylindrischer Einsteckwelle
- 16 **HZ** - Abtrieb mit Keileinsteckwelle
- 17 **FZ** - Abtrieb mit Keilaufsteckwelle
- 18 **FP** - Abtrieb mit Aufsteckwelle für Schrumpfscheibe
- 19 **PC** - Stützfuß
- 20 **VK** - Verstärkter Abtrieb mit zylindrischer Welle für Rührwerke und Mischer
- 21 **W0A** - Flansch
- 22 **P** - Ritzel
- 23 **M0A** - Nabe
- D** 24 Bodenklemmscheibe
- 25 **B0A** - Keilvollwelle
- 26 **G0A** - Schrumpfscheibe



**C** USCITE / OUTPUT
ABTRIEB / SORTIES**D** ACCESSORI / FITTINGS
ZUBEHÖR / ACCESSOIRES

- A**
- 1 Motore elettrico compact
 - 2 Motore elettrico IEC
 - 3 Preriduzione motore elettrico
 - 4 Arbre rapide
 - 5 Etage de réduction angulaire
 - 6 Un étage de réduction épicycloïdal
 - 7 Deux ou plusieurs étages de réduction épicycloïdaux
- B**
- 8 Etage de réduction épicycloïdal combiné avec réducteur à vis sans fin
 - 9 Etage de réduction épicycloïdal combiné avec réducteur à axes orthogonaux
- C**
- 10 MC/MZ - Sortie arbre mâle cylindrique ou cannelé
 - 11 HC/HZ - Sortie renforcés arbre mâle cylindrique ou cannelé
 - 12 PC/PZ - Sortie avec pied de support et arbre mâle cylindrique ou cannelé
 - 13 FZ - Sortie arbre femelle cannelé
 - 14 FP - Sortie arbre femelle joint à frottement
 - 15 HC - Sortie arbre mâle cylindrique
 - 16 HZ - Sortie arbre mâle cannelé
 - 17 FZ - Sortie arbre femelle cannelé
 - 18 FP - Sortie arbre femelle joint à frottement
 - 19 PC - Patte de support
 - 20 VK - Sortie renforcée avec arbre cylindrique pour agitateurs et mélangeurs
- D**
- 21 W0A - Bride
 - 22 P - Pignon
 - 23 M0A - Manchon lisse
 - 24 Fond de butée
 - 25 B0A - Barre cannelée
 - 26 G0A - Joint à frottement


**3.0 - SIMBOLOGIA E UNITÀ
DI MISURA**
**3.0 - SYMBOLS AND UNITS
OF MEASURE**
**3.0 - SYMBOLE UND
MAßEINHEITEN**
**3.0 - SYMBOLES ET UNITES
DE MESURE**

Simb. Symb.		Descrizione	Description	Beschreibung	Description
A_{c2}	[N]	Carico assiale di calcolo in uscita riduttore	<i>Calculated thrust load at gearbox output shaft</i>	Soll-Axialkraft am Getriebeantrieb	<i>Charge axiale de calcul à la sortie du réducteur</i>
A_{r2}	[N]	Carico assiale in uscita riduttore	<i>Thrust load at gearbox output shaft</i>	Axialkräfte am Getriebeantrieb	<i>Charge axiale à la sortie du réducteur</i>
A_{n2}	[N]	Carico assiale nominale in uscita riduttore	<i>Rated thrust load at gearbox output shaft</i>	Nenn-Axialkraft am Getriebeantrieb	<i>Charge axiale nominale à la sortie du réducteur</i>
f_{a2}		Fattore di carico assiale	<i>Thrust load factor</i>	Axialkraftfaktor	<i>Facteur de charge axiale</i>
f_L		Fattore di durata	<i>Lifetime factor</i>	Lebensdauerfaktor	<i>Facteur de durée</i>
f_m		Fattore di maggiorazione	<i>Adjusting factor</i>	Überdimensionierungsfaktor	<i>Facteur de majoration</i>
f_{n1}, f_{n2}		Fattore di velocità per carichi su alberi entrata, uscita	<i>Speed factor referred to input and output shaft loading</i>	Drehzahlfaktor für auf Antriebs-/Abtriebswellen einwirkende Kräfte	<i>Facteur de vitesse pour charges sur arbres d'entrée, sortie</i>
f_s		Fattore di servizio	<i>Service factor</i>	Betriebsfaktor	<i>Facteur de service</i>
f_t		Fattore termico	<i>Thermal factor</i>	Wärmefaktor	<i>Facteur thermique</i>
f_v		Fattore di velocità per calcolo potenza termica	<i>Speed factor for thermal capacity calculation</i>	Drehzahlfaktor für Berechnung der Wärmeleistung	<i>Facteur de vitesse pour calcul de la puissance thermique</i>
f_{x1}, f_{x2}		Fattore di posizione carichi radiali su alberi entrata, uscita	<i>Load location factor for radial loading on input and output shaft</i>	Positionsfaktor für auf Antriebs-/Abtriebswellen einwirkende Radialkräfte	<i>Facteur de position charges radiales sur arbres d'entrée, sortie</i>
h	[h]	Durata in ore	<i>Lifetime in hours</i>	Dauer in Stunden	<i>Durée en heures</i>
i		Rapporto di riduzione	<i>Gear ratio</i>	Übersetzung	<i>Rapport de réduction</i>
K_a		Fattore di sollecitazione carico assiale	<i>Axial load duty factor</i>	Belastungsfaktor der Axialkraft	<i>Facteur de service de charge axiale</i>
K_r		Fattore di sollecitazione del carico radiale	<i>Radial load factor</i>	Belastungsfaktor der Radialkraft	<i>Facteur de sollicitation de la charge radiale</i>
I		Rapporto di intermittenza	<i>Intermittence factor</i>	Einschaltdauer	<i>Rapport d'intermittence</i>
M_b	[Nm]	Coppia nominale del freno	<i>Rated brake torque</i>	Nenn-Drehmoment der Bremse	<i>Couple nominal du frein</i>
M_{c2}	[Nm]	Coppia di calcolo in uscita riduttore	<i>Calculated output torque</i>	Soll-Drehmoment am Getriebeantrieb	<i>Couple de calcul de sortie réducteur</i>
M_2	[Nm]	Coppia trasmessa in uscita riduttore	<i>Torque delivered to output shaft</i>	Übertragenes Drehmoment am Getriebeantrieb	<i>Couple transmis en sortie réducteur</i>
M_{n2}	[Nm]	Coppia nominale in uscita riduttore	<i>Gearbox rated output torque</i>	Nenn-Drehmoment am Getriebeantrieb	<i>Couple nominal de sortie réducteur</i>
M_{2max}	[Nm]	Coppia massima in uscita riduttore	<i>Gearbox max. output torque</i>	Max. Drehmoment am Getriebeantrieb	<i>Couple max. de sortie réducteur</i>
M_{r1}	[Nm]	Coppia richiesta in entrata al riduttore	<i>Required torque at input shaft</i>	Erforderliches Drehmoment am Getriebeantrieb	<i>Couple nécessaire à l'entrée du réducteur</i>
M_{r2}	[Nm]	Coppia richiesta in uscita al riduttore	<i>Required torque at output shaft</i>	Erforderliches Drehmoment am Getriebeantrieb	<i>Couple requis à la sortie du réducteur</i>
n_1	[min ⁻¹]	Velocità angolare in entrata riduttore	<i>Speed of input shaft</i>	Winkeldrehzahl am Getriebeantrieb	<i>Vitesse angulaire à l'entrée du réducteur</i>
n_2	[min ⁻¹]	Velocità angolare in uscita riduttore	<i>Speed of output shaft</i>	Winkeldrehzahl an Getriebeantrieb	<i>Vitesse angulaire à la sortie du réducteur</i>
P_1	[kW]	Potenza max. trasmissibile in entrata riduttore	<i>Max. power that can be applied to input shaft</i>	Max. übertragbare Leistung an Getriebeantrieb	<i>Puissance maximum transmissible à l'entrée du réducteur</i>
P_2	[kW]	Potenza trasmessa in uscita riduttore	<i>Power delivered to output shaft</i>	Übertragene Leistung am Getriebeantrieb	<i>Puissance transmise à la sortie du réducteur</i>
P_n	[kW]	Potenza nominale motore	<i>Motor rated power</i>	Nennleistung des Motors	<i>Puissance nominale moteur</i>
P_1	[kW]	Potenza richiesta in entrata	<i>Required input power</i>	Erforderliche Leistung am Antrieb	<i>Puissance requise en entrée</i>
P_{r2}	[kW]	Potenza in uscita a n_2 max	<i>Output power at n_2 max</i>	Abtriebsleistung bei n_2 max	<i>Puissance en sortie à n_2 max</i>
P_s	[kW]	Potenza da smaltire	<i>Power to be dissipated</i>	Überleistung	<i>Puissance à éliminer</i>
P_t	[kW]	Potenza termica riduttore	<i>Gearbox thermal capacity</i>	Wärmeleistung des Getriebes	<i>Puissance thermique réducteur</i>
R_{c1}	[N]	Carico radiale (di calcolo) in entrata riduttore	<i>Calculated radial load at gearbox input shaft</i>	Radialkraft (Sollwert) am Getriebeantrieb	<i>Charge radiale de calcul à l'entrée du réducteur</i>
R_{c2}	[N]	Carico radiale (di calcolo) in uscita riduttore	<i>Calculated radial load at gearbox output shaft</i>	Radialkraft (Sollwert) am Getriebeantrieb	<i>Charge radiale de calcul à la sortie du réducteur</i>
R_{n1}, R_{n2}	[N]	Carico radiale nominale in mezzera alberi entrata, uscita	<i>Rated radial load at shaft mid-point, input and output</i>	Nenn-Radialkraft auf Mitte der Antriebs-/Abtriebswellen	<i>Charge radiale nominale à la moitié des arbres d'entrée, sortie</i>
R_{x2}	[N]	Carico radiale nominale in uscita riduttore ricalcolato rispetto a diversi punti di applicazione del carico	<i>Admissible overhung load for forces applying off the shaft midpoint</i>	Nachberechnete Nenn-Radialkraft am Getriebeantrieb in bezug auf verschiedene Kraftangriffspunkte	<i>Charge radiale nominale à la sortie du réducteur recalculée par rapport à différents points d'application de la charge</i>
S		Fattore di sicurezza	<i>Safety factor</i>	Sicherheitsfaktor	<i>Facteur de sécurité</i>
t_a	[°C]	Temperatura ambiente	<i>Ambient temperature</i>	Umgebungstemperatur	<i>Température ambiante</i>
X	[mm]	Distanza di applicazione del carico dallo spallamento albero	<i>Load application distance from shaft shoulder</i>	Abstand des Kraftangriffspunkte vom Wellenansatz	<i>Distance d'application de la charge par rapport à l'épaulement de l'arbre</i>
η_d		Rendimento dinamico	<i>Dynamic efficiency</i>	Dynamischer Wirkungsgrad	<i>Rendement dynamique</i>
Z		Frequenza di avviamento	<i>Starts per hour</i>	Anlaßfrequenz	<i>Frequence de démarrage</i>



Il simbolo identifica il peso.



Icon symbolises the weight.



Symbol für das Gewicht der Getriebe.



Symbole se référant aux poids du réducteur.



Le colonne contrassegnate da questo simbolo indicano i numeri di pagina dove sono riportate le dimensioni.



Columns marked with this symbol indicate the page installation drawings can be sorted from.



In den mit diesem Symbol gekennzeichneten Spalten werden die Seiten mit den entsprechenden Maßangaben aufgeführt.



Les colonnes portant ce symbole indiquent les numéros de page où sont mentionnées les dimensions.



Questo simbolo indica la pagina alla quale è rimandata l'informazione.



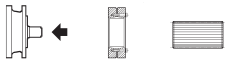
This symbol identifies the page the information is available at.



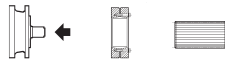
In diesem Symbol wird eine Nummer angegeben, die für die entsprechende Bezugsseite steht.



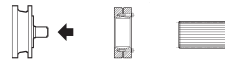
Cette image comporte un chiffre représentant le numéro de page de référence.



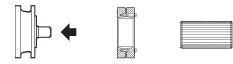
Questi simboli evidenziano il punto di montaggio degli accessori.



These symbols identify the side the accessories are mounted onto.



Durch diese Symbole werden die Montagepunkte für die Zubehörteile hervorgehoben.



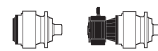
Ces images montrent la position de montage des accessoires.



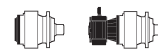
Le parti in nero di questi simboli evidenziano la collocazione delle entrate dei riduttori.



Areas marked in black show the input component parts.



Die schwarz hervorgehobenen Teile stellen die Seite des Getriebeantriebs dar.



Les parties noires de ces images montrent l'emplacement des entrées des réducteurs.



Il numero associato al simbolo della chiave indica la coppia di serraggio specificata dal costruttore.



The number associated with the wrench indicates the rated tightening torque.



Das an eine Nummer gebundene Schlüsselsymbol steht für den Anzugsmoment der Schrupfscheibenschraube.



Le nombre associée a l'image de la clé indique le couple de serrage des vis.



Esecuzione in linea.



In-line unit.



Reihenanzordnung.



Exécution coaxiale.



Esecuzione angolare.



Right-angle unit.



Winkelanordnung.



Exécution angulaire.



Esecuzione combinata con vite senza fine.



Worm-planetary combined design.



Mit Schneckengetriebe kombinierte Ausführung.



Exécution combinée avec vis sans fin.



Esecuzione combinata con riduttore ad assi ortogonali.



Bevel helical-planetary combined design.



Mit Kegelradgetriebe kombinierte Ausführung.



Exécution combinée avec réducteur à axes orthogonaux.



4.0 - COPPIA IN USCITA

4.0 - OUTPUT TORQUE

4.0 - ABTRIEBSMOMENT

4.0 - COUPLE EN SORTIE

4.1 Coppia motoriduttore M_2 [Nm]

È la coppia trasmessa in uscita dal motoriduttore con carico continuo uniforme e fattore di sicurezza **S** risultante dalle tabelle dati tecnici per una durata di 10000 h.

4.1 Gearmotor 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.*

4.1 Drehmoment des Getriebemotors M_2 [Nm]

Ist das an der Abtriebswelle des Getriebemotors übertragene Drehmoment bei gleichmäßiger Dauerbelastung und einem, aus den Tabellen der technischen Daten in bezug auf eine Dauer von 10000 Std. resultierenden Sicherheitsfaktor **S**.

4.1 Couple motoréducteur M_2 [Nm]

*C'est le couple transmis à la sortie du motoréducteur avec charge continue uniforme et facteur de sécurité **S**, voir tableaux données techniques, pour une durée de 10000 h.*

4.2 Coppia nominale riduttore M_{n2} [Nm]

È la coppia nominale trasmissibile dal riduttore con:

- carico uniforme e fattore di sicurezza **S**=1
- durata di calcolo di 10000 ore. I valori di M_{n2} sono verificati secondo i seguenti standard:

ISO DP 6336 per gli ingranaggi
ISO 281 per i cuscinetti.

4.2 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
- 10000 hours theoretical lifetime

M_{n2} values are in compliance with following standards:

ISO DP 6336 for gears
ISO 281 for bearings.

4.2 Nenn-Drehmoment des Getriebes M_{n2} [Nm]

Ist das vom Getriebe am Abtrieb übertragene Drehmoment mit gleichmäßiger Dauerbelastung und Sicherheitsfaktor **S**=1 für eine Dauer von 10000 Std. Die Werte M_{n2} werden den folgenden Normen gemäß geprüft:

ISO DP 6336 für Zahnräder
ISO 281 für Lager.

4.2 Couple motoréducteur M_{n2} [Nm]

C'est le couple nominal transmis à la sortie du réducteur avec :

- charge continue uniforme
 - facteur de sécurité **S**=1 pendant une durée de 10000 h.
- Les valeurs de M_{n2} sont vérifiées conformément aux normes suivantes:*

ISO DP 6336 pour les engrenages
ISO 281 pour les roulements.

4.3 Coppia massima M_{2max} [Nm]

È il valore di coppia in uscita sopportabile dal riduttore in condizioni statiche o fortemente intermittenti. È inteso come carico istantaneo o come coppia di spunto sotto carico.

4.3 Maximum torque M_{2max} [Nm]

The output torque the gear unit will withstand in a static condition or a highly intermittent operation. It is generally meant as a momentary peak load or start-up torque under load.

4.3 Maximales Drehmoment M_{2max} [Nm]

Stellt den Wert des Abtriebsdrehmoments dar, mit dem das Getriebe in statischen oder Bedingungen mit häufigen Schaltungen belastet werden kann. (Wird als augenblicklicher Spitzendrehmoment oder als Anlaufdrehmoment unter Last verstanden).

4.3 Couple maximal M_{2max} [Nm]

C'est la valeur de couple en sortie que le réducteur peut supporter dans des conditions statiques ou de forte intermittence (considérée en tant que couple de pointe de charge instantanée ou couple de démarrage en charge).

4.4 Coppia richiesta M_{r2} [Nm]

Rappresenta la coppia richiesta dall'applicazione. Il suo valore dovrà sempre essere uguale, o inferiore, alla coppia nominale M_{n2} del riduttore.

4.4 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.

4.4 Erforderliches Drehmoment M_{r2} [Nm]

Dies ist das von der Anwendung verlangte Drehmoment, das stets kleiner oder gleich dem Nenn- Abtriebsmoment M_{n2} des gewählten Getriebes sein muß.

4.4 Couple requis M_{r2} [Nm]

Il représente le couple requis par l'application et devra toujours être inférieur ou égal au couple en sortie nominal M_{n2} du réducteur choisi.

4.5 Coppia di calcolo M_{c2} [Nm]

È il valore di coppia da utilizzare nella selezione del riduttore. L'espressione è fornita dall'equazione seguente, in funzione della coppia richiesta M_{r2} e del fattore di servizio f_s :

4.5 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:

4.5 Soll-Drehmoment M_{c2} [Nm]

Ist der Wert des Drehmoments, der für die Getriebewahl, unter Berücksichtigung des erforderlichen Drehmoments M_{r2} und des Betriebsfaktors f_s , zu verwenden ist und ergibt sich aus folgender Formel:

4.5 Couple de calcul M_{c2} [Nm]

C'est la valeur de couple à utiliser pour la sélection du réducteur en considérant le couple requis M_{r2} et le facteur de service f_s (tab. A3); elle résulte de la formule suivante:

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

(1)

5.0 - POTENZA

5.0 - POWER

5.0 - LEISTUNG

5.0 - PUISSANCE

5.1 Potenza in entrata P_{n1} [kW]

La grandezza P_{n1} rappresenta la potenza massima applicabile al riduttore nelle condizioni di:

- azionamento alla velocità di comando n_1
- fattore di sicurezza **S**=1
- durata teorica di 10000 ore.

5.1 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 n_1 drive speed
- under a safety factor **S**=1
- yielding a theoretical lifetime of 10000 hours.

5.1 Leistung am Antrieb P_{n1} [kW]

In den Auswahltabellen der Getriebegrößen wird die maximal im Antrieb übertragbare Leistung in bezug auf:

- Drehzahl n_1 angegeben
- Sicherheitsfaktor **S**=1
- theoretische Dauer von 10000 Stunden berücksichtigt.

5.1 Puissance en entrée P_{n1} [kW]

Le tableau de sélection de chaque taille de réducteur indique la puissance maximum transmissible en entrée en fonction de :

- vitesse n_1
- facteur de sécurité **S**=1
- pendant une durée théorique de 10000 heures.



5.2 Potenza in uscita P₂ [kW]

Il parametro rappresenta la potenza netta trasmessa all'albero lento del riduttore. Il suo valore si può calcolare con le seguenti formule:

5.2 Output power P₂ [kW]

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

5.2 Leistung am Abtrieb P₂ [kW]

Dieser Wert stellt die an den Getriebeabtrieb übertragene Leistung dar. Er ergibt sich aus folgenden Formeln:

5.2 Puissance en sortie P₂ [kW]

Cette valeur représente la puissance transmise à la sortie du réducteur. On peut la calculer avec les formules suivantes :

$$P_2 = P_1 \times \eta_d \quad (2)$$

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

Per i valori del rendimento η_d vedi tabella (A2).

Efficiency values are listed in table (A2).

In bezug auf den Wirkungsgrad η_d verweisen wir

En ce qui concerne les valeurs du rendement η_d voir le tableau (A2).

6.0 - POTENZA TERMICA P_t [kW]

È il valore che indica il limite termico del riduttore (riferirsi alle tabelle dati tecnici dei riduttori) ed è la potenza trasmissibile in servizio continuo con velocità in ingresso pari a n_1 e ad una temperatura ambiente di 20°C senza ricorrere ad un raffreddamento ausiliario. Per un tipo di servizio caratterizzato da una breve durata di funzionamento e da un tempo di sosta sufficientemente lungo da consentire il raffreddamento del gruppo, la potenza termica acquista scarsa rilevanza per cui può non essere tenuta in considerazione. Se la temperatura ambiente è diversa da 20°C, il servizio è intermittente e la velocità di comando n_1 è diversa da quelle indicate nelle tabelle dati tecnici è opportuno correggere il valore di P_t in funzione del fattore termico f_t e del fattore di velocità f_v riportati nella tabella (A1). Verificare infine che sia sempre soddisfatta la relazione:

6.0 - THERMAL CAPACITY P_t [kW]

This value is linked to the gearbox thermal limit. Values for the thermal capacity are listed within the rating charts of gearboxes. The parameter represents the power that can be transmitted continuously at an input speed n_1 at 20°C ambient temperature, without using 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. For ambient temperatures other than 20°C, intermittent duty and input speed n_1 other than those listed in the rating charts, P_t is to be adjusted through thermal factor f_t and/or speed factor f_v as listed in table (A1). Make sure that the following condition is always satisfied.

6.0 - WÄRMELEISTUNG P_t [kW]

Dieser Wert steht für die Wärmegrenzleistung des Getriebes (hierzu Bezug auf die Tabellen mit den technischen Daten der Getriebemotoren und der Getriebe nehmen) und die im Dauerbetrieb übertragbare Leistung bei einer Antriebsdrehzahl gleich n_1 und einer Umgebungstemperatur von 20°C ohne Zusatzkühlung. Bei einem Betrieb, der sich durch eine kurzzeitige Betriebsdauer und eine für die Abkühlung der Gruppe ausreichend lang andauernde Aussetzzeit kennzeichnet, ist die Wärmeleistung von geringer Bedeutung und braucht daher nicht unbedingt berücksichtigt zu werden. Bei einer von 20°C abweichenden Umgebungstemperatur, einem Aussetzbetrieb und einer Antriebsdrehzahl n_1 , die nicht mit den in der Tabelle angegebenen Daten übereinstimmen, kann der Wert P_t dem Wärmefaktor f_t und dem Drehzahlfaktor f_v gemäß, beide in der Tabelle (A1) aufgeführt, berechnet werden. Überprüfen, ob immer folgendes Verhältnis gegeben ist.

6.0 - PUISSANCE THERMIQUE P_t [kW]

C'est la valeur qui indique la limite thermique du réducteur (voir les tableaux de données techniques des réducteurs) et c'est la puissance transmissible en service continu, avec vitesse d'entrée égale à n_1 , à une température ambiante de 20°C sans recourir à un refroidissement auxiliaire. Pour un type de service caractérisé par une durée de fonctionnement brève et par un temps de pause suffisamment long pour permettre le refroidissement du groupe, la puissance thermique ne revêt qu'une faible importance et peut, par conséquent, ne pas être prise en considération. En cas de températures ambiantes autre que 20°C, en service intermittent et avec vitesses n_1 en entrée différentes de celles indiquées dans les tableaux des données techniques, il est possible de calculer la valeur de P_t sur la base du facteur thermique f_t et du facteur de vitesse f_v indiquées dans le tableau (A1). Vérifier que l'équation suivante soit toujours satisfaite.

$$P_{r1} \leq P_t \times f_t \times f_v \quad (4)$$

(A1)

t _a [°C]	Servizio continuo Continuous duty Dauerbetrieb Service continu	f _t			
		Servizio intermittente / Intermittent duty / Aussetzbetrieb / Service intermittent			
		Rapporto di intermittenza / Cyclic duration factor Relative Einschaltdauer / Rapport d'intermittenza			
		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

n ₁	f _v
750	1.5
950	1.2
1500	1
2000	0.7

Il rapporto di intermittenza (I)% è dato dal rapporto fra il tempo di funzionamento a carico t_f e il tempo totale (t_f + t_r), con t_r = tempo di riposo, espresso in percentuale:

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.

Die relative Einschaltdauer (I) % wird von dem Verhältnis zwischen Betriebszeit unter Last t_f und der Gesamtbetriebszeit (t_f + t_r) gegeben, wobei t_r = Ruhezeit, in Prozenten ausgedrückt, ist.

Le rapport d'intermittenza (I) % est donné par le rapport entre la durée de fonctionnement en charge t_f et le temps total (t_f + t_r) avec t_r = temps de repos, exprimé en pourcentage.

$$I = \frac{t_f}{t_f + t_r} \times 100 \quad (5)$$



7.0 - RENDIMENTO

7.1 Rendimento dinamico $[\eta_d]$

È rappresentato dal rapporto fra la potenza misurata all'albero lento P_2 e quella applicata all'albero veloce P_1 :

7.0 - EFFICIENCY

7.1 Dynamic efficiency $[\eta_d]$

The parameter is defined as the relationship of the net power delivered to the output shaft P_2 to the power applied to the input shaft P_1 :

7.0 - WIRKUNGSGRAD

7.1 Dynamischer Wirkungsgrad $[\eta_d]$

Er ist gegeben durch das Verhältnis der Abtriebsleistung P_2 zur Antriebsleistung P_1 :

7.0 - RENDEMENT

7.1 Rendement dynamique $[\eta_d]$

Il est donné par le rapport entre la puissance en sortie P_2 et celle en entrée P_1 :

$$\eta_d = \frac{P_2}{P_1} \quad (6)$$

I valori indicativi di rendimento sono riportati nella tabella seguente.

Indicative values for the efficiency are listed in the chart here after.

Die Werte des indikativen Wirkungsgrads werden in der nachstehenden Tabelle aufgeführt.

Les valeurs indicatif de rendement sont indiquées sur le tableau suivant.

(A2)

N° stadi No. of reductions Anz. Stufen Nombre d'étages de réduction	Esecuzione / Configuration / Ausführung / Exécution		
	Epicycloidale Planetary Planetengetriebe Epicycloïdale	Combinato con riduttore a vite senza fine Combined with worm gear unit Kombiniert mit Schneckengetriebe Combinée avec réducteur à vis sans fin	Combinato con riduttore angolare Combined with right-angle unit Kombiniert mit Kegelradgetriebe Combinée avec réducteur angulaire
1	0.97	—	—
2	0.94	0.73	—
3	0.91	0.70	0.91
4	0.88	—	—

8.0 - RAPPORTO DI RIDUZIONE « i »

È definito come il rapporto fra la velocità di comando dell'albero veloce e la velocità misurata all'albero lento del riduttore.

8.0 - 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.

8.0 - ÜBERSETZUNG « i »

Ist das Verhältnis zwischen Antriebs- und Abtriebsdrehzahl des Getriebes.

8.0 - RAPPORT DE REDUCTION « i »

C'est le rapport entre la vitesse d'entrée et la vitesse de sortie du réducteur.

$$i = \frac{n_1}{n_2} \quad (7)$$

9.0 - VELOCITÀ

9.1 Velocità in entrata n_1 [min⁻¹]

È la velocità con la quale è azionato il riduttore.

Coincide con la velocità del motore nel caso in cui questo sia collegato direttamente al riduttore.

Nel caso di azionamenti tramite trasmissioni esterne, la velocità del motore dovrà essere corretta in funzione del rapporto di trasmissione della trasmissione stessa.

In questi casi è consigliabile che la velocità di comando del riduttore sia inferiore a 1400 min⁻¹.

La velocità di comando non deve mai superare il valore indicato nelle tabelle dati tecnici dei riduttori.

9.0 - OPERATING SPEED

9.1 Input speed n_1 [min⁻¹]

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 min⁻¹.

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

9.0 - DREHZAHL

9.1 Drehzahl Antriebswelle n_1 [min⁻¹]

Ist die Geschwindigkeit des Antriebsmotors, wenn dieser direkt auf Achse mit dem Getriebe verbunden ist. Kann aber auch die Geschwindigkeit darstellen, die sich immer aus dem Motor und aus eventuellen Übersetzungsverhältnissen im Fall eines indirekten Antriebs ergibt, z.B. bei einem Riemenantrieb.

In diesen Fällen wird am Getriebeantrieb eine unter 1400 min⁻¹ liegende Drehzahl empfohlen.

Die Antriebsgeschwindigkeit darf die in den Tabellen der Getriebe angegebenen Werte nie überschreiten.

9.0 - VITESSE ANGULAIRE

9.1 Vitesse d'entrée n_1 [min⁻¹]

C'est la vitesse du moteur d'entraînement, au cas où celui-ci serait directement accouplé au réducteur de manière axiale. Ou bien la vitesse débouchant toujours du moteur, et des rapports de transmission éventuels, en cas d'entraînement indirect par exemple par courroies.

Dans ces cas, une vitesse d'entrée au réducteur inférieure à 1400 min⁻¹ est conseillée.

La vitesse en entrée ne doit jamais dépasser les valeurs indiquées aux tableaux des données techniques des réducteurs.

9.2 Velocità in uscita n_2 [min⁻¹]

È funzione della velocità di comando n_1 e del rapporto di trasmissione i , secondo la relazione:

9.2 Output speed n_2 [min⁻¹]

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

9.2 Abtriebsdrehzahl n_2 [min⁻¹]

Sie ist abhängig von der Antriebsdrehzahl n_1 und der Übersetzung i nach folgender Gleichung:

9.2 Vitesse en sortie n_2 [min⁻¹]

Elle varie en fonction de la vitesse d'entrée n_1 et du rapport de réduction i selon l'équation :

$$n_2 = \frac{n_1}{i} \quad (8)$$

**10.0 - FATTORE DI SERVIZIO**
[f_s]

È un fattore che associa un valore numerico alla gravosità dell'applicazione. Il parametro tiene conto, con qualche inevitabile approssimazione, della variabilità del carico col quale opera il riduttore, del tipo di servizio e della durata di funzionamento. La tabella (A3) fornisce una indicazione per la determinazione del fattore di servizio.

10.0 - SERVICE FACTOR
[f_s]

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.

10.0 - BETRIEBSFAKTOR
[f_s]

Stellt einen Faktor dar, der die Applikationsart bestimmt. Er berücksichtigt, mit einer ausreichenden Annäherung, die Belastungsschwankungen, denen das Getriebe bei einer bestimmten Betriebsart und Betriebsdauer unterliegt. Die Tabelle (A3) gibt einen Hinweis für die Auswahl des am besten geeigneten Betriebsfaktors.

10.0 - FACTEUR DE SERVICE
[f_s]

C'est un facteur qui définit le type d'application. Il prend en considération, avec une approximation satisfaisante, la variabilité de la charge à laquelle le réducteur est soumis pour un type de service donné ainsi que la durée de fonctionnement. Le tableau (A3) fournit une indication pour le choix du facteur de service le plus adapté.

(A3)

Fattore di servizio / Service factor / Betriebsfaktor / Facteur de service « f _s »						
Natura del carico Type of load Belastungsart Nature de la charge	N° avviamenti /ora Number of starts/hour Schaltungen/Std. N.bre démarrages/heures Z	Durata totale di funzionamento (h) Total operating hours (h) Gesamte Betriebsdauer (h) Durée totale de fonctionnement (h)				
		≤ 5000	10000	15000	25000	50000
		Durata di funzionamento giornaliera (h) Daily operating hours (h) Tägliche Betriebsdauer (h) Durée journalière de fonctionnement (h)				
		h < 4	4 < h < 8	8 < h < 12	12 < h < 16	16 < h < 24
Uniforme Uniform load Gleichmäßig Uniforme	Z < 10	0.90	1.00	1.15	1.30	1.60
	10 < Z < 30	0.95	1.15	1.30	1.50	1.80
	30 < Z < 100	1.00	1.25	1.45	1.60	2.00
Variabile con urti moderati Moderate shock load Variable mit mäßigen Stößen Variable avec chocs modérés	Z < 10	1.00	1.25	1.45	1.60	2.00
	10 < Z < 30	1.10	1.40	1.60	1.80	2.20
	30 < Z < 100	1.20	1.50	1.70	2.00	2.40
Variabile con urti forti Heavy shock load Variable mit starken Stößen Variable avec chocs fort	Z < 10	1.20	1.50	1.70	2.00	2.40
	10 < Z < 30	1.30	1.60	1.80	2.10	2.60
	30 < Z < 100	1.40	1.75	2.00	2.30	2.80

11.0 - FATTORE DI SICUREZZA [S]

È rappresentato dal rapporto fra la potenza trasmissibile dal riduttore in condizioni nominali e la potenza del motore elettrico installato.

11.0 - SAFETY FACTOR [S]

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

11.0 - SICHERHEITSAKTOR [S]

Ist das Verhältnis zwischen der unter normalen Bedingungen vom Getriebe übertragenen Leistung und der Leistung des eingebauten Elektromotors.

11.0 - FACTEUR DE SECURITE [S]

C'est le rapport entre la puissance transmissible par le réducteur en conditions nominales et la puissance du moteur électrique installé.

$$S = \frac{P_{n1}}{P_1} \quad (9)$$

12.0 - SELEZIONE PRODOTTO

I dati necessari a completare la selezione di un riduttore, o motoriduttore, sono sintetizzati nella tabella (A4). Una copia di questa, debitamente compilata in ogni parte, può essere inviata al nostro Servizio Tecnico per la selezione del riduttore più idoneo per la specifica applicazione.

12.0 - PRODUCT SELECTION

The key parameters that are necessary when selecting a gearbox, or a gearmotor, are listed in table (A4). The form, duly filled in, can be forwarded to our Technical Service which will assist the Customer in selecting the most suitable drive for the specific application.

12.0 - ANTRIEBSAUSWAHL

Um ein Getriebe oder einen Getriebemotor in korrekter Weise auswählen zu können, muß man über einige grundsätzliche Daten verfügen. Daten, die auf der Tabelle (A4) zusammengefaßt werden. Eine Kopie dieser Tabelle kann an unsere Verkaufsorganisation gesendet werden, um in dieser Weise gemeinsam die Wahl des für die jeweilige Applikationsart geeignetsten Getriebes treffen zu können.

12.0 - SELECTION

Pour choisir correctement un réducteur, ou motoréducteur, il est nécessaire de prendre en considération certaines données fondamentales, résumées dans le tableau (A4). Un exemplaire de ce tableau peut être adressé à notre Organisation de vente afin de faciliter le choix du réducteur le plus adapté au type d'application.



(A4)

Tipo di applicazione
Type of application
Anwendung
Type d'application

**MOTORE ELETTRICO / ELECTRIC MOTOR
ELEKTROMOTOR / MOTEUR ELECTRIQUE**

Grandezza IEC
IEC size
IEC Baugröße
Taille CEI

RIDUTTORE / GEARBOX / GETRIEBE / REDUCTEUR

P_{r2} Potenza richiesta in uscita
Required output power
Am Abtrieb erforderliche Leistu
Puissance nécessaire en sortie kW

M_{r2} Coppia richiesta in uscita
Required output torque
Am Abtrieb erforderliches Drehmoment
Couple nécessaire en sortie Nm

n_2 Velocità in uscita
Output speed
Abtriebsdrehzahl
Vitesse en sortie min⁻¹

n_1 Velocità in entrata
Input speed
Antriebsdrehzahl
Vitesse en entrée min⁻¹

R_2 Carico radiale su albero in uscita
Radial load on output shaft
Radialkraft auf Abtriebswelle
Charge radiale sur l'arbre de sortie N

X_2 Distanza di applicazione del carico
Load application distance
Abstand des Kraftangriffspunktes
Distance d'application de la charge mm (*)

R_1 Carico radiale su albero in entrata
Radial load on input shaft
Radialkraft auf Antriebswelle
Charge radiale sur l'arbre d'entrée N

X_1 Distanza di applicazione del carico
Load application distance
Abstand des Kraftangriffspunktes
Distance d'application de la charge mm (*)

A_2 Carico assiale su albero in uscita
Thrust load on output shaft
Axialkraft auf Abtriebswelle
Charge axiale sur l'arbre de sortie N (+)

A_1 Carico assiale su albero in entrata
Thrust load on input shaft
Axialkraft auf Antriebswelle
Charge axiale sur l'arbre d'entrée N (+)

h Durata di vita
Requested life time
Lebensdauer
Durée de vie h

t_a Temperatura ambiente
Ambient temperature
Umgebungstemperatur
Température ambiante °C

P_n Potenza nominale
Rated power
Nennleistung
Puissance nominale kW

Tensione di alimentazione
Motor voltage
Nennspannung des Motors
Tension d'alimentation moteur V

N° poli
Number of poles
Anzahl der Pole
N.bre de pôles

Frequenza
Frequency
Frequenz
Fréquence Hz

Fattore di intermittenza in accordo a CEI
Duty type to IEC norms
Relative Einschaltdauer gemäß CEI
Type de service selon CEI S...../.....%

Z Frequenza di avviamento
Starts per hour
Schaltungshäufigkeit
Fréquence de démarrage 1/h

Grado di protezione motore
Motor protection degree
Schutzart des Motors
Degré de protection moteur IP.....

Classe di isolamento
Insulation class
Isolierstoffklasse
Classe d'isolation

**FRENO SU MOTORE AUTOFRENANTE
MOTOR IN-BUILT BRAKE (IF FITTED)
BREMSE AUF SELBSTBREMSENDEM MOTOR
FREIN SUR MOTEUR AUTOFREINE**

Tensione di alimentazione freno
Brake voltage
Nennspannung der Bremse
Tension d'alimentation du frein V

M_b Coppia frenante
Brake torque
Bremsmoment
Couple de freinage Nm

Esecuzione In linea Angolare Combinato con riduttore a vite senza fine
Type In line Right angle Combined with worm gearbox
Ausführung In Reihe Auf Winkel Kombinierte mit Schneckengetriebe
Exécution Linéaire Angulaire Combiné avec réducteur à vis sans fin

Versione uscita
Output version
Abtriebsversion
Version sortie

Accessori
Accessories
Zubehör
Accessoires

Posizione di montaggio
Mounting position
Montageposition
Position de montage

N.B: Tab. (A4)

(*) La distanza $X_{1,2}$ è quella compresa fra il punto di applicazione della forza e la battuta dell'albero (se non indicata, si considererà la forza agente sulla mezzeria della sporgenza dell'albero).

(+) + = compressione
- = trazione

N.B: Table (A4)

(*) Dimension $x_{1,2}$ is the distance between the point the force applies and the shaft shoulder (if not specified a force applying at mid-point of the shaft will be assumed).

(+) + = push
- = pull

N.B: Tab. (A4)

(*) Der Abstand $X_{1,2}$ ist der Abstand vom Kraftangriffspunkt zum Wellenansatz (wenn nicht anders angegeben, wird davon ausgegangen, daß die Kraft auf der Mitte des Wellenendes angreift).

(+) + = Druck
- = Zug

N.B: Tab. (A4)

(*) La distance $X_{1,2}$ est celle comprise entre le point d'application de la force et l'épaulement de l'arbre (si non précisée l'on considerera la force agissant au milieu de la saillie de l'arbre).

(+) + = compression
- = traction

**N.B.**

I criteri di scelta e i dati tecnici riportati in questo catalogo non sono validi per tutte le applicazioni, come ad esempio impianti di sollevamento, dove il riduttore funziona come organo di sicurezza verso persone e/o cose. In questi casi la selezione del riduttore deve essere fatta con criteri specifici, ed eventualmente in accordo alle vigenti norme di sicurezza, per cui è necessario interpellare il Servizio Tecnico di BONFIGLIOLI.

NOTE:

The selection criteria and specifications reported in this catalogue are not valid for every and each application, including those where the gearbox operates as a safety device preventing injury to persons or damage to objects, as is the case with hoisting equipment. For these applications, the gearbox should be selected according to specific criteria and in compliance with the applicable safety regulations. Should this be the case we recommend that you seek advice from BONFIGLIOLI Technical Service.

MERKE:

Die Auswahlkriterien und die technischen Daten, die in diesem Katalog aufgeführt werden, sind nicht für alle Applikationsarten gültig, wie z.B. an Hebeanlagen, wo das Getriebe die Funktion eines Sicherheitsorgans im Hinblick auf den Personen- und/oder Sachschutz hat. In diesen Fällen muß die Getriebewahl unter Anwendung spezifischer Kriterien und eventuell in Übereinstimmung mit den Sicherheitsnormen erfolgen. Es ist daher erforderlich, daß Sie sich diesbezüglich mit einer Verkaufsstelle der BONFIGLIOLI in Verbindung setzen.

N.B.

Les critères de sélection et les données techniques indiqués dans ce catalogue ne sont pas valables pour toutes les applications, telles que les équipements de levage, où le réducteur a fonction d'organe de sécurité vis-à-vis du personnel et des matériels. Dans ces cas, la sélection du réducteur doit être faite avec des critères spécifiques, et, s'il y a lieu, en conformité avec les règles de sécurité en vigueur; c'est pourquoi il faut consulter l'organisation de vente BONFIGLIOLI.

12.1 Selezione motoriduttore

In base al tipo di applicazione definire:

- a) il fattore di servizio f_s in funzione del tipo di carico, del n° di avviamenti/ora e della durata richiesta (tab A3);
- b) La potenza necessaria all'azionamento:

12.1 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:

12.1 Wahl der Getriebemotor

Der Applikationsart gemäß ist folgendes zu definieren:

- a) Betriebsfaktor f_s in Abhängigkeit zur Belastungsart, zu den Schaltungen/Std. und zu geforderter Dauer (Tab. A3);
- b) die für den Antrieb erforderliche Leistung:

12.1 Choix du motoréducteur

En fonction du type d'application, il est nécessaire de définir :

- a) le facteur de service f_s en fonction du type de charge et du nombre de démarrages/heure et de la durée nécessaire (tab. A3);
- b) La puissance nécessaire au mouvement;

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

La tabella (A2) riporta i valori indicativi di rendimento η_d per vari tipi di riduttore.

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

Die Tabelle (A2) führt die indikativen Werte des Wirkungsgrads η_d bezüglich der unterschiedlichen

Le tableau (A2) indique les valeurs indicatives de rendement η_d relatives aux différents types de réducteurs

- c) Disponendo del valore di potenza P_{r1} preventivamente calcolato e della velocità richiesta all'albero n_2 , consultare le tabelle di selezione motoriduttori identificando la tabella relativa alla potenza P_n normalizzata maggiore o uguale a P_{r1} :

- 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} :
Note that for duty cycles from S2 to S8 and motor frame sizes up to 132 included, power may be upgraded over that specified for continuous duty.

- c) Unter Bezugnahme auf den berechneten Leistungswert P_{r1} und die erforderliche Drehzahl n_2 , die Tabelle der technischen Daten der Getriebemotoren konsultieren, dabei die Tabelle bezüglich der genormten Leistung P_n , die dem Wert P_{r1} gleich kommt oder größer ist, herausuchen.

- c) Une fois la valeur de puissance P_{r1} calculée et le nombre de tours n_2 demandé, consulter les tableaux des données techniques des motoréducteurs après avoir identifié le tableau correspondant à la puissance P_n normalisée, supérieure ou égale à P_{r1} .

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

Se non diversamente indicato, la potenza P_n dei motori riportata a catalogo si riferisce al servizio continuo S1.

Unless otherwise specified, power P_n listed in the motor rating chart refers to continuous duty S1.

Falls nicht anders angegeben, bezieht sich die im Katalog angegebene Leistung der Motoren P_n auf den Dauerbetrieb S1.

Sauf indication diverse, la puissance P_n des moteurs indiquée dans le catalogue se réfère au service continu S1.

Per i motori utilizzati in condizioni diverse da S1, può essere opportuno identificare il tipo di servizio previsto con riferimento alle Norme CEI 2-3/IEC 60034-1.

For motors operating in conditions other than S1, determine type of duty according to CEI 2-3/IEC 60034-1 standards.

Bei Motoren, die unter von S1 abweichenden Bedingungen verwendet werden, muß unter Bezugnahme auf die Normen CEI 2-3/IEC 60034-1 die entsprechende Betriebsart identifiziert werden.

En cas de moteurs utilisés dans des conditions différentes de S1, il est nécessaire de déterminer le type de service prévu, dans le respect des Normes CEI 2-3 IEC 60034-1.

In particolare, per i servizi da S2 a S8 e per le grandezze motore uguali o inferiori a 132, è possibile ottenere una maggiorazione della potenza rispetto a quella prevista per il servizio continuo.

Note that for duty cycles from S2 to S8 and motor frame sizes up to 132 included, power may be upgraded over that specified for continuous duty.

Insbesondere ist es für Betriebe von S2 bis S8 und für Motorgrößen, die gleich oder größer als 132 sind, möglich, der für den Dauerbetrieb vorgesehenen Leistung gegenüber einen Leistungsausbau zu erhalten. Die zu erfüllende Bedingung ist daher:

Plus particulièrement, en ce qui concerne les services de S2 à S8 et pour des tailles de moteur égales ou inférieures à 132, il est possible d'obtenir une majoration de la puissance par rapport à celle prévue pour le service continu, par conséquent, la condition doit être la suivante :

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



Il fattore di maggiorazione f_m è ricavabile dalla tabella (A5).

The adjusting factor f_m can be obtained from table (A5).

Der Überdimensionierungsfaktor f_m kann der Tabelle (A5) entnommen werden.

Le facteur de majoration f_m se trouve dans le tableau (A5).

(A5)

	SERVIZIO / DUTY CYCLE / BETRIEB / SERVICE						
	S2			S3*			S4-S8
	Durata del ciclo / Cycle time Zyklusdauer / Durée du cycle			Rapporto di intermittenza I / Cyclic duration rate I Relative Einschaltdauer I / Rapport d'intermittence I			Interpellarci Contact us Rückfrage Nous contacter
	10	30	60	25%	40%	60%	
f_m	1.35	1.15	1.05	1.25	1.15	1.1	

* La durata del ciclo dovrà comunque essere uguale, o inferiore, a 10 minuti; se superiore interpellare il nostro Servizio Tecnico.

* Cycle time must be equal to or less than 10 minutes. Should this not be the case contact our Technical Service for assistance.

* Die Zyklusdauer muß jedoch kürzer oder gleich 10 Minuten sein; sollte sie darüber liegen, sollten Sie sich mit unserer Verkaufsorganisation in Verbindung setzen.

* Dans tous les cas, la durée du cycle doit être égale ou inférieure à 10 minutes ; en cas de durée supérieure, contacter notre Service Technique.

Rapporto di intermittenza: vedere formula (5).

Cyclic duration rate: see formula (5).

Relative Einschaltdauer siehe Formel (5).

Rapport d'intermittence: voir formule (5).

Selezionare infine, in corrispondenza della velocità all'albero n_2 , il motoriduttore che presenta un fattore di sicurezza S che garantisce la seguente condizione:

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

Daraufhin der Abtriebsdrehzahl n_2 gemäß, einen Getriebemotor mit einem Soll-Sicherheitsfaktor S auswählen, der folgendes gewährleistet:

Ensuite, en fonction de la vitesse de sortie n_2 , choisir le motoréducteur avec un facteur de sécurité S calculé assurant :

$$S \geq f_s$$

(13)

12.2 Selezione del riduttore

In base al tipo di applicazione definire:

- il fattore di servizio f_s in funzione del tipo di carico, del numero di avviamenti/ora e della durata richiesta (tab. A3);
- con il valore di coppia richiesta in uscita M_{r2} , determinare la coppia di calcolo:

12.2 Selecting a gearbox

Examine the application and establish:

- service factor f_s according to type of load, number of starts per hour and required lifetime (tab. A3);
- Determine calculated torque according to required output torque M_{r2} as follows:

12.2 Wahl der Getriebe

Der Applikationsart gemäß folgendes definieren:

- Betriebsfaktor f_s in Abhängigkeit zur Belastungsart, zu den Schaltungen/Std. und zu geforderter Dauer (Tab. A3);
- mit dem am Abtrieb erforderlichen Drehmoment M_{r2} den Soll-Drehmoment bestimmen:

12.2 Choix du réducteur

En fonction du type d'application, il est nécessaire de définir:

- le facteur de service f_s en fonction du type de charge et du nombre de démarrages/heure et de la durée nécessaire (tab. A3) ;
- avec la valeur de couple requise en sortie M_{r2} , déterminer le couple de calcul

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

(14)

- In base alla velocità all'albero lento n_2 e a quella di comando n_1 , calcolare il rapporto di trasmissione:

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

- der Abtriebsdrehzahl n_2 und der Antriebsdrehzahl n_1 gemäß, das Übersetzungsverhältnis kalkulieren:

- en fonction de la vitesse en sortie n_2 requise et de celle n_1 en entrée, calculer le rapport de réduction :

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

(15)

- disponendo dei valori di M_{c2} e i , consultare la tabella dati tecnici riduttori relativa alla velocità di comando n_1 e selezionare da questa il riduttore con il rapporto di trasmissione più prossimo a quello calcolato e che assicuri contemporaneamente la condizione:

- 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:

- unter Bezugnahme auf die Werte M_{c2} und i die Tabellen mit den technischen Daten der Getriebe, die der Drehzahl n_1 entsprechen, konsultieren und das Getriebe auswählen, welches dem berechneten Verhältnis am nächsten kommt und folgendes gewährleistet:

- avec la valeur de M_{c2} et i , consulter les tableaux des données techniques réducteurs correspondants à la vitesse n_1 puis sélectionner le réducteur ayant le rapport le plus proche de celui calculé et assurant :

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

(16)

Se al riduttore dovrà essere applicato un motore elettrico, verificarne l'applicabilità consultando le tabelle delle predisposizioni possibili.

If a IEC-normalised motor is to be fitted onto the gearbox, check availability of the applicable adapter.

Falls am ausgewählten Getriebe ein Elektromotor der Bauform B5 angebracht werden soll, muß die entsprechende Applizierbarkeit unter Bezugnahme auf die Tabellen, in denen die entsprechenden Möglichkeiten aufgeführt sind, geprüft werden.

Si le réducteur choisi doit être appliqué à un moteur électrique de forme B5, vérifier ses possibilités d'application en consultant les tableaux des predispositions possibles.



13.0 - VERIFICHE

Effettuata la selezione si raccomanda di procedere alle seguenti verifiche:

a) Potenza termica

Assicurarsi che la potenza termica del riduttore sia uguale, o superiore, alla potenza meccanica richiesta dall'applicazione. Vedi relazione (4) a pag. 9. In caso contrario provvedere ad applicare un sistema di raffreddamento ausiliario (vedi cap. 34) oppure selezionare un riduttore di grandezza superiore.

b) Coppia massima

Verificare che né la coppia istantanea di picco né la coppia di spunto sotto carico superino il valore di M_{2max} ammesso per il riduttore (vedi tab A6).

(A6)

Riduttore / Gearbox Getriebe / Réducteur	M_{2max} [Nm]	Riduttore / Gearbox Getriebe / Réducteur	M_{2max} [Nm]
300	1500	311	55000
301	2400	313	65000
303	3600	315	130000
305	7000	316	170000
306	12000	317	220000
307	18000	318	290000
309	25000	319	450000
310	40000	321	650000

c) Carichi radiali

In base al tipo di applicazione definire:

- la forza radiale risultante sull'albero in entrata o in uscita, secondo la seguente formula:

R_{c1-2} carico radiale (N)
 $_1$ = su albero veloce
 $_2$ = su albero lento
 M_{r1-2} Coppia all'albero (Nm)
 d Diametro primitivo (mm) dell'organo calettato sull'albero (pignone, ingranaggio, puleggia, ecc.)
 $K_r = 1$ pignone per catena
 $K_r = 1,25$ ingranaggio
 $K_r = 1,5-2,0$ puleggia per cinghia trapezoidale

- qualora la durata richiesta sia diversa da 10000 h, il fattore di durata f_L secondo la tabella (A7).

(A7)

Durata / Lifetime Dauer / Durée	2500 h	5000 h	10000 h	15000 h	25000 h	50000 h	100000 h
f_L	0.66	0.81	1.00	1.13	1.32	1.62	2.00

13.0 - VERIFICATIONS

After the drive unit 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 (4) at page 9. If this is not the case provide a supplementary cooling system (see chap. 34) 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 tab. A6).

13.0 - PRÜFUNGEN

Nach Wahl des Getriebemotors folgende Prüfungen ausführen:

a) Wärmeleistung

Sicherstellen, daß die in den Tabellen mit den technischen Daten angegebene Wärmeleistung des Getriebes den gleichen oder einen höheren Wert bezüglich der aus der Gleichung (4) auf Seite 9 hervorgehenden Leistung aufweist. Ist dies nicht der Fall, ein größeres Getriebe auswählen oder ein Hilfskühlsystem applizieren (siehe Kap. 34 auf Seite 348).

b) Max. Drehmoment

Überprüfen, ob das maximale Drehmoment (als augenblicklicher Spitzendrehmoment oder als Anlaßdrehmoment unter Last verstanden) den seitens des Getriebes zulässigen Wert M_{2max} auch nicht überschreitet (siehe Tab. A6)

c) Radialkräfte

Der Applikationsart gemäß, folgendes definieren:

- auf Antriebs- und Abtriebswelle einwirkende Radialkraft, gemäß folgender Formel:

$$R_{c1-2} = \frac{2000 \times M_{r1-2} \times K_r}{d} \quad (17)$$

R_{c1-2} Radialkraft (N)
 $_1$ = auf Antriebswelle
 $_2$ = auf Abtriebswelle
 M_{r1-2} Drehmoment auf Welle (Nm)
 d Durchmesser (mm) des Kettenrads, des Zahnrads, der Riemenscheibe, usw.
 $K_r = 1$ Kettenrad
 $K_r = 1,25$ Zahnrad
 $K_r = 1,5-2,0$ Riemenscheibe für V Rieme

- sollte die geforderte Dauer von den 10000 Stunden abweichen, den Dauerfaktor f_L , welcher der Tabelle (A7) entnommen werden kann.

13.0 - VERIFICATIONS

Après avoir effectué une sélection, nous conseillons de procéder aux vérifications suivantes:

a) Puissance thermique

Vérifier que la puissance thermique du réducteur ait une valeur égale ou supérieure à la puissance requise par l'application selon l'équation (4) page 9. Dans le cas contraire, appliquer un système de refroidissement auxiliaire (voir chap. 34) ou sélectionner un réducteur de taille supérieure.

b) Couple maximum

Vérifier que le couple maximal (considéré en tant que couple de pointe de charge instantanée ou couple de démarrage en charge) ne dépasse pas la valeur de M_{2max} admise par le réducteur (Voir tab. A6).

c) Charges radiales

En fonction du type d'application définir:

- la charge radiale sur l'arbre en entrée ou en sortie selon la formule suivante:

R_{c1-2} charge radiale (N)
 $_1$ = sur l'arbre rapide
 $_2$ = sur l'arbre lent
 M_{r1-2} Couple sur l'arbre (Nm)
 d Diamètre (mm) de la roue pour chaînes, engrenage, poulies, etc.
 $K_r = 1$ roue pour chaîne
 $K_r = 1,25$ engrenage
 $K_r = 1,5-2,0$ poulie pour courroie en V

- en cas de durée requise autre de 10000 h, le facteur de durée f_L selon le tableau (A7).



c₁)albero lento

- per carichi in mezzzeria verificare che sia soddisfatta la seguente relazione:

c₁)output shaft

- for loads applying at shaft mid-point, check that the following condition is verified:

c₁)Abtriebswelle

- Bei Belastungen, die auf die Wellenmitte einwirken, prüfen, ob folgende Bedingung gegeben ist:

c₁)arbre en sortie

- pour des charges sur la moitié, vérifier l'existence de l'équation :

$$R_{n2} \geq R_{c2} \times f_L \tag{18}$$

dove **R_{n2}** è il carico in mezzzeria ammissibile riportato nelle tabelle dei dati tecnici.

where **R_{n2}** is the permitted load at shaft mid-point, as listed in the rating charts.

wobei **R_{n2}** die zulässige, auf die Wellenmitte einwirkende Kraft darstellt, diese wird in den Tabellen der entsprechenden technischen Daten aufgeführt.

où **R_{n2}** est la charge admissible à la moitié indiquée dans les tableaux des données techniques.

- Per posizioni del carico diverse dalla mezzzeria (escluso esecuzione FZ) definire la posizione del carico x sull'albero e leggere il fattore moltiplicativo **f_{x2}** sul diagramma corrispondente (riportato dopo le pagine relative alle dimensioni della grandezza selezionata).
Deve essere verificato:

- Should the point of application not be located at shaft mid-point - with the exception of version FZ - establish the offset value x and find the adjusting factor **f_{x2}** in the relevant diagram (following the pages showing the installation drawing of gearbox under study).
The following condition must be verified:

- Für Kraftangriffspunkte außerhalb der Wellenmitte (ausgenommen Ausführung FZ), an der Welle die Position der Kräfteinwirkung x bestimmen und am entsprechenden Diagramm (folgt den Seiten mit den Maßen der gewählten Größe) den Multiplikationsfaktor **f_{x2}** erheben.
Es muß folgendes geprüft werden:

- Pour des positions de la charge autres que sur la moitié (à l'exclusion de l'exécution FZ), définir la position de la charge x sur l'arbre et repérer le facteur de multiplication **f_{x2}** sur le diagramme correspondant (reporté après les pages relatives aux dimensions de la taille sélectionnée).
Vérifier l'existence de l'équation :

$$R_{x2} = R_{n2} \times f_{x2} \geq R_{c2} \times f_L \tag{19}$$

- Esecuzione VK

Determinare:
- Carico radiale **R_{c2}**
- Carico assiale **A_{c2}**
- Distanza x del carico **R_{c2}**

- VK output

Determine:
- Radial load **R_{c2}**
- Thrust load **A_{c2}**
- Offset x of load **R_{c2}**

- Ausführung VK

Folgendes bestimmen:
- Radialkraft **R_{c2}**
- Axialkraft **A_{c2}**
- Position x der Kräfteinwirkung **R_{c2}**

- Exécution VK

Définir :
- Charge radiale **R_{c2}**
- Charge axiale **A_{c2}**
- Position x de la charge **R_{c2}**

Leggere sul diagramma relativo al riduttore in oggetto, in corrispondenza della distanza x e del rapporto **A_{n2}/R_{n2}** più prossimo al valore **A_{c2}/R_{c2}**, il valore del carico radiale ammissibile **R_{x2}**.
Deve essere verificato:

Look up the diagram relevant to the gearbox under study and identify permitted radial load **R_{x2}** corresponding to distance x and the ratio **A_{n2}/R_{n2}** nearest to value **A_{c2}/R_{c2}**.
Make sure the following equation is verified:

Am zur gewählten Größe gehörigen Diagramm, beim Wert x und dem Verhältnis **A_{n2}/R_{n2}**, welches **A_{c2}/R_{c2}** am nächsten kommt, den Wert der zulässigen Radialkraft **R_{x2}** ablesen.
Es muß folgendes gegeben sein:

Sur le diagramme relatif à la taille sélectionnée, repérer, en face de la valeur x et du rapport **A_{n2}/R_{n2}** le plus proche de la valeur **A_{c2}/R_{c2}**, la valeur de la charge radiale admissible **R_{x2}**.
Vérifier l'existence de l'équation :

$$R_{x2} \geq R_{c2} \tag{20}$$

I valori diagrammati sono validi per:
- velocità **n₂** = 10 min⁻¹
- durata teorica 10000 h

Values in the diagram refer to:
- **n₂** = 10 rpm
- 10000 hrs theoretical lifetime

Die im Diagramm dargestellten Werte sind für
- **n₂** = 10 min⁻¹
- 10000 Std. gültig

Les valeurs indiquées sur le diagramme sont valables pour:
- **n₂** = 10 min⁻¹
- durée 10000 h

Per valori di velocità in uscita **n₂**, o per durate diverse, definire:
- fattore di velocità **f_{n2}** secondo la tabella (A8):

For different output speed **n₂**, or lifetime expectancy, consider:
- a speed factor **f_{n2}** as per table (A8):

Für die Werte der Abtriebsdrehzahl **n₂** oder abweichenden Belastungsdauern, muß folgendes definiert werden:
- Drehzahlfaktor **f_{n2}** gemäß

En cas de valeurs de vitesse en sortie **n₂** ou de durée différentes, définir :
- facteur de vitesse **f_{n2}** selon le tableau (A8) suivant :

(A8)

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

- fattore di durata **f_L** secondo la tabella (A7).
Deve essere verificato:

- a lifetime factor **f_L** according to table (A7).
This condition must be verified:

- Dauerfaktor **f_L** gemäß Tabelle (A7):
Folgendes muß gegeben sein:

- facteur de durée **f_L** selon le tableau (A7) :
Vérifier l'existence de l'équation :

$$R_{x2} \times f_{n2} \geq R_{c2} \times f_L \tag{21}$$



c₂)albero veloce

Con il valore di carico R_{c1} calcolato con la formula (17), definire la posizione assiale x sull'albero e leggere il valore del carico ammissibile R_{n1} sul diagramma dei carichi relativo alla grandezza di riduttore selezionato. Deve essere verificato:

c₂)input shaft

Based on the load value R_{c1} calculated through formula (17), determine point of load application over shaft length x and locate permitted load R_{n1} in the load diagram relevant to the specific gearbox. The following condition must be verified:

c₂)Antriebswelle

Unter Anwendung des anhand der Formel (17) berechneten Belastungswerts R_{c1} , die Axialposition x an der Welle bestimmen und den zulässigen Belastungswert R_{n1} am Belastungsdiagramm bezüglich der Größen des ausgewählten Getriebes erheben. Folgendes muß gegeben sein:

c₂)arbre en entrée

Avec la valeur de charge R_{c1} calculée selon la formule (17), définir la position axiale x sur l'arbre et repérer la valeur de la charge admissible R_{n1} sur le diagramme des charges relatif à la taille de réducteur sélectionnée. Vérifier l'existence de l'équation :

$$R_{n1} \geq R_{c1} \quad (22)$$

I valori diagrammati sono validi per:

- velocità $n_1=1000 \text{ min}^{-1}$
- durate teoriche di 10000 h

Per valori di velocità, o di durata diversi, definire: fattore di velocità f_{n1} secondo la tabella (A9) seguente:

Values listed in the diagram apply for:

- drive speed $n_1 = 1000 \text{ rpm}$
- 10000 hrs theoretical lifetime

For different input speed, or life expectancy, consider: The adjusting factor f_{n1} as per table (A9) here below:

Die im Diagramm dargestellten Werte sind bei:

- $n_1 = 1000 \text{ min}^{-1}$
- 10000 Std. gültig

Bei abweichenden Werten der Antriebsdrehzahl n_1 oder der Belastungsdauern, ist folgendes zu definieren: Drehzahlfaktor f_{n1} gemäß der nachstehenden Tabelle (A9):

Les valeurs indiquées sur le diagramme sont valables pour

- $n_1 = 1000 \text{ min}^{-1}$
- durée 10000 h

En cas de valeurs de vitesse en entrée n_1 , ou de durée différentes, définir: Facteur de vitesse f_{n1} selon le tableau (A9) suivant

(A9)

n_1	500	750	900	1200	1500	1800
f_{n1}	1.23	1.09	1.03	0.95	0.89	0.84

- fattore di durata f_L secondo la tabella (A7).

- a lifetime factor f_L as per table (A7).

- Dauerfaktor f_L , welcher der Tabelle (A7) entnommen werden kann.

- facteur de durée f_L selon le tableau (A7):

Deve essere verificato:

The following condition must be verified:

Folgendes muß gegeben sein

Vérifier l'existence de l'équation :

$$R_{n1} \times f_{n1} \geq R_{c1} \times f_L \quad (23)$$

d) Carichi assiali

Determinare il valore e verso di applicazione del carico Ac_2 che grava assialmente sull'albero del riduttore. Per il riduttore selezionato individuare il fattore moltiplicativo fa_2 corrispondente al tipo di uscita e al verso di applicazione del carico, con i segni (+) e (-) convenzionalmente assegnati come segue:

d) Thrust loads

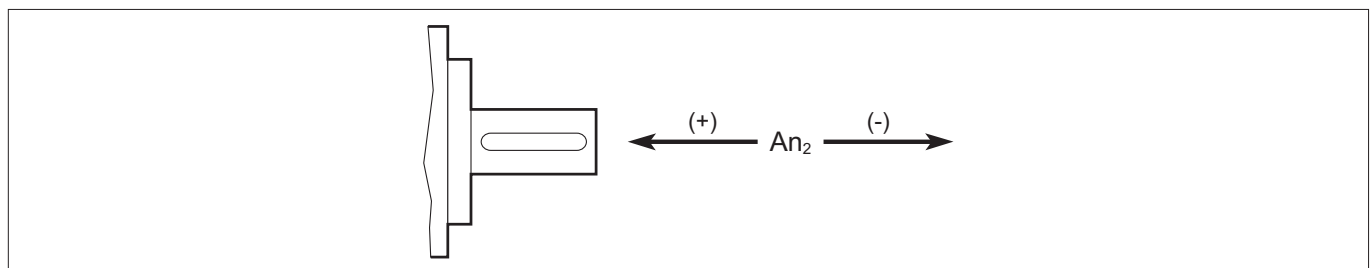
Calculate value and direction of thrust Ac_2 that applies axially onto the shaft. For the gearbox under study locate the adjusting factor fa_2 corresponding to the type of output and the direction the thrust load applies, with the signs (+) and (-) conventionally applied as follows:

d) Axialkräfte

Den Wert und die Richtung der Kraft Ac_2 festlegen, die axial auf die Getriebewelle einwirkt. Für das ausgewählte Getriebe den Multiplikationsfaktor fa_2 ermitteln, der der Abgangsart und der Richtung der Axialbelastung entspricht. Dabei werden die Zeichen (+) und (-) wie folgt angewandt:

d) Charges axiales

Calculer la valeur et la direction de la charge Ac_2 qui s'applique axialement sur l'arbre du réducteur. Pour le réducteur sélectionné, déterminer le facteur multiplicateur fa_2 correspondant au type de sortie et au sens d'application de la charge, avec les signes (+) et (-) conventionnellement choisis comme suit:



Con Rn_2 e fa_2 calcolare il valore del carico assiale ammissibile An_2 :

From Rn_2 and fa_2 determine the value of admissible thrust load An_2 :

Den zulässigen Axialbelastungswert An_2 mit Rn_2 und fa_2 berechnen:

A partir de Rn_2 et de fa_2 , déterminer la valeur de la charge axiale An_2 admissible:

$$An_2 = Rn_2 \times fa_2 \quad (24)$$

Dalla tabella (A7) selezionare il fattore correttivo f_L corrispondente alla durata teorica attesa per i cuscinetti.

From chart (A7) select the adjusting factor f_L corresponding to the theoretical lifetime of bearings that is to be expected.

In der Tabelle (A7) den Korrekturfaktor f_L auswählen, der der theoretisch zu erwartenden Lebensdauer der Lager entspricht.

A partir de la table (A7) sélectionner le facteur de correction f_L correspondant à la durée de vie théorique souhaitée pour les roulements.



Dalla tabella seguente individuare il fattore correttivo del carico assiale K_a in funzione del tipo di applicazione del carico stesso:

From chart below locate the axial load duty factor K_a depending on the type of loading that is applicable:

In der nachstehenden Tabelle den Korrekturfaktor der Axialbelastung K_a je nach Einwirken der Belastung auswählen:

A partir de la table ci-après, sélectionner le facteur de correction de la charge axiale K_a en fonction du type d'application de cette charge:

K_a	Natura del carico / Type of duty / Belastungsart / Nature de la charge		
	Uniforme / Uniform Gleichmäßig / Uniforme	Urti moderati / Moderate shock Mit mäßigen Stößen / Chocs modérés	Forti urti / Heavy shock Mit starken Stößen / Chocs fort
	1.0	1.25	1.5

Con i fattori così predeterminati verificare infine che la seguente condizione sia soddisfatta:

With all factors so determined verify that the following condition is satisfied:

Nachdem diese Faktoren festgelegt wurden, muss überprüft werden, dass folgende Bedingung gegeben ist:

Avec les facteurs ainsi déterminés, vérifier que la condition suivante soit satisfaite:

$$Ac_2 \times f_L \times K_a \leq An_2 \quad (25)$$

Per carichi radiali e assiali agenti contemporaneamente, contattare preferibilmente il nostro Servizio Tecnico.

If radial and axial loads apply simultaneously, please consult Bonfiglioli's Technical Service.

Wirken Radial- und Axialbelastungen gleichzeitig, wird empfohlen, unseren Kundendienst zu kontaktieren.

Dans le cas de charges radiales et axiales appliquées simultanément, contacter le Service Technique de Bonfiglioli.

14.0 - SCELTA DEL MOTORE

a) Tramite la formula sotto riportata ricavare la potenza richiesta all'albero veloce del riduttore, dopo aver preventivamente determinato:

- la coppia M_{r2}
- la velocità n_2
- il rendimento η_d

14.0 - 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

14.0 - WAHL DES MOTOR

a) Da man n_2 und den dynamischen Wirkungsgrad η_d kennt, kann man aus dem Drehmoment M_{r2} nun die Antriebsleistung errechnen:

14.0 - CHOIX DU MOTEUR

a) La formule ci-dessous permet de calculer la puissance requise sur l'arbre rapide du réducteur après avoir déterminé :

- le couple M_{r2}
- la vitesse n_2
- le rendement η_d

$$P_{r1} = \frac{M_{r2} \times n_2}{9550 \times \eta_d} \quad (26)$$

La tabella (A2) fornisce i valori di rendimento η_d indicativi relativi ai vari tipi di riduttore.

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

Die Tabelle (A2) führt die Anhaltswerte des Wirkungsgrads η_d auf, die sich auf die unterschiedlichen Getriebetypen beziehen.

Le tableau (A2) indique les valeurs de rendement η_d indicatives relatives aux différents types de réducteur.

b) Nelle tabelle dati tecnici dei motori selezionare un motore caratterizzato da una potenza nominale P_n che soddisfi la condizione:

b) In the electric motor section select a motor that is sufficiently rated, as per the following condition:

b) In den Tabellen mit den technischen Motordaten eine Größe mit einer solchen Nennleistung wählen, welche die folgende Anforderung.

b) Sélectionner au tableau données techniques des moteurs une taille avec puissance nominale P_n capable de satisfaire à :

$$P_n \geq P_{r1} \quad (27)$$

Per tipi di servizio diversi da quello continuo S1 la potenza P_n può essere corretta tramite il fattore f_m fornito dalla tabella (A5). Preferibilmente scegliere motori a 4 poli, o superiori.

For duties other than continuous S1 the motor rating can be upgraded through the factor f_m , listed in table (A5). 4-Pole motors, or lower speed motors, should be preferred.

Für Einsatzbedingungen, die von den Standardbedingungen abweichen, siehe Tabelle (A5). Sollten vorzugsweise Motoren mit 4 oder mehr Polen gewählt werden.

En cas d'utilisations différentes du service continu S1, la puissance P_n peut être corrigée à l'aide du facteur f_m fourni par le tableau (A5). Choisir de préférence des moteurs à 4 pôles, ou supérieurs.

15.0 - INSTALLAZIONE

È molto importante per l'affidabilità e il buon funzionamento del riduttore rispettare alcune norme per la sua corretta installazione.

Le norme qui riportate hanno valore per una prima indicazione per la installazione del riduttore.

Per provvedere ad una effettiva e corretta installazione attenersi al Manuale di installazione uso e manutenzione dei riduttori for-

15.0 - 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.

For effective and proper installation, follow the instructions given in the Installation, use and maintenance manual available from our Sales network.

15.0 - INSTALLATION

Im Hinblick auf die Zuverlässigkeit und eine gute Betriebsweise des Getriebes ist es besonders wichtig, für deren korrekten Einbau Kenntnis über einige Richtlinien zu haben. Die hier in Folge angeführten Normen sind eine erste Anleitung für die Auswahl des Getriebes.

Um eine effektive und korrekt erfolgte Installation zu erhalten, muß man sich an das Anleitung und Instandhaltungshand-

15.0 - INSTALLATION

Il est très important pour la fiabilité et le bon fonctionnement du réducteur de respecter certaines règles pour une installation correcte. Les règles indiquées n'ont qu'une valeur indicative d'orientation pour le choix du réducteur. Pour effectuer une installation définitive parfaite, respecter les consignes d'installation, utilisation et entretien des réducteurs de la série 300, qui peuvent être li-



nibile dalla nostra Organizzazione di Vendita.
Riportiamo in breve le norme da seguire:

Following is a brief outline of installation rules:

buch der Getriebe der Serie 300 halten. Dieses Handbuch ist bei unserer Verkaufsorganisation erhältlich. Wir möchten Ihnen hier nur kurz die zu befolgenden Normen anführen:

vrées par notre Organisation de Vente.

Voici brièvement les règles qu'il faut suivre :

a) Fissaggio:

- Appoggiare il riduttore a una struttura sufficientemente rigida, con superfici di accoppiamento piane e lavorate di macchina utensile.
- Le superfici di accoppiamento, specialmente per riduttori montati con flangia e con alberi in uscita femmina scanalati, devono risultare entro precise tolleranze geometriche (vedi manuale).
- Per alcune grandezze di riduttori, in applicazioni con elevati carichi radiali in uscita, è raccomandato il montaggio a flangia eseguito per utilizzare i doppi diametri di centraggio di cui tali riduttori sono provvisti.
- Verificare che il riduttore sia previsto per la posizione di montaggio richiesta.
- Fissare il riduttore con viti di classe 8.8, o superiore, serrandole ai valori di coppia indicati nelle relative tabelle. Per coppie massime trasmesse maggiori od uguali al 70% della coppia M_{2max} indicata e con frequenti inversioni del moto, utilizzare viti in classe minima di resistenza 10.9. Alcune grandezze di riduttori prevedono oltre il fissaggio con viti, anche spine. Inserire le spine di cui i riduttori sono provvisti, nella struttura sulla quale il riduttore viene installato per una lunghezza almeno pari a 1,5 volte il valore del loro diametro.

a) Fastening:

- *Place the gearbox on a surface providing adequate rigidity. Mating surfaces should be machined and flat.*
- *This applies especially 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.*

a) Befestigung:

- Das Getriebe auf einer ausreichend starken Struktur mit flachen und mittels Werkzeugmaschinen bearbeiteten Passungsflächen ablegen.
- Die Passungsflächen, besonders für die mit Flansch und Keilabtriebswellen montierten Getriebe, müssen innerhalb bestimmter geometrischer Toleranzen liegen (siehe Handbuch).
- Bei einigen Baugrößen der Getriebe, bei Applikationen mit hoher auf dem Abtrieb einwirkender Radialkraft, wird die Montageweise mit Flansch empfohlen, wodurch die doppelten Zentrierdurchmesser, mit denen die Getriebe ausgestattet sind, verwendet werden können.
- Unter Bezugnahme auf die Darstellung der Tabelle (A8) auf Seite 17 prüfen, ob das Getriebe auch für die betreffende Montageposition vorgesehen ist.
- Das Getriebe mit Schrauben der Widerstandsklasse 8.8 oder einer höheren Klasse befestigen, dabei auf die in den jeweiligen Tabellen angegebenen Anzugsmomente bringen. Für zu übertragene Maximaldrehmomente, die höher als 70% des angegebenen Werts M_{2max} oder diesem Prozentsatz gleich kommen und im Fall von häufigen Schaltungen sind Schrauben aus der Klasse der min. Widerstandsgrads 10.9 zu verwenden. Einige Getriebebaugrößen der Getriebe sehen ausser der Befestigung durch die Schrauben, auch Stifte vor. Dazu die Stifte, mit denen die Getriebe ausgestattet sind, über eine Länge von mindestens gleich 1,5 des Werts ihres Durchmesser, in die Struktur einstecken, auf die das Getriebe installiert werden soll.

a) Fixation:

- *Faire en sorte que le réducteur repose sur un bâti suffisamment rigide avec des surfaces d'accouplement planes et usinées à la machine-outil.*
- *Les surfaces d'accouplement, spécialement pour les réducteurs avec bride d'assemblage et arbres de sortie femelle cannelés, doivent respecter des tolérances géométriques bien précises (voir catalogue).*
- *Pour certaines tailles de réducteur, dans des applications avec des charges radiales élevées à la sortie, on préconise un montage avec bride, afin d'utiliser les doubles diamètres de centrage, dont ces réducteurs sont pourvus.*
- *Veiller à ce que le réducteur convienne à la position de montage nécessaire.*
- *Fixer le réducteur avec des vis d'un degré de résistance 8.8 ou supérieur en les serrant aux valeurs de couple de serrage indiquées sur les tableaux correspondants. Pour des couples maximaux transmis plus importants ou équivalents à 70% du couple M_{2max} indiqué, et en cas d'inversions fréquentes du mouvement, utiliser des vis dans une classe minimale de résistance 10.9. Certaines tailles de réducteurs prévoient une fixation tant par vis que par goupilles. Introduire les goupilles, livrées avec les réducteurs, dans le bâti sur lequel le réducteur sera installé sur une longueur au moins égale à 1,5 de la valeur de leur diamètre.*

b) Collegamenti

- Fissare gli organi di collegamento in entrata ed uscita al riduttore evitando di battere con martello o equivalenti. Utilizzare per l'inserimento degli organi le viti di servizio e i fori filettati presenti negli alberi. Prima di montare gli organi di collegamento avere cura di pulire gli alberi eliminando grassi o protettivi eventualmente presenti.
- Versi di rotazione. Nell'effettuare il cablaggio del motore, tenere presente che i riduttori hanno i versi di

b) 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 de-*

b) Anschlüsse

- Die Anschlußteile im An- und Abtrieb des Getriebes befestigen, dabei ist ein Einklopfen dieser unter Anwendung eines Hammers oder anderer gleichartiger Instrumente zu vermeiden. Zum Einführen der Teile die Service-schrauben und die Gewindebohrungen der Wellen verwenden. Vor der Montage der Verbindungsteile, die Wellen sorgfältig von Fett oder eventuell vorhandenen Schutzmitteln reinigen.
- Drehrichtungen Beim Anschluß der Motoren an den Schaltkreis in Abhängigkeit zu ihren Umdre-

b) Raccordements

- *Fixer les éléments de raccordement en entrée et en sortie du réducteur en évitant de frapper avec un marteau ou autre. Pour l'introduction des organes, utiliser les vis appropriées et les orifices filetés présents sur les arbres. Avant de monter les éléments de raccordement, nettoyer les arbres en éliminant les graisses ou produits de protection éventuellement présents.*
- *Sens de rotation. En ce qui concerne le raccordement des moteurs au circuit électrique, en fonction*



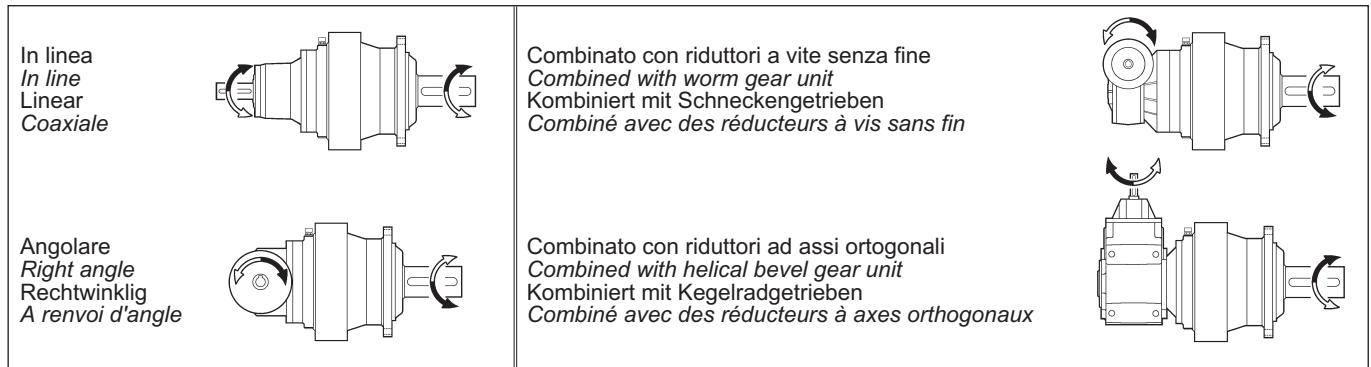
rotazione entrata/uscita, come indicato nella tabella seguente:

scribed in the diagram here after:

hungsrichtungen, muß berücksichtigt werden, daß die Getriebe im An-/Abtrieb die folgenden, in der nachstehenden Tabelle aufgeführten Drehrichtungen aufweisen:

de leur sens de rotation différent, ne pas oublier que les sens de rotation entrée/sortie des réducteurs sont ceux indiqués dans le tableau suivant :

(A10)



c) Verniciatura

- Utilizzare vernici compatibili con la vernice di fondo presente sui riduttori, vedi: Condizioni di fornitura. Durante la verniciatura proteggere gli anelli di tenuta presente sugli alberi. La vernice li può fare essiccare causando perdite d'olio.

c) Paint coating

- Use paint compatible with the primer applied to the gearbox, see: Supply conditions. Prior to painting, tape the seal rings installed on the shafts. Contact with the solvent may deteriorate the seals with subsequent oil leakage.

c) Lackierung

- Lackarten verwenden, die mit der Grundlackierung der Getriebe kompatibel sind. Siehe Lieferbedingungen auf Seite 21. angeführten Lieferbedingungen. Während des Lackiervorgangs sind die auf der Welle angeordneten Dichtringe in angemessener Weise zu schützen. Der Lack kann zum Austrocknen dieser Ringe führen, was letztendlich zu Ölverlusten führen würde.

c) Peinture

- Utiliser des peintures compatibles avec la couche de fond déjà existante sur les réducteurs, voir Conditions de livraison. En cours de peinture, protéger les bagues à lèvres des arbres. La peinture peut les sécher et des fuites d'huile peuvent en découler.

d) Lubrificazione

- Prima della messa in servizio riempire il riduttore di lubrificante (vedi: Lubrificazione) fino al raggiungimento del livello riscontrabile dall'apposito tappo di servizio di cui ogni riduttore è provvisto in funzione della posizione di montaggio specificata in fase di ordine.

d) Lubrication

- Prior to commissioning, fill the gearbox with the recommended type and quantity of oil (see: Lubrication). 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.

d) Schmierung

- Vor der Inbetriebnahme muß das Getriebe oder der Getriebemotor solange mit dem empfohlenen Schmieröl (siehe "Schmierung" auf Seite 33) gefüllt werden, bis der vorgesehene Pegel über die Einfüllschraube oder das Schauglas, mit denen die Getriebe je nach Montagelage ausgestattet sind, erkennbar ist.

d) Lubrification

- Avant la mise en service, remplir le réducteur avec l'huile conseillée (voir Lubrification) jusqu'au niveau prévu, vérifiable à travers le bouchon ou niveau visible équipant chaque réducteur, en fonction de la position de montage établie.

NOTA: nei riduttori combinati la lubrificazione degli stadi epicicloidali è separata da quella dei riduttori a vite senza fine (serie 3/V), o ortogonali (serie 3/A). I riduttori forniti con lubrificazione permanente ad olio sintetico (vedi tab. A26) non necessitano delle operazioni sopra descritte.

NOTE: Combined gearboxes feature separate lubrication for planetary stages and for worm gears (series 3/V) or bevel helical units (series 3/A). The operations described above are not to be performed with life-lubed gearboxes, that are factory filled with synthetic oil (see tab. A26)

MERKE: Bei den kombinierten Getrieben ist die Schmierung der Planetenstufen von denen der Schneckengetriebe (3/V) oder Kegelradgetriebe (3/A) getrennt. Bei den mit Dauerschmierung mit Synthetiköl (siehe Tabelle A26) gelieferten Getriebe sind die zuvor genannten Arbeiten nicht erforderlich.

REMARQUE : Sur les réducteurs combinés, la lubrification des étages épicycloïdaux est séparée de celle des réducteurs à vis sans fin (3/V) ou orthogonaux (3/A). Sur les réducteurs fournis avec lubrification permanente avec de l'huile synthétique (voir tab. A26), il n'est pas nécessaire d'effectuer les opérations décrites ci-dessus.

16.0 - MANUTENZIONE

Controllare il serraggio dei bulloni dopo 50 ore di lavoro. Effettuare il primo cambio olio circa dopo 100-150 ore di lavoro; successivamente effettuare il cambio ogni 2000 3000 ore, a seconda degli impieghi, o almeno una volta all'anno. Sono esclusi i riduttori dotati di lubrificazione permanente. È buona norma comunque controllare il livello una volta al mese per funzionamento intermittente, o più frequentemente, per funzionamento in continuo, e aggiungere olio se necessario.

16.0 - 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.

16.0 - WARTUNG

Schrauben nach 50 Betriebsstunden auf festen Sitz prüfen. Ersten Ölwechsel nach zirka 100-150 Betriebsstunden durchführen. Anschließend alle 2000 - 3000 oder mindestens einmal jährlich einen Ölwechsel durchführen (je nach Einsatzbereich). Hiervon ausgeschlossen sind die Getriebe mit Dauerschmierung. Es sollte jedoch bei Aussetzbetrieb einmal monatlich und bei Dauerbetrieb häufiger der Ölstand kontrolliert werden. Falls notwendig, Öl nachfüllen.

16.0 - ENTRETIEN

Contrôler le serrage des vis et boulons, après 50 heures de travail. Effectuer la première vidange du lubrifiant, après 100 à 150 heures de travail. Ultérieurement, effectuer une vidange toutes les 2000 à 3000 heures, selon les applications, ou au minimum une fois par an. Les réducteurs avec lubrification permanente sont exclus. Toutefois, il est conseillé de contrôler le niveau d'huile une fois par mois, en cas de fonctionnement intermittent, plus souvent en cas de service continu, et de faire l'appoint si nécessaire.



17.0 - STOCCAGGIO

Il corretto stoccaggio dei prodotti richiede l'esecuzione delle seguenti attività:

- a) Escludere aree all'aperto, zone esposte alle intemperie o con eccessiva umidità.
- b) Interporre sempre tra il pavimento ed i prodotti, pianali lignei o di altra natura, atti ad impedire il diretto contatto col suolo.
- c) Per periodi di stoccaggio superiori ai 60 giorni, le superfici interessate agli accoppiamenti quali flangie, alberi e giunti, devono essere protette con idoneo prodotto antiossidante (Mobilarma 248 od equivalente).
- d) Per periodi di stoccaggio previsti superiori ai 6 mesi, i prodotti devono essere oggetto delle seguenti attività:
 - Ricoprire tutte le parti lavorate esterne con grasso atto ad evitare ossidazioni.
 - Posizionare i riduttori con il tappo di sfiato nella posizione più alta e riempirli di olio, ad eccezione di quelli dotati in fabbrica di lubrificazione permanente. I riduttori, prima del loro utilizzo, dovranno essere ripristinati con la corretta quantità e tipo di lubrificante previsto (vedi tab. A25-A26).

17.0 - STORAGE

Observe the following instructions to ensure correct storage of the products:

- a) *Do not store outdoors, in areas exposed to weather or with excessive humidity.*
- b) *Always place boards, wood, or other material between the products and the floor. The gearbox should not have direct contact with the floor.*
- c) *For storage periods of over 60 days, all machined surfaces such as flanges, shafts and couplings must be protected with a suitable anti-oxidation product (Mobilarma 248 or equivalent product).*
- d) *When units are expected to be in storage for more than 6 months, the following extra measures are required:*
 - *Smear all machined parts with grease to prevent oxidation.*
 - *Place the gearbox so that the breather plug is uppermost and fill it with oil (this does not apply to life-lubricated gearboxes). Before the gearbox is put into operation, the appropriate type and quantity of oil should be restored (tab. A25 - A26).*

17.0 - LAGERUNG

Die korrekte Lagerung der Antriebe erfordert folgende Vorkehrungen:

- a) Die Produkte nicht im Freien lagern und nicht in Räumen, die der Witterung ausgesetzt sind, oder eine hohe Feuchtigkeit aufweisen.
- b) Die Produkte nie direkt auf dem Boden, sondern auf Unterlagen aus Holz oder einem anderen Material lagern.
- c) Bei Lagerzeiten von mehr als 60 Tagen die Oberflächen für die Verbindung, wie Flansche, Wellen oder Kupplungen mit einem geeigneten Oxidationsschutzmittel behandeln (Mobilarma 248 oder ein äquivalentes Mittel).
- d) Bei Lagerzeiten von mehr als 6 Monaten müssen folgende Vorkehrungen getroffen werden:
 - Die bearbeiteten Außenteile und die Passflächen mit Oxidationsschutzfett abdecken.
 - Die Getriebe mit der Entlüftungsschraube in der obersten Position ausgerichtet aufstellen und, die mit Dauerschmierung ausgestatteten Getriebe ausgenommen, mit Öl füllen. Die Getriebe müssen vor ihrem Einsatz mit der richtigen Menge des vorgesehenen Schmiermittels aufgefüllt werden (Tab. A25 - A26).

17.0 - STOCKAGE

Un stockage correct des produits reçus nécessite de respecter les règles suivantes :

- a) *Exclure les zones à ciel ouvert, les zones exposées aux intempéries ou avec humidité excessive.*
- b) *Interposer dans tous les cas entre le plancher et les produits des planches de bois ou des supports d'autre nature empêchant le contact direct avec le sol.*
- c) *Pour les périodes de stockage supérieures à 60 jours, les surfaces concernées par les liaisons telles que les brides, les arbres et les accouplements doivent être protégées avec un produit antioxydant spécial (Mobilarma 248 ou équivalent).*
- d) *Pour les périodes de stockage prévues supérieures à 6 mois, les produits doivent faire l'objet des contrôles suivants :*
 - *Recouvrir les parties extérieures usinées avec de la graisse contre l'oxydation.*
 - *Positionner les réducteurs avec le bouchon reniflard le plus haut possible et les remplir d'huile, à l'exception de ceux à lubrification permanente. Avant utilisation, les réducteurs doivent être remplis de la quantité et du type de lubrifiant préconisés (tab. A25- A26).*

18.0 - CONDIZIONI DI FORNITURA

I riduttori vengono forniti come segue:

- a) predisposti per l'installazione nella posizione di montaggio specificata nell'ordinativo;
- b) **senza olio lubrificante ed internamente protetti con un film d'olio usato per il collaudo finale (tipo SHELL ENSIS OIL N);**
- c) verniciati con vernice di fondo antiossidante all'acqua di colore grigio (tipo Idrayon Primer Ral 7042/C441). Le superfici di accoppiamento non sono verniciate. La verniciatura finale è a cura del cliente;
- d) collaudati secondo specifiche interne;
- e) appositamente imballati;
- f) provvisti di dadi e bulloni per montaggio motori elettrici versione IEC;
- g) dotati di carica di lubrificante per i tipi a lubrificazione permanente.

18.0 - SUPPLY CONDITIONS

Gearboxes are generally supplied as follows:

- a) *arranged for installation in the mounting position specified in the purchase order;*
- b) ***Unlubricated. Inner parts are protected by a film of the oil used for testing purpose (type SHELL ENSIS OIL N);***
- c) *primer coated with grey anti-oxidant water-based primer type Idrayon Primer-Ral 7042/C441. Mounting surfaces are not paint coated. Finish coating is to be applied by the Customer;*
- d) *tested to factory specifications;*
- e) *suitably packed;*
- f) *complete with mounting hardware for IEC electric motors;*
- g) *gearboxes lubricated "for life" are factory filled with oil.*

18.0 - LIEFERBEDINGUNGEN

Die Getriebe werden folgendermaßen geliefert:

- a) bereits für die Installation in der Einbaulage gemäß Auftrag bereit.
- b) **ohne Schmieröl und innen mit einem Öl, das für die Endabnahmeprüfung verwendet wurde, überzogen (Typ SHELL ENSIS OIL N).**
- c) mit einer grauen, vor Oxidation durch Wasser schützenden Grundlackierung überzogen (Typ Idrayon Primer Ral 7042/C441). Die Verbindungsflächen sind nicht lackiert. Die Endlackierung geht zu Lasten des Kunden.
- d) gemäß werksinterner Spezifikationen geprüft.
- e) in angemessener Weise verpackt.
- f) mit Muttern und Schrauben für die Montage an Elektromotoren der Version IEC;
- g) die mit Dauerschmierung, bereits mit Schmiermittel ausgestattet.

18.0 - CONDITIONS DE LIVRAISON

Les réducteurs sont livrés comme suit :

- a) *déjà adaptés pour l'installation dans la position d'assemblage définie en cours de commande;*
- b) ***sans huile et protégés à l'intérieur avec un film d'huile utilisée lors de l'essai final (type SHELL ENSIS OIL N);***
- c) *peints avec une couche de fond de protection antioxydant à l'eau, de coloris gris (type idrayon Primer-Ral 7042/C441). Les surfaces d'accouplement ne sont pas peintes. La peinture de finition doit être réalisée par le client ;*
- d) *essayés d'après les spécifications internes ;*
- e) *dûment emballés ;*
- f) *pourvus d'écrous et de boulons pour l'assemblage aux moteurs électriques, version CEI ;*
- g) *déjà pourvus de lubrifiant pour ceux à lubrification permanente.*



19.0 - DESIGNAZIONE
RIDUTTORE 300

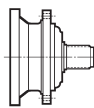
19.0 - 300 GEARBOX
DESIGNATION

19.0 - 300 GETRIEBE-
BEZEICHNUNG

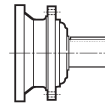
19.0 - DESIGNATION
REDUCTEUR 300

3 11 L 2 16.7 HZ

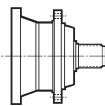
VERSIONE USCITA / OUTPUT VERSION / AUSGANGSVERSION / VERSION EN SORTIE



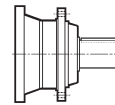
MZ: Albero maschio scanalato
Splined male shaft
Vielkeilwelle
Arbre de sortie cannelé sortant



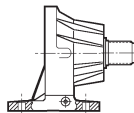
MC: Albero maschio cilindrico
Solid keyed shaft
Zylindrisches Welle
Arbre de sortie cyl. Claveté sortant



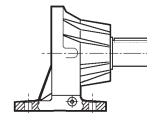
HZ: Albero maschio rinforzato scanalato
Heavy duty splined male shaft
Vielkeilwelle mit Verstärker
Lagerung
Arbres de sortie cannelé sortant, paliers renforcés



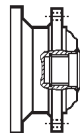
HC: Albero maschio rinforzato cilindrico
Heavy duty solid keyed shaft
Zylindrisches Welle mit Verstärker
Lagerung
Arbre de sortie cyl. claveté sortant, paliers renforcés



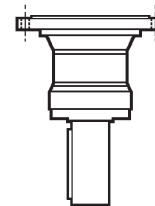
PZ: Base di supporto con albero maschio scanalato
Foot mounted with splined shaft
Fußausführung mit Keilwelle
Base de support avec arbre mâle cannelé



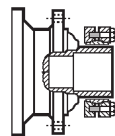
PC: Base di supporto con albero cilindrico
Foot mounted with solid keyed shaft
Fußausführung mit zylindrischer Welle
Base support à pattes avec arbre cyl. clavé



FZ: Albero femmina scanalato
Hollow splined shaft
Vielkeilhohlwelle
Arbre de sortie creux cannelé



VK: Albero cilindrico rinforzato per agitatori e mescolatori
Reinforced output with large solid keyed shaft for stirrers and mixer
Verstärkter Abtrieb mit zylindrischer Welle für Rührwerke und Mischer
Sortie renforcée avec arbre cylindrique pour agitateurs et mélangeurs



FP: Albero femmina per giunto ad attrito
Hollow shaft for shrink disc
Zylindrische Hohlwelle für Schumpfscheibe
Arbre de sortie creux pour montage par frette

RAPPORTO DI RIDUZIONE / GEAR RATIO / ÜBERSETZUNG / RAPPORT DE REDUCTION

Indicare il valore del rapporto (compresi punto e decimali) riportato su pagine dati tecnici
Fill in the value of the transm. ratio (including point and decimals) reported in the selection charts
Den auf den Seiten der technischen Daten angegebenen Wert des Übersetzungs (einschließlich Punkt und Dezimalen) angeben
Indiquer la valeur du rapport (y inclus les chiffres décimaux) citée aux pages des données techniques
Es. / Ex. / Beispiel / Ex. : 1/5.33 = 5.33 1/44.6 = 44.6 1/131 = 131

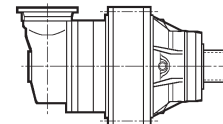
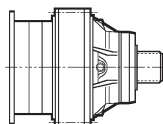
NUMERO STADI DI RIDUZIONE / REDUCTIONS
ANZAHL DER GETRIEBESTUFEN / N. ETAGES DE REDUCTION TOTAUX

1 - 2 - 3 - 4

ESECUZIONE / DESIGN / AUSFÜHRUNG / EXECUTION

L = Lineare / *In line* / Linear / *Coaxiale*

R = Angolare / *Right angle* / Rechtwinklig / *A renvoi d'angle*



GRANDEZZA RIDUTTORE / GEARBOX FRAME SIZE / GETRIEBEBAUGRÖSSE / TAILLE REDUCTEUR

00 = 300
01 = 301
03 = 303
05 = 305

188
196
204
214

06 = 306
07 = 307
09 = 309
10 = 310

224
234
244
254

11 = 311
13 = 313
15 = 315
16 = 316

264
274
284
294

17 = 317
18 = 318
19 = 319
21 = 321

302
310
318
326

SERIE / SERIES / SERIE / SERIE



P180 A W0A

OPZIONI / OPTIONS / OPTIONEN / OPTIONS
 GUARNIZIONI / GASKET / DICHTUNGEN / MATIERE ETANCHE
 STANDARD = NITRILBUTADIENE / NITRILBUTADIENE
 NITRILBUTADIEN / NITRILEBUTADIENE

PV = VITON®

SOLO PER ESECUZIONE ANGOLARE / ONLY FOR RIGHT ANGLE DESIGN
 NUR FÜR WINKELAUSFÜHRUNGEN / UNIQUEMENT EN CASE D'EXECUTION D'ANGLE
 senso di rotazione in ingresso preferenziale / preferential input direction of rotation
 bevorzugte umdrehungsrichtung am antrieb / sense de rotation de preference en entrée

RA = Sinistro / Left / Links / Gauche

RO = Destro / Right / Rechts / Droit



CENTRALINA AUSILIARE DI RAFFREDDAMENTO
 SUPPLEMENTARY COOLING SYSTEM
 HILFSKÜHLSYSTEM
 UNITE DE REFROIDISSEMENT AUXILIAIRE
CR1, CR2, CR3



ACCESSORI IN USCITA / OUTPUT FITTINGS / ZUBEHÖR (ABTRIEB) / ACCESSOIRES COTE SORTIE



P... = Pignoni
 Pinions
 Ritzel
 Pignons



B0A = Barra scanalata
 Splined bar
 Vielkeilvollwelle
 Barre cannelée



M0A = Manicotto liscio
 Sleeve coupling
 Nabe
 Manchon lisse



G0A = Giunto ad attrito
 Shrink disc
 Schrumpfscheibe
 Frette de serrage



W0A = Flangia
 Flange
 Flansch
 Bride

POSIZIONE DI MONTAGGIO / MOUNTING POSITION
 EINBAULAGEN / POSITION DE MONTAGE

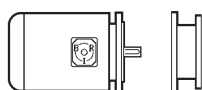


ENTRATA / INPUT / EINGANG / ENTREE



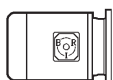
Albero veloce
 Input keyed shaft
 Eingangswelle
 Arbre d'entrée cyl. claveté

VO1A = Ø 24
VO1B = Ø 38
VO5B = Ø 48
VO6B = Ø 60
VO7B = Ø 80
V11 B = Ø 80

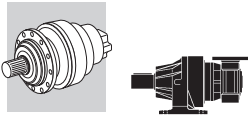


Predisposizione motore elettrico
 Electric motor connection
 Motoranbauteile für IEC-Motor
 Adaptation pour moteur électrique

P + grandezza motore (80,90,100,132,160,...)
P + motor size (80,90,100,132,160,...)
P + Motor Größe (80,90,100,132,160,...)
P + tailles de moteur (80,90,100,132,160,...)



Motoriduttore integrato completo di motore elettrico compatto: **S2_ S3_ S4_**
 Disponibile fino alla grandezza 307
 Integrated gearmotor with in-built compact electric motor: **S2_ S3_ S4_**
 Available up to size 307
 Integrierter Getriebemotor komplett mit kompakten Elektromotor: **S2_ S3_ S4_**
 Bis zur Baugröße 307 verfügbar
 Motoréducteur intégré avec moteur électrique compact: **S2_ S3_ S4_**
 Disponible jusqu'à la taille 307



19.0 - DESIGNAZIONE
RIDUTTORE 3/V

19.0 - 3/V GEARBOX
DESIGNATION

19.0 - 3/V GETRIEBE-
BEZEICHNUNG

19.0 - DESIGNATION
REDUCTEUR 3/V

3/V 05 L 3 623 PC

VERSIONE USCITA / OUTPUT VERSION / AUSGANGSVERSION / VERSION EN SORTIE

	<p>MZ: Albero maschio scanalato <i>Splined male shaft</i> Vielkeilwelle <i>Arbre de sortie cannelé sortant</i></p>		<p>MC: Albero maschio cilindrico <i>Solid keyed shaft</i> Zylindrisches Welle <i>Arbre de sortie cyl. claveté sortant</i></p>
	<p>HZ: Albero maschio rinforzato scanalato <i>Heavy duty splined male shaft</i> Vielkeilwelle mit Verstärker Lagerung <i>Arbres de sortie cannelé sortant, paliers renforcés</i></p>		<p>HC: Albero maschio rinforzato cilindrico <i>Heavy duty solid keyed shaft</i> Zylindrisches Welle mit Verstärker Lagerung <i>Arbres de sortie cyl. claveté sortant, paliers renforcés</i></p>
	<p>PZ: Base di supporto con albero maschio scanalato <i>Foot mounted with splined shaft</i> Fußausführung mit Keilwelle <i>Base de support avec arbre mâle cannelé</i></p>		<p>PC: Base di supporto con albero cilindrico <i>Foot mounted with solid keyed shaft</i> Fußausführung mit zylindrischer Welle <i>Base support à pattes avec arbre cyl. clavé</i></p>
	<p>FZ: Albero femmina scanalato <i>Hollow splined shaft</i> Vielkeilhohlwelle <i>Arbre de sortie creux cannelé</i></p>		
	<p>FP: Albero femmina per giunto ad attrito <i>Hollow shaft for shrink disc</i> Zylindrische Hohlwelle für Schumpfscheibe <i>Arbre de sortie creux pour montage par frette</i></p>		

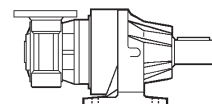
RAPPORTO DI RIDUZIONE / GEAR RATIO / ÜBERSETZUNG / RAPPORT DE REDUCTION

Indicare il valore del rapporto riportato su pagine dati tecnici
Fill in the value of the transm. ratio reported in the selection charts
Den auf den Seiten der technischen Daten angegebenen Wert des Übersetzungs angeben
Indiquer la valeur du rapport citée aux pages des données techniques
Es. / Ex. / Beispiel / Ex. : 1/773 = 773

NUMERO STADI DI RIDUZIONE / REDUCTIONS
ANZAHL DER GETRIEBESTUFEN / N. ETAGES DE REDUCTION TOTAUX
3 - 4

ESECUZIONE / DESIGN / AUSFÜHRUNG / EXECUTION

L = Combinato serie 300, 2 o 3 stadi epicicloidali + vite senza fine
Combined 300 unit, 2 or 3 planetary stages + worm gear units
Kombinierte Version aus Serie 300, 2 oder 3 Planetenstufen + Schneckengetriebe
Combiné série 300, 2 ou 3 étages épicycloïdaux + réducteur à vis sans fin

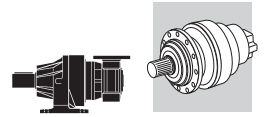


GRANDEZZA RIDUTTORE / GEARBOX FRAME SIZE / GETRIEBEBAUGRÖSSE / TAILLE REDUCTEUR

00 = 3/V 00	190	06 = 3/V 06	226	11 = 3/V 11	266	17 = 3/V 17	304
01 = 3/V 01	198	07 = 3/V 07	236	13 = 3/V 13	276	18 = 3/V 18	312
03 = 3/V 03	206	09 = 3/V 09	246	15 = 3/V 15	286	19 = 3/V 19	320
05 = 3/V 05	216	10 = 3/V 10	256	16 = 3/V 16	296	21 = 3/V 21	328

SERIE / SERIES / SERIE / SERIE

Riduttori combinati serie 300 / riduttori a vite senza fine / *Combined 300 gearboxes / Worm gear units*
Kombinierte Getriebe aus Serie 300 / Schneckengetriebe / *Réducteurs combinés série 300 / réducteur à vis sans fin*



P80 B5 AF W0A ...

OPZIONI / *OPTIONS* / OPTIONEN / *OPTIONS*
 GUARNIZIONI / *GASKET* / DICHTUNGEN / *MATIERE ETANCHE*
 STANDARD = NITRILBUTADIENE / *NITRILBUTADIENE*
 NITRILBUTADIEN / *NITRILEBUTADIENE*
 PV = VITON®

ACCESSORI IN USCITA / *OUTPUT FITTINGS* ZUBEHÖR (ABTRIEB) / *ACCESSOIRES COTE SORTIE*



P... = Pignoni
Pinions
 Ritzel
Pignons



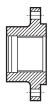
B0A = Barra scanalata
Splined bar
 Vielkeilvollwelle
Barre cannelée



M0A = Manicotto liscio
Sleeve coupling
 Nabe
Manchon lisse



G0A = Giunto ad attrito
Shrink disc
 Schrumpfscheibe
Frette de serrage



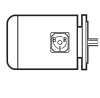
W0A = Flangia
Flange
 Flansch
Bride

POSIZIONE DI MONTAGGIO / *MOUNTING POSITION*
 EINBAULAGEN / *POSITION DE MONTAGE*



FORMA COSTRUTTIVA / *MOTOR EXECUTION* / BAUFORM / *FORM DE CONSTRUCTION*
B5, B14

ENTRATA / *INPUT* / EINGANG / *ENTREE*



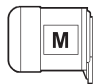
Predisposizione motore elettrico
Electric motor connection
 Motoranbauteile für IEC-Motor
Adaptation pour moteur électrique

P + grandezza motore (80,90,100,132,160,...)
P + *motor size* (80,90,100,132,160,...)
P + Motor Größe (80,90,100,132,160,...)
P + *tailles de moteur* (80,90,100,132,160,...)

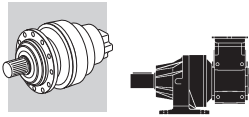


Albero veloce
Input keyed shaft
 Eingangswelle
Arbre d'entrée cyl. claveté

HS



S1
S2
S3



19.0 - DESIGNAZIONE
RIDUTTORE 3/A

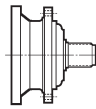
19.0 - 3/A GEARBOX
DESIGNATION

19.0 - 3/A GETRIEBE-
BEZEICHNUNG

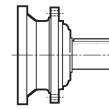
19.0 - DESIGNATION
REDUCTEUR 3/A

3/A 06 L 2 69.9 PC

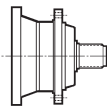
VERSIONE USCITA / OUTPUT VERSION / AUSGANGSVERSION / VERSION EN SORTIE



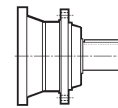
MZ: Albero maschio scanalato
Splined male shaft
Vielkeilwelle
Arbre de sortie cannelé sortant



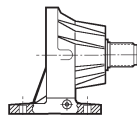
MC: Albero maschio cilindrico
Solid keyed shaft
Zylindrisches Welle
Arbre de sortie cyl. claveté sortant



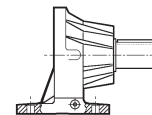
HZ: Albero maschio rinforzato scanalato
Heavy duty splined male shaft
Vielkeilwelle mit Verstärker Lagerung
Arbres de sortie cannelé sortant, paliers renforcés



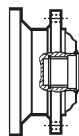
HC: Albero maschio rinforzato cilindrico
Heavy duty solid keyed shaft
Zylindrisches Welle mit Verstärker Lagerung
Arbre de sortie cyl. claveté sortant, paliers renforcés



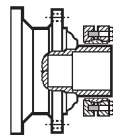
PZ: Base di supporto con albero maschio scanalato
Foot mounted with splined shaft
Fußausführung mit Keilwelle
Base de support avec arbre mâle cannelé



PC: Base di supporto con albero cilindrico
Foot mounted with solid keyed shaft
Fußausführung mit zylindrischer Welle
Base support à pattes avec arbre cyl. clavété



FZ: Albero femmina scanalato
Hollow splined shaft
Vielkeilhohlwelle
Arbre de sortie creux cannelé



FP: Albero femmina per giunto ad attrito
Hollow shaft for shrink disc
Zylindrische Hohlwelle für Schumpfscheibe
Arbre de sortie creux pour montage par frette

RAPPORTO DI RIDUZIONE / GEAR RATIO / ÜBERSETZUNG / RAPPORT DE REDUCTION

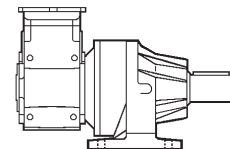
Indicare il valore del rapporto (compresi punto e decimali) riportato su pagine dati tecnici
Fill in the value of the transm. ratio (including point and decimals) reported in the selection charts
Den auf den Seiten der technischen Daten angegebenen Wert des Übersetzungs (einschließlich Punkt und Dezimalen) angeben
Indiquer la valeur du rapport (y inclus les chiffres décimaux) citée aux pages des données techniques

Es. / Ex. / Beispiel / Ex. : 1/19.4 = 19.4 1/175 = 175

NUMERO UNITÀ DI RIDUZIONE / TOTAL REDUCTION UNITS
ÜBERSETZUNGSSTUFEN INSGESAMT / N. ETAGES DE REDUCTION TOTAUX
2

ESECUZIONE / DESIGN / AUSFÜHRUNG / EXECUTION

L = Combinato serie 300, 1 stadio epicicloidale + riduttore ad assi ortogonali serie A
Combined 300 unit, 1 planetary stages + A helical bevel units
Kombinierte Version aus Serie 300, 1 Planetenstufe + Kegelradgetriebe der Serie A
Combiné série 300, 1 étage épicycloïdaux + réducteur à axes orthogonaux série A



GRANDEZZA RIDUTTORE / GEARBOX SIZE / GETRIEBEBEAUGRÖSSE / TAILLE REDUCTEUR

00 = 3/A 00 (300+A10)
01 = 3/A 01 (301+A20)
03 = 3/A 03 (303+A30)
05 = 3/A 05 (305+A41)

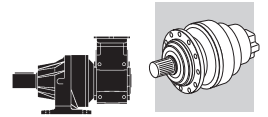
191
199
207
217

06 = 3/A 06 (306+A50)
07 = 3/A 07 (307+A60)

227
237

SERIE / SERIES / SERIE / SERIE

Riduttori combinati serie 300 / riduttori ad assi ortogonali serie A
Combined 300 gearboxes / A series helical bevel gear units
Kombinierte Getriebe aus Serie 300 / Kegelradgetriebe der Serie A
Réducteurs combinés série 300 / réducteur à axes orthogonaux série A



S4 EF WOA ...

OPZIONI / *OPTIONS* / OPTIONEN / *OPTIONS*
 GUARNIZIONI / *GASKET* / DICHTUNGEN / *MATIERE ETANCHE*
 STANDARD = NITRILBUTADIENE / *NITRILBUTADIENE*
 NITRILBUTADIEN / *NITRILEBUTADIENE*
 PV = VITON®

ACCESSORI IN USCITA / *OUTPUT FITTINGS* / ZUBEHÖR (ABTRIEB) / *ACCESSOIRES COTE SORTIE*



P... = Pignoni
Pinions
 Ritzel
 Pignons



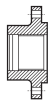
B0A = Barra scanalata
Splined bar
 Vielkeilvollwelle
 Barre cannelée



M0A = Manicotto liscio
Sleeve coupling
 Nabe
 Manchon lisse



G0A = Giunto ad attrito
Shrink disc
 Schrumpfscheibe
 Frette de serrage

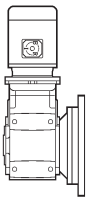


WOA = Flangia
Flange
 Flansch
 Bride

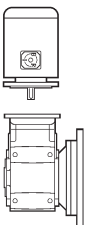
POSIZIONE DI MONTAGGIO / *MOUNTING POSITION*
 EINBAULAGEN / *POSITION DE MONTAGE*

31

ENTRATA / *INPUT* / EINGANG / *ENTREE*

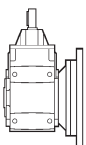


Motoriduttore integrato completo di motore elettrico compatto: **S2_, S3_, S4_**
Integrated gearmotor with in-built compact electric motor: S2_, S3_, S4_
 Integrierter Getriebemotor komplett mit kompakten Elektromotor: **S2_, S3_, S4_**
Motoréducteur intégré avec moteur électrique compact: S2_, S3_, S4_



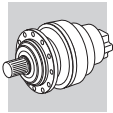
Predisposizione motore elettrico
Electric motor connection
 Motoranbauteile für IEC-Motor
Adaptation pour moteur électrique

P + grandezza motore (80,90,100,132,160,...)
P + *motor size* (80,90,100,132,160,...)
P + Motor Größe (80,90,100,132,160,...)
P + *tailles de moteur* (80,90,100,132,160,...)



Albero veloce
Input keyed shaft
 Eingangswelle
Arbre d'entrée cyl. claveté

HS



19.1 - Designazione motore

19.1 - Motor designation

19.1 - Motor Bezeichnung

19.1 - Designation moteur

MOTORE / MOTOR / MOTOR / MOTEUR

FRENO / BRAKE / BREMSE / FREIN

M 1LA 4 230/400-50 IP54 CLF ... W

FD 7.5 R SB 220 SA ...

OPZIONI
OPTIONS
OPTIONEN
OPTIONS

ALIMENTAZ. FRENO
BRAKE SUPPLY
BREMSVERSÖRGUNG
ALIMENTATION FREIN

TIPO ALIMENTATORE
RECTIFIER TYPE
GLEICHRICHTERTYP
TYPE ALIMENTATEUR
NB, SB, NBR, SBR

LEVA DI SBLOCCO FRENO
BRAKE HAND RELEASE
BRESENTHANDLÜFTUNG
LEVIER DE DEBLOCAGE FREIN
R, RM

COPPIA FRENANTE / BRAKE TORQUE
BREMSMOMENT/ COUPLE FREIN

TIPO FRENO / BRAKE TYPE
BRESENTYP / TYPE DE FREIN

FD (freno c.c./ d.c. brake / G.S. Bremse / frein c.c.)
FA, BA (freno c.a./ a.c. brake / W.S. Bremse / frein c.a.)

POSIZIONE MORSETTIERA / TERMINAL BOX POSITION
KLEMMENKASTENLAGE / POSITION BOITE A BORNE
W (default), N, E, S

FORMA COSTRUTTIVA / MOTOR MOUNTING
BAUFORM / FORM DE CONSTRUCTION

— (motore integrato / compact motor / kompaktes Motor / moteur compact)
B5 (motore IEC / IEC -motor / IEC Motor / moteur CEI)

CLASSE ISOLAMENTO / INSULATION CLASS
ISOLIERUNGSKLASSE / CLASSE ISOLATION

CL F standard
CL H option

GRADO DI PROTEZIONE / DEGREE OF PROTECTION
SCHUTZART / DEGRE DE PROTECTION

IP55 standard (IP54 - autofrenante / brake motor / Bremssmotor / moteur frein)

TENSIONE - FREQUENZA / VOLTAGE - FREQUENCY
SPANNUNG - FREQUENZ / TENSION - FREQUENCE

NUMERO DI POLI / POLE NUMBER / POLZAHL / N.bre POLES
4, 6, 2/4, 2/6, 2/8, 2/12

GRANDEZZA MOTORE / MOTOR SIZE / MOTOR-BAUGRÖSSE / TAILLE MOTEUR

1SD - 5LA (motore integrato / compact motor / kompaktes Motor / moteur compact)
63A - 250M (motore IEC / IEC motor / IEC - motor / moteur CEI)

TIPO MOTORE/ MOTOR TYPE / MOTORTYP / TYPE MOTEUR

M = trifase integrato / compact 3-phase / kompaktes Dreiphasen / 3 phase compact
BN = trifase IEC / IEC 3-phase / IEC Dreiphasen / 3 phase CEI



20.0 - POSIZIONE DI MONTAGGIO

Per la completa definizione della configurazione del riduttore, è necessario specificare la posizione di montaggio rispetto al suolo. Riferirsi per questo alla tabella (A11) per i riduttori in linea e alla (A12) per i riduttori con riduzione angolare.

20.0 - MOUNTING POSITION

The product designation is only complete when the mounting position is also specified. Please refer to table (A11) for in-line gear units and to (A12) for right angle drives.

20.0 - MONTAGEPOSITION

Für die vollständige Definition der Bauform des Getriebemotors oder des gewählten Getriebes ist die Montagestellung gegenüber dem Boden gemäß der Tabelle (A11) und der Ausrichtung des Winkelstücks festzulegen (A12).

20.0 - POSITION DE MONTAGE

Pour une définition complète de la forme de construction, du réducteur, préciser la position de montage par rapport au sol. D'après les tableaux (A11) et l'orientation de l'angulaire (A12).

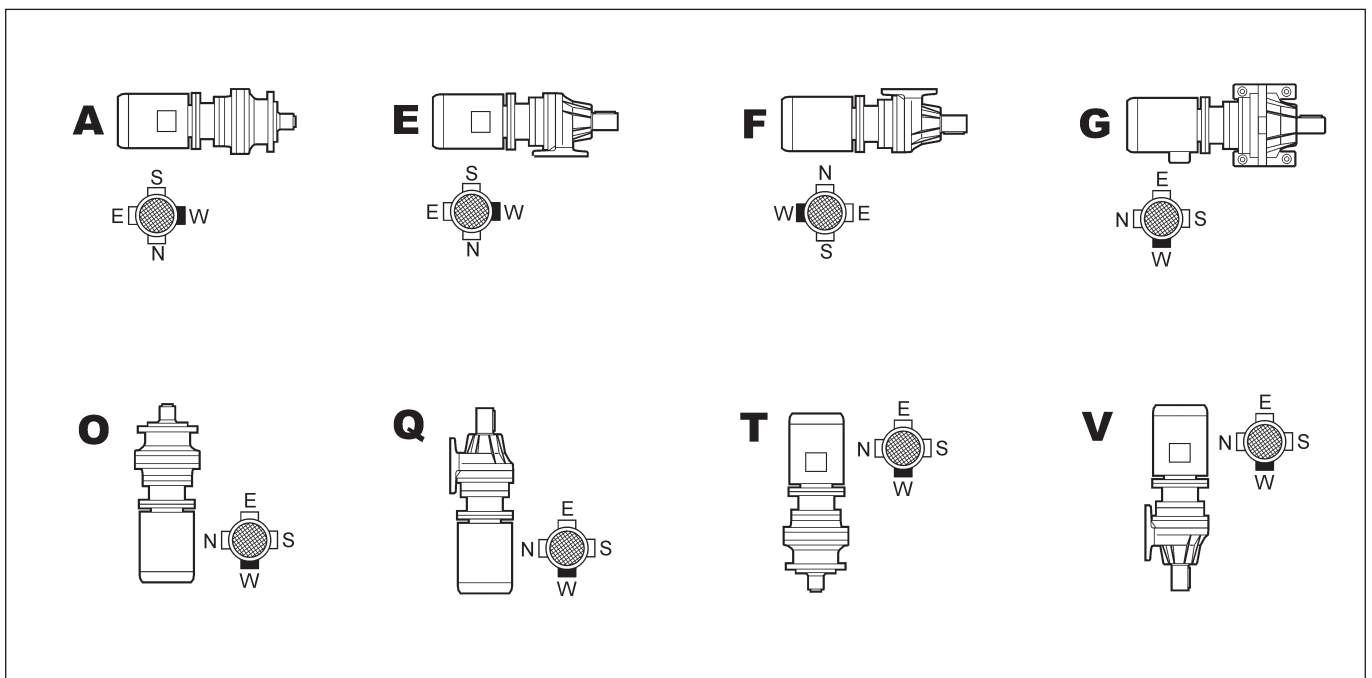
20.1 - Riduttori in linea

20.1 - In-line units

20.1 - Coaxiale Untersetzungsgetriebe

20.1 - Réducteurs coaxiaux

(A11)





20.2 - Riduttori angolari

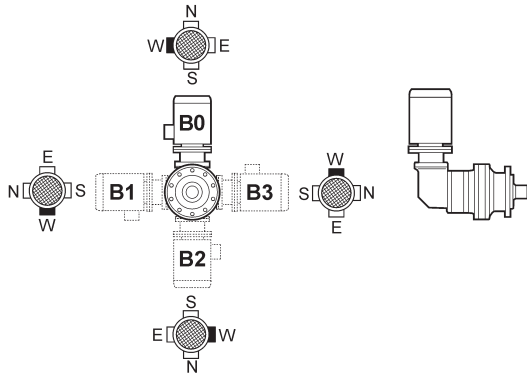
20.2 - Right angle units

20.2 - Rechtwinklige
Untersetzungsgetriebe

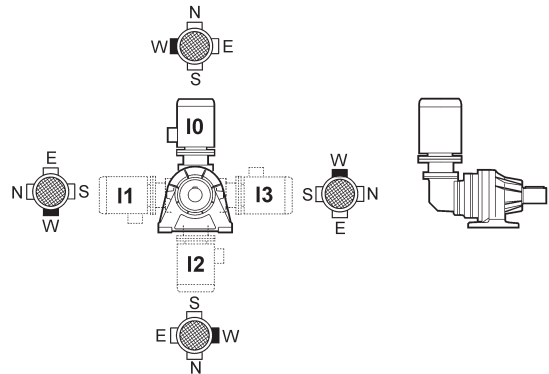
20.2 - Réducteurs a renvoi
d'angle

(A12)

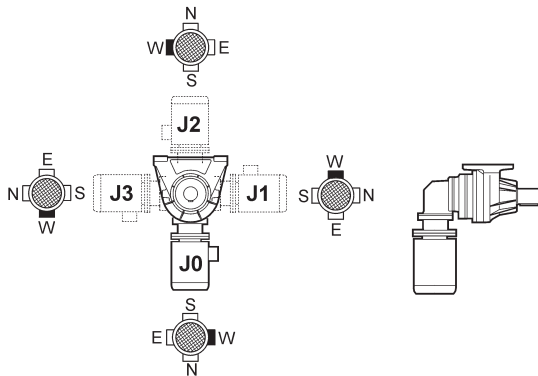
B0 - B1 - B2 - B3



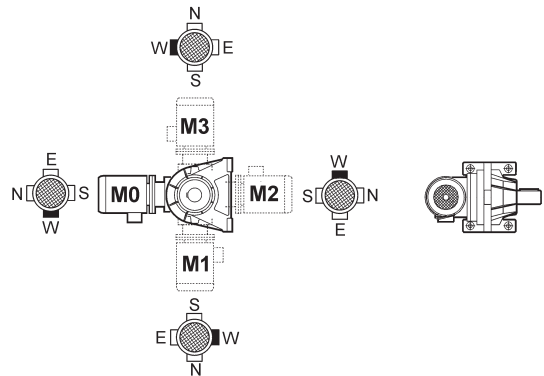
I0 - I1 - I2 - I3



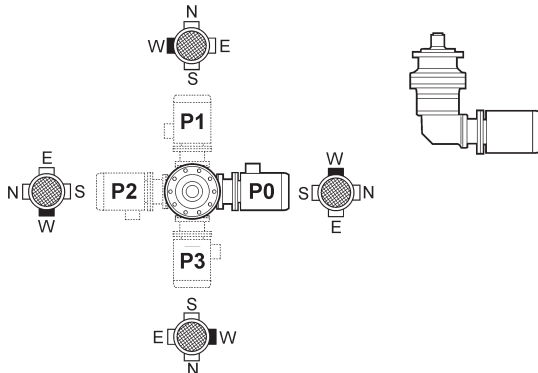
J0 - J1 - J2 - J3



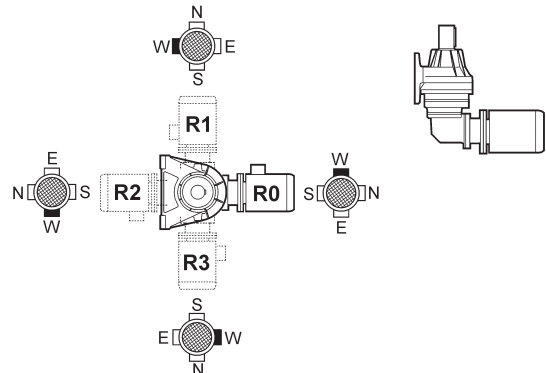
M0 - M1 - M2 - M3



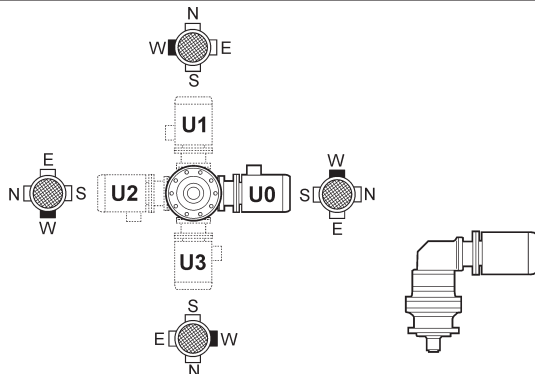
P0 - P1 - P2 - P3



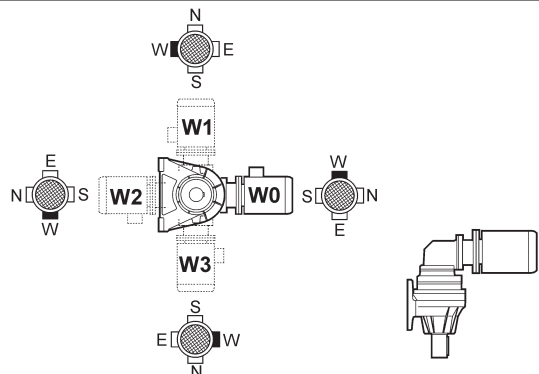
R0 - R1 - R2 - R3

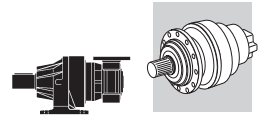


U0 - U1 - U2 - U3



W0 - W1 - W2 - W3





20.3 - Serie 3/V

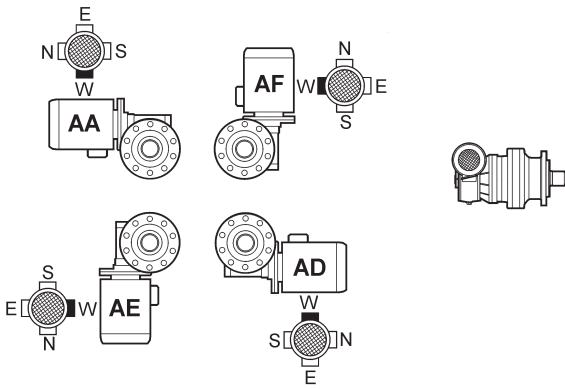
20.3 - 3/V Series

20.3 - Serie 3/V

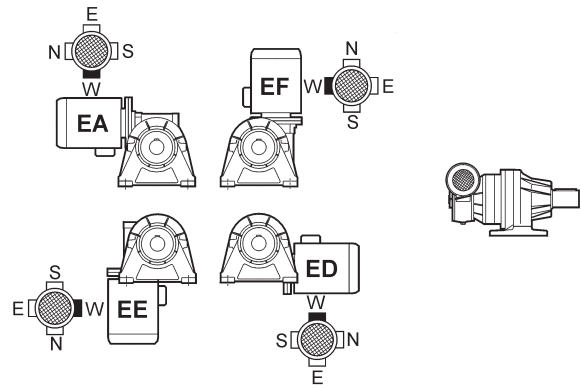
20.3 - Série 3/V

(A13)

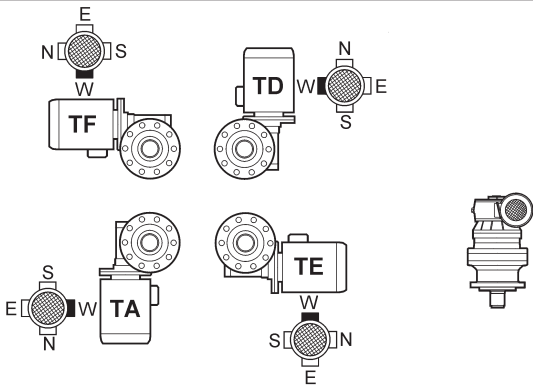
AA - AE - AF - AD



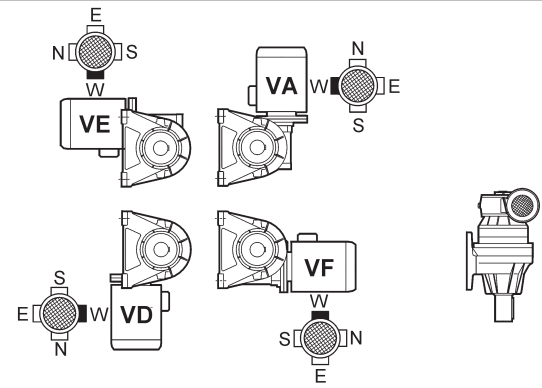
EA - EE - EF - ED



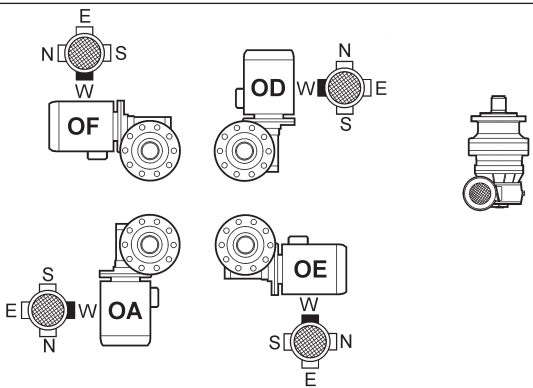
TA - TE - TF - TD



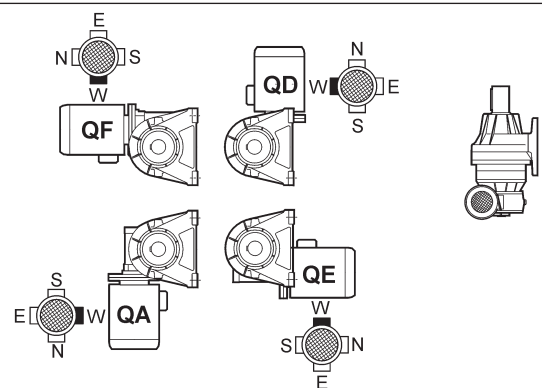
VA - VE - VF - VD



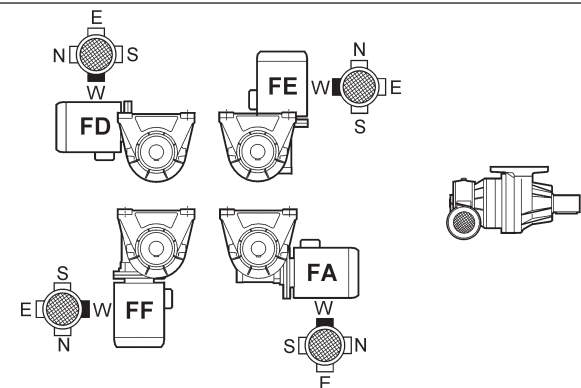
OA - OE - OF - OD

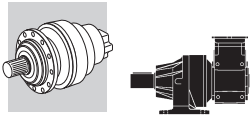


QA - QE - QF - QD



FA - FE - FF - FD





20.4 - Serie 3/A

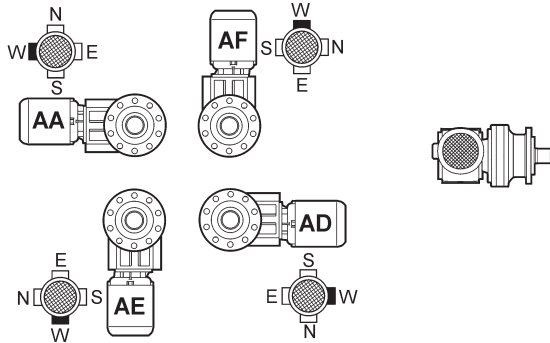
20.4 - 3/A Series

20.4 - Serie 3/A

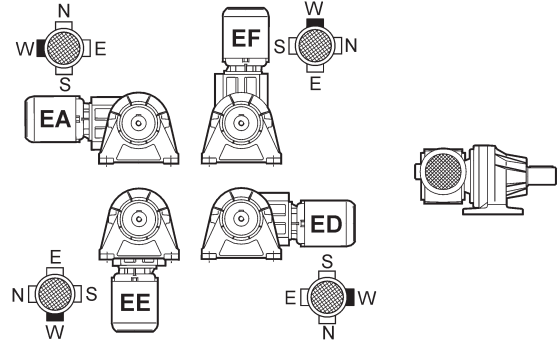
20.4 - Série 3/A

(A14)

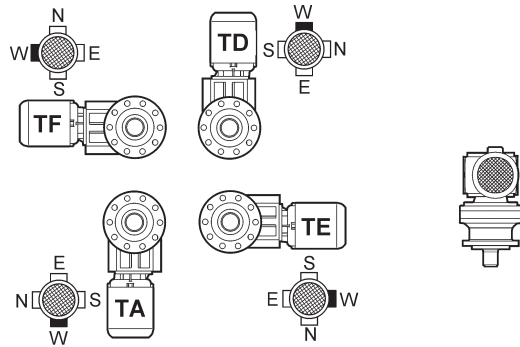
AA - AE - AF - AD



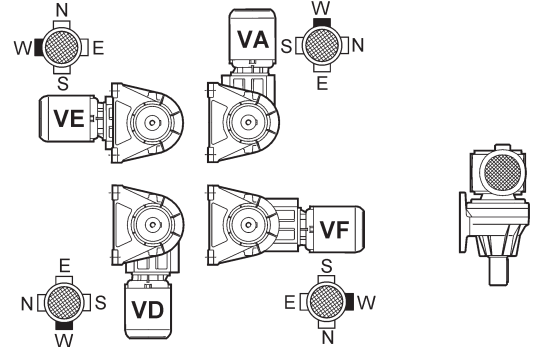
EA - EE - EF - ED



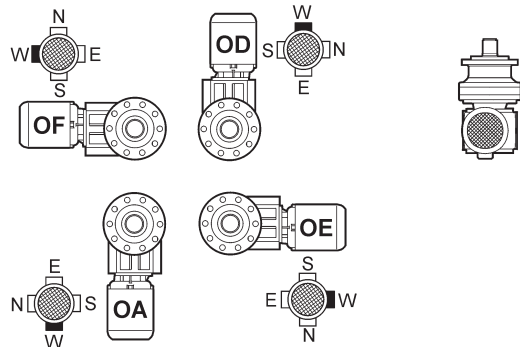
TA - TE - TF - TD



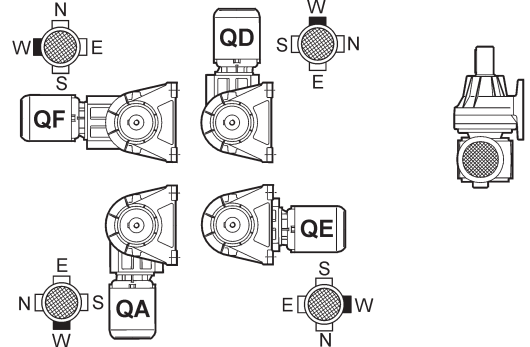
VA - VE - VF - VD



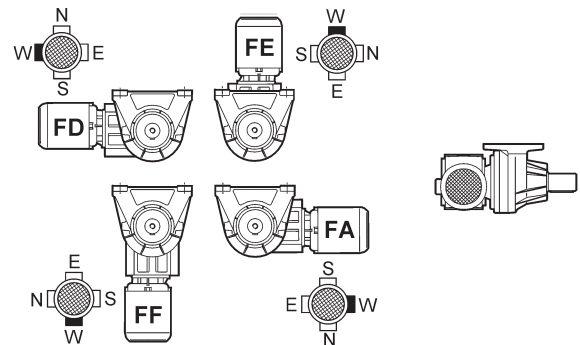
OA - OE - OF - OD

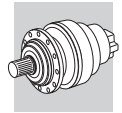


QA - QE - QF - QD



FA - FE - FF - FD





21.0 - LUBRIFICAZIONE (prima della messa in servizio)

Tutti i riduttori prevedono una lubrificazione a bagno d'olio. Nelle posizioni di montaggio che prevedono i riduttori con un asse verticale, dove lo sbattimento dell'olio durante il funzionamento non sarebbe sufficiente a garantire la corretta lubrificazione dei cuscinetti superiori, vengono adottati adeguati sistemi di lubrificazione.

Il funzionamento dei riduttori è ammesso per temperature ambiente comprese fra -20°C e $+40^{\circ}\text{C}$. Per temperature ambiente comprese fra -20°C e -10°C l'avviamento del riduttore potrà avvenire solo dopo aver effettuato un pre-riscaldamento progressivo ed omogeneo del gruppo, oppure con funzionamento "a vuoto", senza carico collegato.

Il carico potrà poi essere applicato all'albero del riduttore quando la temperatura dello stesso avrà raggiunto la temperatura di -10°C , o superiore.

Prima della messa in opera immettere la giusta quantità di lubrificante del tipo raccomandato in tabella (A15). A tal proposito i riduttori sono muniti dei tappi di carico, livello e scarico olio.

Al fine di predisporre il corretto orientamento dei tappi, per una adeguata lubrificazione, di precisare sempre la posizione di montaggio desiderata.

Nella tabella (A15) sono riportate le marche più diffuse di lubrificazione con i tipi di oli consigliati per applicazioni normali.

- Per funzionamenti particolari dove sono richiesti speciali requisiti, interpellare il nostro Servizio Tecnico.
- La temperatura max. del lubrificante in esercizio continuo non deve superare gli 80°C .
- Tutti i riduttori vengono forniti senz'olio, ma predisposti con tappi di carico, scarico e livello fanno eccezione i riduttori e motoriduttori combinati (3/V-3/A) con lubrificazione permanente a base di olio sintetico.
- Le quantità d'olio indicate per i vari tipi di riduttori sono indicative, il riempimento deve considerarsi corretto quando il lubrificante raggiunge il tappo di livello, collocato in fabbrica in funzione della posizione di montaggio.
- nel caso in cui la potenza trasmessa superi quella termica, occorrerà provvedere ad una circolazione forzata dell'olio (vedi: Sistemi ausiliari di raffreddamento).

21.0 - 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 (A15).

Gearboxes are generally provided with oil fill, level and drain plugs. As such, the mounting position needs always to be specified when ordering the gearbox.

The table (A15) 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 80°C in operation.*
- *Gear units are generally supplied unlubricated and feature fill, drain and level plugs, except for life-lubed combined gearboxes (series 3/V and 3/A) that are factory filled with synthetic oil.*
- *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 when ordering to ensure the gearbox is properly filled.*
- *Should transmitted power exceed the thermal capacity of the unit a supplementary cooling unit must be provided (see: Supplementary cooling systems).*

21.0 - SCHMIERUNG (vor der Inbetriebnahme)

Alle Getriebe weisen eine Ölbadschmierung auf. Werden die Getriebe mit vertikaler Achse eingebaut, so daß nicht gewährleistet werden kann, daß das Öl während des Betriebs des Getriebes auch die oberen Lager ordnungsgemäß schmiert, werden entsprechende Dauerschmierungen vorgesehen.

Die Getriebe dürfen bei einer Umgebungstemperatur von -20°C bis $+40^{\circ}\text{C}$ betrieben werden. Allerdings darf ein Start unter Last bei -20°C bis -10°C erst nach stufenweiser und gleichmäßiger Vorwärmung erfolgen. Anderfalls muss das Anfahren ohne Last erfolgen.

Die Last darf erst zugeschaltet werden, wenn die Getriebeeinheit eine Temperatur von mindestens -10° oder höher erreicht hat.

Vor der Inbetriebnahme muß die entsprechende Schmiermittelmenge eingefüllt werden. Die hierzu jeweils erforderlichen Viskositätswerte können der Tabelle (A15) entnommen werden. Für diesen Füllvorgang wurden die Getriebe mit Verschlüssen für das Einfüllen, Nachfüllen und den Abfluß des Öls ausgestattet. Um die Verschlüsse für eine angemessene Schmierung in korrekter Weise auszurichten zu können, empfehlen wir Ihnen, immer die gewünschte Montageposition anzugeben.

In der Tabelle (A15) werden die bekanntesten Schmiermittelmarken mit den für normale Applikationen empfohlenen Öltypen aufgeführt.

- Im Falle von speziellen Einsatzbereichen, bei denen besondere Anforderungen vorzönden sind, wenden Sie sich bitte an unsere technische Abteilung.
- Die maximale Temperatur des Schmiermittels bei Dauerbetrieb darf 80°C nicht überschreiten.
- Alle Getriebe werden ohne Öl geliefert, sind jedoch mit Verschlüssen für das Einfüllen, Nachfüllen und für seinen Abfluß ausgestattet. Davon ausgenommen sind die kombinierten Getriebe (3/V-3/A), die über eine Dauerschmierung mittels Synthetiköl verfügen.
- Die für die verschiedenen Getriebetypen angegebenen Ölmengen sind Anhaltswerte, der Füllstand ist dann korrekt, wenn das Schmiermittel den Ölstandverschluss erreicht, der in Abhängigkeit zur Einbaulage in der Herstellerfirma angeordnet wurde.

21.0 - LUBRIFICATION (avant mise en route)

Tous les réducteurs prévoient une lubrification en bain d'huile. Dans les positions de montage qui prévoient les réducteurs avec axe vertical, où le barbotage de l'huile pendant le fonctionnement serait insuffisant pour garantir une lubrification correcte des paliers supérieurs, l'on adopte des systèmes appropriés de graissage à vie.

Le fonctionnement des réducteurs est admis pour des températures ambiantes comprises entre -20°C et $+40^{\circ}\text{C}$. Pour des températures ambiantes comprises entre -20°C et -10°C le démarrage du réducteur est admis seulement après un préchauffage progressif et homogène, ou avec un fonctionnement « à vide », sans charge appliquée.

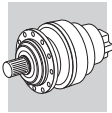
La charge pourra être ensuite appliquée à l'arbre du réducteur quand celui-ci aura atteint une température de -10°C , ou supérieure.

Avant la mise en service, introduire la quantité exacte de lubrifiant en choisissant la viscosité dans le tableau (A15). Les réducteurs sont pourvus à cet effet d'un bouchon de remplissage, jauge de niveau et élément de vidange huile.

Dans le but de réaliser une mise en place exacte des bouchons, pour une lubrification appropriée, il est conseillé de spécifier toujours la position de montage souhaitée.

Sur le tableau (A15), ont été reportées les marques les plus répandues de lubrifiants avec les types conseillés, pour des applications normales.

- *Pour des applications dans des conditions de fonctionnement particulières, consulter nos Services Techniques.*
- *La température maxi du lubrifiant, en fonctionnement continu, ne doit pas dépasser 80°C .*
- *Tous les réducteurs sont livrés sans huile mais équipés de bouchon de remplissage, vidange et niveau, à l'exception des réducteurs combinés (3/V-3/A) qui bénéficient d'une lubrification permanente à base d'huile synthétique.*
- *Les quantités d'huile indiquées pour les différents types de réducteurs sont à titre indicatif; le remplissage est correct quand le lubrifiant atteint le bouchon de niveau, placé à l'usine selon la position de montage.*
- *Dans le cas où la puissance transmise dépasserait la puissance thermique, il sera nécessaire de prévoir une circulation d'huile (voir Systèmes auxiliaires de refroidissement).*



NOTA: nei riduttori di tipo combinato la lubrificazione degli stadi epicicloidali è separata da quella dei riduttori a vite senza fine (3/V), o ortogonali (3/A).

NOTE: Combined gearboxes and gearmotors feature separate lubrication for planetary stages and for worm gearboxes (3/V) or helical bevel units (3/A).

– Sollte die übertragende Leistung die Wärmeleistung übersteigen, ist eine Ölumwälzung erforderlich (Siehe Hilfskühlssysteme).

REMARQUE: Sur les réducteurs combinés, la lubrification des étages épicycloïdaux est séparée de celle des réducteurs à vis sans fin (3/V) ou orthogonaux (3/A).

MERKE: Bei den kombinierten Getrieben ist die Schmierung der Planetenstufen von denen der Schneckengetriebe (3/V) oder Kegelradgetriebe (3/A) getrennt.

(A15)

	STADI EPICICLOIDALI / PLANETARY STAGES / PLANETENSTUFEN / ETAGES EPICYCLOIDAU		
	Norme ISO 3448 con caratteristiche EP. / ISO standard 3448 E.P. grade ISO-Normen 3448 E.P.-Merkmalen / Normes ISO 3448 avec caractéristiques E.P.		
Temperatura ambiente Ambient temperature Temperaturbereiche Température ambiante	-10°C / +30°C	+10°C / +45°C	-20°C / +60°C
	ISO VG 150	ISO VG 220	ISO VG 150-220
SHELL	OMALA EP150	OMALA EP220	TIVELA OIL S
AGIP	BLASIA150	BLASIA 220	BLASIA S220
ARAL	DEGOL BG 150	DEGOL BG 220	DEGOL GS 220
BP-MACH	ENERGOL GR XP 150	ENERGOL GR XP 220	ENERSYN HTX 220
CASTROL	ALPHA SP 150	ALPHA SP 220	ALPHASYN PG 150
CHEVRON	N.L. GEAR COMPOUND 150	N.L. GEAR COMPOUND 220	
ELF	REDUCTELF SP150	REDUCTELF SP 220	ELF ORITIS 125 MS ELF SYNTERMA P20
ESSO	SPARTAN EP 150	SPARTAN EP 220	GLYCOLUBE 220
FINA	GIRAN 150	GIRAN 220	
I.P.	MELLANA150	MELLANA220	TELESIA OIL 150
KLÜBER	KLÜBEROIL GEM1-150	KLÜBEROIL GEM1-320	KLÜBERSYNT GH 6-220
Q8	GOYA 150	GOYA 220	EL GRECO 220
MOBIL	MOBILGEAR 629	MOBILGEAR 630	SHC 630
TOTAL	CARTER EP 150	CARTER EP 220	

La temperatura sulla carcassa non deve superare, nel punto più caldo, i 70-75°C.

The temperature of the gear case should never exceed 70-75°C at the hottest point.

Gehäusetemperatur, an der Wärmsten Stelle max. 70-75°C.

La température sur la carcasse ne devant pas dépasser les 70-75°C

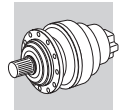
■ Oli a base sintetica

■ Synthetic oil

■ Synthetische Öle

■ Huiles à base synthétique

STADIO RIDUZIONE A VITE SENZA FINE (3/V) / WORM GEAR (3/V) SCHNECKENÜBERSETZUNGSSTUFE (3/V) / ETAGE DE REDUCTION A VIS SANS FIN (3/V) STADIO RIDUZIONE AD ASSI ORTOGONALI (3/A) / HELICAL BEVEL GEAR (3/A) KEGELRADÜBERSETZUNGSSTUFE (3/A) / ETAGE DE REDUCTION A AXES ORTHOGONAUX (3/A)				
Tipo di carico / Type of duty Art der Belastung / Type de charge	0 °C / +20 °C		+20 °C / +40 °C	
	Olio minerale Mineral oil Mineralöl Huile minérale	Olio sintetico Synthetic oil Syntheseöl Huile synthétique	Olio minerale Mineral oil Mineralöl Huile minérale	Olio sintetico Synthetic oil Syntheseöl Huile synthétique
	ISO VG	ISO VG	ISO VG	ISO VG
Carico leggero / Light duty / Leicht / Charge légère	150	150	220	220
Carico medio / Medium duty / Normal / Charge moyenne	150	150	320	220
Carico pesante / Heavy duty / Schwer / Charge lourde	220	220	460	320



21.1 - Posizione tappi olio
Serie 3_L - 3_R

21.1 - Oil plug positions
3_L - 3_R Series

21.1 - Position der Schrauben
Serie 3_L - 3_R

21.1 - Positions des bouchons
Série 3_L - 3_R

(A16)

TUTTI I RIDUTTORI

- 1 Tappo carico e sfiato
- 2 Tappo di livello
- 3 Tappo scarico

RIDUTTORI LINEARI AD UNO STADIO

- 1A Tappo carico e sfiato
- 3A Tappo scarico

RIDUTTORI ANGOLARI A DUE STADI

- 1B Tappo carico e sfiato
- 3B Tappo scarico

ALL UNITS

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

1 STAGE IN-LINE GEAR UNITS

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

2 STAGE RIGHT ANGLE GEAR UNITS

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

ALLE GETRIEBE

- 1 Einfüll-und Ablassschraube
- 2 Ölstandschrabe
- 3 Ölablassschraube

LINEAR GETRIEBE MIT 1 STUFEN

- 1A Einfüll-und Ablassschraube
- 3A Ölablassschraube

RECHTWINLIG GETRIEBE MIT 2 STUFEN

- 1B Einfüll-und Ablassschraube
- 3B Ölablassschraube

TOUTES REDUCTEURS

- 1 Bouchon de remplissage et reniflard
- 2 Bouchon de niveau
- 3 Bouchon de vidange

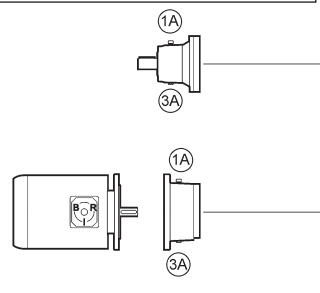
REDUCTEURS COAXIALE AVEC 1 TRAIN DE REDUCTION

- 1A Bouchon de remplissage et reniflard
- 3A Bouchon de vidange

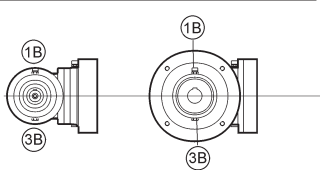
REDUCTEURS A RENVOI D'ANGLE AVEC 2 TRAINS DE REDUCTION

- 1B Bouchon de remplissage et reniflard
- 3B Bouchon de vidange

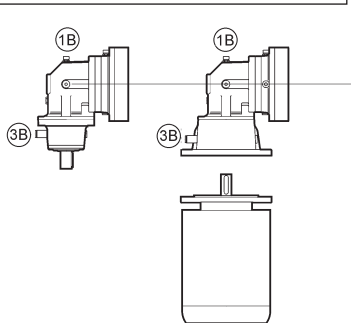
A - E



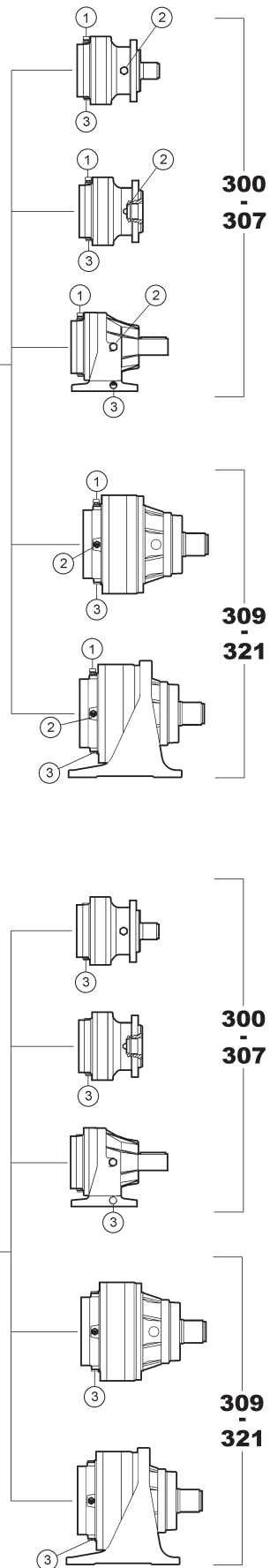
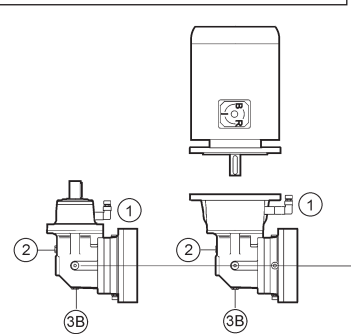
B1 - B3 - I1 - I3

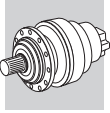


B2 - I2



B0 - I0





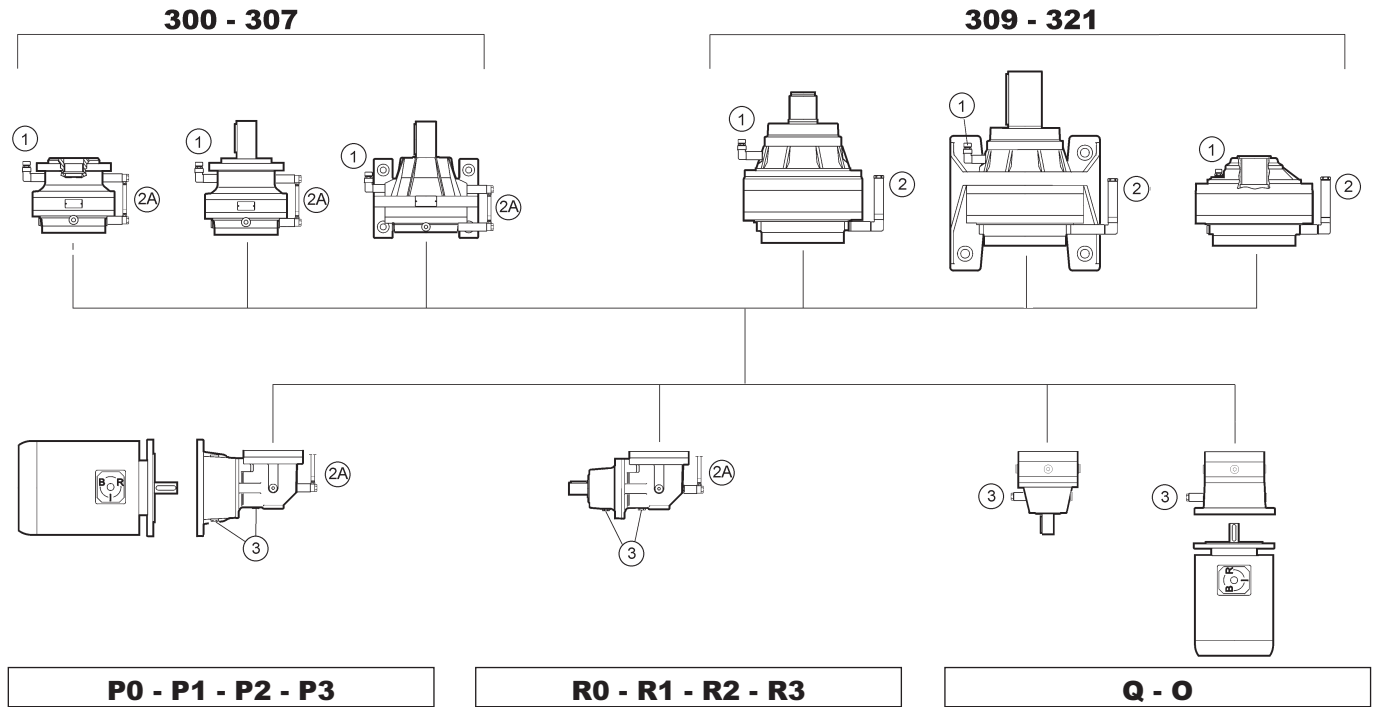
21.1 - Posizione tappi olio
Serie 3_L - 3_R

21.1 - Oil plug positions
3_L - 3_R Series

21.1 - Position der Schrauben
Serie 3_L - 3_R

21.1 - Positions des bouchons
Série 3_L - 3_R

(A17)



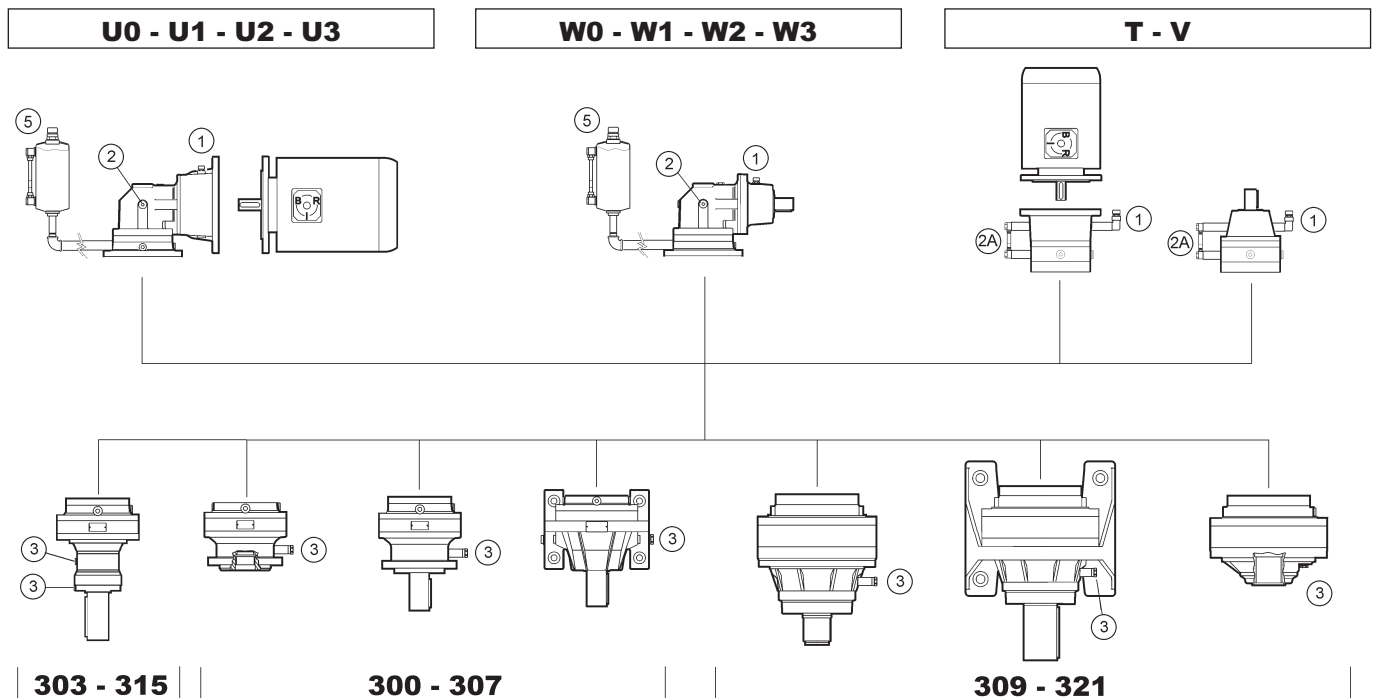
TUTTI I RIDUTTORI
 1 Tappo carico e sfiato
 2 Tappo di livello
 2A Tubo trasparente di livello
 3 Tappo scarico
 5 Vaso d'espansione per servizio continuo

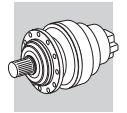
ALL GEARBOXES
 Filler/breather oil plug
 Oil level plug
 Transparent oil level pipe
 Oil draining plug
 Expansion tank for continuous duty

ALLE GETRIEBE
 Einfüll- und Ablassschraube
 Ölstandschrabe
 Ölstandschrabe
 Ölablassschraube
 Ölüberlaufgefäß für Applikationen im Dauerbetriebe

TOUTES REDUCTEURS
 Bouchon de remplissage et reniflard
 Bouchon de niveau
 Bouchon de niveau
 Bouchon de vidange
 Vase d'expansion pour des applications en service continu

(A18)





21.1 - Posizione tappi olio Serie 3/V

21.1 - Oil plug positions 3/V Series

21.1 - Position der Schrauben Serie 3/V

21.1 - Positions des bouchons Série 3/V

(A19)

A - E

TUTTI I RIDUTTORI (stadi epicicloidali)

- 1 Tappo carico e sfiato
- 2 Tappo di livello
- 3 Tappo scarico

(stadio a vite senza fine)

- 1V Tappo carico e sfiato
- 2V Tappo di livello
- 3V Tappo scarico

ALL GEARBOXES (planetary stages)

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

(worm reduction module)

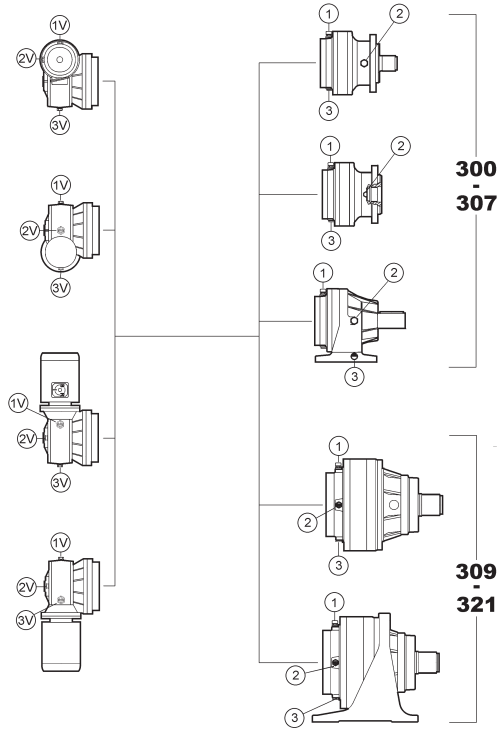
- 1V Filler/breather oil plug
- 2V Oil level plug
- 3V Oil draining plug

ALLE GETRIEBE (Planetenstufen)

- 1 Einfüll-und Ablasschraube
- 2 Ölstandschrabe
- 3 Ölablasschraube

(Schneckenübersetzungsstufe)

- 1V Einfüll-und Ablasschraube
- 2V Ölstandschrabe
- 3V Ölablasschraube

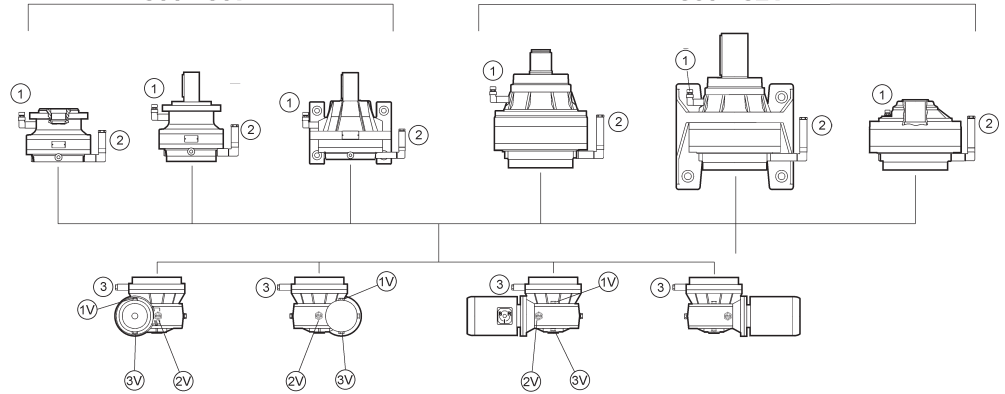


(A20)

O - Q

300 - 307

309 - 321



TOUTES REDUCTEURS (étages épicycloïdaux)

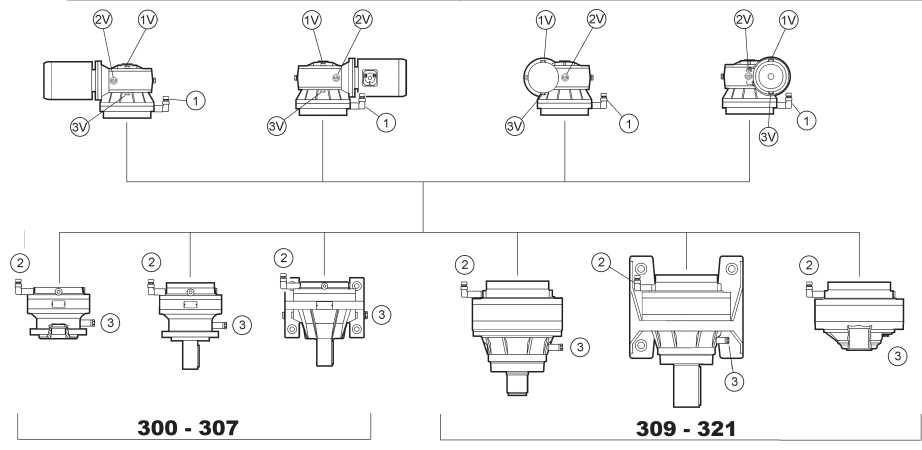
- 1 Bouchon de remplissage et reniflard
- 2 Bouchon de niveau
- 3 Bouchon de vidange

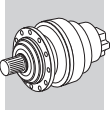
(étage de réduction à vis sans fin)

- 1V Bouchon de remplissage et reniflard
- 2V Bouchon de niveau
- 3V Bouchon de vidange

(A21)

T - V





21.1 - Posizione tappi olio Serie 3/A

21.1 - Oil plug position 3/A Series

21.1 - Position der Schrauben Serie 3/A

21.1 - Positions des bouchons Série 3/A

(A22)

A - E

TUTTI I RIDUTTORI (stadi epicicloidali)

- 1 Tappo carico e sfiato
- 2 Tappo di livello
- 3 Tappo scarico

(stadio ad assi ortogonali)

- 1A Tappo carico e sfiato
- 2A Tappo di livello
- 3A Tappo scarico

ALL GEARBOXES (planetary stages)

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

(helical bevel reduction module)

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

ALLE GETRIEBE (Planetenstufen)

- 1 Einfüll-und Ablassschraube
- 2 Ölstandschrabe
- 3 Ölablassschraube

(Kegelradübersetzungsstufe)

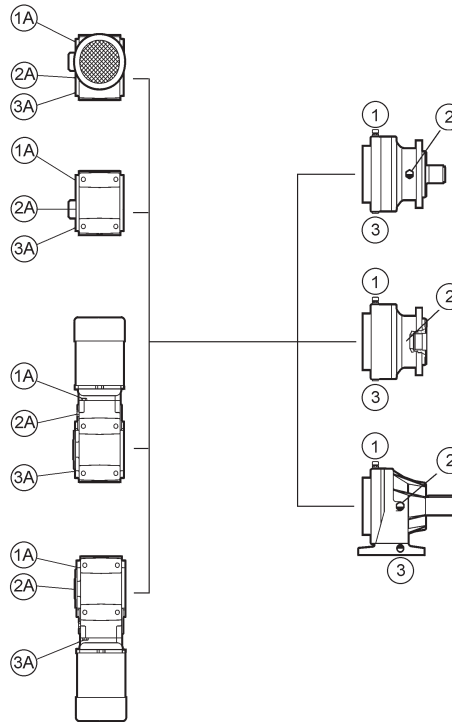
- 1A Einfüll-und Ablassschraube
- 2A Ölstandschrabe
- 3A Ölablassschraube

TOUTES REDUCTEURS (étages épicycloïdaux)

- 1 Bouchon de remplissage et reniflard
- 2 Bouchon de niveau
- 3 Bouchon de vidange

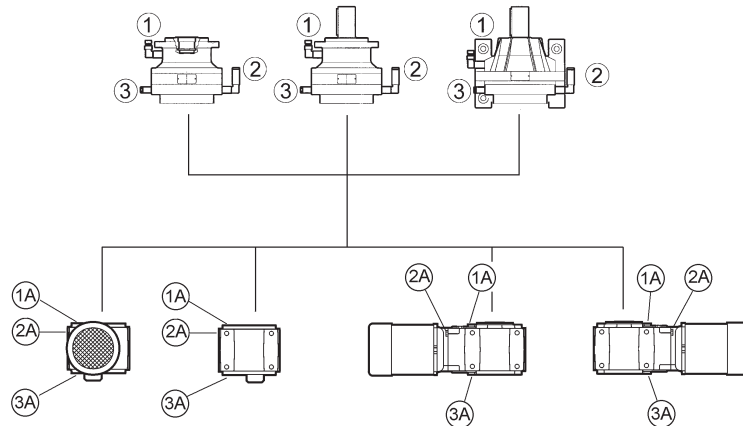
(étage de réduction à axes orthogonaux)

- 1A Bouchon de remplissage et reniflard
- 2A Bouchon de niveau
- 3A Bouchon de vidange



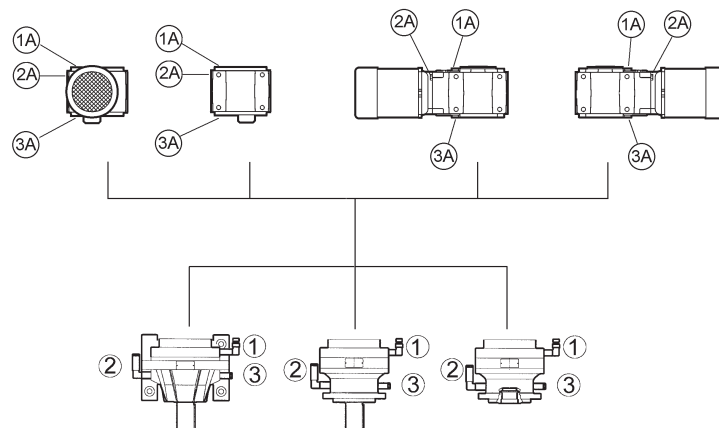
(A23)

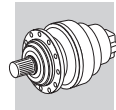
O - Q



(A24)

T - V









21.2 - Quantità olio (l)
Serie 3_L e 3_R

21.2 - Oil quantity (l)
3_L and 3_R Series

21.2 - Schmierölmenge (l)
Serie 3_L und 3_R

21.2 - Quantité d'huile (l)
Série 3_L et 3_R

(A25)

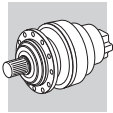
Tipo / Type Typ / Type		 Posizione di montaggio Mounting position Einbaulagen Position de montage			 Posizione di montaggio Mounting position Einbaulagen Position de montage			
								
		A	T	O	B0	U*	P*	
300	L1	0.6	1.0	0.9	R2	1.2	1.7	1.5
	L2	0.9	1.3	1.2	R3	1.5	2.0	1.8
	L3	1.2	1.6	1.5	R4	1.8	2.3	2.1
	L4	1.5	1.9	1.8				
301	L1	0.8	1.2	1.1	R2	1.6	2.1	1.9
	L2	1.1	1.5	1.4	R3	1.9	2.4	2.2
	L3	1.4	1.8	1.7	R4	2.2	2.7	2.5
	L4	1.7	2.1	2.0				
303	L1	1.3	2.3	2.0	R2	2.2	2.8	2.6
	L2	1.6	2.6	2.3	R3	2.5	3.1	2.9
	L3	1.9	2.9	2.6	R4	2.8	3.4	3.2
	L4	2.2	3.2	2.9				
305	L1	1.6	2.6	2.4	R2	2.5	3.1	2.9
	L2	2.1	3.1	2.9	R3	3.0	3.6	3.4
	L3	2.4	3.4	3.2	R4	3.3	3.9	3.7
	L4	2.7	3.7	3.5				
306	L1	2.5	3.5	3.2	R2	4.0	5.0	4.8
	L2	3.3	4.3	4.0	R3	4.8	5.8	5.6
	L3	3.6	4.6	4.3	R4	5.1	6.1	5.9
	L4	3.9	4.9	4.6				
307	L1	3.5	5.0	4.5	R2	6.0	8.0	7.0
	L2	4.5	6.0	5.5	R3	7.0	9.0	8.0
	L3	5.0	6.5	6.0	R4	7.5	9.5	8.5
	L4	5.3	6.8	6.3				
309	L1	4.0	5.5	5.0	R2	6.5	8.5	7.5
	L2	5.0	6.5	6.0	R3	7.5	9.5	8.5
	L3	5.5	7.0	6.5	R4	8.0	10	9
	L4	5.8	7.3	6.8				
310	L1	5.0	6.5	6.0	R3	11	13	12
	L2	6.3	7.8	7.3	R4	12	14	13
	L3	7.1	8.6	8.1				
	L4	7.4	8.9	8.4				
311	L1	7.0	12	10	R2	14	19	17
	L2	9.0	14	12	R3	16	21	19
	L3	10	15	13	R4	17	22	20
	L4	10.5	15.5	13.5				
313	L1	9.0	14	12	R2	16	21	19
	L2	11.5	16.5	14.5	R3	19	24	22
	L3	12.5	17.5	15.5	R4	20	25	23
	L4	13	18	16				
315	L1	15	23	19	R3	27	35	31
	L2	19	27	23	R4	30	38	34
	L3	21	29	25				
	L4	22	30	26				
316	L1	18	26	22	R3	30	38	34
	L2	22	30	26	R4	33	41	37
	L3	24	32	28				
	L4	25	33	29				
317	L1	20	35	30	R3	38	52	48
	L2	26	41	36	R4	42	56	52
	L3	29	44	39				
	L4	30	45	40				
318	L1	25	40	35	R4	48	63	58
	L2	35	50	45				
	L3	40	55	50				
	L4	43	58	53				
319	L1	35	55	45				
	L2	45	65	55				
	L3	50	70	60				
	L4	53	73	63				
321	L1	35	55	45				
	L2	50	70	60				
	L3	56	76	66				
	L4	60	80	70				

N.B. Le quantità d'olio sono indicative. Verificare l'esatto livello al momento del riempimento tramite l'apposito tappo.

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

Achtung! Die Angabe bezüglich Ölmenge sind Richtwerte. Der Ölstand soll während des Einfüllens anhand des Ölstandstopfens überprüft werden.

N.B. Les quantités d'huile sont indicatives. Vérifiez la quantité correcte de lubrifiant selon le niveau d'huile.



21.2 - Quantità olio (l)
Serie 3/V - 3/A

21.2 - Oil quantity (l)
3/V - 3/A Series

21.2 - Schmierolmenge (l)
Serie 3/V - 3/A

21.2 - Quantité d'huile (l)
Série 3/V - 3/A

(A26A)

	[]												
	AA - EA - FD			AF - EF - FE		AE - EE - FF		AD - ED - FA		TA - TE - TF - TD VA - VC - VF - VO		OA - OE - OF - OD QA - QE - QF - QD	
		input			input		input		input		input		input
	P(IEC)	HS	P(IEC)	HS	P(IEC)	HS	P(IEC)	HS	P(IEC)	HS	P(IEC)	HS	
3/V 00 L3	0.9	0.12	0.12	0.9	0.12	0.9	0.12	0.9	0.12	1.3	0.12	1.2	0.12
3/V 01 L3	1.1			1.1		1.1		1.1		1.5		1.4	
3/V 03 L3	1.6	0.25	0.25	1.6	0.31	1.6	0.31	1.6	0.38	2.6	0.31	2.3	0.25
3/V 05 L3	2.1	0.38	0.38	2.1	0.43	2.1	0.43	2.1	0.52	3.1	0.52	2.9	0.38
3/V 06 L3	3.3	0.64	0.64	3.3	0.76	3.3	0.76	3.3	0.85	4.3	0.76	4	0.76
3/V 10 L4	7.1			7.1		7.1		7.1		8.6		8.1	
3/V 07 L3	4.5			4.5		4.5		4.5		6		5.5	
3/V 11 L4	10	2.4	2.8	10	2.6	10	2.6	10	1.7	15	1.9	13	1.9
3/V 13 L4	13			13		13		13		18		16	
3/V 09 L3	5			5		5.0		5		6.5		6	
3/V 10 L3	6.3	4.3	4.5	6.3	3.9	6.3	3.9	6.3	3.0	7.8	3.5	7.3	3.5
3/V 15 L4	21			21		21		21		29		25	
3/V 16 L4	24			24		24		24		32		28	
3/V 11 L3	9			9		9		9		14		12	
3/V 13 L3	12	7.8	9.6	12	6.7	12	6.7	12	5.0	17	5.5	15	5.5
3/V 17 L4	29			29		29		29		44		39	
3/V 15 L3	19			19		19		19		27		23	
3/V 16 L3	22	11	15	22	8.9	22	9.4	22	7.5	30	9.5	26	9.5
3/V 18 L4	40			40		40		40		55		50	
3/V 19 L4	50			50		50		50		70		60	
3/V 17 L3	26	23	28	26	16.8	26	17.5	26	10.7	41	17	36	17
3/V 21 L4	56			56		56		56		76		66	

Lubrificazione permanente / Life lubricated / Dauerschmierung / Lubrification permanente

(A26B)

	[]											
	AA - EA - FD		TA - TE - TF - TD VA - VC - VF - VO		OA - OE - OF - OD QA - QE - QF - QD		AD - ED - FA		AF - EF - FE		AE - EE - FF	
3/A 00 L2	0.60	1.4	1.0	1.4	0.9	1.4	0.6	1.4	0.6	1.4	0.6	1.4
3/A 01 L2	0.80	2.3	1.2	2.3	1.1	2.3	0.8	2.3	0.8	2.3	0.8	2.3
3/A 03 L2	1.3	3.2	2.3	3.2	2.0	3.2	1.3	3.2	1.3	3.2	1.3	3.2
3/A 05 L2	1.6	4.0	2.6	4.1	2.4	4.1	1.6	4.7	1.6	5.2	1.6	4.4
3/A 06 L2	2.5	4.9	3.5	8.1	3.2	4.7	2.5	8.4	2.5	11	2.5	9.2
3/A 07 L2	3.5	6.8	5.0	8.1	4.5	12	3.5	15	3.5	18	3.5	15

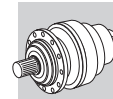
Lubrificazione permanente / Life lubricated / Dauerschmierung / Lubrification permanente

NOTA: nei riduttori combinati la lubrificazione degli stadi epicycloidal è separata da quella dei riduttori a vite senza fine (3/V), o ortogonali (3/A).

NOTE: Combined gearboxes feature separate lubrication for planetary stages and for worm gearboxes (3/V), or helical bevel units (3/A).

MERKE: Bei den kombinierten Getrieben ist die Schmierung der Planetenstufen von denen der Schneckengetriebe (3/V), oder Kegelradgetriebe (3/A) getrennt

REMARQUE: Sur les réducteurs combinés, la lubrification des étages épicycloïdaux est séparée de celle des réducteurs à vis sans fin (3/V), ou orthogonaux (3/A).



**22.0 - DATI TECNICI
MOTORIDUTTORI
300 L - 300 R**

**22.0 - 300 L - 300 R GEAR-
MOTOR RATING
CHARTS**

**22.0 - 300 L - 300 R TECHNI-
SCHEN DATEN DER
GETRIEBEMOTOREN**

**22.0 - DONNEES TECHNIQUES
MOTOREDUCTEURS
300 L- 300 R**

Guida alla consultazione delle tabelle.

Reading the rating chart.

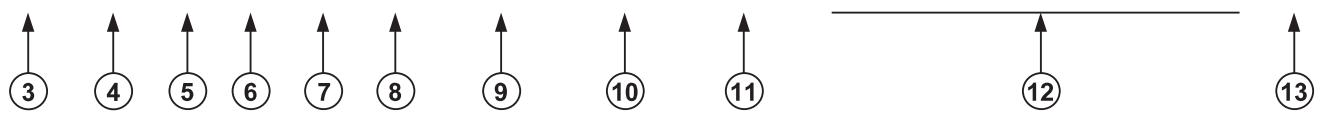
Anleitung für die richtige Kon-
sultation der Tabellen.

Guide pour la consultation des
tableaux.

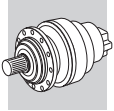


$P_1 = 0.37 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
3.8	826	2.8	364	12.0	—	303 R4	BN 71B 4	M1SD 4		23000	26800	42700	49400	15300	205
3.8	824	1.1	363	10.0	—	300 R4	BN 71B 4	M1SD 4		7700	8000	20700	22700	5100	189
3.8	824	2.2	363	10.0	—	301 R4	BN 71B 4	M1SD 4		7700	8000	20700	22700	5100	197
4.1	762	3.0	336	12.0	—	303 R4	BN 71B 4	M1SD 4		22400	26100	41700	48200	14900	205
4.4	710	2.5	313	12.0	—	303 R4	BN 71B 4	M1SD 4		21900	25500	40800	47200	14600	205



1	Potenza del motore elettrico abbinato al riduttore	Rating of electric motor connected to the gearbox	Übertragene Leistung am Getriebeantrieb	Puissance transmise à l'entrée du réducteur
2	Velocità del motore	Gearbox drive speed	Drehzahl am Getriebeantrieb	Vitesse angulaire à l'entrée du réducteur
3	Velocità albero lento	Gearbox output speed	Drehzahl am Getriebeabtrieb	Vitesse angulaire en sortie réducteur
4	Coppia trasmessa all'albero lento	Torque delivered at output shaft	Übertragenes Drehmoment am Getriebeabtrieb	Couple transmise en sortie réducteur
5	Fattore di sicurezza	Safety factor	Sicherheitsfaktor	Facteur de sécurité
6	Rapporto di riduzione	Gear ratio	Übersetzung	Rapport de réduction
7	Potenza termica riduttore	Gearbox thermal capacity	Wärmeleistung des Getriebes	Puissance thermique réducteur
8	Grandezza riduttore in esecuzione lineare	Frame size of the in-line gear unit	Baugröße des Lineargeetriebes	Taille réducteur exécution linéaire
9	Grandezza riduttore in esecuzione angolare	Frame size of the right-angled gear unit	Baugröße des Winkelgetriebes	Taille réducteur exécution angulaire
9	NOTA: i contrassegni (A) (B) (C) sulla stessa grandezza indicano riduzioni angolari di dimensioni differenti: vedere le pagine dimensionali	NOTE: Suffix (A), (B) or (C) alongside the frame size refer to different bevel gear sets. See installation drawings for reference	HINWEIS: Die Kennzeichnungen (A) (B) (C) an der gleichen Baugröße weisen auf die Winkelreduzierung in unterschiedlichen Maßen hin: siehe Seiten mit Maßtabellen	REMARQUE : les indications (A) (B) (C) sur la même taille indique des réductions angulaires de dimensions différentes. Se reporter aux pages des dimensions
10	Grandezza motore IEC e polarità	IEC motor size and pole number	Baugröße des IEC-Motors und Anzahl der Pole	Taille moteur IEC et n° pôles
11	Grandezza motore compatto e polarità	Integral motor frame size and pole number	Baugröße des Kompaktmotors und Anzahl der Pole	Taille moteur compact et n° pôles
12	Carico radiale applicabile sull'albero lento, calcolato per: - fattore di sicurezza S=1 - durata teorica di 10000 h	Permitted overhung loading on output shaft, based on: - safety factor S=1 - 10000 hrs theoretical lifetime	Auf die Mitte der Abtriebswelle für Sicherheitsfaktor S=1 und eine Dauer von 10000 Std. applizierbare Nenn- Radialkräfte.	Charges radiales applicables en milieu d'arbre de sortie pendant : - facteur de sécurité S=1 - durée de 10000 heures
12	Per forze non agenti in mezzzeria riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	For forces not applying at shaft midpoint, see diagrams provided in the pages following dimensions of the specific gearbox	Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	Pour d'autres positons de charge, voir diagrammes figurant à la suite des pages dimensions de la taille sélectionnée
13	Pagina delle dimensioni. Le dimensioni dei motoriduttori si riferiscono ad abbinamenti con motori di produzione BONFIGLIOLI	Page dimensions can be sorted from. Gearmotor overall dimensions refer to matches with BONFIGLIOLI motors only	Maßseiten. Die Maße der Getriebemotoren sind nur im Fall einer Montage mit Motoren der BONFIGLIOLI gültig	Page avec les dimensions. Les dimensions des motoréducteurs sont valables seulement avec moteurs BONFIGLIOLI

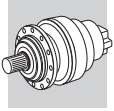


P₁ = 0.55 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
10.5	453	1.9	131	7.5	300 L3	—	BN 80A 4	M1LA 4	5500	5700	15200	16700	3630	188
10.7	434	2.0	130	10.0	—	300 R4	BN 80A 4	M1LA 4	5500	5700	15200	16600	3620	189
11.9	401	1.6	116	7.5	300 L3	—	BN 80A 4	M1LA 4	5300	5500	14700	16100	3490	188
13.0	368	1.5	106	12.0	—	300 R3	BN 80A 4	M1LA 4	5100	5300	14300	15700	3390	189
13.0	354	2.4	106	10.0	—	300 R4	BN 80A 4	M1LA 4	5100	5300	14300	15700	3380	189
13.2	363	2.3	105	7.5	300 L3	—	BN 80A 4	M1LA 4	5100	5300	14200	15600	3370	188
16.0	289	2.2	86.4	10.0	—	300 R4	BN 80A 4	M1LA 4	4800	5000	13400	14700	3160	189
16.1	296	2.9	85.6	7.5	300 L3	—	BN 80A 4	M1LA 4	4800	5000	13400	14700	3150	188
16.2	295	2.2	85.2	12.0	—	300 R3	BN 80A 4	M1LA 4	4800	5000	13400	14700	3150	189
19.8	242	2.7	69.9	7.5	300 L3	—	BN 80A 4	M1LA 4	4500	4700	12600	13800	2950	188
20.2	236	2.8	68.2	12.0	—	300 R3	BN 80A 4	M1LA 4	4400	4600	12500	13700	2920	189
26.6	185	3.0	51.8	7.5	300 L2	—	BN 80A 4	M1LA 4	4000	4200	11500	12600	2670	188

P₁ = 0.75 kW n₁=1400 min⁻¹

0.55	11361	2.3	2523	11.0	310 L4	—	BN 80B 4	—	—	—	133000	166000	65000	254
0.58	10907	1.0	2423	7.5	307 L4	—	BN 80B 4	M2SA 4	52000	65000	109000	145000	45000	234
0.58	10907	1.6	2423	7.5	309 L4	—	BN 80B 4	—	—	—	110000	145000	36000	244
0.69	9190	1.5	2041	7.5	307 L4	—	BN 80B 4	M2SA 4	52000	65000	109000	145000	45000	234
0.69	9190	1.7	2041	7.5	309 L4	—	BN 80B 4	—	—	—	110000	145000	36000	244
0.69	9103	2.9	2022	11.0	310 L4	—	BN 80B 4	—	—	—	133000	166000	65000	254
0.81	7756	1.4	1723	7.5	307 L4	—	BN 80B 4	M2SA 4	52000	65000	109000	145000	45000	234
0.81	7756	2.2	1723	7.5	309 L4	—	BN 80B 4	—	—	—	110000	145000	36000	244
0.84	7459	3.0	1657	11.0	310 L4	—	BN 80B 4	—	—	—	133000	166000	65000	254
0.87	7224	1.5	1605	7.5	307 L4	—	BN 80B 4	M2SA 4	52000	65000	109000	145000	45000	234
0.87	7224	2.4	1605	7.5	309 L4	—	BN 80B 4	—	—	—	110000	145000	36000	244
0.88	7189	1.2	1597	6.0	306 L4	—	BN 80B 4	M2SA 4	45000	51000	101000	119000	35000	224
0.95	6639	1.4	1475	6.0	306 L4	—	BN 80B 4	M2SA 4	45000	51000	101000	119000	35000	224
1.0	6215	1.8	1380	7.5	307 L4	—	BN 80B 4	M2SA 4	51800	64700	108500	144400	44800	234
1.0	6215	2.7	1380	7.5	309 L4	—	BN 80B 4	—	—	—	109500	144400	35800	244
1.1	5760	1.5	1279	6.0	306 L4	—	BN 80B 4	M2SA 4	43700	49500	98300	115800	34000	224
1.1	5754	1.0	1278	6.0	305 L4	—	BN 80B 4	M2SA 4	35000	40720	62300	72000	23300	214
1.1	5738	2.1	1274	7.5	307 L4	—	BN 80B 4	M2SA 4	50400	63000	106000	141000	43600	234
1.1	5738	2.1	1274	7.5	309 L4	—	BN 80B 4	—	—	—	106900	141000	34900	244
1.2	5175	2.1	1149	7.5	307 L4	—	BN 80B 4	M2SA 4	48700	60900	102700	136700	42100	234
1.3	4928	1.5	1095	6.0	306 L4	—	BN 80B 4	M2SA 4	41500	47000	93800	110500	32200	224
1.4	4585	1.2	1018	6.0	305 L4	—	BN 80B 4	M2SA 4	32400	37760	58200	67300	21600	214
1.4	4570	2.0	1015	6.0	306 L4	—	BN 80B 4	M2SA 4	40500	45900	91700	108100	31400	224
1.4	4498	2.9	999	7.5	307 L4	—	BN 80B 4	M2SA 4	46500	58100	98500	131000	40200	234
1.6	4035	1.1	896	6.0	305 L4	—	BN 80B 4	M2SA 4	31100	36240	56000	64700	20700	214
1.6	3949	1.9	877	6.0	306 L4	—	BN 80B 4	M2SA 4	38600	43700	87800	103400	29900	224
1.7	3738	1.7	830	12.0	—	306 R4	BN 80B 4	M2SA 4	37900	42900	86300	101700	29400	225
1.7	3674	1.5	816	6.0	305 L4	—	BN 80B 4	M2SA 4	30100	35090	54400	62900	20000	214
1.7	3641	2.0	809	6.0	306 L4	—	BN 80B 4	M2SA 4	37500	42500	85700	100900	29200	224
1.8	3588	1.0	797	12.0	—	305 R4	BN 80B 4	M2SA 4	29900	34800	54000	62500	19900	215
1.9	3233	1.3	718	6.0	305 L4	—	BN 80B 4	M2SA 4	28900	33660	52400	60600	19200	214
2.0	3150	2.8	700	6.0	306 L4	—	BN 80B 4	M2SA 4	35800	40500	82000	96600	27800	224
2.1	2995	2.0	665	12.0	—	306 R4	BN 80B 4	M2SA 4	35200	39800	80800	95200	27300	225
2.2	2924	1.5	649	6.0	305 L4	—	BN 80B 4	M2SA 4	27900	32520	50800	58800	18600	214
2.2	2875	1.2	639	12.0	—	305 R4	BN 80B 4	M2SA 4	27800	32300	50600	58500	18500	215
2.4	2658	2.2	590	12.0	—	306 R4	BN 80B 4	M2SA 4	33800	38300	78000	91800	26200	225
2.5	2552	1.0	567	12.0	—	303 R4	BN 80B 4	M2SA 4	26700	31100	48800	56400	17800	205
2.5	2552	1.9	567	12.0	—	305 R4	BN 80B 4	M2SA 4	26700	31100	48800	56400	17800	215
2.5	2504	1.1	556	6.0	303 L4	—	BN 80B 4	M2SA 4	26500	30900	48500	56100	17600	204
2.5	2504	2.2	556	6.0	305 L4	—	BN 80B 4	M2SA 4	26500	30900	48500	56100	17600	214
2.5	2476	2.4	550	12.0	—	306 R4	BN 80B 4	M2SA 4	33000	37400	76300	89900	25600	225
2.7	2377	1.6	528	12.0	—	305 R4	BN 80B 4	M2SA 4	26100	30300	47800	55200	17300	215
2.8	2216	1.2	492	6.0	303 L4	—	BN 80B 4	M2SA 4	25500	29660	46800	54100	16900	204
2.8	2216	2.4	492	6.0	305 L4	—	BN 80B 4	M2SA 4	25500	29660	46800	54100	16900	214
3.1	2040	0.9	453	10.0	—	301 R4	BN 80B 4	M2SA 4	8300	8600	22100	24200	5490	197

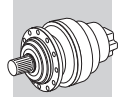


$$P_1 = 0.75 \text{ kW} \quad n_1 = 1400 \text{ min}^{-1}$$






n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
16.4	398	2.1	85.6	7.5	300 L3	—	BN 80B 4	M2SA 4	4800	5000	13400	14700	3150	188
16.4	396	1.6	85.2	12.0	—	300 R3	BN 80B 4	M2SA 4	4800	5000	13400	14700	3150	189
18.1	361	2.4	77.5	7.5	300 L3	—	BN 80B 4	M2SA 4	4600	4800	13000	14300	3050	188
20.0	325	2.0	69.9	7.5	300 L3	—	BN 80B 4	M2SA 4	4500	4700	12600	13800	2950	188
20.5	318	2.0	68.2	12.0	—	300 R3	BN 80B 4	M2SA 4	4400	4600	12500	13700	2920	189
22.2	294	2.9	63.2	7.5	300 L3	—	BN 80B 4	M2SA 4	4300	4500	12200	13400	2850	188
22.2	293	2.9	62.9	12.0	—	300 R3	BN 80B 4	M2SA 4	4300	4500	12200	13400	2840	189
27.0	249	2.2	51.8	7.5	300 L2	—	BN 80B 4	M2SA 4	4000	4200	11500	12600	2670	188

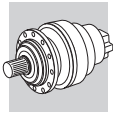
$$P_1 = 1.1 \text{ kW} \quad n_1 = 1400 \text{ min}^{-1}$$

0.55	16663	1.6	2523	11.0	310 L4	—	BN 90S 4	—	—	—	133000	166000	65000	254
0.58	15996	1.1	2423	7.5	309 L4	—	BN 90S 4	—	—	—	110000	145000	36000	244
0.67	13843	2.5	2096	11.0	311 L4	—	BN 90S 4	—	—	—	157000	195000	65000	264
0.69	13478	1.0	2041	7.5	307 L4	—	BN 90S 4	M2SB 4	52000	65000	109000	145000	45000	234
0.69	13478	1.2	2041	7.5	309 L4	—	BN 90S 4	—	—	—	110000	145000	36000	244
0.69	13352	1.9	2022	11.0	310 L4	—	BN 90S 4	—	—	—	133000	166000	65000	254
0.78	11849	2.2	1794	11.0	310 L4	—	BN 90S 4	—	—	—	133000	166000	65000	254
0.81	11375	1.0	1723	7.5	307 L4	—	BN 90S 4	M2SB 4	52000	65000	109000	145000	45000	234
0.81	11375	1.5	1723	7.5	309 L4	—	BN 90S 4	—	—	—	110000	145000	36000	244
0.84	10940	2.0	1657	11.0	310 L4	—	BN 90S 4	—	—	—	133000	166000	65000	254
0.87	10596	1.0	1605	7.5	307 L4	—	BN 90S 4	M2SB 4	52000	65000	109000	145000	45000	234
0.87	10596	1.6	1605	7.5	309 L4	—	BN 90S 4	—	—	—	110000	145000	36000	244
0.95	9737	1.0	1475	6.0	306 L4	—	BN 90S 4	M2SB 4	45000	51000	101000	119000	35000	224
0.97	9494	2.7	1438	11.0	310 L4	—	BN 90S 4	—	—	—	133000	166000	65000	254
1.0	9115	1.2	1380	7.5	307 L4	—	BN 90S 4	M2SB 4	51800	64700	108500	144400	44800	234
1.0	9115	1.9	1380	7.5	309 L4	—	BN 90S 4	—	—	—	109500	144400	35800	244
1.1	8448	1.0	1279	6.0	306 L4	—	BN 90S 4	M2SB 4	43700	49500	98300	115800	34000	224
1.1	8416	1.5	1274	7.5	307 L4	—	BN 90S 4	M2SB 4	50400	63000	106000	141000	43600	234
1.1	8416	1.5	1274	7.5	309 L4	—	BN 90S 4	—	—	—	106900	141000	34900	244
1.2	7589	1.4	1149	7.5	307 L4	—	BN 90S 4	M2SB 4	48700	60900	102700	136700	42100	234
1.2	7589	2.2	1149	7.5	309 L4	—	BN 90S 4	—	—	—	103700	136700	33700	244
1.3	7227	1.0	1095	6.0	306 L4	—	BN 90S 4	M2SB 4	41500	47000	93800	110500	32200	224
1.4	6702	1.4	1015	6.0	306 L4	—	BN 90S 4	M2SB 4	40500	45900	91700	108100	31400	224
1.4	6597	2.0	999	7.5	307 L4	—	BN 90S 4	M2SB 4	46500	58100	98500	131000	40200	234
1.4	6597	2.8	999	7.5	309 L4	—	BN 90S 4	—	—	—	99400	131000	32200	244
1.5	5984	2.4	906	7.5	307 L4	—	BN 90S 4	M2SB 4	45000	56300	95700	127300	38900	234
1.5	5984	2.9	906	7.5	309 L4	—	BN 90S 4	—	—	—	96500	127300	31100	244
1.6	5791	1.3	877	6.0	306 L4	—	BN 90S 4	M2SB 4	38600	43700	87800	103400	29900	224
1.7	5482	1.2	830	12.0	—	306 R4	BN 90S 4	M2SB 4	37900	42900	86300	101700	29400	225
1.7	5389	1.0	816	6.0	305 L4	—	BN 90S 4	M2SB 4	30100	35090	54400	62900	20000	214
1.7	5341	1.4	809	6.0	306 L4	—	BN 90S 4	M2SB 4	37500	42500	85700	100900	29200	224
1.7	5286	2.4	801	7.5	307 L4	—	BN 90S 4	M2SB 4	43200	54000	92200	122600	37400	234
1.9	4769	3.0	722	7.5	307 L4	—	BN 90S 4	M2SB 4	41800	52200	89400	118900	36100	234
2.0	4620	1.9	700	6.0	306 L4	—	BN 90S 4	M2SB 4	35800	40500	82000	96600	27800	224
2.0	4554	2.2	690	15.0	—	307 R4	BN 90S 4	M2SB 4	41100	51400	88100	117300	35500	235
2.1	4393	1.4	665	12.0	—	306 R4	BN 90S 4	M2SB 4	35200	39800	80800	95200	27300	225
2.1	4315	2.9	654	7.5	307 L4	—	BN 90S 4	M2SB 4	40400	50500	86700	115400	34900	234
2.2	4288	1.0	649	6.0	305 L4	—	BN 90S 4	M2SB 4	27900	32520	50800	58800	18600	214
2.2	4197	2.1	636	6.0	306 L4	—	BN 90S 4	M2SB 4	34600	39300	79700	93900	26900	224
2.4	3898	1.5	590	12.0	—	306 R4	BN 90S 4	M2SB 4	33800	38300	78000	91800	26200	225
2.4	3891	2.2	589	6.0	306 L4	—	BN 90S 4	M2SB 4	33800	38300	77900	91800	26200	224
2.5	3743	1.3	567	12.0	—	305 R4	BN 90S 4	M2SB 4	26700	31100	48800	56400	17800	215
2.5	3672	1.5	556	6.0	305 L4	—	BN 90S 4	M2SB 4	26500	30900	48500	56100	17600	214
2.5	3631	1.6	550	12.0	—	306 R4	BN 90S 4	M2SB 4	33000	37400	76300	89900	25600	225
2.7	3486	1.1	528	12.0	—	305 R4	BN 90S 4	M2SB 4	26100	30300	47800	55200	17300	215
2.7	3363	2.6	509	6.0	306 L4	—	BN 90S 4	M2SB 4	32200	36400	74600	87900	25000	224
2.8	3251	1.6	492	6.0	305 L4	—	BN 90S 4	M2SB 4	25500	29660	46800	54100	16900	214
2.9	3239	2.9	490	15.0	—	307 R4	BN 90S 4	M2SB 4	36700	45900	79600	105900	31700	235
2.9	3223	2.6	488	12.0	—	306 R4	BN 90S 4	M2SB 4	31700	35900	73600	86700	24600	225



$P_1 = 1.1 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min^{-1}	M_2 Nm	S	i	Pt kW					R_{n_2} [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
3.1	3002	2.3	455	12.0	—	306 R4	BN 90S 4	M2SB 4	31000	35100	72100	84900	24100	225
3.1	2982	1.6	452	12.0	—	305 R4	BN 90S 4	M2SB 4	24700	28800	45600	52700	16500	215
3.1	2943	0.9	446	6.0	303 L4	—	BN 90S 4	M2SB 4	24600	28700	45400	52500	16400	204
3.1	2943	1.8	446	6.0	305 L4	—	BN 90S 4	M2SB 4	24600	28700	45400	52500	16400	214
3.3	2772	3.0	420	12.0	—	306 R4	BN 90S 4	M2SB 4	30200	34200	70400	82900	23400	225
3.4	2729	1.7	413	6.0	305 L4	—	BN 90S 4	M2SB 4	24000	27940	44400	51300	16000	214
3.5	2765	2.0	405	7.5	306 L3	—	BN 90S 4	M2SB 4	29800	33800	69600	82000	23100	224
3.6	2576	1.5	390	12.0	—	305 R4	BN 90S 4	M2SB 4	23600	27500	43600	50400	15700	215
3.6	2655	1.2	389	7.5	305 L3	—	BN 90S 4	M2SB 4	23500	27460	43600	50400	15700	214
3.7	2489	2.7	377	12.0	—	306 R4	BN 90S 4	M2SB 4	29100	33000	68100	80300	22600	225
3.8	2403	1.0	364	12.0	—	303 R4	BN 90S 4	M2SB 4	23000	26800	42700	49400	15300	205
3.8	2403	1.9	364	12.0	—	305 R4	BN 90S 4	M2SB 4	23000	26800	42700	49400	15300	215
4.2	2216	1.0	336	12.0	—	303 R4	BN 90S 4	M2SB 4	22400	26100	41700	48200	14900	205
4.2	2216	2.0	336	12.0	—	305 R4	BN 90S 4	M2SB 4	22400	26100	41700	48200	14900	215
4.3	2216	2.5	325	7.5	306 L3	—	BN 90S 4	M2SB 4	27700	31400	65100	76800	21500	224
4.5	2064	1.7	313	12.0	—	305 R4	BN 90S 4	M2SB 4	21900	25600	40800	47200	14600	215
4.5	2127	1.5	312	7.5	305 L3	—	BN 90S 4	M2SB 4	21900	25460	40800	47100	14500	214
4.8	1921	0.9	291	10.0	—	301 R4	BN 90S 4	M2SB 4	7200	7500	19300	21200	4740	197
4.8	1915	1.4	290	12.0	—	303 R4	BN 90S 4	M2SB 4	21400	24900	39900	46100	14200	205
4.8	1915	2.8	290	12.0	—	305 R4	BN 90S 4	M2SB 4	21400	24900	39900	46100	14200	215
4.9	1967	2.8	288	7.5	306 L3	—	BN 90S 4	M2SB 4	26600	30200	62800	74100	20700	224
5.1	1888	1.2	276	7.5	303 L3	—	BN 90S 4	M2SB 4	21000	24510	39300	45500	14000	204
5.1	1888	2.3	276	7.5	305 L3	—	BN 90S 4	M2SB 4	21000	24510	39300	45500	14000	214
5.2	1771	1.0	268	10.0	—	301 R4	BN 90S 4	M2SB 4	7000	7300	18900	20700	4610	197
5.4	1759	1.0	258	7.5	303 L3	—	BN 90S 4	M2SB 4	20500	23940	38500	44500	13600	204
5.4	1759	2.0	258	7.5	305 L3	—	BN 90S 4	M2SB 4	20500	23940	38500	44500	13600	214
5.5	1685	1.1	255	12.0	—	303 R4	BN 90S 4	M2SB 4	20500	23800	38400	44400	13600	205
5.5	1685	2.1	255	12.0	—	305 R4	BN 90S 4	M2SB 4	20500	23800	38400	44400	13600	215
6.1	1525	1.2	231	12.0	—	303 R4	BN 90S 4	M2SB 4	19800	23100	37300	43100	13200	205
6.1	1525	2.4	231	12.0	—	305 R4	BN 90S 4	M2SB 4	19800	23100	37300	43100	13200	215
6.3	1509	1.1	221	7.5	301 L3	—	BN 90S 4	M2SB 4	6500	6800	17800	19500	4320	196
6.4	1504	1.5	220	7.5	303 L3	—	BN 90S 4	M2SB 4	19500	22700	36800	42500	13000	204
6.5	1419	1.2	215	10.0	—	301 R4	BN 90S 4	M2SB 4	6500	6700	17700	19400	4280	197
6.5	1415	1.8	214	12.0	—	303 R4	BN 90S 4	M2SB 4	19300	22500	36400	42100	12800	205
7.3	1311	1.0	192	7.5	301 L3	—	BN 90S 4	M2SB 4	6200	6500	17100	18700	4130	196
7.4	1299	1.4	190	7.5	303 L3	—	BN 90S 4	M2SB 4	18600	21650	35200	40700	12300	204
7.4	1299	2.8	190	7.5	305 L3	—	BN 90S 4	M2SB 4	18600	21650	35200	40700	12300	214
7.6	1221	1.7	185	12.0	—	303 R4	BN 90S 4	M2SB 4	18400	21400	34900	40300	12200	205
7.9	1212	1.8	178	7.5	303 L3	—	BN 90S 4	M2SB 4	18200	21170	34400	39800	12100	204
7.9	1209	1.4	177	7.5	301 L3	—	BN 90S 4	M2SB 4	6100	6300	16700	18300	4020	196
8.0	1159	1.5	175	10.0	—	301 R4	BN 90S 4	M2SB 4	6000	6300	16600	18200	4000	197
8.6	1118	2.0	164	7.5	303 L3	—	BN 90S 4	M2SB 4	17700	20600	33600	38900	11700	204
8.8	1049	1.6	159	10.0	—	301 R4	BN 90S 4	M2SB 4	5900	6100	16100	17700	3870	197
8.8	1046	2.5	158	12.0	—	303 R4	BN 90S 4	M2SB 4	17400	20300	33300	38500	11600	205
9.2	1041	1.7	152	7.5	303 L3	—	BN 90S 4	M2SB 4	17200	20030	32900	38100	11500	204
9.4	978	2.1	148	12.0	—	303 R4	BN 90S 4	M2SB 4	17100	19900	32600	37700	11400	205
9.8	946	1.4	143	10.0	—	301 R4	BN 90S 4	M2SB 4	5700	5900	15600	17200	3740	197
9.9	969	1.8	142	7.5	301 L3	—	BN 90S 4	M2SB 4	5600	5900	15600	17100	3730	196
9.9	966	2.7	141	7.5	303 L3	—	BN 90S 4	M2SB 4	16800	19550	32200	37200	11200	204
10.7	894	1.0	131	7.5	300 L3	—	BN 90S 4	M2SB 4	5500	5700	15200	16700	3630	188
10.7	894	1.9	131	7.5	301 L3	—	BN 90S 4	M2SB 4	5500	5700	15200	16700	3630	196
10.8	856	1.0	130	10.0	—	300 R4	BN 90S 4	M2SB 4	5500	5700	15200	16600	3620	189
10.8	856	2.0	130	10.0	—	301 R4	BN 90S 4	M2SB 4	5500	5700	15200	16600	3620	197
11.2	850	2.1	124	7.5	303 L3	—	BN 90S 4	M2SB 4	16100	18790	31000	35800	10700	204
12.1	791	1.6	116	7.5	301 L3	—	BN 90S 4	M2SB 4	5300	5500	14700	16100	3490	196
12.4	769	2.3	113	7.5	303 L3	—	BN 90S 4	M2SB 4	15600	18210	30100	34700	10400	204
12.6	756	2.2	111	14.0	—	303 R3	BN 90S 4	M2SB 4	15500	18100	29900	34600	10300	205
13.2	726	1.6	106	12.0	—	301 R3	BN 90S 4	M2SB 4	5100	5300	14300	15700	3390	197
13.2	699	1.2	106	10.0	—	300 R4	BN 90S 4	M2SB 4	5100	5300	14300	15700	3380	189
13.2	699	2.4	106	10.0	—	301 R4	BN 90S 4	M2SB 4	5100	5300	14300	15700	3380	197
13.4	716	1.2	105	7.5	300 L3	—	BN 90S 4	M2SB 4	5100	5300	14200	15600	3370	188
13.4	716	2.4	105	7.5	301 L3	—	BN 90S 4	M2SB 4	5100	5300	14200	15600	3370	196

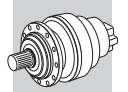


P₁ = 1.1 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
15.3	625	2.9	91.5	14.0	—	303 R3	BN 90S 4	M2SB 4	14600	17000	28200	32600	9670	205
16.2	570	1.1	86.4	10.0	—	300 R4	BN 90S 4	M2SB 4	4800	5000	13400	14700	3160	189
16.2	570	2.3	86.4	10.0	—	301 R4	BN 90S 4	M2SB 4	4800	5000	13400	14700	3160	197
16.4	584	1.5	85.6	7.5	300 L3	—	BN 90S 4	M2SB 4	4800	5000	13400	14700	3150	188
16.4	584	2.9	85.6	7.5	301 L3	—	BN 90S 4	M2SB 4	4800	5000	13400	14700	3150	196
16.4	581	1.1	85.2	12.0	—	300 R3	BN 90S 4	M2SB 4	4800	5000	13400	14700	3150	189
16.4	581	2.2	85.2	12.0	—	301 R3	BN 90S 4	M2SB 4	4800	5000	13400	14700	3150	197
18.1	529	1.6	77.5	7.5	300 L3	—	BN 90S 4	M2SB 4	4600	4800	13000	14300	3050	188
20.0	477	1.4	69.9	7.5	300 L3	—	BN 90S 4	M2SB 4	4500	4700	12600	13800	2950	188
20.0	477	2.7	69.9	7.5	301 L3	—	BN 90S 4	M2SB 4	4500	4700	12600	13800	2950	196
20.5	466	1.4	68.2	12.0	—	300 R3	BN 90S 4	M2SB 4	4400	4600	12500	13700	2920	189
20.5	466	2.8	68.2	12.0	—	301 R3	BN 90S 4	M2SB 4	4400	4600	12500	13700	2920	197
22.2	432	2.0	63.2	7.5	300 L3	—	BN 90S 4	M2SB 4	4300	4500	12200	13400	2850	188
22.2	430	2.0	62.9	12.0	—	300 R3	BN 90S 4	M2SB 4	4300	4500	12200	13400	2840	189
27.0	366	1.5	51.8	7.5	300 L2	—	BN 90S 4	M2SB 4	4000	4200	11500	12600	2670	188
27.1	353	2.4	51.6	7.5	300 L3	—	BN 90S 4	M2SB 4	4000	4200	11500	12600	2660	188
27.8	344	2.5	50.4	12.0	—	300 R3	BN 90S 4	M2SB 4	4000	4200	11400	12500	2640	189
33	288	2.3	42.1	7.5	300 L3	—	BN 90S 4	M2SB 4	3800	3900	10800	11900	2490	188
34	293	2.2	41.5	7.5	300 L2	—	BN 90S 4	M2SB 4	3800	3900	10800	11800	2480	188
34	281	2.3	41.2	12.0	—	300 R3	BN 90S 4	M2SB 4	3800	3900	10800	11800	2470	189
42	235	2.8	33.3	7.5	300 L2	—	BN 90S 4	M2SB 4	3500	3600	10100	11100	2300	188

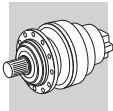
P₁ = 1.5 kW n₁=1400 min⁻¹

0.56	22561	1.2	2523	11.0	310 L4	—	BN 90LA 4	—	—	—	133000	166000	65000	254
0.64	19553	2.5	2187	11.0	313 L4	—	BN 90LA 4	—	—	—	192000	231000	80000	274
0.67	18743	1.8	2096	11.0	311 L4	—	BN 90LA 4	—	—	—	157000	195000	65000	264
0.70	18078	1.4	2022	11.0	310 L4	—	BN 90LA 4	—	—	—	133000	166000	65000	254
0.79	16043	1.6	1794	11.0	310 L4	—	BN 90LA 4	—	—	—	133000	166000	65000	254
0.80	15793	2.7	1766	11.0	311 L4	—	BN 90LA 4	—	—	—	157000	195000	65000	264
0.82	15402	1.1	1723	7.5	309 L4	—	BN 90LA 4	—	—	—	110000	145000	36000	244
0.84	15018	2.3	1680	11.0	311 L4	—	BN 90LA 4	—	—	—	157000	195000	65000	264
0.85	14813	1.5	1657	11.0	310 L4	—	BN 90LA 4	—	—	—	133000	166000	65000	254
0.88	14346	1.2	1605	7.5	309 L4	—	BN 90LA 4	—	—	—	110000	145000	36000	244
0.98	12855	2.0	1438	11.0	310 L4	—	BN 90LA 4	—	—	—	133000	166000	65000	254
1.0	12341	1.4	1380	7.5	309 L4	—	BN 90LA 4	—	—	—	109500	144400	35800	244
1.1	11394	1.1	1274	7.5	307 L4	—	BN 90LA 4	M3SA 4	50400	63000	106000	141000	43600	234
1.1	11394	1.1	1274	7.5	309 L4	—	BN 90LA 4	—	—	—	106900	141000	34900	244
1.1	11256	2.5	1259	11.0	310 L4	—	BN 90LA 4	—	—	—	128800	160800	62700	254
1.2	10409	2.7	1164	11.0	310 L4	—	BN 90LA 4	—	—	—	125800	157100	61100	254
1.2	10276	1.0	1149	7.5	307 L4	—	BN 90LA 4	M3SA 4	48700	60900	102700	136700	42100	234
1.2	10276	1.6	1149	7.5	309 L4	—	BN 90LA 4	—	—	—	103700	136700	33700	244
1.4	9074	1.0	1015	6.0	306 L4	—	BN 90LA 4	M3SA 4	40500	45900	91700	108100	31400	224
1.4	8933	1.5	999	7.5	307 L4	—	BN 90LA 4	M3SA 4	46500	58100	98500	131000	40200	234
1.4	8933	2.0	999	7.5	309 L4	—	BN 90LA 4	—	—	—	99400	131000	32200	244
1.6	8103	1.8	906	7.5	307 L4	—	BN 90LA 4	M3SA 4	45000	56300	95700	127300	38900	234
1.6	8103	2.2	906	7.5	309 L4	—	BN 90LA 4	—	—	—	96500	127300	31100	244
1.6	8029	2.9	898	15.0	—	310 R4	BN 90LA 4	—	—	—	116400	145300	56100	255
1.6	7841	0.9	877	6.0	306 L4	—	BN 90LA 4	M3SA 4	38600	43700	87800	103400	29900	224
1.7	7231	1.0	809	6.0	306 L4	—	BN 90LA 4	M3SA 4	37500	42500	85700	100900	29200	224
1.8	7157	1.8	801	7.5	307 L4	—	BN 90LA 4	M3SA 4	43200	54000	92200	122600	37400	234
1.8	7157	2.6	801	7.5	309 L4	—	BN 90LA 4	—	—	—	93000	122600	29900	244
2.0	6457	2.2	722	7.5	307 L4	—	BN 90LA 4	M3SA 4	41800	52200	89400	118900	36100	234
2.0	6255	1.4	700	6.0	306 L4	—	BN 90LA 4	M3SA 4	35800	40500	82000	96600	27800	224
2.0	6167	1.6	690	15.0	—	307 R4	BN 90LA 4	M3SA 4	41100	51400	88100	117300	35500	235
2.0	6167	2.4	690	15.0	—	309 R4	BN 90LA 4	—	—	—	89000	117300	28400	245
2.1	5948	1.0	665	12.0	—	306 R4	BN 90LA 4	M3SA 4	35200	39800	80800	95200	27300	225
2.2	5843	2.1	654	7.5	307 L4	—	BN 90LA 4	M3SA 4	40400	50500	86700	115400	34900	234
2.2	5682	1.5	636	6.0	306 L4	—	BN 90LA 4	M3SA 4	34600	39300	79700	93900	26900	224
2.4	5278	1.1	590	12.0	—	306 R4	BN 90LA 4	M3SA 4	33800	38300	78000	91800	26200	225



$P_1 = 1.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min^{-1}	M_2 Nm	S	i	P_t kW					R_{n_2} [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.4	5269	1.6	589	6.0	306 L4	—	BN 90LA 4	M3SA 4	33800	38300	77900	91800	26200	224
2.4	5196	2.3	581	15.0	—	307 R4	BN 90LA 4	M3SA 4	38800	48500	83700	111400	33600	235
2.4	5174	2.7	579	7.5	307 L4	—	BN 90LA 4	M3SA 4	38800	48500	83600	111200	33500	234
2.5	5067	1.0	567	12.0	—	305 R4	BN 90LA 4	M3SA 4	26700	31100	48800	56400	17800	215
2.5	4972	1.1	556	6.0	305 L4	—	BN 90LA 4	M3SA 4	26500	30900	48500	56100	17600	214
2.6	4917	1.2	550	12.0	—	306 R4	BN 90LA 4	M3SA 4	33000	37400	76300	89900	25600	225
2.8	4553	1.9	509	6.0	306 L4	—	BN 90LA 4	M3SA 4	32200	36400	74600	87900	25000	224
2.8	4552	3.0	509	7.5	307 L4	—	BN 90LA 4	M3SA 4	37200	46400	80500	107100	32100	234
2.9	4401	1.2	492	6.0	305 L4	—	BN 90LA 4	M3SA 4	25500	29660	46800	54100	16900	214
2.9	4385	2.1	490	15.0	—	307 R4	BN 90LA 4	M3SA 4	36700	45900	79600	105900	31700	235
2.9	4363	1.9	488	12.0	—	306 R4	BN 90LA 4	M3SA 4	31700	35900	73600	86700	24600	225
3.0	4156	2.8	465	7.5	307 L4	—	BN 90LA 4	M3SA 4	36100	45100	78300	104200	31200	234
3.1	4085	2.3	457	15.0	—	307 R4	BN 90LA 4	M3SA 4	35900	44800	77900	103600	31000	235
3.1	4065	1.7	455	12.0	—	306 R4	BN 90LA 4	M3SA 4	31000	35100	72100	84900	24100	225
3.1	4038	1.2	452	12.0	—	305 R4	BN 90LA 4	M3SA 4	24700	28800	45600	52700	16500	215
3.2	3984	1.4	446	6.0	305 L4	—	BN 90LA 4	M3SA 4	24600	28700	45400	52500	16400	214
3.2	3972	2.4	444	6.0	306 L4	—	BN 90LA 4	M3SA 4	30700	34800	71600	84300	23900	224
3.4	3754	2.2	420	12.0	—	306 R4	BN 90LA 4	M3SA 4	30200	34200	70400	82900	23400	225
3.4	3694	1.3	413	6.0	305 L4	—	BN 90LA 4	M3SA 4	24000	27940	44400	51300	16000	214
3.5	3744	1.5	405	7.5	306 L3	—	BN 90LA 4	M3SA 4	29800	33800	69600	82000	23100	224
3.6	3488	1.1	390	12.0	—	305 R4	BN 90LA 4	M3SA 4	23600	27500	43600	50400	15700	215
3.7	3370	2.0	377	12.0	—	306 R4	BN 90LA 4	M3SA 4	29100	33000	68100	80300	22600	225
3.9	3253	1.4	364	12.0	—	305 R4	BN 90LA 4	M3SA 4	23000	26800	42700	49400	15300	215
4.2	3111	2.8	336	11.0	307 L3	—	BN 90LA 4	M3SA 4	32400	40400	71100	94500	28000	234
4.2	3000	1.5	336	12.0	—	305 R4	BN 90LA 4	M3SA 4	22400	26100	41700	48200	14900	215
4.3	3000	1.8	325	7.5	306 L3	—	BN 90LA 4	M3SA 4	27700	31400	65100	76800	21500	224
4.5	2795	1.3	313	12.0	—	305 R4	BN 90LA 4	M3SA 4	21900	25600	40800	47200	14600	215
4.5	2786	2.7	312	12.0	—	306 R4	BN 90LA 4	M3SA 4	27300	31000	64400	75800	21200	225
4.5	2880	1.1	312	7.5	305 L3	—	BN 90LA 4	M3SA 4	21900	25460	40800	47100	14500	214
4.9	2593	1.0	290	12.0	—	303 R4	BN 90LA 4	M3SA 4	21400	24900	39900	46100	14200	205
4.9	2593	2.0	290	12.0	—	305 R4	BN 90LA 4	M3SA 4	21400	24900	39900	46100	14200	215
4.9	2663	2.1	288	7.5	306 L3	—	BN 90LA 4	M3SA 4	26600	30200	62800	74100	20700	224
5.1	2556	1.7	276	7.5	305 L3	—	BN 90LA 4	M3SA 4	21000	24510	39300	45500	14000	214
5.3	2480	2.2	268	7.5	306 L3	—	BN 90LA 4	M3SA 4	26000	29400	61500	72500	20200	224
5.5	2381	1.5	258	7.5	305 L3	—	BN 90LA 4	M3SA 4	20500	23940	38500	44500	13600	214
5.5	2281	1.6	255	12.0	—	305 R4	BN 90LA 4	M3SA 4	20500	23800	38400	44400	13600	215
6.1	2065	1.7	231	12.0	—	305 R4	BN 90LA 4	M3SA 4	19800	23100	37300	43100	13200	215
6.4	2037	1.1	220	7.5	303 L3	—	BN 90LA 4	M3SA 4	19500	22700	36800	42500	13000	204
6.4	2037	2.3	220	7.5	305 L3	—	BN 90LA 4	M3SA 4	19500	22700	36800	42500	13000	214
6.6	1916	1.4	214	12.0	—	303 R4	BN 90LA 4	M3SA 4	19300	22500	36400	42100	12800	205
6.6	1916	2.7	214	12.0	—	305 R4	BN 90LA 4	M3SA 4	19300	22500	36400	42100	12800	215
7.4	1759	1.0	190	7.5	303 L3	—	BN 90LA 4	M3SA 4	18600	21650	35200	40700	12300	204
7.4	1759	2.0	190	7.5	305 L3	—	BN 90LA 4	M3SA 4	18600	21650	35200	40700	12300	214
7.6	1653	1.3	185	12.0	—	303 R4	BN 90LA 4	M3SA 4	18400	21400	34900	40300	12200	205
7.6	1653	2.5	185	12.0	—	305 R4	BN 90LA 4	M3SA 4	18400	21500	34900	40300	12200	215
7.9	1641	1.3	178	7.5	303 L3	—	BN 90LA 4	M3SA 4	18200	21170	34400	39800	12100	204
7.9	1641	2.7	178	7.5	305 L3	—	BN 90LA 4	M3SA 4	18200	21170	34400	39800	12100	214
8.0	1637	1.0	177	7.5	301 L3	—	BN 90LA 4	M3SA 4	6100	6300	16700	18300	4020	196
8.0	1569	1.1	175	10.0	—	301 R4	BN 90LA 4	M3SA 4	6000	6300	16600	18200	4000	197
8.6	1513	1.5	164	7.5	303 L3	—	BN 90LA 4	M3SA 4	17700	20600	33600	38900	11700	204
8.6	1513	2.9	164	7.5	305 L3	—	BN 90LA 4	M3SA 4	17700	20600	33600	38900	11700	214
8.9	1420	1.2	159	10.0	—	301 R4	BN 90LA 4	M3SA 4	5900	6100	16100	17700	3870	197
8.9	1416	1.8	158	12.0	—	303 R4	BN 90LA 4	M3SA 4	17400	20300	33300	38500	11600	205
9.2	1410	1.3	152	7.5	303 L3	—	BN 90LA 4	M3SA 4	17200	20030	32900	38100	11500	204
9.2	1410	2.6	152	7.5	305 L3	—	BN 90LA 4	M3SA 4	17200	20030	32900	38100	11500	214
9.5	1325	1.6	148	12.0	—	303 R4	BN 90LA 4	M3SA 4	17100	19900	32600	37700	11400	205
9.8	1281	1.0	143	10.0	—	301 R4	BN 90LA 4	M3SA 4	5700	5900	15600	17200	3740	197
9.9	1312	1.3	142	7.5	301 L3	—	BN 90LA 4	M3SA 4	5600	5900	15600	17100	3730	196
10.0	1308	2.0	141	7.5	303 L3	—	BN 90LA 4	M3SA 4	16800	19550	32200	37200	11200	204
10.8	1210	1.4	131	7.5	301 L3	—	BN 90LA 4	M3SA 4	5500	5700	15200	16700	3630	196
10.9	1158	1.5	130	10.0	—	301 R4	BN 90LA 4	M3SA 4	5500	5700	15200	16600	3620	197
10.9	1156	2.2	129	12.0	—	303 R4	BN 90LA 4	M3SA 4	16300	19000	31300	36200	10800	205

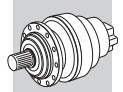


P₁ = 1.5 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
11.3	1151	1.6	124	7.5	303 L3	—	BN 90LA 4	M3SA 4	16100	18790	31000	35800	10700	204
12.2	1071	1.2	116	7.5	301 L3	—	BN 90LA 4	M3SA 4	5300	5500	14700	16100	3490	196
12.5	1042	1.7	113	7.5	303 L3	—	BN 90LA 4	M3SA 4	15600	18210	30100	34700	10400	204
12.7	1023	1.6	111	14.0	—	303 R3	BN 90LA 4	M3SA 4	15500	18100	29900	34600	10300	205
13.3	983	1.2	106	12.0	—	301 R3	BN 90LA 4	M3SA 4	5100	5300	14300	15700	3390	197
13.3	946	1.8	106	10.0	—	301 R4	BN 90LA 4	M3SA 4	5100	5300	14300	15700	3380	197
13.4	969	1.8	105	7.5	301 L3	—	BN 90LA 4	M3SA 4	5100	5300	14200	15600	3370	196
13.5	966	2.7	105	7.5	303 L3	—	BN 90LA 4	M3SA 4	15200	17740	29400	34000	10100	204
15.4	846	2.1	91.5	14.0	—	303 R3	BN 90LA 4	M3SA 4	14600	17000	28200	32600	9670	205
15.6	834	2.5	90.2	7.5	303 L3	—	BN 90LA 4	M3SA 4	14500	16880	28100	32500	9620	204
16.3	772	1.7	86.4	10.0	—	301 R4	BN 90LA 4	M3SA 4	4800	5000	13400	14700	3160	197
16.5	791	1.1	85.6	7.5	300 L3	—	BN 90LA 4	M3SA 4	4800	5000	13400	14700	3150	188
16.5	791	2.1	85.6	7.5	301 L3	—	BN 90LA 4	M3SA 4	4800	5000	13400	14700	3150	196
16.6	787	1.7	85.2	12.0	—	301 R3	BN 90LA 4	M3SA 4	4800	5000	13400	14700	3150	197
18.2	716	1.2	77.5	7.5	300 L3	—	BN 90LA 4	M3SA 4	4600	4800	13000	14300	3050	188
18.2	716	2.4	77.5	7.5	301 L3	—	BN 90LA 4	M3SA 4	4600	4800	13000	14300	3050	196
19.2	678	2.7	73.3	14.0	—	303 R3	BN 90LA 4	M3SA 4	13500	15700	26400	30500	8980	205
20.2	646	1.0	69.9	7.5	300 L3	—	BN 90LA 4	M3SA 4	4500	4700	12600	13800	2950	188
20.2	646	2.0	69.9	7.5	301 L3	—	BN 90LA 4	M3SA 4	4500	4700	12600	13800	2950	196
20.7	631	1.0	68.2	12.0	—	300 R3	BN 90LA 4	M3SA 4	4400	4600	12500	13700	2920	189
20.7	631	2.1	68.2	12.0	—	301 R3	BN 90LA 4	M3SA 4	4400	4600	12500	13700	2920	197
22.3	584	1.5	63.2	7.5	300 L3	—	BN 90LA 4	M3SA 4	4300	4500	12200	13400	2850	188
22.3	584	2.9	63.2	7.5	301 L3	—	BN 90LA 4	M3SA 4	4300	4500	12200	13400	2850	196
22.4	582	1.5	62.9	12.0	—	300 R3	BN 90LA 4	M3SA 4	4300	4500	12200	13400	2840	189
22.4	582	2.9	62.9	12.0	—	301 R3	BN 90LA 4	M3SA 4	4300	4500	12200	13400	2840	197
27.2	495	1.1	51.8	7.5	300 L2	—	BN 90LA 4	M3SA 4	4000	4200	11500	12600	2670	188
27.2	495	2.3	51.8	7.5	301 L2	—	BN 90LA 4	M3SA 4	4000	4200	11500	12600	2670	196
27.3	477	1.8	51.6	7.5	300 L3	—	BN 90LA 4	M3SA 4	4000	4200	11500	12600	2660	188
28.0	466	1.8	50.4	12.0	—	300 R3	BN 90LA 4	M3SA 4	4000	4200	11400	12500	2640	189
33.3	390	1.7	42.1	7.5	300 L3	—	BN 90LA 4	M3SA 4	3800	3900	10800	11900	2490	188
34	397	1.6	41.5	7.5	300 L2	—	BN 90LA 4	M3SA 4	3800	3900	10800	11800	2480	188
34	381	1.7	41.2	12.0	—	300 R3	BN 90LA 4	M3SA 4	3800	3900	10800	11800	2470	189
38	344	2.5	37.3	12.0	—	300 R3	BN 90LA 4	M3SA 4	3600	3800	10400	11500	2390	189
42	318	2.0	33.3	7.5	300 L2	—	BN 90LA 4	M3SA 4	3500	3600	10100	11100	2300	188
46	293	2.8	30.7	7.5	300 L2	—	BN 90LA 4	M3SA 4	3400	3500	9850	10800	2240	188
46	281	2.3	30.4	12.0	—	300 R3	BN 90LA 4	M3SA 4	3400	3500	9830	10800	2230	189
57	230	2.8	24.8	12.0	—	300 R3	BN 90LA 4	M3SA 4	3200	3300	9250	10100	2090	189

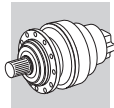
P₁ = 1.85 kW n₁=1400 min⁻¹

0.55	28024	0.9	2523	11.0	310 L4	—	BN 90LB 4	—	—	—	133000	166000	65000	254
0.64	24287	2.0	2187	11.0	313 L4	—	BN 90LB 4	—	—	—	192000	231000	80000	274
0.67	23281	1.5	2096	11.0	311 L4	—	BN 90LB 4	—	—	—	157000	195000	65000	264
0.69	22455	1.2	2022	11.0	310 L4	—	BN 90LB 4	—	—	—	133000	166000	65000	254
0.77	20177	2.7	1817	11.0	313 L4	—	BN 90LB 4	—	—	—	192000	231000	80000	274
0.78	19928	1.3	1794	11.0	310 L4	—	BN 90LB 4	—	—	—	133000	166000	65000	254
0.79	19617	2.2	1766	11.0	311 L4	—	BN 90LB 4	—	—	—	157000	195000	65000	264
0.83	18655	1.8	1680	11.0	311 L4	—	BN 90LB 4	—	—	—	157000	195000	65000	264
0.84	18399	1.2	1657	11.0	310 L4	—	BN 90LB 4	—	—	—	133000	166000	65000	254
0.87	17820	1.0	1605	7.5	309 L4	—	BN 90LB 4	—	—	—	110000	145000	36000	244
0.97	15968	1.6	1438	11.0	310 L4	—	BN 90LB 4	—	—	—	133000	166000	65000	254
0.99	15718	2.7	1415	11.0	311 L4	—	BN 90LB 4	—	—	—	157000	195000	65000	264
1.0	15329	1.1	1380	7.5	309 L4	—	BN 90LB 4	—	—	—	109500	144400	35800	244
1.1	13981	2.0	1259	11.0	310 L4	—	BN 90LB 4	—	—	—	128800	160800	62700	254
1.2	12930	2.2	1164	11.0	310 L4	—	BN 90LB 4	—	—	—	125800	157100	61100	254
1.2	12764	1.3	1149	7.5	309 L4	—	BN 90LB 4	—	—	—	103700	136700	33700	244
1.3	12248	2.8	1103	11.0	311 L4	—	BN 90LB 4	—	—	—	146200	181500	60000	264
1.4	11334	2.5	1021	11.0	310 L4	—	BN 90LB 4	—	—	—	121000	151000	58500	254
1.4	11095	1.2	999	7.5	307 L4	—	BN 90LB 4	—	46500	58100	98500	131000	40200	234
1.4	11095	1.6	999	7.5	309 L4	—	BN 90LB 4	—	—	—	99400	131000	32200	244








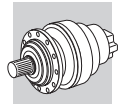
$P_1 = 1.85 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.5	10426	2.6	939	11.0	310 L4	—	BN 90LB 4	—	—	—	118000	147200	56900	254
1.5	10065	1.4	906	7.5	307 L4	—	BN 90LB 4	—	45000	56300	95700	127300	38900	234
1.5	10065	1.7	906	7.5	309 L4	—	BN 90LB 4	—	—	—	96500	127300	31100	244
1.6	9974	2.4	898	15.0	—	310 R4	BN 90LB 4	—	—	—	116400	145300	56100	255
1.7	9082	3.0	818	11.0	310 L4	—	BN 90LB 4	—	—	—	113200	141300	54300	254
1.7	8891	1.4	801	7.5	307 L4	—	BN 90LB 4	—	43200	54000	92200	122600	37400	234
1.7	8891	2.1	801	7.5	309 L4	—	BN 90LB 4	—	—	—	93000	122600	29900	244
1.9	8020	1.8	722	7.5	307 L4	—	BN 90LB 4	—	41800	52200	89400	118900	36100	234
1.9	8020	2.6	722	7.5	309 L4	—	BN 90LB 4	—	—	—	90200	118900	28900	244
2.0	7769	1.1	700	6.0	306 L4	—	BN 90LB 4	—	35800	40500	82000	96600	27800	224
2.0	7660	1.3	690	15.0	—	307 R4	BN 90LB 4	—	41100	51400	88100	117300	35500	235
2.0	7660	2.0	690	15.0	—	309 R4	BN 90LB 4	—	—	—	89000	117300	28400	245
2.1	7257	1.7	654	7.5	307 L4	—	BN 90LB 4	—	40400	50500	86700	115400	34900	234
2.1	7257	2.5	654	7.5	309 L4	—	BN 90LB 4	—	—	—	87500	115400	27900	244
2.2	7058	1.2	636	6.0	306 L4	—	BN 90LB 4	—	34600	39300	79700	93900	26900	224
2.4	6545	1.3	589	6.0	306 L4	—	BN 90LB 4	—	33800	38300	77900	91800	26200	224
2.4	6454	1.9	581	15.0	—	307 R4	BN 90LB 4	—	38800	48500	83700	111400	33600	235
2.4	6454	2.4	581	15.0	—	309 R4	BN 90LB 4	—	—	—	84500	111400	26900	245
2.4	6426	2.1	579	7.5	307 L4	—	BN 90LB 4	—	38800	48500	83600	111200	33500	234
2.5	6107	1.0	550	12.0	—	306 R4	BN 90LB 4	—	33000	37400	76300	89900	25600	225
2.7	5655	1.5	509	6.0	306 L4	—	BN 90LB 4	—	32200	36400	74600	87900	25000	224
2.7	5655	2.4	509	7.5	307 L4	—	BN 90LB 4	—	37200	46400	80500	107100	32100	234
2.7	5655	2.5	509	7.5	309 L4	—	BN 90LB 4	—	—	—	81200	107100	25700	244
2.8	5467	1.0	492	6.0	305 L4	—	BN 90LB 4	—	25500	29660	46800	54100	16900	214
2.9	5447	1.7	490	15.0	—	307 R4	BN 90LB 4	—	36700	45900	79600	105900	31700	235
2.9	5447	2.6	490	15.0	—	309 R4	BN 90LB 4	—	—	—	80300	105900	25400	245
2.9	5420	1.5	488	12.0	—	306 R4	BN 90LB 4	—	31700	35900	73600	86700	24600	225
3.0	5162	2.3	465	7.5	307 L4	—	BN 90LB 4	—	36100	45100	78300	104200	31200	234
3.1	5074	1.8	457	15.0	—	307 R4	BN 90LB 4	—	35900	44800	77900	103600	31000	235
3.1	5074	2.7	457	15.0	—	309 R4	BN 90LB 4	—	—	—	78600	103600	24800	245
3.1	5049	1.4	455	12.0	—	306 R4	BN 90LB 4	—	31000	35100	72100	84900	24100	225
3.1	5016	0.9	452	12.0	—	305 R4	BN 90LB 4	—	24700	28800	45600	52700	16500	215
3.1	4949	1.1	446	6.0	305 L4	—	BN 90LB 4	—	24600	28700	45400	52500	16400	214
3.2	4934	1.9	444	6.0	306 L4	—	BN 90LB 4	—	30700	34800	71600	84300	23900	224
3.3	4662	1.8	420	12.0	—	306 R4	BN 90LB 4	—	30200	34200	70400	82900	23400	225
3.4	4590	2.5	413	15.0	—	307 R4	BN 90LB 4	—	34700	43300	75600	100600	30000	235
3.4	4589	1.0	413	6.0	305 L4	—	BN 90LB 4	—	24000	27940	44400	51300	16000	214
3.5	4651	1.2	405	7.5	306 L3	—	BN 90LB 4	—	29800	33800	69600	82000	23100	224
3.5	4497	2.5	405	7.5	307 L4	—	BN 90LB 4	—	34400	43000	75100	99900	29800	234
3.7	4187	1.6	377	12.0	—	306 R4	BN 90LB 4	—	29100	33000	68100	80300	22600	225
3.8	4041	1.1	364	12.0	—	305 R4	BN 90LB 4	—	23000	26800	42700	49400	15300	215
4.2	3864	2.3	336	11.0	307 L3	—	BN 90LB 4	—	32400	40400	71100	94500	28000	234
4.2	3727	1.2	336	12.0	—	305 R4	BN 90LB 4	—	22400	26100	41700	48200	14900	215
4.2	3678	3.0	331	15.0	—	307 R4	BN 90LB 4	—	32200	40200	70700	94100	27800	235
4.3	3727	1.5	325	7.5	306 L3	—	BN 90LB 4	—	27700	31400	65100	76800	21500	224
4.5	3478	2.5	313	15.0	—	307 R4	BN 90LB 4	—	31600	39500	69600	92500	27300	235
4.5	3472	1.0	313	12.0	—	305 R4	BN 90LB 4	—	21900	25600	40800	47200	14600	215
4.5	3461	2.1	312	12.0	—	306 R4	BN 90LB 4	—	27300	31000	64400	75800	21200	225
4.8	3220	1.6	290	12.0	—	305 R4	BN 90LB 4	—	21400	24900	39900	46100	14200	215
4.8	3209	2.4	289	12.0	—	306 R4	BN 90LB 4	—	26600	30200	62900	74100	20700	225
4.9	3307	1.7	288	7.5	306 L3	—	BN 90LB 4	—	26600	30200	62800	74100	20700	224
5.1	3175	1.4	276	7.5	305 L3	—	BN 90LB 4	—	21000	24510	39300	45500	14000	214
5.2	3081	1.8	268	7.5	306 L3	—	BN 90LB 4	—	26000	29400	61500	72500	20200	224
5.4	2958	1.2	258	7.5	305 L3	—	BN 90LB 4	—	20500	23940	38500	44500	13600	214
5.5	2834	1.3	255	12.0	—	305 R4	BN 90LB 4	—	20500	23800	38400	44400	13600	215
5.6	2761	2.8	249	12.0	—	306 R4	BN 90LB 4	—	25400	28700	60100	70900	19700	225
5.9	2734	2.8	238	7.5	306 L3	—	BN 90LB 4	—	25000	28300	59400	69900	19400	224
6.1	2565	1.4	231	12.0	—	305 R4	BN 90LB 4	—	19800	23100	37300	43100	13200	215
6.1	2557	2.9	230	12.0	—	306 R4	BN 90LB 4	—	24700	28000	58800	69200	19200	225
6.3	2547	2.6	222	7.5	306 L3	—	BN 90LB 4	—	24400	27700	58100	68500	18900	224
6.4	2530	1.9	220	7.5	305 L3	—	BN 90LB 4	—	19500	22700	36800	42500	13000	214
6.5	2380	1.1	214	12.0	—	303 R4	BN 90LB 4	—	19300	22500	36400	42100	12800	205



$P_1 = 1.85 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn_2 [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
6.5	2380	2.2	214	12.0	—	305 R4	BN 90LB 4	—	—	19300	22500	36400	42100	12800	215
7.4	2185	1.6	190	7.5	305 L3	—	BN 90LB 4	—	—	18600	21650	35200	40700	12300	214
7.6	2054	1.0	185	12.0	—	303 R4	BN 90LB 4	—	—	18400	21400	34900	40300	12200	205
7.6	2054	2.0	185	12.0	—	305 R4	BN 90LB 4	—	—	18400	21500	34900	40300	12200	215
7.9	2039	1.1	178	7.5	303 L3	—	BN 90LB 4	—	—	18200	21170	34400	39800	12100	204
7.9	2039	2.2	178	7.5	305 L3	—	BN 90LB 4	—	—	18200	21170	34400	39800	12100	214
8.6	1880	1.2	164	7.5	303 L3	—	BN 90LB 4	—	—	17700	20600	33600	38900	11700	204
8.6	1880	2.3	164	7.5	305 L3	—	BN 90LB 4	—	—	17700	20600	33600	38900	11700	214
8.8	1764	1.0	159	10.0	—	301 R4	BN 90LB 4	—	—	5900	6100	16100	17700	3870	197
8.8	1758	1.5	158	12.0	—	303 R4	BN 90LB 4	—	—	17400	20300	33300	38500	11600	205
8.8	1758	3.0	158	12.0	—	305 R4	BN 90LB 4	—	—	17400	20300	33300	38500	11600	215
9.2	1751	1.0	152	7.5	303 L3	—	BN 90LB 4	—	—	17200	20030	32900	38100	11500	204
9.2	1751	2.1	152	7.5	305 L3	—	BN 90LB 4	—	—	17200	20030	32900	38100	11500	214
9.4	1645	1.3	148	12.0	—	303 R4	BN 90LB 4	—	—	17100	19900	32600	37700	11400	205
9.4	1645	2.6	148	12.0	—	305 R4	BN 90LB 4	—	—	17100	19900	32600	37700	11400	215
9.9	1630	1.0	142	7.5	301 L3	—	BN 90LB 4	—	—	5600	5900	15600	17100	3730	196
9.9	1624	1.6	141	7.5	303 L3	—	BN 90LB 4	—	—	16800	19550	32200	37200	11200	204
10.7	1503	1.1	131	7.5	301 L3	—	BN 90LB 4	—	—	5500	5700	15200	16700	3630	196
10.8	1439	1.2	130	10.0	—	301 R4	BN 90LB 4	—	—	5500	5700	15200	16600	3620	197
10.8	1435	1.8	129	12.0	—	303 R4	BN 90LB 4	—	—	16300	19000	31300	36200	10800	205
11.2	1429	1.3	124	7.5	303 L3	—	BN 90LB 4	—	—	16100	18790	31000	35800	10700	204
11.2	1429	2.5	124	7.5	305 L3	—	BN 90LB 4	—	—	16100	18790	31000	35800	10700	214
12.1	1330	1.0	116	7.5	301 L3	—	BN 90LB 4	—	—	5300	5500	14700	16100	3490	196
12.4	1294	1.4	113	7.5	303 L3	—	BN 90LB 4	—	—	15600	18210	30100	34700	10400	204
12.4	1294	2.8	113	7.5	305 L3	—	BN 90LB 4	—	—	15600	18210	30100	34700	10400	214
12.6	1271	1.3	111	14.0	—	303 R3	BN 90LB 4	—	—	15500	18100	29900	34600	10300	205
12.6	1271	2.4	111	14.0	—	305 R3	BN 90LB 4	—	—	15500	18100	29900	34600	10300	215
13.2	1220	0.9	106	12.0	—	301 R3	BN 90LB 4	—	—	5100	5300	14300	15700	3390	197
13.2	1175	1.4	106	10.0	—	301 R4	BN 90LB 4	—	—	5100	5300	14300	15700	3380	197
13.4	1204	1.4	105	7.5	301 L3	—	BN 90LB 4	—	—	5100	5300	14200	15600	3370	196
13.4	1200	2.2	105	7.5	303 L3	—	BN 90LB 4	—	—	15200	17740	29400	34000	10100	204
15.3	1051	1.7	91.5	14.0	—	303 R3	BN 90LB 4	—	—	14600	17000	28200	32600	9670	205
15.5	1036	2.0	90.2	7.5	303 L3	—	BN 90LB 4	—	—	14500	16880	28100	32500	9620	204
16.2	959	1.4	86.4	10.0	—	301 R4	BN 90LB 4	—	—	4800	5000	13400	14700	3160	197
16.4	983	1.7	85.6	7.5	301 L3	—	BN 90LB 4	—	—	4800	5000	13400	14700	3150	196
16.4	978	1.3	85.2	12.0	—	301 R3	BN 90LB 4	—	—	4800	5000	13400	14700	3150	197
17.8	904	2.4	78.7	14.0	—	303 R3	BN 90LB 4	—	—	13800	16100	27000	31200	9190	205
18.1	890	1.0	77.5	7.5	300 L3	—	BN 90LB 4	—	—	4600	4800	13000	14300	3050	188
18.1	890	1.9	77.5	7.5	301 L3	—	BN 90LB 4	—	—	4600	4800	13000	14300	3050	196
18.1	887	2.9	77.2	7.5	303 L3	—	BN 90LB 4	—	—	13800	16020	26800	31000	9140	204
19.1	842	2.1	73.3	14.0	—	303 R3	BN 90LB 4	—	—	13500	15700	26400	30500	8980	205
19.4	830	2.5	72.3	7.5	303 L3	—	BN 90LB 4	—	—	13500	15640	26300	30400	8940	204
20.0	802	1.6	69.9	7.5	301 L3	—	BN 90LB 4	—	—	4500	4700	12600	13800	2950	196
20.5	784	1.7	68.2	12.0	—	301 R3	BN 90LB 4	—	—	4400	4600	12500	13700	2920	197
22.2	726	1.2	63.2	7.5	300 L3	—	BN 90LB 4	—	—	4300	4500	12200	13400	2850	188
22.2	726	2.3	63.2	7.5	301 L3	—	BN 90LB 4	—	—	4300	4500	12200	13400	2850	196
22.2	723	1.2	62.9	12.0	—	300 R3	BN 90LB 4	—	—	4300	4500	12200	13400	2840	189
22.2	723	2.4	62.9	12.0	—	301 R3	BN 90LB 4	—	—	4300	4500	12200	13400	2840	197
25.8	622	2.9	54.2	14.0	—	303 R3	BN 90LB 4	—	—	12200	14200	24100	27900	8120	205
25.9	641	2.6	54.0	9.0	303 L2	—	BN 90LB 4	—	—	12200	14210	24100	27900	8110	204
27.0	615	1.9	51.8	7.5	301 L2	—	BN 90LB 4	—	—	4000	4200	11500	12600	2670	196
27.1	593	1.4	51.6	7.5	300 L3	—	BN 90LB 4	—	—	4000	4200	11500	12600	2660	188
27.1	593	2.9	51.6	7.5	301 L3	—	BN 90LB 4	—	—	4000	4200	11500	12600	2660	196
27.8	579	1.5	50.4	12.0	—	300 R3	BN 90LB 4	—	—	4000	4200	11400	12500	2640	189
27.8	579	2.9	50.4	12.0	—	301 R3	BN 90LB 4	—	—	4000	4200	11400	12500	2640	197
33	484	1.3	42.1	7.5	300 L3	—	BN 90LB 4	—	—	3800	3900	10800	11900	2490	188
33	484	2.7	42.1	7.5	301 L3	—	BN 90LB 4	—	—	3800	3900	10800	11900	2490	196
34	493	1.3	41.5	7.5	300 L2	—	BN 90LB 4	—	—	3800	3900	10800	11800	2480	188
34	493	2.6	41.5	7.5	301 L2	—	BN 90LB 4	—	—	3800	3900	10800	11800	2480	196
34	473	1.4	41.2	12.0	—	300 R3	BN 90LB 4	—	—	3800	3900	10800	11800	2470	189
34	473	2.8	41.2	12.0	—	301 R3	BN 90LB 4	—	—	3800	3900	10800	11800	2470	197
38	428	2.0	37.3	12.0	—	300 R3	BN 90LB 4	—	—	3600	3800	10400	11500	2390	189

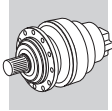


P₁ = 1.85 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
42	395	1.6	33.3	7.5	300 L2	—	BN 90LB 4	—	—	3500	3600	10100	11100	2300	188
46	364	2.2	30.7	7.5	300 L2	—	BN 90LB 4	—	—	3400	3500	9850	10800	2240	188
46	349	1.9	30.4	12.0	—	300 R3	BN 90LB 4	—	—	3400	3500	9830	10800	2230	189
56	285	2.3	24.8	12.0	—	300 R3	BN 90LB 4	—	—	3200	3300	9250	10100	2090	189
57	292	2.6	24.6	7.5	300 L2	—	BN 90LB 4	—	—	3200	3300	9220	10100	2080	188
70	238	2.7	20.1	7.5	300 L2	—	BN 90LB 4	—	—	3000	3100	8680	9520	1940	188

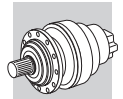
P₁ = 2.2 kW n₁=1400 min⁻¹

0.64	28677	1.7	2187	11.0	313 L4	—	BN 100LA 4	—	—	—	—	192000	231000	80000	274
0.67	27489	1.2	2096	11.0	311 L4	—	BN 100LA 4	—	—	—	—	157000	195000	65000	264
0.70	26514	1.0	2022	11.0	310 L4	—	BN 100LA 4	—	—	—	—	133000	166000	65000	254
0.78	23824	2.3	1817	11.0	313 L4	—	BN 100LA 4	—	—	—	—	192000	231000	80000	274
0.79	23530	1.1	1794	11.0	310 L4	—	BN 100LA 4	—	—	—	—	133000	166000	65000	254
0.80	23162	1.9	1766	11.0	311 L4	—	BN 100LA 4	—	—	—	—	157000	195000	65000	264
0.84	22027	1.5	1680	11.0	311 L4	—	BN 100LA 4	—	—	—	—	157000	195000	65000	264
0.85	21725	1.0	1657	11.0	310 L4	—	BN 100LA 4	—	—	—	—	133000	166000	65000	254
0.94	19695	2.8	1502	11.0	313 L4	—	BN 100LA 4	—	—	—	—	192000	231000	80000	274
0.98	18854	1.4	1438	11.0	310 L4	—	BN 100LA 4	—	—	—	—	133000	166000	65000	254
1.0	18560	2.3	1415	11.0	311 L4	—	BN 100LA 4	—	—	—	—	157000	195000	65000	264
1.0	18278	2.9	1394	11.0	313 L4	—	BN 100LA 4	—	—	—	—	191700	230700	79900	274
1.0	18100	0.9	1380	7.5	309 L4	—	BN 100LA 4	—	—	—	—	109500	144400	35800	244
1.1	16508	1.7	1259	11.0	310 L4	—	BN 100LA 4	—	—	—	—	128800	160800	62700	254
1.1	16134	2.6	1230	11.0	311 L4	—	BN 100LA 4	—	—	—	—	151000	187600	62300	264
1.2	15267	1.9	1164	11.0	310 L4	—	BN 100LA 4	—	—	—	—	125800	157100	61100	254
1.2	15071	1.1	1149	7.5	309 L4	—	BN 100LA 4	—	—	—	—	103700	136700	33700	244
1.3	14462	2.4	1103	11.0	311 L4	—	BN 100LA 4	—	—	—	—	146200	181500	60000	264
1.4	13383	2.1	1021	11.0	310 L4	—	BN 100LA 4	—	—	—	—	121000	151000	58500	254
1.4	13101	1.0	999	7.5	307 L4	—	BN 100LA 4	M3LA 4	46500	58100	98500	131000	40200	234	
1.4	13101	1.4	999	7.5	309 L4	—	BN 100LA 4	—	—	—	—	99400	131000	32200	244
1.5	12311	2.2	939	11.0	310 L4	—	BN 100LA 4	—	—	—	—	118000	147200	56900	254
1.6	11884	1.2	906	7.5	307 L4	—	BN 100LA 4	M3LA 4	45000	56300	95700	127300	38900	234	
1.6	11884	1.5	906	7.5	309 L4	—	BN 100LA 4	—	—	—	—	96500	127300	31100	244
1.6	11777	2.0	898	15.0	—	310 R4	BN 100LA 4	—	—	—	—	116400	145300	56100	255
1.7	10723	2.5	818	11.0	310 L4	—	BN 100LA 4	—	—	—	—	113200	141300	54300	254
1.8	10498	1.2	801	7.5	307 L4	—	BN 100LA 4	M3LA 4	43200	54000	92200	122600	37400	234	
1.8	10498	1.7	801	7.5	309 L4	—	BN 100LA 4	—	—	—	—	93000	122600	29900	244
1.9	9923	2.7	757	15.0	—	310 R4	BN 100LA 4	—	—	—	—	110600	138000	52900	255
1.9	9517	2.8	726	11.0	310 L4	—	BN 100LA 4	—	—	—	—	109200	136300	52200	254
2.0	9470	1.5	722	7.5	307 L4	—	BN 100LA 4	M3LA 4	41800	52200	89400	118900	36100	234	
2.0	9470	2.2	722	7.5	309 L4	—	BN 100LA 4	—	—	—	—	90200	118900	28900	244
2.0	9174	1.0	700	6.0	306 L4	—	BN 100LA 4	M3LA 4	35800	40500	82000	96600	27800	224	
2.0	9044	1.1	690	15.0	—	307 R4	BN 100LA 4	M3LA 4	41100	51400	88100	117300	35500	235	
2.0	9044	1.7	690	15.0	—	309 R4	BN 100LA 4	—	—	—	—	89000	117300	28400	245
2.2	8569	1.4	654	7.5	307 L4	—	BN 100LA 4	M3LA 4	40400	50500	86700	115400	34900	234	
2.2	8569	2.1	654	7.5	309 L4	—	BN 100LA 4	—	—	—	—	87500	115400	27900	244
2.2	8374	2.6	639	15.0	—	310 R4	BN 100LA 4	—	—	—	—	105100	131200	50000	255
2.2	8356	2.7	637	11.0	310 L4	—	BN 100LA 4	—	—	—	—	105000	131100	50000	254
2.2	8334	1.0	636	6.0	306 L4	—	BN 100LA 4	M3LA 4	34600	39300	79700	93900	26900	224	
2.4	7732	2.8	590	15.0	—	310 R4	BN 100LA 4	—	—	—	—	102600	128100	48700	255
2.4	7728	1.1	589	6.0	306 L4	—	BN 100LA 4	M3LA 4	33800	38300	77900	91800	26200	224	
2.4	7621	1.6	581	15.0	—	307 R4	BN 100LA 4	M3LA 4	38800	48500	83700	111400	33600	235	
2.4	7621	2.1	581	15.0	—	309 R4	BN 100LA 4	—	—	—	—	84500	111400	26900	245
2.4	7588	1.8	579	7.5	307 L4	—	BN 100LA 4	M3LA 4	38800	48500	83600	111200	33500	234	
2.4	7588	2.7	579	7.5	309 L4	—	BN 100LA 4	—	—	—	—	84400	111200	26800	244
2.8	6678	1.3	509	6.0	306 L4	—	BN 100LA 4	M3LA 4	32200	36400	74600	87900	25000	224	
2.8	6677	2.0	509	7.5	307 L4	—	BN 100LA 4	M3LA 4	37200	46400	80500	107100	32100	234	
2.8	6677	2.1	509	7.5	309 L4	—	BN 100LA 4	—	—	—	—	81200	107100	25700	244
2.9	6432	1.5	490	15.0	—	307 R4	BN 100LA 4	M3LA 4	36700	45900	79600	105900	31700	235	



P₁ = 2.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.9	6432	2.2	490	15.0	—	309 R4	BN 100LA 4	—	—	—	80300	105900	25400	245
2.9	6400	1.3	488	12.0	—	306 R4	BN 100LA 4	M3LA 4	31700	35900	73600	86700	24600	225
3.0	6095	1.9	465	7.5	307 L4	—	BN 100LA 4	M3LA 4	36100	45100	78300	104200	31200	234
3.0	6095	2.9	465	7.5	309 L4	—	BN 100LA 4	—	—	—	79000	104200	24900	244
3.1	5991	1.5	457	15.0	—	307 R4	BN 100LA 4	M3LA 4	35900	44800	77900	103600	31000	235
3.1	5991	2.3	457	15.0	—	309 R4	BN 100LA 4	—	—	—	78600	103600	24800	245
3.1	5961	1.2	455	12.0	—	306 R4	BN 100LA 4	M3LA 4	31000	35100	72100	84900	24100	225
3.2	5843	0.9	446	6.0	305 L4	—	BN 100LA 4	M3LA 4	24600	28700	45400	52500	16400	214
3.2	5825	1.6	444	6.0	306 L4	—	BN 100LA 4	M3LA 4	30700	34800	71600	84300	23900	224
3.4	5505	1.5	420	12.0	—	306 R4	BN 100LA 4	M3LA 4	30200	34200	70400	82900	23400	225
3.4	5419	2.1	413	15.0	—	307 R4	BN 100LA 4	M3LA 4	34700	43300	75600	100600	30000	235
3.5	5492	1.0	405	7.5	306 L3	—	BN 100LA 4	M3LA 4	29800	33800	69600	82000	23100	224
3.5	5310	2.1	405	7.5	307 L4	—	BN 100LA 4	M3LA 4	34400	43000	75100	99900	29800	234
3.7	4943	1.4	377	12.0	—	306 R4	BN 100LA 4	M3LA 4	29100	33000	68100	80300	22600	225
3.9	4772	1.0	364	12.0	—	305 R4	BN 100LA 4	M3LA 4	23000	26800	42700	49400	15300	215
3.9	4758	2.6	363	15.0	—	307 R4	BN 100LA 4	M3LA 4	33200	41500	72700	96700	28700	235
3.9	4758	2.6	363	15.0	—	309 R4	BN 100LA 4	—	—	—	73400	96700	23000	245
4.0	4577	2.9	349	7.5	307 L4	—	BN 100LA 4	M3LA 4	32800	41000	71900	95600	28300	234
4.2	4562	1.9	336	11.0	307 L3	—	BN 100LA 4	M3LA 4	32400	40400	71100	94500	28000	234
4.2	4562	2.9	336	11.0	309 L3	—	BN 100LA 4	—	—	—	71700	94500	22400	244
4.2	4401	1.0	336	12.0	—	305 R4	BN 100LA 4	M3LA 4	22400	26100	41700	48200	14900	215
4.3	4342	2.5	331	15.0	—	307 R4	BN 100LA 4	M3LA 4	32200	40200	70700	94100	27800	235
4.3	4400	1.2	325	7.5	306 L3	—	BN 100LA 4	M3LA 4	27700	31400	65100	76800	21500	224
4.5	4107	2.1	313	15.0	—	307 R4	BN 100LA 4	M3LA 4	31600	39500	69600	92500	27300	235
4.5	4086	1.8	312	12.0	—	306 R4	BN 100LA 4	M3LA 4	27300	31000	64400	75800	21200	225
4.9	3802	1.4	290	12.0	—	305 R4	BN 100LA 4	M3LA 4	21400	24900	39900	46100	14200	215
4.9	3789	2.1	289	12.0	—	306 R4	BN 100LA 4	M3LA 4	26600	30200	62900	74100	20700	225
4.9	3905	1.4	288	7.5	306 L3	—	BN 100LA 4	M3LA 4	26600	30200	62800	74100	20700	224
5.0	3730	2.9	284	15.0	—	307 R4	BN 100LA 4	M3LA 4	30600	38200	67600	89900	26500	235
5.0	3844	2.8	284	11.0	307 L3	—	BN 100LA 4	M3LA 4	30600	38200	67500	89800	26400	234
5.1	3749	1.2	276	7.5	305 L3	—	BN 100LA 4	M3LA 4	21000	24510	39300	45500	14000	214
5.3	3638	1.5	268	7.5	306 L3	—	BN 100LA 4	M3LA 4	26000	29400	61500	72500	20200	224
5.5	3492	1.0	258	7.5	305 L3	—	BN 100LA 4	M3LA 4	20500	23940	38500	44500	13600	214
5.5	3346	1.1	255	12.0	—	305 R4	BN 100LA 4	M3LA 4	20500	23800	38400	44400	13600	215
5.7	3260	2.4	249	12.0	—	306 R4	BN 100LA 4	M3LA 4	25400	28700	60100	70900	19700	225
5.9	3244	2.7	239	11.0	307 L3	—	BN 100LA 4	M3LA 4	28900	36100	64200	85300	25000	234
5.9	3228	2.4	238	7.5	306 L3	—	BN 100LA 4	M3LA 4	25000	28300	59400	69900	19400	224
6.1	3029	1.2	231	12.0	—	305 R4	BN 100LA 4	M3LA 4	19800	23100	37300	43100	13200	215
6.1	3020	2.5	230	12.0	—	306 R4	BN 100LA 4	M3LA 4	24700	28000	58800	69200	19200	225
6.3	3022	2.9	223	11.0	307 L3	—	BN 100LA 4	M3LA 4	28200	35300	62800	83500	24400	234
6.4	3007	2.2	222	7.5	306 L3	—	BN 100LA 4	M3LA 4	24400	27700	58100	68500	18900	224
6.4	2987	1.6	220	7.5	305 L3	—	BN 100LA 4	M3LA 4	19500	22700	36800	42500	13000	214
6.6	2810	0.9	214	12.0	—	303 R4	BN 100LA 4	M3LA 4	19300	22500	36400	42100	12800	205
6.6	2810	1.9	214	12.0	—	305 R4	BN 100LA 4	M3LA 4	19300	22500	36400	42100	12800	215
6.9	2777	2.8	205	7.5	306 L3	—	BN 100LA 4	M3LA 4	23800	26900	56700	66900	18400	224
7.4	2581	1.4	190	7.5	305 L3	—	BN 100LA 4	M3LA 4	18600	21650	35200	40700	12300	214
7.6	2425	1.7	185	12.0	—	305 R4	BN 100LA 4	M3LA 4	18400	21500	34900	40300	12200	215
7.7	2494	2.7	184	7.5	306 L3	—	BN 100LA 4	M3LA 4	22900	26000	54900	64700	17800	224
7.9	2407	0.9	178	7.5	303 L3	—	BN 100LA 4	M3LA 4	18200	21170	34400	39800	12100	204
7.9	2407	1.8	178	7.5	305 L3	—	BN 100LA 4	M3LA 4	18200	21170	34400	39800	12100	214
8.6	2220	1.0	164	7.5	303 L3	—	BN 100LA 4	M3LA 4	17700	20600	33600	38900	11700	204
8.6	2220	2.0	164	7.5	305 L3	—	BN 100LA 4	M3LA 4	17700	20600	33600	38900	11700	214
8.9	2076	1.3	158	12.0	—	303 R4	BN 100LA 4	M3LA 4	17400	20300	33300	38500	11600	205
8.9	2076	2.5	158	12.0	—	305 R4	BN 100LA 4	M3LA 4	17400	20300	33300	38500	11600	215
9.2	2068	1.7	152	7.5	305 L3	—	BN 100LA 4	M3LA 4	17200	20030	32900	38100	11500	214
9.5	1943	1.1	148	12.0	—	303 R4	BN 100LA 4	M3LA 4	17100	19900	32600	37700	11400	205
9.5	1943	2.2	148	12.0	—	305 R4	BN 100LA 4	M3LA 4	17100	19900	32600	37700	11400	215
9.8	1954	2.8	144	14.0	—	306 R3	BN 100LA 4	M3LA 4	21100	23900	51100	60200	16400	225
10.0	1918	1.4	141	7.5	303 L3	—	BN 100LA 4	M3LA 4	16800	19550	32200	37200	11200	204
10.0	1918	2.7	141	7.5	305 L3	—	BN 100LA 4	M3LA 4	16800	19550	32200	37200	11200	214
10.8	1774	1.0	131	7.5	301 L3	—	BN 100LA 4	M3LA 4	5500	5700	15200	16700	3630	196
10.9	1695	1.5	129	12.0	—	303 R4	BN 100LA 4	M3LA 4	16300	19000	31300	36200	10800	205

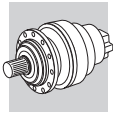


P₁ = 2.2 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
11.3	1688	1.1	124	7.5	303 L3	—	BN 100LA 4	M3LA 4	16100	18790	31000	35800	10700	204
11.3	1688	2.1	124	7.5	305 L3	—	BN 100LA 4	M3LA 4	16100	18790	31000	35800	10700	214
12.5	1528	1.2	113	7.5	303 L3	—	BN 100LA 4	M3LA 4	15600	18210	30100	34700	10400	204
12.5	1528	2.4	113	7.5	305 L3	—	BN 100LA 4	M3LA 4	15600	18210	30100	34700	10400	214
12.7	1501	1.1	111	14.0	—	303 R3	BN 100LA 4	M3LA 4	15500	18100	29900	34600	10300	205
12.7	1501	2.1	111	14.0	—	305 R3	BN 100LA 4	M3LA 4	15500	18100	29900	34600	10300	215
13.4	1422	1.2	105	7.5	301 L3	—	BN 100LA 4	M3LA 4	5100	5300	14200	15600	3370	196
13.5	1417	1.8	105	7.5	303 L3	—	BN 100LA 4	M3LA 4	15200	17740	29400	34000	10100	204
15.4	1241	1.5	91.5	14.0	—	303 R3	BN 100LA 4	M3LA 4	14600	17000	28200	32600	9670	205
15.4	1241	2.9	91.5	14.0	—	305 R3	BN 100LA 4	M3LA 4	14600	17000	28200	32600	9670	215
15.6	1223	1.7	90.2	7.5	303 L3	—	BN 100LA 4	M3LA 4	14500	16880	28100	32500	9620	204
16.5	1161	1.5	85.6	7.5	301 L3	—	BN 100LA 4	M3LA 4	4800	5000	13400	14700	3150	196
16.6	1155	1.1	85.2	12.0	—	301 R3	BN 100LA 4	M3LA 4	4800	5000	13400	14700	3150	197
17.9	1067	2.1	78.7	14.0	—	303 R3	BN 100LA 4	M3LA 4	13800	16100	27000	31200	9190	205
18.2	1051	1.6	77.5	7.5	301 L3	—	BN 100LA 4	M3LA 4	4600	4800	13000	14300	3050	196
18.3	1047	2.5	77.2	7.5	303 L3	—	BN 100LA 4	M3LA 4	13800	16020	26800	31000	9140	204
19.2	994	1.8	73.3	14.0	—	303 R3	BN 100LA 4	M3LA 4	13500	15700	26400	30500	8980	205
19.5	980	2.1	72.3	7.5	303 L3	—	BN 100LA 4	M3LA 4	13500	15640	26300	30400	8940	204
20.2	947	1.4	69.9	7.5	301 L3	—	BN 100LA 4	M3LA 4	4500	4700	12600	13800	2950	196
20.7	925	1.4	68.2	12.0	—	301 R3	BN 100LA 4	M3LA 4	4400	4600	12500	13700	2920	197
22.3	857	2.0	63.2	7.5	301 L3	—	BN 100LA 4	M3LA 4	4300	4500	12200	13400	2850	196
22.4	855	2.6	63.1	14.0	—	303 R3	BN 100LA 4	M3LA 4	12900	15000	25300	29200	8540	205
22.4	853	1.0	62.9	12.0	—	300 R3	BN 100LA 4	M3LA 4	4300	4500	12200	13400	2840	189
22.4	853	2.0	62.9	12.0	—	301 R3	BN 100LA 4	M3LA 4	4300	4500	12200	13400	2840	197
26.0	735	2.4	54.2	14.0	—	303 R3	BN 100LA 4	M3LA 4	12200	14200	24100	27900	8120	205
26.1	756	2.2	54.0	9.0	303 L2	—	BN 100LA 4	M3LA 4	12200	14210	24100	27900	8110	204
26.4	724	2.9	53.4	7.5	303 L3	—	BN 100LA 4	M3LA 4	12200	14210	24000	27800	8080	204
27.2	726	1.6	51.8	7.5	301 L2	—	BN 100LA 4	M3LA 4	4000	4200	11500	12600	2670	196
27.3	700	2.4	51.6	7.5	301 L3	—	BN 100LA 4	M3LA 4	4000	4200	11500	12600	2660	196
28.0	684	1.2	50.4	12.0	—	300 R3	BN 100LA 4	M3LA 4	4000	4200	11400	12500	2640	189
28.0	684	2.5	50.4	12.0	—	301 R3	BN 100LA 4	M3LA 4	4000	4200	11400	12500	2640	197
32	625	2.9	44.6	9.0	303 L2	—	BN 100LA 4	M3LA 4	11500	13350	22800	26300	7610	204
33	571	2.3	42.1	7.5	301 L3	—	BN 100LA 4	M3LA 4	3800	3900	10800	11900	2490	196
34	582	1.1	41.5	7.5	300 L2	—	BN 100LA 4	M3LA 4	3800	3900	10800	11800	2480	188
34	582	2.2	41.5	7.5	301 L2	—	BN 100LA 4	M3LA 4	3800	3900	10800	11800	2480	196
34	558	1.2	41.2	12.0	—	300 R3	BN 100LA 4	M3LA 4	3800	3900	10800	11800	2470	189
34	558	2.3	41.2	12.0	—	301 R3	BN 100LA 4	M3LA 4	3800	3900	10800	11800	2470	197
38	505	1.7	37.3	12.0	—	300 R3	BN 100LA 4	M3LA 4	3600	3800	10400	11500	2390	189
42	466	1.4	33.3	7.5	300 L2	—	BN 100LA 4	M3LA 4	3500	3600	10100	11100	2300	188
42	466	2.8	33.3	7.5	301 L2	—	BN 100LA 4	M3LA 4	3500	3600	10100	11100	2300	196
46	430	1.9	30.7	7.5	300 L2	—	BN 100LA 4	M3LA 4	3400	3500	9850	10800	2240	188
46	412	1.6	30.4	12.0	—	300 R3	BN 100LA 4	M3LA 4	3400	3500	9830	10800	2230	189
57	337	1.9	24.8	12.0	—	300 R3	BN 100LA 4	M3LA 4	3200	3300	9250	10100	2090	189
57	344	2.2	24.6	7.5	300 L2	—	BN 100LA 4	M3LA 4	3200	3300	9220	10100	2080	188
70	281	2.3	20.1	7.5	300 L2	—	BN 100LA 4	M3LA 4	3000	3100	8680	9520	1940	188
78	255	2.7	18.2	7.5	300 L2	—	BN 100LA 4	M3LA 4	2900	3000	8420	9240	1880	188
96	207	2.7	14.8	12.0	—	300 R2	BN 100LA 4	M3LA 4	2700	2800	7910	8680	1750	189

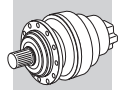
P₁ = 3 kW n₁=1400 min⁻¹

0.64	39105	1.3	2187	11.0	313 L4	—	BN 100LB 4	—	—	—	192000	231000	80000	274
0.67	37486	0.9	2096	11.0	311 L4	—	BN 100LB 4	—	—	—	157000	195000	65000	264
0.78	32488	1.7	1817	11.0	313 L4	—	BN 100LB 4	—	—	—	192000	231000	80000	274
0.80	31585	1.4	1766	11.0	311 L4	—	BN 100LB 4	—	—	—	157000	195000	65000	264
0.84	30037	1.1	1680	11.0	311 L4	—	BN 100LB 4	—	—	—	157000	195000	65000	264
0.94	26856	2.0	1502	11.0	313 L4	—	BN 100LB 4	—	—	—	192000	231000	80000	274
0.98	25710	1.0	1438	11.0	310 L4	—	BN 100LB 4	—	—	—	133000	166000	65000	254
1.0	25309	1.7	1415	11.0	311 L4	—	BN 100LB 4	—	—	—	157000	195000	65000	264
1.0	24924	2.1	1394	11.0	313 L4	—	BN 100LB 4	—	—	—	191700	230700	79900	274
1.1	22629	2.4	1266	11.0	313 L4	—	BN 100LB 4	—	—	—	186300	224100	77400	274








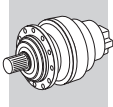
$P_1 = 3 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.1	22511	1.2	1259	11.0	310 L4	—	BN 100LB 4	—	—	—	128800	160800	62700	254
1.1	22000	1.9	1230	11.0	311 L4	—	BN 100LB 4	—	—	—	151000	187600	62300	264
1.2	20818	1.4	1164	11.0	310 L4	—	BN 100LB 4	—	—	—	125800	157100	61100	254
1.3	19971	2.6	1117	11.0	313 L4	—	BN 100LB 4	—	—	—	179400	215900	74200	274
1.3	19721	1.7	1103	11.0	311 L4	—	BN 100LB 4	—	—	—	146200	181500	60000	264
1.4	18249	1.5	1021	11.0	310 L4	—	BN 100LB 4	—	—	—	121000	151000	58500	254
1.4	18132	2.9	1014	11.0	313 L4	—	BN 100LB 4	—	—	—	174300	209700	71800	274
1.4	17865	1.0	999	7.5	309 L4	—	BN 100LB 4	—	—	—	99400	131000	32200	244
1.4	17629	2.3	986	11.0	311 L4	—	BN 100LB 4	—	—	—	141300	175500	57800	264
1.5	16788	1.6	939	11.0	310 L4	—	BN 100LB 4	—	—	—	118000	147200	56900	254
1.6	16205	1.1	906	7.5	309 L4	—	BN 100LB 4	—	—	—	96500	127300	31100	244
1.6	16159	2.8	904	11.0	311 L4	—	BN 100LB 4	—	—	—	137700	171000	56200	264
1.6	16059	1.5	898	15.0	—	310 R4	BN 100LB 4	—	—	—	116400	145300	56100	255
1.7	14747	2.8	825	11.0	311 L4	—	BN 100LB 4	—	—	—	134000	166400	54500	264
1.7	14623	1.8	818	11.0	310 L4	—	BN 100LB 4	—	—	—	113200	141300	54300	254
1.8	14315	1.3	801	7.5	309 L4	—	BN 100LB 4	—	—	—	93000	122600	29900	244
1.9	13531	2.0	757	15.0	—	310 R4	BN 100LB 4	—	—	—	110600	138000	52900	255
1.9	13341	2.3	746	22	—	311 R4	BN 100LB 4	—	—	—	130000	161500	52700	265
1.9	12977	2.0	726	11.0	310 L4	—	BN 100LB 4	—	—	—	109200	136300	52200	254
2.0	12914	1.1	722	7.5	307 L4	—	BN 100LB 4	M3LB 4	41800	52200	89400	118900	36100	234
2.0	12914	1.6	722	7.5	309 L4	—	BN 100LB 4	—	—	—	90200	118900	28900	244
2.0	12333	1.2	690	15.0	—	309 R4	BN 100LB 4	—	—	—	89000	117300	28400	245
2.2	11685	1.1	654	7.5	307 L4	—	BN 100LB 4	M3LB 4	40400	50500	86700	115400	34900	234
2.2	11685	1.6	654	7.5	309 L4	—	BN 100LB 4	—	—	—	87500	115400	27900	244
2.2	11420	1.9	639	15.0	—	310 R4	BN 100LB 4	—	—	—	105100	131200	50000	255
2.2	11394	2.0	637	11.0	310 L4	—	BN 100LB 4	—	—	—	105000	131100	50000	254
2.4	10544	2.1	590	15.0	—	310 R4	BN 100LB 4	—	—	—	102600	128100	48700	255
2.4	10392	1.2	581	15.0	—	307 R4	BN 100LB 4	M3LB 4	38800	48500	83700	111400	33600	235
2.4	10392	1.5	581	15.0	—	309 R4	BN 100LB 4	—	—	—	84500	111400	26900	245
2.4	10347	1.3	579	7.5	307 L4	—	BN 100LB 4	M3LB 4	38800	48500	83600	111200	33500	234
2.4	10347	2.0	579	7.5	309 L4	—	BN 100LB 4	—	—	—	84400	111200	26800	244
2.5	9940	2.7	556	11.0	310 L4	—	BN 100LB 4	—	—	—	100800	125800	47800	254
2.7	9247	2.7	517	15.0	—	310 R4	BN 100LB 4	—	—	—	98600	123100	46600	255
2.8	9106	1.0	509	6.0	306 L4	—	BN 100LB 4	M3LB 4	32200	36400	74600	87900	25000	224
2.8	9105	1.5	509	7.5	307 L4	—	BN 100LB 4	M3LB 4	37200	46400	80500	107100	32100	234
2.8	9105	1.6	509	7.5	309 L4	—	BN 100LB 4	—	—	—	81200	107100	25700	244
2.8	9071	2.8	507	11.0	310 L4	—	BN 100LB 4	—	—	—	98100	122400	46300	254
2.9	8770	1.1	490	15.0	—	307 R4	BN 100LB 4	M3LB 4	36700	45900	79600	105900	31700	235
2.9	8770	1.6	490	15.0	—	309 R4	BN 100LB 4	—	—	—	80300	105900	25400	245
2.9	8727	1.0	488	12.0	—	306 R4	BN 100LB 4	M3LB 4	31700	35900	73600	86700	24600	225
3.0	8312	1.4	465	7.5	307 L4	—	BN 100LB 4	M3LB 4	36100	45100	78300	104200	31200	234
3.0	8312	2.1	465	7.5	309 L4	—	BN 100LB 4	—	—	—	79000	104200	24900	244
3.1	8169	1.1	457	15.0	—	307 R4	BN 100LB 4	M3LB 4	35900	44800	77900	103600	31000	235
3.1	8169	1.7	457	15.0	—	309 R4	BN 100LB 4	—	—	—	78600	103600	24800	245
3.1	8121	2.5	454	15.0	—	310 R4	BN 100LB 4	—	—	—	94900	118400	44700	255
3.2	7944	1.2	444	6.0	306 L4	—	BN 100LB 4	M3LB 4	30700	34800	71600	84300	23900	224
3.4	7507	1.1	420	12.0	—	306 R4	BN 100LB 4	M3LB 4	30200	34200	70400	82900	23400	225
3.4	7390	1.6	413	15.0	—	307 R4	BN 100LB 4	M3LB 4	34700	43300	75600	100600	30000	235
3.4	7390	2.3	413	15.0	—	309 R4	BN 100LB 4	—	—	—	76300	100600	24000	245
3.5	7240	1.6	405	7.5	307 L4	—	BN 100LB 4	M3LB 4	34400	43000	75100	99900	29800	234
3.5	7240	2.4	405	7.5	309 L4	—	BN 100LB 4	—	—	—	75800	99900	23800	244
3.7	6741	1.0	377	12.0	—	306 R4	BN 100LB 4	M3LB 4	29100	33000	68100	80300	22600	225
3.9	6488	1.9	363	15.0	—	307 R4	BN 100LB 4	M3LB 4	33200	41500	72700	96700	28700	235
3.9	6488	1.9	363	15.0	—	309 R4	BN 100LB 4	—	—	—	73400	96700	23000	245
4.0	6242	2.1	349	7.5	307 L4	—	BN 100LB 4	M3LB 4	32800	41000	71900	95600	28300	234
4.2	6221	1.4	336	11.0	307 L3	—	BN 100LB 4	M3LB 4	32400	40400	71100	94500	28000	234
4.2	6221	2.1	336	11.0	309 L3	—	BN 100LB 4	—	—	—	71700	94500	22400	244
4.3	5921	1.9	331	15.0	—	307 R4	BN 100LB 4	M3LB 4	32200	40200	70700	94100	27800	235
4.3	5921	2.8	331	15.0	—	309 R4	BN 100LB 4	—	—	—	71400	94100	22300	245
4.3	6000	0.9	325	7.5	306 L3	—	BN 100LB 4	M3LB 4	27700	31400	65100	76800	21500	224
4.5	5600	1.6	313	15.0	—	307 R4	BN 100LB 4	M3LB 4	31600	39500	69600	92500	27300	235
4.5	5600	2.3	313	15.0	—	309 R4	BN 100LB 4	—	—	—	70200	92500	21900	245








$P_1 = 3 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					R _{n2} [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
4.5	5572	1.3	312	12.0	—	306 R4	BN 100LB 4	M3LB 4	27300	31000	64400	75800	21200	225
4.9	5185	1.0	290	12.0	—	305 R4	BN 100LB 4	M3LB 4	21400	24900	39900	46100	14200	215
4.9	5167	1.5	289	12.0	—	306 R4	BN 100LB 4	M3LB 4	26600	30200	62900	74100	20700	225
4.9	5325	1.0	288	7.5	306 L3	—	BN 100LB 4	M3LB 4	26600	30200	62800	74100	20700	224
5.0	5087	2.1	284	15.0	—	307 R4	BN 100LB 4	M3LB 4	30600	38200	67600	89900	26500	235
5.0	5242	2.1	284	11.0	307 L3	—	BN 100LB 4	M3LB 4	30600	38200	67500	89800	26400	234
5.3	4960	1.1	268	7.5	306 L3	—	BN 100LB 4	M3LB 4	26000	29400	61500	72500	20200	224
5.5	4614	2.8	258	15.0	—	307 R4	BN 100LB 4	M3LB 4	29600	37000	65600	87300	25600	235
5.7	4445	1.7	249	12.0	—	306 R4	BN 100LB 4	M3LB 4	25400	28700	60100	70900	19700	225
5.9	4424	2.0	239	11.0	307 L3	—	BN 100LB 4	M3LB 4	28900	36100	64200	85300	25000	234
5.9	4424	2.9	239	11.0	309 L3	—	BN 100LB 4	—	—	—	64700	85300	20000	244
5.9	4402	1.8	238	7.5	306 L3	—	BN 100LB 4	M3LB 4	25000	28300	59400	69900	19400	224
6.1	4152	2.5	232	15.0	—	307 R4	BN 100LB 4	M3LB 4	28600	35800	63600	84600	24700	235
6.1	4118	1.8	230	12.0	—	306 R4	BN 100LB 4	M3LB 4	24700	28000	58800	69200	19200	225
6.3	4121	2.1	223	11.0	307 L3	—	BN 100LB 4	M3LB 4	28200	35300	62800	83500	24400	234
6.4	4101	1.6	222	7.5	306 L3	—	BN 100LB 4	M3LB 4	24400	27700	58100	68500	18900	224
6.4	4074	1.2	220	7.5	305 L3	—	BN 100LB 4	M3LB 4	19500	22700	36800	42500	13000	214
6.6	3832	1.4	214	12.0	—	305 R4	BN 100LB 4	M3LB 4	19300	22500	36400	42100	12800	215
6.6	3820	2.4	214	12.0	—	306 R4	BN 100LB 4	M3LB 4	24100	27400	57500	67700	18700	225
6.9	3787	2.0	205	7.5	306 L3	—	BN 100LB 4	M3LB 4	23800	26900	56700	66900	18400	224
7.0	3728	2.8	202	11.0	307 L3	—	BN 100LB 4	M3LB 4	27300	34100	60900	81100	23600	234
7.4	3519	1.0	190	7.5	305 L3	—	BN 100LB 4	M3LB 4	18600	21650	35200	40700	12300	214
7.6	3306	1.3	185	12.0	—	305 R4	BN 100LB 4	M3LB 4	18400	21500	34900	40300	12200	215
7.7	3400	2.0	184	7.5	306 L3	—	BN 100LB 4	M3LB 4	22900	26000	54900	64700	17800	224
7.8	3236	2.6	181	12.0	—	306 R4	BN 100LB 4	M3LB 4	22800	25800	54700	64400	17700	225
7.9	3282	1.3	178	7.5	305 L3	—	BN 100LB 4	M3LB 4	18200	21170	34400	39800	12100	214
8.4	3000	2.5	168	12.0	—	306 R4	BN 100LB 4	M3LB 4	22200	25200	53400	63000	17300	225
8.6	3027	1.5	164	7.5	305 L3	—	BN 100LB 4	M3LB 4	17700	20600	33600	38900	11700	214
8.9	2831	0.9	158	12.0	—	303 R4	BN 100LB 4	M3LB 4	17400	20300	33300	38500	11600	205
8.9	2831	1.8	158	12.0	—	305 R4	BN 100LB 4	M3LB 4	17400	20300	33300	38500	11600	215
9.2	2820	1.3	152	7.5	305 L3	—	BN 100LB 4	M3LB 4	17200	20030	32900	38100	11500	214
9.3	2811	2.6	152	7.5	306 L3	—	BN 100LB 4	M3LB 4	21500	24400	51900	61100	16700	224
9.5	2649	1.6	148	12.0	—	305 R4	BN 100LB 4	M3LB 4	17100	19900	32600	37700	11400	215
9.8	2665	2.1	144	14.0	—	306 R3	BN 100LB 4	M3LB 4	21100	23900	51100	60200	16400	225
10.0	2616	1.0	141	7.5	303 L3	—	BN 100LB 4	M3LB 4	16800	19550	32200	37200	11200	204
10.0	2616	2.0	141	7.5	305 L3	—	BN 100LB 4	M3LB 4	16800	19550	32200	37200	11200	214
10.0	2607	3.0	141	7.5	306 L3	—	BN 100LB 4	M3LB 4	21000	23800	50700	59800	16300	224
10.9	2311	1.1	129	12.0	—	303 R4	BN 100LB 4	M3LB 4	16300	19000	31300	36200	10800	205
10.9	2311	2.2	129	12.0	—	305 R4	BN 100LB 4	M3LB 4	16300	19000	31300	36200	10800	215
11.3	2302	1.6	124	7.5	305 L3	—	BN 100LB 4	M3LB 4	16100	18790	31000	35800	10700	214
11.8	2203	3.0	119	14.0	—	306 R3	BN 100LB 4	M3LB 4	19800	22500	48200	56800	15400	225
12.5	2084	1.7	113	7.5	305 L3	—	BN 100LB 4	M3LB 4	15600	18210	30100	34700	10400	214
12.7	2047	1.5	111	14.0	—	305 R3	BN 100LB 4	M3LB 4	15500	18100	29900	34600	10300	215
13.5	1933	1.3	105	7.5	303 L3	—	BN 100LB 4	M3LB 4	15200	17740	29400	34000	10100	204
13.5	1933	2.7	105	7.5	305 L3	—	BN 100LB 4	M3LB 4	15200	17740	29400	34000	10100	214
15.4	1692	1.1	91.5	14.0	—	303 R3	BN 100LB 4	M3LB 4	14600	17000	28200	32600	9670	205
15.4	1692	2.1	91.5	14.0	—	305 R3	BN 100LB 4	M3LB 4	14600	17000	28200	32600	9670	215
15.6	1668	1.3	90.2	7.5	303 L3	—	BN 100LB 4	M3LB 4	14500	16880	28100	32500	9620	204
15.6	1668	2.5	90.2	7.5	305 L3	—	BN 100LB 4	M3LB 4	14500	16880	28100	32500	9620	214
16.5	1583	1.1	85.6	7.5	301 L3	—	BN 100LB 4	M3LB 4	4800	5000	13400	14700	3150	196
17.9	1456	1.5	78.7	14.0	—	303 R3	BN 100LB 4	M3LB 4	13800	16100	27000	31200	9190	205
18.2	1433	1.2	77.5	7.5	301 L3	—	BN 100LB 4	M3LB 4	4600	4800	13000	14300	3050	196
18.3	1428	1.8	77.2	7.5	303 L3	—	BN 100LB 4	M3LB 4	13800	16020	26800	31000	9140	204
19.2	1356	1.3	73.3	14.0	—	303 R3	BN 100LB 4	M3LB 4	13500	15700	26400	30500	8980	205
19.2	1356	2.7	73.3	14.0	—	305 R3	BN 100LB 4	M3LB 4	13500	15700	26400	30500	8980	215
19.5	1336	1.6	72.3	7.5	303 L3	—	BN 100LB 4	M3LB 4	13500	15640	26300	30400	8940	204
20.2	1292	1.0	69.9	7.5	301 L3	—	BN 100LB 4	M3LB 4	4500	4700	12600	13800	2950	196
20.7	1262	1.0	68.2	12.0	—	301 R3	BN 100LB 4	M3LB 4	4400	4600	12500	13700	2920	197
22.3	1169	1.5	63.2	7.5	301 L3	—	BN 100LB 4	M3LB 4	4300	4500	12200	13400	2850	196
22.4	1166	1.9	63.1	14.0	—	303 R3	BN 100LB 4	M3LB 4	12900	15000	25300	29200	8540	205
22.4	1166	2.2	63.1	7.5	303 L3	—	BN 100LB 4	M3LB 4	12900	14970	25200	29200	8540	204
22.4	1163	1.5	62.9	12.0	—	301 R3	BN 100LB 4	M3LB 4	4300	4500	12200	13400	2840	197

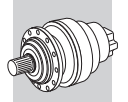


$P_1 = 3 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$






n_2 min^{-1}	M_2 Nm	S	i	Pt kW					Rn ₂ [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
26.0	1002	1.8	54.2	14.0	—	303 R3	BN 100LB 4	M3LB 4		12200	14200	24100	27900	8120	205
26.1	1031	1.6	54.0	9.0	303 L2	—	BN 100LB 4	M3LB 4		12200	14210	24100	27900	8110	204
26.4	988	2.1	53.4	7.5	303 L3	—	BN 100LB 4	M3LB 4		12200	14210	24000	27800	8080	204
27.2	990	1.2	51.8	7.5	301 L2	—	BN 100LB 4	M3LB 4		4000	4200	11500	12600	2670	196
27.3	955	1.8	51.6	7.5	301 L3	—	BN 100LB 4	M3LB 4		4000	4200	11500	12600	2660	196
28.0	932	0.9	50.4	12.0	—	300 R3	BN 100LB 4	M3LB 4		4000	4200	11400	12500	2640	189
28.0	932	1.8	50.4	12.0	—	301 R3	BN 100LB 4	M3LB 4		4000	4200	11400	12500	2640	197
28.1	929	2.6	50.3	14.0	—	303 R3	BN 100LB 4	M3LB 4		11900	13900	23600	27300	7920	205
30	862	2.6	46.6	14.0	—	303 R3	BN 100LB 4	M3LB 4		11600	13500	23100	26700	7720	205
32	853	2.1	44.6	9.0	303 L2	—	BN 100LB 4	M3LB 4		11500	13350	22800	26300	7610	204
32	806	2.6	43.6	7.5	303 L3	—	BN 100LB 4	M3LB 4		11400	13260	22600	26100	7550	204
33	787	2.6	42.6	14.0	—	303 R3	BN 100LB 4	M3LB 4		11300	13100	22400	26000	7490	205
33	779	1.7	42.1	7.5	301 L3	—	BN 100LB 4	M3LB 4		3800	3900	10800	11900	2490	196
34	793	1.6	41.5	7.5	301 L2	—	BN 100LB 4	M3LB 4		3800	3900	10800	11800	2480	196
34	761	1.7	41.2	12.0	—	301 R3	BN 100LB 4	M3LB 4		3800	3900	10800	11800	2470	197
37	733	3.0	38.4	9.0	303 L2	—	BN 100LB 4	M3LB 4		10900	12680	21800	25200	7240	204
38	689	1.2	37.3	12.0	—	300 R3	BN 100LB 4	M3LB 4		3600	3800	10400	11500	2390	189
38	689	2.2	37.3	12.0	—	301 R3	BN 100LB 4	M3LB 4		3600	3800	10400	11500	2390	197
39	683	2.6	35.8	9.0	303 L2	—	BN 100LB 4	M3LB 4		10700	12400	21300	24600	7070	204
42	636	1.0	33.3	7.5	300 L2	—	BN 100LB 4	M3LB 4		3500	3600	10100	11100	2300	188
42	636	2.0	33.3	7.5	301 L2	—	BN 100LB 4	M3LB 4		3500	3600	10100	11100	2300	196
46	586	1.4	30.7	7.5	300 L2	—	BN 100LB 4	M3LB 4		3400	3500	9850	10800	2240	188
46	586	2.5	30.7	7.5	301 L2	—	BN 100LB 4	M3LB 4		3400	3500	9850	10800	2240	196
46	562	1.2	30.4	12.0	—	300 R3	BN 100LB 4	M3LB 4		3400	3500	9830	10800	2230	189
46	562	2.3	30.4	12.0	—	301 R3	BN 100LB 4	M3LB 4		3400	3500	9830	10800	2230	197
57	459	1.4	24.8	12.0	—	300 R3	BN 100LB 4	M3LB 4		3200	3300	9250	10100	2090	189
57	459	2.8	24.8	12.0	—	301 R3	BN 100LB 4	M3LB 4		3200	3300	9250	10100	2090	197
57	470	1.6	24.6	7.5	300 L2	—	BN 100LB 4	M3LB 4		3200	3300	9220	10100	2080	188
57	470	2.9	24.6	7.5	301 L2	—	BN 100LB 4	M3LB 4		3200	3300	9220	10100	2080	196
70	383	1.7	20.1	7.5	300 L2	—	BN 100LB 4	M3LB 4		3000	3100	8680	9520	1940	188
78	347	2.0	18.2	7.5	300 L2	—	BN 100LB 4	M3LB 4		2900	3000	8420	9240	1880	188
95	283	2.3	14.8	7.5	300 L2	—	BN 100LB 4	M3LB 4		2700	2800	7920	8690	1760	188
96	282	2.0	14.8	12.0	—	300 R2	BN 100LB 4	M3LB 4		2700	2800	7910	8680	1750	189
116	231	2.7	12.1	7.5	300 L2	—	BN 100LB 4	M3LB 4		2500	2600	7460	8180	1640	188
119	226	2.6	11.8	12.0	—	300 R2	BN 100LB 4	M3LB 4		2500	2600	7400	8120	1630	189
196	142	3.5	7.20	7.5	300 L1	—	BN 100LB 4	M3LB 4		2100	2200	6380	7000	1380	188
244	114	4.1	5.77	7.5	300 L1	—	BN 100LB 4	M3LB 4		2000	2100	5970	6550	1280	188

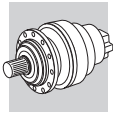
$P_1 = 4 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

0.64	52891	0.9	2187	11.0	313 L4	—	BN 112M 4	—		—	—	192000	231000	80000	274
0.77	43940	1.3	1817	11.0	313 L4	—	BN 112M 4	—		—	—	192000	231000	80000	274
0.79	42719	1.0	1766	11.0	311 L4	—	BN 112M 4	—		—	—	157000	195000	65000	264
0.93	36324	1.5	1502	11.0	313 L4	—	BN 112M 4	—		—	—	192000	231000	80000	274
0.98	34230	1.3	1415	11.0	311 L4	—	BN 112M 4	—		—	—	157000	195000	65000	264
1.0	33711	1.6	1394	11.0	313 L4	—	BN 112M 4	—		—	—	191700	230700	79900	274
1.1	30606	1.8	1266	11.0	313 L4	—	BN 112M 4	—		—	—	186300	224100	77400	274
1.1	30447	0.9	1259	11.0	310 L4	—	BN 112M 4	—		—	—	128800	160800	62700	254
1.1	29756	1.4	1230	11.0	311 L4	—	BN 112M 4	—		—	—	151000	187600	62300	264
1.2	28157	1.0	1164	11.0	310 L4	—	BN 112M 4	—		—	—	125800	157100	61100	254
1.2	27012	1.9	1117	11.0	313 L4	—	BN 112M 4	—		—	—	179400	215900	74200	274
1.3	26673	1.3	1103	11.0	311 L4	—	BN 112M 4	—		—	—	146200	181500	60000	264
1.4	24682	1.1	1021	11.0	310 L4	—	BN 112M 4	—		—	—	121000	151000	58500	254
1.4	24524	2.1	1014	11.0	313 L4	—	BN 112M 4	—		—	—	174300	209700	71800	274
1.4	23843	1.7	986	11.0	311 L4	—	BN 112M 4	—		—	—	141300	175500	57800	264
1.5	22706	1.2	939	11.0	310 L4	—	BN 112M 4	—		—	—	118000	147200	56900	254
1.5	21856	2.1	904	11.0	311 L4	—	BN 112M 4	—		—	—	137700	171000	56200	264
1.5	21720	1.1	898	15.0	—	310 R4	BN 112M 4	—		—	—	116400	145300	56100	255
1.6	21507	2.4	889	11.0	313 L4	—	BN 112M 4	—		—	—	167600	201600	68800	274
1.7	19945	2.1	825	11.0	311 L4	—	BN 112M 4	—		—	—	134000	166400	54500	264








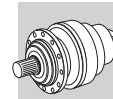
$P_1 = 4 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min^{-1}	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.7	19778	1.4	818	11.0	310 L4	—	BN 112M 4	—	—	—	113200	141300	54300	254
1.7	19361	0.9	801	7.5	309 L4	—	BN 112M 4	—	—	—	93000	122600	29900	244
1.8	19103	2.7	790	11.0	313 L4	—	BN 112M 4	—	—	—	161700	194600	66100	274
1.8	18824	2.4	778	22	—	313 R4	BN 112M 4	—	—	—	161000	193700	65800	275
1.8	18301	1.5	757	15.0	—	310 R4	BN 112M 4	—	—	—	110600	138000	52900	255
1.9	18044	1.7	746	22	—	311 R4	BN 112M 4	—	—	—	130000	161500	52700	265
1.9	17552	1.5	726	11.0	310 L4	—	BN 112M 4	—	—	—	109200	136300	52200	254
1.9	17513	2.6	724	11.0	311 L4	—	BN 112M 4	—	—	—	128800	160000	52200	264
1.9	17466	1.2	722	7.5	309 L4	—	BN 112M 4	—	—	—	90200	118900	28900	244
2.0	16811	3.0	695	11.0	313 L4	—	BN 112M 4	—	—	—	155600	187200	63300	274
2.1	15804	1.2	654	7.5	309 L4	—	BN 112M 4	—	—	—	87500	115400	27900	244
2.2	15445	1.4	639	15.0	—	310 R4	BN 112M 4	—	—	—	105100	131200	50000	255
2.2	15411	1.5	637	11.0	310 L4	—	BN 112M 4	—	—	—	105000	131100	50000	254
2.2	15204	2.5	629	22	—	311 R4	BN 112M 4	—	—	—	123500	153400	49800	265
2.2	15142	2.4	626	11.0	311 L4	—	BN 112M 4	—	—	—	123300	153200	49700	264
2.4	14261	1.5	590	15.0	—	310 R4	BN 112M 4	—	—	—	102600	128100	48700	255
2.4	14055	1.1	581	15.0	—	309 R4	BN 112M 4	—	—	—	84500	111400	26900	245
2.4	13995	1.0	579	7.5	307 L4	—	BN 112M 4	M3LC 4	38800	48500	83600	111200	33500	234
2.4	13995	1.5	579	7.5	309 L4	—	BN 112M 4	—	—	—	84400	111200	26800	244
2.5	13444	2.0	556	11.0	310 L4	—	BN 112M 4	—	—	—	100800	125800	47800	254
2.7	12569	2.9	520	22	—	311 R4	BN 112M 4	—	—	—	116600	144900	46700	265
2.7	12507	2.0	517	15.0	—	310 R4	BN 112M 4	—	—	—	98600	123100	46600	255
2.7	12314	1.1	509	7.5	307 L4	—	BN 112M 4	M3LC 4	37200	46400	80500	107100	32100	234
2.7	12314	1.2	509	7.5	309 L4	—	BN 112M 4	—	—	—	81200	107100	25700	244
2.7	12269	2.0	507	11.0	310 L4	—	BN 112M 4	—	—	—	98100	122400	46300	254
2.8	11862	1.2	490	15.0	—	309 R4	BN 112M 4	—	—	—	80300	105900	25400	245
2.8	11847	2.9	490	22	—	311 R4	BN 112M 4	—	—	—	114600	142300	45800	265
3.0	11242	1.0	465	7.5	307 L4	—	BN 112M 4	M3LC 4	36100	45100	78300	104200	31200	234
3.0	11242	1.6	465	7.5	309 L4	—	BN 112M 4	—	—	—	79000	104200	24900	244
3.0	11049	1.3	457	15.0	—	309 R4	BN 112M 4	—	—	—	78600	103600	24800	245
3.1	10983	1.8	454	15.0	—	310 R4	BN 112M 4	—	—	—	94900	118400	44700	255
3.1	10899	2.6	451	11.0	310 L4	—	BN 112M 4	—	—	—	94700	118100	44500	254
3.3	10141	2.9	419	15.0	—	310 R4	BN 112M 4	—	—	—	92600	115600	43500	255
3.4	9995	1.2	413	15.0	—	307 R4	BN 112M 4	M3LC 4	34700	43300	75600	100600	30000	235
3.4	9995	1.7	413	15.0	—	309 R4	BN 112M 4	—	—	—	76300	100600	24000	245
3.4	9793	1.2	405	7.5	307 L4	—	BN 112M 4	M3LC 4	34400	43000	75100	99900	29800	234
3.4	9793	1.8	405	7.5	309 L4	—	BN 112M 4	—	—	—	75800	99900	23800	244
3.6	9414	2.6	389	11.0	310 L4	—	BN 112M 4	—	—	—	90600	113100	42400	254
3.8	8785	2.7	363	15.0	—	310 R4	BN 112M 4	—	—	—	88700	110700	41500	255
3.8	8776	1.4	363	15.0	—	307 R4	BN 112M 4	M3LC 4	33200	41500	72700	96700	28700	235
3.8	8776	1.4	363	15.0	—	309 R4	BN 112M 4	—	—	—	73400	96700	23000	245
4.0	8442	1.6	349	7.5	307 L4	—	BN 112M 4	M3LC 4	32800	41000	71900	95600	28300	234
4.0	8442	2.4	349	7.5	309 L4	—	BN 112M 4	—	—	—	72500	95600	22700	244
4.1	8414	1.1	336	11.0	307 L3	—	BN 112M 4	M3LC 4	32400	40400	71100	94500	28000	234
4.1	8414	1.6	336	11.0	309 L3	—	BN 112M 4	—	—	—	71700	94500	22400	245
4.2	8009	1.4	331	15.0	—	307 R4	BN 112M 4	M3LC 4	32200	40200	70700	94100	27800	235
4.2	8009	2.1	331	15.0	—	309 R4	BN 112M 4	—	—	—	71400	94100	22300	245
4.4	7574	1.2	313	15.0	—	307 R4	BN 112M 4	M3LC 4	31600	39500	69600	92500	27300	235
4.4	7574	1.7	313	15.0	—	309 R4	BN 112M 4	—	—	—	70200	92500	21900	245
4.5	7537	1.0	312	12.0	—	306 R4	BN 112M 4	M3LC 4	27300	31000	64400	75800	21200	225
4.8	6989	1.1	289	12.0	—	306 R4	BN 112M 4	M3LC 4	26600	30200	62900	74100	20700	225
4.9	6880	1.6	284	15.0	—	307 R4	BN 112M 4	M3LC 4	30600	38200	67600	89900	26500	235
4.9	6880	2.4	284	15.0	—	309 R4	BN 112M 4	—	—	—	68200	89900	21200	245
4.9	7090	1.5	284	11.0	307 L3	—	BN 112M 4	M3LC 4	30600	38200	67500	89800	26400	234
4.9	7090	2.2	284	11.0	309 L3	—	BN 112M 4	—	—	—	68100	89800	21100	245
5.4	6241	2.1	258	15.0	—	307 R4	BN 112M 4	M3LC 4	29600	37000	65600	87300	25600	235
5.4	6241	2.8	258	15.0	—	309 R4	BN 112M 4	—	—	—	66200	87300	20500	245
5.6	6012	1.3	249	12.0	—	306 R4	BN 112M 4	M3LC 4	25400	28700	60100	70900	19700	225
5.8	5984	1.5	239	11.0	307 L3	—	BN 112M 4	M3LC 4	28900	36100	64200	85300	25000	234
5.8	5984	2.2	239	11.0	309 L3	—	BN 112M 4	—	—	—	64700	85300	20000	245
5.8	5954	1.3	238	7.5	306 L3	—	BN 112M 4	M3LC 4	25000	28300	59400	69900	19400	224
6.0	5616	1.9	232	15.0	—	307 R4	BN 112M 4	M3LC 4	28600	35800	63600	84600	24700	235



P₁ = 4 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
6.0	5616	2.8	232	15.0	—	309 R4	BN 112M 4	—	—	—	64200	84600	19800	245
6.0	5569	1.3	230	12.0	—	306 R4	BN 112M 4	M3LC 4	24700	28000	58800	69200	19200	225
6.2	5574	1.6	223	11.0	307 L3	—	BN 112M 4	M3LC 4	28200	35300	62800	83500	24400	234
6.2	5574	2.3	223	11.0	309 L3	—	BN 112M 4	—	—	—	63400	83500	19500	245
6.3	5546	1.2	222	7.5	306 L3	—	BN 112M 4	M3LC 4	24400	27700	58100	68500	18900	224
6.5	5182	1.0	214	12.0	—	305 R4	BN 112M 4	M3LC 4	19300	22500	36400	42100	12800	215
6.5	5166	1.8	214	12.0	—	306 R4	BN 112M 4	M3LC 4	24100	27400	57500	67700	18700	225
6.8	4973	2.5	206	15.0	—	307 R4	BN 112M 4	M3LC 4	27500	34400	61300	81600	23700	235
6.8	5122	1.5	205	7.5	306 L3	—	BN 112M 4	M3LC 4	23800	26900	56700	66900	18400	224
6.9	5042	2.1	202	11.0	307 L3	—	BN 112M 4	M3LC 4	27300	34100	60900	81100	23600	234
7.3	4611	2.7	191	15.0	—	307 R4	BN 112M 4	M3LC 4	26800	33500	59900	79700	23200	235
7.5	4472	0.9	185	12.0	—	305 R4	BN 112M 4	M3LC 4	18400	21500	34900	40300	12200	215
7.6	4599	1.5	184	7.5	306 L3	—	BN 112M 4	M3LC 4	22900	26000	54900	64700	17800	224
7.7	4376	1.9	181	12.0	—	306 R4	BN 112M 4	M3LC 4	22800	25800	54700	64400	17700	225
7.8	4439	1.0	178	7.5	305 L3	—	BN 112M 4	M3LC 4	18200	21170	34400	39800	12100	214
7.9	4427	2.8	177	11.0	307 L3	—	BN 112M 4	M3LC 4	26100	32700	58600	78000	22600	234
7.9	4427	2.8	177	11.0	309 L3	—	BN 112M 4	—	—	—	59100	78000	18100	245
8.3	4058	1.8	168	12.0	—	306 R4	BN 112M 4	M3LC 4	22200	25200	53400	63000	17300	225
8.4	3995	2.6	165	15.0	—	307 R4	BN 112M 4	M3LC 4	25500	31900	57400	76400	22100	235
8.5	4094	1.1	164	7.5	305 L3	—	BN 112M 4	M3LC 4	17700	20600	33600	38900	11700	214
8.6	4040	2.6	162	11.0	307 L3	—	BN 112M 4	M3LC 4	25400	31700	57000	75900	21900	234
8.8	3829	1.4	158	12.0	—	305 R4	BN 112M 4	M3LC 4	17400	20300	33300	38500	11600	215
8.8	3818	2.4	158	12.0	—	306 R4	BN 112M 4	M3LC 4	21800	24700	52500	61800	16900	225
9.1	3821	2.3	153	11.0	307 L3	—	BN 112M 4	M3LC 4	24900	31100	56100	74600	21500	234
9.1	3814	0.9	152	7.5	305 L3	—	BN 112M 4	M3LC 4	17200	20030	32900	38100	11500	214
9.1	3802	2.0	152	7.5	306 L3	—	BN 112M 4	M3LC 4	21500	24400	51900	61100	16700	224
9.4	3583	1.2	148	12.0	—	305 R4	BN 112M 4	M3LC 4	17100	19900	32600	37700	11400	215
9.6	3605	1.5	144	14.0	—	306 R3	BN 112M 4	M3LC 4	21100	23900	51100	60200	16400	225
9.8	3538	1.5	141	7.5	305 L3	—	BN 112M 4	M3LC 4	16800	19550	32200	37200	11200	214
9.9	3525	2.2	141	7.5	306 L3	—	BN 112M 4	M3LC 4	21000	23800	50700	59800	16300	224
10.8	3126	1.7	129	12.0	—	305 R4	BN 112M 4	M3LC 4	16300	19000	31300	36200	10800	215
11.2	3113	1.2	124	7.5	305 L3	—	BN 112M 4	M3LC 4	16100	18790	31000	35800	10700	214
11.5	3033	2.6	121	7.5	306 L3	—	BN 112M 4	M3LC 4	19900	22600	48500	57100	15500	224
11.6	2995	2.9	120	22	—	307 R3	BN 112M 4	M3LC 4	23000	28700	52100	69300	19800	235
11.7	2980	2.2	119	14.0	—	306 R3	BN 112M 4	M3LC 4	19800	22500	48200	56800	15400	225
12.3	2818	1.3	113	7.5	305 L3	—	BN 112M 4	M3LC 4	15600	18210	30100	34700	10400	214
12.4	2809	2.6	112	7.5	306 L3	—	BN 112M 4	M3LC 4	19400	22000	47400	55800	15100	224
12.6	2768	1.1	111	14.0	—	305 R3	BN 112M 4	M3LC 4	15500	18100	29900	34600	10300	215
13.3	2614	1.0	105	7.5	303 L3	—	BN 112M 4	M3LC 4	15200	17740	29400	34000	10100	204
13.3	2614	2.0	105	7.5	305 L3	—	BN 112M 4	M3LC 4	15200	17740	29400	34000	10100	214
14.1	2463	2.6	98.5	14.0	—	306 R3	BN 112M 4	M3LC 4	18600	21100	45600	53700	14400	225
15.2	2289	1.6	91.5	14.0	—	305 R3	BN 112M 4	M3LC 4	14600	17000	28200	32600	9670	215
15.4	2256	0.9	90.2	7.5	303 L3	—	BN 112M 4	M3LC 4	14500	16880	28100	32500	9620	204
15.4	2256	1.9	90.2	7.5	305 L3	—	BN 112M 4	M3LC 4	14500	16880	28100	32500	9620	214
17.7	1969	1.1	78.7	14.0	—	303 R3	BN 112M 4	M3LC 4	13800	16100	27000	31200	9190	205
17.7	1969	2.2	78.7	14.0	—	305 R3	BN 112M 4	M3LC 4	13800	16100	27000	31200	9190	215
18.0	1932	1.3	77.2	7.5	303 L3	—	BN 112M 4	M3LC 4	13800	16020	26800	31000	9140	204
18.0	1932	2.7	77.2	7.5	305 L3	—	BN 112M 4	M3LC 4	13800	16020	26800	31000	9140	214
19.0	1834	1.0	73.3	14.0	—	303 R3	BN 112M 4	M3LC 4	13500	15700	26400	30500	8980	205
19.0	1834	2.0	73.3	14.0	—	305 R3	BN 112M 4	M3LC 4	13500	15700	26400	30500	8980	215
19.2	1808	1.2	72.3	7.5	303 L3	—	BN 112M 4	M3LC 4	13500	15640	26300	30400	8940	204
19.2	1808	2.3	72.3	7.5	305 L3	—	BN 112M 4	M3LC 4	13500	15640	26300	30400	8940	214
22.0	1577	1.4	63.1	14.0	—	303 R3	BN 112M 4	M3LC 4	12900	15000	25300	29200	8540	205
22.0	1577	2.8	63.1	14.0	—	305 R3	BN 112M 4	M3LC 4	12900	15000	25300	29200	8540	215
22.0	1577	1.6	63.1	7.5	303 L3	—	BN 112M 4	M3LC 4	12900	14970	25200	29200	8540	204
22.1	1574	1.1	62.9	12.0	—	301 R3	BN 112M 4	M3LC 4	4300	4500	12200	13400	2840	197
25.7	1355	1.3	54.2	14.0	—	303 R3	BN 112M 4	M3LC 4	12200	14200	24100	27900	8120	205
25.7	1355	2.7	54.2	14.0	—	305 R3	BN 112M 4	M3LC 4	12200	14200	24100	27900	8120	215
25.7	1395	1.2	54.0	9.0	303 L2	—	BN 112M 4	M3LC 4	12200	14210	24100	27900	8110	204
25.7	1395	2.2	54.0	9.0	305 L2	—	BN 112M 4	M3LC 4	12200	14210	24100	27900	8110	214
26.0	1336	1.6	53.4	7.5	303 L3	—	BN 112M 4	M3LC 4	12200	14210	24000	27800	8080	204
27.6	1261	1.3	50.4	12.0	—	301 R3	BN 112M 4	M3LC 4	4000	4200	11400	12500	2640	197

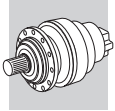


P₁ = 4 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
27.7	1257	1.9	50.3	14.0	—	303 R3	BN 112M 4	M3LC 4	11900	13900	23600	27300	7920	205
29.8	1166	1.9	46.6	14.0	—	303 R3	BN 112M 4	M3LC 4	11600	13500	23100	26700	7720	205
31	1153	1.6	44.6	9.0	303 L2	—	BN 112M 4	M3LC 4	11500	13350	22800	26300	7610	204
32	1090	1.9	43.6	7.5	303 L3	—	BN 112M 4	M3LC 4	11400	13260	22600	26100	7550	204
33	1065	1.9	42.6	14.0	—	303 R3	BN 112M 4	M3LC 4	11300	13100	22400	26000	7490	205
33	1073	1.2	41.5	7.5	301 L2	—	BN 112M 4	M3LC 4	3800	3900	10800	11800	2480	196
34	1029	1.3	41.2	12.0	—	301 R3	BN 112M 4	M3LC 4	3800	3900	10800	11800	2470	197
36	992	2.2	38.4	9.0	303 L2	—	BN 112M 4	M3LC 4	10900	12680	21800	25200	7240	204
37	932	1.7	37.3	12.0	—	301 R3	BN 112M 4	M3LC 4	3600	3800	10400	11500	2390	197
37	929	2.5	37.1	14.0	—	303 R3	BN 112M 4	M3LC 4	10800	12600	21500	24900	7160	205
39	924	1.9	35.8	9.0	303 L2	—	BN 112M 4	M3LC 4	10700	12400	21300	24600	7070	204
42	860	1.5	33.3	7.5	301 L2	—	BN 112M 4	M3LC 4	3500	3600	10100	11100	2300	196
44	787	2.5	31.5	14.0	—	303 R3	BN 112M 4	M3LC 4	10200	11900	20500	23700	6770	205
45	795	2.8	30.8	9.0	303 L2	—	BN 112M 4	M3LC 4	10100	11820	20400	23500	6720	204
45	793	1.0	30.7	7.5	300 L2	—	BN 112M 4	M3LC 4	3400	3500	9850	10800	2240	188
45	793	1.8	30.7	7.5	301 L2	—	BN 112M 4	M3LC 4	3400	3500	9850	10800	2240	196
46	761	1.7	30.4	12.0	—	301 R3	BN 112M 4	M3LC 4	3400	3500	9830	10800	2230	197
53	683	2.6	26.4	9.0	303 L2	—	BN 112M 4	M3LC 4	9600	11250	19500	22500	6390	204
54	642	2.9	25.7	14.0	—	303 R3	BN 112M 4	M3LC 4	9500	11100	19300	22300	6330	205
56	621	2.1	24.8	12.0	—	301 R3	BN 112M 4	M3LC 4	3200	3300	9250	10100	2090	197
57	635	1.2	24.6	7.5	300 L2	—	BN 112M 4	M3LC 4	3200	3300	9220	10100	2080	188
57	635	2.1	24.6	7.5	301 L2	—	BN 112M 4	M3LC 4	3200	3300	9220	10100	2080	196
69	519	1.3	20.1	7.5	300 L2	—	BN 112M 4	M3LC 4	3000	3100	8680	9520	1940	188
69	519	2.5	20.1	7.5	301 L2	—	BN 112M 4	M3LC 4	3000	3100	8680	9520	1940	196
76	470	1.5	18.2	7.5	300 L2	—	BN 112M 4	M3LC 4	2900	3000	8420	9240	1880	188
76	470	2.6	18.2	7.5	301 L2	—	BN 112M 4	M3LC 4	2900	3000	8420	9240	1880	196
94	383	1.7	14.8	7.5	300 L2	—	BN 112M 4	M3LC 4	2700	2800	7920	8690	1760	188
94	381	1.4	14.8	12.0	—	300 R2	BN 112M 4	M3LC 4	2700	2800	7910	8680	1750	189
94	381	2.9	14.8	12.0	—	301 R2	BN 112M 4	M3LC 4	2700	2800	7910	8680	1750	197
115	313	2.0	12.1	7.5	300 L2	—	BN 112M 4	M3LC 4	2500	2600	7460	8180	1640	188
118	306	1.9	11.8	12.0	—	300 R2	BN 112M 4	M3LC 4	2500	2600	7400	8120	1630	189
159	226	2.4	8.74	12.0	—	300 R2	BN 112M 4	M3LC 4	2300	2400	6760	7410	1470	189
193	192	2.6	7.20	7.5	300 L1	—	BN 112M 4	M3LC 4	2100	2200	6380	7000	1380	188
195	184	2.9	7.13	12.0	—	300 R2	BN 112M 4	M3LC 4	2100	2200	6360	6980	1380	189
241	154	3.1	5.77	7.5	300 L1	—	BN 112M 4	M3LC 4	2000	2100	5970	6550	1280	188
326	114	4.0	4.26	7.5	300 L1	—	BN 112M 4	M3LC 4	1800	1900	5450	5980	1160	188

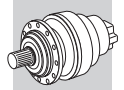
P₁ = 5.5 kW n₁=1400 min⁻¹

0.76	60750	2.4	1893	18.0	317 L4	—	BN 132S 4	—	—	—	442000	470000	150000	302
0.79	58320	0.9	1817	11.0	313 L4	—	BN 132S 4	—	—	—	192000	231000	80000	274
0.79	58233	1.4	1814	18.0	315 L4	—	BN 132S 4	—	—	—	206000	243000	90000	284
0.96	48211	1.1	1502	11.0	313 L4	—	BN 132S 4	—	—	—	192000	231000	80000	274
0.96	48140	1.7	1500	18.0	315 L4	—	BN 132S 4	—	—	—	206000	243000	90000	284
1.0	45432	0.9	1415	11.0	311 L4	—	BN 132S 4	—	—	—	157000	195000	65000	264
1.0	44743	1.2	1394	11.0	313 L4	—	BN 132S 4	—	—	—	191700	230700	79900	274
1.1	41118	2.6	1281	18.0	316 L4	—	BN 132S 4	—	—	—	335500	374900	106800	294
1.1	40622	1.3	1266	11.0	313 L4	—	BN 132S 4	—	—	—	186300	224100	77400	274
1.1	40562	2.4	1264	18.0	315 L4	—	BN 132S 4	—	—	—	199800	235600	87000	284
1.2	39494	1.1	1230	11.0	311 L4	—	BN 132S 4	—	—	—	151000	187600	62300	264
1.3	35851	1.5	1117	11.0	313 L4	—	BN 132S 4	—	—	—	179400	215900	74200	274
1.3	35402	1.0	1103	11.0	311 L4	—	BN 132S 4	—	—	—	146200	181500	60000	264
1.3	34892	2.7	1087	18.0	315 L4	—	BN 132S 4	—	—	—	190900	225200	82700	284
1.4	32550	1.6	1014	11.0	313 L4	—	BN 132S 4	—	—	—	174300	209700	71800	274
1.5	31646	1.3	986	11.0	311 L4	—	BN 132S 4	—	—	—	141300	175500	57800	264
1.6	29332	2.6	914	40	—	315 R4	BN 132S 4	—	—	—	181300	213800	78100	285
1.6	29008	1.6	904	11.0	311 L4	—	BN 132S 4	—	—	—	137700	171000	56200	264
1.6	28546	1.8	889	11.0	313 L4	—	BN 132S 4	—	—	—	167600	201600	68800	274
1.7	26473	1.6	825	11.0	311 L4	—	BN 132S 4	—	—	—	134000	166400	54500	264
1.8	26250	1.0	818	11.0	310 L4	—	BN 132S 4	—	—	—	113200	141300	54300	254








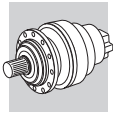
$P_1 = 5.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min^{-1}	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.8	25354	2.1	790	11.0	313 L4	—	BN 132S 4	—	—	—	161700	194600	66100	274
1.9	24984	1.8	778	22	—	313 R4	BN 132S 4	—	—	—	161000	193700	65800	275
1.9	24290	1.1	757	15.0	—	310 R4	BN 132S 4	—	—	—	110600	138000	52900	255
1.9	23949	1.3	746	22	—	311 R4	BN 132S 4	—	—	—	130000	161500	52700	265
2.0	23296	1.1	726	11.0	310 L4	—	BN 132S 4	—	—	—	109200	136300	52200	254
2.0	23244	1.9	724	11.0	311 L4	—	BN 132S 4	—	—	—	128800	160000	52200	264
2.1	22312	2.2	695	11.0	313 L4	—	BN 132S 4	—	—	—	155600	187200	63300	274
2.2	20756	2.4	647	22	—	313 R4	BN 132S 4	—	—	—	152300	183200	61800	275
2.3	20500	1.1	639	15.0	—	310 R4	BN 132S 4	—	—	—	105100	131200	50000	255
2.3	20454	1.1	637	11.0	310 L4	—	BN 132S 4	—	—	—	105000	131100	50000	254
2.3	20316	2.6	633	11.0	313 L4	—	BN 132S 4	—	—	—	151300	182000	61400	274
2.3	20180	1.8	629	22	—	311 R4	BN 132S 4	—	—	—	123500	153400	49800	265
2.3	20098	1.8	626	11.0	311 L4	—	BN 132S 4	—	—	—	123300	153200	49700	264
2.4	18927	1.2	590	15.0	—	310 R4	BN 132S 4	—	—	—	102600	128100	48700	255
2.5	18575	1.1	579	7.5	309 L4	—	BN 132S 4	—	—	—	84400	111200	26800	244
2.5	18222	2.3	568	11.0	311 L4	—	BN 132S 4	—	—	—	119800	148700	48100	264
2.6	17844	1.5	556	11.0	310 L4	—	BN 132S 4	—	—	—	100800	125800	47800	254
2.7	17158	2.8	535	22	—	313 R4	BN 132S 4	—	—	—	143800	173000	58000	275
2.8	16682	2.2	520	22	—	311 R4	BN 132S 4	—	—	—	116600	144900	46700	265
2.8	16599	1.5	517	15.0	—	310 R4	BN 132S 4	—	—	—	98600	123100	46600	255
2.8	16488	2.9	514	11.0	313 L4	—	BN 132S 4	—	—	—	142100	171000	57300	274
2.8	16438	2.7	512	11.0	311 L4	—	BN 132S 4	—	—	—	116100	144200	46500	264
2.8	16284	1.5	507	11.0	310 L4	—	BN 132S 4	—	—	—	98100	122400	46300	254
2.9	15724	2.2	490	22	—	311 R4	BN 132S 4	—	—	—	114600	142300	45800	265
3.1	14921	1.2	465	7.5	309 L4	—	BN 132S 4	—	—	—	79000	104200	24900	244
3.2	14665	0.9	457	15.0	—	309 R4	BN 132S 4	—	—	—	78600	103600	24800	245
3.2	14578	1.4	454	15.0	—	310 R4	BN 132S 4	—	—	—	94900	118400	44700	255
3.2	14465	1.9	451	11.0	310 L4	—	BN 132S 4	—	—	—	94700	118100	44500	254
3.3	14056	2.5	438	22	—	311 R4	BN 132S 4	—	—	—	110800	137600	44100	265
3.4	13460	2.2	419	15.0	—	310 R4	BN 132S 4	—	—	—	92600	115600	43500	255
3.5	13266	1.3	413	15.0	—	309 R4	BN 132S 4	—	—	—	76300	100600	24000	245
3.6	12997	1.3	405	7.5	309 L4	—	BN 132S 4	—	—	—	75800	99900	23800	244
3.7	12495	2.0	389	11.0	310 L4	—	BN 132S 4	—	—	—	90600	113100	42400	254
3.8	12091	2.8	377	22	—	311 R4	BN 132S 4	—	—	—	105900	131500	42000	265
4.0	11659	2.0	363	15.0	—	310 R4	BN 132S 4	—	—	—	88700	110700	41500	255
4.0	11648	1.1	363	15.0	—	307 R4	BN 132S 4	M4SA 4	33200	41500	72700	96700	28700	235
4.0	11648	1.1	363	15.0	—	309 R4	BN 132S 4	—	—	—	73400	96700	23000	245
4.1	11633	1.6	350	18.0	310 L3	—	BN 132S 4	—	—	—	87800	109600	41000	254
4.1	11204	1.2	349	7.5	307 L4	—	BN 132S 4	M4SA 4	32800	41000	71900	95600	28300	234
4.1	11204	1.8	349	7.5	309 L4	—	BN 132S 4	—	—	—	72500	95600	22700	244
4.3	11168	1.2	336	11.0	309 L3	—	BN 132S 4	—	—	—	71700	94500	22400	245
4.3	10726	2.5	334	15.0	—	310 R4	BN 132S 4	—	—	—	86500	108000	40300	255
4.3	10630	1.0	331	15.0	—	307 R4	BN 132S 4	M4SA 4	32200	40200	70700	94100	27800	235
4.3	10630	1.6	331	15.0	—	309 R4	BN 132S 4	—	—	—	71400	94100	22300	245
4.6	10053	1.3	313	15.0	—	309 R4	BN 132S 4	—	—	—	70200	92500	21900	245
4.7	9788	2.3	305	15.0	—	310 R4	BN 132S 4	—	—	—	84200	105100	39100	255
4.9	9802	2.3	295	18.0	310 L3	—	BN 132S 4	—	—	—	83400	104100	38700	254
4.9	9665	2.8	291	18.0	311 L3	—	BN 132S 4	—	—	—	98000	121700	38500	264
5.1	9131	1.2	284	15.0	—	307 R4	BN 132S 4	M4SA 4	30600	38200	67600	89900	26500	235
5.1	9131	1.8	284	15.0	—	309 R4	BN 132S 4	—	—	—	68200	89900	21200	245
5.1	9410	1.1	284	11.0	307 L3	—	BN 132S 4	M4SA 4	30600	38200	67500	89800	26400	234
5.1	9410	1.7	284	11.0	309 L3	—	BN 132S 4	—	—	—	68100	89800	21100	245
5.1	9085	2.5	283	15.0	—	310 R4	BN 132S 4	—	—	—	82300	102800	38100	255
5.6	8291	2.7	258	15.0	—	310 R4	BN 132S 4	—	—	—	80100	100000	37000	255
5.6	8283	1.5	258	15.0	—	307 R4	BN 132S 4	M4SA 4	29600	37000	65600	87300	25600	235
5.6	8283	2.1	258	15.0	—	309 R4	BN 132S 4	—	—	—	66200	87300	20500	245
5.8	8273	2.2	249	18.0	310 L3	—	BN 132S 4	—	—	—	79200	98900	36600	254
5.8	7979	1.0	249	12.0	—	306 R4	BN 132S 4	M4SA 4	25400	28700	60100	70900	19700	225
6.0	7942	1.1	239	11.0	307 L3	—	BN 132S 4	M4SA 4	28900	36100	64200	85300	25000	234
6.0	7942	1.6	239	11.0	309 L3	—	BN 132S 4	—	—	—	64700	85300	20000	245
6.0	7903	1.0	238	7.5	306 L3	—	BN 132S 4	M4SA 4	25000	28300	59400	69900	19400	224
6.2	7454	1.4	232	15.0	—	307 R4	BN 132S 4	M4SA 4	28600	35800	63600	84600	24700	235



$P_1 = 5.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
6.2	7454	2.1	232	15.0	—	309 R4	BN 132S 4	—	—	—	64200	84600	19800	245
6.3	7392	1.0	230	12.0	—	306 R4	BN 132S 4	M4SA 4	24700	28000	58800	69200	19200	225
6.3	7638	2.9	230	18.0	310 L3	—	BN 132S 4	—	—	—	77400	96600	35600	254
6.5	7398	1.2	223	11.0	307 L3	—	BN 132S 4	M4SA 4	28200	35300	62800	83500	24400	234
6.5	7398	1.8	223	11.0	309 L3	—	BN 132S 4	—	—	—	63400	83500	19500	245
6.7	6857	1.3	214	12.0	—	306 R4	BN 132S 4	M4SA 4	24100	27400	57500	67700	18700	225
7.0	6600	1.9	206	15.0	—	307 R4	BN 132S 4	M4SA 4	27500	34400	61300	81600	23700	235
7.0	6600	2.6	206	15.0	—	309 R4	BN 132S 4	—	—	—	61900	81600	19000	245
7.0	6798	1.1	205	7.5	306 L3	—	BN 132S 4	M4SA 4	23800	26900	56700	66900	18400	224
7.1	6692	1.6	202	11.0	307 L3	—	BN 132S 4	M4SA 4	27300	34100	60900	81100	23600	234
7.1	6692	2.4	202	11.0	309 L3	—	BN 132S 4	—	—	—	61500	81100	18900	245
7.6	6121	2.0	191	15.0	—	307 R4	BN 132S 4	M4SA 4	26800	33500	59900	79700	23200	235
7.6	6121	2.9	191	15.0	—	309 R4	BN 132S 4	—	—	—	60500	79700	18500	245
7.8	6104	1.1	184	7.5	306 L3	—	BN 132S 4	M4SA 4	22900	26000	54900	64700	17800	224
8.0	5808	1.4	181	12.0	—	306 R4	BN 132S 4	M4SA 4	22800	25800	54700	64400	17700	225
8.1	5875	2.1	177	11.0	307 L3	—	BN 132S 4	M4SA 4	26100	32700	58600	78000	22600	234
8.1	5875	2.1	177	11.0	309 L3	—	BN 132S 4	—	—	—	59100	78000	18100	245
8.6	5386	1.4	168	12.0	—	306 R4	BN 132S 4	M4SA 4	22200	25200	53400	63000	17300	225
8.7	5302	2.0	165	15.0	—	307 R4	BN 132S 4	M4SA 4	25500	31900	57400	76400	22100	235
8.7	5302	3.0	165	15.0	—	309 R4	BN 132S 4	—	—	—	57900	76400	17700	245
8.9	5362	2.0	162	11.0	307 L3	—	BN 132S 4	M4SA 4	25400	31700	57000	75900	21900	234
8.9	5362	3.0	162	11.0	309 L3	—	BN 132S 4	—	—	—	57500	75900	17500	245
9.1	5083	1.0	158	12.0	—	305 R4	BN 132S 4	M4SA 4	17400	20300	33300	38500	11600	215
9.1	5067	1.8	158	12.0	—	306 R4	BN 132S 4	M4SA 4	21800	24700	52500	61800	16900	225
9.4	5071	1.7	153	11.0	307 L3	—	BN 132S 4	M4SA 4	24900	31100	56100	74600	21500	234
9.4	5071	2.6	153	11.0	309 L3	—	BN 132S 4	—	—	—	56600	74600	17200	245
9.5	5046	1.5	152	7.5	306 L3	—	BN 132S 4	M4SA 4	21500	24400	51900	61100	16700	224
9.5	4877	2.6	152	15.0	—	307 R4	BN 132S 4	M4SA 4	24900	31100	56000	74500	21500	235
9.5	4877	3.0	152	15.0	—	309 R4	BN 132S 4	—	—	—	56500	74500	17200	245
10.0	4784	1.1	144	14.0	—	306 R3	BN 132S 4	M4SA 4	21100	23900	51100	60200	16400	225
10.2	4695	1.1	141	7.5	305 L3	—	BN 132S 4	M4SA 4	16800	19550	32200	37200	11200	214
10.2	4679	1.7	141	7.5	306 L3	—	BN 132S 4	M4SA 4	21000	23800	50700	59800	16300	224
10.4	4606	2.3	139	11.0	307 L3	—	BN 132S 4	M4SA 4	24100	30100	54500	72500	20800	234
11.1	4149	1.3	129	12.0	—	305 R4	BN 132S 4	M4SA 4	16300	19000	31300	36200	10800	215
11.4	4178	3.0	126	11.0	307 L3	—	BN 132S 4	M4SA 4	23400	29200	52900	70400	20200	234
11.9	4025	1.9	121	7.5	306 L3	—	BN 132S 4	M4SA 4	19900	22600	48500	57100	15500	224
12.0	3975	2.2	120	22	—	307 R3	BN 132S 4	M4SA 4	23000	28700	52100	69300	19800	235
12.1	3955	1.6	119	14.0	—	306 R3	BN 132S 4	M4SA 4	19800	22500	48200	56800	15400	225
12.7	3760	2.8	113	11.0	307 L3	—	BN 132S 4	M4SA 4	22500	28100	51300	68200	19500	234
12.8	3740	1.0	113	7.5	305 L3	—	BN 132S 4	M4SA 4	15600	18210	30100	34700	10400	214
12.8	3729	2.0	112	7.5	306 L3	—	BN 132S 4	M4SA 4	19400	22000	47400	55800	15100	224
13.8	3470	1.5	105	7.5	305 L3	—	BN 132S 4	M4SA 4	15200	17740	29400	34000	10100	214
13.8	3459	2.3	104	7.5	306 L3	—	BN 132S 4	M4SA 4	19000	21500	46300	54600	14700	224
14.5	3286	2.6	99.0	22	—	307 R3	BN 132S 4	M4SA 4	21600	26900	49200	65500	18600	235
14.6	3270	2.0	98.5	14.0	—	306 R3	BN 132S 4	M4SA 4	18600	21100	45600	53700	14400	225
15.7	3038	1.2	91.5	14.0	—	305 R3	BN 132S 4	M4SA 4	14600	17000	28200	32600	9670	215
16.0	2994	1.4	90.2	7.5	305 L3	—	BN 132S 4	M4SA 4	14500	16880	28100	32500	9620	214
16.3	2930	2.3	88.3	7.5	306 L3	—	BN 132S 4	M4SA 4	18000	20400	44100	51900	13900	224
17.0	2813	2.8	84.7	14.0	—	306 R3	BN 132S 4	M4SA 4	17700	20100	43500	51300	13700	225
17.6	2717	2.7	81.9	7.5	306 L3	—	BN 132S 4	M4SA 4	17500	19800	43100	50800	13600	224
18.3	2613	1.7	78.7	14.0	—	305 R3	BN 132S 4	M4SA 4	13800	16100	27000	31200	9190	215
18.6	2564	1.0	77.2	7.5	303 L3	—	BN 132S 4	M4SA 4	13800	16020	26800	31000	9140	204
18.6	2564	2.0	77.2	7.5	305 L3	—	BN 132S 4	M4SA 4	13800	16020	26800	31000	9140	214
18.7	2556	3.0	77.0	7.5	306 L3	—	BN 132S 4	M4SA 4	17200	19400	42300	49800	13300	224
19.6	2434	1.5	73.3	14.0	—	305 R3	BN 132S 4	M4SA 4	13500	15700	26400	30500	8980	215
19.9	2399	1.8	72.3	7.5	305 L3	—	BN 132S 4	M4SA 4	13500	15640	26300	30400	8940	214
22.1	2165	3.0	65.2	7.5	306 L3	—	BN 132S 4	M4SA 4	16200	18400	40300	47400	12600	224
22.8	2094	2.1	63.1	14.0	—	305 R3	BN 132S 4	M4SA 4	12900	15000	25300	29200	8540	215
22.8	2093	1.2	63.1	7.5	303 L3	—	BN 132S 4	M4SA 4	12900	14970	25200	29200	8540	204
22.8	2093	2.4	63.1	7.5	305 L3	—	BN 132S 4	M4SA 4	12900	14970	25200	29200	8540	214
25.6	1929	2.9	56.3	13.0	306 L2	—	BN 132S 4	M4SA 4	15500	17500	38500	45400	12000	224
26.6	1799	2.0	54.2	14.0	—	305 R3	BN 132S 4	M4SA 4	12200	14200	24100	27900	8120	215

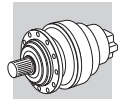


P₁ = 5.5 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
26.7	1852	1.7	54.0	9.0	305 L2	—	BN 132S 4	M4SA 4	12200	14210	24100	27900	8110	214
27.0	1773	1.2	53.4	7.5	303 L3	—	BN 132S 4	M4SA 4	12200	14210	24000	27800	8080	204
27.0	1773	2.3	53.4	7.5	305 L3	—	BN 132S 4	M4SA 4	12200	14210	24000	27800	8080	214
28.6	1668	2.6	50.3	14.0	—	305 R3	BN 132S 4	M4SA 4	11900	13900	23600	27300	7920	215
31	1547	2.8	46.6	14.0	—	305 R3	BN 132S 4	M4SA 4	11600	13500	23100	26700	7720	215
32	1531	1.2	44.6	9.0	303 L2	—	BN 132S 4	M4SA 4	11500	13350	22800	26300	7610	204
32	1531	2.4	44.6	9.0	305 L2	—	BN 132S 4	M4SA 4	11500	13350	22800	26300	7610	214
33	1447	1.5	43.6	7.5	303 L3	—	BN 132S 4	M4SA 4	11400	13260	22600	26100	7550	204
33	1447	2.7	43.6	7.5	305 L3	—	BN 132S 4	M4SA 4	11400	13260	22600	26100	7550	214
34	1413	2.6	42.6	14.0	—	305 R3	BN 132S 4	M4SA 4	11300	13200	22400	26000	7490	215
35	1424	0.9	41.5	7.5	301 L2	—	BN 132S 4	M4SA 4	3800	3900	10800	11800	2480	196
38	1317	1.7	38.4	9.0	303 L2	—	BN 132S 4	M4SA 4	10900	12680	21800	25200	7240	204
39	1233	3.0	37.1	14.0	—	305 R3	BN 132S 4	M4SA 4	10800	12600	21500	24900	7160	215
40	1226	1.5	35.8	9.0	303 L2	—	BN 132S 4	M4SA 4	10700	12400	21300	24600	7070	204
40	1226	2.9	35.8	9.0	305 L2	—	BN 132S 4	M4SA 4	10700	12400	21300	24600	7070	214
43	1141	1.1	33.3	7.5	301 L2	—	BN 132S 4	M4SA 4	3500	3600	10100	11100	2300	196
46	1044	3.0	31.5	14.0	—	305 R3	BN 132S 4	M4SA 4	10200	11900	20500	23700	6770	215
47	1055	2.1	30.8	9.0	303 L2	—	BN 132S 4	M4SA 4	10100	11820	20400	23500	6720	204
47	1052	1.4	30.7	7.5	301 L2	—	BN 132S 4	M4SA 4	3400	3500	9850	10800	2240	196
54	906	2.0	26.4	9.0	303 L2	—	BN 132S 4	M4SA 4	9600	11250	19500	22500	6390	204
56	852	3.0	25.7	14.0	—	305 R3	BN 132S 4	M4SA 4	9500	11200	19300	22300	6330	215
59	843	1.6	24.6	7.5	301 L2	—	BN 132S 4	M4SA 4	3200	3300	9220	10100	2080	196
59	841	2.3	24.5	9.0	303 L2	—	BN 132S 4	M4SA 4	9400	10970	19000	22000	6230	204
63	780	2.7	22.7	9.0	303 L2	—	BN 132S 4	M4SA 4	9200	10680	18600	21500	6080	204
69	712	2.3	20.8	9.0	303 L2	—	BN 132S 4	M4SA 4	8900	10390	18100	20900	5900	204
72	688	0.9	20.1	7.5	300 L2	—	BN 132S 4	M4SA 4	3000	3100	8680	9520	1940	188
72	688	1.9	20.1	7.5	301 L2	—	BN 132S 4	M4SA 4	3000	3100	8680	9520	1940	196
75	659	2.5	19.2	18.0	—	303 R2	BN 132S 4	M4SA 4	8700	10100	17700	20400	5750	205
79	623	1.1	18.2	7.5	300 L2	—	BN 132S 4	M4SA 4	2900	3000	8420	9240	1880	188
79	623	2.0	18.2	7.5	301 L2	—	BN 132S 4	M4SA 4	2900	3000	8420	9240	1880	196
79	621	3.0	18.1	9.0	303 L2	—	BN 132S 4	M4SA 4	8500	9920	17400	20100	5630	204
94	526	3.0	15.3	9.0	303 L2	—	BN 132S 4	M4SA 4	8000	9350	16500	19100	5330	204
97	509	1.3	14.8	7.5	300 L2	—	BN 132S 4	M4SA 4	2700	2800	7920	8690	1760	188
97	509	2.4	14.8	7.5	301 L2	—	BN 132S 4	M4SA 4	2700	2800	7920	8690	1760	196
98	506	1.1	14.8	12.0	—	300 R2	BN 132S 4	M4SA 4	2700	2800	7910	8680	1750	189
98	506	2.2	14.8	12.0	—	301 R2	BN 132S 4	M4SA 4	2700	2800	7910	8680	1750	197
119	415	1.5	12.1	7.5	300 L2	—	BN 132S 4	M4SA 4	2500	2600	7460	8180	1640	188
119	415	2.7	12.1	7.5	301 L2	—	BN 132S 4	M4SA 4	2500	2600	7460	8180	1640	196
122	406	1.4	11.8	12.0	—	300 R2	BN 132S 4	M4SA 4	2500	2600	7400	8120	1630	189
122	406	2.6	11.8	12.0	—	301 R2	BN 132S 4	M4SA 4	2500	2600	7400	8120	1630	197
165	300	1.8	8.74	12.0	—	300 R2	BN 132S 4	M4SA 4	2300	2400	6760	7410	1470	189
165	300	3.0	8.74	12.0	—	301 R2	BN 132S 4	M4SA 4	2300	2400	6760	7410	1470	197
200	255	1.9	7.20	7.5	300 L1	—	BN 132S 4	M4SA 4	2100	2200	6380	7000	1380	188
200	255	3.5	7.20	7.5	301 L1	—	BN 132S 4	M4SA 4	2100	2200	6380	7000	1380	196
202	245	2.2	7.13	12.0	—	300 R2	BN 132S 4	M4SA 4	2100	2200	6360	6980	1380	189
202	245	3.0	7.13	12.0	—	301 R2	BN 132S 4	M4SA 4	2100	2200	6360	6980	1380	197
250	204	2.3	5.77	7.5	300 L1	—	BN 132S 4	M4SA 4	2000	2100	5970	6550	1280	188
338	151	3.0	4.26	7.5	300 L1	—	BN 132S 4	M4SA 4	1800	1900	5450	5980	1160	188

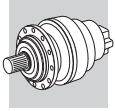
P₁ = 7.5 kW n₁=1400 min⁻¹

0.76	82841	1.8	1893	18.0	317 L4	—	BN 132MA 4	—	—	—	442000	470000	150000	302
0.79	79409	1.0	1814	18.0	315 L4	—	BN 132MA 4	—	—	—	206000	243000	90000	284
0.90	69801	2.4	1595	18.0	317 L4	—	BN 132MA 4	—	—	—	442000	470000	150000	302
0.96	65645	1.2	1500	18.0	315 L4	—	BN 132MA 4	—	—	—	206000	243000	90000	284
1.1	57702	2.9	1318	18.0	317 L4	—	BN 132MA 4	—	—	—	434100	461600	147000	302
1.1	56070	1.9	1281	18.0	316 L4	—	BN 132MA 4	—	—	—	335500	374900	106800	294
1.1	55394	1.0	1266	11.0	313 L4	—	BN 132MA 4	—	—	—	186300	224100	77400	274
1.1	55312	1.8	1264	18.0	315 L4	—	BN 132MA 4	—	—	—	199800	235600	87000	284
1.3	48888	1.1	1117	11.0	313 L4	—	BN 132MA 4	—	—	—	179400	215900	74200	274








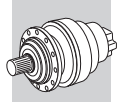
$P_1 = 7.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.3	47580	2.0	1087	18.0	315 L4	—	BN 132MA 4	—	—	—	190900	225200	82700	284
1.3	47229	2.7	1079	18.0	316 L4	—	BN 132MA 4	—	—	—	318700	356100	100900	294
1.4	44386	1.2	1014	11.0	313 L4	—	BN 132MA 4	—	—	—	174300	209700	71800	274
1.4	43931	2.3	1004	18.0	315 L4	—	BN 132MA 4	—	—	—	186400	219900	80500	284
1.5	43153	0.9	986	11.0	311 L4	—	BN 132MA 4	—	—	—	141300	175500	57800	264
1.6	40091	2.3	916	18.0	315 L4	—	BN 132MA 4	—	—	—	181400	214000	78100	284
1.6	39999	1.9	914	40	—	315 R4	BN 132MA 4	—	—	—	181300	213800	78100	285
1.6	39557	1.1	904	11.0	311 L4	—	BN 132MA 4	—	—	—	137700	171000	56200	264
1.6	38926	1.3	889	11.0	313 L4	—	BN 132MA 4	—	—	—	167600	201600	68800	274
1.7	36316	2.8	830	18.0	315 L4	—	BN 132MA 4	—	—	—	176100	207700	75600	284
1.7	36099	1.2	825	11.0	311 L4	—	BN 132MA 4	—	—	—	134000	166400	54500	264
1.8	34574	1.5	790	11.0	313 L4	—	BN 132MA 4	—	—	—	161700	194600	66100	274
1.9	34069	1.3	778	22	—	313 R4	BN 132MA 4	—	—	—	161000	193700	65800	275
1.9	33703	2.7	770	40	—	315 R4	BN 132MA 4	—	—	—	172200	203100	73700	285
1.9	32658	0.9	746	22	—	311 R4	BN 132MA 4	—	—	—	130000	161500	52700	265
2.0	31696	1.4	724	11.0	311 L4	—	BN 132MA 4	—	—	—	128800	160000	52200	264
2.1	30426	1.6	695	11.0	313 L4	—	BN 132MA 4	—	—	—	155600	187200	63300	274
2.2	28304	1.7	647	22	—	313 R4	BN 132MA 4	—	—	—	152300	183200	61800	275
2.3	27703	1.9	633	11.0	313 L4	—	BN 132MA 4	—	—	—	151300	182000	61400	274
2.3	27518	1.4	629	22	—	311 R4	BN 132MA 4	—	—	—	123500	153400	49800	265
2.3	27406	1.3	626	11.0	311 L4	—	BN 132MA 4	—	—	—	123300	153200	49700	264
2.5	24848	1.7	568	11.0	311 L4	—	BN 132MA 4	—	—	—	119800	148700	48100	264
2.6	24676	2.2	564	11.0	313 L4	—	BN 132MA 4	—	—	—	146100	175800	59100	274
2.6	24332	1.1	556	11.0	310 L4	—	BN 132MA 4	—	—	—	100800	125800	47800	254
2.7	23398	2.0	535	22	—	313 R4	BN 132MA 4	—	—	—	143800	173000	58000	275
2.8	22748	1.6	520	22	—	311 R4	BN 132MA 4	—	—	—	116600	144900	46700	265
2.8	22636	1.1	517	15.0	—	310 R4	BN 132MA 4	—	—	—	98600	123100	46600	255
2.8	22483	2.1	514	11.0	313 L4	—	BN 132MA 4	—	—	—	142100	171000	57300	274
2.8	22415	2.0	512	11.0	311 L4	—	BN 132MA 4	—	—	—	116100	144200	46500	264
2.8	22206	1.1	507	11.0	310 L4	—	BN 132MA 4	—	—	—	98100	122400	46300	254
2.9	21715	2.4	496	22	—	313 R4	BN 132MA 4	—	—	—	140600	169200	56600	275
2.9	21442	1.6	490	22	—	311 R4	BN 132MA 4	—	—	—	114600	142300	45800	265
3.2	19879	1.0	454	15.0	—	310 R4	BN 132MA 4	—	—	—	94900	118400	44700	255
3.2	19773	2.8	452	11.0	313 L4	—	BN 132MA 4	—	—	—	136700	164500	54900	274
3.2	19726	1.4	451	11.0	310 L4	—	BN 132MA 4	—	—	—	94700	118100	44500	254
3.2	19715	2.4	450	22	—	313 R4	BN 132MA 4	—	—	—	136600	164400	54800	275
3.3	19167	1.8	438	22	—	311 R4	BN 132MA 4	—	—	—	110800	137600	44100	265
3.4	18354	1.6	419	15.0	—	310 R4	BN 132MA 4	—	—	—	92600	115600	43500	255
3.5	18090	1.0	413	15.0	—	309 R4	BN 132MA 4	—	—	—	76300	100600	24000	245
3.5	18067	2.3	413	22	—	311 R4	BN 132MA 4	—	—	—	108800	135200	43300	265
3.5	17961	2.4	410	11.0	311 L4	—	BN 132MA 4	—	—	—	108600	134900	43200	264
3.6	17724	1.0	405	7.5	309 L4	—	BN 132MA 4	—	—	—	75800	99900	23800	244
3.7	17038	1.5	389	11.0	310 L4	—	BN 132MA 4	—	—	—	90600	113100	42400	254
3.7	16959	2.7	387	22	—	313 R4	BN 132MA 4	—	—	—	130600	157100	52100	275
3.8	16488	2.1	377	22	—	311 R4	BN 132MA 4	—	—	—	105900	131500	42000	265
4.0	15899	1.5	363	15.0	—	310 R4	BN 132MA 4	—	—	—	88700	110700	41500	255
4.1	15864	1.2	350	18.0	310 L3	—	BN 132MA 4	—	—	—	87800	109600	41000	254
4.1	15279	1.3	349	7.5	309 L4	—	BN 132MA 4	—	—	—	72500	95600	22700	244
4.1	15214	2.7	348	11.0	311 L4	—	BN 132MA 4	—	—	—	103400	128400	40900	264
4.2	14935	2.7	341	22	—	311 R4	BN 132MA 4	—	—	—	102800	127700	40600	265
4.3	14626	1.8	334	15.0	—	310 R4	BN 132MA 4	—	—	—	86500	108000	40300	255
4.3	14495	1.2	331	15.0	—	309 R4	BN 132MA 4	—	—	—	71400	94100	22300	245
4.5	14078	2.8	322	22	—	311 R4	BN 132MA 4	—	—	—	101000	125400	39800	265
4.6	13708	0.9	313	15.0	—	309 R4	BN 132MA 4	—	—	—	70200	92500	21900	245
4.7	13347	1.7	305	15.0	—	310 R4	BN 132MA 4	—	—	—	84200	105100	39100	255
4.7	13749	2.8	304	18.0	313 L3	—	BN 132MA 4	—	—	—	121400	146100	48100	274
4.9	13367	1.7	295	18.0	310 L3	—	BN 132MA 4	—	—	—	83400	104100	38700	254
4.9	13179	2.0	291	18.0	311 L3	—	BN 132MA 4	—	—	—	98000	121700	38500	264
5.1	12451	1.3	284	15.0	—	309 R4	BN 132MA 4	—	—	—	68200	89900	21200	245
5.1	12832	1.2	284	11.0	309 L3	—	BN 132MA 4	—	—	—	68100	89800	21100	245
5.1	12389	1.8	283	15.0	—	310 R4	BN 132MA 4	—	—	—	82300	102800	38100	255
5.6	11306	2.0	258	15.0	—	310 R4	BN 132MA 4	—	—	—	80100	100000	37000	255



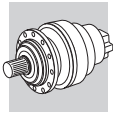
P₁ = 7.5 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
5.6	11295	1.1	258	15.0	—	307 R4	BN 132MA 4	M4LA 4	29600	37000	65600	87300	25600	235
5.6	11295	1.5	258	15.0	—	309 R4	BN 132MA 4	—	—	—	66200	87300	20500	245
5.8	11281	1.6	249	18.0	310 L3	—	BN 132MA 4	—	—	—	79200	98900	36600	254
5.9	11105	2.9	245	18.0	311 L3	—	BN 132MA 4	—	—	—	93100	115600	36400	264
6.0	10830	1.2	239	11.0	309 L3	—	BN 132MA 4	—	—	—	64700	85300	20000	245
6.2	10241	2.2	234	15.0	—	310 R4	BN 132MA 4	—	—	—	77800	97100	35800	255
6.2	10164	1.0	232	15.0	—	307 R4	BN 132MA 4	M4LA 4	28600	35800	63600	84600	24700	235
6.2	10164	1.6	232	15.0	—	309 R4	BN 132MA 4	—	—	—	64200	84600	19800	245
6.3	10416	2.1	230	18.0	310 L3	—	BN 132MA 4	—	—	—	77400	96600	35600	254
6.5	10088	1.3	223	11.0	309 L3	—	BN 132MA 4	—	—	—	63400	83500	19500	245
6.7	9350	1.0	214	12.0	—	306 R4	BN 132MA 4	M4LA 4	24100	27400	57500	67700	18700	225
7.0	9009	2.2	206	15.0	—	310 R4	BN 132MA 4	—	—	—	74800	93400	34300	255
7.0	9000	1.4	206	15.0	—	307 R4	BN 132MA 4	M4LA 4	27500	34400	61300	81600	23700	235
7.0	9000	1.9	206	15.0	—	309 R4	BN 132MA 4	—	—	—	61900	81600	19000	245
7.1	9135	2.4	202	18.0	310 L3	—	BN 132MA 4	—	—	—	74400	92800	34100	254
7.1	9125	1.2	202	11.0	307 L3	—	BN 132MA 4	M4LA 4	27300	34100	60900	81100	23600	234
7.1	9125	1.8	202	11.0	309 L3	—	BN 132MA 4	—	—	—	61500	81100	18900	245
7.6	8346	1.5	191	15.0	—	307 R4	BN 132MA 4	M4LA 4	26800	33500	59900	79700	23200	235
7.6	8346	2.1	191	15.0	—	309 R4	BN 132MA 4	—	—	—	60500	79700	18500	245
7.6	8288	2.2	189	15.0	—	310 R4	BN 132MA 4	—	—	—	73000	91100	33400	255
8.0	7920	1.1	181	12.0	—	306 R4	BN 132MA 4	M4LA 4	22800	25800	54700	64400	17700	225
8.1	8022	2.2	177	18.0	310 L3	—	BN 132MA 4	—	—	—	71500	89300	32600	254
8.1	8012	1.5	177	11.0	307 L3	—	BN 132MA 4	M4LA 4	26100	32700	58600	78000	22600	234
8.1	8012	1.5	177	11.0	309 L3	—	BN 132MA 4	—	—	—	59100	78000	18100	245
8.6	7345	1.0	168	12.0	—	306 R4	BN 132MA 4	M4LA 4	22200	25200	53400	63000	17300	225
8.7	7230	1.5	165	15.0	—	307 R4	BN 132MA 4	M4LA 4	25500	31900	57400	76400	22100	235
8.7	7230	2.2	165	15.0	—	309 R4	BN 132MA 4	—	—	—	57900	76400	17700	245
8.9	7312	1.4	162	11.0	307 L3	—	BN 132MA 4	M4LA 4	25400	31700	57000	75900	21900	234
8.9	7312	2.2	162	11.0	309 L3	—	BN 132MA 4	—	—	—	57500	75900	17500	245
9.0	7020	2.2	160	15.0	—	310 R4	BN 132MA 4	—	—	—	69400	86700	31600	255
9.1	6910	1.3	158	12.0	—	306 R4	BN 132MA 4	M4LA 4	21800	24700	52500	61800	16900	225
9.4	6915	1.3	153	11.0	307 L3	—	BN 132MA 4	M4LA 4	24900	31100	56100	74600	21500	234
9.4	6915	1.9	153	11.0	309 L3	—	BN 132MA 4	—	—	—	56600	74600	17200	245
9.5	6881	1.1	152	7.5	306 L3	—	BN 132MA 4	M4LA 4	21500	24400	51900	61100	16700	224
9.5	6651	1.9	152	15.0	—	307 R4	BN 132MA 4	M4LA 4	24900	31100	56000	74500	21500	235
9.5	6651	2.2	152	15.0	—	309 R4	BN 132MA 4	—	—	—	56500	74500	17200	245
10.2	6381	1.2	141	7.5	306 L3	—	BN 132MA 4	M4LA 4	21000	23800	50700	59800	16300	224
10.4	6281	1.7	139	11.0	307 L3	—	BN 132MA 4	M4LA 4	24100	30100	54500	72500	20800	234
10.4	6281	2.5	139	11.0	309 L3	—	BN 132MA 4	—	—	—	55000	72500	16700	245
10.6	5947	2.2	136	15.0	—	310 R4	BN 132MA 4	—	—	—	66100	82500	29900	255
11.1	5658	0.9	129	12.0	—	305 R4	BN 132MA 4	M4LA 4	16300	19000	31300	36200	10800	215
11.4	5697	2.2	126	11.0	307 L3	—	BN 132MA 4	M4LA 4	23400	29200	52900	70400	20200	234
11.4	5697	2.7	126	11.0	309 L3	—	BN 132MA 4	—	—	—	53400	70400	16100	245
11.9	5489	1.4	121	7.5	306 L3	—	BN 132MA 4	M4LA 4	19900	22600	48500	57100	15500	224
12.0	5420	1.6	120	22	—	307 R3	BN 132MA 4	M4LA 4	23000	28700	52100	69300	19800	235
12.0	5420	2.4	120	22	—	309 R3	BN 132MA 4	—	—	—	52600	69300	15900	245
12.1	5393	1.2	119	14.0	—	306 R3	BN 132MA 4	M4LA 4	19800	22500	48200	56800	15400	225
12.7	5127	2.0	113	11.0	307 L3	—	BN 132MA 4	M4LA 4	22500	28100	51300	68200	19500	234
12.8	5085	1.5	112	7.5	306 L3	—	BN 132MA 4	M4LA 4	19400	22000	47400	55800	15100	224
13.8	4731	1.1	105	7.5	305 L3	—	BN 132MA 4	M4LA 4	15200	17740	29400	34000	10100	214
13.8	4717	1.7	104	7.5	306 L3	—	BN 132MA 4	M4LA 4	19000	21500	46300	54600	14700	224
14.4	4540	2.7	100	11.0	307 L3	—	BN 132MA 4	M4LA 4	21600	27000	49400	65800	18700	234
14.5	4481	1.9	99.0	22	—	307 R3	BN 132MA 4	M4LA 4	21600	26900	49200	65500	18600	235
14.5	4481	2.9	99.0	22	—	309 R3	BN 132MA 4	—	—	—	49700	65500	14900	245
14.6	4459	1.5	98.5	14.0	—	306 R3	BN 132MA 4	M4LA 4	18600	21100	45600	53700	14400	225
15.5	4210	2.8	93.0	11.0	307 L3	—	BN 132MA 4	M4LA 4	21100	26400	48300	64300	18200	234
16.0	4083	1.0	90.2	7.5	305 L3	—	BN 132MA 4	M4LA 4	14500	16880	28100	32500	9620	214
16.3	3995	1.7	88.3	7.5	306 L3	—	BN 132MA 4	M4LA 4	18000	20400	44100	51900	13900	224
17.0	3835	2.0	84.7	14.0	—	306 R3	BN 132MA 4	M4LA 4	17700	20100	43500	51300	13700	225
17.3	3775	2.8	83.4	22	—	307 R3	BN 132MA 4	M4LA 4	20400	25400	46800	62200	17600	235
17.6	3705	2.0	81.9	7.5	306 L3	—	BN 132MA 4	M4LA 4	17500	19800	43100	50800	13600	224
17.9	3647	2.9	80.6	11.0	307 L3	—	BN 132MA 4	M4LA 4	20100	25100	46300	61600	17400	234








$P_1 = 7.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
18.3	3563	1.2	78.7	14.0	—	305 R3	BN 132MA 4	M4LA 4	13800	16100	27000	31200	9190	215
18.6	3496	1.5	77.2	7.5	305 L3	—	BN 132MA 4	M4LA 4	13800	16020	26800	31000	9140	214
18.7	3485	2.2	77.0	7.5	306 L3	—	BN 132MA 4	M4LA 4	17200	19400	42300	49800	13300	224
19.6	3319	1.1	73.3	14.0	—	305 R3	BN 132MA 4	M4LA 4	13500	15700	26400	30500	8980	215
19.8	3299	2.2	72.9	14.0	—	306 R3	BN 132MA 4	M4LA 4	16900	19100	41600	49000	13100	225
19.9	3271	1.3	72.3	7.5	305 L3	—	BN 132MA 4	M4LA 4	13500	15640	26300	30400	8940	214
21.3	3056	2.2	67.5	14.0	—	306 R3	BN 132MA 4	M4LA 4	16400	18600	40700	47900	12700	225
22.1	2952	2.2	65.2	7.5	306 L3	—	BN 132MA 4	M4LA 4	16200	18400	40300	47400	12600	224
22.8	2855	1.5	63.1	14.0	—	305 R3	BN 132MA 4	M4LA 4	12900	15000	25300	29200	8540	215
22.8	2854	0.9	63.1	7.5	303 L3	—	BN 132MA 4	M4LA 4	12900	14970	25200	29200	8540	204
22.8	2854	1.7	63.1	7.5	305 L3	—	BN 132MA 4	M4LA 4	12900	14970	25200	29200	8540	214
24.8	2629	2.2	58.1	14.0	—	306 R3	BN 132MA 4	M4LA 4	15600	17700	38900	45800	12100	225
25.6	2630	2.1	56.3	13.0	306 L2	—	BN 132MA 4	M4LA 4	15500	17500	38500	45400	12000	224
26.6	2453	1.5	54.2	14.0	—	305 R3	BN 132MA 4	M4LA 4	12200	14200	24100	27900	8120	215
26.7	2525	1.2	54.0	9.0	305 L2	—	BN 132MA 4	M4LA 4	12200	14210	24100	27900	8110	214
27.0	2417	1.7	53.4	7.5	305 L3	—	BN 132MA 4	M4LA 4	12200	14210	24000	27800	8080	214
27.0	2410	2.6	53.2	7.5	306 L3	—	BN 132MA 4	M4LA 4	15200	17200	37900	44600	11800	224
28.6	2275	1.9	50.3	14.0	—	305 R3	BN 132MA 4	M4LA 4	11900	13900	23600	27300	7920	215
31	2110	2.1	46.6	14.0	—	305 R3	BN 132MA 4	M4LA 4	11600	13500	23100	26700	7720	215
31	2174	3.0	46.5	13.0	306 L2	—	BN 132MA 4	M4LA 4	14500	16400	36400	42800	11300	224
31	2095	2.2	46.3	14.0	—	306 R3	BN 132MA 4	M4LA 4	14500	16400	36300	42800	11200	225
32	2041	2.6	45.1	7.5	306 L3	—	BN 132MA 4	M4LA 4	14400	16300	36000	42500	11100	224
32	2087	1.7	44.6	9.0	305 L2	—	BN 132MA 4	M4LA 4	11500	13350	22800	26300	7610	214
33	1973	1.1	43.6	7.5	303 L3	—	BN 132MA 4	M4LA 4	11400	13260	22600	26100	7550	204
33	1973	2.0	43.6	7.5	305 L3	—	BN 132MA 4	M4LA 4	11400	13260	22600	26100	7550	214
34	1927	1.9	42.6	14.0	—	305 R3	BN 132MA 4	M4LA 4	11300	13200	22400	26000	7490	215
37	1775	2.2	39.2	14.0	—	306 R3	BN 132MA 4	M4LA 4	13700	15500	34600	40700	10600	225
38	1795	1.2	38.4	9.0	303 L2	—	BN 132MA 4	M4LA 4	10900	12680	21800	25200	7240	204
38	1795	2.3	38.4	9.0	305 L2	—	BN 132MA 4	M4LA 4	10900	12680	21800	25200	7240	214
39	1681	2.2	37.1	14.0	—	305 R3	BN 132MA 4	M4LA 4	10800	12600	21500	24900	7160	215
40	1672	1.1	35.8	9.0	303 L2	—	BN 132MA 4	M4LA 4	10700	12400	21300	24600	7070	204
40	1672	2.2	35.8	9.0	305 L2	—	BN 132MA 4	M4LA 4	10700	12400	21300	24600	7070	214
43	1503	2.2	33.2	14.0	—	306 R3	BN 132MA 4	M4LA 4	13000	14700	32900	38700	10100	225
46	1424	2.2	31.5	14.0	—	305 R3	BN 132MA 4	M4LA 4	10200	11900	20500	23700	6770	215
47	1439	1.5	30.8	9.0	303 L2	—	BN 132MA 4	M4LA 4	10100	11820	20400	23500	6720	204
47	1439	2.7	30.8	9.0	305 L2	—	BN 132MA 4	M4LA 4	10100	11820	20400	23500	6720	214
47	1435	1.0	30.7	7.5	301 L2	—	BN 132MA 4	M4LA 4	3400	3500	9850	10800	2240	196
54	1236	1.5	26.4	9.0	303 L2	—	BN 132MA 4	M4LA 4	9600	11250	19500	22500	6390	204
54	1236	2.9	26.4	9.0	305 L2	—	BN 132MA 4	M4LA 4	9600	11250	19500	22500	6390	214
56	1162	2.2	25.7	14.0	—	305 R3	BN 132MA 4	M4LA 4	9500	11200	19300	22300	6330	215
59	1150	1.2	24.6	7.5	301 L2	—	BN 132MA 4	M4LA 4	3200	3300	9220	10100	2080	196
59	1146	1.7	24.5	9.0	303 L2	—	BN 132MA 4	M4LA 4	9400	10970	19000	22000	6230	204
63	1063	2.0	22.7	9.0	303 L2	—	BN 132MA 4	M4LA 4	9200	10680	18600	21500	6080	204
69	971	1.7	20.8	9.0	303 L2	—	BN 132MA 4	M4LA 4	8900	10390	18100	20900	5900	204
72	939	1.4	20.1	7.5	301 L2	—	BN 132MA 4	M4LA 4	3000	3100	8680	9520	1940	196
75	899	1.8	19.2	18.0	—	303 R2	BN 132MA 4	M4LA 4	8700	10100	17700	20400	5750	205
79	850	1.5	18.2	7.5	301 L2	—	BN 132MA 4	M4LA 4	2900	3000	8420	9240	1880	196
79	847	2.2	18.1	9.0	303 L2	—	BN 132MA 4	M4LA 4	8500	9920	17400	20100	5630	204
91	743	2.4	15.9	18.0	—	303 R2	BN 132MA 4	M4LA 4	8100	9430	16700	19300	5390	205
94	718	2.2	15.3	9.0	303 L2	—	BN 132MA 4	M4LA 4	8000	9350	16500	19100	5330	204
97	694	0.9	14.8	7.5	300 L2	—	BN 132MA 4	M4LA 4	2700	2800	7920	8690	1760	188
97	694	1.7	14.8	7.5	301 L2	—	BN 132MA 4	M4LA 4	2700	2800	7920	8690	1760	196
98	690	1.6	14.8	12.0	—	301 R2	BN 132MA 4	M4LA 4	2700	2800	7910	8680	1750	197
105	639	2.8	13.7	18.0	—	303 R2	BN 132MA 4	M4LA 4	7800	9050	16000	18500	5130	205
115	586	2.6	12.5	9.0	303 L2	—	BN 132MA 4	M4LA 4	7500	8770	15500	18000	4980	204
119	566	1.1	12.1	7.5	300 L2	—	BN 132MA 4	M4LA 4	2500	2600	7460	8180	1640	188
119	566	2.0	12.1	7.5	301 L2	—	BN 132MA 4	M4LA 4	2500	2600	7460	8180	1640	196
122	553	1.0	11.8	12.0	—	300 R2	BN 132MA 4	M4LA 4	2500	2600	7400	8120	1630	189
122	553	1.9	11.8	12.0	—	301 R2	BN 132MA 4	M4LA 4	2500	2600	7400	8120	1630	197
165	409	1.3	8.74	12.0	—	300 R2	BN 132MA 4	M4LA 4	2300	2400	6760	7410	1470	189
165	409	2.2	8.74	12.0	—	301 R2	BN 132MA 4	M4LA 4	2300	2400	6760	7410	1470	197
192	362	4.0	7.50	11.0	303 L1	—	BN132MA4	M4LA4	6300	7340	13300	15400	4200	204

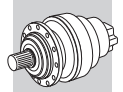


P₁ = 7.5 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
200	347	1.4	7.20	7.5	300 L1	—	BN 132MA 4	M4LA 4	2100	2200	6380	7000	1380	188
200	347	2.5	7.20	7.5	301 L1	—	BN 132MA 4	M4LA 4	2100	2200	6380	7000	1380	196
202	334	1.6	7.13	12.0	—	300 R2	BN 132MA 4	M4LA 4	2100	2200	6360	6980	1380	189
202	334	2.2	7.13	12.0	—	301 R2	BN 132MA 4	M4LA 4	2100	2200	6360	6980	1380	197
250	278	1.7	5.77	7.5	300 L1	—	BN 132MA 4	M4LA 4	2000	2100	5970	6550	1280	188
338	206	2.2	4.26	7.5	300 L1	—	BN 132MA 4	M4LA 4	1800	1900	5450	5980	1160	188
338	206	3.9	4.26	7.5	301 L1	—	BN132MA4	M4LA4	1800	1900	5450	5980	1160	196

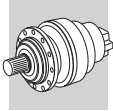
P₁ = 9.2 kW n₁=1400 min⁻¹

0.76	101618	1.4	1893	18.0	317 L4	—	BN 132MB 4	—	—	—	442000	470000	150000	302
0.90	85622	2.0	1595	18.0	317 L4	—	BN 132MB 4	—	—	—	442000	470000	150000	302
0.96	80525	1.0	1500	18.0	315 L4	—	BN 132MB 4	—	—	—	206000	243000	90000	284
1.1	70781	2.4	1318	18.0	317 L4	—	BN 132MB 4	—	—	—	434100	461600	147000	302
1.1	68780	1.6	1281	18.0	316 L4	—	BN 132MB 4	—	—	—	335500	374900	106800	294
1.1	67849	1.4	1264	18.0	315 L4	—	BN 132MB 4	—	—	—	199800	235600	87000	284
1.3	60887	2.7	1134	18.0	317 L4	—	BN 132MB 4	—	—	—	414900	441200	139800	302
1.3	58365	1.6	1087	18.0	315 L4	—	BN 132MB 4	—	—	—	190900	225200	82700	284
1.3	57934	2.2	1079	18.0	316 L4	—	BN 132MB 4	—	—	—	318700	356100	100900	294
1.4	54447	1.0	1014	11.0	313 L4	—	BN 132MB 4	—	—	—	174300	209700	71800	274
1.4	53888	1.9	1004	18.0	315 L4	—	BN 132MB 4	—	—	—	186400	219900	80500	284
1.5	51185	2.7	953	50	—	317 R4	BN 132MB 4	—	—	—	393900	418800	132000	303
1.6	49178	1.9	916	18.0	315 L4	—	BN 132MB 4	—	—	—	181400	214000	78100	284
1.6	49065	1.5	914	40	—	315 R4	BN 132MB 4	—	—	—	181300	213800	78100	285
1.6	48523	0.9	904	11.0	311 L4	—	BN 132MB 4	—	—	—	137700	171000	56200	264
1.6	47893	2.6	892	18.0	316 L4	—	BN 132MB 4	—	—	—	301000	336400	94700	294
1.6	47750	1.1	889	11.0	313 L4	—	BN 132MB 4	—	—	—	167600	201600	68800	274
1.7	45155	2.5	841	18.0	316 L4	—	BN 132MB 4	—	—	—	295700	330500	92900	294
1.7	44548	2.3	830	18.0	315 L4	—	BN 132MB 4	—	—	—	176100	207700	75600	284
1.7	44281	0.9	825	11.0	311 L4	—	BN 132MB 4	—	—	—	134000	166400	54500	264
1.8	42411	1.2	790	11.0	313 L4	—	BN 132MB 4	—	—	—	161700	194600	66100	274
1.9	41792	1.1	778	22	—	313 R4	BN 132MB 4	—	—	—	161000	193700	65800	275
1.9	41342	2.2	770	40	—	315 R4	BN 132MB 4	—	—	—	172200	203100	73700	285
1.9	41236	3.0	768	18.0	316 L4	—	BN 132MB 4	—	—	—	287800	321600	90100	294
2.0	38880	1.2	724	11.0	311 L4	—	BN 132MB 4	—	—	—	128800	160000	52200	264
2.0	38320	2.6	714	18.0	315 L4	—	BN 132MB 4	—	—	—	168300	198500	71900	284
2.1	37323	1.3	695	11.0	313 L4	—	BN 132MB 4	—	—	—	155600	187200	63300	274
2.2	34834	2.5	649	40	—	315 R4	BN 132MB 4	—	—	—	163600	192900	69600	285
2.2	34719	1.4	647	22	—	313 R4	BN 132MB 4	—	—	—	152300	183200	61800	275
2.2	34712	2.9	647	18.0	315 L4	—	BN 132MB 4	—	—	—	163400	192700	69600	284
2.3	33983	1.5	633	11.0	313 L4	—	BN 132MB 4	—	—	—	151300	182000	61400	274
2.3	33755	1.1	629	22	—	311 R4	BN 132MB 4	—	—	—	123500	153400	49800	265
2.3	33618	1.1	626	11.0	311 L4	—	BN 132MB 4	—	—	—	123300	153200	49700	264
2.5	30480	1.4	568	11.0	311 L4	—	BN 132MB 4	—	—	—	119800	148700	48100	264
2.6	30270	1.8	564	11.0	313 L4	—	BN 132MB 4	—	—	—	146100	175800	59100	274
2.6	29848	0.9	556	11.0	310 L4	—	BN 132MB 4	—	—	—	100800	125800	47800	254
2.7	28701	1.7	535	22	—	313 R4	BN 132MB 4	—	—	—	143800	173000	58000	275
2.8	27904	1.3	520	22	—	311 R4	BN 132MB 4	—	—	—	116600	144900	46700	265
2.8	27766	0.9	517	15.0	—	310 R4	BN 132MB 4	—	—	—	98600	123100	46600	255
2.8	27579	1.7	514	11.0	313 L4	—	BN 132MB 4	—	—	—	142100	171000	57300	274
2.8	27496	1.6	512	11.0	311 L4	—	BN 132MB 4	—	—	—	116100	144200	46500	264
2.8	27239	0.9	507	11.0	310 L4	—	BN 132MB 4	—	—	—	98100	122400	46300	254
2.9	26637	2.0	496	22	—	313 R4	BN 132MB 4	—	—	—	140600	169200	56600	275
2.9	26303	1.3	490	22	—	311 R4	BN 132MB 4	—	—	—	114600	142300	45800	265
3.2	24254	2.3	452	11.0	313 L4	—	BN 132MB 4	—	—	—	136700	164500	54900	274
3.2	24197	1.2	451	11.0	310 L4	—	BN 132MB 4	—	—	—	94700	118100	44500	254
3.2	24184	1.9	450	22	—	313 R4	BN 132MB 4	—	—	—	136600	164400	54800	275
3.3	23512	1.5	438	22	—	311 R4	BN 132MB 4	—	—	—	110800	137600	44100	265
3.4	22514	1.3	419	15.0	—	310 R4	BN 132MB 4	—	—	—	92600	115600	43500	255
3.4	22444	2.5	418	22	—	313 R4	BN 132MB 4	—	—	—	133600	160700	53500	275








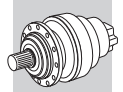
P₁ = 9.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
3.5	22162	1.9	413	22	—	311 R4	BN 132MB 4	—	—	—	108800	135200	43300	265
3.5	22032	1.9	410	11.0	311 L4	—	BN 132MB 4	—	—	—	108600	134900	43200	264
3.7	21159	2.6	394	11.0	313 L4	—	BN 132MB 4	—	—	—	131300	157900	52400	274
3.7	20901	1.2	389	11.0	310 L4	—	BN 132MB 4	—	—	—	90600	113100	42400	254
3.7	20803	2.2	387	22	—	313 R4	BN 132MB 4	—	—	—	130600	157100	52100	275
3.8	20225	1.7	377	22	—	311 R4	BN 132MB 4	—	—	—	105900	131500	42000	265
4.0	19503	1.2	363	15.0	—	310 R4	BN 132MB 4	—	—	—	88700	110700	41500	255
4.1	18900	2.5	352	11.0	313 L4	—	BN 132MB 4	—	—	—	126900	152700	50500	274
4.1	19460	1.0	350	18.0	310 L3	—	BN 132MB 4	—	—	—	87800	109600	41000	254
4.1	18742	1.1	349	7.5	309 L4	—	BN 132MB 4	—	—	—	72500	95600	22700	244
4.1	18663	2.2	348	11.0	311 L4	—	BN 132MB 4	—	—	—	103400	128400	40900	264
4.2	18554	2.7	346	22	—	313 R4	BN 132MB 4	—	—	—	126200	151800	50200	275
4.2	18321	2.2	341	22	—	311 R4	BN 132MB 4	—	—	—	102800	127700	40600	265
4.3	17941	1.5	334	15.0	—	310 R4	BN 132MB 4	—	—	—	86500	108000	40300	255
4.3	17780	0.9	331	15.0	—	309 R4	BN 132MB 4	—	—	—	71400	94100	22300	245
4.5	17269	2.3	322	22	—	311 R4	BN 132MB 4	—	—	—	101000	125400	39800	265
4.7	16577	2.7	309	22	—	313 R4	BN 132MB 4	—	—	—	122000	146800	48300	275
4.7	16373	1.4	305	15.0	—	310 R4	BN 132MB 4	—	—	—	84200	105100	39100	255
4.7	16865	2.3	304	18.0	313 L3	—	BN 132MB 4	—	—	—	121400	146100	48100	274
4.9	16397	1.4	295	18.0	310 L3	—	BN 132MB 4	—	—	—	83400	104100	38700	254
4.9	15760	2.5	294	22	—	311 R4	BN 132MB 4	—	—	—	98300	122000	38600	265
4.9	16166	1.7	291	18.0	311 L3	—	BN 132MB 4	—	—	—	98000	121700	38500	264
5.1	15274	1.1	284	15.0	—	309 R4	BN 132MB 4	—	—	—	68200	89900	21200	245
5.1	15741	1.0	284	11.0	309 L3	—	BN 132MB 4	—	—	—	68100	89800	21100	244
5.1	15197	1.5	283	15.0	—	310 R4	BN 132MB 4	—	—	—	82300	102800	38100	255
5.1	15094	2.7	281	22	—	313 R4	BN 132MB 4	—	—	—	118600	142700	46800	275
5.4	14276	2.6	266	22	—	311 R4	BN 132MB 4	—	—	—	95400	118500	37400	265
5.6	13869	1.6	258	15.0	—	310 R4	BN 132MB 4	—	—	—	80100	100000	37000	255
5.6	13855	0.9	258	15.0	—	307 R4	BN 132MB 4	M4LB 4	29600	37000	65600	87300	25600	235
5.6	13855	1.3	258	15.0	—	309 R4	BN 132MB 4	—	—	—	66200	87300	20500	245
5.8	13838	1.3	249	18.0	310 L3	—	BN 132MB 4	—	—	—	79200	98900	36600	254
5.9	13622	2.3	245	18.0	311 L3	—	BN 132MB 4	—	—	—	93100	115600	36400	264
6.0	13284	1.0	239	11.0	309 L3	—	BN 132MB 4	—	—	—	64700	85300	20000	244
6.1	12718	2.7	237	22	—	313 R4	BN 132MB 4	—	—	—	112700	135600	44200	275
6.2	12563	1.8	234	15.0	—	310 R4	BN 132MB 4	—	—	—	77800	97100	35800	255
6.2	12468	1.3	232	15.0	—	309 R4	BN 132MB 4	—	—	—	64200	84600	19800	245
6.3	12777	1.7	230	18.0	310 L3	—	BN 132MB 4	—	—	—	77400	96600	35600	254
6.5	12374	1.1	223	11.0	309 L3	—	BN 132MB 4	—	—	—	63400	83500	19500	244
6.5	11965	2.7	223	22	—	311 R4	BN 132MB 4	—	—	—	90500	112400	35200	265
7.0	11052	1.8	206	15.0	—	310 R4	BN 132MB 4	—	—	—	74800	93400	34300	255
7.0	11041	1.1	206	15.0	—	307 R4	BN 132MB 4	M4LB 4	27500	34400	61300	81600	23700	235
7.0	11041	1.6	206	15.0	—	309 R4	BN 132MB 4	—	—	—	61900	81600	19000	245
7.1	11261	2.8	203	18.0	311 L3	—	BN 132MB 4	—	—	—	87900	109200	34100	264
7.1	11205	1.9	202	18.0	310 L3	—	BN 132MB 4	—	—	—	74400	92800	34100	254
7.1	11193	0.9	202	11.0	307 L3	—	BN 132MB 4	M4LB 4	27300	34100	60900	81100	23600	234
7.1	11193	1.4	202	11.0	309 L3	—	BN 132MB 4	—	—	—	61500	81100	18900	244
7.2	10773	2.7	201	22	—	313 R4	BN 132MB 4	—	—	—	107200	129000	41900	275
7.3	10638	2.7	198	22	—	311 R4	BN 132MB 4	—	—	—	87300	108500	33900	265
7.6	10238	1.2	191	15.0	—	307 R4	BN 132MB 4	M4LB 4	26800	33500	59900	79700	23200	235
7.6	10238	1.7	191	15.0	—	309 R4	BN 132MB 4	—	—	—	60500	79700	18500	245
7.6	10167	1.8	189	15.0	—	310 R4	BN 132MB 4	—	—	—	73000	91100	33400	255
7.8	9910	2.7	185	22	—	313 R4	BN 132MB 4	—	—	—	104500	125800	40700	275
7.9	9786	2.7	182	22	—	311 R4	BN 132MB 4	—	—	—	85200	105800	32900	265
8.1	9840	1.8	177	18.0	310 L3	—	BN 132MB 4	—	—	—	71500	89300	32600	254
8.1	9828	1.3	177	11.0	307 L3	—	BN 132MB 4	M4LB 4	26100	32700	58600	78000	22600	234
8.1	9828	1.3	177	11.0	309 L3	—	BN 132MB 4	—	—	—	59100	78000	18100	244
8.7	8869	1.2	165	15.0	—	307 R4	BN 132MB 4	M4LB 4	25500	31900	57400	76400	22100	235
8.7	8869	1.8	165	15.0	—	309 R4	BN 132MB 4	—	—	—	57900	76400	17700	245
8.8	9086	2.5	164	18.0	310 L3	—	BN 132MB 4	—	—	—	69900	87200	31800	254
8.9	8969	1.2	162	11.0	307 L3	—	BN 132MB 4	M4LB 4	25400	31700	57000	75900	21900	234
8.9	8969	1.8	162	11.0	309 L3	—	BN 132MB 4	—	—	—	57500	75900	17500	244
9.0	8612	1.8	160	15.0	—	310 R4	BN 132MB 4	—	—	—	69400	86700	31600	255








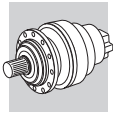
P₁ = 9.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
9.1	8476	1.1	158	12.0	—	306 R4	BN 132MB 4	M4LB 4	—	21800	24700	52500	61800	16900	225
9.3	8289	2.7	154	22	—	311 R4	BN 132MB 4	—	—	—	—	81000	100600	31200	265
9.4	8482	1.0	153	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	24900	31100	56100	74600	21500	234
9.4	8482	1.5	153	11.0	309 L3	—	BN 132MB 4	—	—	—	—	56600	74600	17200	244
9.5	8158	1.5	152	15.0	—	307 R4	BN 132MB 4	M4LB 4	—	24900	31100	56000	74500	21500	235
9.5	8158	1.8	152	15.0	—	309 R4	BN 132MB 4	—	—	—	—	56500	74500	17200	245
10.2	7870	2.6	142	18.0	310 L3	—	BN 132MB 4	—	—	—	—	66900	83500	30300	254
10.2	7827	1.0	141	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	21000	23800	50700	59800	16300	224
10.4	7705	1.4	139	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	24100	30100	54500	72500	20800	234
10.4	7705	2.1	139	11.0	309 L3	—	BN 132MB 4	—	—	—	—	55000	72500	16700	244
10.6	7295	1.8	136	15.0	—	310 R4	BN 132MB 4	—	—	—	—	66100	82500	29900	255
11.0	7240	2.9	130	18.0	310 L3	—	BN 132MB 4	—	—	—	—	65300	81400	29500	254
11.4	6989	1.8	126	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	23400	29200	52900	70400	20200	234
11.4	6989	2.2	126	11.0	309 L3	—	BN 132MB 4	—	—	—	—	53400	70400	16100	244
11.9	6733	1.2	121	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	19900	22600	48500	57100	15500	224
12.0	6649	1.3	120	22	—	307 R3	BN 132MB 4	M4LB 4	—	23000	28700	52100	69300	19800	235
12.0	6649	2.0	120	22	—	309 R3	BN 132MB 4	—	—	—	—	52600	69300	15900	245
12.0	6649	2.7	120	22	—	310 R3	BN 132MB 4	—	—	—	—	63600	79400	28600	255
12.1	6616	1.0	119	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	19800	22500	48200	56800	15400	225
12.1	6607	3.0	119	18.0	310 L3	—	BN 132MB 4	—	—	—	—	63500	79200	28600	254
12.7	6289	1.7	113	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	22500	28100	51300	68200	19500	234
12.7	6289	2.5	113	11.0	309 L3	—	BN 132MB 4	—	—	—	—	51700	68200	15600	244
12.8	6237	1.2	112	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	19400	22000	47400	55800	15100	224
13.8	5786	1.4	104	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	19000	21500	46300	54600	14700	224
14.4	5569	2.2	100	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	21600	27000	49400	65800	18700	234
14.4	5569	2.5	100	11.0	309 L3	—	BN 132MB 4	—	—	—	—	49900	65800	15000	244
14.5	5496	1.6	99.0	22	—	307 R3	BN 132MB 4	M4LB 4	—	21600	26900	49200	65500	18600	235
14.5	5496	2.4	99.0	22	—	309 R3	BN 132MB 4	—	—	—	—	49700	65500	14900	245
14.5	5496	2.7	99.0	22	—	310 R3	BN 132MB 4	—	—	—	—	60100	75000	26900	255
14.6	5469	1.2	98.5	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	18600	21100	45600	53700	14400	225
15.5	5164	2.3	93.0	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	21100	26400	48300	64300	18200	234
15.5	5164	2.7	93.0	11.0	309 L3	—	BN 132MB 4	—	—	—	—	48800	64300	14600	244
16.3	4901	1.4	88.3	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	18000	20400	44100	51900	13900	224
17.0	4705	1.6	84.7	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	17700	20100	43500	51300	13700	225
17.3	4631	2.3	83.4	22	—	307 R3	BN 132MB 4	M4LB 4	—	20400	25400	46800	62200	17600	235
17.3	4631	2.7	83.4	22	—	309 R3	BN 132MB 4	—	—	—	—	47200	62200	14100	245
17.3	4631	2.7	83.4	22	—	310 R3	BN 132MB 4	—	—	—	—	57100	71200	25400	255
17.6	4545	1.6	81.9	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	17500	19800	43100	50800	13600	224
17.9	4474	2.3	80.6	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	20100	25100	46300	61600	17400	234
18.3	4371	1.0	78.7	14.0	—	305 R3	BN 132MB 4	M4LB 4	—	13800	16100	27000	31200	9190	215
18.3	4365	2.6	78.6	22	—	307 R3	BN 132MB 4	M4LB 4	—	20000	24900	45900	61100	17200	235
18.3	4365	2.7	78.6	22	—	309 R3	BN 132MB 4	—	—	—	—	46400	61100	13800	245
18.3	4365	2.7	78.6	22	—	310 R3	BN 132MB 4	—	—	—	—	56100	70000	24900	255
18.6	4289	1.2	77.2	7.5	305 L3	—	BN 132MB 4	M4LB 4	—	13800	16020	26800	31000	9140	214
18.7	4275	1.8	77.0	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	17200	19400	42300	49800	13300	224
19.4	4115	2.7	74.1	11.0	307 L3	—	BN 132MB 4	M4LB 4	—	19600	24500	45100	60000	16900	234
19.8	4047	1.8	72.9	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	16900	19100	41600	49000	13100	225
19.9	4013	1.0	72.3	7.5	305 L3	—	BN 132MB 4	M4LB 4	—	13500	15640	26300	30400	8940	214
20.1	3984	2.6	71.8	22	—	307 R3	BN 132MB 4	M4LB 4	—	19400	24200	44700	59500	16700	235
20.1	3984	2.7	71.8	22	—	309 R3	BN 132MB 4	—	—	—	—	45100	59500	13400	245
20.1	3984	2.7	71.8	22	—	310 R3	BN 132MB 4	—	—	—	—	54500	68100	24100	255
21.3	3749	1.8	67.5	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	16400	18600	40700	47900	12700	225
22.1	3622	1.8	65.2	7.5	306 L3	—	BN 132MB 4	M4LB 4	—	16200	18400	40300	47400	12600	224
22.2	3609	2.7	65.0	22	—	307 R3	BN 132MB 4	M4LB 4	—	18700	23400	43400	57700	16200	235
22.2	3609	2.7	65.0	22	—	309 R3	BN 132MB 4	—	—	—	—	43800	57700	12900	245
22.2	3609	2.7	65.0	22	—	310 R3	BN 132MB 4	—	—	—	—	53000	66100	23400	255
22.8	3502	1.3	63.1	14.0	—	305 R3	BN 132MB 4	M4LB 4	—	12900	15000	25300	29200	8540	215
22.8	3501	1.4	63.1	7.5	305 L3	—	BN 132MB 4	M4LB 4	—	12900	14970	25200	29200	8540	214
24.8	3225	1.8	58.1	14.0	—	306 R3	BN 132MB 4	M4LB 4	—	15600	17700	38900	45800	12100	225
25.6	3226	1.7	56.3	13.0	306 L2	—	BN 132MB 4	M4LB 4	—	15500	17500	38500	45400	12000	224
25.8	3104	2.7	55.9	22	—	307 R3	BN 132MB 4	M4LB 4	—	17800	22300	41500	55200	15400	235
25.8	3104	2.7	55.9	22	—	309 R3	BN 132MB 4	—	—	—	—	41900	55200	12300	245



P₁ = 9.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
25.8	3104	2.7	55.9	22	—	310 R3	BN 132MB 4	—	—	—	50600	63200	22200	255
26.6	3008	1.2	54.2	14.0	—	305 R3	BN 132MB 4	M4LB 4	12200	14200	24100	27900	8120	215
26.7	3097	1.0	54.0	9.0	305 L2	—	BN 132MB 4	M4LB 4	12200	14210	24100	27900	8110	214
27.0	2965	1.4	53.4	7.5	305 L3	—	BN 132MB 4	M4LB 4	12200	14210	24000	27800	8080	214
27.0	2956	2.1	53.2	7.5	306 L3	—	BN 132MB 4	M4LB 4	15200	17200	37900	44600	11800	224
28.6	2791	1.6	50.3	14.0	—	305 R3	BN 132MB 4	M4LB 4	11900	13900	23600	27300	7920	215
31	2588	1.7	46.6	14.0	—	305 R3	BN 132MB 4	M4LB 4	11600	13500	23100	26700	7720	215
31	2667	2.4	46.5	13.0	306 L2	—	BN 132MB 4	M4LB 4	14500	16400	36400	42800	11300	224
31	2570	1.8	46.3	14.0	—	306 R3	BN 132MB 4	M4LB 4	14500	16400	36300	42800	11200	225
32	2504	2.1	45.1	7.5	306 L3	—	BN 132MB 4	M4LB 4	14400	16300	36000	42500	11100	224
32	2560	1.4	44.6	9.0	305 L2	—	BN 132MB 4	M4LB 4	11500	13350	22800	26300	7610	214
32	2474	2.7	44.6	22	—	307 R3	BN 132MB 4	M4LB 4	16500	20700	38700	51500	14300	235
32	2474	2.7	44.6	22	—	309 R3	BN 132MB 4	—	—	—	39100	51500	11400	245
32	2474	2.7	44.6	22	—	310 R3	BN 132MB 4	—	—	—	47300	59000	20600	255
33	2421	1.6	43.6	7.5	305 L3	—	BN 132MB 4	M4LB 4	11400	13260	22600	26100	7550	214
34	2364	1.6	42.6	14.0	—	305 R3	BN 132MB 4	M4LB 4	11300	13200	22400	26000	7490	215
37	2177	1.8	39.2	14.0	—	306 R3	BN 132MB 4	M4LB 4	13700	15500	34600	40700	10600	225
37	2205	2.9	38.4	13.0	306 L2	—	BN 132MB 4	M4LB 4	13600	15400	34300	40500	10600	224
38	2202	1.0	38.4	9.0	303 L2	—	BN 132MB 4	M4LB 4	10900	12680	21800	25200	7240	204
38	2202	1.9	38.4	9.0	305 L2	—	BN 132MB 4	M4LB 4	10900	12680	21800	25200	7240	214
38	2095	2.7	37.7	22	—	307 R3	BN 132MB 4	M4LB 4	15600	19500	36900	49000	13500	235
38	2095	2.7	37.7	22	—	309 R3	BN 132MB 4	—	—	—	37200	49000	10800	245
38	2095	2.7	37.7	22	—	310 R3	BN 132MB 4	—	—	—	45000	56100	19500	255
39	2062	1.8	37.1	14.0	—	305 R3	BN 132MB 4	M4LB 4	10800	12600	21500	24900	7160	215
40	2051	1.8	35.8	9.0	305 L2	—	BN 132MB 4	M4LB 4	10700	12400	21300	24600	7070	214
43	1844	1.8	33.2	14.0	—	306 R3	BN 132MB 4	M4LB 4	13000	14700	32900	38700	10100	225
46	1756	2.7	31.6	22	—	307 R3	BN 132MB 4	M4LB 4	14700	18400	35000	46500	12700	235
46	1756	2.7	31.6	22	—	309 R3	BN 132MB 4	—	—	—	35300	46500	10200	245
46	1747	1.8	31.5	14.0	—	305 R3	BN 132MB 4	M4LB 4	10200	11900	20500	23700	6770	215
47	1765	1.2	30.8	9.0	303 L2	—	BN 132MB 4	M4LB 4	10100	11820	20400	23500	6720	204
47	1765	2.2	30.8	9.0	305 L2	—	BN 132MB 4	M4LB 4	10100	11820	20400	23500	6720	214
54	1516	1.2	26.4	9.0	303 L2	—	BN 132MB 4	M4LB 4	9600	11250	19500	22500	6390	204
54	1516	2.4	26.4	9.0	305 L2	—	BN 132MB 4	M4LB 4	9600	11250	19500	22500	6390	214
56	1426	1.8	25.7	14.0	—	305 R3	BN 132MB 4	M4LB 4	9500	11200	19300	22300	6330	215
59	1411	1.0	24.6	7.5	301 L2	—	BN 132MB 4	M4LB 4	3200	3300	9220	10100	2080	196
59	1406	1.4	24.5	9.0	303 L2	—	BN 132MB 4	M4LB 4	9400	10970	19000	22000	6230	204
59	1406	2.5	24.5	9.0	305 L2	—	BN 132MB 4	M4LB 4	9400	10970	19000	22000	6230	214
63	1304	1.6	22.7	9.0	303 L2	—	BN 132MB 4	M4LB 4	9200	10680	18600	21500	6080	204
63	1304	2.7	22.7	9.0	305 L2	—	BN 132MB 4	M4LB 4	9200	10680	18600	21500	6080	214
69	1191	1.4	20.8	9.0	303 L2	—	BN 132MB 4	M4LB 4	8900	10390	18100	20900	5900	204
69	1191	2.5	20.8	9.0	305 L2	—	BN 132MB 4	M4LB 4	8900	10390	18100	20900	5900	214
72	1151	1.1	20.1	7.5	301 L2	—	BN 132MB 4	M4LB 4	3000	3100	8680	9520	1940	196
75	1102	1.5	19.2	18.0	—	303 R2	BN 132MB 4	M4LB 4	8700	10100	17700	20400	5750	205
75	1102	2.7	19.2	18.0	—	305 R2	BN 132MB 4	M4LB 4	8700	10100	17700	20400	5750	215
75	1102	2.7	19.2	18.0	—	306 R2	BN 132MB 4	M4LB 4	10800	12300	27900	32900	8380	225
79	1042	1.2	18.2	7.5	301 L2	—	BN 132MB 4	M4LB 4	2900	3000	8420	9240	1880	196
79	1039	1.8	18.1	9.0	303 L2	—	BN 132MB 4	M4LB 4	8500	9920	17400	20100	5630	204
91	911	2.0	15.9	18.0	—	303 R2	BN 132MB 4	M4LB 4	8100	9430	16700	19300	5390	205
91	911	2.7	15.9	18.0	—	305 R2	BN 132MB 4	M4LB 4	8100	9440	16700	19300	5390	215
91	911	2.7	15.9	18.0	—	306 R2	BN 132MB 4	M4LB 4	10200	11500	26400	31000	7870	225
94	880	1.8	15.3	9.0	303 L2	—	BN 132MB 4	M4LB 4	8000	9350	16500	19100	5330	204
97	851	1.4	14.8	7.5	301 L2	—	BN 132MB 4	M4LB 4	2700	2800	7920	8690	1760	196
98	847	1.3	14.8	12.0	—	301 R2	BN 132MB 4	M4LB 4	2700	2800	7910	8680	1750	197
105	784	2.3	13.7	18.0	—	303 R2	BN 132MB 4	M4LB 4	7800	9050	16000	18500	5130	205
105	784	2.7	13.7	18.0	—	305 R2	BN 132MB 4	M4LB 4	7800	9060	16000	18500	5130	215
105	784	2.7	13.7	18.0	—	306 R2	BN 132MB 4	M4LB 4	9700	11000	25200	29700	7480	225
115	719	2.1	12.5	9.0	303 L2	—	BN 132MB 4	M4LB 4	7500	8770	15500	18000	4980	204
119	695	0.9	12.1	7.5	300 L2	—	BN 132MB 4	M4LB 4	2500	2600	7460	8180	1640	188
119	695	1.6	12.1	7.5	301 L2	—	BN 132MB 4	M4LB 4	2500	2600	7460	8180	1640	196
122	678	1.5	11.8	12.0	—	301 R2	BN 132MB 4	M4LB 4	2500	2600	7400	8120	1630	197
132	625	2.7	10.9	18.0	—	303 R2	BN 132MB 4	M4LB 4	7200	8380	14900	17200	4760	205
132	625	2.7	10.9	18.0	—	305 R2	BN 132MB 4	M4LB 4	7200	8390	14900	17200	4760	215

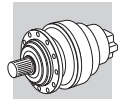


P₁ = 9.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
132	625	2.7	10.9	18.0	—	306 R2	BN 132MB 4	M4LB 4	9000	10200	23500	27700	6930	225
156	529	2.7	9.23	18.0	—	303 R2	BN 132MB 4	M4LB 4	6800	7910	14200	16400	4500	205
156	529	2.7	9.23	18.0	—	305 R2	BN 132MB 4	M4LB 4	6800	7910	14200	16400	4500	215
156	529	2.7	9.23	18.0	—	306 R2	BN 132MB 4	M4LB 4	8500	9600	22400	26400	6560	225
165	501	1.1	8.74	12.0	—	300 R2	BN 132MB 4	M4LB 4	2300	2400	6760	7410	1470	189
165	501	1.8	8.74	12.0	—	301 R2	BN 132MB 4	M4LB 4	2300	2400	6760	7410	1470	197
200	426	1.1	7.20	7.5	300 L1	—	BN 132MB 4	M4LB 4	2100	2200	6380	7000	1380	188
200	426	2.1	7.20	7.5	301 L1	—	BN 132MB 4	M4LB 4	2100	2200	6380	7000	1380	196
202	409	1.3	7.13	12.0	—	300 R2	BN 132MB 4	M4LB 4	2100	2200	6360	6980	1380	189
202	409	1.8	7.13	12.0	—	301 R2	BN 132MB 4	M4LB 4	2100	2200	6360	6980	1380	197
250	341	1.4	5.77	7.5	300 L1	—	BN 132MB 4	M4LB 4	2000	2100	5970	6550	1280	188
250	341	2.5	5.77	7.5	301 L1	—	BN 132MB 4	M4LB 4	2000	2100	5970	6550	1280	196
338	252	1.8	4.26	7.5	300 L1	—	BN 132MB 4	M4LB 4	1800	1900	5450	5980	1160	188

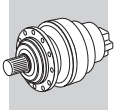
P₁ = 11 kW n₁=1400 min⁻¹

0.76	121499	1.2	1893	18.0	317 L4	—	BN 160MR 4	—	—	—	442000	470000	150000	302
0.90	102375	1.7	1595	18.0	317 L4	—	BN 160MR 4	—	—	—	442000	470000	150000	302
1.1	84630	2.0	1318	18.0	317 L4	—	BN 160MR 4	—	—	—	434100	461600	147000	302
1.1	82237	1.3	1281	18.0	316 L4	—	BN 160MR 4	—	—	—	335500	374900	106800	294
1.1	81124	1.2	1264	18.0	315 L4	—	BN 160MR 4	—	—	—	199800	235600	87000	284
1.3	72800	2.3	1134	18.0	317 L4	—	BN 160MR 4	—	—	—	414900	441200	139800	302
1.3	69784	1.4	1087	18.0	315 L4	—	BN 160MR 4	—	—	—	190900	225200	82700	284
1.3	69269	1.8	1079	18.0	316 L4	—	BN 160MR 4	—	—	—	318700	356100	100900	294
1.4	66272	2.7	1032	18.0	317 L4	—	BN 160MR 4	—	—	—	403400	428900	135500	302
1.4	64432	1.6	1004	18.0	315 L4	—	BN 160MR 4	—	—	—	186400	219900	80500	284
1.5	61200	2.2	953	50	—	317 R4	BN 160MR 4	—	—	—	393900	418800	132000	303
1.6	58800	1.6	916	18.0	315 L4	—	BN 160MR 4	—	—	—	181400	214000	78100	284
1.6	58665	1.3	914	40	—	315 R4	BN 160MR 4	—	—	—	181300	213800	78100	285
1.6	58012	2.8	904	18.0	317 L4	—	BN 160MR 4	—	—	—	387600	412200	129600	302
1.6	57264	2.2	892	18.0	316 L4	—	BN 160MR 4	—	—	—	301000	336400	94700	294
1.6	57092	0.9	889	11.0	313 L4	—	BN 160MR 4	—	—	—	167600	201600	68800	274
1.7	53990	2.1	841	18.0	316 L4	—	BN 160MR 4	—	—	—	295700	330500	92900	294
1.7	53263	1.9	830	18.0	315 L4	—	BN 160MR 4	—	—	—	176100	207700	75600	284
1.8	50708	1.0	790	11.0	313 L4	—	BN 160MR 4	—	—	—	161700	194600	66100	274
1.9	49431	1.8	770	40	—	315 R4	BN 160MR 4	—	—	—	172200	203100	73700	285
1.9	49303	2.5	768	18.0	316 L4	—	BN 160MR 4	—	—	—	287800	321600	90100	294
1.9	48276	2.6	752	18.0	316 L4	—	BN 160MR 4	—	—	—	286000	319600	89500	294
2.0	46487	1.0	724	11.0	311 L4	—	BN 160MR 4	—	—	—	128800	160000	52200	264
2.0	45818	2.2	714	18.0	315 L4	—	BN 160MR 4	—	—	—	168300	198500	71900	284
2.0	45516	2.7	709	18.0	316 L4	—	BN 160MR 4	—	—	—	281000	314000	87700	294
2.1	44625	1.1	695	11.0	313 L4	—	BN 160MR 4	—	—	—	155600	187200	63300	274
2.2	41650	2.1	649	40	—	315 R4	BN 160MR 4	—	—	—	163600	192900	69600	285
2.2	41536	3.0	647	18.0	316 L4	—	BN 160MR 4	—	—	—	273400	305500	85100	294
2.2	41512	1.2	647	22	—	313 R4	BN 160MR 4	—	—	—	152300	183200	61800	275
2.2	41504	2.4	647	18.0	315 L4	—	BN 160MR 4	—	—	—	163400	192700	69600	284
2.2	41407	2.9	645	45	—	316 R4	BN 160MR 4	—	—	—	273100	305200	85000	295
2.3	40632	1.3	633	11.0	313 L4	—	BN 160MR 4	—	—	—	151300	182000	61400	274
2.3	40359	0.9	629	22	—	311 R4	BN 160MR 4	—	—	—	123500	153400	49800	265
2.4	38517	2.6	600	40	—	315 R4	BN 160MR 4	—	—	—	159800	188500	67900	285
2.5	36511	2.7	569	18.0	315 L4	—	BN 160MR 4	—	—	—	157200	185500	66700	284
2.5	36443	1.1	568	11.0	311 L4	—	BN 160MR 4	—	—	—	119800	148700	48100	264
2.6	36192	1.5	564	11.0	313 L4	—	BN 160MR 4	—	—	—	146100	175800	59100	274
2.7	34317	1.4	535	22	—	313 R4	BN 160MR 4	—	—	—	143800	173000	58000	275
2.8	33364	1.1	520	22	—	311 R4	BN 160MR 4	—	—	—	116600	144900	46700	265
2.8	32975	1.4	514	11.0	313 L4	—	BN 160MR 4	—	—	—	142100	171000	57300	274
2.8	32964	3.0	513	18.0	315 L4	—	BN 160MR 4	—	—	—	152500	179900	64400	284
2.8	32876	1.4	512	11.0	311 L4	—	BN 160MR 4	—	—	—	116100	144200	46500	264
2.8	32454	3.0	506	40	—	315 R4	BN 160MR 4	—	—	—	151800	179000	64100	285
2.9	31848	1.6	496	22	—	313 R4	BN 160MR 4	—	—	—	140600	169200	56600	275



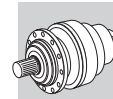
$P_1 = 11 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.9	31449	1.1	490	22	—	311 R4	BN 160MR 4	—	—	—	114600	142300	45800	265
3.2	29000	1.9	452	11.0	313 L4	—	BN 160MR 4	—	—	—	136700	164500	54900	274
3.2	28931	1.0	451	11.0	310 L4	—	BN 160MR 4	—	—	—	94700	118100	44500	254
3.2	28915	1.6	450	22	—	313 R4	BN 160MR 4	—	—	—	136600	164400	54800	275
3.3	28112	1.2	438	22	—	311 R4	BN 160MR 4	—	—	—	110800	137600	44100	265
3.4	26919	1.1	419	15.0	—	310 R4	BN 160MR 4	—	—	—	92600	115600	43500	255
3.4	26835	2.0	418	22	—	313 R4	BN 160MR 4	—	—	—	133600	160700	53500	275
3.5	26498	1.6	413	22	—	311 R4	BN 160MR 4	—	—	—	108800	135200	43300	265
3.5	26343	1.6	410	11.0	311 L4	—	BN 160MR 4	—	—	—	108600	134900	43200	264
3.7	25299	2.2	394	11.0	313 L4	—	BN 160MR 4	—	—	—	131300	157900	52400	274
3.7	24990	1.0	389	11.0	310 L4	—	BN 160MR 4	—	—	—	90600	113100	42400	254
3.7	24873	1.8	387	22	—	313 R4	BN 160MR 4	—	—	—	130600	157100	52100	275
3.8	24182	1.4	377	22	—	311 R4	BN 160MR 4	—	—	—	105900	131500	42000	265
4.0	23319	1.0	363	15.0	—	310 R4	BN 160MR 4	—	—	—	88700	110700	41500	255
4.1	22597	2.1	352	11.0	313 L4	—	BN 160MR 4	—	—	—	126900	152700	50500	274
4.1	22314	1.8	348	11.0	311 L4	—	BN 160MR 4	—	—	—	103400	128400	40900	264
4.2	22184	2.2	346	22	—	313 R4	BN 160MR 4	—	—	—	126200	151800	50200	275
4.2	21905	1.9	341	22	—	311 R4	BN 160MR 4	—	—	—	102800	127700	40600	265
4.3	21451	1.3	334	15.0	—	310 R4	BN 160MR 4	—	—	—	86500	108000	40300	255
4.5	20648	1.9	322	22	—	311 R4	BN 160MR 4	—	—	—	101000	125400	39800	265
4.7	19821	2.3	309	22	—	313 R4	BN 160MR 4	—	—	—	122000	146800	48300	275
4.7	19576	1.2	305	15.0	—	310 R4	BN 160MR 4	—	—	—	84200	105100	39100	255
4.7	20165	1.9	304	18.0	313 L3	—	BN 160MR 4	—	—	—	121400	146100	48100	274
4.9	19605	1.2	295	18.0	310 L3	—	BN 160MR 4	—	—	—	83400	104100	38700	254
4.9	18843	2.1	294	22	—	311 R4	BN 160MR 4	—	—	—	98300	122000	38600	265
4.9	19329	1.4	291	18.0	311 L3	—	BN 160MR 4	—	—	—	98000	121700	38500	264
5.1	18170	1.3	283	15.0	—	310 R4	BN 160MR 4	—	—	—	82300	102800	38100	255
5.1	18047	2.2	281	22	—	313 R4	BN 160MR 4	—	—	—	118600	142700	46800	275
5.4	17069	2.2	266	22	—	311 R4	BN 160MR 4	—	—	—	95400	118500	37400	265
5.6	16582	1.4	258	15.0	—	310 R4	BN 160MR 4	—	—	—	80100	100000	37000	255
5.7	16752	2.7	252	18.0	313 L3	—	BN 160MR 4	—	—	—	114800	138200	45200	274
5.8	16545	1.1	249	18.0	310 L3	—	BN 160MR 4	—	—	—	79200	98900	36600	254
5.9	16287	2.0	245	18.0	311 L3	—	BN 160MR 4	—	—	—	93100	115600	36400	264
6.1	15206	2.2	237	22	—	313 R4	BN 160MR 4	—	—	—	112700	135600	44200	275
6.2	15021	1.5	234	15.0	—	310 R4	BN 160MR 4	—	—	—	77800	97100	35800	255
6.3	15276	1.4	230	18.0	310 L3	—	BN 160MR 4	—	—	—	77400	96600	35600	254
6.5	14306	2.3	223	22	—	311 R4	BN 160MR 4	—	—	—	90500	112400	35200	265
7.0	13214	1.5	206	15.0	—	310 R4	BN 160MR 4	—	—	—	74800	93400	34300	255
7.1	13464	2.4	203	18.0	311 L3	—	BN 160MR 4	—	—	—	87900	109200	34100	264
7.1	13397	1.6	202	18.0	310 L3	—	BN 160MR 4	—	—	—	74400	92800	34100	254
7.1	13383	1.2	202	11.0	309 L3	—	BN 160MR 4	—	—	—	61500	81100	18900	244
7.2	12881	2.3	201	22	—	313 R4	BN 160MR 4	—	—	—	107200	129000	41900	275
7.3	12719	2.2	198	22	—	311 R4	BN 160MR 4	—	—	—	87300	108500	33900	265
7.5	12691	2.7	191	18.0	311 L3	—	BN 160MR 4	—	—	—	86400	107300	33500	264
7.6	12156	1.5	189	15.0	—	310 R4	BN 160MR 4	—	—	—	73000	91100	33400	255
7.8	11849	2.3	185	22	—	313 R4	BN 160MR 4	—	—	—	104500	125800	40700	275
7.9	11701	2.2	182	22	—	311 R4	BN 160MR 4	—	—	—	85200	105800	32900	265
8.1	11766	1.5	177	18.0	310 L3	—	BN 160MR 4	—	—	—	71500	89300	32600	254
8.1	11751	1.0	177	11.0	307 L3	—	BN 160MR 4	M4LC 4	26100	32700	58600	78000	22600	234
8.1	11751	1.0	177	11.0	309 L3	—	BN 160MR 4	—	—	—	59100	78000	18100	244
8.4	11344	2.8	171	18.0	311 L3	—	BN 160MR 4	—	—	—	83500	103800	32200	264
8.8	10863	2.1	164	18.0	310 L3	—	BN 160MR 4	—	—	—	69900	87200	31800	254
8.9	10724	1.0	162	11.0	307 L3	—	BN 160MR 4	M4LC 4	25400	31700	57000	75900	21900	234
8.9	10724	1.5	162	11.0	309 L3	—	BN 160MR 4	—	—	—	57500	75900	17500	244
9.0	10297	1.5	160	15.0	—	310 R4	BN 160MR 4	—	—	—	69400	86700	31600	255
9.3	9911	2.3	154	22	—	311 R4	BN 160MR 4	—	—	—	81000	100600	31200	265
9.4	10142	1.3	153	11.0	309 L3	—	BN 160MR 4	—	—	—	56600	74600	17200	244
9.8	9736	2.8	147	40	—	311 R3	BN 160MR 4	—	—	—	79800	99100	30600	265
10.2	9410	2.2	142	18.0	310 L3	—	BN 160MR 4	—	—	—	66900	83500	30300	254
10.4	9212	1.1	139	11.0	307 L3	—	BN 160MR 4	M4LC 4	24100	30100	54500	72500	20800	234
10.4	9212	1.7	139	11.0	309 L3	—	BN 160MR 4	—	—	—	55000	72500	16700	244
10.6	8722	1.5	136	15.0	—	310 R4	BN 160MR 4	—	—	—	66100	82500	29900	255








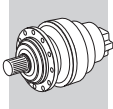
P₁ = 11 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
11.0	8657	2.4	130	18.0	310 L3	—	BN 160MR 4	—	—	—	65300	81400	29500	254
11.4	8356	1.5	126	11.0	307 L3	—	BN 160MR 4	M4LC 4	23400	29200	52900	70400	20200	234
11.4	8356	1.9	126	11.0	309 L3	—	BN 160MR 4	—	—	—	53400	70400	16100	244
12.0	7950	1.1	120	22	—	307 R3	BN 160MR 4	M4LC 4	23000	28700	52100	69300	19800	235
12.0	7950	1.6	120	22	—	309 R3	BN 160MR 4	—	—	—	52600	69300	15900	245
12.0	7950	2.2	120	22	—	310 R3	BN 160MR 4	—	—	—	63600	79400	28600	255
12.1	7900	2.5	119	18.0	310 L3	—	BN 160MR 4	—	—	—	63500	79200	28600	254
12.7	7520	1.4	113	11.0	307 L3	—	BN 160MR 4	M4LC 4	22500	28100	51300	68200	19500	234
12.7	7520	2.1	113	11.0	309 L3	—	BN 160MR 4	—	—	—	51700	68200	15600	244
13.0	7333	2.7	110	18.0	310 L3	—	BN 160MR 4	—	—	—	62100	77500	27900	254
14.3	6692	2.8	101	18.0	310 L3	—	BN 160MR 4	—	—	—	60400	75400	27000	254
14.4	6659	1.8	100	11.0	307 L3	—	BN 160MR 4	M4LC 4	21600	27000	49400	65800	18700	234
14.4	6659	2.1	100	11.0	309 L3	—	BN 160MR 4	—	—	—	49900	65800	15000	244
14.5	6572	1.3	99.0	22	—	307 R3	BN 160MR 4	M4LC 4	21600	26900	49200	65500	18600	235
14.5	6572	2.0	99.0	22	—	309 R3	BN 160MR 4	—	—	—	49700	65500	14900	245
14.5	6572	2.2	99.0	22	—	310 R3	BN 160MR 4	—	—	—	60100	75000	26900	255
15.5	6175	1.9	93.0	11.0	307 L3	—	BN 160MR 4	M4LC 4	21100	26400	48300	64300	18200	234
15.5	6175	2.3	93.0	11.0	309 L3	—	BN 160MR 4	—	—	—	48800	64300	14600	244
17.3	5537	1.9	83.4	22	—	307 R3	BN 160MR 4	M4LC 4	20400	25400	46800	62200	17600	235
17.3	5537	2.2	83.4	22	—	309 R3	BN 160MR 4	—	—	—	47200	62200	14100	245
17.3	5537	2.2	83.4	22	—	310 R3	BN 160MR 4	—	—	—	57100	71200	25400	255
17.9	5349	2.0	80.6	11.0	307 L3	—	BN 160MR 4	M4LC 4	20100	25100	46300	61600	17400	234
17.9	5349	2.7	80.6	11.0	309 L3	—	BN 160MR 4	—	—	—	46700	61600	13900	244
18.3	5219	2.1	78.6	22	—	307 R3	BN 160MR 4	M4LC 4	20000	24900	45900	61100	17200	235
18.3	5219	2.2	78.6	22	—	309 R3	BN 160MR 4	—	—	—	46400	61100	13800	245
18.3	5219	2.2	78.6	22	—	310 R3	BN 160MR 4	—	—	—	56100	70000	24900	255
19.4	4921	2.2	74.1	11.0	307 L3	—	BN 160MR 4	M4LC 4	19600	24500	45100	60000	16900	234
19.4	4921	2.7	74.1	11.0	309 L3	—	BN 160MR 4	—	—	—	45600	60000	13500	244
20.1	4763	2.2	71.8	22	—	307 R3	BN 160MR 4	M4LC 4	19400	24200	44700	59500	16700	235
20.1	4763	2.2	71.8	22	—	309 R3	BN 160MR 4	—	—	—	45100	59500	13400	245
20.1	4763	2.2	71.8	22	—	310 R3	BN 160MR 4	—	—	—	54500	68100	24100	255
22.2	4315	2.2	65.0	22	—	307 R3	BN 160MR 4	M4LC 4	18700	23400	43400	57700	16200	235
22.2	4315	2.2	65.0	22	—	309 R3	BN 160MR 4	—	—	—	43800	57700	12900	245
22.2	4315	2.2	65.0	22	—	310 R3	BN 160MR 4	—	—	—	53000	66100	23400	255
23.8	4017	2.6	60.5	11.0	307 L3	—	BN 160MR 4	M4LC 4	18300	22900	42500	56500	15800	234
23.8	4017	2.8	60.5	11.0	309 L3	—	BN 160MR 4	—	—	—	42900	56500	12600	244
25.6	3857	1.4	56.3	13.0	306 L2	—	BN 160MR 4	M4LC 4	15500	17500	38500	45400	12000	224
25.8	3712	2.2	55.9	22	—	307 R3	BN 160MR 4	M4LC 4	17800	22300	41500	55200	15400	235
25.8	3712	2.2	55.9	22	—	309 R3	BN 160MR 4	—	—	—	41900	55200	12300	245
25.8	3712	2.2	55.9	22	—	310 R3	BN 160MR 4	—	—	—	50600	63200	22200	255
28.1	3402	2.8	51.3	11.0	307 L3	—	BN 160MR 4	M4LC 4	17300	21600	40400	53800	14900	234
28.1	3402	2.8	51.3	11.0	309 L3	—	BN 160MR 4	—	—	—	40800	53800	12000	244
31	3205	2.7	46.7	18.0	307 L2	—	BN 160MR 4	M4LC 4	16800	21000	39300	52300	14500	234
31	3189	2.0	46.5	13.0	306 L2	—	BN 160MR 4	M4LC 4	14500	16400	36400	42800	11300	224
32	2958	2.2	44.6	22	—	307 R3	BN 160MR 4	M4LC 4	16500	20700	38700	51500	14300	235
32	2958	2.2	44.6	22	—	309 R3	BN 160MR 4	—	—	—	39100	51500	11400	245
32	2958	2.2	44.6	22	—	310 R3	BN 160MR 4	—	—	—	47300	59000	20600	255
37	2636	2.5	38.4	13.0	306 L2	—	BN 160MR 4	M4LC 4	13600	15400	34300	40500	10600	224
38	2505	2.2	37.7	22	—	307 R3	BN 160MR 4	M4LC 4	15600	19500	36900	49000	13500	235
38	2505	2.2	37.7	22	—	309 R3	BN 160MR 4	—	—	—	37200	49000	10800	245
38	2505	2.2	37.7	22	—	310 R3	BN 160MR 4	—	—	—	45000	56100	19500	255
44	2268	2.8	33.1	13.0	306 L2	—	BN 160MR 4	M4LC 4	13000	14700	32800	38700	10000	224
46	2100	2.2	31.6	22	—	307 R3	BN 160MR 4	M4LC 4	14700	18400	35000	46500	12700	235
46	2100	2.2	31.6	22	—	309 R3	BN 160MR 4	—	—	—	35300	46500	10200	245
75	1318	2.2	19.2	18.0	—	306 R2	BN 160MR 4	M4LC 4	10800	12300	27900	32900	8380	225
91	1089	2.2	15.9	18.0	—	306 R2	BN 160MR 4	M4LC 4	10200	11500	26400	31000	7870	225
105	937	2.2	13.7	18.0	—	306 R2	BN 160MR 4	M4LC 4	9700	11000	25200	29700	7480	225
132	747	2.2	10.9	18.0	—	306 R2	BN 160MR 4	M4LC 4	9000	10200	23500	27700	6930	225
156	633	2.2	9.23	18.0	—	306 R2	BN 160MR 4	M4LC 4	8500	9600	22400	26400	6560	225
192	531	2.7	7.50	11.0	303 L1	—	BN 160MR 4	M4LC 4	6300	7340	13300	15400	4200	204
270	377	3.6	5.33	11.0	303 L1	—	BN160MR4	M4LC4	5700	6580	12000	13900	3750	303 L1
339	301	3.7	4.25	11.0	303 L1	—	BN160MR4	M4LC4	5300	6100	11200	13000	3480	303 L1








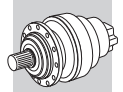
P₁ = 15 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.92	137689	1.2	1595	18.0	317 L4	—	BN 160L 4	—	—	—	442000	470000	150000	302
1.1	113823	1.5	1318	18.0	317 L4	—	BN 160L 4	—	—	—	434100	461600	147000	302
1.1	110605	1.0	1281	18.0	316 L4	—	BN 160L 4	—	—	—	335500	374900	106800	294
1.3	97912	1.7	1134	18.0	317 L4	—	BN 160L 4	—	—	—	414900	441200	139800	302
1.3	93857	1.0	1087	18.0	315 L4	—	BN 160L 4	—	—	—	190900	225200	82700	284
1.4	93164	1.4	1079	18.0	316 L4	—	BN 160L 4	—	—	—	318700	356100	100900	294
1.4	89134	2.0	1032	18.0	317 L4	—	BN 160L 4	—	—	—	403400	428900	135500	302
1.5	86658	1.2	1004	18.0	315 L4	—	BN 160L 4	—	—	—	186400	219900	80500	284
1.5	82311	1.7	953	50	—	317 R4	BN 160L 4	—	—	—	393900	418800	132000	303
1.6	79083	1.2	916	18.0	315 L4	—	BN 160L 4	—	—	—	181400	214000	78100	284
1.6	78902	1.0	914	40	—	315 R4	BN 160L 4	—	—	—	181300	213800	78100	285
1.6	78024	2.1	904	18.0	317 L4	—	BN 160L 4	—	—	—	387600	412200	129600	302
1.6	77017	1.6	892	18.0	316 L4	—	BN 160L 4	—	—	—	301000	336400	94700	294
1.7	72614	1.6	841	18.0	316 L4	—	BN 160L 4	—	—	—	295700	330500	92900	294
1.8	71637	1.4	830	18.0	315 L4	—	BN 160L 4	—	—	—	176100	207700	75600	284
1.8	69355	2.3	803	50	—	317 R4	BN 160L 4	—	—	—	374100	397800	124600	303
1.8	68383	2.6	792	18.0	317 L4	—	BN 160L 4	—	—	—	372600	396200	124100	302
1.9	66482	1.4	770	40	—	315 R4	BN 160L 4	—	—	—	172200	203100	73700	285
1.9	66311	1.9	768	18.0	316 L4	—	BN 160L 4	—	—	—	287800	321600	90100	294
1.9	64930	1.9	752	18.0	316 L4	—	BN 160L 4	—	—	—	286000	319600	89500	294
2.0	62085	2.9	719	18.0	317 L4	—	BN 160L 4	—	—	—	361900	384800	120100	302
2.0	61623	1.6	714	18.0	315 L4	—	BN 160L 4	—	—	—	168300	198500	71900	284
2.1	61217	2.0	709	18.0	316 L4	—	BN 160L 4	—	—	—	281000	314000	87700	294
2.2	58438	2.7	677	50	—	317 R4	BN 160L 4	—	—	—	355400	377900	117700	303
2.3	56017	1.6	649	40	—	315 R4	BN 160L 4	—	—	—	163600	192900	69600	285
2.3	55864	2.2	647	18.0	316 L4	—	BN 160L 4	—	—	—	273400	305500	85100	294
2.3	55821	1.8	647	18.0	315 L4	—	BN 160L 4	—	—	—	163400	192700	69600	284
2.3	55691	2.2	645	45	—	316 R4	BN 160L 4	—	—	—	273100	305200	85000	295
2.3	54648	1.0	633	11.0	313 L4	—	BN 160L 4	—	—	—	151300	182000	61400	274
2.3	54043	2.9	626	50	—	317 R4	BN 160L 4	—	—	—	347200	369200	114700	303
2.4	52842	2.3	612	18.0	316 L4	—	BN 160L 4	—	—	—	268800	300400	83500	294
2.4	51804	1.9	600	40	—	315 R4	BN 160L 4	—	—	—	159800	188500	67900	285
2.5	50597	2.4	586	18.0	316 L4	—	BN 160L 4	—	—	—	265400	296500	82300	294
2.6	49106	2.0	569	18.0	315 L4	—	BN 160L 4	—	—	—	157200	185500	66700	284
2.6	48676	1.1	564	11.0	313 L4	—	BN 160L 4	—	—	—	146100	175800	59100	274
2.6	47661	2.6	552	18.0	316 L4	—	BN 160L 4	—	—	—	260700	291300	80700	294
2.7	46970	2.7	544	45	—	316 R4	BN 160L 4	—	—	—	259500	290000	80300	295
2.7	46155	1.0	535	22	—	313 R4	BN 160L 4	—	—	—	143800	173000	58000	275
2.8	44350	1.1	514	11.0	313 L4	—	BN 160L 4	—	—	—	142100	171000	57300	274
2.8	44335	2.2	513	18.0	315 L4	—	BN 160L 4	—	—	—	152500	179900	64400	284
2.9	44217	1.0	512	11.0	311 L4	—	BN 160L 4	—	—	—	116100	144200	46500	264
2.9	43650	2.2	506	40	—	315 R4	BN 160L 4	—	—	—	151800	179000	64100	285
2.9	43517	2.8	504	18.0	316 L4	—	BN 160L 4	—	—	—	253600	283400	78300	294
2.9	42834	1.2	496	22	—	313 R4	BN 160L 4	—	—	—	140600	169200	56600	275
3.1	40460	2.4	469	18.0	315 L4	—	BN 160L 4	—	—	—	148300	175000	62500	284
3.2	39004	1.4	452	11.0	313 L4	—	BN 160L 4	—	—	—	136700	164500	54900	274
3.2	38890	1.2	450	22	—	313 R4	BN 160L 4	—	—	—	136600	164400	54800	275
3.3	37809	0.9	438	22	—	311 R4	BN 160L 4	—	—	—	110800	137600	44100	265
3.4	36650	2.6	424	18.0	315 L4	—	BN 160L 4	—	—	—	144000	169900	60500	284
3.5	36092	1.5	418	22	—	313 R4	BN 160L 4	—	—	—	133600	160700	53500	275
3.5	35639	1.2	413	22	—	311 R4	BN 160L 4	—	—	—	108800	135200	43300	265
3.6	35430	1.2	410	11.0	311 L4	—	BN 160L 4	—	—	—	108600	134900	43200	264
3.7	34025	1.6	394	11.0	313 L4	—	BN 160L 4	—	—	—	131300	157900	52400	274
3.7	34013	2.8	394	40	—	315 R4	BN 160L 4	—	—	—	140800	166100	59000	285
3.8	33453	1.4	387	22	—	313 R4	BN 160L 4	—	—	—	130600	157100	52100	275
3.9	32524	1.0	377	22	—	311 R4	BN 160L 4	—	—	—	105900	131500	42000	265
4.1	30392	1.6	352	11.0	313 L4	—	BN 160L 4	—	—	—	126900	152700	50500	274
4.2	30011	1.4	348	11.0	311 L4	—	BN 160L 4	—	—	—	103400	128400	40900	264
4.2	29836	1.7	346	22	—	313 R4	BN 160L 4	—	—	—	126200	151800	50200	275
4.3	29462	1.4	341	22	—	311 R4	BN 160L 4	—	—	—	102800	127700	40600	265
4.4	28851	0.9	334	15.0	—	310 R4	BN 160L 4	—	—	—	86500	108000	40300	255
4.5	27771	1.4	322	22	—	311 R4	BN 160L 4	—	—	—	101000	125400	39800	265



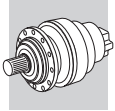
P₁ = 15 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
4.7	26658	1.7	309	22	—	313 R4	BN 160L 4	—	—	—	122000	146800	48300	275
4.8	27121	1.4	304	18.0	313 L3	—	BN 160L 4	—	—	—	121400	146100	48100	274
5.0	25343	1.5	294	22	—	311 R4	BN 160L 4	—	—	—	98300	122000	38600	265
5.0	25997	1.0	291	18.0	311 L3	—	BN 160L 4	—	—	—	98000	121700	38500	264
5.2	24438	0.9	283	15.0	—	310 R4	BN 160L 4	—	—	—	82300	102800	38100	255
5.2	24273	1.7	281	22	—	313 R4	BN 160L 4	—	—	—	118600	142700	46800	275
5.5	22957	1.6	266	22	—	311 R4	BN 160L 4	—	—	—	95400	118500	37400	265
5.7	22302	1.0	258	15.0	—	310 R4	BN 160L 4	—	—	—	80100	100000	37000	255
5.8	22531	2.0	252	18.0	313 L3	—	BN 160L 4	—	—	—	114800	138200	45200	274
6.0	21905	1.5	245	18.0	311 L3	—	BN 160L 4	—	—	—	93100	115600	36400	264
6.2	20452	1.7	237	22	—	313 R4	BN 160L 4	—	—	—	112700	135600	44200	275
6.2	20202	1.1	234	15.0	—	310 R4	BN 160L 4	—	—	—	77800	97100	35800	255
6.3	20546	1.1	230	18.0	310 L3	—	BN 160L 4	—	—	—	77400	96600	35600	254
6.6	19240	1.7	223	22	—	311 R4	BN 160L 4	—	—	—	90500	112400	35200	265
7.0	18626	2.4	209	18.0	313 L3	—	BN 160L 4	—	—	—	108500	130500	42400	274
7.1	17772	1.1	206	15.0	—	310 R4	BN 160L 4	—	—	—	74800	93400	34300	255
7.2	18108	1.8	203	18.0	311 L3	—	BN 160L 4	—	—	—	87900	109200	34100	264
7.2	18019	1.2	202	18.0	310 L3	—	BN 160L 4	—	—	—	74400	92800	34100	254
7.3	17324	1.7	201	22	—	313 R4	BN 160L 4	—	—	—	107200	129000	41900	275
7.4	17107	1.7	198	22	—	311 R4	BN 160L 4	—	—	—	87300	108500	33900	265
7.5	17286	2.9	194	18.0	313 L3	—	BN 160L 4	—	—	—	106100	127600	41400	274
7.6	17069	2.0	191	18.0	311 L3	—	BN 160L 4	—	—	—	86400	107300	33500	264
7.7	16349	1.1	189	15.0	—	310 R4	BN 160L 4	—	—	—	73000	91100	33400	255
7.9	15937	1.7	185	22	—	313 R4	BN 160L 4	—	—	—	104500	125800	40700	275
8.0	15737	1.7	182	22	—	311 R4	BN 160L 4	—	—	—	85200	105800	32900	265
8.2	15824	1.1	177	18.0	310 L3	—	BN 160L 4	—	—	—	71500	89300	32600	254
8.3	15694	2.9	176	18.0	313 L3	—	BN 160L 4	—	—	—	103000	124000	40100	274
8.5	15258	2.1	171	18.0	311 L3	—	BN 160L 4	—	—	—	83500	103800	32200	264
8.9	14610	1.5	164	18.0	310 L3	—	BN 160L 4	—	—	—	69900	87200	31800	254
9.0	14423	1.1	162	11.0	309 L3	—	BN 160L 4	—	—	—	57500	75900	17500	244
9.1	14382	2.3	161	18.0	311 L3	—	BN 160L 4	—	—	—	82100	101900	31600	264
9.1	13848	1.1	160	15.0	—	310 R4	BN 160L 4	—	—	—	69400	86700	31600	255
9.5	13330	1.7	154	22	—	311 R4	BN 160L 4	—	—	—	81000	100600	31200	265
9.5	13661	2.9	153	40	—	313 R3	BN 160L 4	—	—	—	98800	118900	38200	275
9.6	13641	1.0	153	11.0	309 L3	—	BN 160L 4	—	—	—	56600	74600	17200	244
9.9	13125	2.3	147	18.0	311 L3	—	BN 160L 4	—	—	—	79800	99200	30700	264
10.0	13095	2.1	147	40	—	311 R3	BN 160L 4	—	—	—	79800	99100	30600	265
10.3	12656	1.6	142	18.0	310 L3	—	BN 160L 4	—	—	—	66900	83500	30300	254
10.5	12390	1.3	139	11.0	309 L3	—	BN 160L 4	—	—	—	55000	72500	16700	244
10.7	11730	1.1	136	15.0	—	310 R4	BN 160L 4	—	—	—	66100	82500	29900	255
11.0	11889	2.6	133	18.0	311 L3	—	BN 160L 4	—	—	—	77500	96300	29700	264
11.2	11643	1.8	130	18.0	310 L3	—	BN 160L 4	—	—	—	65300	81400	29500	254
11.6	11239	1.1	126	11.0	307 L3	—	BN 160L 4	—	23400	29200	52900	70400	20200	234
11.6	11239	1.4	126	11.0	309 L3	—	BN 160L 4	—	—	—	53400	70400	16100	244
11.6	11207	2.7	126	18.0	311 L3	—	BN 160L 4	—	—	—	76200	94600	29100	264
11.8	11034	2.6	124	40	—	311 R3	BN 160L 4	—	—	—	75800	94100	28900	265
12.2	10692	1.2	120	22	—	309 R3	BN 160L 4	—	—	—	52600	69300	15900	245
12.2	10692	1.7	120	22	—	310 R3	BN 160L 4	—	—	—	63600	79400	28600	255
12.3	10625	1.8	119	18.0	310 L3	—	BN 160L 4	—	—	—	63500	79200	28600	254
12.7	10227	2.9	115	18.0	311 L3	—	BN 160L 4	—	—	—	74100	92000	28200	264
12.9	10114	1.0	113	11.0	307 L3	—	BN 160L 4	—	22500	28100	51300	68200	19500	234
12.9	10114	1.6	113	11.0	309 L3	—	BN 160L 4	—	—	—	51700	68200	15600	244
13.2	9862	2.0	110	18.0	310 L3	—	BN 160L 4	—	—	—	62100	77500	27900	254
14.0	9297	2.9	104	40	—	311 R3	BN 160L 4	—	—	—	72000	89400	27300	265
14.5	9000	2.1	101	18.0	310 L3	—	BN 160L 4	—	—	—	60400	75400	27000	254
14.6	8956	1.4	100	11.0	307 L3	—	BN 160L 4	—	21600	27000	49400	65800	18700	234
14.6	8956	1.6	100	11.0	309 L3	—	BN 160L 4	—	—	—	49900	65800	15000	244
14.7	8839	1.0	99.0	22	—	307 R3	BN 160L 4	M5SB 4	21600	26900	49200	65500	18600	235
14.7	8839	1.5	99.0	22	—	309 R3	BN 160L 4	—	—	—	49700	65500	14900	245
14.7	8839	1.7	99.0	22	—	310 R3	BN 160L 4	—	—	—	60100	75000	26900	255
15.7	8305	1.4	93.0	11.0	307 L3	—	BN 160L 4	—	21100	26400	48300	64300	18200	234
15.7	8305	1.7	93.0	11.0	309 L3	—	BN 160L 4	—	—	—	48800	64300	14600	244








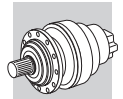
P₁ = 15 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
16.0	8153	2.3	91.3	18.0	310 L3	—	BN 160L 4	—	—	—	58600	73200	26200	254
17.5	7447	1.4	83.4	22	—	307 R3	BN 160L 4	M5SB 4	20400	25400	46800	62200	17600	235
17.5	7447	1.7	83.4	22	—	309 R3	BN 160L 4	—	—	—	47200	62200	14100	245
17.5	7447	1.7	83.4	22	—	310 R3	BN 160L 4	—	—	—	57100	71200	25400	255
18.1	7194	1.5	80.6	11.0	307 L3	—	BN 160L 4	—	20100	25100	46300	61600	17400	234
18.1	7194	2.0	80.6	11.0	309 L3	—	BN 160L 4	—	—	—	46700	61600	13900	244
18.2	7172	2.4	80.3	18.0	310 L3	—	BN 160L 4	—	—	—	56400	70400	25100	254
18.6	7020	1.6	78.6	22	—	307 R3	BN 160L 4	M5SB 4	20000	24900	45900	61100	17200	235
18.6	7020	1.7	78.6	22	—	309 R3	BN 160L 4	—	—	—	46400	61100	13800	245
18.6	7020	1.7	78.6	22	—	310 R3	BN 160L 4	—	—	—	56100	70000	24900	255
19.7	6618	1.7	74.1	11.0	307 L3	—	BN 160L 4	—	19600	24500	45100	60000	16900	234
19.7	6618	2.0	74.1	11.0	309 L3	—	BN 160L 4	—	—	—	45600	60000	13500	244
19.8	6598	2.7	73.9	18.0	310 L3	—	BN 160L 4	—	—	—	55000	68700	24400	254
20.3	6406	1.6	71.8	22	—	307 R3	BN 160L 4	M5SB 4	19400	24200	44700	59500	16700	235
20.3	6406	1.7	71.8	22	—	309 R3	BN 160L 4	—	—	—	45100	59500	13400	245
20.3	6406	1.7	71.8	22	—	310 R3	BN 160L 4	—	—	—	54500	68100	24100	255
22.5	5803	1.7	65.0	22	—	307 R3	BN 160L 4	M5SB 4	18700	23400	43400	57700	16200	235
22.5	5803	1.7	65.0	22	—	309 R3	BN 160L 4	—	—	—	43800	57700	12900	245
22.5	5803	1.7	65.0	22	—	310 R3	BN 160L 4	—	—	—	53000	66100	23400	255
23.3	5588	2.8	62.6	18.0	310 L3	—	BN 160L 4	—	—	—	52400	65300	23100	254
24.1	5402	1.9	60.5	11.0	307 L3	—	BN 160L 4	—	18300	22900	42500	56500	15800	234
24.1	5402	2.1	60.5	11.0	309 L3	—	BN 160L 4	—	—	—	42900	56500	12600	244
26.0	5188	1.1	56.3	13.0	306 L2	—	BN 160L 4	M5SB 4	15500	17500	38500	45400	12000	224
26.1	4992	1.7	55.9	22	—	307 R3	BN 160L 4	M5SB 4	17800	22300	41500	55200	15400	235
26.1	4992	1.7	55.9	22	—	309 R3	BN 160L 4	—	—	—	41900	55200	12300	245
26.1	4992	1.7	55.9	22	—	310 R3	BN 160L 4	—	—	—	50600	63200	22200	255
27.5	4734	2.8	53.0	18.0	310 L3	—	BN 160L 4	—	—	—	49800	62200	21800	254
28.5	4576	2.1	51.3	11.0	307 L3	—	BN 160L 4	—	17300	21600	40400	53800	14900	234
28.5	4576	2.1	51.3	11.0	309 L3	—	BN 160L 4	—	—	—	40800	53800	12000	244
31	4310	2.0	46.7	18.0	307 L2	—	BN 160L 4	M5SB 4	16800	21000	39300	52300	14500	234
31	4310	2.9	46.7	18.0	309 L2	—	BN 160L 4	—	—	—	39700	52300	11600	244
31	4289	1.5	46.5	13.0	306 L2	—	BN 160L 4	M5SB 4	14500	16400	36400	42800	11300	224
33	3978	1.7	44.6	22	—	307 R3	BN 160L 4	M5SB 4	16500	20700	38700	51500	14300	235
33	3978	1.7	44.6	22	—	309 R3	BN 160L 4	—	—	—	39100	51500	11400	245
33	3978	1.7	44.6	22	—	310 R3	BN 160L 4	—	—	—	47300	59000	20600	255
38	3563	2.4	38.6	18.0	307 L2	—	BN 160L 4	M5SB 4	15800	19700	37100	49400	13600	234
38	3545	1.8	38.4	13.0	306 L2	—	BN 160L 4	M5SB 4	13600	15400	34300	40500	10600	224
39	3370	1.7	37.7	22	—	307 R3	BN 160L 4	M5SB 4	15600	19500	36900	49000	13500	235
39	3370	1.7	37.7	22	—	309 R3	BN 160L 4	—	—	—	37200	49000	10800	245
39	3370	1.7	37.7	22	—	310 R3	BN 160L 4	—	—	—	45000	56100	19500	255
44	3050	2.1	33.1	13.0	306 L2	—	BN 160L 4	M5SB 4	13000	14700	32800	38700	10000	224
45	3002	2.8	32.6	18.0	307 L2	—	BN 160L 4	M5SB 4	14900	18600	35300	46900	12800	234
46	2824	1.7	31.6	22	—	307 R3	BN 160L 4	M5SB 4	14700	18400	35000	46500	12700	235
46	2824	1.7	31.6	22	—	309 R3	BN 160L 4	—	—	—	35300	46500	10200	245
48	2830	3.0	30.7	18.0	307 L2	—	BN 160L 4	M5SB 4	14600	18200	34600	46100	12600	234
51	2623	2.3	28.4	13.0	306 L2	—	BN 160L 4	M5SB 4	12300	14000	31400	37000	9550	224
55	2430	2.4	26.4	13.0	306 L2	—	BN 160L 4	M5SB 4	12000	13600	30700	36100	9310	224
64	2091	2.7	22.7	13.0	306 L2	—	BN 160L 4	M5SB 4	11400	13000	29300	34500	8850	224
76	1773	1.7	19.2	18.0	—	306 R2	BN 160L 4	M5SB 4	10800	12300	27900	32900	8380	225
81	1666	2.8	18.1	13.0	306 L2	—	BN 160L 4	M5SB 4	10600	12000	27400	32300	8210	224
92	1465	1.7	15.9	18.0	—	306 R2	BN 160L 4	M5SB 4	10200	11500	26400	31000	7870	225
95	1411	2.8	15.3	13.0	306 L2	—	BN 160L 4	M5SB 4	10000	11400	26100	30700	7770	224
107	1260	1.7	13.7	18.0	—	306 R2	BN 160L 4	M5SB 4	9700	11000	25200	29700	7480	225
113	1195	2.8	13.0	13.0	306 L2	—	BN 160L 4	M5SB 4	9500	10800	24800	29200	7350	224
134	1004	1.7	10.9	18.0	—	306 R2	BN 160L 4	M5SB 4	9000	10200	23500	27700	6930	225
158	851	1.7	9.23	18.0	—	306 R2	BN 160L 4	M5SB 4	8500	9600	22400	26400	6560	225
195	714	2.0	7.50	11.0	303 L1	—	BN 160L 4	M5SB 4	6300	7340	13300	15400	4200	204
195	714	3.5	7.50	13.0	305 L1	—	BN 160L 4	M5SB 4	6300	7340	13300	15400	4200	214
235	590	2.4	6.20	11.0	303 L1	—	BN 160L 4	M5SB 4	6000	6960	12600	14600	3940	204
274	508	2.7	5.33	11.0	303 L1	—	BN 160L 4	M5SB 4	5700	6580	12000	13900	3750	204
344	404	2.8	4.25	11.0	303 L1	—	BN 160L 4	M5SB 4	5300	6100	11200	13000	3480	204








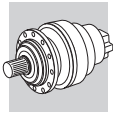
$P_1 = 18.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.92	169817	1.0	1595	18.0	317 L4	—	BN 180M 4	—	—	—	442000	470000	150000	302
1.0	148610	2.3	1396	30	319 L4	—	BN 180M 4	—	—	—	637400	701300	199800	318
1.1	140382	1.2	1318	18.0	317 L4	—	BN 180M 4	—	—	—	434100	461600	147000	302
1.1	136412	0.9	1281	18.0	316 L4	—	BN 180M 4	—	—	—	335500	374900	106800	294
1.2	125575	2.4	1179	30	319 L4	—	BN 180M 4	—	—	—	606000	666800	188900	318
1.3	120759	1.4	1134	18.0	317 L4	—	BN 180M 4	—	—	—	414900	441200	139800	302
1.4	114902	1.1	1079	18.0	316 L4	—	BN 180M 4	—	—	—	318700	356100	100900	294
1.4	113304	2.1	1064	18.0	318 L4	—	BN 180M 4	—	—	—	463300	520400	155200	310
1.4	109931	1.6	1032	18.0	317 L4	—	BN 180M 4	—	—	—	403400	428900	135500	302
1.5	106878	1.0	1004	18.0	315 L4	—	BN 180M 4	—	—	—	186400	219900	80500	284
1.5	101517	1.3	953	50	—	317 R4	BN 180M 4	—	—	—	393900	418800	132000	303
1.6	97536	1.0	916	18.0	315 L4	—	BN 180M 4	—	—	—	181400	214000	78100	284
1.6	96229	1.7	904	18.0	317 L4	—	BN 180M 4	—	—	—	387600	412200	129600	302
1.6	95521	2.6	897	18.0	318 L4	—	BN 180M 4	—	—	—	440200	494400	146600	310
1.6	94988	1.3	892	18.0	316 L4	—	BN 180M 4	—	—	—	301000	336400	94700	294
1.7	89557	1.3	841	18.0	316 L4	—	BN 180M 4	—	—	—	295700	330500	92900	294
1.8	88352	1.1	830	18.0	315 L4	—	BN 180M 4	—	—	—	176100	207700	75600	284
1.8	85537	1.9	803	50	—	317 R4	BN 180M 4	—	—	—	374100	397800	124600	303
1.8	84339	2.1	792	18.0	317 L4	—	BN 180M 4	—	—	—	372600	396200	124100	302
1.9	81994	1.1	770	40	—	315 R4	BN 180M 4	—	—	—	172200	203100	73700	285
1.9	81784	1.5	768	18.0	316 L4	—	BN 180M 4	—	—	—	287800	321600	90100	294
1.9	80080	1.5	752	18.0	316 L4	—	BN 180M 4	—	—	—	286000	319600	89500	294
2.0	76572	2.3	719	18.0	317 L4	—	BN 180M 4	—	—	—	361900	384800	120100	302
2.0	76002	1.3	714	18.0	315 L4	—	BN 180M 4	—	—	—	168300	198500	71900	284
2.1	75501	1.6	709	18.0	316 L4	—	BN 180M 4	—	—	—	281000	314000	87700	294
2.1	74010	2.9	695	110	—	318 R4 (C)	BN 180M 4	—	—	—	407700	458000	134700	311
2.2	72073	2.2	677	50	—	317 R4	BN 180M 4	—	—	—	355400	377900	117700	303
2.3	69088	1.3	649	40	—	315 R4	BN 180M 4	—	—	—	163600	192900	69600	285
2.3	68898	1.8	647	18.0	316 L4	—	BN 180M 4	—	—	—	273400	305500	85100	294
2.3	68846	1.4	647	18.0	315 L4	—	BN 180M 4	—	—	—	163400	192700	69600	284
2.3	68685	1.7	645	45	—	316 R4	BN 180M 4	—	—	—	273100	305200	85000	295
2.3	66652	2.3	626	50	—	317 R4	BN 180M 4	—	—	—	347200	369200	114700	303
2.4	65868	2.7	619	18.0	317 L4	—	BN 180M 4	—	—	—	345900	367900	114200	302
2.4	65171	1.9	612	18.0	316 L4	—	BN 180M 4	—	—	—	268800	300400	83500	294
2.4	63892	1.5	600	40	—	315 R4	BN 180M 4	—	—	—	159800	188500	67900	285
2.5	62403	2.0	586	18.0	316 L4	—	BN 180M 4	—	—	—	265400	296500	82300	294
2.6	60564	1.6	569	18.0	315 L4	—	BN 180M 4	—	—	—	157200	185500	66700	284
2.6	58782	2.1	552	18.0	316 L4	—	BN 180M 4	—	—	—	260700	291300	80700	294
2.7	57930	2.2	544	45	—	316 R4	BN 180M 4	—	—	—	259500	290000	80300	295
2.8	55373	2.8	520	50	—	317 R4	BN 180M 4	—	—	—	328400	349200	107800	303
2.8	54680	1.8	513	18.0	315 L4	—	BN 180M 4	—	—	—	152500	179900	64400	284
2.9	53835	1.8	506	40	—	315 R4	BN 180M 4	—	—	—	151800	179000	64100	285
2.9	53670	2.3	504	18.0	316 L4	—	BN 180M 4	—	—	—	253600	283400	78300	294
3.1	49900	1.9	469	18.0	315 L4	—	BN 180M 4	—	—	—	148300	175000	62500	284
3.2	48772	2.6	458	45	—	316 R4	BN 180M 4	—	—	—	246400	275400	75800	295
3.2	48665	2.5	457	18.0	316 L4	—	BN 180M 4	—	—	—	246300	275200	75800	294
3.3	46657	2.8	438	50	—	317 R4	BN 180M 4	—	—	—	311900	331700	101800	303
3.4	45202	2.1	424	18.0	315 L4	—	BN 180M 4	—	—	—	144000	169900	60500	284
3.4	45151	2.6	424	45	—	316 R4	BN 180M 4	—	—	—	240800	269100	73900	295
3.7	42482	2.8	399	50	—	317 R4	BN 180M 4	—	—	—	303300	322500	98700	303
3.7	41949	2.3	394	40	—	315 R4	BN 180M 4	—	—	—	140800	166100	59000	285
3.8	40785	2.9	383	18.0	316 L4	—	BN 180M 4	—	—	—	233600	261000	71500	294
4.1	37883	2.5	356	18.0	315 L4	—	BN 180M 4	—	—	—	136600	161100	57000	284
4.3	35795	2.8	336	50	—	317 R4	BN 180M 4	—	—	—	288100	306300	93200	303
4.4	35346	2.6	332	40	—	315 R4	BN 180M 4	—	—	—	133800	157800	55700	285
4.8	33449	1.2	304	18.0	313 L3	—	BN 180M 4	—	—	—	121400	146100	48100	274
5.0	30985	2.9	291	18.0	315 L4	—	BN 180M 4	—	—	—	128600	151700	53300	284
5.6	27892	2.8	262	50	—	317 R4	BN 180M 4	—	—	—	267300	284300	85800	303
5.6	27542	2.8	259	40	—	315 R4	BN 180M 4	—	—	—	124100	146400	51300	285
5.8	27788	1.6	252	18.0	313 L3	—	BN 180M 4	—	—	—	114800	138200	45200	274
6.0	27016	1.2	245	18.0	311 L3	—	BN 180M 4	—	—	—	93100	115600	36400	264
6.0	26637	2.4	242	30	315 L3	—	BN 180M 4	—	—	—	121700	143500	50100	284
6.7	23376	2.8	220	50	—	317 R4	BN 180M 4	—	—	—	253500	269600	80900	303








$P_1 = 18.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
6.7	23083	2.8	217	40	—	315 R4	BN 180M 4	—	—	—	117700	138900	48300	285
7.0	22972	2.0	209	18.0	313 L3	—	BN 180M 4	—	—	—	108500	130500	42400	274
7.2	22333	1.4	203	18.0	311 L3	—	BN 180M 4	—	—	—	87900	109200	34100	264
7.2	22223	1.0	202	18.0	310 L3	—	BN 180M 4	—	—	—	74400	92800	34100	254
7.5	21319	2.3	194	18.0	313 L3	—	BN 180M 4	—	—	—	106100	127600	41400	274
7.6	21052	1.6	191	18.0	311 L3	—	BN 180M 4	—	—	—	86400	107300	33500	264
8.2	19517	0.9	177	18.0	310 L3	—	BN 180M 4	—	—	—	71500	89300	32600	254
8.3	19356	2.3	176	18.0	313 L3	—	BN 180M 4	—	—	—	103000	124000	40100	274
8.5	18818	1.7	171	18.0	311 L3	—	BN 180M 4	—	—	—	83500	103800	32200	264
8.9	18020	1.2	164	18.0	310 L3	—	BN 180M 4	—	—	—	69900	87200	31800	254
9.0	17963	2.6	163	18.0	313 L3	—	BN 180M 4	—	—	—	100700	121200	39100	274
9.1	17738	1.8	161	18.0	311 L3	—	BN 180M 4	—	—	—	82100	101900	31600	264
9.5	16848	2.3	153	40	—	313 R3	BN 180M 4	—	—	—	98800	118900	38200	275
9.7	16650	2.7	151	18.0	313 L3	—	BN 180M 4	—	—	—	98500	118500	38100	274
9.9	16188	1.9	147	18.0	311 L3	—	BN 180M 4	—	—	—	79800	99200	30700	264
10.0	16150	1.7	147	40	—	311 R3	BN 180M 4	—	—	—	79800	99100	30600	265
10.3	15609	1.3	142	18.0	310 L3	—	BN 180M 4	—	—	—	66900	83500	30300	254
10.8	14850	3.0	135	18.0	313 L3	—	BN 180M 4	—	—	—	95200	114500	36700	274
11.0	14663	2.1	133	18.0	311 L3	—	BN 180M 4	—	—	—	77500	96300	29700	264
11.2	14359	1.4	130	18.0	310 L3	—	BN 180M 4	—	—	—	65300	81400	29500	254
11.5	13997	2.8	127	40	—	313 R3	BN 180M 4	—	—	—	93500	112500	36000	275
11.6	13822	2.2	126	18.0	311 L3	—	BN 180M 4	—	—	—	76200	94600	29100	264
11.8	13608	2.1	124	40	—	311 R3	BN 180M 4	—	—	—	75800	94100	28900	265
12.3	13104	1.5	119	18.0	310 L3	—	BN 180M 4	—	—	—	63500	79200	28600	254
12.7	12614	2.3	115	18.0	311 L3	—	BN 180M 4	—	—	—	74100	92000	28200	264
13.2	12163	1.6	110	18.0	310 L3	—	BN 180M 4	—	—	—	62100	77500	27900	254
13.6	11794	2.8	107	40	—	313 R3	BN 180M 4	—	—	—	88800	106800	34000	275
14.0	11466	2.4	104	40	—	311 R3	BN 180M 4	—	—	—	72000	89400	27300	265
14.1	11426	2.5	104	18.0	311 L3	—	BN 180M 4	—	—	—	71900	89300	27300	264
14.5	11100	1.7	101	18.0	310 L3	—	BN 180M 4	—	—	—	60400	75400	27000	254
15.0	10738	2.8	97.5	40	—	313 R3	BN 180M 4	—	—	—	86300	103900	32900	275
15.2	10604	2.6	96.3	40	—	311 R3	BN 180M 4	—	—	—	70300	87400	26600	265
16.0	10055	1.9	91.3	18.0	310 L3	—	BN 180M 4	—	—	—	58600	73200	26200	254
16.8	9576	2.8	87.0	18.0	311 L3	—	BN 180M 4	—	—	—	68200	84700	25700	264
17.8	9048	2.8	82.2	40	—	313 R3	BN 180M 4	—	—	—	82000	98700	31100	275
18.0	8935	2.8	81.1	40	—	311 R3	BN 180M 4	—	—	—	66800	83000	25200	265
18.2	8845	2.0	80.3	18.0	310 L3	—	BN 180M 4	—	—	—	56400	70400	25100	254
19.8	8137	2.2	73.9	18.0	310 L3	—	BN 180M 4	—	—	—	55000	68700	24400	254
20.9	7702	2.8	69.9	40	—	313 R3	BN 180M 4	—	—	—	78100	94000	29500	275
21.5	7488	2.8	68.0	40	—	311 R3	BN 180M 4	—	—	—	63400	78700	23700	265
22.8	7050	2.8	64.0	40	—	313 R3	BN 180M 4	—	—	—	76100	91600	28600	275
23.1	6962	2.8	63.2	40	—	311 R3	BN 180M 4	—	—	—	62000	77000	23100	265
23.3	6892	2.3	62.6	18.0	310 L3	—	BN 180M 4	—	—	—	52400	65300	23100	254
27.2	5909	2.8	53.7	40	—	313 R3	BN 180M 4	—	—	—	72200	86800	27000	275
27.5	5838	2.3	53.0	18.0	310 L3	—	BN 180M 4	—	—	—	49800	62200	21800	254
27.6	5835	2.8	53.0	40	—	311 R3	BN 180M 4	—	—	—	58800	73000	21800	265
31	5316	1.6	46.7	18.0	307 L2	—	BN 180M 4	M5LA 4	16800	21000	39300	52300	14500	234
31	5316	2.4	46.7	18.0	309 L2	—	BN 180M 4	—	—	—	39700	52300	11600	244
31	5316	2.8	46.7	22	310 L2	—	BN 180M 4	—	—	—	48000	59900	20900	254
31	5289	1.2	46.5	13.0	306 L2	—	BN 180M 4	M5LA 4	14500	16400	36400	42800	11300	224
38	4394	2.0	38.6	18.0	307 L2	—	BN 180M 4	M5LA 4	15800	19700	37100	49400	13600	234
38	4394	2.7	38.6	18.0	309 L2	—	BN 180M 4	—	—	—	37500	49400	10900	244
38	4373	1.5	38.4	13.0	306 L2	—	BN 180M 4	M5LA 4	13600	15400	34300	40500	10600	224
44	3761	1.7	33.1	13.0	306 L2	—	BN 180M 4	M5LA 4	13000	14700	32800	38700	10000	224
45	3703	2.3	32.6	18.0	307 L2	—	BN 180M 4	M5LA 4	14900	18600	35300	46900	12800	234
48	3490	2.4	30.7	18.0	307 L2	—	BN 180M 4	M5LA 4	14600	18200	34600	46100	12600	234
48	3490	2.8	30.7	18.0	309 L2	—	BN 180M 4	—	—	—	35000	46100	10100	244
51	3236	1.9	28.4	13.0	306 L2	—	BN 180M 4	M5LA 4	12300	14000	31400	37000	9550	224
52	3185	2.5	28.0	18.0	307 L2	—	BN 180M 4	M5LA 4	14200	17700	33700	44800	12200	234
55	2997	1.9	26.4	13.0	306 L2	—	BN 180M 4	M5LA 4	12000	13600	30700	36100	9310	224
58	2885	2.8	25.4	18.0	307 L2	—	BN 180M 4	M5LA 4	13700	17100	32700	43500	11800	234
62	2677	2.8	23.5	35	—	307 R2	BN 180M 4	M5LA 4	13400	16700	32000	42600	11500	235
62	2677	2.8	23.5	35	—	309 R2	BN 180M 4	—	—	—	32300	42600	9220	245

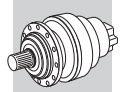


P₁ = 18.5 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
64	2578	2.2	22.7	13.0	306 L2	—	BN 180M 4	M5LA 4	11400	13000	29300	34500	8850	224
74	2256	2.8	19.8	35	—	307 R2	BN 180M 4	M5LA 4	12600	15800	30400	40400	10900	235
74	2256	2.8	19.8	35	—	309 R2	BN 180M 4	—	—	—	30700	40400	8710	245
81	2055	2.3	18.1	13.0	306 L2	—	BN 180M 4	M5LA 4	10600	12000	27400	32300	8210	224
94	1758	2.8	15.5	35	—	307 R2	BN 180M 4	M5LA 4	11600	14500	28200	37500	10000	235
94	1758	2.8	15.5	35	—	309 R2	BN 180M 4	—	—	—	28500	37500	8020	245
95	1740	2.3	15.3	13.0	306 L2	—	BN 180M 4	M5LA 4	10000	11400	26100	30700	7770	224
113	1474	2.3	13.0	13.0	306 L2	—	BN 180M 4	M5LA 4	9500	10800	24800	29200	7350	224
113	1473	2.8	13.0	35	—	307 R2	BN 180M 4	M5LA 4	11000	13700	26700	35600	9450	235
113	1473	2.8	13.0	35	—	309 R2	BN 180M 4	—	—	—	27000	35600	7560	245
195	880	1.6	7.50	11.0	303 L1	—	BN 180M 4	M5LA 4	6300	7340	13300	15400	4200	204
195	880	2.8	7.50	13.0	305 L1	—	BN 180M 4	M5LA 4	6300	7340	13300	15400	4200	214
235	728	1.9	6.20	11.0	303 L1	—	BN 180M 4	M5LA 4	6000	6960	12600	14600	3940	204
235	728	3.3	6.20	13.0	305 L1	—	BN 180M 4	M5LA 4	6000	6960	12600	14600	3940	214
274	626	2.2	5.33	11.0	303 L1	—	BN 180M 4	M5LA 4	5700	6580	12000	13900	3750	204
274	626	3.4	5.33	13.0	305 L1	—	BN 180M 4	M5LA 4	5700	6580	12000	13900	3750	214
344	499	2.2	4.25	11.0	303 L1	—	BN 180M 4	M5LA 4	5300	6100	11200	13000	3480	204
344	499	3.4	4.25	13.0	305 L1	—	BN 180M 4	M5LA 4	5300	6100	11200	13000	3480	214

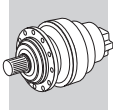
P₁ = 22 kW n₁=1400 min⁻¹

1.0	176122	1.9	1396	30	319 L4	—	BN 180L 4	—	—	—	637400	701300	199800	318
1.1	166371	1.0	1318	18.0	317 L4	—	BN 180L 4	—	—	—	434100	461600	147000	302
1.2	148823	2.1	1179	30	319 L4	—	BN 180L 4	—	—	—	606000	666800	188900	318
1.3	143115	1.2	1134	18.0	317 L4	—	BN 180L 4	—	—	—	414900	441200	139800	302
1.4	136173	0.9	1079	18.0	316 L4	—	BN 180L 4	—	—	—	318700	356100	100900	294
1.4	134280	1.8	1064	18.0	318 L4	—	BN 180L 4	—	—	—	463300	520400	155200	310
1.4	130283	1.4	1032	18.0	317 L4	—	BN 180L 4	—	—	—	403400	428900	135500	302
1.5	125040	2.6	991	30	319 L4	—	BN 180L 4	—	—	—	575100	632800	178200	318
1.5	122488	2.6	971	95	—	319 R4 (A)	BN 180L 4	—	—	—	571600	628900	177000	319
1.5	120311	1.1	953	50	—	317 R4	BN 180L 4	—	—	—	393900	418800	132000	303
1.6	115636	2.7	916	30	319 L4	—	BN 180L 4	—	—	—	561800	618200	173600	318
1.6	114971	2.8	911	115	—	319 R4 (C)	BN 180L 4	—	—	—	560900	617100	173400	319
1.6	114045	1.4	904	18.0	317 L4	—	BN 180L 4	—	—	—	387600	412200	129600	302
1.6	113204	2.2	897	18.0	318 L4	—	BN 180L 4	—	—	—	440200	494400	146600	310
1.6	112573	1.1	892	18.0	316 L4	—	BN 180L 4	—	—	—	301000	336400	94700	294
1.7	106137	1.1	841	18.0	316 L4	—	BN 180L 4	—	—	—	295700	330500	92900	294
1.8	104709	1.0	830	18.0	315 L4	—	BN 180L 4	—	—	—	176100	207700	75600	284
1.8	103503	3.0	820	95	—	319 R4 (A)	BN 180L 4	—	—	—	543400	597900	167300	319
1.8	101373	1.6	803	50	—	317 R4	BN 180L 4	—	—	—	374100	397800	124600	303
1.8	99953	1.8	792	18.0	317 L4	—	BN 180L 4	—	—	—	372600	396200	124100	302
1.9	97174	0.9	770	40	—	315 R4	BN 180L 4	—	—	—	172200	203100	73700	285
1.9	96924	1.3	768	18.0	316 L4	—	BN 180L 4	—	—	—	287800	321600	90100	294
1.9	95410	2.6	756	18.0	318 L4	—	BN 180L 4	—	—	—	418200	469700	138500	310
1.9	94905	1.3	752	18.0	316 L4	—	BN 180L 4	—	—	—	286000	319600	89500	294
2.0	90748	2.0	719	18.0	317 L4	—	BN 180L 4	—	—	—	361900	384800	120100	302
2.1	90072	1.1	714	18.0	315 L4	—	BN 180L 4	—	—	—	168300	198500	71900	284
2.1	89478	1.4	709	18.0	316 L4	—	BN 180L 4	—	—	—	281000	314000	87700	294
2.1	88090	2.8	698	18.0	318 L4	—	BN 180L 4	—	—	—	408300	458600	134900	310
2.1	87711	2.5	695	110	—	318 R4 (C)	BN 180L 4	—	—	—	407700	458000	134700	311
2.2	85416	1.8	677	50	—	317 R4	BN 180L 4	—	—	—	355400	377900	117700	303
2.3	81878	1.1	649	40	—	315 R4	BN 180L 4	—	—	—	163600	192900	69600	285
2.3	81654	1.5	647	18.0	316 L4	—	BN 180L 4	—	—	—	273400	305500	85100	294
2.3	81591	1.2	647	18.0	315 L4	—	BN 180L 4	—	—	—	163400	192700	69600	284
2.3	81401	1.5	645	45	—	316 R4	BN 180L 4	—	—	—	273100	305200	85000	295
2.3	80392	2.9	637	18.0	318 L4	—	BN 180L 4	—	—	—	397200	446200	130800	310
2.3	78992	2.0	626	50	—	317 R4	BN 180L 4	—	—	—	347200	369200	114700	303
2.4	78063	2.3	619	18.0	317 L4	—	BN 180L 4	—	—	—	345900	367900	114200	302
2.4	77236	1.6	612	18.0	316 L4	—	BN 180L 4	—	—	—	268800	300400	83500	294
2.4	75720	1.3	600	40	—	315 R4	BN 180L 4	—	—	—	159800	188500	67900	285








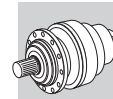
P₁ = 22 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.5	74334	2.9	589	18.0	318 L4	—	BN 180L 4	—	—	—	388000	435800	127400	310
2.5	73955	1.7	586	18.0	316 L4	—	BN 180L 4	—	—	—	265400	296500	82300	294
2.6	71776	1.4	569	18.0	315 L4	—	BN 180L 4	—	—	—	157200	185500	66700	284
2.7	69664	1.8	552	18.0	316 L4	—	BN 180L 4	—	—	—	260700	291300	80700	294
2.7	69621	2.5	552	18.0	317 L4	—	BN 180L 4	—	—	—	334300	355400	110000	302
2.7	68655	1.8	544	45	—	316 R4	BN 180L 4	—	—	—	259500	290000	80300	295
2.8	65624	2.4	520	50	—	317 R4	BN 180L 4	—	—	—	328400	349200	107800	303
2.9	64803	1.5	513	18.0	315 L4	—	BN 180L 4	—	—	—	152500	179900	64400	284
2.9	63801	1.5	506	40	—	315 R4	BN 180L 4	—	—	—	151800	179000	64100	285
2.9	63607	1.9	504	18.0	316 L4	—	BN 180L 4	—	—	—	253600	283400	78300	294
3.0	62597	2.9	496	18.0	318 L4	—	BN 180L 4	—	—	—	368500	413900	120300	310
3.0	62206	2.7	493	18.0	317 L4	—	BN 180L 4	—	—	—	323200	343600	105900	302
3.1	59138	1.6	469	18.0	315 L4	—	BN 180L 4	—	—	—	148300	175000	62500	284
3.2	57927	2.9	459	18.0	318 L4	—	BN 180L 4	—	—	—	360000	404400	117300	310
3.2	57801	2.2	458	45	—	316 R4	BN 180L 4	—	—	—	246400	275400	75800	295
3.2	57675	2.1	457	18.0	316 L4	—	BN 180L 4	—	—	—	246300	275200	75800	294
3.3	56640	2.9	449	18.0	317 L4	—	BN 180L 4	—	—	—	314200	334100	102700	302
3.3	55294	2.4	438	50	—	317 R4	BN 180L 4	—	—	—	311900	331700	101800	303
3.5	53570	1.8	424	18.0	315 L4	—	BN 180L 4	—	—	—	144000	169900	60500	284
3.5	53510	2.2	424	45	—	316 R4	BN 180L 4	—	—	—	240800	269100	73900	295
3.5	52501	2.9	416	18.0	318 L4	—	BN 180L 4	—	—	—	349600	392600	113500	310
3.7	50346	2.4	399	50	—	317 R4	BN 180L 4	—	—	—	303300	322500	98700	303
3.7	49715	1.9	394	40	—	315 R4	BN 180L 4	—	—	—	140800	166100	59000	285
3.8	48841	2.9	387	18.0	318 L4	—	BN 180L 4	—	—	—	342100	384200	110800	310
3.8	48336	2.4	383	18.0	316 L4	—	BN 180L 4	—	—	—	233600	261000	71500	294
4.1	45467	2.8	360	18.0	317 L4	—	BN 180L 4	—	—	—	294200	312800	95400	302
4.1	45055	2.6	357	45	—	316 R4	BN 180L 4	—	—	—	228700	255600	69800	295
4.1	44897	2.1	356	18.0	315 L4	—	BN 180L 4	—	—	—	136600	161100	57000	284
4.3	42909	2.7	340	18.0	316 L4	—	BN 180L 4	—	—	—	225400	251900	68700	294
4.4	42422	2.4	336	50	—	317 R4	BN 180L 4	—	—	—	288100	306300	93200	303
4.4	41890	2.2	332	40	—	315 R4	BN 180L 4	—	—	—	133800	157800	55700	285
4.5	40890	2.9	324	18.0	318 L4	—	BN 180L 4	—	—	—	324300	364300	104400	310
4.7	39502	2.8	313	18.0	316 L4	—	BN 180L 4	—	—	—	219900	245700	66800	294
4.7	39111	2.9	310	18.0	317 L4	—	BN 180L 4	—	—	—	281200	299000	90700	302
4.8	39641	1.0	304	18.0	313 L3	—	BN 180L 4	—	—	—	121400	146100	48100	274
4.9	37987	2.9	301	18.0	318 L4	—	BN 180L 4	—	—	—	317200	356300	101900	310
4.9	37735	3.0	299	45	—	316 R4	BN 180L 4	—	—	—	216800	242300	65800	295
5.0	36721	2.4	291	18.0	315 L4	—	BN 180L 4	—	—	—	128600	151700	53300	284
5.5	33444	2.9	265	18.0	316 L4	—	BN 180L 4	—	—	—	209200	233700	63200	294
5.6	33056	2.4	262	50	—	317 R4	BN 180L 4	—	—	—	267300	284300	85800	303
5.7	32641	2.4	259	40	—	315 R4	BN 180L 4	—	—	—	124100	146400	51300	285
5.8	31929	2.9	253	18.0	318 L4	—	BN 180L 4	—	—	—	301100	338200	96200	310
5.8	32933	1.4	252	18.0	313 L3	—	BN 180L 4	—	—	—	114800	138200	45200	274
6.0	32018	1.0	245	18.0	311 L3	—	BN 180L 4	—	—	—	93100	115600	36400	264
6.1	31569	2.1	242	30	315 L3	—	BN 180L 4	—	—	—	121700	143500	50100	284
6.6	28017	2.9	222	18.0	316 L4	—	BN 180L 4	—	—	—	198300	221600	59600	294
6.7	27704	2.4	220	50	—	317 R4	BN 180L 4	—	—	—	253500	269600	80900	303
6.8	27356	2.4	217	40	—	315 R4	BN 180L 4	—	—	—	117700	138900	48300	285
7.0	27224	1.7	209	18.0	313 L3	—	BN 180L 4	—	—	—	108500	130500	42400	274
7.2	26599	2.9	204	30	315 L3	—	BN 180L 4	—	—	—	115600	136300	47300	284
7.2	26468	1.2	203	18.0	311 L3	—	BN 180L 4	—	—	—	87900	109200	34100	264
7.6	25266	2.0	194	18.0	313 L3	—	BN 180L 4	—	—	—	106100	127600	41400	274
7.7	24949	1.4	191	18.0	311 L3	—	BN 180L 4	—	—	—	86400	107300	33500	264
8.3	22939	2.0	176	18.0	313 L3	—	BN 180L 4	—	—	—	103000	124000	40100	274
8.6	22302	1.4	171	18.0	311 L3	—	BN 180L 4	—	—	—	83500	103800	32200	264
8.7	21955	3.0	168	75	—	315 R3 (A)	BN 180L 4	—	—	—	109100	128700	44400	285
9.0	21355	1.0	164	18.0	310 L3	—	BN 180L 4	—	—	—	69900	87200	31800	254
9.0	21289	2.2	163	18.0	313 L3	—	BN 180L 4	—	—	—	100700	121200	39100	274
9.1	21022	1.5	161	18.0	311 L3	—	BN 180L 4	—	—	—	82100	101900	31600	264
9.6	19967	2.0	153	40	—	313 R3	BN 180L 4	—	—	—	98800	118900	38200	275
9.7	19732	2.3	151	18.0	313 L3	—	BN 180L 4	—	—	—	98500	118500	38100	274
10.0	19184	1.6	147	18.0	311 L3	—	BN 180L 4	—	—	—	79800	99200	30700	264



$P_1 = 22 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
10.0	19140	1.4	147	40	—	311 R3	BN 180L 4	—	—	—	79800	99100	30600	265
10.3	18499	1.1	142	18.0	310 L3	—	BN 180L 4	—	—	—	66900	83500	30300	254
10.9	17599	2.5	135	18.0	313 L3	—	BN 180L 4	—	—	—	95200	114500	36700	274
11.0	17378	1.8	133	18.0	311 L3	—	BN 180L 4	—	—	—	77500	96300	29700	264
11.2	17018	1.2	130	18.0	310 L3	—	BN 180L 4	—	—	—	65300	81400	29500	254
11.5	16588	2.4	127	40	—	313 R3	BN 180L 4	—	—	—	93500	112500	36000	275
11.7	16381	1.8	126	18.0	311 L3	—	BN 180L 4	—	—	—	76200	94600	29100	264
11.9	16128	1.8	124	40	—	311 R3	BN 180L 4	—	—	—	75800	94100	28900	265
12.2	15724	2.6	120	18.0	313 L3	—	BN 180L 4	—	—	—	92000	110700	35300	274
12.3	15530	1.3	119	18.0	310 L3	—	BN 180L 4	—	—	—	63500	79200	28600	254
12.8	14949	2.0	115	18.0	311 L3	—	BN 180L 4	—	—	—	74100	92000	28200	264
13.3	14415	1.4	110	18.0	310 L3	—	BN 180L 4	—	—	—	62100	77500	27900	254
13.4	14317	2.9	110	18.0	313 L3	—	BN 180L 4	—	—	—	89400	107600	34200	274
13.7	13977	2.4	107	40	—	313 R3	BN 180L 4	—	—	—	88800	106800	34000	275
14.1	13589	2.0	104	40	—	311 R3	BN 180L 4	—	—	—	72000	89400	27300	265
14.1	13541	2.1	104	18.0	311 L3	—	BN 180L 4	—	—	—	71900	89300	27300	264
14.5	13155	1.4	101	18.0	310 L3	—	BN 180L 4	—	—	—	60400	75400	27000	254
15.0	12726	2.4	97.5	40	—	313 R3	BN 180L 4	—	—	—	86300	103900	32900	275
15.2	12567	2.2	96.3	40	—	311 R3	BN 180L 4	—	—	—	70300	87400	26600	265
15.8	12064	2.9	92.4	18.0	313 L3	—	BN 180L 4	—	—	—	85000	102200	32300	274
16.0	11916	1.6	91.3	18.0	310 L3	—	BN 180L 4	—	—	—	58600	73200	26200	254
16.8	11349	2.4	87.0	18.0	311 L3	—	BN 180L 4	—	—	—	68200	84700	25700	264
17.8	10723	2.4	82.2	40	—	313 R3	BN 180L 4	—	—	—	82000	98700	31100	275
18.1	10589	2.4	81.1	40	—	311 R3	BN 180L 4	—	—	—	66800	83000	25200	265
18.2	10483	1.7	80.3	18.0	310 L3	—	BN 180L 4	—	—	—	56400	70400	25100	254
18.7	10219	2.9	78.3	18.0	313 L3	—	BN 180L 4	—	—	—	80800	97300	30600	274
18.9	10090	2.6	77.3	18.0	311 L3	—	BN 180L 4	—	—	—	65800	81800	24800	264
19.8	9643	1.8	73.9	18.0	310 L3	—	BN 180L 4	—	—	—	55000	68700	24400	254
20.3	9400	2.9	72.0	18.0	313 L3	—	BN 180L 4	—	—	—	78800	94800	29800	274
20.6	9282	2.7	71.1	18.0	311 L3	—	BN 180L 4	—	—	—	64200	79800	24100	264
20.9	9128	2.4	69.9	40	—	313 R3	BN 180L 4	—	—	—	78100	94000	29500	275
21.5	8874	2.4	68.0	40	—	311 R3	BN 180L 4	—	—	—	63400	78700	23700	265
22.9	8356	2.4	64.0	40	—	313 R3	BN 180L 4	—	—	—	76100	91600	28600	275
23.2	8251	2.4	63.2	40	—	311 R3	BN 180L 4	—	—	—	62000	77000	23100	265
23.4	8168	1.9	62.6	18.0	310 L3	—	BN 180L 4	—	—	—	52400	65300	23100	254
24.0	7963	2.9	61.0	18.0	313 L3	—	BN 180L 4	—	—	—	75000	90200	28200	274
24.3	7863	2.9	60.2	18.0	311 L3	—	BN 180L 4	—	—	—	61100	75900	22800	264
27.3	7003	2.4	53.7	40	—	313 R3	BN 180L 4	—	—	—	72200	86800	27000	275
27.6	6919	1.9	53.0	18.0	310 L3	—	BN 180L 4	—	—	—	49800	62200	21800	254
27.6	6915	2.4	53.0	40	—	311 R3	BN 180L 4	—	—	—	58800	73000	21800	265
28.6	6673	2.9	51.1	18.0	313 L3	—	BN 180L 4	—	—	—	71100	85600	26500	274
29.0	6590	2.9	50.5	18.0	311 L3	—	BN 180L 4	—	—	—	57900	72000	21500	264
31	6300	1.4	46.7	18.0	307 L2	—	BN 180L 4	—	16800	21000	39300	52300	14500	234
31	6300	2.0	46.7	18.0	309 L2	—	BN 180L 4	—	—	—	39700	52300	11600	244
31	6300	2.3	46.7	22	310 L2	—	BN 180L 4	—	—	—	48000	59900	20900	254
32	6269	1.0	46.5	13.0	306 L2	—	BN 180L 4	—	14500	16400	36400	42800	11300	224
38	5208	1.7	38.6	18.0	307 L2	—	BN 180L 4	—	15800	19700	37100	49400	13600	234
38	5208	2.3	38.6	18.0	309 L2	—	BN 180L 4	—	—	—	37500	49400	10900	244
38	5208	2.7	38.6	22	310 L2	—	BN 180L 4	—	—	—	45300	56500	19600	254
38	5182	1.3	38.4	13.0	306 L2	—	BN 180L 4	—	13600	15400	34300	40500	10600	224
44	4458	1.4	33.1	13.0	306 L2	—	BN 180L 4	—	13000	14700	32800	38700	10000	224
45	4388	1.9	32.6	18.0	307 L2	—	BN 180L 4	—	14900	18600	35300	46900	12800	234
45	4388	2.6	32.6	18.0	309 L2	—	BN 180L 4	—	—	—	35600	46900	10300	244
48	4136	2.0	30.7	18.0	307 L2	—	BN 180L 4	—	14600	18200	34600	46100	12600	234
48	4136	2.4	30.7	18.0	309 L2	—	BN 180L 4	—	—	—	35000	46100	10100	244
52	3835	1.6	28.4	13.0	306 L2	—	BN 180L 4	—	12300	14000	31400	37000	9550	224
52	3775	2.1	28.0	18.0	307 L2	—	BN 180L 4	—	14200	17700	33700	44800	12200	234
52	3775	2.9	28.0	18.0	309 L2	—	BN 180L 4	—	—	—	34000	44800	9770	244
56	3552	1.6	26.4	13.0	306 L2	—	BN 180L 4	—	12000	13600	30700	36100	9310	224
58	3419	2.3	25.4	18.0	307 L2	—	BN 180L 4	—	13700	17100	32700	43500	11800	234
58	3419	2.8	25.4	18.0	309 L2	—	BN 180L 4	—	—	—	33000	43500	9460	244
62	3173	2.4	23.5	35	—	307 R2	BN 180L 4	—	13400	16700	32000	42600	11500	235

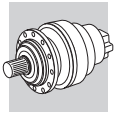


P₁ = 22 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
62	3173	2.4	23.5	35	—	309 R2	BN 180L 4	—	—	—	32300	42600	9220	245
65	3056	1.8	22.7	13.0	306 L2	—	BN 180L 4	—	11400	13000	29300	34500	8850	224
67	2941	2.6	21.8	18.0	307 L2	—	BN 180L 4	—	13000	16300	31300	41600	11200	234
67	2941	2.9	21.8	18.0	309 L2	—	BN 180L 4	—	—	—	31600	41600	8990	244
74	2674	2.4	19.8	35	—	307 R2	BN 180L 4	—	12600	15800	30400	40400	10900	235
74	2674	2.4	19.8	35	—	309 R2	BN 180L 4	—	—	—	30700	40400	8710	245
81	2435	1.9	18.1	13.0	306 L2	—	BN 180L 4	—	10600	12000	27400	32300	8210	224
84	2344	2.9	17.4	18.0	307 L2	—	BN 180L 4	—	12100	15100	29200	38900	10400	234
84	2344	2.9	17.4	18.0	309 L2	—	BN 180L 4	—	—	—	29500	38900	8340	244
95	2083	2.4	15.5	35	—	307 R2	BN 180L 4	—	11600	14500	28200	37500	10000	235
95	2083	2.4	15.5	35	—	309 R2	BN 180L 4	—	—	—	28500	37500	8020	245
96	2063	1.9	15.3	13.0	306 L2	—	BN 180L 4	—	10000	11400	26100	30700	7770	224
99	1985	2.9	14.7	18.0	307 L2	—	BN 180L 4	—	11400	14300	27800	37000	9860	234
99	1985	2.9	14.7	18.0	309 L2	—	BN 180L 4	—	—	—	28100	37000	7890	244
113	1747	1.9	13.0	13.0	306 L2	—	BN 180L 4	—	9500	10800	24800	29200	7350	224
113	1746	2.4	13.0	35	—	307 R2	BN 180L 4	—	11000	13700	26700	35600	9450	235
113	1746	2.4	13.0	35	—	309 R2	BN 180L 4	—	—	—	27000	35600	7560	245
119	1664	2.9	12.3	18.0	307 L2	—	BN 180L 4	—	10800	13500	26400	35100	9300	234
119	1664	2.9	12.3	18.0	309 L2	—	BN 180L 4	—	—	—	26600	35100	7440	244
195	1043	1.4	7.50	11.0	303 L1	—	BN 180L 4	—	6300	7340	13300	15400	4200	204
195	1043	2.4	7.50	13.0	305 L1	—	BN 180L 4	—	6300	7340	13300	15400	4200	214
195	1043	3.6	7.50	18.0	306 L1	—	BN180L4	—	7900	9000	21000	24800	6120	224
236	862	1.6	6.20	11.0	303 L1	—	BN 180L 4	—	6000	6960	12600	14600	3940	204
236	862	2.8	6.20	13.0	305 L1	—	BN 180L 4	—	6000	6960	12600	14600	3940	214
236	862	3.6	6.20	18.0	306 L1	—	BN180L4	—	7400	8400	19900	23400	5750	224
275	742	1.8	5.33	11.0	303 L1	—	BN 180L 4	—	5700	6580	12000	13900	3750	204
275	742	2.9	5.33	13.0	305 L1	—	BN 180L 4	—	5700	6580	12000	13900	3750	214
275	742	3.6	5.33	18.0	306 L1	—	BN180L4	—	7100	8000	19000	22400	5470	224
345	591	1.9	4.25	11.0	303 L1	—	BN 180L 4	—	5300	6100	11200	13000	3480	204
345	591	2.9	4.25	13.0	305 L1	—	BN 180L 4	—	5300	6100	11200	13000	3480	214

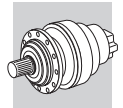
P₁ = 30 kW n₁=1400 min⁻¹

1.0	240167	1.4	1396	30	319 L4	—	BN 200L 4	—	—	—	637400	701300	199800	318
1.2	202941	1.5	1179	30	319 L4	—	BN 200L 4	—	—	—	606000	666800	188900	318
1.3	193012	2.6	1122	35	321 L4	—	BN 200L 4	—	—	—	728900	863600	1122800	326
1.4	183110	1.3	1064	18.0	318 L4	—	BN 200L 4	—	—	—	463300	520400	155200	310
1.5	170509	1.9	991	30	319 L4	—	BN 200L 4	—	—	—	575100	632800	178200	318
1.5	167029	1.9	971	95	—	319 R4 (A)	BN 200L 4	—	—	—	571600	628900	177000	319
1.6	157685	2.0	916	30	319 L4	—	BN 200L 4	—	—	—	561800	618200	173600	318
1.6	156779	2.1	911	115	—	319 R4 (C)	BN 200L 4	—	—	—	560900	617100	173400	319
1.6	154370	1.6	897	18.0	318 L4	—	BN 200L 4	—	—	—	440200	494400	146600	310
1.7	144080	2.4	837	30	319 L4	—	BN 200L 4	—	—	—	546800	601700	168500	318
1.8	141140	2.2	820	95	—	319 R4 (A)	BN 200L 4	—	—	—	543400	597900	167300	319
1.8	138236	1.2	803	50	—	317 R4	BN 200L 4	—	—	—	374100	397800	124600	303
1.9	134235	2.6	780	105	—	321 R4 (A)	BN 200L 4	—	—	—	653600	774400	1006900	327
1.9	132514	2.3	770	115	—	319 R4 (C)	BN 200L 4	—	—	—	533300	586800	163900	319
1.9	130104	1.9	756	18.0	318 L4	—	BN 200L 4	—	—	—	418200	469700	138500	310
2.1	121401	2.7	705	30	319 L4	—	BN 200L 4	—	—	—	519400	571500	159100	318
2.1	120123	2.1	698	18.0	318 L4	—	BN 200L 4	—	—	—	408300	458600	134900	310
2.1	119606	1.8	695	110	—	318 R4 (C)	BN 200L 4	—	—	—	407700	458000	134700	311
2.1	118585	2.5	689	95	—	319 R4 (A)	BN 200L 4	—	—	—	515800	567500	157900	319
2.2	116476	1.3	677	50	—	317 R4	BN 200L 4	—	—	—	355400	377900	117700	303
2.2	113239	2.7	658	95	—	319 R4 (B)	BN 200L 4	—	—	—	508700	559800	155500	319
2.2	113067	2.6	657	105	—	321 R4 (A)	BN 200L 4	—	—	—	620900	735600	932600	327
2.2	112270	3.0	652	30	319 L4	—	BN 200L 4	—	—	—	507400	558300	155100	318
2.3	111346	2.7	647	115	—	319 R4 (C)	BN 200L 4	—	—	—	506200	556900	154700	319
2.3	111002	1.1	645	45	—	316 R4	BN 200L 4	—	—	—	273100	305200	85000	295
2.3	109625	2.1	637	18.0	318 L4	—	BN 200L 4	—	—	—	397200	446200	130800	310
2.3	107716	1.4	626	50	—	317 R4	BN 200L 4	—	—	—	347200	369200	114700	303



$P_1 = 30 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.4	103255	1.0	600	40	—	315 R4	BN 200L 4	—	—	—	159800	188500	67900	285
2.5	101364	2.1	589	18.0	318 L4	—	BN 200L 4	—	—	—	388000	435800	127400	310
2.5	100676	2.5	585	110	—	318 R4 (C)	BN 200L 4	—	—	—	387200	434900	127100	311
2.5	100204	2.6	582	95	—	319 R4 (A)	BN 200L 4	—	—	—	490400	539600	149300	319
2.7	93964	2.6	546	105	—	321 R4 (A)	BN 200L 4	—	—	—	587300	695900	876800	327
2.7	93620	1.3	544	45	—	316 R4	BN 200L 4	—	—	—	259500	290000	80300	295
2.7	92668	2.6	538	95	—	319 R4 (A)	BN 200L 4	—	—	—	479000	527000	145400	319
2.8	89487	1.8	520	50	—	317 R4	BN 200L 4	—	—	—	328400	349200	107800	303
2.9	88134	2.6	512	105	—	321 R4 (A)	BN 200L 4	—	—	—	576100	682600	887500	327
2.9	87002	1.1	506	40	—	315 R4	BN 200L 4	—	—	—	151800	179000	64100	285
2.9	86392	2.4	502	90	—	318 R4 (B)	BN 200L 4	—	—	—	369800	415400	120800	311
3.0	85359	2.1	496	18.0	318 L4	—	BN 200L 4	—	—	—	368500	413900	120300	310
3.0	84843	2.9	493	110	—	318 R4 (C)	BN 200L 4	—	—	—	367800	413200	120100	311
3.2	78992	2.1	459	18.0	318 L4	—	BN 200L 4	—	—	—	360000	404400	117300	310
3.2	78820	1.6	458	45	—	316 R4	BN 200L 4	—	—	—	246400	275400	75800	295
3.2	78081	2.6	454	95	—	319 R4 (A)	BN 200L 4	—	—	—	455000	500600	137400	319
3.3	75401	1.8	438	50	—	317 R4	BN 200L 4	—	—	—	311900	331700	101800	303
3.4	73219	2.6	425	105	—	321 R4 (A)	BN 200L 4	—	—	—	544900	645700	839500	327
3.5	72969	1.6	424	45	—	316 R4	BN 200L 4	—	—	—	240800	269100	73900	295
3.5	71592	2.1	416	18.0	318 L4	—	BN 200L 4	—	—	—	349600	392600	113500	310
3.7	68654	1.8	399	50	—	317 R4	BN 200L 4	—	—	—	303300	322500	98700	303
3.7	67793	1.4	394	40	—	315 R4	BN 200L 4	—	—	—	140800	166100	59000	285
3.8	66601	2.1	387	18.0	318 L4	—	BN 200L 4	—	—	—	342100	384200	110800	310
4.1	61438	1.9	357	45	—	316 R4	BN 200L 4	—	—	—	228700	255600	69800	295
4.1	60842	2.6	354	95	—	319 R4 (A)	BN 200L 4	—	—	—	422200	464500	126400	319
4.4	57848	1.8	336	50	—	317 R4	BN 200L 4	—	—	—	288100	306300	93200	303
4.4	57122	1.6	332	40	—	315 R4	BN 200L 4	—	—	—	133800	157800	55700	285
4.5	56173	2.6	326	105	—	321 R4 (A)	BN 200L 4	—	—	—	503300	596300	775300	327
4.5	55759	2.1	324	18.0	318 L4	—	BN 200L 4	—	—	—	324300	364300	104400	310
4.9	51801	2.1	301	18.0	318 L4	—	BN 200L 4	—	—	—	317200	356300	101900	310
4.9	51457	2.2	299	45	—	316 R4	BN 200L 4	—	—	—	216800	242300	65800	295
5.3	47843	2.2	278	45	—	316 R4	BN 200L 4	—	—	—	212200	237100	64200	295
5.6	45076	1.8	262	50	—	317 R4	BN 200L 4	—	—	—	267300	284300	85800	303
5.7	44511	1.8	259	40	—	315 R4	BN 200L 4	—	—	—	124100	146400	51300	285
5.8	43540	2.1	253	18.0	318 L4	—	BN 200L 4	—	—	—	301100	338200	96200	310
5.8	44908	1.0	252	18.0	313 L3	—	BN 200L 4	—	—	—	114800	138200	45200	274
5.8	44908	2.6	252	35	317 L3	—	BN 200L 4	—	—	—	264400	281100	84700	302
6.1	43048	1.5	242	30	315 L3	—	BN 200L 4	—	—	—	121700	143500	50100	284
6.3	40098	2.5	233	45	—	316 R4	BN 200L 4	—	—	—	201200	224900	60600	295
6.7	37778	1.8	220	50	—	317 R4	BN 200L 4	—	—	—	253500	269600	80900	303
6.8	37304	1.8	217	40	—	315 R4	BN 200L 4	—	—	—	117700	138900	48300	285
7.0	37124	1.2	209	18.0	313 L3	—	BN 200L 4	—	—	—	108500	130500	42400	274
7.2	36272	2.1	204	30	315 L3	—	BN 200L 4	—	—	—	115600	136300	47300	284
7.6	34453	1.4	194	18.0	313 L3	—	BN 200L 4	—	—	—	106100	127600	41400	274
8.3	31280	1.4	176	18.0	313 L3	—	BN 200L 4	—	—	—	103000	124000	40100	274
8.3	31232	2.6	176	90	—	317 R3 (A)	BN 200L 4	—	—	—	237100	252100	75100	303
8.5	30562	2.4	172	30	315 L3	—	BN 200L 4	—	—	—	109800	129500	44700	284
8.6	30432	3.0	171	30	316 L3	—	BN 200L 4	—	—	—	183400	204900	54600	294
8.7	29939	2.2	168	75	—	315 R3 (A)	BN 200L 4	—	—	—	109100	128700	44400	285
9.0	29030	1.6	163	18.0	313 L3	—	BN 200L 4	—	—	—	100700	121200	39100	274
9.2	28264	2.6	159	30	315 L3	—	BN 200L 4	—	—	—	107200	126500	43600	284
9.3	28118	2.3	158	90	—	315 R3 (C)	BN 200L 4	—	—	—	107100	126300	43500	285
9.6	27228	1.4	153	40	—	313 R3	BN 200L 4	—	—	—	98800	118900	38200	275
9.7	26908	1.7	151	18.0	313 L3	—	BN 200L 4	—	—	—	98500	118500	38100	274
9.9	26316	2.6	148	90	—	317 R3 (A)	BN 200L 4	—	—	—	225200	239500	70900	303
10.3	25226	2.6	142	75	—	315 R3 (A)	BN 200L 4	—	—	—	103600	122200	41900	285
10.9	23998	1.9	135	18.0	313 L3	—	BN 200L 4	—	—	—	95200	114500	36700	274
10.9	23815	2.9	134	30	315 L3	—	BN 200L 4	—	—	—	101900	120200	41200	284
11.5	22620	1.8	127	40	—	313 R3	BN 200L 4	—	—	—	93500	112500	36000	275
11.9	21863	2.6	123	90	—	317 R3 (A)	BN 200L 4	—	—	—	213000	226500	66700	303
12.2	21442	1.9	120	18.0	313 L3	—	BN 200L 4	—	—	—	92000	110700	35300	274
12.3	21255	2.6	119	75	—	315 R3 (A)	BN 200L 4	—	—	—	98400	116100	39600	285

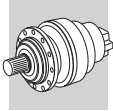


P₁ = 30 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
12.7	20506	2.6	115	90	—	317 R3 (A)	BN 200L 4	—	—	—	209000	222200	65200	303
13.3	19657	2.6	110	75	—	315 R3 (A)	BN 200L 4	—	—	—	96200	113400	38600	285
13.4	19524	2.1	110	18.0	313 L3	—	BN 200L 4	—	—	—	89400	107600	34200	274
13.7	19060	1.8	107	40	—	313 R3	BN 200L 4	—	—	—	88800	106800	34000	275
15.0	17354	1.8	97.5	40	—	313 R3	BN 200L 4	—	—	—	86300	103900	32900	275
15.3	17036	2.6	95.7	90	—	317 R3 (A)	BN 200L 4	—	—	—	197600	210200	61300	303
15.7	16563	2.6	93.1	75	—	315 R3 (A)	BN 200L 4	—	—	—	91300	107700	36500	285
15.8	16450	2.1	92.4	18.0	313 L3	—	BN 200L 4	—	—	—	85000	102200	32300	274
17.8	14623	1.8	82.2	40	—	313 R3	BN 200L 4	—	—	—	82000	98700	31100	275
18.7	13934	2.1	78.3	18.0	313 L3	—	BN 200L 4	—	—	—	80800	97300	30600	274
19.9	13070	2.6	73.4	90	—	317 R3 (A)	BN 200L 4	—	—	—	182500	194100	56200	303
20.2	12906	2.6	72.5	75	—	315 R3 (A)	BN 200L 4	—	—	—	84800	100000	33500	285
20.3	12818	2.1	72.0	18.0	313 L3	—	BN 200L 4	—	—	—	78800	94800	29800	274
20.9	12447	1.8	69.9	40	—	313 R3	BN 200L 4	—	—	—	78100	94000	29500	275
22.9	11394	1.8	64.0	40	—	313 R3	BN 200L 4	—	—	—	76100	91600	28600	275
24.0	10858	2.1	61.0	18.0	313 L3	—	BN 200L 4	—	—	—	75000	90200	28200	274
27.3	9549	1.7	53.7	40	—	313 R3	BN 200L 4	—	—	—	72200	86800	27000	275
28.6	9100	2.1	51.1	18.0	313 L3	—	BN 200L 4	—	—	—	71100	85600	26500	274
31	8590	1.7	46.7	22	310 L2	—	BN 200L 4	—	—	—	48000	59900	20900	254
38	7137	2.8	38.8	26	311 L2	—	BN 200L 4	—	—	—	53600	66500	19700	264
38	7101	2.0	38.6	22	310 L2	—	BN 200L 4	—	—	—	45300	56500	19600	254
45	5984	2.2	32.6	22	310 L2	—	BN 200L 4	—	—	—	43000	53700	18600	254
48	5640	2.4	30.7	22	310 L2	—	BN 200L 4	—	—	—	42300	52800	18200	254
52	5178	2.6	28.2	75	—	313 R2 (A)	BN 200L 4	—	—	—	59500	71600	21800	275
52	5147	2.5	28.0	22	310 L2	—	BN 200L 4	—	—	—	41100	51300	17600	254
54	4963	2.5	27.0	55	—	310 R2 (A)	BN 200L 4	—	—	—	40700	50800	17500	255
54	4963	2.6	27.0	75	—	311 R2 (A)	BN 200L 4	—	—	—	48000	59600	17400	265
58	4663	2.6	25.4	22	310 L2	—	BN 200L 4	—	—	—	39900	49800	17100	254
62	4327	1.7	23.5	35	—	307 R2	BN 200L 4	—	13400	16700	32000	42600	11500	235
62	4327	1.7	23.5	35	—	309 R2	BN 200L 4	—	—	—	32300	42600	9220	245
63	4302	2.6	23.4	75	—	313 R2 (A)	BN 200L 4	—	—	—	56300	67700	20500	275
64	4182	2.6	22.8	75	—	311 R2 (A)	BN 200L 4	—	—	—	45600	56700	16500	265
65	4173	2.6	22.7	55	—	310 R2 (A)	BN 200L 4	—	—	—	38700	48300	16500	255
67	4011	2.6	21.8	22	310 L2	—	BN 200L 4	—	—	—	38200	47600	16200	254
74	3646	1.7	19.8	35	—	307 R2	BN 200L 4	—	12600	15800	30400	40400	10900	235
74	3646	1.7	19.8	35	—	309 R2	BN 200L 4	—	—	—	30700	40400	8710	245
82	3300	2.6	18.0	75	—	313 R2 (A)	BN 200L 4	—	—	—	52000	62500	18700	275
83	3259	2.6	17.7	75	—	311 R2 (A)	BN 200L 4	—	—	—	42300	52600	15200	265
83	3254	2.6	17.7	55	—	310 R2 (A)	BN 200L 4	—	—	—	35900	44800	15200	255
84	3196	2.6	17.4	22	310 L2	—	BN 200L 4	—	—	—	35700	44500	15100	254
95	2841	1.7	15.5	35	—	307 R2	BN 200L 4	—	11600	14500	28200	37500	10000	235
95	2841	1.7	15.5	35	—	309 R2	BN 200L 4	—	—	—	28500	37500	8020	245
99	2707	2.6	14.7	22	310 L2	—	BN 200L 4	—	—	—	33900	42300	14200	254
113	2381	1.8	13.0	35	—	307 R2	BN 200L 4	—	11000	13700	26700	35600	9450	235
113	2381	1.8	13.0	35	—	309 R2	BN 200L 4	—	—	—	27000	35600	7560	245
195	1423	2.6	7.50	18.0	306 L1	—	BN 200L 4	—	7900	9000	21000	24800	6120	224
236	1176	2.6	6.20	18.0	306 L1	—	BN 200L 4	—	7400	8400	19900	23400	5750	224
275	1012	2.6	5.33	18.0	306 L1	—	BN 200L 4	—	7100	8000	19000	22400	5470	224

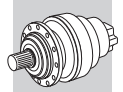
P₁ = 37 kW n₁=1400 min⁻¹

1.0	309958	1.1	1396	30	319 L4	—	BN 225S 4	—	—	—	637400	701300	199800	318
1.2	261914	1.2	1179	30	319 L4	—	BN 225S 4	—	—	—	606000	666800	188900	318
1.2	249100	2.0	1122	35	321 L4	—	BN 225S 4	—	—	—	728900	863600	1122800	326
1.3	236320	1.0	1064	18.0	318 L4	—	BN 225S 4	—	—	—	463300	520400	155200	310
1.4	220058	1.5	991	30	319 L4	—	BN 225S 4	—	—	—	575100	632800	178200	318
1.5	209890	2.4	945	35	321 L4	—	BN 225S 4	—	—	—	692400	820300	1066500	326
1.5	203508	1.6	916	30	319 L4	—	BN 225S 4	—	—	—	561800	618200	173600	318
1.5	202338	1.6	911	115	—	319 R4 (C)	BN 225S 4	—	—	—	560900	617100	173400	319
1.6	199229	1.3	897	18.0	318 L4	—	BN 225S 4	—	—	—	440200	494400	146600	310



$P_1 = 37 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.7	185949	1.9	837	30	319 L4	—	BN 225S 4	—	—	546800	601700	168500	318	
1.8	176852	2.8	796	35	321 L4	—	BN 225S 4	—	—	657700	779300	1013100	326	
1.8	171021	1.8	770	115	—	319 R4 (C)	BN 225S 4	—	—	533300	586800	163900	319	
1.9	167912	1.5	756	18.0	318 L4	—	BN 225S 4	—	—	418200	469700	138500	310	
1.9	162581	2.7	732	125	—	321 R4 (C)	BN 225S 4	—	—	641300	759900	966800	327	
2.0	156680	2.1	705	30	319 L4	—	BN 225S 4	—	—	519400	571500	159100	318	
2.0	155030	1.6	698	18.0	318 L4	—	BN 225S 4	—	—	408300	458600	134900	310	
2.0	154363	1.4	695	110	—	318 R4 (C)	BN 225S 4	—	—	407700	458000	134700	311	
2.1	146146	2.1	658	95	—	319 R4 (B)	BN 225S 4	—	—	508700	559800	155500	319	
2.1	144896	2.3	652	30	319 L4	—	BN 225S 4	—	—	507400	558300	155100	318	
2.2	143702	2.1	647	115	—	319 R4 (C)	BN 225S 4	—	—	506200	556900	154700	319	
2.2	141481	1.6	637	18.0	318 L4	—	BN 225S 4	—	—	397200	446200	130800	310	
2.3	137039	2.6	617	125	—	321 R4 (C)	BN 225S 4	—	—	609300	721900	913300	327	
2.4	130820	1.6	589	18.0	318 L4	—	BN 225S 4	—	—	388000	435800	127400	310	
2.4	129932	1.9	585	110	—	318 R4 (C)	BN 225S 4	—	—	387200	434900	127100	311	
2.5	123491	2.4	556	95	—	319 R4 (B)	BN 225S 4	—	—	483700	532200	147100	319	
2.5	122088	2.6	550	30	319 L4	—	BN 225S 4	—	—	482000	530300	146500	318	
2.6	121270	2.6	546	115	—	319 R4 (C)	BN 225S 4	—	—	481000	529300	146200	319	
2.7	113940	2.6	513	125	—	321 R4 (C)	BN 225S 4	—	—	576100	682600	858200	327	
2.8	112906	2.7	508	30	319 L4	—	BN 225S 4	—	—	470800	518000	142700	318	
2.8	112163	2.6	505	115	—	319 R4 (C)	BN 225S 4	—	—	469900	517000	142400	319	
2.8	111497	1.9	502	90	—	318 R4 (B)	BN 225S 4	—	—	369800	415400	120800	311	
2.8	110164	1.6	496	18.0	318 L4	—	BN 225S 4	—	—	368500	413900	120300	310	
2.8	109498	2.2	493	110	—	318 R4 (C)	BN 225S 4	—	—	367800	413200	120100	311	
2.9	106833	2.6	481	125	—	321 R4 (C)	BN 225S 4	—	—	565400	669900	840500	327	
3.0	103945	2.7	468	95	—	319 R4 (B)	BN 225S 4	—	—	459300	505400	138900	319	
3.1	101947	1.6	459	18.0	318 L4	—	BN 225S 4	—	—	360000	404400	117300	310	
3.1	101280	2.4	456	110	—	318 R4 (C)	BN 225S 4	—	—	359300	403600	117000	311	
3.3	95133	2.7	428	30	319 L4	—	BN 225S 4	—	—	447200	492100	134800	318	
3.3	94617	2.6	426	115	—	319 R4 (C)	BN 225S 4	—	—	446500	491300	134600	319	
3.3	93951	2.5	423	90	—	318 R4 (B)	BN 225S 4	—	—	351300	394600	114100	311	
3.4	92396	1.6	416	18.0	318 L4	—	BN 225S 4	—	—	349600	392600	113500	310	
3.6	85955	1.6	387	18.0	318 L4	—	BN 225S 4	—	—	342100	384200	110800	310	
3.6	85289	2.6	384	110	—	318 R4 (C)	BN 225S 4	—	—	341300	383300	110500	311	
3.9	79292	2.9	357	90	—	318 R4 (B)	BN 225S 4	—	—	333900	375000	107900	311	
4.2	74130	2.7	334	30	319 L4	—	BN 225S 4	—	—	415000	456600	124000	318	
4.2	73739	2.6	332	115	—	319 R4 (C)	BN 225S 4	—	—	414400	455900	123800	319	
4.3	71962	1.6	324	18.0	318 L4	—	BN 225S 4	—	—	324300	364300	104400	310	
4.7	66854	1.6	301	18.0	318 L4	—	BN 225S 4	—	—	317200	356300	101900	310	
4.7	66410	2.6	299	110	—	318 R4 (C)	BN 225S 4	—	—	316600	355600	101700	311	
5.5	56193	1.6	253	18.0	318 L4	—	BN 225S 4	—	—	301100	338200	96200	310	
5.5	57958	2.0	252	35	317 L3	—	BN 225S 4	—	—	264400	281100	84700	302	
5.8	55558	1.2	242	30	315 L3	—	BN 225S 4	—	—	121700	143500	50100	284	
6.6	48835	2.9	213	35	317 L3	—	BN 225S 4	—	—	251100	267000	80000	302	
6.9	46812	1.7	204	30	315 L3	—	BN 225S 4	—	—	115600	136300	47300	284	
8.2	39444	1.9	172	30	315 L3	—	BN 225S 4	—	—	109800	129500	44700	284	
8.2	39275	2.3	171	30	316 L3	—	BN 225S 4	—	—	183400	204900	54600	294	
8.5	37897	2.6	165	100	—	317 R3 (C)	BN 225S 4	—	—	232800	247500	73600	303	
8.8	36477	2.0	159	30	315 L3	—	BN 225S 4	—	—	107200	126500	43600	284	
8.9	36289	1.8	158	90	—	315 R3 (C)	BN 225S 4	—	—	107100	126300	43500	285	
9.7	33074	2.6	144	30	316 L3	—	BN 225S 4	—	—	174200	194600	51600	294	
10.1	31925	2.6	139	100	—	317 R3 (C)	BN 225S 4	—	—	221100	235100	69500	303	
10.5	30735	2.3	134	30	315 L3	—	BN 225S 4	—	—	101900	120200	41200	284	
10.5	30547	2.5	133	90	—	315 R3 (C)	BN 225S 4	—	—	101700	120000	41100	285	
11.6	27791	2.9	121	30	316 L3	—	BN 225S 4	—	—	165300	184700	48700	294	
12.1	26643	2.6	116	100	—	317 R3 (C)	BN 225S 4	—	—	208900	222100	65300	303	
12.3	26183	2.4	114	75	—	315 R3 (B)	BN 225S 4	—	—	97100	114600	39100	285	
12.5	25724	2.6	112	90	—	315 R3 (C)	BN 225S 4	—	—	96600	114000	38800	285	
12.5	25724	2.7	112	30	316 L3	—	BN 225S 4	—	—	161500	180500	47400	294	
12.6	25494	2.7	111	90	—	316 R3 (C)	BN 225S 4	—	—	161100	180000	47300	295	
13.0	24805	2.7	108	100	—	317 R3 (C)	BN 225S 4	—	—	205000	218000	63900	303	
13.4	23950	2.7	104	30	315 L3	—	BN 225S 4	—	—	94500	111500	37900	284	

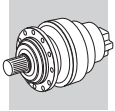


P₁ = 37 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
13.5	23886	2.7	104	90	—	315 R3 (C)	BN 225S 4	—	—	—	94500	111400	37900	285
14.8	21705	2.7	94.5	30	316 L3	—	BN 225S 4	—	—	—	153500	171500	44800	294
14.9	21567	2.7	93.9	90	—	316 R3 (C)	BN 225S 4	—	—	—	153200	171200	44700	295
15.9	20180	2.7	87.9	30	315 L3	—	BN 225S 4	—	—	—	89800	105900	35800	284
16.0	20051	2.7	87.3	90	—	315 R3 (C)	BN 225S 4	—	—	—	89700	105700	35700	285
17.7	18190	2.7	79.2	30	316 L3	—	BN 225S 4	—	—	—	145600	162700	42300	294
19.0	16904	2.7	73.6	30	316 L3	—	BN 225S 4	—	—	—	142400	159200	41300	294
19.1	16812	2.7	73.2	90	—	316 R3 (C)	BN 225S 4	—	—	—	142200	158900	41200	295
20.4	15725	2.7	68.5	30	315 L3	—	BN 225S 4	—	—	—	83300	98300	32900	284
20.6	15618	2.7	68.0	90	—	315 R3 (C)	BN 225S 4	—	—	—	83200	98100	32900	285
22.7	14171	2.7	61.7	30	316 L3	—	BN 225S 4	—	—	—	135100	151000	38900	294
24.4	13179	2.7	57.4	30	315 L3	—	BN 225S 4	—	—	—	79000	93200	31000	284
30	11087	1.3	46.7	22	310 L2	—	BN 225S 4	—	—	—	48000	59900	20900	254
36	9211	2.2	38.8	26	311 L2	—	BN 225S 4	—	—	—	53600	66500	19700	264
36	9165	1.5	38.6	22	310 L2	—	BN 225S 4	—	—	—	45300	56500	19600	254
43	7761	2.5	32.7	26	311 L2	—	BN 225S 4	—	—	—	50900	63200	18600	264
43	7722	1.7	32.6	22	310 L2	—	BN 225S 4	—	—	—	43000	53700	18600	254
46	7279	1.9	30.7	22	310 L2	—	BN 225S 4	—	—	—	42300	52800	18200	254
50	6643	1.9	28.0	22	310 L2	—	BN 225S 4	—	—	—	41100	51300	17600	254
51	6539	2.7	27.6	26	311 L2	—	BN 225S 4	—	—	—	48300	60000	17600	264
53	6263	2.6	26.4	90	—	313 R2 (C)	BN 225S 4	—	—	—	58400	70200	21300	275
55	6047	2.7	25.5	26	311 L2	—	BN 225S 4	—	—	—	47200	58600	17100	264
55	6018	2.0	25.4	22	310 L2	—	BN 225S 4	—	—	—	39900	49800	17100	254
55	6002	2.6	25.3	90	—	311 R2 (C)	BN 225S 4	—	—	—	47100	58500	17100	265
64	5219	2.6	22.0	90	—	313 R2 (C)	BN 225S 4	—	—	—	55300	66500	20100	275
64	5176	2.0	21.8	22	310 L2	—	BN 225S 4	—	—	—	38200	47600	16200	254
65	5095	2.7	21.5	26	311 L2	—	BN 225S 4	—	—	—	44800	55700	16200	264
66	5053	2.7	21.3	90	—	311 R2 (C)	BN 225S 4	—	—	—	44800	55600	16200	265
76	4365	2.6	18.4	55	—	310 R2 (B)	BN 225S 4	—	—	—	36300	45300	15400	255
78	4270	2.7	18.0	26	311 L2	—	BN 225S 4	—	—	—	42500	52800	15200	264
81	4125	2.0	17.4	22	310 L2	—	BN 225S 4	—	—	—	35700	44500	15100	254
83	3986	2.7	16.8	90	—	313 R2 (C)	BN 225S 4	—	—	—	51000	61300	18400	275
84	3970	2.7	16.7	26	311 L2	—	BN 225S 4	—	—	—	41600	51700	14900	264
84	3938	2.6	16.6	90	—	311 R2 (C)	BN 225S 4	—	—	—	41600	51600	14900	265
90	3677	2.9	15.5	55	—	310 R2 (B)	BN 225S 4	—	—	—	34500	43000	14500	255
95	3494	2.0	14.7	22	310 L2	—	BN 225S 4	—	—	—	33900	42300	14200	254
100	3328	2.7	14.0	26	311 L2	—	BN 225S 4	—	—	—	39500	49000	14000	264
116	2871	3.0	12.1	55	—	310 R2 (B)	BN 225S 4	—	—	—	32000	40000	13400	255
187	1836	2.0	7.50	18.0	306 L1	—	BN 225S 4	—	7900	9000	21000	24800	6120	224
225	1525	2.7	6.23	22	307 L1	—	BN 225S 4	—	8600	10700	21500	28600	7400	234
226	1518	2.0	6.20	18.0	306 L1	—	BN 225S 4	—	7400	8400	19900	23400	5750	224
263	1306	2.0	5.33	18.0	306 L1	—	BN 225S 4	—	7100	8000	19000	22400	5470	224
267	1285	2.7	5.25	22	307 L1	—	BN 225S 4	—	8100	10100	20400	27100	6990	234

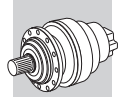
P₁ = 45 kW n₁=1400 min⁻¹

1.0	376976	0.9	1396	30	319 L4	—	BN 225M 4	—	—	—	637400	701300	199800	318
1.2	318545	1.0	1179	30	319 L4	—	BN 225M 4	—	—	—	606000	666800	188900	318
1.2	302960	1.6	1122	35	321 L4	—	BN 225M 4	—	—	—	728900	863600	1122800	326
1.4	267639	1.2	991	30	319 L4	—	BN 225M 4	—	—	—	575100	632800	178200	318
1.5	255272	2.0	945	35	321 L4	—	BN 225M 4	—	—	—	692400	820300	1066500	326
1.5	247509	1.3	916	30	319 L4	—	BN 225M 4	—	—	—	561800	618200	173600	318
1.5	246087	1.3	911	115	—	319 R4 (C)	BN 225M 4	—	—	—	560900	617100	173400	319
1.6	242305	1.0	897	18.0	318 L4	—	BN 225M 4	—	—	—	440200	494400	146600	310
1.7	226155	1.5	837	30	319 L4	—	BN 225M 4	—	—	—	546800	601700	168500	318
1.8	215090	2.3	796	35	321 L4	—	BN 225M 4	—	—	—	657700	779300	1013100	326
1.8	207999	1.4	770	115	—	319 R4 (C)	BN 225M 4	—	—	—	533300	586800	163900	319
1.9	204217	1.2	756	18.0	318 L4	—	BN 225M 4	—	—	—	418200	469700	138500	310
1.9	198913	2.5	736	35	321 L4	—	BN 225M 4	—	—	—	642400	761200	989600	326
1.9	197734	2.2	732	125	—	321 R4 (C)	BN 225M 4	—	—	—	641300	759900	966800	327



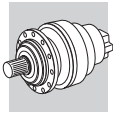
$P_1 = 45 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.0	190556	1.7	705	30	319 L4	—	BN 225M 4	—	—	519400	571500	159100	318	
2.0	188550	1.3	698	18.0	318 L4	—	BN 225M 4	—	—	408300	458600	134900	310	
2.0	187739	1.2	695	110	—	318 R4 (C)	BN 225M 4	—	—	407700	458000	134700	311	
2.1	177745	1.7	658	95	—	319 R4 (B)	BN 225M 4	—	—	508700	559800	155500	319	
2.1	176224	1.9	652	30	319 L4	—	BN 225M 4	—	—	507400	558300	155100	318	
2.2	174773	1.7	647	115	—	319 R4 (C)	BN 225M 4	—	—	506200	556900	154700	319	
2.2	172072	1.3	637	18.0	318 L4	—	BN 225M 4	—	—	397200	446200	130800	310	
2.3	166669	2.1	617	125	—	321 R4 (C)	BN 225M 4	—	—	609300	721900	913300	327	
2.3	165251	2.9	612	35	321 L4	—	BN 225M 4	—	—	607700	720000	936100	326	
2.4	159106	1.3	589	18.0	318 L4	—	BN 225M 4	—	—	388000	435800	127400	310	
2.4	158025	1.6	585	110	—	318 R4 (C)	BN 225M 4	—	—	387200	434900	127100	311	
2.5	150191	2.0	556	95	—	319 R4 (B)	BN 225M 4	—	—	483700	532200	147100	319	
2.5	148485	2.1	550	30	319 L4	—	BN 225M 4	—	—	482000	530300	146500	318	
2.6	147490	2.1	546	115	—	319 R4 (C)	BN 225M 4	—	—	481000	529300	146200	319	
2.7	139239	2.9	515	35	321 L4	—	BN 225M 4	—	—	577200	683900	889200	326	
2.7	138576	2.1	513	125	—	321 R4 (C)	BN 225M 4	—	—	576100	682600	858200	327	
2.8	137318	2.2	508	30	319 L4	—	BN 225M 4	—	—	470800	518000	142700	318	
2.8	136415	2.1	505	115	—	319 R4 (C)	BN 225M 4	—	—	469900	517000	142400	319	
2.8	135605	1.5	502	90	—	318 R4 (B)	BN 225M 4	—	—	369800	415400	120800	311	
2.8	133984	1.3	496	18.0	318 L4	—	BN 225M 4	—	—	368500	413900	120300	310	
2.8	133173	1.8	493	110	—	318 R4 (C)	BN 225M 4	—	—	367800	413200	120100	311	
2.9	129932	2.2	481	125	—	321 R4 (C)	BN 225M 4	—	—	565400	669900	840500	327	
3.0	126780	2.9	469	35	321 L4	—	BN 225M 4	—	—	561200	665000	864500	326	
3.0	126420	2.2	468	95	—	319 R4 (B)	BN 225M 4	—	—	459300	505400	138900	319	
3.1	123989	1.3	459	18.0	318 L4	—	BN 225M 4	—	—	360000	404400	117300	310	
3.1	123179	2.0	456	110	—	318 R4 (C)	BN 225M 4	—	—	359300	403600	117000	311	
3.3	115703	2.2	428	30	319 L4	—	BN 225M 4	—	—	447200	492100	134800	318	
3.3	115075	2.1	426	115	—	319 R4 (C)	BN 225M 4	—	—	446500	491300	134600	319	
3.3	114264	2.1	423	90	—	318 R4 (B)	BN 225M 4	—	—	351300	394600	114100	311	
3.4	112373	1.3	416	18.0	318 L4	—	BN 225M 4	—	—	349600	392600	113500	310	
3.5	106824	2.9	395	35	321 L4	—	BN 225M 4	—	—	533100	631700	821200	326	
3.5	106701	3.0	395	95	—	319 R4 (B)	BN 225M 4	—	—	436500	480300	131200	319	
3.6	104540	1.3	387	18.0	318 L4	—	BN 225M 4	—	—	342100	384200	110800	310	
3.6	103729	2.2	384	110	—	318 R4 (C)	BN 225M 4	—	—	341300	383300	110500	311	
3.9	96436	2.4	357	90	—	318 R4 (B)	BN 225M 4	—	—	333900	375000	107900	311	
4.2	90158	2.2	334	30	319 L4	—	BN 225M 4	—	—	415000	456600	124000	318	
4.2	89683	2.2	332	115	—	319 R4 (C)	BN 225M 4	—	—	414400	455900	123800	319	
4.2	89142	2.5	330	90	—	318 R4 (B)	BN 225M 4	—	—	326100	366300	105100	311	
4.3	87522	1.3	324	18.0	318 L4	—	BN 225M 4	—	—	324300	364300	104400	310	
4.5	83239	2.9	308	35	321 L4	—	BN 225M 4	—	—	494700	586100	762000	326	
4.7	81309	1.3	301	18.0	318 L4	—	BN 225M 4	—	—	317200	356300	101900	310	
4.7	80768	2.2	299	110	—	318 R4 (C)	BN 225M 4	—	—	316600	355600	101700	311	
5.0	75096	2.8	278	90	—	318 R4 (B)	BN 225M 4	—	—	309800	347900	99200	311	
5.4	69762	2.9	258	35	321 L4	—	BN 225M 4	—	—	469200	555900	722700	326	
5.5	68343	1.3	253	18.0	318 L4	—	BN 225M 4	—	—	301100	338200	96200	310	
5.5	70490	1.6	252	35	317 L3	—	BN 225M 4	—	—	264400	281100	84700	302	
5.8	67570	1.0	242	30	315 L3	—	BN 225M 4	—	—	121700	143500	50100	284	
6.6	59394	2.4	213	35	317 L3	—	BN 225M 4	—	—	251100	267000	80000	302	
6.9	56934	1.4	204	30	315 L3	—	BN 225M 4	—	—	115600	136300	47300	284	
7.8	50045	2.8	179	35	317 L3	—	BN 225M 4	—	—	238500	253600	75600	302	
8.2	47972	1.5	172	30	315 L3	—	BN 225M 4	—	—	109800	129500	44700	284	
8.2	47767	1.9	171	30	316 L3	—	BN 225M 4	—	—	183400	204900	54600	294	
8.4	46281	2.5	166	35	317 L3	—	BN 225M 4	—	—	233000	247800	73600	302	
8.5	46091	2.1	165	100	—	317 R3 (C)	BN 225M 4	—	—	232800	247500	73600	303	
8.8	44364	1.7	159	30	315 L3	—	BN 225M 4	—	—	107200	126500	43600	284	
8.9	44135	1.5	158	90	—	315 R3 (C)	BN 225M 4	—	—	107100	126300	43500	285	
9.7	40225	2.2	144	30	316 L3	—	BN 225M 4	—	—	174200	194600	51600	294	
10.1	38828	2.1	139	100	—	317 R3 (C)	BN 225M 4	—	—	221100	235100	69500	303	
10.2	38449	2.9	138	35	317 L3	—	BN 225M 4	—	—	220400	234400	69200	302	
10.5	37381	1.9	134	30	315 L3	—	BN 225M 4	—	—	101900	120200	41200	284	
10.5	37152	2.1	133	90	—	315 R3 (C)	BN 225M 4	—	—	101700	120000	41100	285	
11.6	33800	2.4	121	30	316 L3	—	BN 225M 4	—	—	165300	184700	48700	294	
12.1	32403	2.2	116	100	—	317 R3 (C)	BN 225M 4	—	—	208900	222100	65300	303	








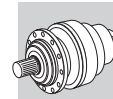
$P_1 = 45 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
12.1	32397	2.9	116	35	317 L3	—	BN 225M 4	—	—	209400	222600	65400	302	
12.3	31844	2.0	114	75	—	315 R3 (B)	BN 225M 4	—	—	97100	114600	39100	285	
12.5	31286	2.2	112	90	—	315 R3 (C)	BN 225M 4	—	—	96600	114000	38800	285	
12.5	31286	2.6	112	30	316 L3	—	BN 225M 4	—	—	161500	180500	47400	294	
12.6	31006	2.2	111	90	—	316 R3 (C)	BN 225M 4	—	—	161100	180000	47300	295	
13.0	30168	2.2	108	100	—	317 R3 (C)	BN 225M 4	—	—	205000	218000	63900	303	
13.3	29498	2.9	106	35	317 L3	—	BN 225M 4	—	—	203600	216500	63400	302	
13.4	29128	2.2	104	30	315 L3	—	BN 225M 4	—	—	94500	111500	37900	284	
13.5	29051	2.2	104	90	—	315 R3 (C)	BN 225M 4	—	—	94500	111400	37900	285	
14.6	26872	2.8	96.2	75	—	315 R3 (B)	BN 225M 4	—	—	92300	108900	36900	285	
14.8	26397	2.6	94.5	30	316 L3	—	BN 225M 4	—	—	153500	171500	44800	294	
14.9	26230	2.2	93.9	90	—	316 R3 (C)	BN 225M 4	—	—	153200	171200	44700	295	
15.7	24855	2.9	89.0	35	317 L3	—	BN 225M 4	—	—	193400	205600	59900	302	
15.9	24543	2.2	87.9	30	315 L3	—	BN 225M 4	—	—	89800	105900	35800	284	
16.0	24386	2.2	87.3	90	—	315 R3 (C)	BN 225M 4	—	—	89700	105700	35700	285	
17.7	22124	2.2	79.2	30	316 L3	—	BN 225M 4	—	—	145600	162700	42300	294	
19.0	20559	2.6	73.6	30	316 L3	—	BN 225M 4	—	—	142400	159200	41300	294	
19.1	20448	2.2	73.2	90	—	316 R3 (C)	BN 225M 4	—	—	142200	158900	41200	295	
20.2	19367	2.9	69.3	35	317 L3	—	BN 225M 4	—	—	179400	190800	55100	302	
20.4	19124	2.2	68.5	30	315 L3	—	BN 225M 4	—	—	83300	98300	32900	284	
20.6	18995	2.2	68.0	90	—	315 R3 (C)	BN 225M 4	—	—	83200	98100	32900	285	
22.7	17235	2.6	61.7	30	316 L3	—	BN 225M 4	—	—	135100	151000	38900	294	
24.1	16232	2.9	58.1	35	317 L3	—	BN 225M 4	—	—	170200	180900	51900	302	
24.4	16028	2.2	57.4	30	315 L3	—	BN 225M 4	—	—	79000	93200	31000	284	
30	13484	1.1	46.7	22	310 L2	—	BN 225M 4	—	—	48000	59900	20900	254	
35	11686	2.5	40.5	30	313 L2	—	BN 225M 4	—	—	66300	79800	24600	274	
36	11202	1.8	38.8	26	311 L2	—	BN 225M 4	—	—	53600	66500	19700	264	
36	11147	1.2	38.6	22	310 L2	—	BN 225M 4	—	—	45300	56500	19600	254	
42	9708	2.9	33.6	30	313 L2	—	BN 225M 4	—	—	62700	75500	23100	274	
43	9439	2.1	32.7	26	311 L2	—	BN 225M 4	—	—	50900	63200	18600	264	
43	9392	1.4	32.6	22	310 L2	—	BN 225M 4	—	—	43000	53700	18600	254	
46	8853	1.5	30.7	22	310 L2	—	BN 225M 4	—	—	42300	52800	18200	254	
49	8180	2.9	28.4	30	313 L2	—	BN 225M 4	—	—	59600	71700	21800	274	
50	8079	1.6	28.0	22	310 L2	—	BN 225M 4	—	—	41100	51300	17600	254	
51	7953	2.2	27.6	26	311 L2	—	BN 225M 4	—	—	48300	60000	17600	264	
53	7618	2.1	26.4	90	—	313 R2 (C)	BN 225M 4	—	—	58400	70200	21300	275	
54	7448	2.9	25.8	30	313 L2	—	BN 225M 4	—	—	57900	69700	21100	274	
55	7355	2.2	25.5	26	311 L2	—	BN 225M 4	—	—	47200	58600	17100	264	
55	7319	1.7	25.4	22	310 L2	—	BN 225M 4	—	—	39900	49800	17100	254	
55	7300	2.1	25.3	90	—	311 R2 (C)	BN 225M 4	—	—	47100	58500	17100	265	
64	6348	2.1	22.0	90	—	313 R2 (C)	BN 225M 4	—	—	55300	66500	20100	275	
64	6296	1.7	21.8	22	310 L2	—	BN 225M 4	—	—	38200	47600	16200	254	
64	6276	2.9	21.8	30	313 L2	—	BN 225M 4	—	—	55000	66200	20000	274	
65	6197	2.2	21.5	26	311 L2	—	BN 225M 4	—	—	44800	55700	16200	264	
66	6146	2.2	21.3	90	—	311 R2 (C)	BN 225M 4	—	—	44800	55600	16200	265	
76	5342	2.9	18.5	30	313 L2	—	BN 225M 4	—	—	52400	63100	18900	274	
76	5309	2.1	18.4	55	—	310 R2 (B)	BN 225M 4	—	—	36300	45300	15400	255	
78	5194	2.2	18.0	26	311 L2	—	BN 225M 4	—	—	42500	52800	15200	264	
81	5017	1.7	17.4	22	310 L2	—	BN 225M 4	—	—	35700	44500	15100	254	
83	4890	2.9	16.9	30	313 L2	—	BN 225M 4	—	—	51100	61400	18400	274	
83	4848	2.2	16.8	90	—	313 R2 (C)	BN 225M 4	—	—	51000	61300	18400	275	
84	4829	2.2	16.7	26	311 L2	—	BN 225M 4	—	—	41600	51700	14900	264	
84	4790	2.2	16.6	90	—	311 R2 (C)	BN 225M 4	—	—	41600	51600	14900	265	
90	4472	2.4	15.5	55	—	310 R2 (B)	BN 225M 4	—	—	34500	43000	14500	255	
95	4250	1.7	14.7	22	310 L2	—	BN 225M 4	—	—	33900	42300	14200	254	
99	4099	2.9	14.2	30	313 L2	—	BN 225M 4	—	—	48400	58300	17300	274	
100	4047	2.2	14.0	26	311 L2	—	BN 225M 4	—	—	39500	49000	14000	264	
116	3491	2.4	12.1	55	—	310 R2 (B)	BN 225M 4	—	—	32000	40000	13400	255	
187	2233	1.7	7.50	18.0	306 L1	—	BN 225M 4	—	7900	9000	21000	24800	6120	224
225	1855	2.2	6.23	22	307 L1	—	BN 225M 4	—	8600	10700	21500	28600	7400	234
226	1846	1.7	6.20	18.0	306 L1	—	BN 225M 4	—	7400	8400	19900	23400	5750	224
263	1588	1.7	5.33	18.0	306 L1	—	BN 225M 4	—	7100	8000	19000	22400	5470	224
267	1563	2.2	5.25	22	307 L1	—	BN 225M 4	—	8100	10100	20400	27100	6990	234



$P_1 = 55 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.2	370284	1.3	1122	35	321 L4	—	BN 250M 4	—	—	—	728900	863600	1122800	326
1.5	311999	1.6	945	35	321 L4	—	BN 250M 4	—	—	—	692400	820300	1066500	326
1.8	262888	1.9	796	35	321 L4	—	BN 250M 4	—	—	—	657700	779300	1013100	326
1.9	243116	2.0	736	35	321 L4	—	BN 250M 4	—	—	—	642400	761200	989600	326
2.3	201973	2.4	612	35	321 L4	—	BN 250M 4	—	—	—	607700	720000	936100	326
2.7	170181	2.4	515	35	321 L4	—	BN 250M 4	—	—	—	577200	683900	889200	326
3.0	154953	2.4	469	35	321 L4	—	BN 250M 4	—	—	—	561200	665000	864500	326
3.5	130562	2.4	395	35	321 L4	—	BN 250M 4	—	—	—	533100	631700	821200	326
4.5	101737	2.4	308	35	321 L4	—	BN 250M 4	—	—	—	494700	586100	762000	326
5.4	85265	2.4	258	35	321 L4	—	BN 250M 4	—	—	—	469200	555900	722700	326
5.5	86154	1.3	252	35	317 L3	—	BN 250M 4	—	—	—	264400	281100	84700	302
6.6	72593	1.9	213	35	317 L3	—	BN 250M 4	—	—	—	251100	267000	80000	302
7.8	61166	2.3	179	35	317 L3	—	BN 250M 4	—	—	—	238500	253600	75600	302
8.4	56566	2.1	166	35	317 L3	—	BN 250M 4	—	—	—	233000	247800	73600	302
10.2	46993	2.4	138	35	317 L3	—	BN 250M 4	—	—	—	220400	234400	69200	302
12.1	39596	2.4	116	35	317 L3	—	BN 250M 4	—	—	—	209400	222600	65400	302
13.3	36053	2.4	106	35	317 L3	—	BN 250M 4	—	—	—	203600	216500	63400	302
15.7	30378	2.4	89.0	35	317 L3	—	BN 250M 4	—	—	—	193400	205600	59900	302
20.2	23671	2.4	69.3	35	317 L3	—	BN 250M 4	—	—	—	179400	190800	55100	302
24.1	19839	2.4	58.1	35	317 L3	—	BN 250M 4	—	—	—	170200	180900	51900	302
35	14283	2.0	40.5	30	313 L2	—	BN 250M 4	—	—	—	66300	79800	24600	274
36	13691	1.5	38.8	26	311 L2	—	BN 250M 4	—	—	—	53600	66500	19700	264
42	11866	2.4	33.6	30	313 L2	—	BN 250M 4	—	—	—	62700	75500	23100	274
43	11536	1.7	32.7	26	311 L2	—	BN 250M 4	—	—	—	50900	63200	18600	264
49	9998	2.4	28.4	30	313 L2	—	BN 250M 4	—	—	—	59600	71700	21800	274
51	9720	1.8	27.6	26	311 L2	—	BN 250M 4	—	—	—	48300	60000	17600	264
54	9103	2.4	25.8	30	313 L2	—	BN 250M 4	—	—	—	57900	69700	21100	274
55	8989	1.8	25.5	26	311 L2	—	BN 250M 4	—	—	—	47200	58600	17100	264
64	7671	2.4	21.8	30	313 L2	—	BN 250M 4	—	—	—	55000	66200	20000	274
65	7574	1.8	21.5	26	311 L2	—	BN 250M 4	—	—	—	44800	55700	16200	264
76	6529	2.4	18.5	30	313 L2	—	BN 250M 4	—	—	—	52400	63100	18900	274
78	6348	1.8	18.0	26	311 L2	—	BN 250M 4	—	—	—	42500	52800	15200	264
83	5977	2.4	16.9	30	313 L2	—	BN 250M 4	—	—	—	51100	61400	18400	274
84	5902	1.8	16.7	26	311 L2	—	BN 250M 4	—	—	—	41600	51700	14900	264
99	5009	2.4	14.2	30	313 L2	—	BN 250M 4	—	—	—	48400	58300	17300	274
100	4947	1.8	14.0	26	311 L2	—	BN 250M 4	—	—	—	39500	49000	14000	264
225	2268	1.8	6.23	22	307 L1	—	BN 250M 4	—	8600	10700	21500	28600	7400	234
225	2268	2.7	6.23	25	309 L1	—	BN 250M 4	—	—	—	21700	28600	5920	244
225	2267	2.7	6.23	35	310 L1	—	BN 250M 4	—	—	—	26300	32800	10700	254
267	1911	1.8	5.25	22	307 L1	—	BN 250M 4	—	8100	10100	20400	27100	6990	234
267	1911	2.7	5.25	25	309 L1	—	BN 250M 4	—	—	—	20600	27100	5590	244
267	1911	2.7	5.25	35	310 L1	—	BN 250M 4	—	—	—	24900	31100	10100	254
342	1488	2.7	4.09	35	310 L1	—	BN 250M 4	—	—	—	23100	28900	9300	254



23.0 - DATI TECNICI RIDUTTORI IN LINEA 300 L

23.0 - RATING CHARTS FOR IN-LINE UNITS 300 L

23.0 - TECHNISCHE DATEN DER GETRIEBE 300 L

23.0 - DONNEES TECHNIQUES REDUCTEURS 300 L

Guida alla consultazione delle tabelle.

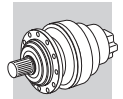
Reading the rating chart.

Anleitung für die richtige Konsultation der Tabellen.

Guide pour la consultation des tableaux.




300 L								1000 Nm					
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	300 L1	4.26	328	450	15.8	7.5	71-80-90-100-112-132	1800	1900	5450	5980	1160	188
	300 L1	5.77	243	470	12.3	7.5	71-80-90-100-112-132	2000	2100	5970	6550	1280	188
	300 L1	7.20	194	490	10.3	7.5	71-80-90-100-112-132	2100	2200	6380	7000	1380	188
	300 L2	12.1	116	630	8.0	7.5	71-80-90-100-112-132	2500	2600	7460	8180	1640	188
	300 L2	14.8	94	650	6.8	7.5	71-80-90-100-112-132	2700	2800	7920	8690	1760	188

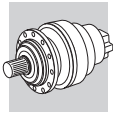
1	Coppia massima trasmissibile dal riduttore	Max. transmissible torque	Nenn-Drehmoment am Abtrieb des Bezuggetriebes	Couple maximum du réducteur
2	Velocità di comando riduttore	Gearbox drive speed	Drehzahl am Getriebeantrieb	Vitesse angulaire à l'entrée du réducteur
3	Grandezza riduttore in esecuzione lineare	Frame size of the in-line gear unit	Getriebegröße in Linearausführung	Taille réducteur exécution coaxiale
4	Rapporto di riduzione	Gear ratio	Übersetzung	Rapport de réduction
5	Velocità angolare all'albero lento	Gearbox output speed	Drehzahl am Getriebeabtrieb	Vitesse angulaire en sortie réducteur
6	Coppia nominale all'albero lento del riduttore, basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	Gearbox rated output torque based on: - safety factor S=1 - 10000 h theoretical lifetime	Nenn-Drehmoment am Getriebeabtrieb mit Sicherheitsfaktor S=1 für eine Dauer von 10000 Std.	Couple nominal à la sortie du réducteur pendant : - facteur de sécurité S=1 - durée de 10000 h
7	Potenza nominale applicabile al riduttore, per: - fattore di sicurezza S=1 - durata teorica di 10000 h	Gearbox rated input power, based on: - safety factor S=1 - 10000 h theoretical lifetime	Nenn-Leistung am Getriebeantrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 Std.	Puissance nominale en entrée réducteur pendant : - facteur de sécurité S=1 - durée de 10000 h
8	Potenza termica riduttore	Gearbox thermal capacity	Wärmeleistung des Getriebes	Puissance thermique réducteur
9	Grandezza motore elettrico IEC installabile	Frame size of available IEC motor	Baugröße des installierbaren IEC-Motors	Taille IEC moteur électrique à installer
10	Carichi radiali applicabili all'albero lento, basati su: - fattore di sicurezza S=1 - durata teorica di 10000 h Per forze non applicate in mezzzeria riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	Permitted overhung loading on output shaft, based on: - safety factor S=1 - 10000 h theoretical lifetime. For forces applying off mid-point of the shaft, see diagrams provided in the pages following dimensions of the specific gearbox	Auf die Mitte der Abtriebswelle für: - Dauer von 10000 Std. applizierbare Nenn-Radialkräfte - Sicherheitsfaktor S=1 Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	Charges radiales nominales applicables à la moitié de l'arbre pendant : - facteur de sécurité S=1 - durée de 10000 h Pour d'autres positions de charge, voir diagrammes figurant à la suite des pages dimensionnelles de la taille sélectionnée
11	Pagina delle dimensioni	Page installation drawing can be found at	Maßseiten	Page avec les dimensions



300 L




1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
900	300 L3	116	7.8	650	0.58	9.0	71-80-90	6100	6400	16800	18400	4040	188	
	300 L3	131	6.9	850	0.67	9.0	71-80-90	6400	6600	17400	19100	4210	188	
	300 L3	142	6.3	850	0.62	9.0	71-80-90	6500	6800	17800	19500	4320	188	
	300 L3	177	5.1	890	0.52	9.0	71-80-90	7000	7300	19000	20900	4650	188	
	300 L3	192	4.7	660	0.35	9.0	71-80-90	7200	7500	19500	21400	4780	188	
	300 L3	221	4.1	920	0.43	9.0	71-80-90	7600	7900	20300	22300	5010	188	
	300 L3	240	3.8	680	0.29	9.0	71-80-90	7800	8100	20800	22900	5150	188	
	300 L3	299	3.0	710	0.25	9.0	71-80-90	8400	8700	22300	24400	5540	188	
	300 L3	373	2.4	600	0.17	9.0	71-80-90	9000	9400	23800	26100	5970	188	
	300 L4	403	2.2	750	0.20	7.5	71-80-90	9200	9600	24400	26700	6120	188	
	300 L4	447	2.0	1000	0.24	7.5	71-80-90	9600	9900	25100	27600	6340	188	
	300 L4	494	1.8	1000	0.22	7.5	71-80-90	9900	10300	25900	28400	6550	188	
	300 L4	558	1.6	1000	0.19	7.5	71-80-90	10300	10700	26900	29500	6820	188	
	300 L4	616	1.5	1000	0.17	7.5	71-80-90	10600	11100	27700	30300	7050	188	
	300 L4	755	1.2	1000	0.14	7.5	71-80-90	11400	11800	29400	32300	7540	188	
	300 L4	819	1.1	1000	0.13	7.5	71-80-90	11700	12200	30100	33000	7750	188	
	300 L4	942	0.96	1000	0.11	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1022	0.88	1000	0.10	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1108	0.81	860	0.08	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1275	0.71	1000	0.08	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1383	0.65	860	0.07	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1591	0.57	1000	0.07	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	1725	0.52	860	0.05	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	2153	0.42	860	0.04	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	300 L4	2687	0.33	700	0.03	7.5	71-80-90	12000	12500	31000	34000	8000	188	
	500	300 L1	3.48	144	590	9.1	15.0	71-80-90-100-112-132	2300	2400	6980	7660	1530	188
		300 L1	4.26	117	610	7.7	15.0	71-80-90-100-112-132	2500	2600	7420	8140	1630	188
		300 L1	5.77	87	640	6.0	15.0	71-80-90-100-112-132	2800	2900	8130	8920	1810	188
		300 L1	7.20	69	550	4.1	15.0	71-80-90-100-112-132	3000	3100	8690	9530	1950	188
		300 L2	12.1	41	650	3.0	15.0	71-80-90-100-112-132	3500	3700	10200	11100	2310	188
300 L2		14.8	34	650	2.4	15.0	71-80-90-100-112-132	3800	3900	10800	11800	2480	188	
300 L2		18.2	27.5	850	2.6	15.0	71-80-90-100-112-132	4000	4200	11500	12600	2650	188	
300 L2		20.1	24.9	650	1.8	15.0	71-80-90-100-112-132	4200	4300	11800	13000	2740	188	
300 L2		24.6	20.3	850	1.9	15.0	71-80-90-100-112-132	4400	4600	12600	13800	2930	188	
300 L2		30.7	16.3	850	1.5	15.0	71-80-90-100-112-132	4800	5000	13400	14700	3160	188	
300 L2		33.3	15.0	650	1.1	15.0	71-80-90-100-112-132	4900	5100	13800	15100	3240	188	
300 L2		41.5	12.0	650	0.87	15.0	71-80-90-100-112-132	5300	5500	14700	16100	3490	188	
300 L2		51.8	9.6	550	0.59	15.0	71-80-90-100-112-132	5700	5900	15700	17200	3760	188	
300 L3		42.1	11.9	650	0.88	15.0	71-80-90	5300	5500	14800	16200	3510	188	
300 L3		51.6	9.7	850	0.94	15.0	71-80-90	5700	5900	15700	17200	3750	188	
300 L3		63.2	7.9	850	0.77	15.0	71-80-90	6100	6300	16700	18300	4010	188	
300 L3		69.9	7.2	660	0.54	15.0	71-80-90	6300	6500	17200	18800	4150	188	
300 L3		77.5	6.5	850	0.63	15.0	71-80-90	6500	6800	17700	19400	4300	188	
300 L3		85.6	5.8	870	0.58	15.0	71-80-90	6700	7000	18300	20000	4440	188	
300 L3		105	4.8	900	0.49	15.0	71-80-90	7200	7500	19400	21300	4750	188	
300 L3		116	4.3	670	0.33	15.0	71-80-90	7400	7700	20000	21900	4910	188	
300 L3		131	3.8	930	0.41	15.0	71-80-90	7700	8000	20700	22700	5120	188	
300 L3		142	3.5	950	0.38	15.0	71-80-90	7900	8300	21200	23300	5260	188	
300 L3		177	2.8	980	0.32	15.0	71-80-90	8500	8900	22700	24900	5660	188	
300 L3		192	2.6	730	0.22	15.0	71-80-90	8800	9100	23300	25500	5820	188	
300 L3		221	2.3	1000	0.26	15.0	71-80-90	9200	9600	24300	26600	6090	188	
300 L3		240	2.1	760	0.18	15.0	71-80-90	9400	9800	24900	27300	6260	188	
300 L3		299	1.7	790	0.15	15.0	71-80-90	10200	10600	26600	29100	6740	188	
300 L3		373	1.3	670	0.10	15.0	71-80-90	10900	11400	28400	31100	7260	188	
300 L4		403	1.2	830	0.12	12.0	71-80-90	11200	11700	29100	31900	7450	188	
300 L4		447	1.1	1000	0.13	12.0	71-80-90	11600	12100	30000	32900	7710	188	
300 L4		494	1.0	1000	0.12	12.0	71-80-90	12000	12500	30900	33900	7970	188	
300 L4		558	0.90	1000	0.11	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		616	0.81	1000	0.10	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		755	0.66	1000	0.08	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		819	0.61	1000	0.07	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		819	0.61	1000	0.07	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		942	0.53	1000	0.06	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		1022	0.49	1000	0.06	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		1108	0.45	860	0.05	12.0	71-80-90	12000	12500	31000	34000	8000	188	
300 L4		1275	0.39	1000	0.05	12.0	71-80-90	12000	12500	31000	34000	8000	188	






300 L

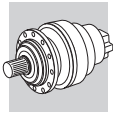
1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	300 L4	1383	0.36	860	0.04	12.0	71-80-90	12000	12500	31000	34000	8000	188
	300 L4	1591	0.31	1000	0.04	12.0	71-80-90	12000	12500	31000	34000	8000	188
	300 L4	1725	0.29	860	0.03	12.0	71-80-90	12000	12500	31000	34000	8000	188
	300 L4	2153	0.23	860	0.02	12.0	71-80-90	12000	12500	31000	34000	8000	188
	300 L4	2687	0.19	700	0.02	12.0	71-80-90	12000	12500	31000	34000	8000	188

301 L




1750 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	301 L1	4.26	328	800	28	7.5	71-80-90-100-112-132	1800	1900	5450	5980	1160	196
	301 L1	5.77	243	850	22	7.5	71-80-90-100-112-132	2000	2100	5970	6550	1280	196
	301 L1	7.20	194	880	18.5	7.5	71-80-90-100-112-132	2100	2200	6380	7000	1380	196
	301 L2	12.1	116	1130	14.5	7.5	71-80-90-100-112-132	2500	2600	7460	8180	1640	196
	301 L2	14.8	94	1200	12.6	7.5	71-80-90-100-112-132	2700	2800	7920	8690	1760	196
	301 L2	18.2	77	1240	10.6	7.5	71-80-90-100-112-132	2900	3000	8420	9240	1880	196
	301 L2	20.1	70	1300	10.1	7.5	71-80-90-100-112-132	3000	3100	8680	9520	1940	196
	301 L2	24.6	57	1360	8.6	7.5	71-80-90-100-112-132	3200	3300	9220	10100	2080	196
	301 L2	30.7	46	1450	7.4	7.5	71-80-90-100-112-132	3400	3500	9850	10800	2240	196
	301 L2	33.3	42	1300	6.1	7.5	71-80-90-100-112-132	3500	3600	10100	11100	2300	196
	301 L2	41.5	34	1300	4.9	7.5	71-80-90-100-112-132	3800	3900	10800	11800	2480	196
	301 L2	51.8	27.0	1150	3.5	7.5	71-80-90-100-112-132	4000	4200	11500	12600	2670	196
	301 L3	42.1	33	1300	5.0	7.5	71-80-90-100	3800	3900	10800	11900	2490	196
	301 L3	51.6	27.1	1700	5.3	7.5	71-80-90-100	4000	4200	11500	12600	2660	196
	301 L3	63.2	22.2	1700	4.3	7.5	71-80-90-100	4300	4500	12200	13400	2850	196
	301 L3	69.9	20.0	1300	3.0	7.5	71-80-90-100	4500	4700	12600	13800	2950	196
	301 L3	77.5	18.1	1700	3.5	7.5	71-80-90-100	4600	4800	13000	14300	3050	196
	301 L3	85.6	16.4	1700	3.2	7.5	71-80-90-100	4800	5000	13400	14700	3150	196
	301 L3	105	13.4	1700	2.6	7.5	71-80-90-100	5100	5300	14200	15600	3370	196
	301 L3	116	12.1	1300	1.8	7.5	71-80-90-100	5300	5500	14700	16100	3490	196
	301 L3	131	10.7	1700	2.1	7.5	71-80-90-100	5500	5700	15200	16700	3630	196
	301 L3	142	9.9	1700	1.9	7.5	71-80-90-100	5600	5900	15600	17100	3730	196
	301 L3	177	7.9	1700	1.5	7.5	71-80-90-100	6100	6300	16700	18300	4020	196
	301 L3	192	7.3	1300	1.1	7.5	71-80-90-100	6200	6500	17100	18700	4130	196
	301 L3	221	6.3	1710	1.2	7.5	71-80-90-100	6500	6800	17800	19500	4320	196
	301 L3	240	5.8	1300	0.87	7.5	71-80-90-100	6700	7000	18300	20000	4440	196
	301 L3	299	4.7	1310	0.70	7.5	71-80-90-100	7200	7500	19500	21400	4780	196
	301 L3	373	3.8	1150	0.49	7.5	71-80-90-100	7800	8100	20900	22900	5150	196
	301 L4	403	3.5	1370	0.56	6.0	71-80-90-100	8000	8300	21300	23400	5280	196
	301 L4	447	3.1	1910	0.71	6.0	71-80-90-100	8300	8600	22000	24100	5470	196
	301 L4	494	2.8	1940	0.65	6.0	71-80-90-100	8500	8900	22700	24900	5650	196
	301 L4	558	2.5	1980	0.59	6.0	71-80-90-100	8900	9200	23500	25800	5890	196
	301 L4	616	2.3	2000	0.54	6.0	71-80-90-100	9200	9600	24200	26600	6090	196
	301 L4	755	1.9	2000	0.44	6.0	71-80-90-100	9800	10200	25800	28200	6510	196
	301 L4	819	1.7	2000	0.40	6.0	71-80-90-100	10100	10500	26400	28900	6690	196
	301 L4	942	1.5	2000	0.35	6.0	71-80-90-100	10600	11000	27500	30200	7010	196
	301 L4	1022	1.4	2000	0.32	6.0	71-80-90-100	10900	11300	28200	30900	7200	196
	301 L4	1108	1.3	1630	0.24	6.0	71-80-90-100	11100	11600	28900	31700	7400	196
	301 L4	1275	1.1	2000	0.26	6.0	71-80-90-100	11700	12200	30100	33100	7750	196
	301 L4	1383	1.0	1700	0.20	6.0	71-80-90-100	12000	12500	30900	33900	7970	196
	301 L4	1591	0.88	2000	0.21	6.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1725	0.81	1700	0.16	6.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	2153	0.65	1700	0.13	6.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	2687	0.52	1150	0.07	6.0	71-80-90-100	12000	12500	31000	34000	8000	196
	900	301 L1	3.48	259	890	25	9.0	71-80-90-100-112-132	1900	2000	5860	6420	1260
301 L1		4.26	211	920	21	9.0	71-80-90-100-112-132	2100	2100	6220	6830	1340	196
301 L1		5.77	156	970	16.3	9.0	71-80-90-100-112-132	2300	2400	6810	7470	1490	196
301 L1		7.20	125	1010	13.6	9.0	71-80-90-100-112-132	2400	2500	7280	7990	1600	196
301 L2		12.1	74	1290	10.7	9.0	71-80-90-100-112-132	2900	3000	8510	9340	1900	196
301 L2		14.8	61	1300	8.8	9.0	71-80-90-100-112-132	3100	3200	9050	9920	2040	196






301 L

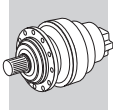
1750 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	301 L3	240	2.1	1500	0.36	15.0	71-80-90-100	9400	9800	24900	27300	6260	196
	301 L3	299	1.7	1560	0.30	15.0	71-80-90-100	10200	10600	26600	29100	6740	196
	301 L3	373	1.3	1150	0.18	15.0	71-80-90-100	10900	11400	28400	31100	7260	196
	301 L4	403	1.2	1640	0.24	12.0	71-80-90-100	11200	11700	29100	31900	7450	196
	301 L4	447	1.1	2000	0.26	12.0	71-80-90-100	11600	12100	30000	32900	7710	196
	301 L4	494	1.0	2000	0.24	12.0	71-80-90-100	12000	12500	30900	33900	7970	196
	301 L4	558	0.90	2000	0.21	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	616	0.81	2000	0.19	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	755	0.66	2000	0.16	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	819	0.61	2000	0.14	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	942	0.53	2000	0.13	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1022	0.49	2000	0.12	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1108	0.45	1700	0.09	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1275	0.39	2000	0.09	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1383	0.36	1700	0.07	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1591	0.31	2000	0.07	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	1725	0.29	1700	0.06	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	2153	0.23	1700	0.05	12.0	71-80-90-100	12000	12500	31000	34000	8000	196
	301 L4	2687	0.19	1150	0.03	12.0	71-80-90-100	12000	12500	31000	34000	8000	196

303 L




2500 Nm

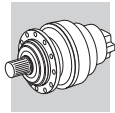
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	303 L1	4.25	329	1120	40	11.0	132-160-180	5300	6100	11200	13000	3480	204
	303 L1	5.33	263	1350	38	11.0	132-160-180	5700	6580	12000	13900	3750	204
	303 L1	6.20	226	1400	34	11.0	132-160-180	6000	6960	12600	14600	3940	204
	303 L1	7.50	187	1440	29	11.0	132-160-180	6300	7340	13300	15400	4200	204
303 L2	12.5	112	1500	18.7	9.0	71-80-90-100-112-132	7500	8770	15500	18000	4980	204	
303 L2	15.3	91	1560	15.8	9.0	71-80-90-100-112-132	8000	9350	16500	19100	5330	204	
303 L2	18.1	77	1840	15.8	9.0	71-80-90-100-112-132	8500	9920	17400	20100	5630	204	
303 L2	20.8	67	1640	12.3	9.0	71-80-90-100-112-132	8900	10400	18100	20900	5900	204	
303 L2	22.7	62	2090	14.3	9.0	71-80-90-100-112-132	9200	10700	18600	21500	6080	204	
303 L2	24.5	57	1940	12.3	9.0	71-80-90-100-112-132	9400	11000	19000	22000	6230	204	
303 L2	26.4	53	1800	10.6	9.0	71-80-90-100-112-132	9600	11300	19500	22500	6390	204	
303 L2	30.8	46	2200	11.1	9.0	71-80-90-100-112-132	10100	11800	20400	23500	6720	204	
303 L2	35.8	39	1800	7.8	9.0	71-80-90-100-112-132	10700	12400	21300	24600	7070	204	
303 L2	38.4	36	2200	8.9	9.0	71-80-90-100-112-132	10900	12700	21800	25200	7240	204	
303 L2	44.6	31	1800	6.3	9.0	71-80-90-100-112-132	11500	13400	22800	26300	7610	204	
303 L2	54.0	25.9	1650	4.8	9.0	71-80-90-100-112-132	12200	14200	24100	27900	8110	204	
303 L3	43.6	32	2100	7.7	7.5	71-80-90-100-112-132	11400	13300	22600	26100	7550	204	
303 L3	53.4	26.2	2100	6.3	7.5	71-80-90-100-112-132	12200	14200	24000	27800	8080	204	
303 L3	63.1	22.2	2600	6.6	7.5	71-80-90-100-112-132	12900	15000	25200	29200	8540	204	
303 L3	72.3	19.4	2100	4.7	7.5	71-80-90-100-112-132	13500	15600	26300	30400	8940	204	
303 L3	77.2	18.1	2600	5.4	7.5	71-80-90-100-112-132	13800	16000	26800	31000	9140	204	
303 L3	90.2	15.5	2100	3.7	7.5	71-80-90-100-112-132	14500	16900	28100	32500	9620	204	
303 L3	105	13.4	2600	4.0	7.5	71-80-90-100-112-132	15200	17700	29400	34000	10100	204	
303 L3	113	12.4	1800	2.6	7.5	71-80-90-100-112-132	15600	18200	30100	34700	10400	204	
303 L3	124	11.2	1800	2.3	7.5	71-80-90-100-112-132	16100	18800	31000	35800	10700	204	
303 L3	141	9.9	2600	3.0	7.5	71-80-90-100-112-132	16800	19500	32200	37200	11200	204	
303 L3	152	9.2	1800	1.9	7.5	71-80-90-100-112-132	17200	20000	32900	38100	11500	204	
303 L3	164	8.6	2200	2.2	7.5	71-80-90-100-112-132	17700	20600	33600	38900	11700	204	
303 L3	178	7.9	2200	2.0	7.5	71-80-90-100-112-132	18200	21200	34400	39800	12100	204	
303 L3	190	7.4	1800	1.5	7.5	71-80-90-100-112-132	18600	21600	35200	40700	12300	204	
303 L3	220	6.4	2270	1.7	7.5	71-80-90-100-112-132	19500	22700	36800	42500	13000	204	
303 L3	258	5.4	1800	1.1	7.5	71-80-90-100-112-132	20500	23900	38500	44500	13600	204	
303 L3	276	5.1	2200	1.3	7.5	71-80-90-100-112-132	21000	24500	39300	45500	14000	204	
303 L3	312	4.5	1650	0.85	7.5	71-80-90-100-112-132	21900	25500	40800	47100	14500	204	
303 L3	389	3.6	1650	0.68	7.5	71-80-90-100-112-132	23500	27500	43600	50400	15700	204	
303 L4	413	3.4	2340	0.94	6.0	71-80-90-100-112-132	24000	27900	44400	51300	16000	204	
303 L4	446	3.1	2710	1.0	6.0	71-80-90-100-112-132	24600	28700	45400	52500	16400	204	



303 L




2500 Nm

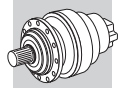
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	303 L4	1991	0.45	2850	0.15	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
	303 L4	2243	0.40	2000	0.09	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
	303 L4	2799	0.32	2000	0.08	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
500	303 L1	3.60	139	1710	26	22	132-160-180	7000	8110	14600	16800	4630	204
	303 L1	4.25	118	1770	22	22	132-160-180	7400	8580	15300	17700	4900	204
	303 L1	5.33	94	1840	18.6	22	132-160-180	8000	9250	16400	19000	5280	204
	303 L1	6.20	81	1800	15.7	22	132-160-180	8400	9730	17100	19800	5560	204
	303 L1	7.50	67	1650	11.9	22	132-160-180	8900	10400	18200	21000	5920	204
	303 L2	12.5	40	2050	9.1	18.0	71-80-90-100-112-132	10600	12300	21200	24500	7020	204
	303 L2	15.3	33	2100	7.6	18.0	71-80-90-100-112-132	11300	13200	22500	26000	7510	204
	303 L2	18.1	27.6	2500	7.7	18.0	71-80-90-100-112-132	12000	13900	23700	27400	7940	204
	303 L2	20.8	24.1	2100	5.6	18.0	71-80-90-100-112-132	12500	14600	24600	28500	8310	204
	303 L2	22.7	22.0	2200	5.4	18.0	71-80-90-100-112-132	12900	15000	25300	29300	8570	204
	303 L2	24.5	20.4	2600	5.9	18.0	71-80-90-100-112-132	13200	15400	25900	29900	8780	204
	303 L2	26.4	18.9	1800	3.8	18.0	71-80-90-100-112-132	13600	15800	26500	30600	9010	204
	303 L2	30.8	16.3	2200	4.0	18.0	71-80-90-100-112-132	14300	16600	27700	32100	9480	204
	303 L2	35.8	14.0	1800	2.8	18.0	71-80-90-100-112-132	15000	17500	29000	33500	9960	204
	303 L2	38.4	13.0	2200	3.2	18.0	71-80-90-100-112-132	15400	17900	29600	34300	10200	204
	303 L2	44.6	11.2	1800	2.2	18.0	71-80-90-100-112-132	16100	18800	31000	35800	10700	204
	303 L2	54.0	9.3	1650	1.7	18.0	71-80-90-100-112-132	17200	20000	32800	38000	11400	204
	303 L3	43.6	11.5	2100	2.8	15.0	71-80-90-100-112-132	16000	18700	30800	35600	10600	204
	303 L3	53.4	9.4	2100	2.3	15.0	71-80-90-100-112-132	17100	19900	32700	37800	11400	204
	303 L3	63.1	7.9	2600	2.4	15.0	71-80-90-100-112-132	18100	21100	34400	39800	12000	204
	303 L3	72.3	6.9	2120	1.7	15.0	71-80-90-100-112-132	18900	22000	35800	41400	12600	204
	303 L3	77.2	6.5	2600	1.9	15.0	71-80-90-100-112-132	19400	22600	36500	42300	12900	204
	303 L3	90.2	5.5	2140	1.4	15.0	71-80-90-100-112-132	20400	23700	38300	44300	13600	204
	303 L3	105	4.8	2650	1.5	15.0	71-80-90-100-112-132	21400	25000	40000	46300	14200	204
	303 L3	113	4.4	1800	0.92	15.0	71-80-90-100-112-132	22000	25700	40900	47300	14600	204
	303 L3	124	4.0	1830	0.84	15.0	71-80-90-100-112-132	22700	26400	42200	48800	15100	204
	303 L3	141	3.5	2680	1.1	15.0	71-80-90-100-112-132	23700	27600	43800	50700	15800	204
	303 L3	152	3.3	1890	0.71	15.0	71-80-90-100-112-132	24300	28200	44800	51800	16200	204
	303 L3	164	3.1	2380	0.83	15.0	71-80-90-100-112-132	24900	29000	45800	52900	16500	204
	303 L3	178	2.8	2410	0.78	15.0	71-80-90-100-112-132	25600	29800	46900	54200	17000	204
	303 L3	190	2.6	1960	0.59	15.0	71-80-90-100-112-132	26100	30400	47900	55400	17400	204
	303 L3	220	2.3	2270	0.59	15.0	71-80-90-100-112-132	27400	31900	50100	57900	18300	204
	303 L3	258	1.9	2060	0.46	15.0	71-80-90-100-112-132	28900	33700	52400	60600	19200	204
	303 L3	276	1.8	2590	0.54	15.0	71-80-90-100-112-132	29600	34400	53600	61900	19700	204
	303 L3	312	1.6	1860	0.34	15.0	71-80-90-100-112-132	30800	35900	55500	64200	20500	204
	303 L3	389	1.3	1930	0.28	15.0	71-80-90-100-112-132	33200	38600	59300	68600	22100	204
	303 L4	413	1.2	2760	0.40	12.0	71-80-90-100-112-132	33800	39400	60400	69900	22500	204
	303 L4	446	1.1	2880	0.38	12.0	71-80-90-100-112-132	34700	40400	61800	71500	23100	204
	303 L4	492	1.0	2750	0.33	12.0	71-80-90-100-112-132	35900	41800	63700	73700	23900	204
	303 L4	556	0.90	2900	0.31	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
	303 L4	649	0.77	2300	0.21	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
	303 L4	718	0.70	2300	0.19	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204
303 L4	816	0.61	2900	0.21	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	896	0.56	2300	0.15	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1018	0.49	2900	0.17	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1098	0.46	2300	0.12	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1278	0.39	2850	0.13	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1370	0.36	2300	0.10	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1586	0.32	2740	0.10	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1854	0.27	2300	0.07	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	1991	0.25	2850	0.08	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	2243	0.22	2000	0.05	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	
303 L4	2799	0.18	2000	0.04	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	204	



305 L




5000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	305 L2	30.8	29.3	4400	14.3	11.0	71-80-90-100-112-132	11700	13600	23200	26900	7790	214
	305 L2	35.8	25.2	3600	10.1	11.0	71-80-90-100-112-132	12300	14400	24300	28100	8190	214
	305 L2	38.4	23.4	4400	11.5	11.0	71-80-90-100-112-132	12600	14700	24800	28700	8390	214
	305 L2	44.6	20.2	3600	8.1	11.0	71-80-90-100-112-132	13300	15400	26000	30100	8820	214
	305 L2	54.0	16.7	3100	5.7	11.0	71-80-90-100-112-132	14100	16500	27500	31800	9400	214
	305 L3	43.6	20.6	4200	9.9	9.0	71-80-90-100-112-132	13200	15400	25800	29800	8750	214
	305 L3	53.4	16.9	4200	8.1	9.0	71-80-90-100-112-132	14100	16400	27400	31700	9360	214
	305 L3	63.1	14.3	5200	8.5	9.0	71-80-90-100-112-132	14900	17400	28800	33300	9890	214
	305 L3	72.3	12.5	4200	6.0	9.0	71-80-90-100-112-132	15600	18100	30000	34700	10400	214
	305 L3	77.2	11.7	5200	7.0	9.0	71-80-90-100-112-132	15900	18600	30600	35400	10600	214
	305 L3	90.2	10.0	4200	4.8	9.0	71-80-90-100-112-132	16800	19500	32100	37100	11100	214
	305 L3	105	8.6	5200	5.1	9.0	71-80-90-100-112-132	17600	20500	33500	38800	11700	214
	305 L3	113	8.0	3600	3.3	9.0	71-80-90-100-112-132	18100	21100	34300	39700	12000	214
	305 L3	124	7.2	3600	3.0	9.0	71-80-90-100-112-132	18600	21700	35400	40900	12400	214
	305 L3	141	6.4	5230	3.8	9.0	71-80-90-100-112-132	19500	22700	36700	42500	13000	214
	305 L3	152	5.9	3600	2.4	9.0	71-80-90-100-112-132	19900	23300	37600	43400	13300	214
	305 L3	164	5.5	4400	2.8	9.0	71-80-90-100-112-132	20500	23800	38400	44400	13600	214
	305 L3	178	5.1	4400	2.6	9.0	71-80-90-100-112-132	21000	24500	39300	45500	14000	214
	305 L3	190	4.7	3600	2.0	9.0	71-80-90-100-112-132	21500	25000	40200	46400	14300	214
	305 L3	220	4.1	4740	2.2	9.0	71-80-90-100-112-132	22600	26300	42000	48500	15000	214
	305 L3	258	3.5	3750	1.5	9.0	71-80-90-100-112-132	23800	27800	44000	50800	15800	214
	305 L3	276	3.3	4690	1.8	9.0	71-80-90-100-112-132	24300	28300	44900	51900	16200	214
	305 L3	312	2.9	3210	1.1	9.0	71-80-90-100-112-132	25300	29600	46600	53800	16900	214
	305 L3	389	2.3	3330	0.88	9.0	71-80-90-100-112-132	27300	31800	49800	57500	18100	214
	305 L4	413	2.2	4980	1.3	7.5	71-80-90-100-112-132	27800	32400	50700	58600	18500	214
	305 L4	446	2.0	5580	1.3	7.5	71-80-90-100-112-132	28500	33300	51800	59900	19000	214
	305 L4	492	1.8	5360	1.2	7.5	71-80-90-100-112-132	29500	34300	53400	61700	19600	214
	305 L4	556	1.6	5650	1.1	7.5	71-80-90-100-112-132	30700	35800	55400	64000	20400	214
	305 L4	649	1.4	4620	0.76	7.5	71-80-90-100-112-132	32300	37700	58000	67100	21500	214
	305 L4	718	1.3	4430	0.66	7.5	71-80-90-100-112-132	33400	39000	59800	69200	22300	214
	305 L4	816	1.1	5380	0.70	7.5	71-80-90-100-112-132	34900	40600	62100	71900	23200	214
	305 L4	896	1.0	4600	0.55	7.5	71-80-90-100-112-132	36000	42000	63900	73900	24000	214
	305 L4	1018	0.88	5590	0.58	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1098	0.82	4600	0.45	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1278	0.70	5600	0.47	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1370	0.66	4600	0.36	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1586	0.57	4740	0.32	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1854	0.49	4600	0.26	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1991	0.45	5600	0.30	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	2243	0.40	3800	0.18	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	2799	0.32	3800	0.14	7.5	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	500	305 L1	3.60	139	2940	44	26	132-160-180	7000	8110	14600	16800	4630
305 L1		4.25	118	3030	38	26	132-160-180	7400	8580	15300	17700	4900	214
305 L1		5.33	94	3160	32	26	132-160-180	8000	9250	16400	19000	5280	214
305 L1		6.20	81	3260	28	26	132-160-180	8400	9730	17100	19800	5560	214
305 L1		7.50	67	3100	22	26	132-160-180	8900	10400	18200	21000	5920	214
305 L2		12.5	40	3690	16.4	18.0	71-80-90-100-112-132	10600	12300	21200	24500	7020	214
305 L2		15.3	33	3820	13.8	18.0	71-80-90-100-112-132	11300	13200	22500	26000	7510	214
305 L2		18.1	27.6	4510	13.8	18.0	71-80-90-100-112-132	12000	13900	23700	27400	7940	214
305 L2		20.8	24.1	4030	10.8	18.0	71-80-90-100-112-132	12500	14600	24600	28500	8310	214
305 L2		22.7	22.0	4400	10.8	18.0	71-80-90-100-112-132	12900	15000	25300	29300	8570	214
305 L2		24.5	20.4	4760	10.8	18.0	71-80-90-100-112-132	13200	15400	25900	29900	8780	214
305 L2		26.4	18.9	3600	7.6	18.0	71-80-90-100-112-132	13600	15800	26500	30600	9010	214
305 L2		30.8	16.3	4400	8.0	18.0	71-80-90-100-112-132	14300	16600	27700	32100	9480	214
305 L2		35.8	14.0	3600	5.6	18.0	71-80-90-100-112-132	15000	17500	29000	33500	9960	214
305 L2		38.4	13.0	4400	6.4	18.0	71-80-90-100-112-132	15400	17900	29600	34300	10200	214
305 L2		44.6	11.2	3600	4.5	18.0	71-80-90-100-112-132	16100	18800	31000	35800	10700	214
305 L2		54.0	9.3	3100	3.2	18.0	71-80-90-100-112-132	17200	20000	32800	38000	11400	214
305 L3		43.6	11.5	4200	5.5	15.0	71-80-90-100-112-132	16000	18700	30800	35600	10600	214
305 L3		53.4	9.4	4200	4.5	15.0	71-80-90-100-112-132	17100	19900	32700	37800	11400	214
305 L3		63.1	7.9	5200	4.7	15.0	71-80-90-100-112-132	18100	21100	34400	39800	12000	214
305 L3		72.3	6.9	4220	3.3	15.0	71-80-90-100-112-132	18900	22000	35800	41400	12600	214
305 L3		77.2	6.5	5220	3.9	15.0	71-80-90-100-112-132	19400	22600	36500	42300	12900	214
305 L3		90.2	5.5	4270	2.7	15.0	71-80-90-100-112-132	20400	23700	38300	44300	13600	214






305 L

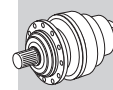
5000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	305 L3	105	4.8	5310	2.9	15.0	71-80-90-100-112-132	21400	25000	40000	46300	14200	214
	305 L3	113	4.4	3610	1.8	15.0	71-80-90-100-112-132	22000	25700	40900	47300	14600	214
	305 L3	124	4.0	3670	1.7	15.0	71-80-90-100-112-132	22700	26400	42200	48800	15100	214
	305 L3	141	3.5	5360	2.2	15.0	71-80-90-100-112-132	23700	27600	43800	50700	15800	214
	305 L3	152	3.3	3790	1.4	15.0	71-80-90-100-112-132	24300	28200	44800	51800	16200	214
	305 L3	164	3.1	4740	1.7	15.0	71-80-90-100-112-132	24900	29000	45800	52900	16500	214
	305 L3	178	2.8	4800	1.5	15.0	71-80-90-100-112-132	25600	29800	46900	54200	17000	214
	305 L3	190	2.6	3930	1.2	15.0	71-80-90-100-112-132	26100	30400	47900	55400	17400	214
	305 L3	220	2.3	4740	1.2	15.0	71-80-90-100-112-132	27400	31900	50100	57900	18300	214
	305 L3	258	1.9	4130	0.92	15.0	71-80-90-100-112-132	28900	33700	52400	60600	19200	214
	305 L3	276	1.8	5120	1.1	15.0	71-80-90-100-112-132	29600	34400	53600	61900	19700	214
	305 L3	312	1.6	3520	0.65	15.0	71-80-90-100-112-132	30800	35900	55500	64200	20500	214
	305 L3	389	1.3	3650	0.54	15.0	71-80-90-100-112-132	33200	38600	59300	68600	22100	214
	305 L4	413	1.2	5440	0.78	12.0	71-80-90-100-112-132	33800	39400	60400	69900	22500	214
	305 L4	446	1.1	5760	0.76	12.0	71-80-90-100-112-132	34700	40400	61800	71500	23100	214
	305 L4	492	1.0	5460	0.66	12.0	71-80-90-100-112-132	35900	41800	63700	73700	23900	214
	305 L4	556	0.90	5800	0.62	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	649	0.77	4700	0.43	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	718	0.70	4600	0.38	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	816	0.61	5800	0.42	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	896	0.56	4600	0.30	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1018	0.49	5800	0.34	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1098	0.46	4600	0.25	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1278	0.39	5600	0.26	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1370	0.36	4600	0.20	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1586	0.32	4740	0.18	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1854	0.27	4600	0.15	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	1991	0.25	5600	0.17	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	2243	0.22	3800	0.10	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214
	305 L4	2799	0.18	3800	0.08	12.0	71-80-90-100-112-132	36000	42000	64000	74000	24000	214

306 L




8500 Nm

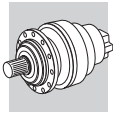
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	306 L1	5.33	263	2650	75	18.0	160-180-200-225	7100	8000	19000	22400	5470	224
	306 L1	6.20	226	3080	75	18.0	160-180-200-225	7400	8400	19900	23400	5750	224
	306 L1	7.50	187	3720	75	18.0	160-180-200-225	7900	9000	21000	24800	6120	224
	306 L2	13.0	108	3330	40	13.0	132-160-180	9500	10800	24800	29200	7350	224
	306 L2	15.3	92	3930	40	13.0	132-160-180	10000	11400	26100	30700	7770	224
	306 L2	18.1	78	4640	40	13.0	132-160-180	10600	12000	27400	32300	8210	224
	306 L2	22.7	62	5560	38	13.0	132-160-180	11400	13000	29300	34500	8850	224
	306 L2	26.4	53	5760	34	13.0	132-160-180	12000	13600	30700	36100	9310	224
	306 L2	28.4	49	6050	33	13.0	132-160-180	12300	14000	31400	37000	9550	224
	306 L2	33.1	42	6330	30	13.0	132-160-180	13000	14700	32800	38700	10000	224
	306 L2	38.4	36	6500	26	13.0	132-160-180	13600	15400	34300	40500	10600	224
	306 L2	46.5	30	6500	22	13.0	132-160-180	14500	16400	36400	42800	11300	224
	306 L2	56.3	24.9	5500	15.2	13.0	132-160-180	15500	17500	38500	45400	12000	224
	306 L3	45.1	31	5240	18.7	7.5	71-80-90-100-112-132	14400	16300	36000	42500	11100	224
	306 L3	53.2	26.3	6190	18.7	7.5	71-80-90-100-112-132	15200	17200	37900	44600	11800	224
	306 L3	65.2	21.5	6420	15.8	7.5	71-80-90-100-112-132	16200	18400	40300	47400	12600	224
	306 L3	77.0	18.2	7580	15.8	7.5	71-80-90-100-112-132	17200	19400	42300	49800	13300	224
	306 L3	81.9	17.1	7280	14.3	7.5	71-80-90-100-112-132	17500	19800	43100	50800	13600	224
	306 L3	88.3	15.9	6770	12.3	7.5	71-80-90-100-112-132	18000	20400	44100	51900	13900	224
	306 L3	104	13.4	7990	12.3	7.5	71-80-90-100-112-132	19000	21500	46300	54600	14700	224
	306 L3	112	12.5	7420	10.6	7.5	71-80-90-100-112-132	19400	22000	47400	55800	15100	224
	306 L3	121	11.5	7750	10.3	7.5	71-80-90-100-112-132	19900	22600	48500	57100	15500	224
	306 L3	141	9.9	7750	8.8	7.5	71-80-90-100-112-132	21000	23800	50700	59800	16300	224
	306 L3	152	9.2	7420	7.8	7.5	71-80-90-100-112-132	21500	24400	51900	61100	16700	224
	306 L3	184	7.6	6800	5.9	7.5	71-80-90-100-112-132	22900	26000	54900	64700	17800	224



306 L




8500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	306 L4	1015	0.89	9310	0.98	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	1095	0.82	7710	0.75	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	1279	0.70	8500	0.71	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	1475	0.61	9500	0.69	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	1597	0.56	8500	0.57	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	1872	0.48	7000	0.40	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	2074	0.43	7000	0.36	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	2337	0.39	7000	0.32	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	2916	0.31	7000	0.26	7.5	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
500	306 L1	3.60	139	4660	70	36	160-180-200-225	8700	9900	23000	27100	6760	224
	306 L1	4.25	118	4780	61	36	160-180-200-225	9200	10500	24200	28500	7140	224
	306 L1	5.33	94	4990	51	36	160-180-200-225	10000	11300	25900	30500	7700	224
	306 L1	6.20	81	5140	45	36	160-180-200-225	10500	11900	27100	31900	8100	224
	306 L1	7.50	67	5310	38	36	160-180-200-225	11100	12600	28700	33800	8630	224
	306 L2	13.0	39	5980	26	26	132-160-180	13400	15200	33800	39800	10400	224
	306 L2	15.3	33	6170	22	26	132-160-180	14100	16000	35500	41800	10900	224
	306 L2	18.1	27.7	7290	22	26	132-160-180	14900	16900	37300	43900	11600	224
	306 L2	22.7	22.1	7580	18.6	26	132-160-180	16100	18200	39900	47000	12500	224
	306 L2	26.4	19.0	7420	15.7	26	132-160-180	16900	19200	41800	49200	13100	224
	306 L2	28.4	17.6	7750	15.2	26	132-160-180	17300	19700	42700	50400	13500	224
	306 L2	33.1	15.1	7750	13.0	26	132-160-180	18300	20700	44700	52700	14200	224
	306 L2	38.4	13.0	6500	9.4	26	132-160-180	19200	21700	46800	55100	14900	224
	306 L2	46.5	10.8	6500	7.8	26	132-160-180	20400	23200	49500	58400	15900	224
	306 L2	56.3	8.9	5500	5.4	26	132-160-180	21800	24700	52400	61800	16900	224
	306 L3	45.1	11.1	7140	9.1	15.0	71-80-90-100-112-132	20200	22900	49100	57800	15700	224
	306 L3	53.2	9.4	7500	8.1	15.0	71-80-90-100-112-132	21400	24200	51600	60800	16600	224
	306 L3	65.2	7.7	7500	6.6	15.0	71-80-90-100-112-132	22900	25900	54800	64600	17800	224
	306 L3	77.0	6.5	9250	6.9	15.0	71-80-90-100-112-132	24200	27400	57600	67900	18800	224
	306 L3	81.9	6.1	7580	5.3	15.0	71-80-90-100-112-132	24700	28000	58700	69100	19100	224
	306 L3	88.3	5.7	8660	5.6	15.0	71-80-90-100-112-132	25300	28700	60000	70700	19600	224
	306 L3	104	4.8	9370	5.2	15.0	71-80-90-100-112-132	26700	30300	63100	74300	20800	224
	306 L3	112	4.5	7420	3.8	15.0	71-80-90-100-112-132	27400	31000	64500	76000	21300	224
	306 L3	121	4.1	7980	3.8	15.0	71-80-90-100-112-132	28100	31800	66000	77800	21800	224
	306 L3	141	3.5	8130	3.3	15.0	71-80-90-100-112-132	29600	33500	69100	81400	23000	224
	306 L3	152	3.3	7420	2.8	15.0	71-80-90-100-112-132	30300	34300	70700	83300	23500	224
	306 L3	184	2.7	6800	2.1	15.0	71-80-90-100-112-132	32300	36600	74800	88200	25100	224
	306 L3	205	2.4	8510	2.4	15.0	71-80-90-100-112-132	33500	37900	77300	91000	26000	224
	306 L3	222	2.3	7340	1.9	15.0	71-80-90-100-112-132	34400	39000	79100	93200	26700	224
	306 L3	238	2.1	8670	2.1	15.0	71-80-90-100-112-132	35200	39900	80800	95300	27300	224
	306 L3	268	1.9	6240	1.3	15.0	71-80-90-100-112-132	36600	41500	83800	98700	28400	224
	306 L3	288	1.7	6320	1.3	15.0	71-80-90-100-112-132	37500	42500	85600	100800	29100	224
	306 L3	325	1.5	6460	1.1	15.0	71-80-90-100-112-132	39000	44200	88700	104500	30300	224
	306 L3	405	1.2	6730	0.95	15.0	71-80-90-100-112-132	42000	47600	94800	111700	32600	224
	306 L4	444	1.1	9950	1.3	12.0	71-80-90-100-112-132	43300	49100	97500	114900	33600	224
	306 L4	509	0.98	8920	1.0	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	589	0.85	9500	0.95	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
	306 L4	636	0.79	9010	0.84	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224
306 L4	700	0.71	9500	0.80	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	809	0.62	8080	0.59	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	877	0.57	8190	0.55	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1015	0.49	9500	0.55	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1095	0.46	8500	0.46	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1279	0.39	8500	0.39	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1475	0.34	9500	0.38	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1597	0.31	8500	0.31	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	1872	0.27	7000	0.22	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	2074	0.24	7000	0.20	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	2337	0.21	7000	0.18	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	
306 L4	2916	0.17	7000	0.14	12.0	71-80-90-100-112-132	45000	51000	101000	119000	35000	224	






307 L

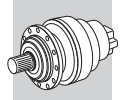
12500 Nm




n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	307 L4	509	0.98	14600	1.7	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	579	0.86	15000	1.5	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	654	0.77	14000	1.3	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	722	0.69	15000	1.2	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	801	0.62	14000	1.0	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	906	0.55	15000	0.98	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	999	0.50	14000	0.83	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	1149	0.44	11000	0.57	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	1274	0.39	14000	0.65	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	1380	0.36	11000	0.47	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	1605	0.31	11000	0.41	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	1723	0.29	11000	0.38	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	2041	0.24	14000	0.41	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234
	307 L4	2423	0.21	11000	0.27	15	71-80-90-100-112-132-160	52000	65000	109000	145000	45000	234

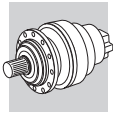
309 L

18000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	309 L1	5.25	267	5210	150	25	180-200-225-250	—	—	20600	27100	5590	244
	309 L1	6.23	225	6180	150	25	180-200-225-250	—	—	21700	28600	5920	244
	309 L2	12.3	113	4750	60	18.0	132-160-180	—	—	26600	35100	7440	244
	309 L2	14.7	95	5670	60	18.0	132-160-180	—	—	28100	37000	7890	244
	309 L2	17.4	81	6700	60	18.0	132-160-180	—	—	29500	38900	8340	244
	309 L2	21.8	64	8400	60	18.0	132-160-180	—	—	31600	41600	8990	244
	309 L2	25.4	55	9500	58	18.0	132-160-180	—	—	33000	43500	9460	244
	309 L2	28.0	50	10780	60	18.0	132-160-180	—	—	34000	44800	9770	244
	309 L2	30.7	46	9820	50	18.0	132-160-180	—	—	35000	46100	10100	244
	309 L2	32.6	43	11500	55	18.0	132-160-180	—	—	35600	46900	10300	244
	309 L2	38.6	36	11900	48	18.0	132-160-180	—	—	37500	49400	10900	244
	309 L2	46.7	30	12600	42	18.0	132-160-180	—	—	39700	52300	11600	244
	309 L3	51.3	27.3	9570	30	11.0	71-80-90-100-112-132-160	—	—	40800	53800	12000	244
	309 L3	60.5	23.1	11300	30	11.0	71-80-90-100-112-132-160	—	—	42900	56500	12600	244
	309 L3	74.1	18.9	13100	28	11.0	71-80-90-100-112-132-160	—	—	45600	60000	13500	244
	309 L3	80.6	17.4	14300	28	11.0	71-80-90-100-112-132-160	—	—	46700	61600	13900	244
	309 L3	93.0	15.1	14200	25	11.0	71-80-90-100-112-132-160	—	—	48800	64300	14600	244
	309 L3	100	14.0	13900	22	11.0	71-80-90-100-112-132-160	—	—	49900	65800	15000	244
	309 L3	113	12.4	16000	23	11.0	71-80-90-100-112-132-160	—	—	51700	68200	15600	244
	309 L3	126	11.1	15600	19.9	11.0	71-80-90-100-112-132-160	—	—	53400	70400	16100	244
	309 L3	139	10.1	16000	18.5	11.0	71-80-90-100-112-132-160	—	—	55000	72500	16700	244
	309 L3	153	9.2	13000	13.7	11.0	71-80-90-100-112-132-160	—	—	56600	74600	17200	244
	309 L3	162	8.7	16000	15.9	11.0	71-80-90-100-112-132-160	—	—	57500	75900	17500	244
	309 L3	177	7.9	12300	11.2	11.0	71-80-90-100-112-132-160	—	—	59100	78000	18100	244
	309 L3	202	6.9	16000	12.7	11.0	71-80-90-100-112-132-160	—	—	61500	81100	18900	244
	309 L3	223	6.3	13000	9.4	11.0	71-80-90-100-112-132-160	—	—	63400	83500	19500	244
	309 L3	239	5.9	13000	8.7	11.0	71-80-90-100-112-132-160	—	—	64700	85300	20000	244
	309 L3	284	4.9	15800	8.9	11.0	71-80-90-100-112-132-160	—	—	68100	89800	21100	244
	309 L3	336	4.2	13100	6.3	11.0	71-80-90-100-112-132-160	—	—	71700	94500	22400	244
	309 L4	349	4.0	20100	9.5	7.5	71-80-90-100-112-132-160	—	—	72500	95600	22700	244
	309 L4	405	3.5	17200	7.0	7.5	71-80-90-100-112-132-160	—	—	75800	99900	23800	244
	309 L4	465	3.0	17600	6.3	7.5	71-80-90-100-112-132-160	—	—	79000	104200	24900	244
	309 L4	509	2.7	14300	4.6	7.5	71-80-90-100-112-132-160	—	—	81200	107100	25700	244
	309 L4	579	2.4	20600	5.9	7.5	71-80-90-100-112-132-160	—	—	84400	111200	26800	244
	309 L4	654	2.1	18300	4.6	7.5	71-80-90-100-112-132-160	—	—	87500	115400	27900	244
	309 L4	722	1.9	20600	4.7	7.5	71-80-90-100-112-132-160	—	—	90200	118900	28900	244
	309 L4	801	1.7	18300	3.8	7.5	71-80-90-100-112-132-160	—	—	93000	122600	29900	244
	309 L4	906	1.5	17500	3.2	7.5	71-80-90-100-112-132-160	—	—	96500	127300	31100	244
	309 L4	999	1.4	18300	3.0	7.5	71-80-90-100-112-132-160	—	—	99400	131000	32200	244
	309 L4	1149	1.2	16400	2.4	7.5	71-80-90-100-112-132-160	—	—	103700	136700	33700	244
	309 L4	1274	1.1	12300	1.6	7.5	71-80-90-100-112-132-160	—	—	106900	141000	34900	244
	309 L4	1380	1.0	17000	2.0	7.5	71-80-90-100-112-132-160	—	—	109500	144400	35800	244




**309 L****18000 Nm**

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	309 L4	1605	0.87	17000	1.8	7.5	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1723	0.81	17000	1.6	7.5	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	2041	0.69	15800	1.3	7.5	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	2423	0.58	17000	1.2	7.5	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
900	309 L1	3.43	263	5290	150	30	180-200-225-250	—	—	20700	27300	5620	244
	309 L1	4.09	220	6320	150	30	180-200-225-250	—	—	21800	28800	5960	244
	309 L1	5.25	171	7620	141	30	180-200-225-250	—	—	23500	31000	6480	244
	309 L1	6.23	144	7860	122	30	180-200-225-250	—	—	24700	32600	6860	244
	309 L2	12.3	73	7390	60	22	132-160-180	—	—	30400	40000	8620	244
	309 L2	14.7	61	8820	60	22	132-160-180	—	—	32000	42200	9140	244
	309 L2	17.4	52	10100	58	22	132-160-180	—	—	33700	44400	9660	244
	309 L2	21.8	41	10500	48	22	132-160-180	—	—	36000	47500	10400	244
	309 L2	25.4	35	10800	43	22	132-160-180	—	—	37700	49700	11000	244
	309 L2	28.0	32	12600	45	22	132-160-180	—	—	38800	51200	11300	244
	309 L2	30.7	29.3	11200	37	22	132-160-180	—	—	39900	52600	11700	244
	309 L2	32.6	27.6	13200	41	22	132-160-180	—	—	40600	53600	11900	244
	309 L2	38.6	23.3	13000	34	22	132-160-180	—	—	42800	56400	12600	244
	309 L2	46.7	19.3	13000	28	22	132-160-180	—	—	45300	59700	13400	244
	309 L3	51.3	17.6	12300	25	13.0	71-80-90-100-112-132-160	—	—	46600	61400	13900	244
	309 L3	60.5	14.9	14500	25	13.0	71-80-90-100-112-132-160	—	—	48900	64500	14600	244
	309 L3	74.1	12.1	15000	21	13.0	71-80-90-100-112-132-160	—	—	52000	68600	15700	244
	309 L3	80.6	11.2	16000	21	13.0	71-80-90-100-112-132-160	—	—	53300	70300	16100	244
	309 L3	93.0	9.7	16200	18.0	13.0	71-80-90-100-112-132-160	—	—	55700	73400	16900	244
	309 L3	100	9.0	15800	16.3	13.0	71-80-90-100-112-132-160	—	—	57000	75100	17300	244
	309 L3	113	7.9	16000	14.6	13.0	71-80-90-100-112-132-160	—	—	59100	77900	18000	244
	309 L3	126	7.2	17500	14.3	13.0	71-80-90-100-112-132-160	—	—	61000	80400	18700	244
	309 L3	139	6.5	16000	11.9	13.0	71-80-90-100-112-132-160	—	—	62800	82800	19300	244
	309 L3	153	5.9	13000	8.8	13.0	71-80-90-100-112-132-160	—	—	64600	85200	19900	244
	309 L3	162	5.6	16000	10.2	13.0	71-80-90-100-112-132-160	—	—	65700	86600	20300	244
	309 L3	177	5.1	12300	7.2	13.0	71-80-90-100-112-132-160	—	—	67500	89000	20900	244
	309 L3	202	4.5	16500	8.5	13.0	71-80-90-100-112-132-160	—	—	70200	92600	21900	244
	309 L3	223	4.0	13200	6.1	13.0	71-80-90-100-112-132-160	—	—	72400	95400	22600	244
	309 L3	239	3.8	13400	5.8	13.0	71-80-90-100-112-132-160	—	—	73900	97400	23100	244
	309 L3	284	3.2	15800	5.7	13.0	71-80-90-100-112-132-160	—	—	77800	102500	24500	244
	309 L3	336	2.7	14200	4.4	13.0	71-80-90-100-112-132-160	—	—	81900	107900	25900	244
	309 L4	349	2.6	20600	6.3	9.0	71-80-90-100-112-132-160	—	—	82800	109100	26300	244
	309 L4	405	2.2	18500	4.9	9.0	71-80-90-100-112-132-160	—	—	86600	114100	27600	244
	309 L4	465	1.9	18900	4.3	9.0	71-80-90-100-112-132-160	—	—	90200	118900	28900	244
	309 L4	509	1.8	14300	3.0	9.0	71-80-90-100-112-132-160	—	—	92700	122200	29800	244
	309 L4	579	1.6	20700	3.8	9.0	71-80-90-100-112-132-160	—	—	96400	127000	31100	244
	309 L4	654	1.4	18300	3.0	9.0	71-80-90-100-112-132-160	—	—	99900	131700	32400	244
	309 L4	722	1.2	21000	3.1	9.0	71-80-90-100-112-132-160	—	—	103000	135700	33500	244
	309 L4	801	1.1	18300	2.4	9.0	71-80-90-100-112-132-160	—	—	106200	140000	34600	244
	309 L4	906	0.99	18000	2.1	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	999	0.90	18300	2.0	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1149	0.78	17000	1.6	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
309 L4	1274	0.71	12700	1.1	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
309 L4	1380	0.65	17000	1.3	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
309 L4	1605	0.56	17000	1.1	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
309 L4	1723	0.52	17000	1.1	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
309 L4	2041	0.44	16900	0.88	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
309 L4	2423	0.37	17000	0.75	9.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	
500	309 L1	3.43	146	8540	134	50	180-200-225-250	—	—	24700	32500	6840	244
	309 L1	4.09	122	8610	114	50	180-200-225-250	—	—	26000	34300	7250	244
	309 L1	5.25	95	9090	94	50	180-200-225-250	—	—	28000	37000	7880	244
	309 L1	6.23	80	9370	81	50	180-200-225-250	—	—	29500	38900	8350	244
	309 L2	12.3	41	9770	44	36	132-160-180	—	—	36200	47800	10500	244
	309 L2	14.7	34	11700	44	36	132-160-180	—	—	38200	50400	11100	244
	309 L2	17.4	28.8	12000	38	36	132-160-180	—	—	40200	52900	11800	244
	309 L2	21.8	22.9	12500	32	36	132-160-180	—	—	43000	56700	12700	244
	309 L2	25.4	19.7	12900	28	36	132-160-180	—	—	45000	59300	13300	244
	309 L2	28.0	17.9	15000	30	36	132-160-180	—	—	46300	61100	13800	244
	309 L2	30.7	16.3	12300	22	36	132-160-180	—	—	47600	62800	14200	244






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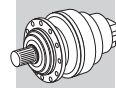
18000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	309 L2	32.6	15.4	15700	27	36	132-160-180	—	—	48500	63900	14500	244
	309 L2	38.6	12.9	13000	18.7	36	132-160-180	—	—	51000	67300	15300	244
	309 L2	46.7	10.7	13000	15.5	36	132-160-180	—	—	54000	71200	16300	244
	309 L3	51.3	9.8	14600	16.4	22	71-80-90-100-112-132-160	—	—	55500	73200	16800	244
	309 L3	60.5	8.3	17300	16.4	22	71-80-90-100-112-132-160	—	—	58400	77000	17800	244
	309 L3	74.1	6.7	17900	13.8	22	71-80-90-100-112-132-160	—	—	62000	81800	19100	244
	309 L3	80.6	6.2	16000	11.4	22	71-80-90-100-112-132-160	—	—	63600	83900	19600	244
	309 L3	93.0	5.4	17500	10.8	22	71-80-90-100-112-132-160	—	—	66400	87500	20600	244
	309 L3	100	5.0	18900	10.8	22	71-80-90-100-112-132-160	—	—	67900	89600	21100	244
	309 L3	113	4.4	16600	8.4	22	71-80-90-100-112-132-160	—	—	70500	92900	21900	244
	309 L3	126	4.0	17500	8.0	22	71-80-90-100-112-132-160	—	—	72700	95900	22700	244
	309 L3	139	3.6	17100	7.1	22	71-80-90-100-112-132-160	—	—	74900	98700	23500	244
	309 L3	153	3.3	13700	5.2	22	71-80-90-100-112-132-160	—	—	77100	101600	24200	244
	309 L3	162	3.1	17500	6.2	22	71-80-90-100-112-132-160	—	—	78400	103300	24700	244
	309 L3	177	2.8	12300	4.0	22	71-80-90-100-112-132-160	—	—	80600	106200	25500	244
	309 L3	202	2.5	18200	5.2	22	71-80-90-100-112-132-160	—	—	83800	110400	26600	244
	309 L3	223	2.2	14700	3.8	22	71-80-90-100-112-132-160	—	—	86300	113800	27500	244
	309 L3	239	2.1	14900	3.6	22	71-80-90-100-112-132-160	—	—	88200	116200	28200	244
	309 L3	284	1.8	15800	3.2	22	71-80-90-100-112-132-160	—	—	92800	122300	29800	244
	309 L3	336	1.5	15800	2.7	22	71-80-90-100-112-132-160	—	—	97700	128800	31500	244
	309 L4	349	1.4	20800	3.5	15.0	71-80-90-100-112-132-160	—	—	98800	130200	31900	244
	309 L4	405	1.2	20300	3.0	15.0	71-80-90-100-112-132-160	—	—	103300	136100	33600	244
	309 L4	465	1.1	20800	2.6	15.0	71-80-90-100-112-132-160	—	—	107600	141900	35100	244
	309 L4	509	0.98	14600	1.7	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	579	0.86	21300	2.2	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	654	0.77	18700	1.7	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	722	0.69	21300	1.7	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	801	0.62	19300	1.4	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	906	0.55	19700	1.3	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	999	0.50	20000	1.2	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1149	0.44	17000	0.87	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1274	0.39	14000	0.65	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1380	0.36	17000	0.73	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1605	0.31	17000	0.63	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	1723	0.29	17000	0.58	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
	309 L4	2041	0.24	18600	0.54	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244
309 L4	2423	0.21	17000	0.42	15.0	71-80-90-100-112-132-160	—	—	110000	145000	36000	244	

310 L

25000 Nm

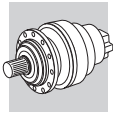
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	310 L1	4	342	4060	150	35	200-225-250	—	—	23100	28900	9300	254
	310 L1	5	267	5210	150	35	200-225-250	—	—	24900	31100	10100	254
	310 L1	6	225	6180	150	35	200-225-250	—	—	26300	32800	10700	254
	310 L2	14.7	95	7090	75	22	160-180-200-225	—	—	33900	42300	14200	254
	310 L2	17.4	81	8370	75	22	160-180-200-225	—	—	35700	44500	15100	254
	310 L2	21.8	64	10500	75	22	160-180-200-225	—	—	38200	47600	16200	254
	310 L2	25.4	55	12200	75	22	160-180-200-225	—	—	39900	49800	17100	254
	310 L2	28.0	50	12700	71	22	160-180-200-225	—	—	41100	51300	17600	254
	310 L2	30.7	46	13500	69	22	160-180-200-225	—	—	42300	52800	18200	254
	310 L2	32.6	43	13300	63	22	160-180-200-225	—	—	43000	53700	18600	254
	310 L2	38.6	36	13900	56	22	160-180-200-225	—	—	45300	56500	19600	254
	310 L2	46.7	30	14700	49	22	160-180-200-225	—	—	48000	59900	20900	254
	310 L3	53.0	26.4	13200	40	18.0	132-160-180	—	—	49800	62200	21800	254
	310 L3	62.6	22.4	15600	40	18.0	132-160-180	—	—	52400	65300	23100	254
	310 L3	73.9	18.9	17600	38	18.0	132-160-180	—	—	55000	68700	24400	254
	310 L3	80.3	17.4	17400	35	18.0	132-160-180	—	—	56400	70400	25100	254
	310 L3	91.3	15.3	18700	33	18.0	132-160-180	—	—	58600	73200	26200	254
	310 L3	101	13.9	18600	30	18.0	132-160-180	—	—	60400	75400	27000	254



310 L




25000 Nm

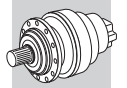
n_1 min ⁻¹		i	n_2 min ⁻¹	M_{n2} Nm	P_{n1} kW	Pt kW	IEC-	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	310 L3	110	12.7	19800	29	18.0	132-160-180	—	—	62100	77500	27900	254	
	310 L3	119	11.8	19500	26	18.0	132-160-180	—	—	63500	79200	28600	254	
	310 L3	130	10.7	20800	26	18.0	132-160-180	—	—	65300	81400	29500	254	
	310 L3	142	9.9	20600	23	18.0	132-160-180	—	—	66900	83500	30300	254	
	310 L3	164	8.6	22300	22	18.0	132-160-180	—	—	69900	87200	31800	254	
	310 L3	177	7.9	17800	16.1	18.0	132-160-180	—	—	71500	89300	32600	254	
	310 L3	202	6.9	21700	17.3	18.0	132-160-180	—	—	74400	92800	34100	254	
	310 L3	230	6.1	21800	15.2	18.0	132-160-180	—	—	77400	96600	35600	254	
	310 L3	249	5.6	17800	11.5	18.0	132-160-180	—	—	79200	98900	36600	254	
	310 L3	295	4.7	22900	12.4	18.0	132-160-180	—	—	83400	104100	38700	254	
	310 L3	350	4.0	19000	8.7	18.0	132-160-180	—	—	87800	109600	41000	254	
	310 L4	389	3.6	24900	10.6	11.0	71-80-90-100-112-132-160	—	—	90600	113100	42400	254	
	310 L4	451	3.1	27900	10.3	11.0	71-80-90-100-112-132-160	—	—	94700	118100	44500	254	
	310 L4	507	2.8	25000	8.2	11.0	71-80-90-100-112-132-160	—	—	98100	122400	46300	254	
	310 L4	556	2.5	27000	8.0	11.0	71-80-90-100-112-132-160	—	—	100800	125800	47800	254	
	310 L4	637	2.2	22900	5.9	11.0	71-80-90-100-112-132-160	—	—	105000	131100	50000	254	
	310 L4	726	1.9	26500	6.0	11.0	71-80-90-100-112-132-160	—	—	109200	136300	52200	254	
	310 L4	818	1.7	27000	5.5	11.0	71-80-90-100-112-132-160	—	—	113200	141300	54300	254	
	310 L4	939	1.5	27000	4.8	11.0	71-80-90-100-112-132-160	—	—	118000	147200	56900	254	
	310 L4	1021	1.4	28000	4.5	11.0	71-80-90-100-112-132-160	—	—	121000	151000	58500	254	
	310 L4	1164	1.2	28600	4.1	11.0	71-80-90-100-112-132-160	—	—	125800	157100	61100	254	
	310 L4	1259	1.1	28000	3.7	11.0	71-80-90-100-112-132-160	—	—	128800	160800	62700	254	
	310 L4	1438	0.97	26000	3.0	11.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	
	310 L4	1657	0.84	22100	2.2	11.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	
	310 L4	1794	0.78	26000	2.4	11.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	
	310 L4	2022	0.69	26000	2.1	11.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	
	310 L4	2523	0.55	26000	1.7	11.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	
	900	310 L1	4	220	6320	150	42	200-225-250	—	—	26400	33000	10800	254
		310 L1	5	171	8110	150	42	200-225-250	—	—	28500	35500	11800	254
		310 L1	6	144	9620	150	42	200-225-250	—	—	30000	37400	12400	254
		310 L2	14.7	61	11000	75	27	160-180-200-225	—	—	38700	48300	16500	254
		310 L2	17.4	52	13000	75	27	160-180-200-225	—	—	40700	50800	17400	254
		310 L2	21.8	41	13900	64	27	160-180-200-225	—	—	43600	54400	18800	254
		310 L2	25.4	35	14600	57	27	160-180-200-225	—	—	45600	56900	19800	254
		310 L2	28.0	32	14500	52	27	160-180-200-225	—	—	47000	58600	20400	254
		310 L2	30.7	29.3	15400	50	27	160-180-200-225	—	—	48300	60200	21100	254
		310 L2	32.6	27.6	15100	47	27	160-180-200-225	—	—	49100	61300	21500	254
		310 L2	38.6	23.3	15800	41	27	160-180-200-225	—	—	51700	64600	22800	254
		310 L2	46.7	19.3	16800	36	27	160-180-200-225	—	—	54800	68300	24200	254
		310 L3	53.0	17.0	18200	35	22	132-160-180	—	—	56900	71000	25300	254
		310 L3	62.6	14.4	19100	32	22	132-160-180	—	—	59800	74600	26700	254
		310 L3	73.9	12.2	20100	28	22	132-160-180	—	—	62800	78400	28300	254
		310 L3	80.3	11.2	19800	25	22	132-160-180	—	—	64400	80400	29000	254
310 L3		91.3	9.9	21400	24	22	132-160-180	—	—	66900	83600	30300	254	
310 L3		101	8.9	21200	22	22	132-160-180	—	—	69000	86100	31300	254	
310 L3		110	8.1	22700	21	22	132-160-180	—	—	70900	88500	32300	254	
310 L3		119	7.6	21700	18.8	22	132-160-180	—	—	72500	90500	33100	254	
310 L3		130	6.9	23800	18.9	22	132-160-180	—	—	74500	93000	34100	254	
310 L3		142	6.3	21800	15.9	22	132-160-180	—	—	76400	95300	35100	254	
310 L3		164	5.5	25500	16.1	22	132-160-180	—	—	79800	99500	36800	254	
310 L3		177	5.1	18000	10.5	22	132-160-180	—	—	81700	102000	37800	254	
310 L3		202	4.5	23100	11.8	22	132-160-180	—	—	84900	106000	39500	254	
310 L3		230	3.9	21800	9.8	22	132-160-180	—	—	88300	110300	41300	254	
310 L3		249	3.6	19500	8.1	22	132-160-180	—	—	90500	112900	42400	254	
310 L3		295	3.0	24600	8.6	22	132-160-180	—	—	95200	118800	44800	254	
310 L3		350	2.6	21000	6.2	22	132-160-180	—	—	100200	125100	47500	254	
310 L4		389	2.3	24900	6.8	13.0	71-80-90-100-112-132-160	—	—	103400	129100	49200	254	
310 L4		451	2.0	29800	7.0	13.0	71-80-90-100-112-132-160	—	—	108100	134900	51600	254	
310 L4		507	1.8	26900	5.6	13.0	71-80-90-100-112-132-160	—	—	112000	139800	53700	254	
310 L4		556	1.6	27000	5.2	13.0	71-80-90-100-112-132-160	—	—	115100	143700	55400	254	
310 L4		637	1.4	22900	3.8	13.0	71-80-90-100-112-132-160	—	—	119900	149700	57900	254	
310 L4		726	1.2	28500	4.2	13.0	71-80-90-100-112-132-160	—	—	124700	155600	60500	254	
310 L4		818	1.1	29000	3.8	13.0	71-80-90-100-112-132-160	—	—	129200	161300	63000	254	
310 L4		939	0.96	27000	3.1	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254	



310 L




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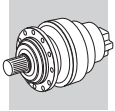
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	310 L4	1021	0.88	29300	3.1	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1164	0.77	29500	2.7	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1259	0.71	28000	2.4	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1438	0.63	26000	1.9	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1657	0.54	24000	1.5	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1794	0.50	26000	1.5	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	2022	0.45	26000	1.4	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	2523	0.36	26000	1.1	13.0	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
500	310 L1	4	122	10700	141	70	200-225-250	—	—	—	—	—	254
	310 L1	5	95	10800	111	70	200-225-250	—	—	—	—	—	254
	310 L1	6	80	11400	99	70	200-225-250	—	—	—	—	—	254
	310 L2	14.7	34	14800	56	44	160-180-200-225	—	—	46200	57700	20100	254
	310 L2	17.4	28.8	15500	50	44	160-180-200-225	—	—	48600	60600	21200	254
	310 L2	21.8	22.9	16600	42	44	160-180-200-225	—	—	52000	64900	22900	254
	310 L2	25.4	19.7	17400	38	44	160-180-200-225	—	—	54400	67900	24100	254
	310 L2	28.0	17.9	17300	34	44	160-180-200-225	—	—	56000	69900	24900	254
	310 L2	30.7	16.3	18400	33	44	160-180-200-225	—	—	57600	71900	25600	254
	310 L2	32.6	15.4	18000	31	44	160-180-200-225	—	—	58600	73100	26100	254
	310 L2	38.6	12.9	17800	26	44	160-180-200-225	—	—	61700	77000	27700	254
	310 L2	46.7	10.7	17800	21	44	160-180-200-225	—	—	65300	81500	29500	254
	310 L3	53.0	9.4	21700	23	36	132-160-180	—	—	67800	84700	30800	254
	310 L3	62.6	8.0	22800	21	36	132-160-180	—	—	71300	89000	32500	254
	310 L3	73.9	6.8	24000	18.6	36	132-160-180	—	—	74900	93500	34400	254
	310 L3	80.3	6.2	21900	15.6	36	132-160-180	—	—	76800	95900	35300	254
	310 L3	91.3	5.5	24900	15.7	36	132-160-180	—	—	79900	99700	36900	254
	310 L3	101	5.0	22700	12.9	36	132-160-180	—	—	82300	102700	38100	254
	310 L3	110	4.5	22900	11.9	36	132-160-180	—	—	84600	105500	39300	254
	310 L3	119	4.2	23300	11.2	36	132-160-180	—	—	86500	107900	40300	254
	310 L3	130	3.8	27000	11.9	36	132-160-180	—	—	88900	110900	41500	254
	310 L3	142	3.5	24000	9.7	36	132-160-180	—	—	91100	113700	42700	254
	310 L3	164	3.1	30000	10.5	36	132-160-180	—	—	95100	118700	44800	254
	310 L3	177	2.8	20600	6.7	36	132-160-180	—	—	97400	121600	46000	254
	310 L3	202	2.5	25400	7.2	36	132-160-180	—	—	101300	126400	48000	254
	310 L3	230	2.2	21800	5.4	36	132-160-180	—	—	105400	131500	50200	254
	310 L3	249	2.0	22200	5.1	36	132-160-180	—	—	107900	134700	51500	254
	310 L3	295	1.7	27100	5.3	36	132-160-180	—	—	113600	141700	54500	254
	310 L3	350	1.4	24000	3.9	36	132-160-180	—	—	119600	149200	57700	254
	310 L4	389	1.3	24900	3.8	22	71-80-90-100-112-132-160	—	—	123400	154000	59800	254
	310 L4	451	1.1	30000	3.9	22	71-80-90-100-112-132-160	—	—	128900	160900	62800	254
	310 L4	507	0.99	29500	3.4	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	556	0.90	27000	2.9	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	637	0.78	22900	2.1	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	726	0.69	29500	2.4	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	818	0.61	29300	2.1	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	939	0.53	27000	1.7	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1021	0.49	29300	1.7	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1164	0.43	29500	1.5	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1259	0.40	29500	1.4	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1438	0.35	26000	1.1	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1657	0.30	26700	0.95	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	1794	0.28	26000	0.86	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	2022	0.25	26000	0.76	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254
	310 L4	2523	0.20	26000	0.61	22	71-80-90-100-112-132-160	—	—	133000	166000	65000	254



311 L




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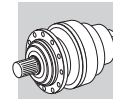
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	311 L2	14.0	100	9000	100	26	180-200-225-250	—	—	39500	49000	14000	264	
	311 L2	16.7	84	10700	100	26	180-200-225-250	—	—	41600	51700	14900	264	
	311 L2	18.0	78	11600	100	26	180-200-225-250	—	—	42500	52800	15200	264	
	311 L2	21.5	65	13800	100	26	180-200-225-250	—	—	44800	55700	16200	264	
	311 L2	25.5	55	16400	100	26	180-200-225-250	—	—	47200	58600	17100	264	
	311 L2	27.6	51	17700	100	26	180-200-225-250	—	—	48300	60000	17600	264	
	311 L2	32.7	43	19400	92	26	180-200-225-250	—	—	50900	63200	18600	264	
	311 L2	38.8	36	20100	81	26	180-200-225-250	—	—	53600	66500	19700	264	
	311 L3	50.5	27.7	18900	60	18.0	132-160-180	—	—	57900	72000	21500	264	
	311 L3	60.2	23.2	22500	60	18.0	132-160-180	—	—	61100	75900	22800	264	
	311 L3	71.1	19.7	25300	57	18.0	132-160-180	—	—	64200	79800	24100	264	
	311 L3	77.3	18.1	26000	54	18.0	132-160-180	—	—	65800	81800	24800	264	
	311 L3	87.0	16.1	26900	50	18.0	132-160-180	—	—	68200	84700	25700	264	
	311 L3	104	13.5	28400	44	18.0	132-160-180	—	—	71900	89300	27300	264	
	311 L3	115	12.2	29200	41	18.0	132-160-180	—	—	74100	92000	28200	264	
	311 L3	126	11.2	30000	38	18.0	132-160-180	—	—	76200	94600	29100	264	
	311 L3	133	10.5	30600	37	18.0	132-160-180	—	—	77500	96300	29700	264	
	311 L3	147	9.5	30400	33	18.0	132-160-180	—	—	79800	99200	30700	264	
	311 L3	161	8.7	32400	32	18.0	132-160-180	—	—	82100	101900	31600	264	
	311 L3	171	8.2	31800	30	18.0	132-160-180	—	—	83500	103800	32200	264	
	311 L3	191	7.3	34100	29	18.0	132-160-180	—	—	86400	107300	33500	264	
	311 L3	203	6.9	32000	25	18.0	132-160-180	—	—	87900	109200	34100	264	
	311 L3	245	5.7	32000	21	18.0	132-160-180	—	—	93100	115600	36400	264	
	311 L3	291	4.8	27000	14.9	18.0	132-160-180	—	—	98000	121700	38500	264	
	311 L4	348	4.0	40800	19.4	11.0	71-80-90-100-112-132-160	—	—	103400	128400	40900	264	
	311 L4	410	3.4	42900	17.3	11.0	71-80-90-100-112-132-160	—	—	108600	134900	43200	264	
	311 L4	512	2.7	45000	14.6	11.0	71-80-90-100-112-132-160	—	—	116100	144200	46500	264	
	311 L4	568	2.5	41700	12.2	11.0	71-80-90-100-112-132-160	—	—	119800	148700	48100	264	
	311 L4	626	2.2	35700	9.4	11.0	71-80-90-100-112-132-160	—	—	123300	153200	49700	264	
	311 L4	724	1.9	45000	10.3	11.0	71-80-90-100-112-132-160	—	—	128800	160000	52200	264	
	311 L4	825	1.7	41700	8.4	11.0	71-80-90-100-112-132-160	—	—	134000	166400	54500	264	
	311 L4	904	1.5	45000	8.2	11.0	71-80-90-100-112-132-160	—	—	137700	171000	56200	264	
	311 L4	986	1.4	40400	6.8	11.0	71-80-90-100-112-132-160	—	—	141300	175500	57800	264	
	311 L4	1103	1.3	34500	5.2	11.0	71-80-90-100-112-132-160	—	—	146200	181500	60000	264	
	311 L4	1230	1.1	42000	5.7	11.0	71-80-90-100-112-132-160	—	—	151000	187600	62300	264	
	311 L4	1415	0.99	43000	5.0	11.0	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
	311 L4	1680	0.83	34000	3.4	11.0	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
	311 L4	1766	0.79	43000	4.0	11.0	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
	311 L4	2096	0.67	34000	2.7	11.0	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
	900	311 L1	4.09	220	8420	200	40	—	—	—	31100	38700	10800	264
		311 L1	5.25	171	10800	200	40	—	—	—	33500	41700	11700	264
		311 L1	6.23	144	12800	200	40	—	—	—	35300	43900	12400	264
		311 L2	14.0	64	14000	100	31	180-200-225-250	—	—	45100	56000	16200	264
311 L2		16.7	54	16700	100	31	180-200-225-250	—	—	47500	59000	17200	264	
311 L2		18.0	50	18000	100	31	180-200-225-250	—	—	48600	60300	17600	264	
311 L2		21.5	42	20200	94	31	180-200-225-250	—	—	51200	63600	18700	264	
311 L2		25.5	35	21200	83	31	180-200-225-250	—	—	53900	66900	19800	264	
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311 L2		32.7	27.5	22100	68	31	180-200-225-250	—	—	58100	72100	21500	264	
311 L2		38.8	23.2	23000	59	31	180-200-225-250	—	—	61100	75900	22800	264	
311 L3		50.5	17.8	26100	53	22	132-160-180	—	—	66200	82200	24900	264	
311 L3		60.2	14.9	27500	47	22	132-160-180	—	—	69800	86600	26400	264	
311 L3		71.1	12.7	28900	42	22	132-160-180	—	—	73300	91100	27900	264	
311 L3		77.3	11.6	29600	40	22	132-160-180	—	—	75200	93400	28700	264	
311 L3		87.0	10.3	30700	36	22	132-160-180	—	—	77900	96700	29800	264	
311 L3		104	8.7	32400	32	22	132-160-180	—	—	82100	102000	31600	264	
311 L3		115	7.9	33400	30	22	132-160-180	—	—	84600	105100	32700	264	
311 L3		126	7.2	34300	28	22	132-160-180	—	—	86900	108000	33700	264	
311 L3		133	6.8	34900	27	22	132-160-180	—	—	88500	109900	34400	264	
311 L3		147	6.1	32000	22	22	132-160-180	—	—	91200	113200	35500	264	
311 L3		161	5.6	37000	24	22	132-160-180	—	—	93700	116400	36600	264	
311 L3		171	5.3	32000	19.3	22	132-160-180	—	—	95400	118500	37400	264	
311 L3		191	4.7	34500	18.6	22	132-160-180	—	—	98600	122500	38800	264	
311 L3	203	4.4	33000	16.8	22	132-160-180	—	—	100400	124700	39600	264		



311 L




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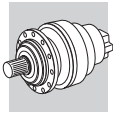
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	311 L3	245	3.7	34100	14.4	22	132-160-180	—	—	106300	132000	42100	264
	311 L3	291	3.1	28500	10.1	22	132-160-180	—	—	111900	139000	44600	264
	311 L4	348	2.6	45000	13.8	13	71-80-90-100-112-132-160	—	—	118000	146600	47300	264
	311 L4	410	2.2	45000	11.7	13	71-80-90-100-112-132-160	—	—	124000	154100	50000	264
	311 L4	512	1.8	45000	9.4	13	71-80-90-100-112-132-160	—	—	132600	164700	53900	264
	311 L4	568	1.6	41700	7.8	13	71-80-90-100-112-132-160	—	—	136700	169800	55700	264
	311 L4	626	1.4	35700	6.1	13	71-80-90-100-112-132-160	—	—	140800	174900	57600	264
	311 L4	724	1.2	45000	6.6	13	71-80-90-100-112-132-160	—	—	147100	182700	60500	264
	311 L4	825	1.1	43400	5.6	13	71-80-90-100-112-132-160	—	—	152900	190000	63100	264
	311 L4	904	1.0	45000	5.3	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	986	0.91	43000	4.6	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	1103	0.82	36300	3.5	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	1230	0.73	43000	3.7	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	1415	0.64	43000	3.2	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	1680	0.54	34000	2.2	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	1766	0.51	43000	2.6	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	311 L4	2096	0.43	34000	1.7	13	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
	500	311 L1	4.09	122	14600	193	65	—	—	—	37100	46100	13100
311 L1		5.25	95	15200	157	65	—	—	—	40000	49700	14200	264
311 L1		6.23	80	15800	137	65	—	—	—	42100	52300	15100	264
311 L2		14.0	36	21200	84	52	180-200-225-250	—	—	53700	66700	19800	264
311 L2		16.7	29.9	22300	74	52	180-200-225-250	—	—	56700	70400	20900	264
311 L2		18.0	27.8	22000	68	52	180-200-225-250	—	—	57900	71900	21500	264
311 L2		21.5	23.3	24100	62	52	180-200-225-250	—	—	61100	75800	22800	264
311 L2		25.5	19.6	25300	55	52	180-200-225-250	—	—	64300	79800	24100	264
311 L2		27.6	18.1	25000	51	52	180-200-225-250	—	—	65800	81700	24700	264
311 L2		32.7	15.3	26400	45	52	180-200-225-250	—	—	69300	86100	26200	264
311 L2		38.8	12.9	27000	39	52	180-200-225-250	—	—	72900	90600	27700	264
311 L3		50.5	9.9	31100	35	36	132-160-180	—	—	78900	98000	30300	264
311 L3		60.2	8.3	32800	31	36	132-160-180	—	—	83200	103400	32100	264
311 L3		71.1	7.0	34500	28	36	132-160-180	—	—	87500	108600	33900	264
311 L3		77.3	6.5	35400	26	36	132-160-180	—	—	89700	111400	34900	264
311 L3		87.0	5.7	35700	24	36	132-160-180	—	—	92900	115400	36300	264
311 L3		104	4.8	38600	21	36	132-160-180	—	—	98000	121700	38500	264
311 L3		115	4.4	39800	19.9	36	132-160-180	—	—	100900	125300	39800	264
311 L3		126	4.0	40900	18.7	36	132-160-180	—	—	103700	128800	41000	264
311 L3		133	3.8	41700	17.9	36	132-160-180	—	—	105600	131100	41800	264
311 L3		147	3.4	34600	13.5	36	132-160-180	—	—	108700	135100	43200	264
311 L3		161	3.1	41700	14.8	36	132-160-180	—	—	111800	138800	44600	264
311 L3		171	2.9	35500	11.9	36	132-160-180	—	—	113800	141300	45400	264
311 L3		191	2.6	34500	10.4	36	132-160-180	—	—	117700	146100	47200	264
311 L3		203	2.5	36600	10.4	36	132-160-180	—	—	119800	148800	48100	264
311 L3		245	2.0	37900	8.9	36	132-160-180	—	—	126800	157500	51300	264
311 L3		291	1.7	31300	6.2	36	132-160-180	—	—	133500	165800	54300	264
311 L4		348	1.4	45000	7.7	22	71-80-90-100-112-132-160	—	—	140800	174800	57600	264
311 L4		410	1.2	45000	6.5	22	71-80-90-100-112-132-160	—	—	148000	183800	60900	264
311 L4		512	0.98	45000	5.2	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		568	0.88	45000	4.7	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		626	0.80	35700	3.4	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		724	0.69	45000	3.7	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		825	0.61	45000	3.2	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		904	0.55	45000	2.9	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		986	0.51	43000	2.6	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		1103	0.45	39700	2.1	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		1230	0.41	43000	2.1	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4		1415	0.35	43000	1.8	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264
311 L4	1680	0.30	34000	1.2	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
311 L4	1766	0.28	43000	1.4	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	
311 L4	2096	0.24	34000	0.96	22	71-80-90-100-112-132-160	—	—	157000	195000	65000	264	



313 L




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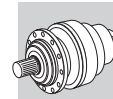
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	313 L2	14.2	99	11900	130	30	180-200-225-250	—	—	48400	58300	17300	274
	313 L2	16.9	83	14100	130	30	180-200-225-250	—	—	51100	61400	18400	274
	313 L2	18.5	76	15400	130	30	180-200-225-250	—	—	52400	63100	18900	274
	313 L2	21.8	64	18100	130	30	180-200-225-250	—	—	55000	66200	20000	274
	313 L2	25.8	54	21500	130	30	180-200-225-250	—	—	57900	69700	21100	274
	313 L2	28.4	49	23700	130	30	180-200-225-250	—	—	59600	71700	21800	274
	313 L2	33.6	42	28100	130	30	180-200-225-250	—	—	62700	75500	23100	274
	313 L2	40.5	35	29200	112	30	180-200-225-250	—	—	66300	79800	24600	274
	313 L3	51.1	27.4	19100	60	18.0	132-160-180-200	—	—	71100	85600	26500	274
	313 L3	61.0	22.9	22800	60	18.0	132-160-180-200	—	—	75000	90200	28200	274
	313 L3	72.0	19.4	26900	60	18.0	132-160-180-200	—	—	78800	94800	29800	274
	313 L3	78.3	17.9	29200	60	18.0	132-160-180-200	—	—	80800	97300	30600	274
	313 L3	92.4	15.1	34500	60	18.0	132-160-180-200	—	—	85000	102200	32300	274
	313 L3	110	12.8	41000	60	18.0	132-160-180-200	—	—	89400	107600	34200	274
	313 L3	120	11.6	41600	55	18.0	132-160-180-200	—	—	92000	110700	35300	274
	313 L3	135	10.4	44400	53	18.0	132-160-180-200	—	—	95200	114500	36700	274
	313 L3	151	9.3	44500	47	18.0	132-160-180-200	—	—	98500	118500	38100	274
	313 L3	163	8.6	47100	46	18.0	132-160-180-200	—	—	100700	121200	39100	274
	313 L3	176	8.0	45000	41	18.0	132-160-180-200	—	—	103000	124000	40100	274
	313 L3	194	7.2	49500	41	18.0	132-160-180-200	—	—	106100	127600	41400	274
	313 L3	209	6.7	45000	35	18.0	132-160-180-200	—	—	108500	130500	42400	274
	313 L3	252	5.5	45000	29	18.0	132-160-180-200	—	—	114800	138200	45200	274
	313 L3	304	4.6	39000	21	18.0	132-160-180-200	—	—	121400	146100	48100	274
	313 L4	352	4.0	47200	22	11.0	71-80-90-100-112-132-160	—	—	126900	152700	50500	274
	313 L4	394	3.6	55000	23	11.0	71-80-90-100-112-132-160	—	—	131300	157900	52400	274
	313 L4	452	3.1	55000	20	11.0	71-80-90-100-112-132-160	—	—	136700	164500	54900	274
	313 L4	514	2.7	47600	15.3	11.0	71-80-90-100-112-132-160	—	—	142100	171000	57300	274
	313 L4	564	2.5	55000	16.2	11.0	71-80-90-100-112-132-160	—	—	146100	175800	59100	274
	313 L4	633	2.2	52200	13.7	11.0	71-80-90-100-112-132-160	—	—	151300	182000	61400	274
	313 L4	695	2.0	49700	11.8	11.0	71-80-90-100-112-132-160	—	—	155600	187200	63300	274
	313 L4	790	1.8	52200	11.0	11.0	71-80-90-100-112-132-160	—	—	161700	194600	66100	274
	313 L4	889	1.6	51500	9.6	11.0	71-80-90-100-112-132-160	—	—	167600	201600	68800	274
	313 L4	1014	1.4	52500	8.6	11.0	71-80-90-100-112-132-160	—	—	174300	209700	71800	274
	313 L4	1117	1.3	52200	7.7	11.0	71-80-90-100-112-132-160	—	—	179400	215900	74200	274
	313 L4	1266	1.1	54200	7.1	11.0	71-80-90-100-112-132-160	—	—	186300	224100	77400	274
	313 L4	1394	1.0	52800	6.3	11.0	71-80-90-100-112-132-160	—	—	191700	230700	79900	274
	313 L4	1502	0.93	55000	6.1	11.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1817	0.77	55000	5.0	11.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	2187	0.64	49000	3.7	11.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	900	313 L1	4.14	217	10700	250	45	—	—	—	38200	46000	13300
313 L1		5.40	167	13900	250	45	—	—	—	41400	49800	14500	274
313 L1		6.50	138	16700	250	45	—	—	—	43700	52600	15500	274
313 L2		14.2	63	18400	130	36	180-200-225-250	—	—	55300	66500	20100	274
313 L2		16.9	53	22000	130	36	180-200-225-250	—	—	58300	70200	21300	274
313 L2		18.5	49	24000	130	36	180-200-225-250	—	—	59900	72000	21900	274
313 L2		21.8	41	28200	130	36	180-200-225-250	—	—	62800	75600	23100	274
313 L2		25.8	35	30900	120	36	180-200-225-250	—	—	66200	79600	24500	274
313 L2		28.4	32	30800	109	36	180-200-225-250	—	—	68000	81900	25300	274
313 L2		33.6	26.7	32400	96	36	180-200-225-250	—	—	71600	86200	26700	274
313 L2		40.5	22.2	33400	83	36	180-200-225-250	—	—	75700	91100	28500	274
313 L3		51.1	17.6	29700	60	22	132-160-180-200	—	—	81200	97700	30800	274
313 L3		61.0	14.8	35500	60	22	132-160-180-200	—	—	85600	103000	32600	274
313 L3		72.0	12.5	40500	58	22	132-160-180-200	—	—	90000	108300	34500	274
313 L3		78.3	11.5	43100	57	22	132-160-180-200	—	—	92300	111000	35400	274
313 L3		92.4	9.7	45300	51	22	132-160-180-200	—	—	97000	116700	37500	274
313 L3		110	8.2	47700	45	22	132-160-180-200	—	—	102100	122900	39700	274
313 L3		120	7.5	45000	39	22	132-160-180-200	—	—	105000	126400	40900	274
313 L3		135	6.7	50700	39	22	132-160-180-200	—	—	108600	130700	42500	274
313 L3		151	6.0	45000	31	22	132-160-180-200	—	—	112400	135300	44100	274
313 L3		163	5.5	53700	34	22	132-160-180-200	—	—	115000	138400	45300	274
313 L3		176	5.1	45000	26	22	132-160-180-200	—	—	117600	141500	46400	274
313 L3		194	4.6	52200	28	22	132-160-180-200	—	—	121100	145700	47900	274
313 L3		209	4.3	45000	22	22	132-160-180-200	—	—	123800	149000	49100	274
313 L3		252	3.6	45800	18.7	22	132-160-180-200	—	—	131100	157700	52400	274



313 L




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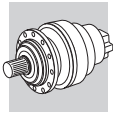
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	313 L3	304	3.0	41200	14.0	22	132-160-180-200	—	—	138600	166800	55700	274
	313 L4	352	2.6	53900	16.3	13.0	71-80-90-100-112-132-160	—	—	144900	174300	58500	274
	313 L4	394	2.3	55000	14.9	13.0	71-80-90-100-112-132-160	—	—	149900	180300	60700	274
	313 L4	452	2.0	55000	13.0	13.0	71-80-90-100-112-132-160	—	—	156100	187800	63600	274
	313 L4	514	1.8	50700	10.5	13.0	71-80-90-100-112-132-160	—	—	162300	195200	66400	274
	313 L4	564	1.6	55000	10.4	13.0	71-80-90-100-112-132-160	—	—	166900	200800	68500	274
	313 L4	633	1.4	52200	8.8	13.0	71-80-90-100-112-132-160	—	—	172800	207800	71100	274
	313 L4	695	1.3	53000	8.1	13.0	71-80-90-100-112-132-160	—	—	177700	213800	73400	274
	313 L4	790	1.1	52200	7.0	13.0	71-80-90-100-112-132-160	—	—	184600	222100	76600	274
	313 L4	889	1.0	54900	6.6	13.0	71-80-90-100-112-132-160	—	—	191300	230200	79700	274
	313 L4	1014	0.89	55000	5.8	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1117	0.81	54900	5.2	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1266	0.71	55000	4.6	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1394	0.65	55000	4.2	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1502	0.60	55000	3.9	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1817	0.50	55000	3.2	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
313 L4	2187	0.41	49000	2.4	13.0	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	
500	313 L1	4.14	121	19200	250	75	—	—	—	45600	54800	16200	274
	313 L1	5.40	93	22300	223	75	—	—	—	49400	59400	17700	274
	313 L1	6.50	77	23000	191	75	—	—	—	52200	62800	18800	274
	313 L2	14.2	35	30800	121	60	180-200-225-250	—	—	66000	79400	24400	274
	313 L2	16.9	29.5	32500	107	60	180-200-225-250	—	—	69600	83700	25900	274
	313 L2	18.5	27.0	32300	97	60	180-200-225-250	—	—	71400	85900	26700	274
	313 L2	21.8	23.0	35000	90	60	180-200-225-250	—	—	75000	90200	28100	274
	313 L2	25.8	19.4	36900	79	60	180-200-225-250	—	—	78900	94900	29800	274
	313 L2	28.4	17.6	36700	72	60	180-200-225-250	—	—	81200	97700	30700	274
	313 L2	33.6	14.9	38700	64	60	180-200-225-250	—	—	85400	102800	32500	274
	313 L2	40.5	12.3	39000	54	60	180-200-225-250	—	—	90300	108700	34600	274
	313 L3	51.1	9.8	39300	44	36	132-160-180-200	—	—	96900	116600	37400	274
	313 L3	61.0	8.2	46800	44	36	132-160-180-200	—	—	102100	122900	39700	274
	313 L3	72.0	6.9	48300	38	36	132-160-180-200	—	—	107400	129200	41900	274
	313 L3	78.3	6.4	51400	38	36	132-160-180-200	—	—	110100	132400	43100	274
	313 L3	92.4	5.4	54000	34	36	132-160-180-200	—	—	115700	139200	45600	274
	313 L3	110	4.6	52200	27	36	132-160-180-200	—	—	121800	146600	48300	274
	313 L3	120	4.1	45000	21	36	132-160-180-200	—	—	125300	150700	49800	274
	313 L3	135	3.7	55000	23	36	132-160-180-200	—	—	129600	155900	51700	274
	313 L3	151	3.3	46300	17.5	36	132-160-180-200	—	—	134100	161400	53700	274
	313 L3	163	3.1	55000	19.3	36	132-160-180-200	—	—	137200	165100	55100	274
	313 L3	176	2.8	47300	15.4	36	132-160-180-200	—	—	140300	168800	56500	274
	313 L3	194	2.6	52200	15.5	36	132-160-180-200	—	—	144400	173800	58300	274
	313 L3	209	2.4	48500	13.3	36	132-160-180-200	—	—	147700	177700	59800	274
	313 L3	252	2.0	49800	11.3	36	132-160-180-200	—	—	156400	188200	63700	274
	313 L3	304	1.6	45300	8.5	36	132-160-180-200	—	—	165300	198900	67800	274
	313 L4	352	1.4	55000	9.2	22	71-80-90-100-112-132-160	—	—	172800	207900	71200	274
	313 L4	394	1.3	55000	8.3	22	71-80-90-100-112-132-160	—	—	178800	215100	73900	274
	313 L4	452	1.1	55000	7.2	22	71-80-90-100-112-132-160	—	—	186200	224100	77300	274
	313 L4	514	0.97	55000	6.3	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	564	0.89	55000	5.8	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	633	0.79	55000	5.1	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	695	0.72	55000	4.7	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	790	0.63	55000	4.1	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	889	0.56	55000	3.7	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1014	0.49	55000	3.2	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
	313 L4	1117	0.45	55000	2.9	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274
313 L4	1266	0.40	55000	2.6	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	
313 L4	1394	0.36	55000	2.3	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	
313 L4	1502	0.33	55000	2.2	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	
313 L4	1817	0.28	55000	1.8	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	
313 L4	2187	0.23	49000	1.3	22	71-80-90-100-112-132-160	—	—	192000	231000	80000	274	



315 L




100000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	315 L3	57.4	24.4	35700	100	30	180-200-225	—	—	79000	93200	31000	284	
	315 L3	68.5	20.4	42600	100	30	180-200-225	—	—	83300	98300	32900	284	
	315 L3	87.9	15.9	54700	100	30	180-200-225	—	—	89800	105900	35800	284	
	315 L3	104	13.4	64900	100	30	180-200-225	—	—	94500	111500	37900	284	
	315 L3	134	10.5	70100	84	30	180-200-225	—	—	101900	120200	41200	284	
	315 L3	159	8.8	73800	75	30	180-200-225	—	—	107200	126500	43600	284	
	315 L3	172	8.2	73500	69	30	180-200-225	—	—	109800	129500	44700	284	
	315 L3	204	6.9	77400	61	30	180-200-225	—	—	115600	136300	47300	284	
	315 L3	242	5.8	65000	43	30	180-200-225	—	—	121700	143500	50100	284	
	315 L4	291	4.8	88500	50	18.0	132-160-180	—	—	128600	151700	53300	284	
	315 L4	356	3.9	94000	44	18.0	132-160-180	—	—	136600	161100	57000	284	
	315 L4	424	3.3	96000	37	18.0	132-160-180	—	—	144000	169900	60500	284	
	315 L4	469	3.0	96700	34	18.0	132-160-180	—	—	148300	175000	62500	284	
	315 L4	513	2.7	97400	31	18.0	132-160-180	—	—	152500	179900	64400	284	
	315 L4	569	2.5	98100	29	18.0	132-160-180	—	—	157200	185500	66700	284	
	315 L4	647	2.2	99100	25	18.0	132-160-180	—	—	163400	192700	69600	284	
	315 L4	714	2.0	99800	23	18.0	132-160-180	—	—	168300	198500	71900	284	
	315 L4	830	1.7	101000	20	18.0	132-160-180	—	—	176100	207700	75600	284	
	315 L4	916	1.5	93100	16.8	18.0	132-160-180	—	—	181400	214000	78100	284	
	315 L4	1004	1.4	102400	16.9	18.0	132-160-180	—	—	186400	219900	80500	284	
	315 L4	1087	1.3	95500	14.5	18.0	132-160-180	—	—	190900	225200	82700	284	
	315 L4	1264	1.1	97600	12.8	18.0	132-160-180	—	—	199800	235600	87000	284	
	315 L4	1500	0.93	80000	8.8	18.0	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1814	0.77	80000	7.3	18.0	132-160-180	—	—	206000	243000	90000	284	
900	315 L2	16.7	54	30100	180	45	—	—	—	62300	73500	23800	284	
	315 L2	21.5	42	38600	180	45	—	—	—	67200	79200	25900	284	
	315 L2	25.5	35	45800	180	45	—	—	—	70700	83400	27400	284	
	315 L2	27.6	33	48500	176	45	—	—	—	72400	85400	28200	284	
	315 L2	32.7	27.5	51000	156	45	—	—	—	76200	89900	29800	284	
	315 L2	38.8	23.2	52900	137	45	—	—	—	80200	94600	31600	284	
	315 L3	57.4	15.7	55600	100	36	180-200-225	—	—	90200	106400	36000	284	
	315 L3	68.5	13.1	65500	99	36	180-200-225	—	—	95100	112200	38100	284	
	315 L3	87.9	10.2	70600	83	36	180-200-225	—	—	102500	120900	41400	284	
	315 L3	104	8.6	74300	74	36	180-200-225	—	—	107900	127300	43900	284	
	315 L3	134	6.7	80000	62	36	180-200-225	—	—	116300	137200	47700	284	
	315 L3	159	5.7	84300	55	36	180-200-225	—	—	122400	144400	50500	284	
	315 L3	172	5.2	78000	47	36	180-200-225	—	—	125300	147800	51800	284	
	315 L3	204	4.4	80000	41	36	180-200-225	—	—	131900	155600	54900	284	
	315 L3	242	3.7	66500	28	36	180-200-225	—	—	138900	163800	58100	284	
	315 L4	291	3.1	96500	35	22	132-160-180	—	—	146800	173200	61800	284	
	315 L4	356	2.5	97900	29	22	132-160-180	—	—	155900	183900	66100	284	
	315 L4	424	2.1	99200	25	22	132-160-180	—	—	164400	193900	70100	284	
	315 L4	469	1.9	100000	23	22	132-160-180	—	—	169400	199800	72400	284	
	315 L4	513	1.8	100700	21	22	132-160-180	—	—	174100	205300	74600	284	
	315 L4	569	1.6	101400	19.0	22	132-160-180	—	—	179500	211700	77200	284	
	315 L4	647	1.4	102400	16.9	22	132-160-180	—	—	186500	220000	80600	284	
	315 L4	714	1.3	103200	15.4	22	132-160-180	—	—	192200	226700	83300	284	
	315 L4	830	1.1	104400	13.4	22	132-160-180	—	—	201000	237100	87600	284	
	315 L4	916	0.98	99000	11.5	22	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1004	0.90	105000	11.1	22	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1087	0.83	99000	9.7	22	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1264	0.71	99000	8.3	22	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1500	0.60	80000	5.7	22	132-160-180	—	—	206000	243000	90000	284	
	315 L4	1814	0.50	80000	4.7	22	132-160-180	—	—	206000	243000	90000	284	
	500	315 L2	16.7	29.9	51200	170	75	—	—	—	74300	87700	29000	284
		315 L2	21.5	23.3	55200	143	75	—	—	—	80100	94500	31500	284
		315 L2	25.5	19.6	58100	127	75	—	—	—	84300	99500	33400	284
315 L2		27.6	18.1	57800	117	75	—	—	—	86400	101900	34300	284	
315 L2		32.7	15.3	60900	104	75	—	—	—	90900	107200	36300	284	
315 L2		38.8	12.9	63200	91	75	—	—	—	95700	112900	38400	284	
315 L3		57.4	8.7	74100	74	60	180-200-225	—	—	107600	126900	43700	284	
315 L3		68.5	7.3	78100	65	60	180-200-225	—	—	113500	133800	46400	284	
315 L3		87.9	5.7	84200	55	60	180-200-225	—	—	122300	144200	50400	284	






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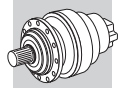
100000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	315 L3	104	4.8	88600	49	60	180-200-225	—	—	128700	151800	53400	284
	315 L3	134	3.7	95100	41	60	180-200-225	—	—	138700	163600	58000	284
	315 L3	159	3.1	96400	35	60	180-200-225	—	—	146000	172300	61400	284
	315 L3	172	2.9	84900	28	60	180-200-225	—	—	149500	176300	63000	284
	315 L3	204	2.5	87000	24	60	180-200-225	—	—	157400	185600	66700	284
	315 L3	242	2.1	72300	17.1	60	180-200-225	—	—	165700	195400	70700	284
	315 L4	291	1.7	100800	20	36	132-160-180	—	—	175100	206600	75100	284
	315 L4	356	1.4	102400	17.0	36	132-160-180	—	—	186000	219400	80300	284
	315 L4	424	1.2	103700	14.5	36	132-160-180	—	—	196100	231400	85200	284
	315 L4	469	1.1	104500	13.2	36	132-160-180	—	—	202000	238300	88100	284
	315 L4	513	0.97	105000	12.1	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	569	0.88	105000	10.9	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	647	0.77	105000	9.6	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	714	0.70	105000	8.7	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	830	0.60	105000	7.5	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	916	0.55	99000	6.4	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	1004	0.50	105000	6.2	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	1087	0.46	99000	5.4	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	1264	0.40	99000	4.6	36	132-160-180	—	—	206000	243000	90000	284
	315 L4	1500	0.33	80000	3.2	36	132-160-180	—	—	206000	243000	90000	284
315 L4	1814	0.28	80000	2.6	36	132-160-180	—	—	206000	243000	90000	284	

316 L




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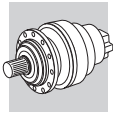
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	316 L3	61.7	22.7	44150	115	30	180-200-225	—	—	135100	151000	38900	294	
	316 L3	73.6	19.0	52750	115	30	180-200-225	—	—	142400	159200	41300	294	
	316 L3	79.2	17.7	56600	115	30	180-200-225	—	—	145600	162700	42300	294	
	316 L3	94.5	14.8	67700	115	30	180-200-225	—	—	153500	171500	44800	294	
	316 L3	112	12.5	80150	115	30	180-200-225	—	—	161500	180500	47400	294	
	316 L3	121	11.6	81950	109	30	180-200-225	—	—	165300	184700	48700	294	
	316 L3	144	9.7	86500	96	30	180-200-225	—	—	174200	194600	51600	294	
	316 L3	171	8.2	89800	84	30	180-200-225	—	—	183400	204900	54600	294	
	316 L4	222	6.3	80400	60	18.0	132-160-180	—	—	198300	221600	59600	294	
	316 L4	265	5.3	96000	60	18.0	132-160-180	—	—	209200	233700	63200	294	
	316 L4	313	4.5	111500	59	18.0	132-160-180	—	—	219900	245700	66800	294	
	316 L4	340	4.1	114600	56	18.0	132-160-180	—	—	225400	251900	68700	294	
	316 L4	383	3.7	118200	51	18.0	132-160-180	—	—	233600	261000	71500	294	
	316 L4	457	3.1	123200	45	18.0	132-160-180	—	—	246300	275200	75800	294	
	316 L4	504	2.8	123300	41	18.0	132-160-180	—	—	253600	283400	78300	294	
	316 L4	552	2.5	123300	37	18.0	132-160-180	—	—	260700	291300	80700	294	
	316 L4	586	2.4	123400	35	18.0	132-160-180	—	—	265400	296500	82300	294	
	316 L4	612	2.3	123350	33	18.0	132-160-180	—	—	268800	300400	83500	294	
	316 L4	647	2.2	123400	32	18.0	132-160-180	—	—	273400	305500	85100	294	
	316 L4	709	2.0	123400	29	18.0	132-160-180	—	—	281000	314000	87700	294	
	316 L4	752	1.9	123450	27	18.0	132-160-180	—	—	286000	319600	89500	294	
	316 L4	768	1.8	123500	27	18.0	132-160-180	—	—	287800	321600	90100	294	
	316 L4	841	1.7	113500	22	18.0	132-160-180	—	—	295700	330500	92900	294	
	316 L4	892	1.6	124400	23	18.0	132-160-180	—	—	301000	336400	94700	294	
	316 L4	1079	1.3	127700	19.6	18.0	132-160-180	—	—	318700	356100	100900	294	
	316 L4	1281	1.1	108900	14.1	18.0	132-160-180	—	—	335500	374900	106800	294	
	900	316 L2	18.0	50.0	34100	190	45	—	—	—	106600	119100	29900	294
		316 L2	23.1	39.0	43750	190	45	—	—	—	114900	128400	32500	294
316 L2		27.4	32.8	52000	190	45	—	—	—	120900	135100	34400	294	
316 L3		61.7	14.6	68600	115	30	180-200-225	—	—	154200	172300	45100	294	
316 L3		73.6	12.2	82100	115	30	180-200-225	—	—	162600	181700	47800	294	
316 L3		79.2	11.4	82350	107	30	180-200-225	—	—	166200	185700	49000	294	
316 L3		94.5	9.5	89050	97	30	180-200-225	—	—	175300	195900	51900	294	
316 L3		112	8.0	93400	86	30	180-200-225	—	—	184400	206100	55000	294	



316 L




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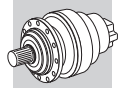
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	316 L3	121	7.4	93800	80	30	180-200-225	—	—	188800	210900	56400	294
	316 L3	144	6.3	98450	71	30	180-200-225	—	—	198900	222200	59800	294
	316 L3	171	5.3	93900	57	30	180-200-225	—	—	209400	234000	63300	294
	316 L4	222	4.1	114650	55	18.0	132-160-180	—	—	226400	253000	69000	294
	316 L4	265	3.4	121100	49	18.0	132-160-180	—	—	238800	266800	73200	294
	316 L4	313	2.9	123200	42	18.0	132-160-180	—	—	251000	280500	77400	294
	316 L4	340	2.6	123300	39	18.0	132-160-180	—	—	257300	287500	79600	294
	316 L4	383	2.3	123350	34	18.0	132-160-180	—	—	266700	298000	82800	294
	316 L4	457	2.0	123400	29	18.0	132-160-180	—	—	281200	314200	87800	294
	316 L4	504	1.8	123550	26	18.0	132-160-180	—	—	289600	323600	90700	294
	316 L4	552	1.6	124400	24	18.0	132-160-180	—	—	297600	332500	93500	294
	316 L4	586	1.5	125400	23	18.0	132-160-180	—	—	303000	338500	95400	294
	316 L4	612	1.5	125400	22	18.0	132-160-180	—	—	306900	343000	96800	294
	316 L4	647	1.4	126500	21	18.0	132-160-180	—	—	312100	348800	98600	294
	316 L4	709	1.3	127700	19	18.0	132-160-180	—	—	320800	358500	101600	294
	316 L4	752	1.2	128850	18.2	18.0	132-160-180	—	—	326500	364800	103700	294
	316 L4	768	1.2	128850	17.9	18.0	132-160-180	—	—	328600	367200	104400	294
	316 L4	841	1.1	127150	16.1	18.0	132-160-180	—	—	337600	377300	107600	294
	316 L4	892	1.0	131850	15.7	18.0	132-160-180	—	—	343700	384000	109700	294
	316 L4	1079	0.8	135500	13.4	18.0	132-160-180	—	—	345000	385000	110000	294
316 L4	1281	0.7	118500	9.8	18.0	132-160-180	—	—	345000	385000	110000	294	
500	316 L2	18.0	27.8	61400	190	45	—	—	—	127100	142100	36400	294
	316 L2	23.1	21.6	68000	164	45	—	—	—	137000	153100	39500	294
	316 L2	27.4	18.2	70750	144	45	—	—	—	144200	161100	41800	294
	316 L3	61.7	8.1	93500	87	30	180-200-225	—	—	184000	205600	54800	294
	316 L3	73.6	6.8	98500	77	30	180-200-225	—	—	194000	216700	58100	294
	316 L3	79.2	6.3	98450	71	30	180-200-225	—	—	198300	221600	59600	294
	316 L3	94.5	5.3	106200	64	30	180-200-225	—	—	209100	233600	63200	294
	316 L3	112	4.5	101000	52	30	180-200-225	—	—	220000	245800	66900	294
	316 L3	121	4.1	111950	53	30	180-200-225	—	—	225200	251600	68600	294
	316 L3	144	3.5	117350	47	30	180-200-225	—	—	237200	265100	72700	294
	316 L3	171	2.9	94150	32	30	180-200-225	—	—	249800	279100	77000	294
	316 L4	222	2.3	123400	33	18.0	132-160-180	—	—	270100	301800	84000	294
	316 L4	265	1.9	123500	28	18.0	132-160-180	—	—	284800	318300	89100	294
	316 L4	313	1.6	124400	24	18.0	132-160-180	—	—	299400	334600	94100	294
	316 L4	340	1.5	125400	22	18.0	132-160-180	—	—	306900	343000	96800	294
	316 L4	383	1.3	127700	20	18.0	132-160-180	—	—	318100	355500	100700	294
	316 L4	457	1.1	130250	16.9	18.0	132-160-180	—	—	335400	374800	106800	294
	316 L4	504	1.0	131800	15.5	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	552	0.9	133600	14.3	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	586	0.9	133600	13.5	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	612	0.8	135400	13.1	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	647	0.8	135400	12.4	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	709	0.7	137850	11.5	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	752	0.7	137800	10.8	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	768	0.7	137800	10.6	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	841	0.6	136650	9.6	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	892	0.6	140400	9.3	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	1079	0.5	143650	7.9	18.0	132-160-180	—	—	345000	385000	110000	294
	316 L4	1281	0.4	131450	6.1	18.0	132-160-180	—	—	345000	385000	110000	294



317 L




170000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	317 L3	58.1	24.1	47000	130	35	180-200-225-250	—	—	170200	180900	51900	302	
	317 L3	69.3	20.2	56100	130	35	180-200-225-250	—	—	179400	190800	55100	302	
	317 L3	89.0	15.7	72000	130	35	180-200-225-250	—	—	193400	205600	59900	302	
	317 L3	106	13.3	85500	130	35	180-200-225-250	—	—	203600	216500	63400	302	
	317 L3	116	12.1	93900	130	35	180-200-225-250	—	—	209400	222600	65400	302	
	317 L3	138	10.2	111400	130	35	180-200-225-250	—	—	220400	234400	69200	302	
	317 L3	166	8.4	116000	112	35	180-200-225-250	—	—	233000	247800	73600	302	
	317 L3	179	7.8	139400	125	35	180-200-225-250	—	—	238500	253600	75600	302	
	317 L3	213	6.6	140000	106	35	180-200-225-250	—	—	251100	267000	80000	302	
	317 L3	252	5.5	115000	73	35	180-200-225-250	—	—	264400	281100	84700	302	
	317 L4	310	4.5	112300	60	18.0	132-160-180	—	—	281200	299000	90700	302	
	317 L4	360	3.9	126900	58	18.0	132-160-180	—	—	294200	312800	95400	302	
	317 L4	449	3.1	162600	60	18.0	132-160-180	—	—	314200	334100	102700	302	
	317 L4	493	2.8	165100	55	18.0	132-160-180	—	—	323200	343600	105900	302	
	317 L4	552	2.5	176300	53	18.0	132-160-180	—	—	334300	355400	110000	302	
	317 L4	619	2.3	176800	47	18.0	132-160-180	—	—	345900	367900	114200	302	
	317 L4	719	1.9	178600	41	18.0	132-160-180	—	—	361900	384800	120100	302	
	317 L4	792	1.8	180000	38	18.0	132-160-180	—	—	372600	396200	124100	302	
	317 L4	904	1.5	161500	30	18.0	132-160-180	—	—	387600	412200	129600	302	
	317 L4	1032	1.4	178600	29	18.0	132-160-180	—	—	403400	428900	135500	302	
	317 L4	1134	1.2	165900	24	18.0	132-160-180	—	—	414900	441200	139800	302	
	317 L4	1318	1.1	168800	21	18.0	132-160-180	—	—	434100	461600	147000	302	
	317 L4	1595	0.88	170000	17.7	18.0	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1893	0.74	145000	12.7	18.0	132-160-180	—	—	442000	470000	150000	302	
900	317 L2	16.9	53	33800	200	50	—	—	—	134200	142700	39900	302	
	317 L2	22.1	41	44100	200	50	—	—	—	145300	154600	43600	302	
	317 L2	26.6	34	53100	200	50	—	—	—	153700	163400	46400	302	
	317 L2	28.4	32	56600	200	50	—	—	—	156600	166600	47400	302	
	317 L2	34.1	26.4	68100	200	50	—	—	—	165600	176100	50400	302	
	317 L2	40.5	22.2	80900	200	50	—	—	—	174300	185400	53400	302	
	317 L3	58.1	15.5	73200	130	42	180-200-225-250	—	—	194300	206600	60200	302	
	317 L3	69.3	13.0	87300	130	42	180-200-225-250	—	—	204800	217800	63800	302	
	317 L3	89.0	10.1	112000	130	42	180-200-225-250	—	—	220800	234800	69400	302	
	317 L3	106	8.5	122600	120	42	180-200-225-250	—	—	232400	247100	73400	302	
	317 L3	116	7.8	122100	109	42	180-200-225-250	—	—	239000	254200	75800	302	
	317 L3	138	6.5	128600	96	42	180-200-225-250	—	—	251600	267600	80200	302	
	317 L3	166	5.4	132400	83	42	180-200-225-250	—	—	266000	282900	85300	302	
	317 L3	179	5.0	140700	81	42	180-200-225-250	—	—	272300	289600	87600	302	
	317 L3	213	4.2	143600	70	42	180-200-225-250	—	—	286700	304900	92700	302	
	317 L3	252	3.6	119500	49	42	180-200-225-250	—	—	301800	320900	98200	302	
	317 L4	310	2.9	140300	48	22	132-160-180	—	—	321000	341300	105100	302	
	317 L4	360	2.5	145000	43	22	132-160-180	—	—	335800	357100	110500	302	
	317 L4	449	2.0	180000	43	22	132-160-180	—	—	358700	381500	118900	302	
	317 L4	493	1.8	178600	39	22	132-160-180	—	—	369000	392300	122700	302	
	317 L4	552	1.6	180000	35	22	132-160-180	—	—	381600	405800	127400	302	
	317 L4	619	1.5	178600	31	22	132-160-180	—	—	395000	420000	132400	302	
	317 L4	719	1.3	178600	26	22	132-160-180	—	—	413200	439400	139200	302	
	317 L4	792	1.1	180000	24	22	132-160-180	—	—	425400	452300	143700	302	
	317 L4	904	1.0	170000	20	22	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1032	0.87	180000	18.6	22	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1134	0.79	170000	16.0	22	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1318	0.68	170000	13.7	22	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1595	0.56	170000	11.3	22	132-160-180	—	—	442000	470000	150000	302	
	317 L4	1893	0.48	145000	8.2	22	132-160-180	—	—	442000	470000	150000	302	
	500	317 L2	16.9	29.5	60900	200	85	—	—	—	160100	170300	48500	302
		317 L2	22.1	22.6	79400	200	85	—	—	—	173400	184400	53000	302
317 L2		26.6	18.8	91200	191	85	—	—	—	183300	194900	56400	302	
317 L2		28.4	17.6	101900	200	85	—	—	—	186900	198700	57600	302	
317 L2		34.1	14.7	115400	188	85	—	—	—	197500	210100	61300	302	
317 L2		40.5	12.3	115000	158	85	—	—	—	208000	221100	64900	302	
317 L3		58.1	8.6	122300	121	70	180-200-225-250	—	—	231700	246400	73200	302	
317 L3		69.3	7.2	128900	107	70	180-200-225-250	—	—	244400	259800	77600	302	
317 L3		89.0	5.6	138900	90	70	180-200-225-250	—	—	263300	280000	84400	302	
317 L3		106	4.7	146300	79	70	180-200-225-250	—	—	277200	294800	89300	302	






317 L

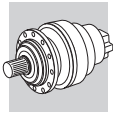
170000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	317 L3	116	4.3	145700	72	70	180-200-225-250	—	—	285100	303200	92200	302
	317 L3	138	3.6	153400	64	70	180-200-225-250	—	—	300200	319200	97600	302
	317 L3	166	3.0	154800	54	70	180-200-225-250	—	—	317300	337400	103800	302
	317 L3	179	2.8	150800	48	70	180-200-225-250	—	—	324900	345400	106500	302
	317 L3	213	2.4	153800	41	70	180-200-225-250	—	—	342000	363700	112800	302
	317 L3	252	2.0	130700	30	70	180-200-225-250	—	—	360000	382800	119400	302
	317 L4	310	1.6	167400	32	36	132-160-180	—	—	382900	407200	127900	302
	317 L4	360	1.4	172900	28	36	132-160-180	—	—	400600	426000	134500	302
	317 L4	449	1.1	180000	24	36	132-160-180	—	—	427900	455000	144700	302
	317 L4	493	1.0	178600	21	36	132-160-180	—	—	440100	468000	149300	302
	317 L4	552	0.91	180000	19.3	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	619	0.81	180000	17.2	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	719	0.70	180000	14.8	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	792	0.63	180000	13.4	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	904	0.55	170000	11.1	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	1032	0.48	180000	10.3	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	1134	0.44	170000	8.9	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	1318	0.38	170000	7.6	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	1595	0.31	170000	6.3	36	132-160-180	—	—	442000	470000	150000	302
	317 L4	1893	0.26	145000	4.5	36	132-160-180	—	—	442000	470000	150000	302

318 L




250000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	318 L3	73.6	19.0	64200	140	35	—	—	—	207900	233500	63700	310
	318 L3	94.5	14.8	82400	140	35	—	—	—	224100	251700	69300	310
	318 L3	112	12.5	97600	140	35	—	—	—	235800	264900	73300	310
	318 L3	121	11.6	105500	140	35	—	—	—	241400	271100	75200	310
	318 L3	144	9.7	125500	140	35	—	—	—	254300	285600	79700	310
	318 L3	171	8.2	149000	140	35	—	—	—	267700	300700	84400	310
	318 L4	253	5.5	91700	60	18.0	180-200-225	—	—	301100	338200	96200	310
	318 L4	301	4.7	109100	60	18.0	180-200-225	—	—	317200	356300	101900	310
	318 L4	324	4.3	117400	60	18.0	180-200-225	—	—	324300	364300	104400	310
	318 L4	387	3.6	140200	60	18.0	180-200-225	—	—	342100	384200	110800	310
	318 L4	416	3.4	150700	60	18.0	180-200-225	—	—	349600	392600	113500	310
	318 L4	459	3.1	166300	60	18.0	180-200-225	—	—	360000	404400	117300	310
	318 L4	496	2.8	179700	60	18.0	180-200-225	—	—	368500	413900	120300	310
	318 L4	589	2.4	213400	60	18.0	180-200-225	—	—	388000	435800	127400	310
	318 L4	637	2.2	230800	60	18.0	180-200-225	—	—	397200	446200	130800	310
	318 L4	698	2.0	250000	59	18.0	180-200-225	—	—	408300	458600	134900	310
	318 L4	756	1.9	250000	55	18.0	180-200-225	—	—	418200	469700	138500	310
	318 L4	897	1.6	250000	46	18.0	180-200-225	—	—	440200	494400	146600	310
	318 L4	1064	1.3	236600	37	18.0	180-200-225	—	—	463300	520400	155200	310
	900	318 L2	18.0	50.0	39500	220.0	55	—	—	—	155600	174800	46200
318 L2		23.1	39.0	50700	220.0	55	—	—	—	167700	188400	50200	310
318 L2		27.4	32.8	60200	220.0	55	—	—	—	176500	198200	53100	310
318 L3		73.6	12.2	99800	140.0	35	—	—	—	237400	266600	73800	310
318 L3		94.5	9.5	128100	140.0	35	—	—	—	255900	287400	80300	310
318 L3		112	8.0	151900	140.0	35	—	—	—	269200	302400	84900	310
318 L3		121	7.4	164100	140.0	35	—	—	—	275600	309500	87100	310
318 L3		144	6.3	195200	140.0	35	—	—	—	290300	326100	92300	310
318 L3		171	5.3	207100	125.1	35	—	—	—	305700	343400	97800	310
318 L4		253	3.6	142600	60.0	18.0	180-200-225	—	—	343800	386200	111400	310
318 L4		301	3.0	169700	60.0	18.0	180-200-225	—	—	362200	406800	118100	310
318 L4		324	2.8	182600	60.0	18.0	180-200-225	—	—	370300	415900	121000	310
318 L4		387	2.3	218100	60.0	18.0	180-200-225	—	—	390500	438700	128400	310
318 L4		416	2.2	234500	60.0	18.0	180-200-225	—	—	399100	448300	131500	310
318 L4		459	2.0	250000	58.0	18.0	180-200-225	—	—	411000	461700	135900	310






318 L

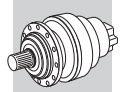
25000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	318 L4	496	1.8	250000	53.7	18.0	180-200-225	—	—	420700	472600	139400	310
	318 L4	589	1.5	250000	45.2	18.0	180-200-225	—	—	443000	497600	147600	310
	318 L4	637	1.4	250000	41.8	18.0	180-200-225	—	—	453500	509400	151600	310
	318 L4	698	1.3	250000	38.1	18.0	180-200-225	—	—	466100	523600	156200	310
	318 L4	756	1.2	250000	35.2	18.0	180-200-225	—	—	477400	536300	160500	310
	318 L4	897	1.0	250000	29.7	18.0	180-200-225	—	—	502500	564500	169900	310
	318 L4	1064	0.8	244000	24.4	18.0	180-200-225	—	—	503000	565000	170000	310
500	318 L2	18.0	27.8	71200	220.0	55	—	—	—	185600	208500	56200	310
	318 L2	23.1	21.6	91300	220.0	55	—	—	—	200000	224700	61000	310
	318 L2	27.4	18.2	108300	220.0	55	—	—	—	210500	236500	64600	310
	318 L3	73.6	6.8	179600	140.0	35	—	—	—	283200	318000	89800	310
	318 L3	94.5	5.3	210600	127.8	35	—	—	—	305200	342800	97600	310
	318 L3	112	4.5	220900	113.1	35	—	—	—	321200	360700	103300	310
	318 L3	121	4.1	225800	107.1	35	—	—	—	328700	369200	106000	310
	318 L3	144	3.5	235600	93.9	35	—	—	—	346300	389000	112300	310
	318 L3	171	2.9	209000	70.1	35	—	—	—	364600	409600	118900	310
	318 L4	253	2.0	250000	58.4	18.0	180-200-225	—	—	410100	460600	135500	310
	318 L4	301	1.7	250000	49.1	18.0	180-200-225	—	—	432000	485300	143600	310
	318 L4	324	1.5	250000	45.6	18.0	180-200-225	—	—	441700	496100	147200	310
	318 L4	387	1.3	250000	38.2	18.0	180-200-225	—	—	465800	523300	156100	310
	318 L4	416	1.2	250000	35.5	18.0	180-200-225	—	—	476000	534700	159900	310
	318 L4	459	1.1	250000	32.2	18.0	180-200-225	—	—	490300	550700	165300	310
	318 L4	496	1.0	250000	29.8	18.0	180-200-225	—	—	501800	563700	169600	310
	318 L4	589	0.8	250000	25.1	18.0	180-200-225	—	—	503000	565000	170000	310
	318 L4	637	0.8	250000	23.2	18.0	180-200-225	—	—	503000	565000	170000	310
	318 L4	698	0.7	250000	21.2	18.0	180-200-225	—	—	503000	565000	170000	310
	318 L4	756	0.7	250000	19.6	18.0	180-200-225	—	—	503000	565000	170000	310
	318 L4	897	0.6	250000	16.5	18.0	180-200-225	—	—	503000	565000	170000	310
	318 L4	1064	0.5	244000	13.6	18.0	180-200-225	—	—	503000	565000	170000	310

319 L




35000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	319 L4	334	4.2	201600	100	30	180-200-225	—	—	415000	456600	124000	318	
	319 L4	428	3.3	258700	100	30	180-200-225	—	—	447200	492100	134800	318	
	319 L4	508	2.8	307000	100	30	180-200-225	—	—	470800	518000	142700	318	
	319 L4	550	2.5	314900	95	30	180-200-225	—	—	482000	530300	146500	318	
	319 L4	652	2.1	331500	84	30	180-200-225	—	—	507400	558300	155100	318	
	319 L4	705	2.0	330300	78	30	180-200-225	—	—	519400	571500	159100	318	
	319 L4	837	1.7	347700	69	30	180-200-225	—	—	546800	601700	168500	318	
	319 L4	916	1.5	316800	57	30	180-200-225	—	—	561800	618200	173600	318	
	319 L4	991	1.4	321000	54	30	180-200-225	—	—	575100	632800	178200	318	
	319 L4	1179	1.2	307400	43	30	180-200-225	—	—	606000	666800	188900	318	
	319 L4	1396	1.0	339800	40	30	180-200-225	—	—	637400	701300	199800	318	
	900	319 L3	81.6	11.0	142200	180	50	—	—	—	310500	341600	89800	318
		319 L3	105	8.6	182500	180	50	—	—	—	334600	368200	97600	318
		319 L3	124	7.2	216600	180	50	—	—	—	352200	387600	103400	318
		319 L3	134	6.7	229200	176	50	—	—	—	360600	396800	106100	318
319 L3		159	5.7	260000	169	50	—	—	—	379300	417300	112200	318	
319 L3		189	4.8	250300	137	50	—	—	—	399600	439700	118900	318	
319 L3		224	4.0	269600	124	50	—	—	—	420300	462500	125800	318	
319 L4		334	2.7	309600	99	36	180-200-225	—	—	473800	521300	143700	318	
319 L4		428	2.1	333700	83	36	180-200-225	—	—	510600	561800	156100	318	
319 L4		508	1.8	350000	73	36	180-200-225	—	—	537500	591400	165300	318	
319 L4		550	1.6	350000	68	36	180-200-225	—	—	550300	605500	169700	318	
319 L4		652	1.4	350000	57	36	180-200-225	—	—	579300	637400	179700	318	
319 L4		705	1.3	350000	53	36	180-200-225	—	—	593000	652500	184400	318	
900		319 L4	837	1.1	350000	45	36	180-200-225	—	—	624300	686900	195200	318






319 L

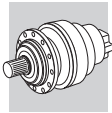
350000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	319 L4	916	0.98	340000	40	36	180-200-225	—	—	638000	702000	200000	318
	319 L4	991	0.91	340000	37	36	180-200-225	—	—	638000	702000	200000	318
	319 L4	1179	0.76	314700	28	36	180-200-225	—	—	638000	702000	200000	318
	319 L4	1396	0.64	340000	26	36	180-200-225	—	—	638000	702000	200000	318
500	319 L3	81.6	6.1	242000	170	85	—	—	—	370400	407500	109300	318
	319 L3	105	4.8	260800	143	85	—	—	—	399100	439200	118800	318
	319 L3	124	4.0	274600	127	85	—	—	—	420200	462300	125700	318
	319 L3	134	3.7	273500	117	85	—	—	—	430100	473300	129100	318
	319 L3	159	3.1	280900	101	85	—	—	—	452400	497800	136500	318
	319 L3	189	2.6	298600	91	85	—	—	—	476700	524500	144700	318
	319 L3	224	2.2	297400	76	85	—	—	—	501400	551700	153000	318
	319 L4	334	1.5	350000	62	60	180-200-225	—	—	565100	621800	174800	318
	319 L4	428	1.2	350000	48	60	180-200-225	—	—	609100	670200	189900	318
	319 L4	508	0.98	350000	41	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	550	0.91	350000	38	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	652	0.77	350000	32	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	705	0.71	350000	29	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	837	0.60	350000	25	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	916	0.55	340000	22	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	991	0.50	340000	20	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	1179	0.42	341700	17.1	60	180-200-225	—	—	638000	702000	200000	318
	319 L4	1396	0.36	340000	14.4	60	180-200-225	—	—	638000	702000	200000	318

321 L




500000 Nm

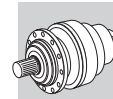
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	321 L4	258	5.4	202700	130	35	180-200-225-250	—	—	469200	555900	722700	326	
	321 L4	308	4.5	241900	130	35	180-200-225-250	—	—	494700	586100	762000	326	
	321 L4	395	3.5	310500	130	35	180-200-225-250	—	—	533100	631700	821200	326	
	321 L4	469	3.0	368500	130	35	180-200-225-250	—	—	561200	665000	864500	326	
	321 L4	515	2.7	404700	130	35	180-200-225-250	—	—	577200	683900	889200	326	
	321 L4	612	2.3	480300	130	35	180-200-225-250	—	—	607700	720000	936100	326	
	321 L4	736	1.9	495500	111	35	180-200-225-250	—	—	642400	761200	989600	326	
	321 L4	796	1.8	498400	104	35	180-200-225-250	—	—	657700	779300	1013100	326	
	321 L4	945	1.5	504900	88	35	180-200-225-250	—	—	692400	820300	1066500	326	
	321 L4	1122	1.2	495800	73	35	180-200-225-250	—	—	728900	863600	1122800	326	
	900	321 L3	75.3	11.9	145900	200	60	—	—	—	370100	438500	570200	326
		321 L3	98.2	9.2	190200	200	60	—	—	—	400800	474800	617300	326
321 L3		118	7.6	228900	200	60	—	—	—	423700	502000	652600	326	
321 L3		126	7.1	244000	200	60	—	—	—	431900	511700	665300	326	
321 L3		152	5.9	293800	200	60	—	—	—	456600	541000	703400	326	
321 L3		180	5.0	348600	200	60	—	—	—	480700	569500	740400	326	
321 L4		258	3.5	315400	130	42	180-200-225-250	—	—	535600	634700	825100	326	
321 L4		308	2.9	376300	130	42	180-200-225-250	—	—	564800	669200	870000	326	
321 L4		395	2.3	482900	130	42	180-200-225-250	—	—	608700	721200	937600	326	
321 L4		469	1.9	495200	112	42	180-200-225-250	—	—	640800	759200	987100	326	
321 L4		515	1.7	498700	103	42	180-200-225-250	—	—	659100	780900	1015200	326	
321 L4		612	1.5	505100	88	42	180-200-225-250	—	—	693800	822100	1068800	326	
321 L4		736	1.2	512200	74	42	180-200-225-250	—	—	733500	869100	1129900	326	
321 L4		796	1.1	515200	69	42	180-200-225-250	—	—	750900	889700	1156700	326	
321 L4		945	0.95	520000	59	42	180-200-225-250	—	—	779000	923000	1200000	326	
321 L4		1122	0.80	515300	49	42	180-200-225-250	—	—	779000	923000	1200000	326	
500		321 L3	75.3	6.6	262600	200	100	—	—	—	441500	523100	680100	326
		321 L3	98.2	5.1	342300	200	100	—	—	—	478000	566400	736400	326
	321 L3	118	4.2	393300	191	100	—	—	—	505400	598800	778500	326	
	321 L3	126	4.0	437000	199	100	—	—	—	515200	610400	793600	326	
	321 L3	152	3.3	461900	175	100	—	—	—	544600	645300	839000	326	
	321 L3	180	2.8	481600	153	100	—	—	—	573400	679300	883200	326	



321 L

500000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	321 L4	258	1.9	494800	113	70	180-200-225-250	—	—	638900	757100	984200	326
	321 L4	308	1.6	501400	96	70	180-200-225-250	—	—	673700	798200	1037800	326
	321 L4	395	1.3	510900	76	70	180-200-225-250	—	—	726100	860300	1118500	326
	321 L4	469	1.1	517500	65	70	180-200-225-250	—	—	764300	905600	1177400	326
	321 L4	515	0.97	520000	60	70	180-200-225-250	—	—	779000	923000	1200000	326
	321 L4	612	0.82	520000	50	70	180-200-225-250	—	—	779000	923000	1200000	326
	321 L4	736	0.68	520000	42	70	180-200-225-250	—	—	779000	923000	1200000	326
	321 L4	796	0.63	520000	39	70	180-200-225-250	—	—	779000	923000	1200000	326
	321 L4	945	0.53	520000	33	70	180-200-225-250	—	—	779000	923000	1200000	326
	321 L4	1122	0.45	520000	27	70	180-200-225-250	—	—	779000	923000	1200000	326



24.0 - DATI TECNICI RIDUTTORI ANGOLARI - 300 R

24.0 - RATING CHARTS FOR RIGHT-ANGLE UNITS 300 R

24.0 - TECHNISCHE DATEN DER GETRIEBE - 300 R




24.0 - DONNEES TECHNIQUES REDUCTEURS ANGULAIRES - 300 R

Guida alla consultazione delle tabelle.

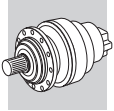
Reading the rating chart.

Anleitung für die richtige Konsultation der Tabellen.

Guide pour la consultation des tableaux.




310 R								25000 Nm					
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	310 R2 (B)	12.1	116	8530	110	55	180-200-225	—	—	32000	40000	13400	255
	310 R2 (B)	15.5	90	10700	108	55	180-200-225	—	—	34500	43000	14500	255
	310 R2 (A)	17.7	79	8510	75	55	132-160-180-200	—	—	35900	44800	15200	255
	310 R2 (B)	18.4	76	11300	96	55	180-200-225	—	—	36300	45300	15400	255
	310 R2 (A)	22.7	62	10900	75	55	132-160-180-200	—	—	38700	48300	16500	255
	310 R2 (A)	27.0	52	12500	72	55	132-160-180-200	—	—	40700	50800	17500	255
2	3	4	5	6	7	8	9	10					11

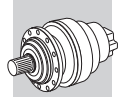
1	Coppia massima trasmissibile del riduttore	Max. transmissible torque	Nenn-Drehmoment am Abtrieb des Bezuggetriebes	Couple maximum du réducteur
2	Velocità di comando riduttore	Gearbox drive speed	Drehzahl am Getriebeantrieb	Vitesse angulaire à l'entrée du réducteur
3	Grandezza riduttore in esecuzione angolare NOTA: i contrassegni (A) (B) (C) sulla stessa grandezza indicano riduzioni angolari di dimensioni differenti: vedere le pagine dimensionali	Frame size of the right-angle gear unit NOTE: letters (A) (B) (C) near size indication identify different angle reduction dimensions. See pages relevant to dimensions	Getriebegröße in Winkelausführung HINWEIS: Die Kennzeichnungen (A) (B) (C) an der gleichen Baugröße weisen auf die Winkelreduzierung in unterschiedlichen Maßen hin: siehe Seiten mit Maßtabellen	Taille réducteur exécution angulaire REMARQUE : les indications (A) (B) (C) sur la même taille indique des réductions angulaires de dimensions différentes. Se reporter aux pages des dimensions
4	Rapporto di riduzione	Gear ratio	Übersetzung	Rapport de réduction
5	Velocità angolare all'albero lento	Gearbox output speed	Drehzahl am Getriebeabtrieb	Vitesse angulaire en sortie réducteur
6	Coppia nominale all'albero lento del riduttore, basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	Gearbox rated output torque, based on: - safety factor S=1 - 10000 h theoretical lifetime	Nenn-Drehmoment am Getriebeabtrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 Std.	Couple nominal à la sortie du réducteur pendant : - facteur de sécurité S=1 - durée de 10000 h
7	Potenza nominale all'albero veloce del riduttore, basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	Gearbox rated input power, based on: - safety factor S=1 - 10000 h theoretical lifetime	Nenn-Leistung am Getriebeantrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 Std.	Puissance nominale en entrée réducteur avec : - facteur de sécurité S=1 - durée de 10000 h
8	Potenza termica riduttore	Gearbox thermal capacity	Wärmeleistung des Getriebes	Puissance thermique réducteur
9	Grandezza motore elettrico IEC installabile	Frame size of available IEC motor	Baugröße des installierbaren IEC-Motors	Taille moteur électrique IEC à installer
10	Carichi radiali applicabili all'albero lento, basati su: - fattore di sicurezza S=1 - durata teorica 10000 h Per forze non applicate in mezz'ora riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	Permitted overhung loading on output shaft, based on: - safety factor S=1 - 10000 hrs theoretical lifetime For forces applying off the midpoint, see diagrams provided in the pages following dimensions of the gearbox under study	Auf die Mitte der Abtriebswelle für eine Dauer von 10000 Std. applizierbare Nenn-Radialkräfte und Sicherheitsfaktor S=1 Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	Charges radiales nominales applicables à la moitié de l'arbre pendant : - facteur de sécurité S=1 - durée de 10000 h Pour d'autres positions de charge, voir diagrammes figurant à la suite des pages dimensions de la taille sélectionnée
11	Pagina delle dimensioni	Page installation drawing can be found at	Maßseiten	Page avec les dimensions



300 R




1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	300 R2	7.13	196	530	11.6	12.0	71-80-90-100-112-132	2100	2200	6360	6980	1380	189	
	300 R2	8.74	160	550	9.9	12.0	71-80-90-100-112-132	2300	2400	6760	7410	1470	189	
	300 R2	11.8	118	580	7.7	12.0	71-80-90-100-112-132	2500	2600	7400	8120	1630	189	
	300 R2	14.8	95	550	5.8	12.0	71-80-90-100-112-132	2700	2800	7910	8680	1750	189	
	300 R3	24.8	56	650	4.2	12.0	71-80-90-100	3200	3300	9250	10100	2090	189	
	300 R3	30.4	46	650	3.4	12.0	71-80-90-100	3400	3500	9830	10800	2230	189	
	300 R3	37.3	38	850	3.7	12.0	71-80-90-100	3600	3800	10400	11500	2390	189	
	300 R3	41.2	34	650	2.5	12.0	71-80-90-100	3800	3900	10800	11800	2470	189	
	300 R3	50.4	27.8	850	2.7	12.0	71-80-90-100	4000	4200	11400	12500	2640	189	
	300 R3	62.9	22.2	850	2.2	12.0	71-80-90-100	4300	4500	12200	13400	2840	189	
	300 R3	68.2	20.5	650	1.5	12.0	71-80-90-100	4400	4600	12500	13700	2920	189	
	300 R3	85.2	16.4	650	1.2	12.0	71-80-90-100	4800	5000	13400	14700	3150	189	
	300 R3	106	13.2	550	0.83	12.0	71-80-90-100	5100	5300	14300	15700	3390	189	
	300 R4	86.4	16.2	650	1.2	10.0	71-80-90	4800	5000	13400	14700	3160	189	
	300 R4	106	13.2	850	1.3	10.0	71-80-90	5100	5300	14300	15700	3380	189	
	300 R4	130	10.8	850	1.1	10.0	71-80-90	5500	5700	15200	16600	3620	189	
	300 R4	143	9.8	650	0.75	10.0	71-80-90	5700	5900	15600	17200	3740	189	
	300 R4	159	8.8	850	0.89	10.0	71-80-90	5900	6100	16100	17700	3870	189	
	300 R4	175	8.0	850	0.80	10.0	71-80-90	6000	6300	16600	18200	4000	189	
	300 R4	215	6.5	850	0.65	10.0	71-80-90	6500	6700	17700	19400	4280	189	
	300 R4	237	5.9	650	0.45	10.0	71-80-90	6700	7000	18200	20000	4430	189	
	300 R4	268	5.2	880	0.55	10.0	71-80-90	7000	7300	18900	20700	4610	189	
	300 R4	291	4.8	900	0.51	10.0	71-80-90	7200	7500	19300	21200	4740	189	
	300 R4	363	3.9	930	0.42	10.0	71-80-90	7700	8000	20700	22700	5100	189	
	300 R4	394	3.6	690	0.29	10.0	71-80-90	7900	8200	21200	23200	5240	189	
	300 R4	453	3.1	970	0.35	10.0	71-80-90	8300	8600	22100	24200	5490	189	
	300 R4	491	2.8	720	0.24	10.0	71-80-90	8500	8900	22600	24800	5640	189	
	300 R4	613	2.3	750	0.20	10.0	71-80-90	9200	9500	24200	26500	6080	189	
	300 R4	765	1.8	630	0.14	10.0	71-80-90	9900	10300	25900	28400	6540	189	
	900	300 R2	7.13	126	610	8.5	15.0	71-80-90-100-112-132	2400	2500	7260	7970	1600	189
		300 R2	8.74	103	630	7.2	15.0	71-80-90-100-112-132	2600	2700	7720	8470	1710	189
		300 R2	11.8	76	650	5.5	15.0	71-80-90-100-112-132	2900	3000	8450	9270	1890	189
300 R2		14.8	61	550	3.7	15.0	71-80-90-100-112-132	3100	3200	9030	9910	2030	189	
300 R3		24.8	36	650	2.7	15.0	71-80-90-100	3700	3800	10600	11600	2420	189	
300 R3		30.4	29.6	650	2.2	15.0	71-80-90-100	3900	4100	11200	12300	2590	189	
300 R3		37.3	24.2	850	2.4	15.0	71-80-90-100	4200	4400	11900	13100	2770	189	
300 R3		41.2	21.9	650	1.6	15.0	71-80-90-100	4300	4500	12300	13500	2860	189	
300 R3		50.4	17.9	850	1.7	15.0	71-80-90-100	4600	4800	13100	14300	3060	189	
300 R3		62.9	14.3	850	1.4	15.0	71-80-90-100	5000	5200	14000	15300	3300	189	
300 R3		68.2	13.2	650	0.98	15.0	71-80-90-100	5100	5300	14300	15700	3390	189	
300 R3		85.2	10.6	650	0.79	15.0	71-80-90-100	5500	5700	15300	16800	3650	189	
300 R3		106	8.5	550	0.53	15.0	71-80-90-100	5900	6200	16300	17900	3920	189	
300 R4		86.4	10.4	650	0.80	12.0	71-80-90	5500	5800	15300	16800	3660	189	
300 R4		106	8.5	850	0.85	12.0	71-80-90	5900	6200	16300	17900	3920	189	
300 R4		130	6.9	850	0.70	12.0	71-80-90	6300	6600	17300	19000	4190	189	
300 R4		143	6.3	670	0.50	12.0	71-80-90	6500	6800	17900	19600	4340	189	
300 R4		159	5.7	870	0.58	12.0	71-80-90	6800	7100	18400	20200	4490	189	
300 R4		175	5.1	890	0.54	12.0	71-80-90	7000	7300	19000	20800	4640	189	
300 R4		215	4.2	920	0.45	12.0	71-80-90	7500	7800	20200	22100	4960	189	
300 R4		237	3.8	680	0.31	12.0	71-80-90	7700	8100	20800	22800	5130	189	
300 R4		268	3.4	950	0.38	12.0	71-80-90	8100	8400	21600	23600	5340	189	
300 R4		291	3.1	970	0.35	12.0	71-80-90	8300	8600	22100	24200	5490	189	
300 R4		363	2.5	1000	0.29	12.0	71-80-90	8900	9300	23600	25900	5910	189	
300 R4		394	2.3	740	0.20	12.0	71-80-90	9200	9500	24200	26500	6070	189	
300 R4		453	2.0	1000	0.23	12.0	71-80-90	9600	10000	25200	27700	6360	189	
300 R4		491	1.8	770	0.17	12.0	71-80-90	9900	10300	25900	28400	6540	189	
300 R4		613	1.5	800	0.14	12.0	71-80-90	10600	11000	27600	30300	7040	189	
300 R4		765	1.2	680	0.09	12.0	71-80-90	11400	11900	29500	32400	7580	189	
500		300 R2	7.13	70	650	5.1	24	71-80-90-100-112-132	3000	3100	8660	9500	1940	189
		300 R2	8.74	57	750	4.8	24	71-80-90-100-112-132	3200	3300	9210	10100	2080	189
		300 R2	11.8	42	650	3.1	24	71-80-90-100-112-132	3500	3600	10100	11100	2300	189
	300 R2	14.8	34	550	2.1	24	71-80-90-100-112-132	3800	3900	10800	11800	2470	189	
	300 R3	24.8	20.1	650	1.5	24	71-80-90-100	4500	4600	12600	13800	2940	189	






300 R

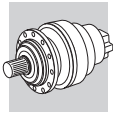
1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	300 R3	30.4	16.4	650	1.2	24	71-80-90-100	4800	5000	13400	14700	3150	189
	300 R3	37.3	13.4	850	1.3	24	71-80-90-100	5100	5300	14200	15600	3370	189
	300 R3	41.2	12.1	650	0.91	24	71-80-90-100	5300	5500	14700	16100	3480	189
	300 R3	50.4	9.9	850	0.97	24	71-80-90-100	5600	5900	15600	17100	3720	189
	300 R3	62.9	7.9	850	0.77	24	71-80-90-100	6100	6300	16600	18300	4010	189
	300 R3	68.2	7.3	650	0.55	24	71-80-90-100	6200	6500	17100	18700	4120	189
	300 R3	85.2	5.9	650	0.44	24	71-80-90-100	6700	7000	18200	20000	4430	189
	300 R3	106	4.7	550	0.30	24	71-80-90-100	7200	7500	19500	21400	4770	189
	300 R4	86.4	5.8	680	0.47	20	71-80-90	6700	7000	18300	20100	4460	189
	300 R4	106	4.7	900	0.50	20	71-80-90	7200	7500	19500	21300	4770	189
	300 R4	130	3.9	930	0.43	20	71-80-90	7700	8000	20700	22700	5100	189
	300 R4	143	3.5	700	0.29	20	71-80-90	8000	8300	21300	23400	5270	189
	300 R4	159	3.1	970	0.36	20	71-80-90	8200	8600	22000	24100	5460	189
	300 R4	175	2.8	980	0.33	20	71-80-90	8500	8900	22600	24800	5640	189
	300 R4	215	2.3	1000	0.28	20	71-80-90	9100	9500	24100	26400	6040	189
	300 R4	237	2.1	760	0.19	20	71-80-90	9400	9800	24800	27200	6240	189
	300 R4	268	1.9	1000	0.22	20	71-80-90	9800	10200	25700	28200	6500	189
	300 R4	291	1.7	1000	0.20	20	71-80-90	10100	10500	26400	28900	6680	189
	300 R4	363	1.4	1000	0.16	20	71-80-90	10800	11300	28200	30900	7190	189
	300 R4	394	1.3	830	0.12	20	71-80-90	11100	11600	28900	31600	7390	189
300 R4	453	1.1	1000	0.13	20	71-80-90	11700	12100	30100	33000	7740	189	
300 R4	491	1.0	860	0.10	20	71-80-90	12000	12500	30800	33800	7950	189	
300 R4	613	0.82	860	0.08	20	71-80-90	12000	12500	31000	34000	8000	189	
300 R4	765	0.65	700	0.05	20	71-80-90	12000	12500	31000	34000	8000	189	

301 R




1750 Nm

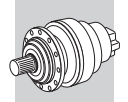
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	301 R2	7.13	196	730	15.9	12.0	71-80-90-100-112-132	2100	2200	6360	6980	1380	197
	301 R2	8.74	160	890	15.9	12.0	71-80-90-100-112-132	2300	2400	6760	7410	1470	197
	301 R2	11.8	118	1050	13.9	12.0	71-80-90-100-112-132	2500	2600	7400	8120	1630	197
	301 R2	14.8	95	1090	11.5	12.0	71-80-90-100-112-132	2700	2800	7910	8680	1750	197
	301 R3	24.8	56	1300	8.4	12.0	71-80-90-100-112	3200	3300	9250	10100	2090	197
	301 R3	30.4	46	1300	6.9	12.0	71-80-90-100-112	3400	3500	9830	10800	2230	197
	301 R3	37.3	38	1540	6.6	12.0	71-80-90-100-112	3600	3800	10400	11500	2390	197
	301 R3	41.2	34	1300	5.1	12.0	71-80-90-100-112	3800	3900	10800	11800	2470	197
	301 R3	50.4	27.8	1690	5.4	12.0	71-80-90-100-112	4000	4200	11400	12500	2640	197
	301 R3	62.9	22.2	1700	4.3	12.0	71-80-90-100-112	4300	4500	12200	13400	2840	197
	301 R3	68.2	20.5	1300	3.1	12.0	71-80-90-100-112	4400	4600	12500	13700	2920	197
	301 R3	85.2	16.4	1300	2.5	12.0	71-80-90-100-112	4800	5000	13400	14700	3150	197
	301 R3	106	13.2	1150	1.7	12.0	71-80-90-100-112	5100	5300	14300	15700	3390	197
	301 R4	86.4	16.2	1300	2.5	10.0	71-80-90	4800	5000	13400	14700	3160	197
	301 R4	106	13.2	1700	2.7	10.0	71-80-90	5100	5300	14300	15700	3380	197
	301 R4	130	10.8	1700	2.2	10.0	71-80-90	5500	5700	15200	16600	3620	197
	301 R4	143	9.8	1300	1.5	10.0	71-80-90	5700	5900	15600	17200	3740	197
	301 R4	159	8.8	1700	1.8	10.0	71-80-90	5900	6100	16100	17700	3870	197
	301 R4	175	8.0	1700	1.6	10.0	71-80-90	6000	6300	16600	18200	4000	197
	301 R4	215	6.5	1700	1.3	10.0	71-80-90	6500	6700	17700	19400	4280	197
301 R4	237	5.9	1300	0.91	10.0	71-80-90	6700	7000	18200	20000	4430	197	
301 R4	268	5.2	1760	1.1	10.0	71-80-90	7000	7300	18900	20700	4610	197	
301 R4	291	4.8	1780	1.0	10.0	71-80-90	7200	7500	19300	21200	4740	197	
301 R4	363	3.9	1850	0.84	10.0	71-80-90	7700	8000	20700	22700	5100	197	
301 R4	394	3.6	1370	0.58	10.0	71-80-90	7900	8200	21200	23200	5240	197	
301 R4	453	3.1	1920	0.70	10.0	71-80-90	8300	8600	22100	24200	5490	197	
301 R4	491	2.8	1420	0.48	10.0	71-80-90	8500	8900	22600	24800	5640	197	
301 R4	613	2.3	1480	0.40	10.0	71-80-90	9200	9500	24200	26500	6080	197	
301 R4	765	1.8	1150	0.25	10.0	71-80-90	9900	10300	25900	28400	6540	197	
900	301 R2	7.13	126	830	11.6	15.0	71-80-90-100-112-132	2400	2500	7260	7970	1600	197
	301 R2	8.74	103	1020	11.6	15.0	71-80-90-100-112-132	2600	2700	7720	8470	1710	197



301 R

1750 Nm

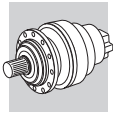
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
900	301 R2	11.8	76	1200	10.2	15.0	71-80-90-100-112-132	2900	3000	8450	9270	1890	197	
	301 R2	14.8	61	1150	7.8	15.0	71-80-90-100-112-132	3100	3200	9030	9910	2030	197	
	301 R3	24.8	36	1300	5.4	15.0	71-80-90-100-112	3700	3800	10600	11600	2420	197	
	301 R3	30.4	29.6	1300	4.4	15.0	71-80-90-100-112	3900	4100	11200	12300	2590	197	
	301 R3	37.3	24.2	1700	4.7	15.0	71-80-90-100-112	4200	4400	11900	13100	2770	197	
	301 R3	41.2	21.9	1300	3.3	15.0	71-80-90-100-112	4300	4500	12300	13500	2860	197	
	301 R3	50.4	17.9	1700	3.5	15.0	71-80-90-100-112	4600	4800	13100	14300	3060	197	
	301 R3	62.9	14.3	1700	2.8	15.0	71-80-90-100-112	5000	5200	14000	15300	3300	197	
	301 R3	68.2	13.2	1300	2.0	15.0	71-80-90-100-112	5100	5300	14300	15700	3390	197	
	301 R3	85.2	10.6	1300	1.6	15.0	71-80-90-100-112	5500	5700	15300	16800	3650	197	
	301 R3	106	8.5	1150	1.1	15.0	71-80-90-100-112	5900	6200	16300	17900	3920	197	
	301 R4	86.4	10.4	1300	1.6	12.0	71-80-90	5500	5800	15300	16800	3660	197	
	301 R4	106	8.5	1700	1.7	12.0	71-80-90	5900	6200	16300	17900	3920	197	
	301 R4	130	6.9	1700	1.4	12.0	71-80-90	6300	6600	17300	19000	4190	197	
	301 R4	143	6.3	1330	0.99	12.0	71-80-90	6500	6800	17900	19600	4340	197	
	301 R4	159	5.7	1740	1.2	12.0	71-80-90	6800	7100	18400	20200	4490	197	
	301 R4	175	5.1	1770	1.1	12.0	71-80-90	7000	7300	19000	20800	4640	197	
	301 R4	215	4.2	1830	0.90	12.0	71-80-90	7500	7800	20200	22100	4960	197	
	301 R4	237	3.8	1350	0.61	12.0	71-80-90	7700	8100	20800	22800	5130	197	
	301 R4	268	3.4	1890	0.75	12.0	71-80-90	8100	8400	21600	23600	5340	197	
	301 R4	291	3.1	1920	0.70	12.0	71-80-90	8300	8600	22100	24200	5490	197	
	301 R4	363	2.5	1990	0.58	12.0	71-80-90	8900	9300	23600	25900	5910	197	
	301 R4	394	2.3	1480	0.40	12.0	71-80-90	9200	9500	24200	26500	6070	197	
	301 R4	453	2.0	2000	0.47	12.0	71-80-90	9600	10000	25200	27700	6360	197	
	301 R4	491	1.8	1530	0.33	12.0	71-80-90	9900	10300	25900	28400	6540	197	
	301 R4	613	1.5	1590	0.28	12.0	71-80-90	10600	11000	27600	30300	7040	197	
	301 R4	765	1.2	1150	0.16	12.0	71-80-90	11400	11900	29500	32400	7580	197	
	500	301 R2	7.13	70	990	7.7	24	71-80-90-100-112-132	3000	3100	8660	9500	1940	197
		301 R2	8.74	57	1210	7.7	24	71-80-90-100-112-132	3200	3300	9210	10100	2080	197
		301 R2	11.8	42	1300	6.1	24	71-80-90-100-112-132	3500	3600	10100	11100	2300	197
		301 R2	14.8	34	1150	4.3	24	71-80-90-100-112-132	3800	3900	10800	11800	2470	197
		301 R3	24.8	20.1	1300	3.0	24	71-80-90-100-112	4500	4600	12600	13800	2940	197
301 R3		30.4	16.4	1300	2.5	24	71-80-90-100-112	4800	5000	13400	14700	3150	197	
301 R3		37.3	13.4	1700	2.6	24	71-80-90-100-112	5100	5300	14200	15600	3370	197	
301 R3		41.2	12.1	1300	1.8	24	71-80-90-100-112	5300	5500	14700	16100	3480	197	
301 R3		50.4	9.9	1700	1.9	24	71-80-90-100-112	5600	5900	15600	17100	3720	197	
301 R3		62.9	7.9	1700	1.5	24	71-80-90-100-112	6100	6300	16600	18300	4010	197	
301 R3		68.2	7.3	1300	1.1	24	71-80-90-100-112	6200	6500	17100	18700	4120	197	
301 R3		85.2	5.9	1300	0.88	24	71-80-90-100-112	6700	7000	18200	20000	4430	197	
301 R3		106	4.7	1150	0.62	24	71-80-90-100-112	7200	7500	19500	21400	4770	197	
301 R4		86.4	5.8	1350	0.92	20	71-80-90	6700	7000	18300	20100	4460	197	
301 R4		106	4.7	1790	1.0	20	71-80-90	7200	7500	19500	21300	4770	197	
301 R4		130	3.9	1850	0.84	20	71-80-90	7700	8000	20700	22700	5100	197	
301 R4		143	3.5	1400	0.58	20	71-80-90	8000	8300	21300	23400	5270	197	
301 R4		159	3.1	1910	0.71	20	71-80-90	8200	8600	22000	24100	5460	197	
301 R4		175	2.8	1940	0.65	20	71-80-90	8500	8900	22600	24800	5640	197	
301 R4		215	2.3	2000	0.55	20	71-80-90	9100	9500	24100	26400	6040	197	
301 R4		237	2.1	1500	0.37	20	71-80-90	9400	9800	24800	27200	6240	197	
301 R4		268	1.9	2000	0.44	20	71-80-90	9800	10200	25700	28200	6500	197	
301 R4		291	1.7	2000	0.41	20	71-80-90	10100	10500	26400	28900	6680	197	
301 R4		363	1.4	2000	0.33	20	71-80-90	10800	11300	28200	30900	7190	197	
301 R4		394	1.3	1630	0.25	20	71-80-90	11100	11600	28900	31600	7390	197	
301 R4		453	1.1	2000	0.26	20	71-80-90	11700	12100	30100	33000	7740	197	
301 R4		491	1.0	1690	0.20	20	71-80-90	12000	12500	30800	33800	7950	197	
301 R4		613	0.82	1700	0.16	20	71-80-90	12000	12500	31000	34000	8000	197	
301 R4		765	0.65	1150	0.09	20	71-80-90	12000	12500	31000	34000	8000	197	



303 R




2500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	303 R2	9.23	152	1420	24	18.0	71-80-90-100-112-132	6800	7910	14200	16400	4500	205
	303 R2	10.9	129	1670	24	18.0	71-80-90-100-112-132	7200	8380	14900	17200	4760	205
	303 R2	13.7	102	1790	20	18.0	71-80-90-100-112-132	7800	9050	16000	18500	5130	205
	303 R2	15.9	88	1800	17.7	18.0	71-80-90-100-112-132	8100	9430	16700	19300	5390	205
	303 R2	19.2	73	1650	13.4	18.0	71-80-90-100-112-132	8700	10100	17700	20400	5750	205
	303 R3	25.7	55	1860	11.6	14.0	71-80-90-100-112	9500	11100	19300	22300	6330	205
	303 R3	31.5	44	1930	9.9	14.0	71-80-90-100-112	10200	11900	20500	23700	6770	205
	303 R3	37.1	38	2280	9.9	14.0	71-80-90-100-112	10800	12600	21500	24900	7160	205
	303 R3	42.6	33	2040	7.7	14.0	71-80-90-100-112	11300	13100	22400	26000	7490	205
	303 R3	46.6	30.0	2200	7.6	14.0	71-80-90-100-112	11600	13500	23100	26700	7720	205
	303 R3	50.3	27.9	2400	7.7	14.0	71-80-90-100-112	11900	13900	23600	27300	7920	205
	303 R3	54.2	25.8	1800	5.3	14.0	71-80-90-100-112	12200	14200	24100	27900	8120	205
	303 R3	63.1	22.2	2200	5.6	14.0	71-80-90-100-112	12900	15000	25300	29200	8540	205
	303 R3	73.3	19.1	1800	3.9	14.0	71-80-90-100-112	13500	15700	26400	30500	8980	205
	303 R3	78.7	17.8	2200	4.5	14.0	71-80-90-100-112	13800	16100	27000	31200	9190	205
	303 R3	91.5	15.3	1800	3.2	14.0	71-80-90-100-112	14600	17000	28200	32600	9670	205
	303 R3	111	12.6	1650	2.4	14.0	71-80-90-100-112	15500	18100	29900	34600	10300	205
	303 R4	129	10.8	2600	3.3	12.0	71-80-90-100-112	16300	19000	31300	36200	10800	205
	303 R4	148	9.4	2100	2.3	12.0	71-80-90-100-112	17100	19900	32600	37700	11400	205
	303 R4	158	8.8	2600	2.7	12.0	71-80-90-100-112	17400	20300	33300	38500	11600	205
	303 R4	185	7.6	2110	1.9	12.0	71-80-90-100-112	18400	21400	34900	40300	12200	205
	303 R4	214	6.5	2600	2.0	12.0	71-80-90-100-112	19300	22500	36400	42100	12800	205
	303 R4	231	6.1	1800	1.3	12.0	71-80-90-100-112	19800	23100	37300	43100	13200	205
	303 R4	255	5.5	1800	1.2	12.0	71-80-90-100-112	20500	23800	38400	44400	13600	205
	303 R4	290	4.8	2650	1.5	12.0	71-80-90-100-112	21400	24900	39900	46100	14200	205
	303 R4	313	4.5	1800	0.95	12.0	71-80-90-100-112	21900	25500	40800	47200	14600	205
	303 R4	336	4.2	2270	1.1	12.0	71-80-90-100-112	22400	26100	41700	48200	14900	205
	303 R4	364	3.8	2290	1.0	12.0	71-80-90-100-112	23000	26800	42700	49400	15300	205
	303 R4	390	3.6	1860	0.79	12.0	71-80-90-100-112	23600	27400	43600	50400	15700	205
	303 R4	452	3.1	2270	0.83	12.0	71-80-90-100-112	24700	28800	45600	52700	16500	205
	303 R4	528	2.7	1960	0.61	12.0	71-80-90-100-112	26100	30300	47800	55200	17300	205
	303 R4	567	2.5	2460	0.72	12.0	71-80-90-100-112	26700	31100	48800	56400	17800	205
	303 R4	639	2.2	1780	0.46	12.0	71-80-90-100-112	27800	32300	50600	58500	18500	205
303 R4	797	1.8	1840	0.38	12.0	71-80-90-100-112	29900	34800	54000	62500	19900	205	
900	303 R2	9.23	98	1617	17.6	22	71-80-90-100-112-132	7900	9150	16200	18700	5210	205
	303 R2	10.9	83	1910	17.6	22	71-80-90-100-112-132	8300	9720	17000	19700	5510	205
	303 R2	13.7	66	2040	15.0	22	71-80-90-100-112-132	9000	10500	18200	21100	5940	205
	303 R2	15.9	57	1800	11.3	22	71-80-90-100-112-132	9400	11000	19100	22000	6250	205
	303 R2	19.2	47	1650	8.6	22	71-80-90-100-112-132	10000	11700	20200	23300	6660	205
	303 R3	25.7	35	2100	8.4	17.0	71-80-90-100-112	11100	12900	22000	25500	7330	205
	303 R3	31.5	28.6	2100	6.9	17.0	71-80-90-100-112	11800	13700	23400	27100	7850	205
	303 R3	37.1	24.2	2600	7.2	17.0	71-80-90-100-112	12500	14500	24600	28400	8290	205
	303 R3	42.6	21.1	2100	5.1	17.0	71-80-90-100-112	13100	15200	25600	29600	8680	205
	303 R3	46.6	19.3	2200	4.9	17.0	71-80-90-100-112	13500	15600	26300	30400	8950	205
	303 R3	50.3	17.9	2600	5.3	17.0	71-80-90-100-112	13800	16100	26900	31100	9170	205
	303 R3	54.2	16.6	1800	3.4	17.0	71-80-90-100-112	14200	16500	27500	31900	9410	205
	303 R3	63.1	14.3	2200	3.6	17.0	71-80-90-100-112	14900	17300	28800	33300	9900	205
	303 R3	73.3	12.3	1800	2.5	17.0	71-80-90-100-112	15700	18200	30200	34900	10400	205
	303 R3	78.7	11.4	2200	2.9	17.0	71-80-90-100-112	16000	18700	30800	35600	10700	205
	303 R3	91.5	9.8	1800	2.0	17.0	71-80-90-100-112	16900	19600	32200	37300	11200	205
	303 R3	111	8.1	1650	1.5	17.0	71-80-90-100-112	18000	21000	34100	39500	11900	205
	303 R4	129	7.0	2600	2.1	15.0	71-80-90-100-112	18900	22000	35800	41300	12600	205
	303 R4	148	6.1	2130	1.5	15.0	71-80-90-100-112	19800	23100	37300	43100	13200	205
	303 R4	158	5.7	2620	1.8	15.0	71-80-90-100-112	20200	23500	38000	43900	13400	205
	303 R4	185	4.9	2150	1.2	15.0	71-80-90-100-112	21300	24800	39800	46000	14200	205
	303 R4	214	4.2	2670	1.3	15.0	71-80-90-100-112	22400	26000	41600	48100	14900	205
	303 R4	231	3.9	1840	0.85	15.0	71-80-90-100-112	22900	26700	42600	49200	15300	205
	303 R4	255	3.5	1870	0.78	15.0	71-80-90-100-112	23700	27500	43800	50700	15800	205
	303 R4	290	3.1	2680	0.98	15.0	71-80-90-100-112	24700	28800	45600	52700	16500	205
	303 R4	313	2.9	1930	0.66	15.0	71-80-90-100-112	25400	29500	46600	53900	16900	205
	303 R4	336	2.7	2430	0.77	15.0	71-80-90-100-112	26000	30200	47600	55000	17300	205
	303 R4	364	2.5	2460	0.72	15.0	71-80-90-100-112	26700	31100	48800	56400	17700	205
	303 R4	390	2.3	2000	0.55	15.0	71-80-90-100-112	27300	31700	49800	57600	18200	205
	303 R4	452	2.0	2270	0.53	15.0	71-80-90-100-112	28700	33300	52000	60200	19100	205






303 R

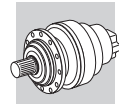
2500 Nm




n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	303 R4	528	1.7	2110	0.42	15.0	71-80-90-100-112	30200	35200	54500	63100	20100	205
	303 R4	567	1.6	2650	0.50	15.0	71-80-90-100-112	30900	36000	55700	64400	20600	205
	303 R4	639	1.4	1900	0.32	15.0	71-80-90-100-112	32200	37400	57700	66800	21400	205
	303 R4	797	1.1	1960	0.26	15.0	71-80-90-100-112	34600	40300	61700	71400	23000	205
500	303 R2	9.23	54	1930	11.6	36	71-80-90-100-112-132	9600	11100	19300	22300	6340	205
	303 R2	10.9	46	2280	11.6	36	71-80-90-100-112-132	10100	11700	20300	23500	6700	205
	303 R2	13.7	37	2200	9.0	36	71-80-90-100-112-132	10900	12700	21700	25100	7230	205
	303 R2	15.9	31	1800	6.3	36	71-80-90-100-112-132	11500	13300	22700	26300	7600	205
	303 R2	19.2	26.0	1650	4.8	36	71-80-90-100-112-132	12200	14200	24100	27800	8100	205
	303 R3	25.7	19.5	2100	4.7	28	71-80-90-100-112	13400	15600	26300	30400	8920	205
	303 R3	31.5	15.9	2100	3.8	28	71-80-90-100-112	14400	16800	27900	32300	9550	205
	303 R3	37.1	13.5	2600	4.0	28	71-80-90-100-112	15200	17600	29300	33900	10090	205
	303 R3	42.6	11.7	2100	2.8	28	71-80-90-100-112	15900	18500	30600	35300	10600	205
	303 R3	46.6	10.7	2200	2.7	28	71-80-90-100-112	16400	19100	31400	36300	10900	205
	303 R3	50.3	9.9	2600	3.0	28	71-80-90-100-112	16800	19500	32100	37100	11200	205
	303 R3	54.2	9.2	1800	1.9	28	71-80-90-100-112	17200	20000	32900	38000	11400	205
	303 R3	63.1	7.9	2200	2.0	28	71-80-90-100-112	18100	21100	34400	39800	12000	205
	303 R3	73.3	6.8	1800	1.4	28	71-80-90-100-112	19000	22200	36000	41600	12700	205
	303 R3	78.7	6.4	2200	1.6	28	71-80-90-100-112	19500	22700	36800	42500	13000	205
	303 R3	91.5	5.5	1800	1.1	28	71-80-90-100-112	20500	23800	38500	44500	13600	205
	303 R3	111	4.5	1650	0.86	28	71-80-90-100-112	21800	25400	40700	47100	14500	205
	303 R4	129	3.9	2680	1.2	24	71-80-90-100-112	23000	26800	42700	49300	15300	205
	303 R4	148	3.4	2180	0.87	24	71-80-90-100-112	24000	28000	44400	51400	16000	205
	303 R4	158	3.2	2710	1.0	24	71-80-90-100-112	24600	28600	45300	52400	16400	205
	303 R4	185	2.7	2200	0.71	24	71-80-90-100-112	25900	30100	47500	54900	17200	205
	303 R4	214	2.3	2760	0.76	24	71-80-90-100-112	27200	31600	49600	57400	18100	205
	303 R4	231	2.2	2020	0.52	24	71-80-90-100-112	27900	32500	50800	58700	18600	205
	303 R4	255	2.0	2060	0.48	24	71-80-90-100-112	28800	33500	52300	60500	19200	205
	303 R4	290	1.7	2680	0.55	24	71-80-90-100-112	30100	35000	54400	62800	20000	205
	303 R4	313	1.6	2130	0.40	24	71-80-90-100-112	30800	35900	55600	64300	20500	205
	303 R4	336	1.5	2670	0.47	24	71-80-90-100-112	31600	36800	56800	65700	21000	205
	303 R4	364	1.4	2710	0.44	24	71-80-90-100-112	32400	37700	58200	67300	21600	205
	303 R4	390	1.3	2210	0.33	24	71-80-90-100-112	33200	38700	59400	68700	22100	205
	303 R4	452	1.1	2270	0.30	24	71-80-90-100-112	34900	40600	62100	71800	23200	205
	303 R4	528	0.95	2300	0.26	24	71-80-90-100-112	36000	41900	64000	74000	24000	205
	303 R4	567	0.88	2850	0.30	24	71-80-90-100-112	36000	41900	64000	74000	24000	205
303 R4	639	0.78	2000	0.19	24	71-80-90-100-112	36000	41900	64000	74000	24000	205	
303 R4	797	0.63	2000	0.15	24	71-80-90-100-112	36000	41900	64000	74000	24000	205	

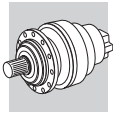
305 R

5000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	305 R2	9.23	152	1420	24	18.0	71-80-90-100-112-132	6800	7920	14200	16400	4500	215
	305 R2	10.9	129	1670	24	18.0	71-80-90-100-112-132	7200	8390	14900	17200	4760	215
	305 R2	13.7	102	2100	24	18.0	71-80-90-100-112-132	7800	9060	16000	18500	5130	215
	305 R2	15.9	88	2440	24	18.0	71-80-90-100-112-132	8100	9440	16700	19300	5390	215
	305 R2	19.2	73	2950	24	18.0	71-80-90-100-112-132	8700	10100	17700	20400	5750	215
	305 R3	25.7	55	2540	15.9	14.0	71-80-90-100-112-132	9500	11200	19300	22300	6330	215
	305 R3	31.5	44	3110	15.9	14.0	71-80-90-100-112-132	10200	11900	20500	23700	6770	215
	305 R3	37.1	38	3670	15.9	14.0	71-80-90-100-112-132	10800	12600	21500	24900	7160	215
	305 R3	42.6	33	3670	13.9	14.0	71-80-90-100-112-132	11300	13200	22400	26000	7490	215
	305 R3	46.6	30.0	4400	15.2	14.0	71-80-90-100-112-132	11600	13500	23100	26700	7720	215
	305 R3	50.3	27.9	4340	13.9	14.0	71-80-90-100-112-132	11900	13900	23600	27300	7920	215
	305 R3	54.2	25.8	3600	10.7	14.0	71-80-90-100-112-132	12200	14200	24100	27900	8120	215
	305 R3	63.1	22.2	4400	11.2	14.0	71-80-90-100-112-132	12900	15000	25300	29200	8540	215
	305 R3	73.3	19.1	3600	7.9	14.0	71-80-90-100-112-132	13500	15700	26400	30500	8980	215
	305 R3	78.7	17.8	4400	9.0	14.0	71-80-90-100-112-132	13800	16100	27000	31200	9190	215
	305 R3	91.5	15.3	3600	6.3	14.0	71-80-90-100-112-132	14600	17000	28200	32600	9670	215
305 R3	111	12.6	3100	4.5	14.0	71-80-90-100-112-132	15500	18100	29900	34600	10300	215	





305 R
5000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	305 R4	129	10.8	5200	6.7	12.0	71-80-90-100-112-132	16300	19000	31300	36200	10800	215
	305 R4	148	9.4	4200	4.7	12.0	71-80-90-100-112-132	17100	19900	32600	37700	11400	215
	305 R4	158	8.8	5200	5.4	12.0	71-80-90-100-112-132	17400	20300	33300	38500	11600	215
	305 R4	185	7.6	4200	3.8	12.0	71-80-90-100-112-132	18400	21500	34900	40300	12200	215
	305 R4	214	6.5	5220	4.0	12.0	71-80-90-100-112-132	19300	22500	36400	42100	12800	215
	305 R4	231	6.1	3600	2.6	12.0	71-80-90-100-112-132	19800	23100	37300	43100	13200	215
	305 R4	255	5.5	3600	2.3	12.0	71-80-90-100-112-132	20500	23800	38400	44400	13600	215
	305 R4	290	4.8	5310	3.0	12.0	71-80-90-100-112-132	21400	24900	39900	46100	14200	215
	305 R4	313	4.5	3600	1.9	12.0	71-80-90-100-112-132	21900	25600	40800	47200	14600	215
	305 R4	336	4.2	4520	2.2	12.0	71-80-90-100-112-132	22400	26100	41700	48200	14900	215
	305 R4	364	3.8	4580	2.1	12.0	71-80-90-100-112-132	23000	26800	42700	49400	15300	215
	305 R4	390	3.6	3740	1.6	12.0	71-80-90-100-112-132	23600	27500	43600	50400	15700	215
	305 R4	452	3.1	4740	1.7	12.0	71-80-90-100-112-132	24700	28800	45600	52700	16500	215
	305 R4	528	2.7	3920	1.2	12.0	71-80-90-100-112-132	26100	30300	47800	55200	17300	215
	305 R4	567	2.5	4890	1.4	12.0	71-80-90-100-112-132	26700	31100	48800	56400	17800	215
	305 R4	639	2.2	3350	0.87	12.0	71-80-90-100-112-132	27800	32300	50600	58500	18500	215
	305 R4	797	1.8	3470	0.72	12.0	71-80-90-100-112-132	29900	34800	54000	62500	19900	215
900	305 R2	9.23	98	1620	17.6	22	71-80-90-100-112-132	7900	9150	16200	18700	5210	215
	305 R2	10.9	83	1910	17.6	22	71-80-90-100-112-132	8300	9730	17000	19700	5510	215
	305 R2	13.7	66	2400	17.6	22	71-80-90-100-112-132	9000	10500	18200	21100	5940	215
	305 R2	15.9	57	2780	17.6	22	71-80-90-100-112-132	9400	11000	19100	22000	6250	215
	305 R2	19.2	47	3100	16.2	22	71-80-90-100-112-132	10000	11700	20200	23300	6660	215
	305 R3	25.7	35	2900	11.6	17.0	71-80-90-100-112-132	11100	12900	22000	25500	7330	215
	305 R3	31.5	28.6	3550	11.6	17.0	71-80-90-100-112-132	11800	13700	23400	27100	7850	215
	305 R3	37.1	24.2	4190	11.6	17.0	71-80-90-100-112-132	12500	14500	24600	28400	8290	215
	305 R3	42.6	21.1	4200	10.2	17.0	71-80-90-100-112-132	13100	15300	25600	29600	8680	215
	305 R3	46.6	19.3	4400	9.7	17.0	71-80-90-100-112-132	13500	15600	26300	30400	8950	215
	305 R3	50.3	17.9	4950	10.2	17.0	71-80-90-100-112-132	13800	16100	26900	31100	9170	215
	305 R3	54.2	16.6	3600	6.9	17.0	71-80-90-100-112-132	14200	16500	27500	31900	9410	215
	305 R3	63.1	14.3	4400	7.2	17.0	71-80-90-100-112-132	14900	17400	28800	33300	9900	215
	305 R3	73.3	12.3	3600	5.1	17.0	71-80-90-100-112-132	15700	18200	30200	34900	10400	215
	305 R3	78.7	11.4	4400	5.8	17.0	71-80-90-100-112-132	16000	18700	30800	35600	10700	215
	305 R3	91.5	9.8	3600	4.1	17.0	71-80-90-100-112-132	16900	19600	32200	37300	11200	215
	305 R3	111	8.1	3100	2.9	17.0	71-80-90-100-112-132	18000	21000	34100	39500	11900	215
	305 R4	129	7.0	5200	4.3	15.0	71-80-90-100-112-132	18900	22000	35800	41300	12600	215
	305 R4	148	6.1	4250	3.1	15.0	71-80-90-100-112-132	19800	23100	37300	43100	13200	215
	305 R4	158	5.7	5260	3.5	15.0	71-80-90-100-112-132	20200	23600	38000	43900	13400	215
	305 R4	185	4.9	4300	2.5	15.0	71-80-90-100-112-132	21300	24800	39800	46000	14200	215
	305 R4	214	4.2	5350	2.7	15.0	71-80-90-100-112-132	22400	26000	41600	48100	14900	215
	305 R4	231	3.9	3690	1.7	15.0	71-80-90-100-112-132	22900	26700	42600	49200	15300	215
	305 R4	255	3.5	3750	1.6	15.0	71-80-90-100-112-132	23700	27600	43800	50700	15800	215
	305 R4	290	3.1	5360	2.0	15.0	71-80-90-100-112-132	24700	28800	45600	52700	16500	215
	305 R4	313	2.9	3870	1.3	15.0	71-80-90-100-112-132	25400	29600	46600	53900	16900	215
	305 R4	336	2.7	4830	1.5	15.0	71-80-90-100-112-132	26000	30200	47600	55000	17300	215
	305 R4	364	2.5	4890	1.4	15.0	71-80-90-100-112-132	26700	31100	48800	56400	17700	215
	305 R4	390	2.3	4010	1.1	15.0	71-80-90-100-112-132	27300	31800	49800	57600	18200	215
	305 R4	452	2.0	4740	1.1	15.0	71-80-90-100-112-132	28700	33400	52000	60200	19100	215
	305 R4	528	1.7	4220	0.85	15.0	71-80-90-100-112-132	30200	35200	54500	63100	20100	215
305 R4	567	1.6	5230	0.98	15.0	71-80-90-100-112-132	30900	36000	55700	64400	20600	215	
305 R4	639	1.4	3600	0.60	15.0	71-80-90-100-112-132	32200	37500	57700	66800	21400	215	
305 R4	797	1.1	3730	0.50	15.0	71-80-90-100-112-132	34600	40300	61700	71400	23000	215	
500	305 R2	9.23	54	1930	11.6	36	71-80-90-100-112-132	9600	11200	19300	22300	6340	215
	305 R2	10.9	46	2280	11.6	36	71-80-90-100-112-132	10100	11700	20300	23500	6700	215
	305 R2	13.7	37	2860	11.6	36	71-80-90-100-112-132	10900	12700	21700	25100	7230	215
	305 R2	15.9	31	3320	11.6	36	71-80-90-100-112-132	11500	13300	22700	26300	7600	215
	305 R2	19.2	26.0	3100	9.0	36	71-80-90-100-112-132	12200	14200	24100	27800	8100	215
	305 R3	25.7	19.5	3450	7.7	28	71-80-90-100-112-132	13400	15600	26300	30400	8920	215
	305 R3	31.5	15.9	4200	7.7	28	71-80-90-100-112-132	14400	16800	27900	32300	9550	215
	305 R3	37.1	13.5	5000	7.7	28	71-80-90-100-112-132	15200	17600	29300	33900	10100	215
	305 R3	42.6	11.7	4200	5.7	28	71-80-90-100-112-132	15900	18500	30600	35300	10600	215
	305 R3	46.6	10.7	4400	5.4	28	71-80-90-100-112-132	16400	19100	31400	36300	10900	215
	305 R3	50.3	9.9	5200	5.9	28	71-80-90-100-112-132	16800	19500	32100	37100	11200	215
	305 R3	54.2	9.2	3600	3.8	28	71-80-90-100-112-132	17200	20000	32900	38000	11400	215
	305 R3	63.1	7.9	4400	4.0	28	71-80-90-100-112-132	18100	21100	34400	39800	12000	215






305 R

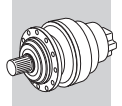
5000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	305 R3	73.3	6.8	3600	2.8	28	71-80-90-100-112-132	19000	22200	36000	41600	12700	215
	305 R3	78.7	6.4	4400	3.2	28	71-80-90-100-112-132	19500	22700	36800	42500	13000	215
	305 R3	91.5	5.5	3600	2.3	28	71-80-90-100-112-132	20500	23800	38500	44500	13600	215
	305 R3	111	4.5	3100	1.6	28	71-80-90-100-112-132	21800	25500	40700	47100	14500	215
	305 R4	129	3.9	5360	2.5	24	71-80-90-100-112-132	23000	26800	42700	49300	15300	215
	305 R4	148	3.4	4390	1.8	24	71-80-90-100-112-132	24000	28000	44400	51400	16000	215
	305 R4	158	3.2	5440	2.0	24	71-80-90-100-112-132	24600	28600	45300	52400	16400	215
	305 R4	185	2.7	4450	1.4	24	71-80-90-100-112-132	25900	30100	47500	54900	17200	215
	305 R4	214	2.3	5530	1.5	24	71-80-90-100-112-132	27200	31700	49600	57400	18100	215
	305 R4	231	2.2	4060	1.0	24	71-80-90-100-112-132	27900	32500	50800	58700	18600	215
	305 R4	255	2.0	4120	0.96	24	71-80-90-100-112-132	28800	33600	52300	60500	19200	215
	305 R4	290	1.7	5360	1.1	24	71-80-90-100-112-132	30100	35000	54400	62800	20000	215
	305 R4	313	1.6	4260	0.81	24	71-80-90-100-112-132	30800	36000	55600	64300	20500	215
	305 R4	336	1.5	5280	0.93	24	71-80-90-100-112-132	31600	36800	56800	65700	21000	215
	305 R4	364	1.4	5340	0.87	24	71-80-90-100-112-132	32400	37800	58200	67300	21600	215
	305 R4	390	1.3	4420	0.67	24	71-80-90-100-112-132	33200	38700	59400	68700	22100	215
	305 R4	452	1.1	4740	0.62	24	71-80-90-100-112-132	34900	40600	62100	71800	23200	215
	305 R4	528	0.95	4600	0.52	24	71-80-90-100-112-132	36000	42000	64000	74000	24000	215
	305 R4	567	0.88	5600	0.58	24	71-80-90-100-112-132	36000	42000	64000	74000	24000	215
	305 R4	639	0.78	3800	0.35	24	71-80-90-100-112-132	36000	42000	64000	74000	24000	215
305 R4	797	0.63	3800	0.28	24	71-80-90-100-112-132	36000	42000	64000	74000	24000	215	

306 R




8000 Nm

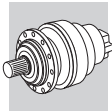
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	306 R2	9.23	152	1420	24	18.0	71-80-90-100-112-132-160	8500	9600	22400	26400	6560	225
	306 R2	10.9	129	1670	24	18.0	71-80-90-100-112-132-160	9000	10200	23500	27700	6930	225
	306 R2	13.7	102	2100	24	18.0	71-80-90-100-112-132-160	9700	11000	25200	29700	7480	225
	306 R2	15.9	88	2440	24	18.0	71-80-90-100-112-132-160	10200	11500	26400	31000	7870	225
	306 R2	19.2	73	2950	24	18.0	71-80-90-100-112-132-160	10800	12300	27900	32900	8380	225
	306 R3	33.2	42	3310	16.0	14.0	71-80-90-100-112-132	13000	14700	32900	38700	10100	225
	306 R3	39.2	36	3910	16.0	14.0	71-80-90-100-112-132	13700	15500	34600	40700	10600	225
	306 R3	46.3	30.2	4610	16.0	14.0	71-80-90-100-112-132	14500	16400	36300	42800	11200	225
	306 R3	58.1	24.1	5790	16.0	14.0	71-80-90-100-112-132	15600	17700	38900	45800	12100	225
	306 R3	67.5	20.7	6730	16.0	14.0	71-80-90-100-112-132	16400	18600	40700	47900	12700	225
	306 R3	72.9	19.2	7260	16.0	14.0	71-80-90-100-112-132	16900	19100	41600	49000	13100	225
	306 R3	84.7	16.5	7750	14.7	14.0	71-80-90-100-112-132	17700	20100	43500	51300	13700	225
	306 R3	98.5	14.2	6500	10.6	14.0	71-80-90-100-112-132	18600	21100	45600	53700	14400	225
	306 R3	119	11.7	6500	8.8	14.0	71-80-90-100-112-132	19800	22500	48200	56800	15400	225
	306 R3	144	9.7	5500	6.1	14.0	71-80-90-100-112-132	21100	23900	51100	60200	16400	225
	306 R4	158	8.9	9250	9.7	12.0	71-80-90-100-112-132	21800	24700	52500	61800	16900	225
	306 R4	168	8.3	7500	7.4	12.0	71-80-90-100-112-132	22200	25200	53400	63000	17300	225
	306 R4	181	7.7	8400	7.7	12.0	71-80-90-100-112-132	22800	25800	54700	64400	17700	225
	306 R4	214	6.6	9250	7.2	12.0	71-80-90-100-112-132	24100	27400	57500	67700	18700	225
	306 R4	230	6.1	7420	5.3	12.0	71-80-90-100-112-132	24700	28000	58800	69200	19200	225
306 R4	249	5.6	7750	5.2	12.0	71-80-90-100-112-132	25400	28700	60100	70900	19700	225	
306 R4	289	4.8	7830	4.5	12.0	71-80-90-100-112-132	26600	30200	62900	74100	20700	225	
306 R4	312	4.5	7420	3.9	12.0	71-80-90-100-112-132	27300	31000	64400	75800	21200	225	
306 R4	377	3.7	6800	3.0	12.0	71-80-90-100-112-132	29100	33000	68100	80300	22600	225	
306 R4	420	3.3	8190	3.2	12.0	71-80-90-100-112-132	30200	34200	70400	82900	23400	225	
306 R4	455	3.1	6930	2.5	12.0	71-80-90-100-112-132	31000	35100	72100	84900	24100	225	
306 R4	488	2.9	8350	2.8	12.0	71-80-90-100-112-132	31700	35900	73600	86700	24600	225	
306 R4	550	2.5	5890	1.8	12.0	71-80-90-100-112-132	33000	37400	76300	89900	25600	225	
306 R4	590	2.4	5970	1.7	12.0	71-80-90-100-112-132	33800	38300	78000	91800	26200	225	
306 R4	665	2.1	6100	1.5	12.0	71-80-90-100-112-132	35200	39800	80800	95200	27300	225	
306 R4	830	1.7	6360	1.3	12.0	71-80-90-100-112-132	37900	42900	86300	101700	29400	225	
900	306 R2	9.23	98	1620	17.6	22	71-80-90-100-112-132-160	9800	11100	25600	30100	7600	225
	306 R2	10.9	83	1910	17.6	22	71-80-90-100-112-132-160	10400	11800	26900	31700	8040	225
	306 R2	13.7	66	2400	17.6	22	71-80-90-100-112-132-160	11200	12700	28800	33900	8670	225



306 R




8000 Nm

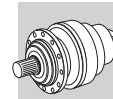
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
900	306 R2	15.9	57	2780	17.6	22	71-80-90-100-112-132-160	11800	13300	30100	35400	9110	225	
	306 R2	19.2	47	3370	17.6	22	71-80-90-100-112-132-160	12500	14200	31900	37500	9710	225	
	306 R3	33.2	27.1	5150	16.0	17.0	71-80-90-100-112-132	15000	17000	37500	44200	11700	225	
	306 R3	39.2	23.0	6080	16.0	17.0	71-80-90-100-112-132	15900	18000	39500	46500	12300	225	
	306 R3	46.3	19.4	7170	16.0	17.0	71-80-90-100-112-132	16800	19000	41500	48900	13000	225	
	306 R3	58.1	15.5	8420	15.0	17.0	71-80-90-100-112-132	18100	20500	44400	52300	14000	225	
	306 R3	67.5	13.3	7420	11.3	17.0	71-80-90-100-112-132	19000	21600	46400	54700	14800	225	
	306 R3	72.9	12.3	7750	11.0	17.0	71-80-90-100-112-132	19500	22100	47500	56000	15100	225	
	306 R3	84.7	10.6	7750	9.4	17.0	71-80-90-100-112-132	20500	23200	49700	58600	15900	225	
	306 R3	98.5	9.1	6500	6.8	17.0	71-80-90-100-112-132	21600	24400	52000	61300	16700	225	
	306 R3	119	7.6	6500	5.6	17.0	71-80-90-100-112-132	23000	26000	55100	64900	17800	225	
	306 R3	144	6.2	5500	3.9	17.0	71-80-90-100-112-132	24500	27700	58300	68700	19000	225	
	306 R4	158	5.7	9300	6.3	15.0	71-80-90-100-112-132	25200	28600	59900	70600	19600	225	
	306 R4	168	5.4	7630	4.8	15.0	71-80-90-100-112-132	25800	29200	61000	71900	20000	225	
	306 R4	181	5.0	8660	5.1	15.0	71-80-90-100-112-132	26400	29900	62400	73500	20500	225	
	306 R4	214	4.2	9420	4.7	15.0	71-80-90-100-112-132	28000	31700	65600	77300	21700	225	
	306 R4	230	3.9	7420	3.4	15.0	71-80-90-100-112-132	28600	32400	67100	79100	22200	225	
	306 R4	249	3.6	8110	3.5	15.0	71-80-90-100-112-132	29400	33300	68700	80900	22800	225	
	306 R4	289	3.1	8260	3.0	15.0	71-80-90-100-112-132	30900	35000	71800	84600	24000	225	
	306 R4	312	2.9	7420	2.5	15.0	71-80-90-100-112-132	31700	35900	73500	86600	24600	225	
	306 R4	377	2.4	6800	1.9	15.0	71-80-90-100-112-132	33700	38200	77800	91700	26200	225	
	306 R4	420	2.1	8650	2.2	15.0	71-80-90-100-112-132	35000	39600	80300	94700	27100	225	
	306 R4	455	2.0	7510	1.8	15.0	71-80-90-100-112-132	35900	40700	82300	97000	27900	225	
	306 R4	488	1.8	8810	1.9	15.0	71-80-90-100-112-132	36700	41600	84100	99000	28500	225	
	306 R4	550	1.6	6390	1.2	15.0	71-80-90-100-112-132	38200	43300	87100	102700	29700	225	
	306 R4	590	1.5	6480	1.2	15.0	71-80-90-100-112-132	39100	44400	89000	104900	30400	225	
	306 R4	665	1.4	6620	1.1	15.0	71-80-90-100-112-132	40700	46200	92200	108700	31600	225	
	306 R4	830	1.1	6900	0.88	15.0	71-80-90-100-112-132	43900	49700	98600	116200	34100	225	
	500	306 R2	9.23	54	1930	11.6	36	71-80-90-100-112-132-160	11900	13500	30500	35900	9250	225
		306 R2	10.9	46	2280	11.6	36	71-80-90-100-112-132-160	12600	14300	32000	37800	9770	225
		306 R2	13.7	37	2860	11.6	36	71-80-90-100-112-132-160	13600	15400	34300	40400	10500	225
		306 R2	15.9	31	3320	11.6	36	71-80-90-100-112-132-160	14300	16200	35900	42300	11100	225
		306 R2	19.2	26.0	4020	11.6	36	71-80-90-100-112-132-160	15200	17300	38000	44800	11800	225
306 R3		33.2	15.1	6730	11.6	28	71-80-90-100-112-132	18300	20700	44800	52800	14200	225	
306 R3		39.2	12.8	7500	11.0	28	71-80-90-100-112-132	19300	21900	47100	55400	15000	225	
306 R3		46.3	10.8	9250	11.5	28	71-80-90-100-112-132	20400	23100	49500	58300	15800	225	
306 R3		58.1	8.6	9070	9.0	28	71-80-90-100-112-132	22000	24900	52900	62400	17100	225	
306 R3		67.5	7.4	7420	6.3	28	71-80-90-100-112-132	23100	26200	55400	65300	18000	225	
306 R3		72.9	6.9	7750	6.1	28	71-80-90-100-112-132	23700	26900	56700	66800	18400	225	
306 R3		84.7	5.9	7750	5.2	28	71-80-90-100-112-132	24900	28300	59300	69900	19400	225	
306 R3		98.5	5.1	6500	3.8	28	71-80-90-100-112-132	26200	29700	62000	73100	20400	225	
306 R3		119	4.2	6560	3.2	28	71-80-90-100-112-132	27900	31700	65700	77400	21700	225	
306 R3		144	3.5	5570	2.2	28	71-80-90-100-112-132	29800	33700	69500	81900	23100	225	
306 R4		158	3.2	9530	3.6	24	71-80-90-100-112-132	30700	34800	71500	84200	23800	225	
306 R4		168	3.0	7680	2.7	24	71-80-90-100-112-132	31300	35500	72800	85800	24300	225	
306 R4		181	2.8	8660	2.8	24	71-80-90-100-112-132	32100	36400	74500	87700	24900	225	
306 R4		214	2.3	9650	2.7	24	71-80-90-100-112-132	34000	38500	78300	92200	26400	225	
306 R4		230	2.2	7420	1.9	24	71-80-90-100-112-132	34800	39400	80000	94300	27000	225	
306 R4		249	2.0	8720	2.1	24	71-80-90-100-112-132	35700	40500	81900	96500	27700	225	
306 R4		289	1.7	8880	1.8	24	71-80-90-100-112-132	37500	42500	85700	101000	29200	225	
306 R4		312	1.6	7420	1.4	24	71-80-90-100-112-132	38500	43600	87600	103300	29900	225	
306 R4		377	1.3	6800	1.1	24	71-80-90-100-112-132	41000	46500	92800	109300	31900	225	
306 R4		420	1.2	9300	1.3	24	71-80-90-100-112-132	42500	48200	95800	112900	33000	225	
306 R4		455	1.1	8350	1.1	24	71-80-90-100-112-132	43700	49500	98200	115700	33900	225	
306 R4		488	1.0	9310	1.1	24	71-80-90-100-112-132	44700	50600	100300	118100	34700	225	
306 R4		550	0.91	7000	0.75	24	71-80-90-100-112-132	45000	51000	101000	119000	35000	225	
306 R4		590	0.85	7000	0.70	24	71-80-90-100-112-132	45000	51000	101000	119000	35000	225	
306 R4		665	0.75	7000	0.62	24	71-80-90-100-112-132	45000	51000	101000	119000	35000	225	
306 R4		830	0.60	7000	0.50	24	71-80-90-100-112-132	45000	51000	101000	119000	35000	225	



307 R




12500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	307 R2	13.0	108	4170	50	35	132-160-180-200	11000	13700	26700	35600	9450	235
	307 R2	15.5	91	4970	50	35	132-160-180-200	11600	14500	28200	37500	10000	235
	307 R2	19.8	71	6380	50	35	132-160-180-200	12600	15800	30400	40400	10900	235
	307 R2	23.5	59	7500	50	35	132-160-180-200	13400	16700	32000	42600	11500	235
	307 R3	31.6	44	4710	24	22	71-80-90-100-112-132-160	14700	18400	35000	46500	12700	235
	307 R3	37.7	37	5620	24	22	71-80-90-100-112-132-160	15600	19500	36900	49000	13500	235
	307 R3	44.6	31	6630	24	22	71-80-90-100-112-132-160	16500	20700	38700	51500	14300	235
	307 R3	55.9	25.0	8330	24	22	71-80-90-100-112-132-160	17800	22300	41500	55200	15400	235
	307 R3	65.0	21.5	9680	24	22	71-80-90-100-112-132-160	18700	23400	43400	57700	16200	235
	307 R3	71.8	19.5	10500	24	22	71-80-90-100-112-132-160	19400	24200	44700	59500	16700	235
	307 R3	78.6	17.8	11200	23	22	71-80-90-100-112-132-160	20000	24900	45900	61100	17200	235
	307 R3	83.4	16.8	10500	20	22	71-80-90-100-112-132-160	20400	25400	46800	62200	17600	235
	307 R3	99.0	14.1	8700	14.1	22	71-80-90-100-112-132-160	21600	26900	49200	65500	18600	235
	307 R3	120	11.7	8700	11.7	22	71-80-90-100-112-132-160	23000	28700	52100	69300	19800	235
	307 R4	152	9.2	12500	13.6	15.0	71-80-90-100-112-132	24900	31100	56000	74500	21500	235
	307 R4	165	8.5	10500	10.5	15.0	71-80-90-100-112-132	25500	31900	57400	76400	22100	235
	307 R4	191	7.3	12500	10.9	15.0	71-80-90-100-112-132	26800	33500	59900	79700	23200	235
	307 R4	206	6.8	12500	10.1	15.0	71-80-90-100-112-132	27500	34400	61300	81600	23700	235
	307 R4	232	6.0	10500	7.5	15.0	71-80-90-100-112-132	28600	35800	63600	84600	24700	235
	307 R4	258	5.4	12800	8.2	15.0	71-80-90-100-112-132	29600	37000	65600	87300	25600	235
	307 R4	284	4.9	10800	6.3	15.0	71-80-90-100-112-132	30600	38200	67600	89900	26500	235
	307 R4	313	4.5	8740	4.6	15.0	71-80-90-100-112-132	31600	39500	69600	92500	27300	235
	307 R4	331	4.2	11000	5.5	15.0	71-80-90-100-112-132	32200	40200	70700	94100	27800	235
	307 R4	363	3.9	12300	5.6	15.0	71-80-90-100-112-132	33200	41500	72700	96700	28700	235
	307 R4	413	3.4	11500	4.6	15.0	71-80-90-100-112-132	34700	43300	75600	100600	30000	235
	307 R4	457	3.1	9260	3.4	15.0	71-80-90-100-112-132	35900	44800	77900	103600	31000	235
	307 R4	490	2.9	9360	3.2	15.0	71-80-90-100-112-132	36700	45900	79600	105900	31700	235
	307 R4	581	2.4	12100	3.5	15.0	71-80-90-100-112-132	38800	48500	83700	111400	33600	235
307 R4	690	2.0	9870	2.4	15.0	71-80-90-100-112-132	41100	51400	88100	117300	35500	235	
900	307 R2	13.0	69	4760	37	42	132-160-180-200	12700	15900	30500	40600	10900	235
	307 R2	15.5	58	5680	37	42	132-160-180-200	13500	16800	32200	42800	11600	235
	307 R2	19.8	45	7290	37	42	132-160-180-200	14600	18300	34700	46200	12600	235
	307 R2	23.5	38	8560	36	42	132-160-180-200	15500	19300	36500	48600	13400	235
	307 R3	31.6	28.5	5380	17.6	27	71-80-90-100-112-132-160	17100	21300	39900	53100	14700	235
	307 R3	37.7	23.8	6420	17.6	27	71-80-90-100-112-132-160	18100	22600	42100	56000	15600	235
	307 R3	44.6	20.2	7570	17.6	27	71-80-90-100-112-132-160	19200	23900	44200	58900	16500	235
	307 R3	55.9	16.1	9510	17.6	27	71-80-90-100-112-132-160	20600	25800	47400	63000	17800	235
	307 R3	65.0	13.8	11100	17.6	27	71-80-90-100-112-132-160	21700	27100	49500	65900	18700	235
	307 R3	71.8	12.5	10500	15.1	27	71-80-90-100-112-132-160	22400	28000	51000	67900	19400	235
	307 R3	78.6	11.4	12300	16.2	27	71-80-90-100-112-132-160	23100	28900	52500	69800	20000	235
	307 R3	83.4	10.8	10500	13.0	27	71-80-90-100-112-132-160	23600	29500	53400	71000	20400	235
	307 R3	99.0	9.1	8700	9.1	27	71-80-90-100-112-132-160	25000	31200	56200	74800	21600	235
	307 R3	120	7.5	8700	7.5	27	71-80-90-100-112-132-160	26600	33300	59500	79200	23000	235
	307 R4	152	5.9	12700	8.9	18.0	71-80-90-100-112-132	28800	36000	63900	85000	24900	235
	307 R4	165	5.4	10600	6.8	18.0	71-80-90-100-112-132	29600	37000	65500	87200	25600	235
	307 R4	191	4.7	13000	7.2	18.0	71-80-90-100-112-132	31100	38800	68400	91000	26800	235
	307 R4	206	4.4	13100	6.8	18.0	71-80-90-100-112-132	31900	39800	70000	93100	27500	235
	307 R4	232	3.9	11200	5.1	18.0	71-80-90-100-112-132	33100	41400	72600	96600	28600	235
	307 R4	258	3.5	13300	5.5	18.0	71-80-90-100-112-132	34300	42900	74900	99700	29700	235
	307 R4	284	3.2	11600	4.3	18.0	71-80-90-100-112-132	35500	44300	77200	102600	30700	235
	307 R4	313	2.9	9350	3.2	18.0	71-80-90-100-112-132	36600	45800	79400	105600	31700	235
	307 R4	331	2.7	11900	3.8	18.0	71-80-90-100-112-132	37300	46600	80800	107400	32200	235
	307 R4	363	2.5	12300	3.6	18.0	71-80-90-100-112-132	38500	48100	83000	110400	33200	235
	307 R4	413	2.2	12300	3.2	18.0	71-80-90-100-112-132	40200	50200	86300	114800	34700	235
	307 R4	457	2.0	9910	2.3	18.0	71-80-90-100-112-132	41500	51900	88900	118300	35900	235
	307 R4	490	1.8	10000	2.2	18.0	71-80-90-100-112-132	42500	53100	90900	120900	36800	235
	307 R4	581	1.5	13000	2.4	18.0	71-80-90-100-112-132	45000	56200	95600	127200	38900	235
307 R4	690	1.3	10600	1.6	18.0	71-80-90-100-112-132	47600	59500	100600	133900	41200	235	
500	307 R2	13.0	39	5680	24	70	132-160-180-200	15500	19300	36400	48500	13300	235
	307 R2	15.5	32	6770	24	70	132-160-180-200	16400	20500	38400	51100	14100	235
	307 R2	19.8	25.2	8690	24	70	132-160-180-200	17800	22200	41400	55100	15300	235
	307 R2	23.5	21.2	8700	21	70	132-160-180-200	18800	23500	43600	58000	16200	235
307 R3	31.6	15.8	6410	11.6	44	71-80-90-100-112-132-160	20800	25900	47600	63300	17900	235	






307 R

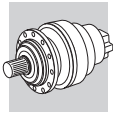
12500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	307 R3	37.7	13.2	7650	11.6	44	71-80-90-100-112-132-160	22000	27500	50200	66800	19000	235
	307 R3	44.6	11.2	9040	11.6	44	71-80-90-100-112-132-160	23300	29100	52800	70200	20100	235
	307 R3	55.9	8.9	11300	11.6	44	71-80-90-100-112-132-160	25100	31400	56500	75100	21700	235
	307 R3	65.0	7.7	12500	11.0	44	71-80-90-100-112-132-160	26400	33000	59100	78600	22800	235
	307 R3	71.8	7.0	10500	8.4	44	71-80-90-100-112-132-160	27300	34100	60900	81000	23600	235
	307 R3	78.6	6.4	12300	9.0	44	71-80-90-100-112-132-160	28100	35100	62600	83200	24300	235
	307 R3	83.4	6.0	10500	7.2	44	71-80-90-100-112-132-160	28700	35800	63700	84700	24800	235
	307 R3	99.0	5.1	8700	5.0	44	71-80-90-100-112-132-160	30400	37900	67100	89200	26200	235
	307 R3	120	4.2	8830	4.2	44	71-80-90-100-112-132-160	32400	40400	71000	94400	27900	235
	307 R4	152	3.3	13400	5.2	30	71-80-90-100-112-132	35000	43800	76300	101400	30300	235
	307 R4	165	3.0	11700	4.2	30	71-80-90-100-112-132	36000	45000	78200	104000	31100	235
	307 R4	191	2.6	13700	4.3	30	71-80-90-100-112-132	37800	47200	81600	108600	32600	235
	307 R4	206	2.4	13800	4.0	30	71-80-90-100-112-132	38700	48400	83500	111100	33500	235
	307 R4	232	2.2	12300	3.1	30	71-80-90-100-112-132	40300	50400	86600	115200	34800	235
	307 R4	258	1.9	14100	3.2	30	71-80-90-100-112-132	41800	52200	89400	118900	36100	235
	307 R4	284	1.8	12800	2.7	30	71-80-90-100-112-132	43100	53900	92000	122400	37300	235
	307 R4	313	1.6	10200	1.9	30	71-80-90-100-112-132	44500	55700	94700	126000	38500	235
	307 R4	331	1.5	13100	2.3	30	71-80-90-100-112-132	45400	56700	96300	128100	39200	235
	307 R4	363	1.4	12300	2.0	30	71-80-90-100-112-132	46800	58500	99000	131700	40400	235
	307 R4	413	1.2	13600	1.9	30	71-80-90-100-112-132	48800	61000	102900	136900	42200	235
	307 R4	457	1.1	10800	1.4	30	71-80-90-100-112-132	50500	63100	106100	141100	43700	235
	307 R4	490	1.0	11000	1.3	30	71-80-90-100-112-132	51700	64600	108400	144200	44700	235
	307 R4	581	0.86	14000	1.4	30	71-80-90-100-112-132	52000	65000	109000	145000	45000	235
	307 R4	690	0.72	11000	0.94	30	71-80-90-100-112-132	52000	65000	109000	145000	45000	235

309 R




18000 Nm

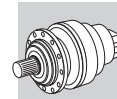
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	309 R2	13.0	108	4170	50	35	132-160-180-200	—	—	27000	35600	7560	245	
	309 R2	15.5	91	4970	50	35	132-160-180-200	—	—	28500	37500	8020	245	
	309 R2	19.8	71	6380	50	35	132-160-180-200	—	—	30700	40400	8710	245	
	309 R2	23.5	59	7570	50	35	132-160-180-200	—	—	32300	42600	9220	245	
	309 R3	31.6	44	4710	24	22	71-80-90-100-112-132-160	—	—	35300	46500	10200	245	
	309 R3	37.7	37	5620	24	22	71-80-90-100-112-132-160	—	—	37200	49000	10800	245	
	309 R3	44.6	31	6630	24	22	71-80-90-100-112-132-160	—	—	39100	51500	11400	245	
	309 R3	55.9	25.0	8330	24	22	71-80-90-100-112-132-160	—	—	41900	55200	12300	245	
	309 R3	65.0	21.5	9680	24	22	71-80-90-100-112-132-160	—	—	43800	57700	12900	245	
	309 R3	71.8	19.5	10700	24	22	71-80-90-100-112-132-160	—	—	45100	59500	13400	245	
	309 R3	78.6	17.8	11700	24	22	71-80-90-100-112-132-160	—	—	46400	61100	13800	245	
	309 R3	83.4	16.8	12400	24	22	71-80-90-100-112-132-160	—	—	47200	62200	14100	245	
	309 R3	99.0	14.1	13000	21	22	71-80-90-100-112-132-160	—	—	49700	65500	14900	245	
	309 R3	120	11.7	13000	17.4	22	71-80-90-100-112-132-160	—	—	52600	69300	15900	245	
	309 R4	152	9.2	14600	15.9	15.0	71-80-90-100-112-132	—	—	56500	74500	17200	245	
	309 R4	165	8.5	15800	15.9	15.0	71-80-90-100-112-132	—	—	57900	76400	17700	245	
	309 R4	191	7.3	17500	15.2	15.0	71-80-90-100-112-132	—	—	60500	79700	18500	245	
	309 R4	206	6.8	17200	13.9	15.0	71-80-90-100-112-132	—	—	61900	81600	19000	245	
	309 R4	232	6.0	16000	11.4	15.0	71-80-90-100-112-132	—	—	64200	84600	19800	245	
	309 R4	258	5.4	17500	11.2	15.0	71-80-90-100-112-132	—	—	66200	87300	20500	245	
	309 R4	284	4.9	16300	9.5	15.0	71-80-90-100-112-132	—	—	68200	89900	21200	245	
	309 R4	313	4.5	13000	6.9	15.0	71-80-90-100-112-132	—	—	70200	92500	21900	245	
	309 R4	331	4.2	16700	8.3	15.0	71-80-90-100-112-132	—	—	71400	94100	22300	245	
	309 R4	363	3.9	12300	5.6	15.0	71-80-90-100-112-132	—	—	73400	96700	23000	245	
	309 R4	413	3.4	17300	6.9	15.0	71-80-90-100-112-132	—	—	76300	100600	24000	245	
	309 R4	457	3.1	13900	5.0	15.0	71-80-90-100-112-132	—	—	78600	103600	24800	245	
	309 R4	490	2.9	14100	4.7	15.0	71-80-90-100-112-132	—	—	80300	105900	25400	245	
	309 R4	581	2.4	15800	4.5	15.0	71-80-90-100-112-132	—	—	84500	111400	26900	245	
	309 R4	690	2.0	15000	3.6	15.0	71-80-90-100-112-132	—	—	89000	117300	28400	245	
	900	309 R2	13.0	69	4760	37	42	132-160-180-200	—	—	30800	40600	8760	245
		309 R2	15.5	58	5680	37	42	132-160-180-200	—	—	32500	42800	9290	245



309 R




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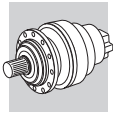
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
900	309 R2	19.8	45	7290	37	42	132-160-180-200	—	—	35000	46200	10100	245	
	309 R2	23.5	38	8650	37	42	132-160-180-200	—	—	36900	48600	10700	245	
	309 R3	31.6	28.5	5380	17.6	27	71-80-90-100-112-132-160	—	—	40300	53100	11800	245	
	309 R3	37.7	23.8	6420	17.6	27	71-80-90-100-112-132-160	—	—	42500	56000	12500	245	
	309 R3	44.6	20.2	7570	17.6	27	71-80-90-100-112-132-160	—	—	44600	58900	13200	245	
	309 R3	55.9	16.1	9510	17.6	27	71-80-90-100-112-132-160	—	—	47800	63000	14300	245	
	309 R3	65.0	13.8	11100	17.6	27	71-80-90-100-112-132-160	—	—	50000	65900	15000	245	
	309 R3	71.8	12.5	12200	17.6	27	71-80-90-100-112-132-160	—	—	51500	67900	15500	245	
	309 R3	78.6	11.4	12300	16.2	27	71-80-90-100-112-132-160	—	—	52900	69800	16000	245	
	309 R3	83.4	10.8	14200	17.6	27	71-80-90-100-112-132-160	—	—	53900	71000	16300	245	
	309 R3	99.0	9.1	13000	13.6	27	71-80-90-100-112-132-160	—	—	56700	74800	17200	245	
	309 R3	120	7.5	13000	11.2	27	71-80-90-100-112-132-160	—	—	60100	79200	18400	245	
	309 R4	152	5.9	16600	11.6	18.0	71-80-90-100-112-132	—	—	64500	85000	19900	245	
	309 R4	165	5.4	16000	10.3	18.0	71-80-90-100-112-132	—	—	66100	87200	20500	245	
	309 R4	191	4.7	17500	9.7	18.0	71-80-90-100-112-132	—	—	69100	91000	21500	245	
	309 R4	206	4.4	19700	10.2	18.0	71-80-90-100-112-132	—	—	70600	93100	22000	245	
	309 R4	232	3.9	16900	7.8	18.0	71-80-90-100-112-132	—	—	73300	96600	22900	245	
	309 R4	258	3.5	17500	7.2	18.0	71-80-90-100-112-132	—	—	75600	99700	23700	245	
	309 R4	284	3.2	17500	6.5	18.0	71-80-90-100-112-132	—	—	77900	102600	24500	245	
	309 R4	313	2.9	14000	4.8	18.0	71-80-90-100-112-132	—	—	80100	105600	25300	245	
	309 R4	331	2.7	17900	5.8	18.0	71-80-90-100-112-132	—	—	81500	107400	25800	245	
	309 R4	363	2.5	12300	3.6	18.0	71-80-90-100-112-132	—	—	83800	110400	26600	245	
	309 R4	413	2.2	18500	4.8	18.0	71-80-90-100-112-132	—	—	87100	114800	27800	245	
	309 R4	457	2.0	15000	3.5	18.0	71-80-90-100-112-132	—	—	89800	118300	28700	245	
	309 R4	490	1.8	15200	3.3	18.0	71-80-90-100-112-132	—	—	91700	120900	29400	245	
	309 R4	581	1.5	15800	2.9	18.0	71-80-90-100-112-132	—	—	96500	127200	31100	245	
	309 R4	690	1.3	16200	2.5	18.0	71-80-90-100-112-132	—	—	101600	133900	32900	245	
	500	309 R2	13.0	39	5680	24	70	132-160-180-200	—	—	36800	48500	10700	245
		309 R2	15.5	32	6770	24	70	132-160-180-200	—	—	38800	51100	11300	245
		309 R2	19.8	25.2	8690	24	70	132-160-180-200	—	—	41800	55100	12300	245
		309 R2	23.5	21.2	10300	24	70	132-160-180-200	—	—	44000	58000	13000	245
		309 R3	31.6	15.8	6410	11.6	44	71-80-90-100-112-132-160	—	—	48100	63300	14300	245
		309 R3	37.7	13.2	7650	11.6	44	71-80-90-100-112-132-160	—	—	50700	66800	15200	245
309 R3		44.6	11.2	9040	11.6	44	71-80-90-100-112-132-160	—	—	53300	70200	16100	245	
309 R3		55.9	8.9	11300	11.6	44	71-80-90-100-112-132-160	—	—	57000	75100	17300	245	
309 R3		65.0	7.7	13200	11.6	44	71-80-90-100-112-132-160	—	—	59600	78600	18200	245	
309 R3		71.8	7.0	14600	11.6	44	71-80-90-100-112-132-160	—	—	61400	81000	18800	245	
309 R3		78.6	6.4	12300	9.0	44	71-80-90-100-112-132-160	—	—	63100	83200	19400	245	
309 R3		83.4	6.0	16000	11.0	44	71-80-90-100-112-132-160	—	—	64300	84700	19800	245	
309 R3		99.0	5.1	13000	7.5	44	71-80-90-100-112-132-160	—	—	67700	89200	21000	245	
309 R3		120	4.2	13100	6.3	44	71-80-90-100-112-132-160	—	—	71600	94400	22400	245	
309 R4		152	3.3	19800	7.7	30	71-80-90-100-112-132	—	—	77000	101400	24200	245	
309 R4		165	3.0	17600	6.3	30	71-80-90-100-112-132	—	—	78900	104000	24900	245	
309 R4		191	2.6	17500	5.4	30	71-80-90-100-112-132	—	—	82400	108600	26100	245	
309 R4		206	2.4	20600	5.9	30	71-80-90-100-112-132	—	—	84300	111100	26800	245	
309 R4		232	2.2	18300	4.7	30	71-80-90-100-112-132	—	—	87400	115200	27900	245	
309 R4		258	1.9	17500	4.0	30	71-80-90-100-112-132	—	—	90200	118900	28900	245	
309 R4		284	1.8	18300	3.8	30	71-80-90-100-112-132	—	—	92900	122400	29800	245	
309 R4		313	1.6	15600	2.9	30	71-80-90-100-112-132	—	—	95600	126000	30800	245	
309 R4		331	1.5	19700	3.5	30	71-80-90-100-112-132	—	—	97200	128100	31400	245	
309 R4		363	1.4	12300	2.0	30	71-80-90-100-112-132	—	—	99900	131700	32400	245	
309 R4		413	1.2	20400	2.9	30	71-80-90-100-112-132	—	—	103900	136900	33800	245	
309 R4		457	1.1	16700	2.2	30	71-80-90-100-112-132	—	—	107100	141100	34900	245	
309 R4		490	1.0	16900	2.0	30	71-80-90-100-112-132	—	—	109400	144200	35800	245	
309 R4		581	0.86	15800	1.6	30	71-80-90-100-112-132	—	—	110000	145000	36000	245	
309 R4		690	0.72	17000	1.5	30	71-80-90-100-112-132	—	—	110000	145000	36000	245	



310 R




25000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	310 R2 (B)	12.1	116	8530	110	55	180-200-225	—	—	32000	40000	13400	255	
	310 R2 (B)	15.5	90	10700	108	55	180-200-225	—	—	34500	43000	14500	255	
	310 R2 (A)	17.7	79	8510	75	55	132-160-180-200	—	—	35900	44800	15200	255	
	310 R2 (B)	18.4	76	11300	96	55	180-200-225	—	—	36300	45300	15400	255	
	310 R2 (A)	22.7	62	10900	75	55	132-160-180-200	—	—	38700	48300	16500	255	
	310 R2 (A)	27.0	52	12500	72	55	132-160-180-200	—	—	40700	50800	17500	255	
	310 R3	37.7	37	5620	24	22	71-80-90-100-112-132-160	—	—	45000	56100	19500	255	
	310 R3	44.6	31	6630	24	22	71-80-90-100-112-132-160	—	—	47300	59000	20600	255	
	310 R3	55.9	25.0	8330	24	22	71-80-90-100-112-132-160	—	—	50600	63200	22200	255	
	310 R3	65.0	21.5	9680	24	22	71-80-90-100-112-132-160	—	—	53000	66100	23400	255	
	310 R3	71.8	19.5	10700	24	22	71-80-90-100-112-132-160	—	—	54500	68100	24100	255	
	310 R3	78.6	17.8	11700	24	22	71-80-90-100-112-132-160	—	—	56100	70000	24900	255	
	310 R3	83.4	16.8	12400	24	22	71-80-90-100-112-132-160	—	—	57100	71200	25400	255	
	310 R3	99.0	14.1	14700	24	22	71-80-90-100-112-132-160	—	—	60100	75000	26900	255	
	310 R3	120	11.7	17800	24	22	71-80-90-100-112-132-160	—	—	63600	79400	28600	255	
	310 R4	136	10.3	13100	16.0	15.0	71-80-90-100-112-132-160	—	—	66100	82500	29900	255	
	310 R4	160	8.7	15500	16.0	15.0	71-80-90-100-112-132-160	—	—	69400	86700	31600	255	
	310 R4	189	7.4	18300	16.0	15.0	71-80-90-100-112-132-160	—	—	73000	91100	33400	255	
	310 R4	206	6.8	19900	16.0	15.0	71-80-90-100-112-132-160	—	—	74800	93400	34300	255	
	310 R4	234	6.0	22600	16.0	15.0	71-80-90-100-112-132-160	—	—	77800	97100	35800	255	
	310 R4	258	5.4	22400	14.3	15.0	71-80-90-100-112-132-160	—	—	80100	100000	37000	255	
	310 R4	283	4.9	22900	13.4	15.0	71-80-90-100-112-132-160	—	—	82300	102800	38100	255	
	310 R4	305	4.6	23000	12.5	15.0	71-80-90-100-112-132-160	—	—	84200	105100	39100	255	
	310 R4	334	4.2	27000	13.4	15.0	71-80-90-100-112-132-160	—	—	86500	108000	40300	255	
	310 R4	363	3.9	23600	10.8	15.0	71-80-90-100-112-132-160	—	—	88700	110700	41500	255	
	310 R4	419	3.3	29600	11.7	15.0	71-80-90-100-112-132-160	—	—	92600	115600	43500	255	
	310 R4	454	3.1	20200	7.4	15.0	71-80-90-100-112-132-160	—	—	94900	118400	44700	255	
	310 R4	517	2.7	25100	8.0	15.0	71-80-90-100-112-132-160	—	—	98600	123100	46600	255	
	310 R4	590	2.4	21800	6.1	15.0	71-80-90-100-112-132-160	—	—	102600	128100	48700	255	
	310 R4	639	2.2	21800	5.7	15.0	71-80-90-100-112-132-160	—	—	105100	131200	50000	255	
	310 R4	757	1.9	26700	5.8	15.0	71-80-90-100-112-132-160	—	—	110600	138000	52900	255	
	310 R4	898	1.6	23500	4.3	15.0	71-80-90-100-112-132-160	—	—	116400	145300	56100	255	
	900	310 R2 (B)	12.1	74	10900	90	66	180-200-225	—	—	36600	45600	15500	255
		310 R2 (B)	15.5	58	10800	70	66	180-200-225	—	—	39400	49100	16800	255
		310 R2 (A)	17.7	51	9530	54	66	132-160-180-200	—	—	41000	51100	17600	255
310 R2 (B)		18.4	49	12700	69	66	180-200-225	—	—	41500	51700	17800	255	
310 R2 (A)		22.7	40	12200	54	66	132-160-180-200	—	—	44100	55100	19100	255	
310 R2 (A)		27.0	33	14500	54	66	132-160-180-200	—	—	46500	58000	20200	255	
310 R3		37.7	23.8	6420	17.6	27	71-80-90-100-112-132-160	—	—	51400	64100	22600	255	
310 R3		44.6	20.2	7570	17.6	27	71-80-90-100-112-132-160	—	—	54000	67400	23900	255	
310 R3		55.9	16.1	9510	17.6	27	71-80-90-100-112-132-160	—	—	57800	72100	25700	255	
310 R3		65.0	13.8	11100	17.6	27	71-80-90-100-112-132-160	—	—	60500	75500	27100	255	
310 R3		71.8	12.5	12200	17.6	27	71-80-90-100-112-132-160	—	—	62300	77700	28000	255	
310 R3		78.6	11.4	13400	17.6	27	71-80-90-100-112-132-160	—	—	64000	79900	28800	255	
310 R3		83.4	10.8	14200	17.6	27	71-80-90-100-112-132-160	—	—	65200	81300	29400	255	
310 R3		99.0	9.1	16800	17.6	27	71-80-90-100-112-132-160	—	—	68600	85600	31100	255	
310 R3		120	7.5	17800	15.3	27	71-80-90-100-112-132-160	—	—	72600	90600	33200	255	
310 R4		136	6.6	20400	16.0	18.0	71-80-90-100-112-132-160	—	—	75400	94100	34600	255	
310 R4		160	5.6	24100	16.0	18.0	71-80-90-100-112-132-160	—	—	79300	98900	36600	255	
310 R4		189	4.8	26600	15.0	18.0	71-80-90-100-112-132-160	—	—	83300	104000	38700	255	
310 R4		206	4.4	23200	12.0	18.0	71-80-90-100-112-132-160	—	—	85400	106600	39800	255	
310 R4		234	3.8	24900	11.3	18.0	71-80-90-100-112-132-160	—	—	88800	110800	41500	255	
310 R4		258	3.5	24000	9.9	18.0	71-80-90-100-112-132-160	—	—	91500	114100	42900	255	
310 R4		283	3.2	22900	8.6	18.0	71-80-90-100-112-132-160	—	—	94000	117300	44200	255	
310 R4		305	3.0	24700	8.6	18.0	71-80-90-100-112-132-160	—	—	96100	120000	45300	255	
310 R4		334	2.7	27000	8.6	18.0	71-80-90-100-112-132-160	—	—	98800	123300	46700	255	
310 R4		363	2.5	25400	7.4	18.0	71-80-90-100-112-132-160	—	—	101300	126400	48000	255	
310 R4		419	2.1	30000	7.6	18.0	71-80-90-100-112-132-160	—	—	105800	132000	50400	255	
310 R4		454	2.0	22300	5.2	18.0	71-80-90-100-112-132-160	—	—	108300	135200	51700	255	
310 R4		517	1.7	26900	5.5	18.0	71-80-90-100-112-132-160	—	—	112600	140600	54000	255	
310 R4		590	1.5	21800	3.9	18.0	71-80-90-100-112-132-160	—	—	117200	146200	56500	255	
310 R4		639	1.4	24100	4.0	18.0	71-80-90-100-112-132-160	—	—	120000	149800	58000	255	
310 R4		757	1.2	28000	3.9	18.0	71-80-90-100-112-132-160	—	—	126300	157600	61300	255	
310 R4		898	1.0	26000	3.1	18.0	71-80-90-100-112-132-160	—	—	132900	165900	65000	255	






310 R

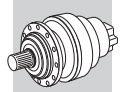
25000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	310 R2 (B)	12.1	41.3	14800	68	110	180-200-225	—	—	43600	54400	18900	255
	310 R2 (B)	15.5	32.3	16100	58	110	180-200-225	—	—	47000	58600	20500	255
	310 R2 (A)	17.7	28.2	12100	38	110	132-160-180-200	—	—	48900	61000	21400	255
	310 R2 (B)	18.4	27.2	15500	47	110	180-200-225	—	—	49400	61700	21700	255
	310 R2 (A)	22.7	22.0	15500	38	110	132-160-180-200	—	—	52600	65700	23200	255
	310 R2 (A)	27.0	18.5	16500	34	110	132-160-180-200	—	—	55500	69200	24600	255
	310 R3	37.7	13.2	7650	11.6	44	71-80-90-100-112-132-160	—	—	61300	76500	27500	255
	310 R3	44.6	11.2	9040	11.6	44	71-80-90-100-112-132-160	—	—	64400	80400	29000	255
	310 R3	55.9	8.9	11300	11.6	44	71-80-90-100-112-132-160	—	—	68900	86000	31300	255
	310 R3	65.0	7.7	13200	11.6	44	71-80-90-100-112-132-160	—	—	72100	90000	32900	255
	310 R3	71.8	7.0	14600	11.6	44	71-80-90-100-112-132-160	—	—	74300	92700	34000	255
	310 R3	78.6	6.4	15900	11.6	44	71-80-90-100-112-132-160	—	—	76400	95300	35100	255
	310 R3	83.4	6.0	16900	11.6	44	71-80-90-100-112-132-160	—	—	77700	97000	35800	255
	310 R3	99.0	5.1	18100	10.5	44	71-80-90-100-112-132-160	—	—	81800	102100	37900	255
	310 R3	120	4.2	18900	9.0	44	71-80-90-100-112-132-160	—	—	86600	108100	40400	255
	310 R4	136	3.7	26700	11.6	30	71-80-90-100-112-132-160	—	—	90000	112300	42100	255
	310 R4	160	3.1	29800	11.0	30	71-80-90-100-112-132-160	—	—	94600	118000	44500	255
	310 R4	189	2.6	30000	9.4	30	71-80-90-100-112-132-160	—	—	99400	124000	47000	255
	310 R4	206	2.4	25500	7.3	30	71-80-90-100-112-132-160	—	—	101900	127200	48400	255
	310 R4	234	2.1	24900	6.3	30	71-80-90-100-112-132-160	—	—	105900	132200	50500	255
	310 R4	258	1.9	26500	6.1	30	71-80-90-100-112-132-160	—	—	109100	136200	52200	255
	310 R4	283	1.8	22900	4.8	30	71-80-90-100-112-132-160	—	—	112100	139900	53800	255
	310 R4	305	1.6	27200	5.3	30	71-80-90-100-112-132-160	—	—	114700	143100	55100	255
	310 R4	334	1.5	27000	4.8	30	71-80-90-100-112-132-160	—	—	117900	147100	56800	255
	310 R4	363	1.4	28000	4.6	30	71-80-90-100-112-132-160	—	—	120800	150800	58400	255
	310 R4	419	1.2	30000	4.2	30	71-80-90-100-112-132-160	—	—	126200	157500	61300	255
	310 R4	454	1.1	25400	3.3	30	71-80-90-100-112-132-160	—	—	129200	161300	62900	255
	310 R4	517	0.97	29500	3.4	30	71-80-90-100-112-132-160	—	—	133000	166000	65000	255
	310 R4	590	0.85	22100	2.2	30	71-80-90-100-112-132-160	—	—	133000	166000	65000	255
	310 R4	639	0.78	26000	2.4	30	71-80-90-100-112-132-160	—	—	133000	166000	65000	255
	310 R4	757	0.66	28300	2.2	30	71-80-90-100-112-132-160	—	—	133000	166000	65000	255
	310 R4	898	0.56	26000	1.7	30	71-80-90-100-112-132-160	—	—	133000	166000	65000	255

311 R




40000 Nm

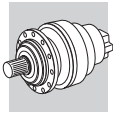
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	311 R2 (B)	12.0	116.7	10800	140	75	180-200-225	—	—	37700	46800	13400	265
	311 R2 (B)	15.4	90.9	13800	140	75	180-200-225	—	—	40600	50500	14500	265
	311 R2 (C)	16.6	84.3	10400	98	90	180-200-225	—	—	41600	51600	14900	265
	311 R2 (A)	17.7	79	8400	74	75	132-160-180-200	—	—	42300	52600	15200	265
	311 R2 (B)	18.3	76.5	16400	140	75	180-200-225	—	—	42800	53100	15400	265
	311 R2 (C)	21.3	65.7	13400	98	90	180-200-225	—	—	44800	55600	16200	265
	311 R2 (A)	22.8	62	10800	74	75	132-160-180-200	—	—	45600	56700	16500	265
	311 R2 (C)	25.3	55.3	15600	96	90	180-200-225	—	—	47100	58500	17100	265
	311 R2 (A)	27.0	52	12800	74	75	132-160-180-200	—	—	48000	59600	17400	265
	311 R3	53.0	26.4	16500	50	40	132-160-180	—	—	58800	73000	21800	265
	311 R3	63.2	22.1	19700	50	40	132-160-180	—	—	62000	77000	23100	265
	311 R3	68.0	20.6	21200	50	40	132-160-180	—	—	63400	78700	23700	265
	311 R3	81.1	17.3	25300	50	40	132-160-180	—	—	66800	83000	25200	265
	311 R3	96.3	14.5	27700	46	40	132-160-180	—	—	70300	87400	26600	265
	311 R3	104	13.4	27400	42	40	132-160-180	—	—	72000	89400	27300	265
	311 R3	124	11.3	28800	37	40	132-160-180	—	—	75800	94100	28900	265
	311 R3	147	9.5	27000	30	40	132-160-180	—	—	79800	99100	30600	265
	311 R4	154	9.1	22300	24	22	71-80-90-100-112-132-160	—	—	81000	100600	31200	265
	311 R4	182	7.7	26300	24	22	71-80-90-100-112-132-160	—	—	85200	105800	32900	265
	311 R4	198	7.1	28600	24	22	71-80-90-100-112-132-160	—	—	87300	108500	33900	265
	311 R4	223	6.3	32200	24	22	71-80-90-100-112-132-160	—	—	90500	112400	35200	265
	311 R4	266	5.3	37600	23	22	71-80-90-100-112-132-160	—	—	95400	118500	37400	265
	311 R4	294	4.8	38800	22	22	71-80-90-100-112-132-160	—	—	98300	122000	38600	265



311 R




40000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	311 R4	322	4.4	39800	21	22	71-80-90-100-112-132-160	—	—	101000	125400	39800	265
	311 R4	341	4.1	40600	19.7	22	71-80-90-100-112-132-160	—	—	102800	127700	40600	265
	311 R4	377	3.7	34000	15.0	22	71-80-90-100-112-132-160	—	—	105900	131500	42000	265
	311 R4	413	3.4	41700	16.7	22	71-80-90-100-112-132-160	—	—	108800	135200	43300	265
	311 R4	438	3.2	35000	13.2	22	71-80-90-100-112-132-160	—	—	110800	137600	44100	265
	311 R4	490	2.9	34500	11.7	22	71-80-90-100-112-132-160	—	—	114600	142300	45800	265
	311 R4	520	2.7	36000	11.5	22	71-80-90-100-112-132-160	—	—	116600	144900	46700	265
	311 R4	629	2.2	37300	9.8	22	71-80-90-100-112-132-160	—	—	123500	153400	49800	265
	311 R4	746	1.9	30800	6.8	22	71-80-90-100-112-132-160	—	—	130000	161500	52700	265
900	311 R2 (B)	12.0	75	12000	100	90	180-200-225	—	—	43000	53400	15500	265
	311 R2 (B)	15.4	58	15400	100	90	180-200-225	—	—	46400	57600	16800	265
	311 R2 (C)	16.6	54	11600	70	108	180-200-225	—	—	47400	58900	17200	265
	311 R2 (A)	17.7	51	9600	54	90	132-160-180-200	—	—	48300	60000	17600	265
	311 R2 (B)	18.3	49	18300	100	90	180-200-225	—	—	48800	60700	17800	265
	311 R2 (C)	21.3	42	15900	75	108	180-200-225	—	—	51100	63500	18700	265
	311 R2 (A)	22.8	40	12300	54	90	132-160-180-200	—	—	52100	64700	19100	265
	311 R2 (C)	25.3	36	19400	77	108	180-200-225	—	—	53800	66800	19800	265
	311 R2 (A)	27.0	33	14600	54	90	132-160-180-200	—	—	54800	68100	20200	265
	311 R3	53.0	17.0	18900	37	48	132-160-180	—	—	67100	83400	25300	265
	311 R3	63.2	14.2	22500	37	48	132-160-180	—	—	70800	87900	26800	265
	311 R3	68.0	13.2	24200	37	48	132-160-180	—	—	72300	89800	27500	265
	311 R3	81.1	11.1	28900	37	48	132-160-180	—	—	76300	94700	29100	265
	311 R3	96.3	9.3	31700	34	48	132-160-180	—	—	80300	99700	30900	265
	311 R3	104	8.6	31300	31	48	132-160-180	—	—	82200	102100	31700	265
	311 R3	124	7.3	32000	27	48	132-160-180	—	—	86500	107500	33500	265
	311 R3	147	6.1	27000	19.0	48	132-160-180	—	—	91100	113200	35500	265
	311 R4	154	5.8	25500	17.6	27	71-80-90-100-112-132-160	—	—	92500	114900	36100	265
	311 R4	182	4.9	30100	17.6	27	71-80-90-100-112-132-160	—	—	97200	120800	38200	265
	311 R4	198	4.5	32700	17.6	27	71-80-90-100-112-132-160	—	—	99700	123800	39200	265
	311 R4	223	4.0	35700	17.1	27	71-80-90-100-112-132-160	—	—	103300	128300	40800	265
	311 R4	266	3.4	43000	17.2	27	71-80-90-100-112-132-160	—	—	108900	135300	43300	265
	311 R4	294	3.1	41700	15.1	27	71-80-90-100-112-132-160	—	—	112200	139300	44700	265
	311 R4	322	2.8	45000	14.9	27	71-80-90-100-112-132-160	—	—	115300	143200	46100	265
	311 R4	341	2.6	41700	13.0	27	71-80-90-100-112-132-160	—	—	117400	145800	47000	265
	311 R4	377	2.4	36800	10.4	27	71-80-90-100-112-132-160	—	—	120900	150200	48600	265
	311 R4	413	2.2	41700	10.7	27	71-80-90-100-112-132-160	—	—	124300	154300	50100	265
	311 R4	438	2.1	37800	9.2	27	71-80-90-100-112-132-160	—	—	126500	157100	51100	265
	311 R4	490	1.8	34500	7.5	27	71-80-90-100-112-132-160	—	—	130800	162500	53100	265
	311 R4	520	1.7	39000	8.0	27	71-80-90-100-112-132-160	—	—	133200	165400	54100	265
	311 R4	629	1.4	40300	6.8	27	71-80-90-100-112-132-160	—	—	141000	175100	57700	265
	311 R4	746	1.2	33000	4.7	27	71-80-90-100-112-132-160	—	—	148400	184300	61100	265
500	311 R2 (B)	12.0	41.7	17200	80	150	180-200-225	—	—	51300	63700	18800	265
	311 R2 (B)	15.4	32.5	22100	80	150	180-200-225	—	—	55300	68700	20400	265
	311 R2 (C)	16.6	30.1	15500	52	180	180-200-225	—	—	56600	70300	20900	265
	311 R2 (A)	17.7	28.2	11400	36	150	132-160-180-200	—	—	57700	71600	21400	265
	311 R2 (B)	18.3	27.3	23300	71	150	180-200-225	—	—	58300	72300	21600	265
	311 R2 (C)	21.3	23.5	19900	52	180	180-200-225	—	—	61000	75700	22800	265
	311 R2 (A)	22.8	22.0	14700	36	150	132-160-180-200	—	—	62100	77200	23200	265
	311 R2 (C)	25.3	19.8	23600	52	180	180-200-225	—	—	64200	79700	24100	265
	311 R2 (A)	27.0	18.5	17400	36	150	132-160-180-200	—	—	65400	81200	24600	265
	311 R3	53.0	9.4	22500	24	80	132-160-180	—	—	80100	99400	30800	265
	311 R3	63.2	7.9	26900	24	80	132-160-180	—	—	84400	104900	32600	265
	311 R3	68.0	7.4	28900	24	80	132-160-180	—	—	86300	107200	33400	265
	311 R3	81.1	6.2	34500	24	80	132-160-180	—	—	91000	113000	35500	265
	311 R3	96.3	5.2	34500	21	80	132-160-180	—	—	95800	119000	37500	265
	311 R3	104	4.8	32500	17.9	80	132-160-180	—	—	98100	121800	38500	265
	311 R3	124	4.0	33500	15.6	80	132-160-180	—	—	103200	128200	40800	265
	311 R3	147	3.4	28100	11.0	80	132-160-180	—	—	108700	135000	43200	265
	311 R4	154	3.2	30400	11.6	44	71-80-90-100-112-132-160	—	—	110400	137100	43900	265
	311 R4	182	2.7	35900	11.6	44	71-80-90-100-112-132-160	—	—	116000	144100	46400	265
	311 R4	198	2.5	39000	11.6	44	71-80-90-100-112-132-160	—	—	118900	147700	47700	265
	311 R4	223	2.2	35700	9.5	44	71-80-90-100-112-132-160	—	—	123200	153000	49700	265
	311 R4	266	1.9	45000	10.0	44	71-80-90-100-112-132-160	—	—	129900	161300	52700	265






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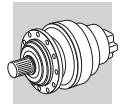
40000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	311 R4	294	1.7	41700	8.4	44	71-80-90-100-112-132-160	—	—	133800	166200	54400	265
	311 R4	322	1.6	45000	8.3	44	71-80-90-100-112-132-160	—	—	137500	170800	56100	265
	311 R4	341	1.5	41700	7.2	44	71-80-90-100-112-132-160	—	—	140000	173900	57200	265
	311 R4	377	1.3	40900	6.4	44	71-80-90-100-112-132-160	—	—	144200	179100	59100	265
	311 R4	413	1.2	42700	6.1	44	71-80-90-100-112-132-160	—	—	148200	184100	61000	265
	311 R4	438	1.1	42000	5.7	44	71-80-90-100-112-132-160	—	—	150900	187400	62200	265
	311 R4	490	1.0	35000	4.2	44	71-80-90-100-112-132-160	—	—	156000	193800	64600	265
	311 R4	520	0.96	43000	4.9	44	71-80-90-100-112-132-160	—	—	157000	195000	65000	265
	311 R4	629	0.80	43000	4.0	44	71-80-90-100-112-132-160	—	—	157000	195000	65000	265
	311 R4	746	0.67	34000	2.7	44	71-80-90-100-112-132-160	—	—	157000	195000	65000	265

313 R




50000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	313 R2 (B)	12.2	115	11000	140	75	180-200-225	—	—	46300	55700	16500	275	
	313 R2 (B)	15.9	88	14300	140	75	180-200-225	—	—	50200	60300	18000	275	
	313 R2 (C)	16.8	83	10600	98	90	180-200-225	—	—	51000	61300	18400	275	
	313 R2 (A)	18.0	78	8500	74	75	132-160-180-200	—	—	52000	62500	18700	275	
	313 R2 (B)	19.1	73	17100	140	75	180-200-225	—	—	53000	63700	19200	275	
	313 R2 (C)	22.0	64	13500	96	90	180-200-225	—	—	55300	66500	20100	275	
	313 R2 (A)	23.4	60	11100	74	75	132-160-180-200	—	—	56300	67700	20500	275	
	313 R2 (C)	26.4	53	16300	96	90	180-200-225	—	—	58400	70200	21300	275	
	313 R2 (A)	28.2	50	13300	74	75	132-160-180-200	—	—	59500	71600	21800	275	
	313 R3	53.7	26.1	16700	50	40	132-160-180-200	—	—	72200	86800	27000	275	
	313 R3	64.0	21.9	20000	50	40	132-160-180-200	—	—	76100	91600	28600	275	
	313 R3	69.9	20.0	21800	50	40	132-160-180-200	—	—	78100	94000	29500	275	
	313 R3	82.2	17.0	25600	50	40	132-160-180-200	—	—	82000	98700	31100	275	
	313 R3	97.5	14.4	30400	50	40	132-160-180-200	—	—	86300	103900	32900	275	
	313 R3	107	13.1	33400	50	40	132-160-180-200	—	—	88800	106800	34000	275	
	313 R3	127	11.0	39700	50	40	132-160-180-200	—	—	93500	112500	36000	275	
	313 R3	153	9.2	39000	41	40	132-160-180-200	—	—	98800	118900	38200	275	
	313 R4	185	7.6	26700	24	22	71-80-90-100-112-132-160	—	—	104500	125800	40700	275	
	313 R4	201	7.0	29000	24	22	71-80-90-100-112-132-160	—	—	107200	129000	41900	275	
	313 R4	237	5.9	34200	24	22	71-80-90-100-112-132-160	—	—	112700	135600	44200	275	
	313 R4	281	5.0	40600	24	22	71-80-90-100-112-132-160	—	—	118600	142700	46800	275	
	313 R4	309	4.5	44600	24	22	71-80-90-100-112-132-160	—	—	122000	146800	48300	275	
	313 R4	346	4.1	49900	24	22	71-80-90-100-112-132-160	—	—	126200	151800	50200	275	
	313 R4	387	3.6	45700	19.5	22	71-80-90-100-112-132-160	—	—	130600	157100	52100	275	
	313 R4	418	3.3	55000	22	22	71-80-90-100-112-132-160	—	—	133600	160700	53500	275	
	313 R4	450	3.1	46700	17.2	22	71-80-90-100-112-132-160	—	—	136600	164400	54800	275	
	313 R4	496	2.8	52200	17.4	22	71-80-90-100-112-132-160	—	—	140600	169200	56600	275	
	313 R4	535	2.6	47800	14.8	22	71-80-90-100-112-132-160	—	—	143800	173000	58000	275	
	313 R4	647	2.2	49200	12.6	22	71-80-90-100-112-132-160	—	—	152300	183200	61800	275	
	313 R4	778	1.8	44600	9.5	22	71-80-90-100-112-132-160	—	—	161000	193700	65800	275	
	900	313 R2 (B)	12.2	74	12200	100	90	180-200-225	—	—	52900	63600	19100	275
		313 R2 (B)	15.9	57	15900	100	90	180-200-225	—	—	57300	68900	20900	275
		313 R2 (C)	16.8	54	11700	70	108	180-200-225	—	—	58200	70000	21300	275
		313 R2 (A)	18.0	50	9700	54	90	132-160-180-200	—	—	59300	71400	21700	275
313 R2 (B)		19.1	47	19100	100	90	180-200-225	—	—	60500	72800	22200	275	
313 R2 (C)		22.0	41	16500	75	108	180-200-225	—	—	63100	75900	23300	275	
313 R2 (A)		23.4	38	12700	54	90	132-160-180-200	—	—	64200	77300	23700	275	
313 R2 (C)		26.4	34	20300	77	108	180-200-225	—	—	66700	80200	24700	275	
313 R2 (A)		28.2	32	15200	54	90	132-160-180-200	—	—	67900	81700	25200	275	
313 R3		53.7	16.8	19100	37	48	132-160-180-200	—	—	82400	99100	31300	275	
313 R3		64.0	14.1	22800	37	48	132-160-180-200	—	—	86900	104500	33100	275	
313 R3		69.9	12.9	24900	37	48	132-160-180-200	—	—	89200	107300	34100	275	
313 R3		82.2	11.0	29300	37	48	132-160-180-200	—	—	93600	112700	36000	275	
313 R3		97.5	9.2	34700	37	48	132-160-180-200	—	—	98600	118600	38100	275	
313 R3		107	8.4	38200	37	48	132-160-180-200	—	—	101400	122000	39300	275	






313 R

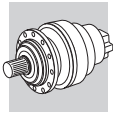
50000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
900	313 R3	127	7.1	45000	37	48	132-160-180-200	—	—	106700	128400	41700	275
	313 R3	153	5.9	39000	26	48	132-160-180-200	—	—	112800	135800	44300	275
	313 R4	185	4.9	30400	17.6	27	71-80-90-100-112-132-160	—	—	119400	143600	47200	275
	313 R4	201	4.5	33100	17.6	27	71-80-90-100-112-132-160	—	—	122400	147300	48500	275
	313 R4	237	3.8	39100	17.6	27	71-80-90-100-112-132-160	—	—	128600	154800	51300	275
	313 R4	281	3.2	46400	17.6	27	71-80-90-100-112-132-160	—	—	135400	162900	54300	275
	313 R4	309	2.9	47100	16.2	27	71-80-90-100-112-132-160	—	—	139300	167600	56000	275
	313 R4	346	2.6	55000	16.9	27	71-80-90-100-112-132-160	—	—	144100	173300	58100	275
	313 R4	387	2.3	48700	13.4	27	71-80-90-100-112-132-160	—	—	149100	179400	60400	275
	313 R4	418	2.2	55000	14.0	27	71-80-90-100-112-132-160	—	—	152500	183500	62000	275
	313 R4	450	2.0	49800	11.8	27	71-80-90-100-112-132-160	—	—	156000	187700	63500	275
	313 R4	496	1.8	52200	11.2	27	71-80-90-100-112-132-160	—	—	160600	193200	65600	275
	313 R4	535	1.7	51000	10.2	27	71-80-90-100-112-132-160	—	—	164200	197600	67200	275
	313 R4	647	1.4	52400	8.6	27	71-80-90-100-112-132-160	—	—	173900	209200	71700	275
	313 R4	778	1.2	47900	6.5	27	71-80-90-100-112-132-160	—	—	183800	221200	76200	275
	500	313 R2 (B)	12.2	41	18000	82	150	180-200-225	—	—	63100	75900	23300
313 R2 (B)		15.9	31	23400	82	150	180-200-225	—	—	68300	82100	25400	275
313 R2 (C)		16.8	29.8	15700	52	180	180-200-225	—	—	69400	83500	25900	275
313 R2 (A)		18.0	27.9	11600	36	150	132-160-180-200	—	—	70800	85100	26400	275
313 R2 (B)		19.1	26.2	28100	82	150	180-200-225	—	—	72100	86800	27000	275
313 R2 (C)		22.0	22.7	20100	51	180	180-200-225	—	—	75300	90500	28300	275
313 R2 (A)		23.4	21.4	15100	36	150	132-160-180-200	—	—	76600	92200	28800	275
313 R2 (C)		26.4	18.9	24200	51	180	180-200-225	—	—	79500	95600	30100	275
313 R2 (A)		28.2	17.8	18200	36	150	132-160-180-200	—	—	81000	97500	30700	275
313 R3		53.7	9.3	22800	24	80	132-160-180-200	—	—	98300	118300	38000	275
313 R3		64.0	7.8	27200	24	80	132-160-180-200	—	—	103600	124700	40300	275
313 R3		69.9	7.1	29700	24	80	132-160-180-200	—	—	106400	128000	41500	275
313 R3		82.2	6.1	34900	24	80	132-160-180-200	—	—	111700	134400	43800	275
313 R3		97.5	5.1	41400	24	80	132-160-180-200	—	—	117600	141500	46400	275
313 R3		107	4.7	45000	24	80	132-160-180-200	—	—	120900	145500	47900	275
313 R3		127	3.9	45100	20	80	132-160-180-200	—	—	127300	153200	50700	275
313 R3		153	3.3	40600	15.2	80	132-160-180-200	—	—	134600	161900	53900	275
313 R4		185	2.7	36300	11.6	44	71-80-90-100-112-132-160	—	—	142400	171300	57400	275
313 R4		201	2.5	39500	11.6	44	71-80-90-100-112-132-160	—	—	146000	175700	59000	275
313 R4		237	2.1	46600	11.6	44	71-80-90-100-112-132-160	—	—	153400	184600	62400	275
313 R4		281	1.8	52200	11.0	44	71-80-90-100-112-132-160	—	—	161500	194400	66000	275
313 R4		309	1.6	51300	9.8	44	71-80-90-100-112-132-160	—	—	166100	199900	68100	275
313 R4		346	1.4	55000	9.4	44	71-80-90-100-112-132-160	—	—	171900	206800	70700	275
313 R4		387	1.3	53000	8.1	44	71-80-90-100-112-132-160	—	—	177900	214000	73500	275
313 R4		418	1.2	55000	7.8	44	71-80-90-100-112-132-160	—	—	182000	218900	75400	275
313 R4		450	1.1	54200	7.1	44	71-80-90-100-112-132-160	—	—	186100	223900	77300	275
313 R4		496	1.0	52700	6.3	44	71-80-90-100-112-132-160	—	—	191500	230500	79800	275
313 R4		535	0.94	55000	6.1	44	71-80-90-100-112-132-160	—	—	192000	231000	80000	275
313 R4		647	0.77	55000	5.0	44	71-80-90-100-112-132-160	—	—	192000	231000	80000	275
313 R4		778	0.64	49000	3.7	44	71-80-90-100-112-132-160	—	—	192000	231000	80000	275

315 R




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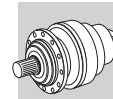
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	315 R3 (B)	49.2	28.5	42800	140	75	180-200-225	—	—	75500	89000	29500	285
	315 R3 (B)	63.1	22.2	54800	140	75	180-200-225	—	—	81300	95900	32100	285
	315 R3 (C)	68.0	20.6	42200	100	90	180-200-225	—	—	83200	98100	32900	285
	315 R3 (A)	72.5	19.3	33300	74	75	132-160-180-200	—	—	84800	100000	33500	285
	315 R3 (B)	74.9	18.7	65100	140	75	180-200-225	—	—	85600	101000	34000	285
	315 R3 (B)	81.0	17.3	70400	140	75	180-200-225	—	—	87700	103400	34900	285
	315 R3 (C)	87.3	16.0	54200	100	90	180-200-225	—	—	89700	105700	35700	285
	315 R3 (A)	93.1	15.0	42800	74	75	132-160-180-200	—	—	91300	107700	36500	285
	315 R3 (B)	96.2	14.6	74600	125	75	180-200-225	—	—	92300	108900	36900	285
	315 R3 (C)	104	13.5	64600	100	90	180-200-225	—	—	94500	111400	37900	285



315 R




90000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	315 R3 (A) 110		12.7	50800	74	75	132-160-180-200	—	—	96200	113400	38600	285	
	315 R3 (C) 112		12.5	68100	98	90	180-200-225	—	—	96600	114000	38800	285	
	315 R3 (B) 114		12.3	63700	90	75	180-200-225	—	—	97100	114600	39100	285	
	315 R3 (A) 119		11.7	54900	74	75	132-160-180-200	—	—	98400	116100	39600	285	
	315 R3 (C) 133		10.5	77600	94	90	180-200-225	—	—	101700	120000	41100	285	
	315 R3 (A) 142		9.9	65100	74	75	132-160-180-200	—	—	103600	122200	41900	285	
	315 R3 (C) 158		8.9	64700	66	90	180-200-225	—	—	107100	126300	43500	285	
	315 R3 (A) 168		8.3	65000	62	75	132-160-180-200	—	—	109100	128700	44400	285	
	315 R4 217		6.5	65600	50	40	132-160-180-200	—	—	117700	138900	48300	285	
	315 R4 259		5.4	78300	50	40	132-160-180-200	—	—	124100	146400	51300	285	
	315 R4 332		4.2	92100	46	40	132-160-180-200	—	—	133800	157800	55700	285	
	315 R4 394		3.6	95500	40	40	132-160-180-200	—	—	140800	166100	59000	285	
	315 R4 506		2.8	97300	32	40	132-160-180-200	—	—	151800	179000	64100	285	
	315 R4 600		2.3	98500	27	40	132-160-180-200	—	—	159800	188500	67900	285	
	315 R4 649		2.2	88600	23	40	132-160-180-200	—	—	163600	192900	69600	285	
	315 R4 770		1.8	90800	19.5	40	132-160-180-200	—	—	172200	203100	73700	285	
	315 R4 914		1.5	75400	13.7	40	132-160-180-200	—	—	181300	213800	78100	285	
	900	315 R3 (B) 49.2		18.3	59400	125	90	180-200-225	—	—	86200	101700	34200	285
		315 R3 (B) 63.1		14.3	76200	125	90	180-200-225	—	—	92900	109500	37200	285
		315 R3 (C) 68.0		13.2	46000	70	108	180-200-225	—	—	95000	112000	38100	285
		315 R3 (A) 72.5		12.4	38100	54	90	132-160-180-200	—	—	96800	114100	38900	285
315 R3 (B) 74.9			12.0	75900	105	90	180-200-225	—	—	97800	115300	39300	285	
315 R3 (B) 81.0			11.1	76700	98	90	180-200-225	—	—	100100	118000	40400	285	
315 R3 (C) 87.3			10.3	59000	70	108	180-200-225	—	—	102400	120700	41400	285	
315 R3 (A) 93.1			9.7	48800	54	90	132-160-180-200	—	—	104300	123000	42200	285	
315 R3 (B) 96.2			9.4	78000	84	90	180-200-225	—	—	105400	124300	42800	285	
315 R3 (C) 104			8.7	69300	69	108	180-200-225	—	—	107900	127200	43900	285	
315 R3 (A) 110			8.1	58000	54	90	132-160-180-200	—	—	109800	129500	44700	285	
315 R3 (C) 112			8.0	73500	68	108	180-200-225	—	—	110300	130100	45000	285	
315 R3 (B) 114			7.9	64900	59	90	180-200-225	—	—	110900	130800	45200	285	
315 R3 (A) 119			7.5	62700	54	90	132-160-180-200	—	—	112400	132600	45900	285	
315 R3 (C) 133			6.8	78300	61	108	180-200-225	—	—	116100	137000	47600	285	
315 R3 (A) 142			6.3	74400	54	90	132-160-180-200	—	—	118300	139600	48600	285	
315 R3 (C) 158			5.7	65600	43	108	180-200-225	—	—	122300	144200	50400	285	
315 R3 (A) 168			5.3	65000	40	90	132-160-180-200	—	—	124600	146900	51500	285	
315 R4 217			4.2	74900	37	48	132-160-180-200	—	—	134400	158500	56000	285	
315 R4 259			3.5	89400	37	48	132-160-180-200	—	—	141700	167200	59400	285	
315 R4 332			2.7	97400	31	48	132-160-180-200	—	—	152700	180200	64500	285	
315 R4 394			2.3	98700	27	48	132-160-180-200	—	—	160800	189700	68300	285	
315 R4 506			1.8	100600	21	48	132-160-180-200	—	—	173300	204400	74300	285	
315 R4 600			1.5	101900	18.1	48	132-160-180-200	—	—	182400	215200	78600	285	
315 R4 649			1.4	94500	15.5	48	132-160-180-200	—	—	186700	220300	80700	285	
315 R4 770			1.2	96800	13.4	48	132-160-180-200	—	—	196600	231900	85400	285	
315 R4 914			0.98	80000	9.3	48	132-160-180-200	—	—	206000	243000	90000	285	
500		315 R3 (B) 49.2		10.2	64100	75	150	180-200-225	—	—	102800	121300	41600	285
		315 R3 (B) 63.1		7.9	87700	80	150	180-200-225	—	—	110800	130600	45200	285
		315 R3 (C) 68.0		7.4	55600	47	180	180-200-225	—	—	113300	133600	46300	285
	315 R3 (A) 72.5		6.9	45400	36	150	132-160-180-200	—	—	115400	136200	47300	285	
	315 R3 (B) 74.9		6.7	91100	70	150	180-200-225	—	—	116600	137500	47800	285	
	315 R3 (B) 81.0		6.2	78800	56	150	180-200-225	—	—	119400	140800	49100	285	
	315 R3 (C) 87.3		5.7	71300	47	180	180-200-225	—	—	122100	144000	50400	285	
	315 R3 (A) 93.1		5.4	58300	36	150	132-160-180-200	—	—	124400	146700	51400	285	
	315 R3 (B) 96.2		5.2	78600	47	150	180-200-225	—	—	125700	148300	52000	285	
	315 R3 (C) 104		4.8	77700	43	180	180-200-225	—	—	128700	151800	53400	285	
	315 R3 (A) 110		4.5	69100	36	150	132-160-180-200	—	—	131000	154500	54400	285	
	315 R3 (C) 112		4.5	79800	41	180	180-200-225	—	—	131600	155200	54700	285	
	315 R3 (B) 114		4.4	65400	33	150	180-200-225	—	—	132300	156000	55000	285	
	315 R3 (A) 119		4.2	74800	36	150	132-160-180-200	—	—	134100	158100	55800	285	
	315 R3 (C) 133		3.8	83200	36	180	180-200-225	—	—	138500	163400	57900	285	
	315 R3 (A) 142		3.5	82600	33	150	132-160-180-200	—	—	141100	166500	59100	285	
	315 R3 (C) 158		3.2	68700	25	180	180-200-225	—	—	145900	172000	61400	285	
	315 R3 (A) 168		3.0	68700	23	150	132-160-180-200	—	—	148600	175300	62600	285	
	315 R4 217		2.3	89400	24	80	132-160-180-200	—	—	160300	189100	68100	285	
	315 R4 259		1.9	99900	23	80	132-160-180-200	—	—	169000	199400	72200	285	






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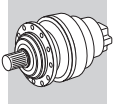
90000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	315 R4	332	1.5	101800	18.1	80	132-160-180-200	—	—	182200	214900	78500	285
	315 R4	394	1.3	103100	15.5	80	132-160-180-200	—	—	191800	226200	83100	285
	315 R4	506	0.99	105000	12.3	80	132-160-180-200	—	—	206000	243000	90000	285
	315 R4	600	0.83	105000	10.3	80	132-160-180-200	—	—	206000	243000	90000	285
	315 R4	649	0.77	99000	9.0	80	132-160-180-200	—	—	206000	243000	90000	285
	315 R4	770	0.65	99000	7.6	80	132-160-180-200	—	—	206000	243000	90000	285
	315 R4	914	0.55	80000	5.2	80	132-160-180-200	—	—	206000	243000	90000	285

316 R




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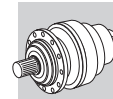
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	316 R3 (B)	52.9	26.5	46000	140	75	180-200-225	—	—	129000	144100	37000	295
	316 R3 (B)	67.9	20.6	59000	140	75	180-200-225	—	—	139000	155400	40200	295
	316 R3 (C)	73.2	19.1	45400	100	90	180-200-225	—	—	142200	158900	41200	295
	316 R3 (B)	81.0	17.3	70400	140	75	180-200-225	—	—	146600	163800	42600	295
	316 R3 (C)	93.9	14.9	58300	100	90	180-200-225	—	—	153200	171200	44700	295
	316 R3 (C)	111	12.6	68900	100	90	180-200-225	—	—	161100	180000	47300	295
	316 R4	233	6.0	101200	70	45	132-160-180-200	—	—	201200	224900	60600	295
	316 R4	278	5.0	105300	61	45	132-160-180-200	—	—	212200	237100	64200	295
	316 R4	299	4.7	113200	61	45	132-160-180-200	—	—	216800	242300	65800	295
	316 R4	357	3.9	115200	52	45	132-160-180-200	—	—	228700	255600	69800	295
	316 R4	424	3.3	118400	45	45	132-160-180-200	—	—	240800	269100	73900	295
	316 R4	458	3.1	125100	44	45	132-160-180-200	—	—	246400	275400	75800	295
	316 R4	544	2.6	124900	37	45	132-160-180-200	—	—	259500	290000	80300	295
	316 R4	645	2.2	120100	30	45	132-160-180-200	—	—	273100	305200	85000	295
900	316 R3 (B)	52.9	17.0	63900	125	90	180-200-225	—	—	147300	164600	42800	295
	316 R3 (B)	67.9	13.3	78700	120	90	180-200-225	—	—	158700	177400	46500	295
	316 R3 (C)	73.2	12.3	49500	70	108	180-200-225	—	—	162300	181400	47700	295
	316 R3 (B)	81.0	11.1	78200	100	90	180-200-225	—	—	167300	187000	49300	295
	316 R3 (C)	93.9	9.6	63500	70	108	180-200-225	—	—	174900	195500	51800	295
	316 R3 (C)	111	8.1	75000	70	108	180-200-225	—	—	183900	205500	54800	295
	316 R4	233	3.9	117000	52	54	132-160-180-200	—	—	229700	256700	70200	295
	316 R4	278	3.2	123500	46	54	132-160-180-200	—	—	242200	270700	74400	295
	316 R4	299	3.0	124100	43	54	132-160-180-200	—	—	247600	276700	76200	295
	316 R4	357	2.5	127500	37	54	132-160-180-200	—	—	261100	291800	80900	295
	316 R4	424	2.1	126900	31	54	132-160-180-200	—	—	274900	307200	85600	295
	316 R4	458	2.0	132700	30	54	132-160-180-200	—	—	281400	314400	87900	295
	316 R4	544	1.7	131300	25	54	132-160-180-200	—	—	296300	331100	93100	295
	316 R4	645	1.4	124600	20	54	132-160-180-200	—	—	311800	348400	98500	295
500	316 R3 (B)	52.9	9.5	72600	79	150	180-200-225	—	—	175700	196300	52100	295
	316 R3 (B)	67.9	7.4	93200	79	150	180-200-225	—	—	189300	211600	56600	295
	316 R3 (C)	73.2	6.8	59800	47	180	180-200-225	—	—	193600	216400	58000	295
	316 R3 (B)	81.0	6.2	92900	66	150	180-200-225	—	—	199600	223100	60000	295
	316 R3 (C)	93.9	5.3	76700	47	180	180-200-225	—	—	208600	233200	63000	295
	316 R3 (C)	111	4.5	90700	47	180	180-200-225	—	—	219400	245200	66700	295
	316 R4	233	2.1	129600	32	90	132-160-180-200	—	—	274000	306200	85300	295
	316 R4	278	1.8	135300	28	90	132-160-180-200	—	—	288900	322900	90500	295
	316 R4	299	1.7	135100	26	90	132-160-180-200	—	—	295300	330000	92700	295
	316 R4	357	1.4	136500	22	90	132-160-180-200	—	—	311400	348000	98400	295
	316 R4	424	1.2	132700	18.0	90	132-160-180-200	—	—	327900	366500	104200	295
	316 R4	458	1.1	143300	18.0	90	132-160-180-200	—	—	335600	375000	106900	295
	316 R4	544	0.92	141800	15.0	90	132-160-180-200	—	—	345000	385000	110000	295
	316 R4	645	0.78	123300	11.0	90	132-160-180-200	—	—	345000	385000	110000	295



317 R




150000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]						
								MC	MZ	HC/PC	HZ/PZ	FZ		
1400	317 R3 (A)	73.4	19.1	33800	74	90	132-160-180-200	—	—	182500	194100	56200	303	
	317 R3 (B)	78.2	17.9	72800	150	90	180-200-225	—	—	186100	197800	57400	303	
	317 R3 (B)	83.3	16.8	77600	150	90	180-200-225	—	—	189600	201600	58600	303	
	317 R3 (A)	95.7	14.6	44000	74	90	132-160-180-200	—	—	197600	210200	61300	303	
	317 R3 (B)	100	14.0	93100	150	90	180-200-225	—	—	200300	213000	62300	303	
	317 R3 (C)	108	13.0	67000	100	100	180-200-225	—	—	205000	218000	63900	303	
	317 R3 (A)	115	12.1	53000	74	90	132-160-180-200	—	—	209000	222200	65200	303	
	317 R3 (C)	116	12.1	70000	98	100	180-200-225	—	—	208900	222100	65300	303	
	317 R3 (B)	119	11.8	110800	150	90	180-200-225	—	—	211000	224400	66000	303	
	317 R3 (A)	123	11.4	56500	74	90	132-160-180-200	—	—	213000	226500	66700	303	
	317 R3 (C)	139	10.1	82800	96	100	180-200-225	—	—	221100	235100	69500	303	
	317 R3 (A)	148	9.5	68000	74	90	132-160-180-200	—	—	225200	239500	70900	303	
	317 R3 (C)	165	8.5	98300	96	100	180-200-225	—	—	232800	247500	73600	303	
	317 R3 (A)	176	8.0	80700	74	90	132-160-180-200	—	—	237100	252100	75100	303	
	317 R4	220	6.4	66500	50	50	132-160-180-200	—	—	253500	269600	80900	303	
	317 R4	262	5.3	79300	50	50	132-160-180-200	—	—	267300	284300	85800	303	
	317 R4	336	4.2	101800	50	50	132-160-180-200	—	—	288100	306300	93200	303	
	317 R4	399	3.5	120800	50	50	132-160-180-200	—	—	303300	322500	98700	303	
	317 R4	438	3.2	132600	50	50	132-160-180-200	—	—	311900	331700	101800	303	
	317 R4	520	2.7	157400	50	50	132-160-180-200	—	—	328400	349200	107800	303	
	317 R4	626	2.2	154800	41	50	132-160-180-200	—	—	347200	369200	114700	303	
	317 R4	677	2.1	156100	38	50	132-160-180-200	—	—	355400	377900	117700	303	
	317 R4	803	1.7	159300	33	50	132-160-180-200	—	—	374100	397800	124600	303	
	317 R4	953	1.5	136800	24	50	132-160-180-200	—	—	393900	418800	132000	303	
	900	317 R3 (A)	73.4	12.3	38500	54	108	132-160-180-200	—	—	208400	221600	65100	303
		317 R3 (B)	78.2	11.5	90600	120	108	180-200-225	—	—	212400	225900	66500	303
		317 R3 (B)	83.3	10.8	94900	118	108	180-200-225	—	—	216500	230200	67900	303
		317 R3 (A)	95.7	9.4	50200	54	108	132-160-180-200	—	—	225700	240000	71100	303
		317 R3 (B)	100	9.0	113900	118	108	180-200-225	—	—	228700	243200	72200	303
		317 R3 (C)	108	8.3	76100	73	120	180-200-225	—	—	234000	248900	74000	303
317 R3 (A)		115	7.8	60500	54	108	132-160-180-200	—	—	238600	253700	75600	303	
317 R3 (C)		116	7.8	78800	71	120	180-200-225	—	—	238500	253600	75600	303	
317 R3 (B)		119	7.6	114900	100	108	180-200-225	—	—	240900	256200	76500	303	
317 R3 (A)		123	7.3	64500	54	108	132-160-180-200	—	—	243200	258600	77200	303	
317 R3 (C)		139	6.5	95300	71	120	180-200-225	—	—	252400	268400	80500	303	
317 R3 (A)		148	6.1	77600	54	108	132-160-180-200	—	—	257100	273400	82200	303	
317 R3 (C)		165	5.5	111500	70	120	180-200-225	—	—	265800	282600	85300	303	
317 R3 (A)		176	5.1	92100	54	108	132-160-180-200	—	—	270700	287800	87000	303	
317 R4		220	4.1	75900	37	60	132-160-180-200	—	—	289500	307800	93700	303	
317 R4		262	3.4	90500	37	60	132-160-180-200	—	—	305200	324500	99400	303	
317 R4		336	2.7	116200	37	60	132-160-180-200	—	—	328900	349800	108000	303	
317 R4		399	2.3	137900	37	60	132-160-180-200	—	—	346300	368200	114400	303	
317 R4		438	2.1	151400	37	60	132-160-180-200	—	—	356100	378700	118000	303	
317 R4		520	1.7	178600	37	60	132-160-180-200	—	—	374900	398700	124900	303	
317 R4		626	1.4	154800	26	60	132-160-180-200	—	—	396400	421500	132900	303	
317 R4		677	1.3	164400	26	60	132-160-180-200	—	—	405800	431500	136400	303	
317 R4		803	1.1	167800	22	60	132-160-180-200	—	—	427200	454200	144400	303	
317 R4		953	0.94	145000	16.2	60	132-160-180-200	—	—	442000	470000	150000	303	
500		317 R3 (A)	73.4	6.8	46000	36	180	132-160-180-200	—	—	248600	264400	79100	303
		317 R3 (B)	78.2	6.4	108700	80	180	180-200-225	—	—	253400	269400	80900	303
		317 R3 (B)	83.3	6.0	115800	80	180	180-200-225	—	—	258200	274600	82600	303
		317 R3 (A)	95.7	5.2	59900	36	180	132-160-180-200	—	—	269200	286200	86500	303
		317 R3 (B)	100	5.0	133800	77	180	180-200-225	—	—	272800	290100	87800	303
		317 R3 (C)	108	4.6	90100	48	200	180-200-225	—	—	279100	296800	90000	303
	317 R3 (A)	115	4.3	72100	36	180	132-160-180-200	—	—	284600	302600	92000	303	
	317 R3 (C)	116	4.3	93900	47	200	180-200-225	—	—	284500	302500	92000	303	
	317 R3 (B)	119	4.2	117900	57	180	180-200-225	—	—	287400	305600	93000	303	
	317 R3 (A)	123	4.1	76900	36	180	132-160-180-200	—	—	290100	308500	93900	303	
	317 R3 (C)	139	3.6	113600	47	200	180-200-225	—	—	301100	320200	97900	303	
	317 R3 (A)	148	3.4	92600	36	180	132-160-180-200	—	—	306700	326100	99900	303	
	317 R3 (C)	165	3.0	123300	43	200	180-200-225	—	—	317000	337100	103700	303	
	317 R3 (A)	176	2.8	109800	36	180	132-160-180-200	—	—	322900	343300	105800	303	
	317 R4	220	2.3	90500	24	100	132-160-180-200	—	—	345300	367200	114000	303	
	317 R4	262	1.9	108000	24	100	132-160-180-200	—	—	364100	387100	120900	303	






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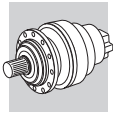
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n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
500	317 R4	336	1.5	138600	24	100	132-160-180-200	—	—	392400	417200	131400	303
	317 R4	399	1.3	164500	24	100	132-160-180-200	—	—	413000	439200	139100	303
	317 R4	438	1.1	178600	24	100	132-160-180-200	—	—	424800	451700	143500	303
	317 R4	520	0.96	179000	20	100	132-160-180-200	—	—	442000	470000	150000	303
	317 R4	626	0.80	161100	15.2	100	132-160-180-200	—	—	442000	470000	150000	303
	317 R4	677	0.74	170000	14.9	100	132-160-180-200	—	—	442000	470000	150000	303
	317 R4	803	0.62	170000	12.5	100	132-160-180-200	—	—	442000	470000	150000	303
	317 R4	953	0.52	145000	9.0	100	132-160-180-200	—	—	442000	470000	150000	303

318 R




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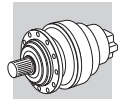
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	318 R4 (B)	216	6.5	194500	150	90	180-200-225	—	—	287200	322600	91200	311
	318 R4 (B)	278	5.0	211900	127	90	180-200-225	—	—	309800	347900	99200	311
	318 R4 (C)	299	4.7	174100	97	110	180-200-225	—	—	316600	355600	101700	311
	318 R4 (B)	330	4.2	221900	112	90	180-200-225	—	—	326100	366300	105100	311
	318 R4 (B)	357	3.9	227200	106	90	180-200-225	—	—	333900	375000	107900	311
	318 R4 (C)	384	3.6	223600	97	110	180-200-225	—	—	341300	383300	110500	311
	318 R4 (B)	423	3.3	236100	93	90	180-200-225	—	—	351300	394600	114100	311
	318 R4 (C)	456	3.1	240900	88	110	180-200-225	—	—	359300	403600	117000	311
	318 R4 (C)	493	2.8	242700	82	110	180-200-225	—	—	367800	413200	120100	311
	318 R4 (B)	502	2.8	207900	69	90	180-200-225	—	—	369800	415400	120800	311
	318 R4 (C)	585	2.4	249300	71	110	180-200-225	—	—	387200	434900	127100	311
	318 R4 (C)	695	2.0	216900	52	110	180-200-225	—	—	407700	458000	134700	311
	900	318 R4 (B)	216	4.2	221900	110	108	180-200-225	—	—	327900	368300	105700
318 R4 (B)		278	3.2	236200	91	108	180-200-225	—	—	353600	397200	115000	311
318 R4 (C)		299	3.0	198200	71	132	180-200-225	—	—	361500	406000	117800	311
318 R4 (B)		330	2.7	246500	80	108	180-200-225	—	—	372300	418200	121700	311
318 R4 (B)		357	2.5	250000	75	108	180-200-225	—	—	381200	428200	125000	311
318 R4 (C)		384	2.3	243800	68	132	180-200-225	—	—	389600	437600	128000	311
318 R4 (B)		423	2.1	248800	63	108	180-200-225	—	—	401100	450500	132200	311
318 R4 (C)		456	2.0	247000	58	132	180-200-225	—	—	410200	460800	135600	311
318 R4 (C)		493	1.8	248600	54	132	180-200-225	—	—	420000	471700	139100	311
318 R4 (B)		502	1.8	225000	48	108	180-200-225	—	—	422200	474300	140000	311
318 R4 (C)		585	1.5	245800	45	132	180-200-225	—	—	442100	496600	147300	311
318 R4 (C)		695	1.3	233600	36	132	180-200-225	—	—	465500	522900	156000	311
500		318 R4 (B)	216	2.3	246900	68	180	180-200-225	—	—	391100	439300	128600
	318 R4 (B)	278	1.8	247700	53	180	180-200-225	—	—	421800	473800	139800	311
	318 R4 (C)	299	1.7	231200	46	220	180-200-225	—	—	431200	484300	143300	311
	318 R4 (B)	330	1.5	249600	45	180	180-200-225	—	—	444100	498800	148100	311
	318 R4 (B)	357	1.4	246000	41	180	180-200-225	—	—	454700	510700	152000	311
	318 R4 (C)	384	1.3	245300	38	220	180-200-225	—	—	464800	522000	155700	311
	318 R4 (B)	423	1.2	248800	35	180	180-200-225	—	—	478400	537400	160800	311
	318 R4 (C)	456	1.1	245300	32	220	180-200-225	—	—	489300	549700	164900	311
	318 R4 (C)	493	1.0	248600	30	220	180-200-225	—	—	500900	562700	169300	311
	318 R4 (B)	502	1.0	244700	29	180	180-200-225	—	—	503000	565000	170000	311
	318 R4 (C)	585	0.85	245800	25	220	180-200-225	—	—	503000	565000	170000	311
	318 R4 (C)	695	0.72	245300	21	220	180-200-225	—	—	503000	565000	170000	311



319 R




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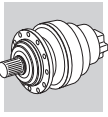
n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	319 R4 (B) 240		5.8	216100	150	95	180-200-225	—	—	375900	413600	111200	319
	319 R4 (B) 308		4.5	277300	150	95	180-200-225	—	—	405100	445800	120800	319
	319 R4 (C) 332		4.2	193300	97	115	180-200-225	—	—	414400	455900	123800	319
	319 R4 (A) 354		4.0	157600	74	95	132-160-180-200	—	—	422200	464500	126400	319
	319 R4 (B) 365		3.8	311100	142	95	180-200-225	—	—	426300	469100	127800	319
	319 R4 (B) 395		3.5	320100	135	95	180-200-225	—	—	436500	480300	131200	319
	319 R4 (C) 426		3.3	245500	96	115	180-200-225	—	—	446500	491300	134600	319
	319 R4 (A) 454		3.1	202300	74	95	132-160-180-200	—	—	455000	500600	137400	319
	319 R4 (B) 468		3.0	283700	101	95	180-200-225	—	—	459300	505400	138900	319
	319 R4 (C) 505		2.8	291000	96	115	180-200-225	—	—	469900	517000	142400	319
	319 R4 (A) 538		2.6	240000	74	95	132-160-180-200	—	—	479000	527000	145400	319
	319 R4 (C) 546		2.6	311400	95	115	180-200-225	—	—	481000	529300	146200	319
	319 R4 (B) 556		2.5	293700	88	95	180-200-225	—	—	483700	532200	147100	319
	319 R4 (A) 582		2.4	259600	74	95	132-160-180-200	—	—	490400	539600	149300	319
	319 R4 (C) 647		2.2	302900	78	115	180-200-225	—	—	506200	556900	154700	319
	319 R4 (B) 658		2.1	300200	76	95	180-200-225	—	—	508700	559800	155500	319
	319 R4 (A) 689		2.0	302100	73	95	132-160-180-200	—	—	515800	567500	157900	319
	319 R4 (C) 770		1.8	300400	65	115	180-200-225	—	—	533300	586800	163900	319
	319 R4 (A) 820		1.7	307400	62	95	132-160-180-200	—	—	543400	597900	167300	319
	319 R4 (C) 911		1.5	322600	59	115	180-200-225	—	—	560900	617100	173400	319
319 R4 (A) 971		1.4	319900	55	95	132-160-180-200	—	—	571600	628900	177000	319	
900	319 R4 (B) 240		3.8	257700	115	114	180-200-225	—	—	429200	472300	128800	319
	319 R4 (B) 308		2.9	330700	115	114	180-200-225	—	—	462600	508900	139900	319
	319 R4 (C) 332		2.7	217000	70	138	180-200-225	—	—	473100	520500	143500	319
	319 R4 (A) 354		2.5	179900	54	114	132-160-180-200	—	—	482000	530400	146500	319
	319 R4 (B) 365		2.5	344200	101	114	180-200-225	—	—	486700	535500	148100	319
	319 R4 (B) 395		2.3	346700	94	114	180-200-225	—	—	498400	548400	152000	319
	319 R4 (C) 426		2.1	282400	71	138	180-200-225	—	—	509800	561000	155900	319
	319 R4 (A) 454		2.0	230900	54	114	132-160-180-200	—	—	519500	571600	159200	319
	319 R4 (B) 468		1.9	310300	71	114	180-200-225	—	—	524400	577000	160900	319
	319 R4 (C) 505		1.8	320700	68	138	180-200-225	—	—	536500	590300	165000	319
	319 R4 (A) 538		1.7	274100	54	114	132-160-180-200	—	—	546900	601700	168500	319
	319 R4 (C) 546		1.6	331400	65	138	180-200-225	—	—	549200	604300	169400	319
	319 R4 (B) 556		1.6	301100	58	114	180-200-225	—	—	552200	607600	170400	319
	319 R4 (A) 582		1.5	296300	54	114	132-160-180-200	—	—	559900	616000	173000	319
	319 R4 (C) 647		1.4	326200	54	138	180-200-225	—	—	577900	635900	179200	319
	319 R4 (B) 658		1.4	325600	53	114	180-200-225	—	—	580800	639100	180200	319
	319 R4 (A) 689		1.3	325200	50	114	132-160-180-200	—	—	588900	648000	183000	319
	319 R4 (C) 770		1.2	302000	42	138	180-200-225	—	—	608900	670000	189900	319
	319 R4 (A) 820		1.1	307400	40	114	132-160-180-200	—	—	620500	682700	193900	319
	319 R4 (C) 911		0.99	340300	40	138	180-200-225	—	—	638000	702000	200000	319
319 R4 (A) 971		0.93	340000	37	114	132-160-180-200	—	—	638000	702000	200000	319	
500	319 R4 (B) 240		2.1	302500	75	190	180-200-225	—	—	512000	563300	156600	319
	319 R4 (B) 308		1.6	346900	67	190	180-200-225	—	—	551700	607100	170200	319
	319 R4 (C) 332		1.5	267900	48	230	180-200-225	—	—	564300	620900	174500	319
	319 R4 (A) 354		1.4	214600	36	190	132-160-180-200	—	—	575000	632700	178200	319
	319 R4 (B) 365		1.4	349700	57	190	180-200-225	—	—	580600	638800	180100	319
	319 R4 (B) 395		1.3	345200	52	190	180-200-225	—	—	594500	654100	184900	319
	319 R4 (C) 426		1.2	336500	47	230	180-200-225	—	—	608100	669100	189700	319
	319 R4 (A) 454		1.1	275400	36	190	132-160-180-200	—	—	619700	681800	193600	319
	319 R4 (B) 468		1.1	338200	43	190	180-200-225	—	—	625500	688300	195700	319
	319 R4 (C) 505		0.99	348000	41	230	180-200-225	—	—	638000	702000	200000	319
	319 R4 (A) 538		0.93	326900	36	190	132-160-180-200	—	—	638000	702000	200000	319
	319 R4 (C) 546		0.92	348700	38	230	180-200-225	—	—	638000	702000	200000	319
	319 R4 (B) 556		0.90	308400	33	190	180-200-225	—	—	638000	702000	200000	319
	319 R4 (A) 582		0.86	350000	36	190	132-160-180-200	—	—	638000	702000	200000	319
	319 R4 (C) 647		0.77	337100	31	230	180-200-225	—	—	638000	702000	200000	319
	319 R4 (B) 658		0.76	342900	31	190	180-200-225	—	—	638000	702000	200000	319
	319 R4 (A) 689		0.73	340000	29	190	132-160-180-200	—	—	638000	702000	200000	319
	319 R4 (C) 770		0.65	310600	24	230	180-200-225	—	—	638000	702000	200000	319
	319 R4 (A) 820		0.61	324700	23	190	132-160-180-200	—	—	638000	702000	200000	319
	319 R4 (C) 911		0.55	336900	22	230	180-200-225	—	—	638000	702000	200000	319
319 R4 (A) 971		0.52	340000	21	190	132-160-180-200	—	—	638000	702000	200000	319	

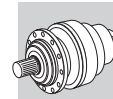


321 R

35000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	321 R4 (B) 221		6.3	199000	150	105	180-200-225	—	—	447800	530500	648600	327
	321 R4 (B) 289		4.8	260200	150	105	180-200-225	—	—	485300	575000	709300	327
	321 R4 (A) 326		4.3	145500	74	105	132-160-180-200	—	—	503300	596300	775300	327
	321 R4 (B) 347		4.0	312400	150	105	180-200-225	—	—	512700	607400	753800	327
	321 R4 (B) 370		3.8	333200	150	105	180-200-225	—	—	522600	619200	770100	327
	321 R4 (A) 425		3.3	189700	74	105	132-160-180-200	—	—	544900	645700	839500	327
	321 R4 (B) 446		3.1	401600	150	105	180-200-225	—	—	552800	654900	819600	327
	321 R4 (C) 481		2.9	280100	97	125	180-200-225	—	—	565400	669900	840500	327
	321 R4 (A) 512		2.7	228300	74	105	132-160-180-200	—	—	576100	682600	887500	327
	321 R4 (C) 513		2.7	295100	96	125	180-200-225	—	—	576100	682600	858200	327
	321 R4 (B) 529		2.6	454100	143	105	180-200-225	—	—	581800	689300	867600	327
	321 R4 (A) 546		2.6	242500	74	105	132-160-180-200	—	—	587300	695900	876800	327
	321 R4 (C) 617		2.3	355600	96	125	180-200-225	—	—	609300	721900	913300	327
	321 R4 (A) 657		2.1	291800	74	105	132-160-180-200	—	—	620900	735600	932600	327
321 R4 (C) 732		1.9	439400	100	125	180-200-225	—	—	641300	759900	966800	327	
321 R4 (A) 780		1.8	347700	74	105	132-160-180-200	—	—	653600	774400	1006900	327	
900	321 R4 (B) 221		4.1	245600	119	126	180-200-225	—	—	511200	605700	751500	327
	321 R4 (B) 289		3.1	321100	119	126	180-200-225	—	—	554100	656500	821800	327
	321 R4 (A) 326		2.8	166100	54	126	132-160-180-200	—	—	574600	680900	885200	327
	321 R4 (B) 347		2.6	372600	115	126	180-200-225	—	—	585300	693500	873400	327
	321 R4 (B) 370		2.4	404200	117	126	180-200-225	—	—	596700	707000	892300	327
	321 R4 (A) 425		2.1	216500	54	126	132-160-180-200	—	—	622200	737200	958400	327
	321 R4 (B) 446		2.0	466400	112	126	180-200-225	—	—	631100	747800	949700	327
	321 R4 (C) 481		1.9	327900	73	150	180-200-225	—	—	645600	764900	973900	327
	321 R4 (A) 512		1.8	260600	54	126	132-160-180-200	—	—	657800	779400	1013300	327
	321 R4 (C) 513		1.8	339400	71	150	180-200-225	—	—	657800	779400	994400	327
	321 R4 (B) 529		1.7	474200	96	126	180-200-225	—	—	664300	787000	1005200	327
	321 R4 (A) 546		1.6	275300	54	126	132-160-180-200	—	—	670600	794500	1015900	327
	321 R4 (C) 617		1.5	409100	71	150	180-200-225	—	—	695600	824200	1058200	327
	321 R4 (A) 657		1.4	331300	54	126	132-160-180-200	—	—	708900	839900	1080500	327
321 R4 (C) 732		1.2	478500	70	150	180-200-225	—	—	732200	867600	1120200	327	
321 R4 (A) 780		1.2	397000	54	126	132-160-180-200	—	—	746300	884200	1149600	327	
500	321 R4 (B) 221		2.3	293500	79	210	180-200-225	—	—	609800	722500	914100	327
	321 R4 (B) 289		1.7	388600	80	210	180-200-225	—	—	660900	783100	999600	327
	321 R4 (A) 326		1.5	198200	36	210	132-160-180-200	—	—	685400	812200	1055900	327
	321 R4 (B) 347		1.4	466600	80	210	180-200-225	—	—	698200	827200	1062500	327
	321 R4 (B) 370		1.4	497500	80	210	180-200-225	—	—	711800	843300	1085500	327
	321 R4 (A) 425		1.2	258300	36	210	132-160-180-200	—	—	742200	879400	1143300	327
	321 R4 (B) 446		1.1	524700	70	210	180-200-225	—	—	752800	891900	1155200	327
	321 R4 (C) 481		1.04	380000	47	250	180-200-225	—	—	770000	912400	1184700	327
	321 R4 (A) 512		0.98	310900	36	210	132-160-180-200	—	—	779000	923000	1200000	327
	321 R4 (C) 513		0.97	378700	44	250	180-200-225	—	—	779000	923000	1200000	327
	321 R4 (B) 529		0.95	497900	56	210	180-200-225	—	—	779000	923000	1200000	327
	321 R4 (A) 546		0.9	330400	36	210	132-160-180-200	—	—	779000	923000	1200000	327
	321 R4 (C) 617		0.81	435600	42	250	180-200-225	—	—	779000	923000	1200000	327
	321 R4 (A) 657		0.8	397500	36	210	132-160-180-200	—	—	779000	923000	1200000	327
321 R4 (C) 732		0.68	492100	40	250	180-200-225	—	—	779000	923000	1200000	327	
321 R4 (A) 780		0.64	473500	36	210	132-160-180-200	—	—	779000	923000	1200000	327	





**25.0 - DATI TECNICI MOTORI-
DUTTORI 3/V - 3/A**

**25.0 - 3/V - 3/A GEARMOTOR
RATING CHARTS**

**25.0 - 3/V - 3/A TECHNISCHE
DATEN DER GETRIEBE-
MOTOREN**

**25.0 - DONNEES TECHNI-
QUES MOTOREDUC-
TEURS 3/V - 3/A**

Guida alla consultazione delle
tabelle.

Reading the rating chart.

Anleitung für die richtige Kon-
sultation der Tabellen.

Guide pour la consultation des
tableaux

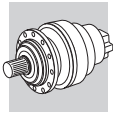


P₁ = 1.1 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.43	18771	1.6	3273	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.43	18713	2.9	3263	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277
0.43	18478	2.4	3222	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.48	16361	2.8	2887	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.49	16261	1.8	2835	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257



1	Potenza trasmessa in entrata riduttore	Power applied at gearbox input shaft	Am Getriebeantrieb übertragene Leistung	Puissance transmise à l'entrée du réducteur
2	Velocità angolare in entrata riduttore	Gearbox drive speed	Drehzahl am Getriebeantrieb	Vitesse angulaire à l'entrée du réducteur
3	Velocità angolare all'albero lento	Gearbox output speed	Drehzahl am Getriebeabtrieb	Vitesse angulaire en sortie réducteur
4	Coppia trasmessa all'albero lento	Torque delivered at gearbox output shaft	Übertragenes Drehmoment am Getriebeabtrieb	Couple transmise en sortie réducteur
5	Fattore di sicurezza	Safety factor	Sicherheitsfaktor	Facteur de sécurité
6	Rapporto di riduzione	Gear ratio	Übersetzung	Rapport de réduction
7	Potenza termica riduttore	Gearbox thermal capacity	Wärmeleistung des Getriebes	Puissance thermique réducteur
8	Grandezza riduttore combinato serie 300 + riduttore a vite senza fine	Model and frame size of combined planetary + worm gear unit	Baugröße des kombinierten Getriebemotors der Serie 300 + Schneckengetriebe	Taille réducteur combiné série 300 + réducteur à vis sans fin série
9	Grandezza riduttore combinato serie 300 + riduttore ad assi ortogonali serie A	Model and frame size of combined planetary + helical bevel gear unit, A type	Baugröße des kombinierten Getriebemotors der Serie 300 + Kegelaradgetriebe der Serie A	Taille réducteur combiné série 300 + réducteur à axes orthogonaux série A
10	Grandezza motore IEC e polarità	IEC motor frame size and pole number	Baugröße des IEC-Motors und Anzahl der Pole	Taille moteur IEC et n° pôles
11	Grandezza motore compatto e polarità	Compact motor size and pole number	Baugröße des Kompaktmotors und Anzahl der Pole	Taille moteur compact et n° pôles
12	Carico radiale applicabile sull'albero lento, calcolato per: - fattore di sicurezza S=1 - durata teorica di 10000 h Per forze non applicate in mezzzeria riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	Permitted overhung loading on output shaft, based on: - safety factor S=1 - 10000 h theoretical lifetime For forces applying off the midpoint, see diagrams provided in the pages following dimensions of the specific gearbox	Auf die Mitte der Abtriebswelle für eine Dauer von 10000 Std. applizierbare Nenn-Radialkräfte und Sicherheitsfaktor S=1 Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	Charges radiales applicables en milieu d'arbre de sortie pendant : - facteur de sécurité S=1 - durée de 10000 h Pour d'autres positons de charge, voir diagrammes figurant à la suite des pages dimensions de la taille sélectionnée
13	Pagina delle dimensioni. Le dimensioni dei motoriduttori si riferiscono ad abbinamenti con motori di produzione BONFIGLIOLI	Page installation drawing can be found at. Gearmotor dimensions refer to matches with BONFIGLIOLI motors only	Maßseiten. Die Maß der Getriebemotoren sind nur im Fall einer Montage mit Motoren der BONFIGLIOLI gültig	Page avec les dimensions. Les dimensions des motoréducteurs sont valables seulement avec moteurs BONFIGLIOLI

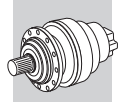


$P_1 = 0.12 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.56	1209	1.0	2333	—	3/V 01 L3	—	BN 63A	—	14300	14600	31000	34000	8000	198
0.70	968	1.8	1869	—	3/V 01 L3	—	BN 63A	—	13300	13600	31000	34000	8000	198
0.88	824	1.0	1495	—	3/V 00 L3	—	BN 63A	—	12300	12600	31000	34000	8000	190
0.88	824	2.1	1495	—	3/V 01 L3	—	BN 63A	—	12300	12600	31000	34000	8000	198
0.95	716	1.4	1381	—	3/V 00 L3	—	BN 63A	—	12000	12300	30900	33900	7960	190
0.95	716	2.8	1381	—	3/V 01 L3	—	BN 63A	—	12000	12300	30900	33900	7960	198
1.1	660	1.3	1198	—	3/V 00 L3	—	BN 63A	—	11500	11700	29600	32400	7600	190
1.1	660	2.5	1198	—	3/V 01 L3	—	BN 63A	—	11500	11700	29600	32400	7600	198
1.2	573	1.7	1107	—	3/V 00 L3	—	BN 63A	—	11200	11400	28900	31700	7400	190
1.3	615	1.3	997	—	3/V 00 L3	—	BN 63A	—	10800	11000	28000	30700	7140	190
1.3	615	2.6	997	—	3/V 01 L3	—	BN 63A	—	10800	11000	28000	30700	7140	198
1.4	468	1.5	903	—	3/V 00 L3	—	BN 63A	—	10400	10600	27200	29800	6910	190
1.4	468	3.0	903	—	3/V 01 L3	—	BN 63A	—	10400	10600	27200	29800	6910	198
1.6	424	2.4	818	—	3/V 00 L3	—	BN 63A	—	10100	10300	26400	28900	6690	190
1.9	402	2.5	689	—	3/V 00 L3	—	BN 63A	—	9540	9720	25100	27500	6320	190
2.0	530	2.2	665	—	—	3/A 01 L2	BN 63A	—	9420	9600	24800	27200	6240	199
2.0	526	1.2	660	—	—	3/A 00 L2	BN 63A	—	9400	9580	24700	27100	6220	191
2.0	360	2.8	654	—	3/V 00 L3	—	BN 63A	—	9370	9550	24700	27100	6210	190
2.3	328	2.1	562	—	3/V 00 L3	—	BN 63A	—	8910	9080	23600	25900	5900	190
2.4	439	1.4	550	—	—	3/A 00 L2	BN 63A	—	8850	9010	23400	25700	5860	191
2.5	425	2.6	532	—	—	3/A 01 L2	BN 63A	—	8750	8920	23200	25400	5800	199
3.0	352	2.0	441	—	—	3/A 00 L2	BN 63A	—	8220	8370	21900	24000	5440	191
3.0	240	2.9	436	—	3/V 00 L3	—	BN 63A	—	8190	8340	21800	24000	5420	190
3.2	243	2.9	415	—	3/V 00 L3	—	BN 63A	—	8060	8210	21500	23600	5340	190
3.3	314	2.6	393	—	—	3/A 01 L2	BN 63A	—	7910	8060	21200	23200	5240	199
3.4	311	1.7	390	—	—	3/A 00 L2	BN 63A	—	7890	8040	21100	23200	5230	191
3.5	295	1.9	369	—	—	3/A 00 L2	BN 63A	—	7750	7890	20800	22800	5130	191
4.1	254	1.7	319	—	—	3/A 00 L2	BN 63A	—	7380	7520	19900	21800	4890	191
4.4	236	2.8	296	—	—	3/A 00 L2	BN 63A	—	7200	7330	19400	21300	4770	191
5.2	202	2.7	253	—	—	3/A 00 L2	BN 63A	—	6830	6960	18500	20300	4520	191

$P_1 = 0.18 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

0.71	1442	1.2	1869	—	3/V 01 L3	—	BN 63B	—	13300	13600	31000	34000	8000	198
0.88	1226	1.4	1495	—	3/V 01 L3	—	BN 63B	—	12300	12600	31000	34000	8000	198
0.96	1065	0.9	1381	—	3/V 00 L3	—	BN 63B	—	12000	12300	30900	33900	7960	190
0.96	1065	1.9	1381	—	3/V 01 L3	—	BN 63B	—	12000	12300	30900	33900	7960	198
1.1	983	1.7	1198	—	3/V 01 L3	—	BN 63B	—	11500	11700	29600	32400	7600	198
1.2	854	1.2	1107	—	3/V 00 L3	—	BN 63B	—	11200	11400	28900	31700	7400	190
1.2	906	2.2	1105	—	3/V 01 L3	—	BN 63B	—	11200	11400	28900	31700	7390	198
1.3	915	1.8	997	—	3/V 01 L3	—	BN 63B	—	10800	11000	28000	30700	7140	198
1.5	697	1.0	903	—	3/V 00 L3	—	BN 63B	—	10400	10600	27200	29800	6910	190
1.5	697	2.0	903	—	3/V 01 L3	—	BN 63B	—	10400	10600	27200	29800	6910	198
1.6	631	1.6	818	—	3/V 00 L3	—	BN 63B	—	10100	10300	26400	28900	6690	190
1.7	733	2.1	799	—	3/V 01 L3	—	BN 63B	—	10000	10200	26200	28700	6640	198
1.8	868	2.1	731	—	—	3/A 03 L2	BN 63B	—	28700	33100	52700	60900	19300	207
1.9	599	1.7	689	—	3/V 00 L3	—	BN 63B	—	9540	9720	25100	27500	6320	190
2.0	789	1.5	665	—	—	3/A 01 L2	BN 63B	—	9420	9600	24800	27200	6240	199
2.0	537	1.9	654	—	3/V 00 L3	—	BN 63B	—	9370	9550	24700	27100	6210	190
2.2	718	2.5	605	—	—	3/A 03 L2	BN 63B	—	26900	31000	49700	57500	18100	207
2.3	681	2.6	574	—	—	3/A 03 L2	BN 63B	—	26500	30500	49000	56600	17800	207
2.3	489	1.4	562	—	3/V 00 L3	—	BN 63B	—	8910	9080	23600	25900	5900	190
2.3	489	2.9	562	—	3/V 01 L3	—	BN 63B	—	8910	9080	23600	25900	5900	198
2.4	653	0.9	550	—	—	3/A 00 L2	BN 63B	—	8850	9010	23400	25700	5860	191
2.5	632	1.8	532	—	—	3/A 01 L2	BN 63B	—	8750	8920	23200	25400	5800	199
2.6	442	2.2	509	—	3/V 00 L3	—	BN 63B	—	8620	8780	22900	25100	5710	190
2.7	588	2.9	495	—	—	3/A 03 L2	BN 63B	—	25200	29000	46900	54200	17000	207
2.9	539	2.1	454	—	—	3/A 01 L2	BN 63B	—	8300	8460	22100	24300	5500	199
3.0	523	1.3	441	—	—	3/A 00 L2	BN 63B	—	8220	8370	21900	24000	5440	191
3.0	358	2.0	436	—	3/V 00 L3	—	BN 63B	—	8190	8340	21800	24000	5420	190

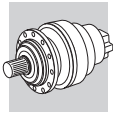


P₁ = 0.18 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
3.2	361	1.9	415	—	3/V 00 L3	—	BN 63B	—	8060	8210	21500	23600	5340	190
3.4	467	1.8	393	—	—	3/A 01 L2	BN 63B	—	7910	8060	21200	23200	5240	199
3.4	463	1.2	390	—	—	3/A 00 L2	BN 63B	—	7890	8040	21100	23200	5230	191
3.6	439	1.3	369	—	—	3/A 00 L2	BN 63B	—	7750	7890	20800	22800	5130	191
4.1	379	1.2	319	—	—	3/A 00 L2	BN 63B	—	7380	7520	19900	21800	4890	191
4.5	351	1.9	296	—	—	3/A 00 L2	BN 63B	—	7200	7330	19400	21300	4770	191
5.2	300	1.8	253	—	—	3/A 00 L2	BN 63B	—	6830	6960	18500	20300	4520	191
6.0	259	2.4	219	—	—	3/A 00 L2	BN 63B	—	6500	6630	17800	19500	4310	191
6.5	240	2.7	203	—	—	3/A 00 L2	BN 63B	—	6340	6460	17400	19000	4200	191
7.7	203	2.7	171	—	—	3/A 00 L2	BN 63B	—	6000	6110	16500	18100	3970	191

P₁ = 0.25 kW n₁=1400 min⁻¹

0.53	3083	2.3	2588	—	3/V 06 L3	—	BN71A4	—	54800	62000	101000	119000	35000	226
0.64	2538	1.5	2160	—	3/V 05 L3	—	BN71A4	—	41200	47500	64000	74000	24000	216
0.68	2197	1.0	2009	—	3/V 03 L3	—	BN71A4	—	40200	46300	64000	74000	24000	206
0.77	2098	2.2	1786	—	3/V 05 L3	—	BN71A4	—	38700	44500	64000	74000	24000	216
0.80	1890	1.5	1728	—	3/V 03 L3	—	BN71A4	—	38200	44100	64000	74000	24000	206
0.85	2036	1.9	1620	—	3/V 05 L3	—	BN71A4	—	37400	43100	64000	74000	24000	216
0.85	1760	1.3	1610	—	3/V 03 L3	—	BN71A4	—	37300	43000	64000	74000	24000	206
0.92	1635	1.0	1495	—	3/V 01 L3	—	BN71A4	—	12300	12600	31000	34000	8000	198
0.96	1681	2.7	1431	—	3/V 05 L3	—	BN71A4	—	35900	41400	64000	74000	24000	216
0.99	1514	1.9	1385	—	3/V 03 L3	—	BN71A4	—	35500	40900	63800	73800	23900	206
1.0	1420	1.4	1381	—	3/V 01 L3	—	BN71A4	—	12000	12300	30900	33900	7960	198
1.1	1310	1.3	1198	—	3/V 01 L3	—	BN71A4	—	11500	11700	29600	32400	7600	198
1.2	1301	1.7	1189	—	3/V 03 L3	—	BN71A4	—	33800	38900	60900	70500	22700	206
1.2	1208	1.7	1105	—	3/V 01 L3	—	BN71A4	—	11200	11400	28900	31700	7390	198
1.3	1119	2.4	1023	—	3/V 03 L3	—	BN71A4	—	32100	37000	58300	67400	21600	206
1.4	1220	1.3	997	—	3/V 01 L3	—	BN71A4	—	10800	11000	28000	30700	7140	198
1.5	1115	2.4	923	—	3/V 03 L3	—	BN71A4	—	31000	35800	56500	65300	20900	206
1.5	929	1.5	903	—	3/V 01 L3	—	BN71A4	—	10400	10600	27200	29800	6910	198
1.7	841	1.2	818	—	3/V 00 L3	—	BN71A4	—	10100	10300	26400	28900	6690	190
1.7	978	1.6	799	—	3/V 01 L3	—	BN71A4	—	10000	10200	26200	28700	6640	198
1.7	958	2.2	793	—	3/V 03 L3	—	BN71A4	—	29500	34000	54000	62400	19900	206
1.9	1158	1.6	731	—	—	3/A 03 L2	BN71A4	—	28700	33100	52700	60900	19300	207
2.0	798	1.3	689	—	3/V 00 L3	—	BN71A4	—	9540	9720	25100	27500	6320	190
2.0	798	2.5	689	—	3/V 01 L3	—	BN71A4	—	9540	9720	25100	27500	6320	198
2.1	1052	1.1	665	—	—	3/A 01 L2	BN71A4	—	9420	9600	24800	27200	6240	199
2.1	715	1.4	654	—	3/V 00 L3	—	BN71A4	—	9370	9550	24700	27100	6210	190
2.1	715	2.8	654	—	3/V 01 L3	—	BN71A4	—	9370	9550	24700	27100	6210	198
2.2	753	3.0	623	—	3/V 03 L3	—	BN71A4	—	27200	31400	50200	58000	18300	206
2.3	957	1.9	605	—	—	3/A 03 L2	BN71A4	—	26900	31000	49700	57500	18100	207
2.4	908	1.9	574	—	—	3/A 03 L2	BN71A4	—	26500	30500	49000	56600	17800	207
2.4	651	1.1	562	—	3/V 00 L3	—	BN71A4	—	8910	9080	23600	25900	5900	190
2.4	651	2.1	562	—	3/V 01 L3	—	BN71A4	—	8910	9080	23600	25900	5900	198
2.6	843	1.3	532	—	—	3/A 01 L2	BN71A4	—	8750	8920	23200	25400	5800	199
2.7	590	1.7	509	—	3/V 00 L3	—	BN71A4	—	8620	8780	22900	25100	5710	190
2.7	664	2.9	502	—	3/V 03 L3	—	BN71A4	—	25300	29200	47100	54400	17100	206
2.8	784	2.2	495	—	—	3/A 03 L2	BN71A4	—	25200	29000	46900	54200	17000	207
3.0	719	1.6	454	—	—	3/A 01 L2	BN71A4	—	8300	8460	22100	24300	5500	199
3.1	698	1.0	441	—	—	3/A 00 L2	BN71A4	—	8220	8370	21900	24000	5440	191
3.2	477	1.5	436	—	3/V 00 L3	—	BN71A4	—	8190	8340	21800	24000	5420	190
3.3	481	1.5	415	—	3/V 00 L3	—	BN71A4	—	8060	8210	21500	23600	5340	190
3.4	648	2.9	409	—	—	3/A 03 L2	BN71A4	—	23700	27300	44300	51200	15900	207
3.5	623	1.3	393	—	—	3/A 01 L2	BN71A4	—	7910	8060	21200	23200	5240	199
3.7	585	0.9	369	—	—	3/A 00 L2	BN71A4	—	7750	7890	20800	22800	5130	191
3.8	576	2.3	364	—	—	3/A 01 L2	BN71A4	—	7710	7860	20700	22700	5110	199
4.4	492	2.3	311	—	—	3/A 01 L2	BN71A4	—	7320	7450	19700	21700	4850	199
4.6	469	1.4	296	—	—	3/A 00 L2	BN71A4	—	7200	7330	19400	21300	4770	191
5.1	426	2.4	269	—	—	3/A 01 L2	BN71A4	—	6970	7100	18900	20700	4620	199

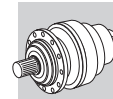


P₁ = 0.25 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
5.4	404	2.8	255	—	—	3/A 01 L2	BN71A4	—	6850	6980	18600	20400	4530	199
5.4	400	1.4	253	—	—	3/A 00 L2	BN71A4	—	6830	6960	18500	20300	4520	191
6.3	348	2.4	220	—	—	3/A 01 L2	BN71A4	—	6510	6640	17800	19500	4310	199
6.3	346	1.8	219	—	—	3/A 00 L2	BN71A4	—	6500	6630	17800	19500	4310	191
6.8	321	2.0	203	—	—	3/A 00 L2	BN71A4	—	6340	6460	17400	19000	4200	191
8.0	271	2.0	171	—	—	3/A 00 L2	BN71A4	—	6000	6110	16500	18100	3970	191
10.3	212	2.6	134	—	—	3/A 00 L2	BN71A4	—	5520	5630	15300	16800	3660	191

P₁ = 0.37 kW n₁=1400 min⁻¹

0.27	8705	2.6	5081	—	3/V 10 L4	—	BN71B4	M1SD4	—	—	133000	166000	65000	257
0.53	4579	1.5	2588	—	3/V 06 L3	—	BN71B4	M1SD4	54800	62000	101000	119000	35000	226
0.63	3770	1.0	2160	—	3/V 05 L3	—	BN71B4	M1SD4	41200	47500	64000	74000	24000	216
0.64	3786	2.2	2139	—	3/V 06 L3	—	BN71B4	M1SD4	51400	58200	101000	119000	35000	226
0.77	3117	1.5	1786	—	3/V 05 L3	—	BN71B4	M1SD4	38700	44500	64000	74000	24000	216
0.77	3130	2.7	1768	—	3/V 06 L3	—	BN71B4	M1SD4	48300	54600	101000	119000	35000	226
0.79	2807	1.0	1728	—	3/V 03 L3	—	BN71B4	M1SD4	38200	44100	64000	74000	24000	206
0.85	3024	1.3	1620	—	3/V 05 L3	—	BN71B4	M1SD4	37400	43100	64000	74000	24000	216
0.96	2498	1.8	1431	—	3/V 05 L3	—	BN71B4	M1SD4	35900	41400	64000	74000	24000	216
0.99	2249	1.3	1385	—	3/V 03 L3	—	BN71B4	M1SD4	35500	40900	63800	73800	23900	206
0.99	2110	0.9	1381	—	3/V 01 L3	—	BN71B4	—	12000	12300	30900	33900	7960	198
1.1	2148	2.6	1231	—	3/V 05 L3	—	BN71B4	M1SD4	34200	39400	61600	71200	23000	216
1.2	1932	1.2	1189	—	3/V 03 L3	—	BN71B4	M1SD4	33800	38900	60900	70500	22700	206
1.2	2165	2.0	1116	—	3/V 05 L3	—	BN71B4	M1SD4	33100	38100	59800	69100	22300	216
1.2	1795	1.1	1105	—	3/V 01 L3	—	BN71B4	—	11200	11400	28900	31700	7390	198
1.3	1846	2.4	1057	—	3/V 05 L3	—	BN71B4	M1SD4	32500	37400	58800	68000	21900	216
1.3	1662	1.6	1023	—	3/V 03 L3	—	BN71B4	M1SD4	32100	37000	58300	67400	21600	206
1.5	1656	1.6	923	—	3/V 03 L3	—	BN71B4	M1SD4	31000	35800	56500	65300	20900	206
1.5	1380	1.0	903	—	3/V 01 L3	—	BN71B4	—	10400	10600	27200	29800	6910	198
1.5	1734	2.5	894	—	3/V 05 L3	—	BN71B4	M1SD4	30700	35400	55900	64700	20700	216
1.7	1453	1.1	799	—	3/V 01 L3	—	BN71B4	—	10000	10200	26200	28700	6640	198
1.7	1423	1.5	793	—	3/V 03 L3	—	BN71B4	M1SD4	29500	34000	54000	62400	19900	206
1.7	1480	2.8	793	—	3/V 05 L3	—	BN71B4	M1SD4	29500	34000	54000	62400	19900	216
1.9	1320	2.0	736	—	3/V 03 L3	—	BN71B4	M1SD4	28800	33100	52800	61000	19400	206
1.9	1720	1.1	731	—	—	3/A 03 L2	BN71B4	M1SD4	28700	33100	52700	60900	19300	207
1.9	1440	2.9	715	—	3/V 05 L3	—	BN71B4	M1SD4	28500	32800	52300	60500	19200	216
2.0	1185	1.7	689	—	3/V 01 L3	—	BN71B4	—	9540	9720	25100	27500	6320	198
2.1	1063	0.9	654	—	3/V 00 L3	—	BN71B4	—	9370	9550	24700	27100	6210	190
2.1	1063	1.9	654	—	3/V 01 L3	—	BN71B4	—	9370	9550	24700	27100	6210	198
2.2	1118	2.0	623	—	3/V 03 L3	—	BN71B4	M1SD4	27200	31400	50200	58000	18300	206
2.3	1422	1.3	605	—	—	3/A 03 L2	BN71B4	M1SD4	26900	31000	49700	57500	18100	207
2.3	1397	2.4	594	—	—	3/A 05 L2	BN71B4	M1SD4	26800	30900	49500	57200	18000	217
2.4	1349	1.3	574	—	—	3/A 03 L2	BN71B4	M1SD4	26500	30500	49000	56600	17800	207
2.4	968	1.4	562	—	3/V 01 L3	—	BN71B4	—	8910	9080	23600	25900	5900	198
2.5	975	2.8	544	—	3/V 03 L3	—	BN71B4	M1SD4	26000	30000	48200	55700	17500	206
2.7	876	1.1	509	—	3/V 00 L3	—	BN71B4	—	8620	8780	22900	25100	5710	190
2.7	876	2.2	509	—	3/V 01 L3	—	BN71B4	—	8620	8780	22900	25100	5710	198
2.7	986	2.0	502	—	3/V 03 L3	—	BN71B4	M1SD4	25300	29200	47100	54400	17100	206
2.8	1164	1.5	495	—	—	3/A 03 L2	BN71B4	M1SD4	25200	29000	46900	54200	17000	207
3.0	826	2.7	460	—	3/V 03 L3	—	BN71B4	M1SD4	24600	28400	45800	53000	16600	206
3.0	1068	1.1	454	—	—	3/A 01 L2	BN71B4	M1SD4	8300	8460	22100	24300	5500	199
3.1	837	2.3	443	—	3/V 01 L3	—	BN71B4	—	8230	8380	21900	24100	5450	198
3.1	708	1.0	436	—	3/V 00 L3	—	BN71B4	—	8190	8340	21800	24000	5420	190
3.2	844	2.3	430	—	3/V 01 L3	—	BN71B4	—	8150	8300	21800	23900	5400	198
3.3	715	1.0	415	—	3/V 00 L3	—	BN71B4	—	8060	8210	21500	23600	5340	190
3.3	962	2.0	409	—	—	3/A 03 L2	BN71B4	M1SD4	23700	27300	44300	51200	15900	207
3.5	775	2.8	395	—	3/V 03 L3	—	BN71B4	M1SD4	23400	26900	43800	50600	15700	206
3.8	856	1.6	364	—	—	3/A 01 L2	BN71B4	M1SD4	7710	7860	20700	22700	5110	199
3.9	827	2.4	352	—	—	3/A 03 L2	BN71B4	M1SD4	22500	25900	42300	48900	15100	207
4.2	765	2.2	326	—	—	3/A 03 L2	BN71B4	M1SD4	21900	25300	41300	47800	14800	207

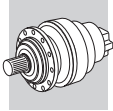


$P_1 = 0.37 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
4.4	731	1.6	311	—	—	3/A 01 L2	BN71B4	M1SD4	7320	7450	19700	21700	4850	199
4.6	696	0.9	296	—	—	3/A 00 L2	BN71B4	M1SD4	7200	7330	19400	21300	4770	191
5.1	633	2.8	269	—	—	3/A 03 L2	BN71B4	M1SD4	20600	23700	39000	45100	13900	207
5.1	632	1.6	269	—	—	3/A 01 L2	BN71B4	M1SD4	6970	7100	18900	20700	4620	199
5.4	599	1.9	255	—	—	3/A 01 L2	BN71B4	M1SD4	6850	6980	18600	20400	4530	199
5.4	594	0.9	253	—	—	3/A 00 L2	BN71B4	M1SD4	6830	6960	18500	20300	4520	191
6.2	516	1.6	220	—	—	3/A 01 L2	BN71B4	M1SD4	6510	6640	17800	19500	4310	199
6.3	514	1.2	219	—	—	3/A 00 L2	BN71B4	M1SD4	6500	6630	17800	19500	4310	191
6.7	480	2.7	204	—	—	3/A 01 L2	BN71B4	M1SD4	6360	6480	17400	19100	4210	199
6.8	476	1.4	203	—	—	3/A 00 L2	BN71B4	M1SD4	6340	6460	17400	19000	4200	191
7.4	433	2.4	184	—	—	3/A 01 L2	BN71B4	M1SD4	6140	6260	16900	18500	4070	199
8.0	403	1.4	171	—	—	3/A 00 L2	BN71B4	M1SD4	6000	6110	16500	18100	3970	191
8.2	391	2.9	166	—	—	3/A 01 L2	BN71B4	M1SD4	5940	6050	16400	17900	3930	199
10.2	315	1.7	134	—	—	3/A 00 L2	BN71B4	M1SD4	5520	5630	15300	16800	3660	191
12.8	252	2.6	107	—	—	3/A 00 L2	BN71B4	M1SD4	5130	5230	14300	15700	3400	191
13.7	235	2.3	100	—	—	3/A 00 L2	BN71B4	M1SD4	5010	5110	14000	15400	3320	191
15.5	208	2.6	88.6	—	—	3/A 00 L2	BN71B4	M1SD4	4810	4900	13500	14900	3190	191

$P_1 = 0.55 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

0.27	12847	1.8	5081	—	3/V 10 L4	—	BN80A4	M1LA4	—	—	133000	166000	65000	257
0.30	11724	2.5	4637	—	3/V 10 L4	—	BN80A4	M1LA4	—	—	133000	166000	65000	257
0.34	11743	2.5	4036	—	3/V 10 L4	—	BN80A4	M1LA4	—	—	133000	166000	65000	257
0.53	6758	1.0	2588	—	3/V 06 L3	—	BN80A4	M1LA4	54800	62000	101000	119000	35000	226
0.56	6192	1.8	2472	—	3/V 07 L3	—	BN80A4	—	61400	76600	109000	145000	45000	236
0.64	5691	1.9	2150	—	3/V 07 L3	—	BN80A4	—	58600	73100	109000	145000	45000	236
0.65	5587	1.5	2139	—	3/V 06 L3	—	BN80A4	M1LA4	51400	58200	101000	119000	35000	226
0.70	4918	2.6	1964	—	3/V 07 L3	—	BN80A4	—	56800	71000	109000	145000	45000	236
0.77	4600	1.0	1786	—	3/V 05 L3	—	BN80A4	M1LA4	38700	44500	64000	74000	24000	216
0.78	4618	1.8	1768	—	3/V 06 L3	—	BN80A4	M1LA4	48300	54600	101000	119000	35000	226
0.89	4202	2.6	1545	—	3/V 07 L3	—	BN80A4	—	52500	65500	109000	145000	45000	236
0.96	3686	1.2	1431	—	3/V 05 L3	—	BN80A4	M1LA4	35900	41400	64000	74000	24000	216
0.99	3793	2.2	1395	—	3/V 06 L3	—	BN80A4	M1LA4	44600	50500	100900	118900	35000	226
1.1	3170	1.7	1231	—	3/V 05 L3	—	BN80A4	M1LA4	34200	39400	61600	71200	23000	216
1.1	3166	2.3	1212	—	3/V 06 L3	—	BN80A4	M1LA4	42600	48200	96700	114000	33400	226
1.2	3136	2.6	1153	—	3/V 06 L3	—	BN80A4	M1LA4	41900	47400	95300	112300	32800	226
1.2	3194	1.4	1116	—	3/V 05 L3	—	BN80A4	M1LA4	33100	38100	59800	69100	22300	216
1.3	2724	1.6	1057	—	3/V 05 L3	—	BN80A4	M1LA4	32500	37400	58800	68000	21900	216
1.5	2795	2.8	930	—	3/V 06 L3	—	BN80A4	M1LA4	39000	44100	89300	105300	30500	226
1.5	2444	1.1	923	—	3/V 03 L3	—	BN80A4	M1LA4	31000	35800	56500	65300	20900	206
1.5	2559	1.7	894	—	3/V 05 L3	—	BN80A4	M1LA4	30700	35400	55900	64700	20700	216
1.7	2099	1.0	793	—	3/V 03 L3	—	BN80A4	M1LA4	29500	34000	54000	62400	19900	206
1.7	2184	1.9	793	—	3/V 05 L3	—	BN80A4	M1LA4	29500	34000	54000	62400	19900	216
1.9	1947	1.4	736	—	3/V 03 L3	—	BN80A4	M1LA4	28800	33100	52800	61000	19400	206
1.9	2124	1.9	715	—	3/V 05 L3	—	BN80A4	M1LA4	28500	32800	52300	60500	19200	216
2.0	1749	1.1	689	—	3/V 01 L3	—	BN80A4	—	9540	9720	25100	27500	6320	198
2.1	2255	2.7	671	—	—	3/A 06 L2	BN80A4	M1LA4	35000	39600	81000	95400	27400	227
2.2	1650	1.3	623	—	3/V 03 L3	—	BN80A4	M1LA4	27200	31400	50200	58000	18300	206
2.2	1717	2.6	623	—	3/V 05 L3	—	BN80A4	M1LA4	27200	31400	50200	58000	18300	216
2.3	2054	2.9	611	—	—	3/A 06 L2	BN80A4	M1LA4	33900	38300	78800	92800	26600	227
2.3	2061	1.6	594	—	—	3/A 05 L2	BN80A4	M1LA4	26800	30900	49500	57200	18000	217
2.4	1752	2.8	576	—	3/V 05 L3	—	BN80A4	M1LA4	26500	30600	49000	56700	17900	216
2.5	1428	1.0	562	—	3/V 01 L3	—	BN80A4	—	8910	9080	23600	25900	5900	198
2.5	1439	1.9	544	—	3/V 03 L3	—	BN80A4	M1LA4	26000	30000	48200	55700	17500	206
2.6	1570	2.5	529	—	3/V 05 L3	—	BN80A4	M1LA4	25800	29700	47800	55300	17300	216
2.7	1293	1.5	509	—	3/V 01 L3	—	BN80A4	—	8620	8780	22900	25100	5710	198
2.7	1455	1.3	502	—	3/V 03 L3	—	BN80A4	M1LA4	25300	29200	47100	54400	17100	206
2.8	1718	1.0	495	—	—	3/A 03 L2	BN80A4	M1LA4	25200	29000	46900	54200	17000	207
2.8	1704	2.3	491	—	—	3/A 05 L2	BN80A4	M1LA4	25100	29000	46700	54000	16900	217
3.0	1219	1.8	460	—	3/V 03 L3	—	BN80A4	M1LA4	24600	28400	45800	53000	16600	206

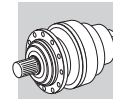


P₁ = 0.55 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]						
									MC	MZ	HC/PC	HZ/PZ	FZ		
3.1	1235	1.5	443	—	3/V 01 L3	—	BN80A4	—	—	8230	8380	21900	24100	5450	198
3.2	1245	1.5	430	—	3/V 01 L3	—	BN80A4	—	—	8150	8300	21800	23900	5400	198
3.3	1465	2.8	422	—	—	3/A 05 L2	BN80A4	M1LA4	—	23900	27500	44700	51700	16100	217
3.4	1420	1.3	409	—	—	3/A 03 L2	BN80A4	M1LA4	—	23700	27300	44300	51200	15900	207
3.5	1382	2.3	398	—	—	3/A 05 L2	BN80A4	M1LA4	—	23400	27000	43900	50800	15800	217
3.5	1144	1.9	395	—	3/V 03 L3	—	BN80A4	M1LA4	—	23400	26900	43800	50600	15700	206
3.8	1264	1.1	364	—	—	3/A 01 L2	BN80A4	M1LA4	—	7710	7860	20700	22700	5110	199
3.9	1221	1.7	352	—	—	3/A 03 L2	BN80A4	M1LA4	—	22500	25900	42300	48900	15100	207
4.2	1130	1.5	326	—	—	3/A 03 L2	BN80A4	M1LA4	—	21900	25300	41300	47800	14800	207
4.4	1079	1.1	311	—	—	3/A 01 L2	BN80A4	M1LA4	—	7320	7450	19700	21700	4850	199
5.1	934	1.9	269	—	—	3/A 03 L2	BN80A4	M1LA4	—	20600	23700	39000	45100	13900	207
5.1	933	1.1	269	—	—	3/A 01 L2	BN80A4	M1LA4	—	6970	7100	18900	20700	4620	199
5.4	885	1.3	255	—	—	3/A 01 L2	BN80A4	M1LA4	—	6850	6980	18600	20400	4530	199
6.3	763	2.2	220	—	—	3/A 03 L2	BN80A4	M1LA4	—	19200	22200	36700	42500	12900	207
6.3	762	1.1	220	—	—	3/A 01 L2	BN80A4	M1LA4	—	6510	6640	17800	19500	4310	199
6.8	709	1.8	204	—	—	3/A 01 L2	BN80A4	M1LA4	—	6360	6480	17400	19100	4210	199
6.8	703	0.9	203	—	—	3/A 00 L2	BN80A4	M1LA4	—	6340	6460	17400	19000	4200	191
7.5	639	1.6	184	—	—	3/A 01 L2	BN80A4	M1LA4	—	6140	6260	16900	18500	4070	199
7.6	630	2.9	182	—	—	3/A 03 L2	BN80A4	M1LA4	—	18000	20800	34700	40100	12200	207
8.1	595	0.9	171	—	—	3/A 00 L2	BN80A4	M1LA4	—	6000	6110	16500	18100	3970	191
8.3	577	2.0	166	—	—	3/A 01 L2	BN80A4	M1LA4	—	5940	6050	16400	17900	3930	199
10.3	465	1.2	134	—	—	3/A 00 L2	BN80A4	M1LA4	—	5520	5630	15300	16800	3660	191
10.4	463	2.8	133	—	—	3/A 01 L2	BN80A4	M1LA4	—	5520	5620	15300	16800	3650	199
12.9	372	1.7	107	—	—	3/A 00 L2	BN80A4	M1LA4	—	5130	5230	14300	15700	3400	191
13.8	347	1.6	100	—	—	3/A 00 L2	BN80A4	M1LA4	—	5010	5110	14000	15400	3320	191
15.6	307	1.8	88.6	—	—	3/A 00 L2	BN80A4	M1LA4	—	4810	4900	13500	14900	3190	191
17.2	278	2.3	80.2	—	—	3/A 00 L2	BN80A4	M1LA4	—	4660	4740	13100	14400	3080	191
19.4	246	2.6	71.0	—	—	3/A 00 L2	BN80A4	M1LA4	—	4470	4550	12700	13900	2960	191

P₁ = 0.75 kW n₁=1400 min⁻¹

0.28	17268	1.3	5081	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.30	15759	1.9	4637	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.35	15784	1.9	4036	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.39	12632	2.3	3570	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.43	12799	2.3	3273	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.49	11087	2.6	2835	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	—	133000	166000	65000	257
0.57	8323	1.3	2472	—	3/V 07 L3	—	BN80B4	M2SA4	61400	76600	109000	145000	45000	236	
0.63	8639	2.6	2209	—	3/V 10 L4	—	BN80B4	M2SA4	—	—	133000	166000	65000	257	
0.65	7650	1.4	2150	—	3/V 07 L3	—	BN80B4	M2SA4	58600	73100	109000	145000	45000	236	
0.65	7509	1.1	2139	—	3/V 06 L3	—	BN80B4	M2SA4	51400	58200	101000	119000	35000	226	
0.71	6610	1.9	1964	—	3/V 07 L3	—	BN80B4	M2SA4	56800	71000	109000	145000	45000	236	
0.79	6208	1.4	1768	—	3/V 06 L3	—	BN80B4	M2SA4	48300	54600	101000	119000	35000	226	
0.91	5648	1.9	1545	—	3/V 07 L3	—	BN80B4	M2SA4	52500	65500	109000	145000	45000	236	
0.98	4954	0.9	1431	—	3/V 05 L3	—	BN80B4	M2SA4	35900	41400	64000	74000	24000	216	
0.99	5023	2.4	1411	—	3/V 07 L3	—	BN80B4	M2SA4	50900	63600	109000	145000	45000	236	
1.0	5099	1.7	1395	—	3/V 06 L3	—	BN80B4	M2SA4	44600	50500	100900	118900	35000	226	
1.1	4262	1.3	1231	—	3/V 05 L3	—	BN80B4	M2SA4	34200	39400	61600	71200	23000	216	
1.2	4255	1.7	1212	—	3/V 06 L3	—	BN80B4	M2SA4	42600	48200	96700	114000	33400	226	
1.2	4292	2.5	1159	—	3/V 07 L3	—	BN80B4	M2SA4	47700	59500	103000	137000	42300	236	
1.2	4215	1.9	1153	—	3/V 06 L3	—	BN80B4	M2SA4	41900	47400	95300	112300	32800	226	
1.3	4294	1.0	1116	—	3/V 05 L3	—	BN80B4	M2SA4	33100	38100	59800	69100	22300	216	
1.3	3661	1.2	1057	—	3/V 05 L3	—	BN80B4	M2SA4	32500	37400	58800	68000	21900	216	
1.4	3626	2.5	992	—	3/V 06 L3	—	BN80B4	M2SA4	39800	45000	91100	107300	31200	226	
1.5	3757	2.1	930	—	3/V 06 L3	—	BN80B4	M2SA4	39000	44100	89300	105300	30500	226	
1.6	3440	1.2	894	—	3/V 05 L3	—	BN80B4	M2SA4	30700	35400	55900	64700	20700	216	
1.8	2936	1.4	793	—	3/V 05 L3	—	BN80B4	M2SA4	29500	34000	54000	62400	19900	216	
1.8	2889	2.6	791	—	3/V 06 L3	—	BN80B4	M2SA4	36900	41800	85100	100200	28900	226	
1.9	2618	1.0	736	—	3/V 03 L3	—	BN80B4	M2SA4	28800	33100	52800	61000	19400	206	
2.0	2855	1.4	715	—	3/V 05 L3	—	BN80B4	M2SA4	28500	32800	52300	60500	19200	216	

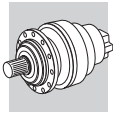


$P_1 = 0.75 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$






n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.0	2851	2.6	698	—	3/V 06 L3	—	BN80B4	M2SA4	35400	40100	81900	96600	27700	226
2.1	3031	2.0	671	—	—	3/A 06 L2	BN80B4	M2SA4	35000	39600	81000	95400	27400	227
2.2	2217	1.0	623	—	3/V 03 L3	—	BN80B4	M2SA4	27200	31400	50200	58000	18300	206
2.2	2307	1.9	623	—	3/V 05 L3	—	BN80B4	M2SA4	27200	31400	50200	58000	18300	216
2.3	2760	2.2	611	—	—	3/A 06 L2	BN80B4	M2SA4	33900	38300	78800	92800	26600	227
2.4	2771	1.2	594	—	—	3/A 05 L2	BN80B4	M2SA4	26800	30900	49500	57200	18000	217
2.4	2355	2.1	576	—	3/V 05 L3	—	BN80B4	M2SA4	26500	30600	49000	56700	17900	216
2.5	2506	2.9	555	—	—	3/A 06 L2	BN80B4	M2SA4	32800	37100	76500	90200	25700	227
2.6	1934	1.4	544	—	3/V 03 L3	—	BN80B4	M2SA4	26000	30000	48200	55700	17500	206
2.6	2110	1.9	529	—	3/V 05 L3	—	BN80B4	M2SA4	25800	29700	47800	55300	17300	216
2.8	1738	1.1	509	—	3/V 01 L3	—	BN80B4	—	8620	8780	22900	25100	5710	198
2.8	1956	1.0	502	—	3/V 03 L3	—	BN80B4	M2SA4	25300	29200	47100	54400	17100	206
2.9	2291	1.7	491	—	—	3/A 05 L2	BN80B4	M2SA4	25100	29000	46700	54000	16900	217
3.0	1887	2.5	462	—	3/V 05 L3	—	BN80B4	M2SA4	24600	28400	45900	53000	16600	216
3.0	1639	1.3	460	—	3/V 03 L3	—	BN80B4	M2SA4	24600	28400	45800	53000	16600	206
3.2	1661	1.2	443	—	3/V 01 L3	—	BN80B4	—	8230	8380	21900	24100	5450	198
3.3	1674	1.1	430	—	3/V 01 L3	—	BN80B4	—	8150	8300	21800	23900	5400	198
3.3	1969	2.1	422	—	—	3/A 05 L2	BN80B4	M2SA4	23900	27500	44700	51700	16100	217
3.4	1909	1.0	409	—	—	3/A 03 L2	BN80B4	M2SA4	23700	27300	44300	51200	15900	207
3.5	1858	1.7	398	—	—	3/A 05 L2	BN80B4	M2SA4	23400	27000	43900	50800	15800	217
3.5	1621	2.3	396	—	3/V 05 L3	—	BN80B4	M2SA4	23400	27000	43800	50700	15800	216
3.5	1537	1.4	395	—	3/V 03 L3	—	BN80B4	M2SA4	23400	26900	43800	50600	15700	206
4.0	1641	1.2	352	—	—	3/A 03 L2	BN80B4	M2SA4	22500	25900	42300	48900	15100	207
4.3	1536	2.4	329	—	—	3/A 05 L2	BN80B4	M2SA4	22000	25400	41500	47900	14800	217
4.3	1518	1.1	326	—	—	3/A 03 L2	BN80B4	M2SA4	21900	25300	41300	47800	14800	207
5.0	1304	2.8	280	—	—	3/A 05 L2	BN80B4	M2SA4	20800	24000	39500	45600	14000	217
5.2	1255	1.4	269	—	—	3/A 03 L2	BN80B4	M2SA4	20600	23700	39000	45100	13900	207
5.5	1189	1.0	255	—	—	3/A 01 L2	BN80B4	M2SA4	6850	6980	18600	20400	4530	199
6.4	1025	1.6	220	—	—	3/A 03 L2	BN80B4	M2SA4	19200	22200	36700	42500	12900	207
6.9	953	1.4	204	—	—	3/A 01 L2	BN80B4	M2SA4	6360	6480	17400	19100	4210	199
7.6	858	1.2	184	—	—	3/A 01 L2	BN80B4	M2SA4	6140	6260	16900	18500	4070	199
7.7	847	2.1	182	—	—	3/A 03 L2	BN80B4	M2SA4	18000	20800	34700	40100	12200	207
8.4	776	1.5	166	—	—	3/A 01 L2	BN80B4	M2SA4	5940	6050	16400	17900	3930	199
9.0	729	2.9	156	—	—	3/A 03 L2	BN80B4	M2SA4	17200	19800	33200	38300	11600	207
9.9	659	2.7	141	—	—	3/A 03 L2	BN80B4	M2SA4	16600	19100	32200	37200	11200	207
10.5	622	2.1	133	—	—	3/A 01 L2	BN80B4	M2SA4	5520	5620	15300	16800	3650	199
13.0	501	1.3	107	—	—	3/A 00 L2	BN80B4	M2SA4	5130	5230	14300	15700	3400	191
13.8	474	2.4	102	—	—	3/A 01 L2	BN80B4	M2SA4	5040	5130	14100	15500	3340	199
14.0	467	1.2	100	—	—	3/A 00 L2	BN80B4	M2SA4	5010	5110	14000	15400	3320	191
15.8	413	1.3	88.6	—	—	3/A 00 L2	BN80B4	M2SA4	4810	4900	13500	14900	3190	191
17.5	374	1.7	80.2	—	—	3/A 00 L2	BN80B4	M2SA4	4660	4740	13100	14400	3080	191
19.7	331	2.0	71.0	—	—	3/A 00 L2	BN80B4	M2SA4	4470	4550	12700	13900	2960	191
22.9	285	2.3	61.2	—	—	3/A 00 L2	BN80B4	M2SA4	4250	4330	12100	13300	2820	191
27.0	242	2.3	51.8	—	—	3/A 00 L2	BN80B4	M2SA4	4030	4100	11500	12600	2670	191
35	185	3.0	39.6	—	—	3/A 00 L2	BN80B4	M2SA4	3680	3750	10600	11700	2440	191

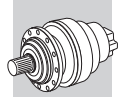
$P_1 = 1.1 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

0.28	25326	0.9	5081	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.28	25499	2.2	5046	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277
0.28	26055	1.7	5021	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.30	23113	1.3	4637	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.31	23849	2.3	4536	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277
0.32	23187	1.9	4410	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.35	21270	2.6	4046	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277
0.35	23151	1.3	4036	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.35	20213	1.8	4000	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.39	18526	1.6	3570	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.39	17971	2.5	3557	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.40	20163	2.7	3515	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277








$P_1 = 1.1 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.43	18771	1.6	3273	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.43	18713	2.9	3263	—	3/V 13 L4	—	BN90S4	M2SB4	—	—	192000	231000	80000	277
0.43	18478	2.4	3222	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.48	16361	2.8	2887	—	3/V 11 L4	—	BN90S4	M2SB4	—	—	157000	195000	65000	267
0.49	16261	1.8	2835	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.57	12207	0.9	2472	—	3/V 07 L3	—	BN90S4	M2SB4	61400	76600	109000	145000	45000	236
0.57	14246	2.1	2455	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.63	12671	1.8	2209	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.65	11220	1.0	2150	—	3/V 07 L3	—	BN90S4	M2SB4	58600	73100	109000	145000	45000	236
0.69	11563	2.6	2016	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.71	9695	1.3	1964	—	3/V 07 L3	—	BN90S4	M2SB4	56800	71000	109000	145000	45000	236
0.77	10474	2.4	1826	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.79	9105	0.9	1768	—	3/V 06 L3	—	BN90S4	M2SB4	48300	54600	101000	119000	35000	226
0.84	9616	2.4	1657	—	3/V 10 L4	—	BN90S4	M2SB4	—	—	133000	166000	65000	257
0.91	8283	1.3	1545	—	3/V 07 L3	—	BN90S4	M2SB4	52500	65500	109000	145000	45000	236
0.99	7367	1.7	1411	—	3/V 07 L3	—	BN90S4	M2SB4	50900	63600	109000	145000	45000	236
1.0	7478	1.1	1395	—	3/V 06 L3	—	BN90S4	M2SB4	44600	50500	100900	118900	35000	226
1.1	6723	2.1	1288	—	3/V 07 L3	—	BN90S4	M2SB4	49400	61600	106300	141400	43800	236
1.2	6241	1.2	1212	—	3/V 06 L3	—	BN90S4	M2SB4	42600	48200	96700	114000	33400	226
1.2	6294	1.7	1159	—	3/V 07 L3	—	BN90S4	M2SB4	47700	59500	103000	137000	42300	236
1.2	6182	1.3	1153	—	3/V 06 L3	—	BN90S4	M2SB4	41900	47400	95300	112300	32800	226
1.4	5439	2.6	1015	—	3/V 07 L3	—	BN90S4	M2SB4	45600	56900	99000	131600	40400	236
1.4	5318	1.7	992	—	3/V 06 L3	—	BN90S4	M2SB4	39800	45000	91100	107300	31200	226
1.5	5510	1.4	930	—	3/V 06 L3	—	BN90S4	M2SB4	39000	44100	89300	105300	30500	226
1.5	4999	2.5	920	—	3/V 07 L3	—	BN90S4	M2SB4	44200	55100	96100	127900	39100	236
1.8	4307	1.0	793	—	3/V 05 L3	—	BN90S4	M2SB4	29500	34000	54000	62400	19900	216
1.8	4238	1.8	791	—	3/V 06 L3	—	BN90S4	M2SB4	36900	41800	85100	100200	28900	226
1.8	4578	2.2	773	—	3/V 07 L3	—	BN90S4	M2SB4	41700	52000	91200	121300	36900	236
2.0	4188	1.0	715	—	3/V 05 L3	—	BN90S4	M2SB4	28500	32800	52300	60500	19200	216
2.0	4182	1.8	698	—	3/V 06 L3	—	BN90S4	M2SB4	35400	40100	81900	96600	27700	226
2.1	4446	1.4	671	—	—	3/A 06 L2	BN90S4	M2SB4	35000	39600	81000	95400	27400	227
2.1	3918	2.2	661	—	3/V 06 L3	—	BN90S4	M2SB4	34800	39400	80700	95000	27300	226
2.2	3384	1.3	623	—	3/V 05 L3	—	BN90S4	M2SB4	27200	31400	50200	58000	18300	216
2.3	4049	1.5	611	—	—	3/A 06 L2	BN90S4	M2SB4	33900	38300	78800	92800	26600	227
2.4	3453	1.4	576	—	3/V 05 L3	—	BN90S4	M2SB4	26500	30600	49000	56700	17900	216
2.5	3371	2.5	569	—	3/V 06 L3	—	BN90S4	M2SB4	33100	37400	77100	90800	25900	226
2.5	3675	2.0	555	—	—	3/A 06 L2	BN90S4	M2SB4	32800	37100	76500	90200	25700	227
2.6	2837	1.0	544	—	3/V 03 L3	—	BN90S4	M2SB4	26000	30000	48200	55700	17500	206
2.6	3095	1.3	529	—	3/V 05 L3	—	BN90S4	M2SB4	25800	29700	47800	55300	17300	216
2.7	3122	2.4	527	—	3/V 06 L3	—	BN90S4	M2SB4	32200	36500	75300	88800	25300	226
2.8	3347	2.1	505	—	—	3/A 06 L2	BN90S4	M2SB4	31800	36000	74400	87700	24900	227
2.9	3360	1.2	491	—	—	3/A 05 L2	BN90S4	M2SB4	25100	29000	46700	54000	16900	217
3.0	2767	1.7	462	—	3/V 05 L3	—	BN90S4	M2SB4	24600	28400	45900	53000	16600	216
3.0	2403	0.9	460	—	3/V 03 L3	—	BN90S4	M2SB4	24600	28400	45800	53000	16600	206
3.2	2879	2.7	435	—	—	3/A 06 L2	BN90S4	M2SB4	30200	34200	71100	83800	23700	227
3.3	2888	1.4	422	—	—	3/A 05 L2	BN90S4	M2SB4	23900	27500	44700	51700	16100	217
3.5	2725	1.1	398	—	—	3/A 05 L2	BN90S4	M2SB4	23400	27000	43900	50800	15800	217
3.5	2377	1.6	396	—	3/V 05 L3	—	BN90S4	M2SB4	23400	27000	43800	50700	15800	216
3.5	2255	1.0	395	—	3/V 03 L3	—	BN90S4	M2SB4	23400	26900	43800	50600	15700	206
3.6	2568	2.2	388	—	—	3/A 06 L2	BN90S4	M2SB4	29100	32900	68700	81000	22800	227
4.3	2252	1.6	329	—	—	3/A 05 L2	BN90S4	M2SB4	22000	25400	41500	47900	14800	217
5.0	1913	1.9	280	—	—	3/A 05 L2	BN90S4	M2SB4	20800	24000	39500	45600	14000	217
5.2	1841	1.0	269	—	—	3/A 03 L2	BN90S4	M2SB4	20600	23700	39000	45100	13900	207
5.8	1646	2.6	241	—	—	3/A 05 L2	BN90S4	M2SB4	19800	22800	37700	43600	13300	217
6.4	1503	1.1	220	—	—	3/A 03 L2	BN90S4	M2SB4	19200	22200	36700	42500	12900	207
6.6	1452	2.1	212	—	—	3/A 05 L2	BN90S4	M2SB4	19000	21900	36300	42000	12800	217
6.9	1397	0.9	204	—	—	3/A 01 L2	BN90S4	M2SB4	6360	6480	17400	19100	4210	199
7.7	1243	1.4	182	—	—	3/A 03 L2	BN90S4	M2SB4	18000	20800	34700	40100	12200	207
8.0	1200	3.0	175	—	—	3/A 05 L2	BN90S4	M2SB4	17800	20600	34300	39700	12000	217
8.4	1138	1.0	166	—	—	3/A 01 L2	BN90S4	M2SB4	5940	6050	16400	17900	3930	199
8.6	1111	2.6	162	—	—	3/A 05 L2	BN90S4	M2SB4	17400	20000	33500	38800	11700	217
9.0	1068	2.0	156	—	—	3/A 03 L2	BN90S4	M2SB4	17200	19800	33200	38300	11600	207

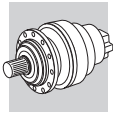


P₁ = 1.1 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
9.9	967	1.9	141	—	—	3/A 03 L2	BN90S4	M2SB4	16600	19100	32200	37200	11200	207
10.5	912	1.4	133	—	—	3/A 01 L2	BN90S4	M2SB4	5520	5620	15300	16800	3650	199
11.5	831	2.6	122	—	—	3/A 03 L2	BN90S4	M2SB4	15800	18200	30700	35600	10600	207
13.8	695	1.7	102	—	—	3/A 01 L2	BN90S4	M2SB4	5040	5130	14100	15500	3340	199
14.4	663	2.5	96.9	—	—	3/A 03 L2	BN90S4	M2SB4	14600	16900	28700	33200	9850	207
15.8	606	0.9	88.6	—	—	3/A 00 L2	BN90S4	M2SB4	4810	4900	13500	14900	3190	191
15.8	605	2.7	88.5	—	—	3/A 03 L2	BN90S4	M2SB4	14200	16400	28000	32300	9560	207
17.2	557	2.3	81.3	—	—	3/A 01 L2	BN90S4	M2SB4	4680	4770	13200	14500	3100	199
17.5	549	1.2	80.2	—	—	3/A 00 L2	BN90S4	M2SB4	4660	4740	13100	14400	3080	191
18.9	507	2.3	74.2	—	—	3/A 01 L2	BN90S4	M2SB4	4540	4620	12800	14100	3000	199
19.7	486	1.3	71.0	—	—	3/A 00 L2	BN90S4	M2SB4	4470	4550	12700	13900	2960	191
22.9	418	1.6	61.2	—	—	3/A 00 L2	BN90S4	M2SB4	4250	4330	12100	13300	2820	191
27.0	355	1.6	51.8	—	—	3/A 00 L2	BN90S4	M2SB4	4030	4100	11500	12600	2670	191
28.5	336	2.3	49.1	—	—	3/A 01 L2	BN90S4	M2SB4	3950	4030	11300	12400	2620	199
34	284	2.3	41.5	—	—	3/A 00 L2	BN90S4	M2SB4	3740	3810	10800	11800	2480	191
35	271	2.0	39.6	—	—	3/A 00 L2	BN90S4	M2SB4	3680	3750	10600	11700	2440	191
44	217	3.0	31.7	—	—	3/A 00 L2	BN90S4	M2SB4	3420	3480	9950	10900	2260	191

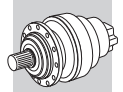
P₁ = 1.5 kW n₁=1400 min⁻¹

0.28	34525	1.6	5046	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.28	35277	1.3	5021	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.30	31294	0.9	4637	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.31	32291	1.7	4536	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.32	31394	1.4	4410	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.35	28799	1.9	4046	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.35	31345	0.9	4036	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.35	27367	1.3	4000	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.39	25084	1.2	3570	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.40	24333	1.8	3557	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.40	27301	2.0	3515	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.43	25416	1.2	3273	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.43	25337	2.2	3263	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.44	25019	1.8	3222	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.49	22153	2.0	2887	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.50	22017	1.3	2835	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.51	19741	2.8	2773	—	3/V 13 L4	—	BN90LA4	M3SA4	—	—	192000	231000	80000	277
0.56	19495	2.3	2510	—	3/V 11 L4	—	BN90LA4	M3SA4	—	—	157000	195000	65000	267
0.57	19289	1.6	2455	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.64	17156	1.3	2209	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.70	15656	1.9	2016	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.72	13127	1.0	1964	—	3/V 07 L3	—	BN90LA4	M3SA4	56800	71000	109000	145000	45000	236
0.77	14182	1.8	1826	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.85	13020	1.8	1657	—	3/V 10 L4	—	BN90LA4	M3SA4	—	—	133000	166000	65000	257
0.91	11215	1.0	1545	—	3/V 07 L3	—	BN90LA4	M3SA4	52500	65500	109000	145000	45000	236
1.0	9974	1.2	1411	—	3/V 07 L3	—	BN90LA4	M3SA4	50900	63600	109000	145000	45000	236
1.1	9102	1.5	1288	—	3/V 07 L3	—	BN90LA4	M3SA4	49400	61600	106300	141400	43800	236
1.2	8522	1.3	1159	—	3/V 07 L3	—	BN90LA4	M3SA4	47700	59500	103000	137000	42300	236
1.2	8370	1.0	1153	—	3/V 06 L3	—	BN90LA4	M3SA4	41900	47400	95300	112300	32800	226
1.4	7364	1.9	1015	—	3/V 07 L3	—	BN90LA4	M3SA4	45600	56900	99000	131600	40400	236
1.4	7200	1.3	992	—	3/V 06 L3	—	BN90LA4	M3SA4	39800	45000	91100	107300	31200	226
1.5	7460	1.1	930	—	3/V 06 L3	—	BN90LA4	M3SA4	39000	44100	89300	105300	30500	226
1.5	6769	1.8	920	—	3/V 07 L3	—	BN90LA4	M3SA4	44200	55100	96100	127900	39100	236
1.8	5737	1.3	791	—	3/V 06 L3	—	BN90LA4	M3SA4	36900	41800	85100	100200	28900	226
1.8	6198	1.6	773	—	3/V 07 L3	—	BN90LA4	M3SA4	41700	52000	91200	121300	36900	236
1.9	5595	2.5	761	—	3/V 07 L3	—	BN90LA4	M3SA4	41400	51700	90800	120800	36700	236
2.0	5662	1.3	698	—	3/V 06 L3	—	BN90LA4	M3SA4	35400	40100	81900	96600	27700	226
2.1	6020	1.0	671	—	—	3/A 06 L2	BN90LA4	M3SA4	35000	39600	81000	95400	27400	227
2.1	5305	1.6	661	—	3/V 06 L3	—	BN90LA4	M3SA4	34800	39400	80700	95000	27300	226
2.2	4813	2.9	655	—	3/V 07 L3	—	BN90LA4	M3SA4	39400	49200	86800	115400	34900	236



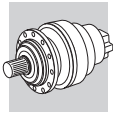
$P_1 = 1.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
2.3	4582	1.0	623	—	3/V 05 L3	—	BN90LA4	M3SA4	27200	31400	50200	58000	18300	216
2.3	5482	1.1	611	—	—	3/A 06 L2	BN90LA4	M3SA4	33900	38300	78800	92800	26600	227
2.4	4676	1.0	576	—	3/V 05 L3	—	BN90LA4	M3SA4	26500	30600	49000	56700	17900	216
2.5	4564	1.9	569	—	3/V 06 L3	—	BN90LA4	M3SA4	33100	37400	77100	90800	25900	226
2.5	4976	1.4	555	—	—	3/A 06 L2	BN90LA4	M3SA4	32800	37100	76500	90200	25700	227
2.7	4190	0.9	529	—	3/V 05 L3	—	BN90LA4	M3SA4	25800	29700	47800	55300	17300	216
2.7	4228	1.8	527	—	3/V 06 L3	—	BN90LA4	M3SA4	32200	36500	75300	88800	25300	226
2.8	4531	1.6	505	—	—	3/A 06 L2	BN90LA4	M3SA4	31800	36000	74400	87700	24900	227
3.1	3747	1.3	462	—	3/V 05 L3	—	BN90LA4	M3SA4	24600	28400	45900	53000	16600	216
3.2	3933	2.3	439	—	—	3/A 07 L2	BN90LA4	M3SA4	34500	43000	77000	102400	30600	237
3.2	3898	2.0	435	—	—	3/A 06 L2	BN90LA4	M3SA4	30200	34200	71100	83800	23700	227
3.3	3463	2.4	427	—	3/V 06 L3	—	BN90LA4	M3SA4	30100	34000	70700	83300	23600	226
3.3	3910	1.1	422	—	—	3/A 05 L2	BN90LA4	M3SA4	23900	27500	44700	51700	16100	217
3.5	3632	2.5	405	—	—	3/A 07 L2	BN90LA4	M3SA4	33600	41900	75100	99900	29800	237
3.6	3218	1.2	396	—	3/V 05 L3	—	BN90LA4	M3SA4	23400	27000	43800	50700	15800	216
3.6	3208	2.3	395	—	3/V 06 L3	—	BN90LA4	M3SA4	29300	33100	69100	81400	23000	226
3.6	3477	1.6	388	—	—	3/A 06 L2	BN90LA4	M3SA4	29100	32900	68700	81000	22800	227
3.6	3210	2.8	386	—	3/V 07 L3	—	BN90LA4	M3SA4	33100	41300	74100	98500	29300	236
4.3	3050	1.2	329	—	—	3/A 05 L2	BN90LA4	M3SA4	22000	25400	41500	47900	14800	217
4.4	2875	2.3	321	—	—	3/A 06 L2	BN90LA4	M3SA4	27300	30900	64900	76500	21400	227
5.0	2590	1.4	280	—	—	3/A 05 L2	BN90LA4	M3SA4	20800	24000	39500	45600	14000	217
5.3	2394	2.3	267	—	—	3/A 06 L2	BN90LA4	M3SA4	25700	29100	61400	72400	20100	227
5.9	2228	1.9	241	—	—	3/A 05 L2	BN90LA4	M3SA4	19800	22800	37700	43600	13300	217
6.6	1966	1.6	212	—	—	3/A 05 L2	BN90LA4	M3SA4	19000	21900	36300	42000	12800	217
7.8	1683	1.1	182	—	—	3/A 03 L2	BN90LA4	M3SA4	18000	20800	34700	40100	12200	207
8.0	1625	2.2	175	—	—	3/A 05 L2	BN90LA4	M3SA4	17800	20600	34300	39700	12000	217
8.7	1504	1.9	162	—	—	3/A 05 L2	BN90LA4	M3SA4	17400	20000	33500	38800	11700	217
9.0	1447	1.5	156	—	—	3/A 03 L2	BN90LA4	M3SA4	17200	19800	33200	38300	11600	207
10.0	1309	1.4	141	—	—	3/A 03 L2	BN90LA4	M3SA4	16600	19100	32200	37200	11200	207
10.0	1304	2.8	141	—	—	3/A 05 L2	BN90LA4	M3SA4	16600	19100	32100	37100	11200	217
10.6	1235	1.1	133	—	—	3/A 01 L2	BN90LA4	M3SA4	5520	5620	15300	16800	3650	199
11.6	1126	1.9	122	—	—	3/A 03 L2	BN90LA4	M3SA4	15800	18200	30700	35600	10600	207
13.9	940	1.2	102	—	—	3/A 01 L2	BN90LA4	M3SA4	5040	5130	14100	15500	3340	199
14.6	898	1.9	96.9	—	—	3/A 03 L2	BN90LA4	M3SA4	14600	16900	28700	33200	9850	207
15.9	820	2.0	88.5	—	—	3/A 03 L2	BN90LA4	M3SA4	14200	16400	28000	32300	9560	207
17.3	754	1.7	81.3	—	—	3/A 01 L2	BN90LA4	M3SA4	4680	4770	13200	14500	3100	199
19.0	687	1.7	74.2	—	—	3/A 01 L2	BN90LA4	M3SA4	4540	4620	12800	14100	3000	199
19.3	678	2.7	73.2	—	—	3/A 03 L2	BN90LA4	M3SA4	13300	15400	26400	30500	8970	207
19.9	657	1.0	71.0	—	—	3/A 00 L2	BN90LA4	M3SA4	4470	4550	12700	13900	2960	191
22.4	583	2.7	62.9	—	—	3/A 03 L2	BN90LA4	M3SA4	12700	14600	25200	29200	8530	207
23.1	567	1.1	61.2	—	—	3/A 00 L2	BN90LA4	M3SA4	4250	4330	12100	13300	2820	191
23.7	551	2.3	59.4	—	—	3/A 01 L2	BN90LA4	M3SA4	4210	4290	12000	13200	2790	199
26.0	502	2.3	54.2	—	—	3/A 01 L2	BN90LA4	M3SA4	4090	4160	11700	12800	2710	199
27.2	480	1.1	51.8	—	—	3/A 00 L2	BN90LA4	M3SA4	4030	4100	11500	12600	2670	191
28.7	455	1.7	49.1	—	—	3/A 01 L2	BN90LA4	M3SA4	3950	4030	11300	12400	2620	199
32	406	2.3	43.9	—	—	3/A 01 L2	BN90LA4	M3SA4	3810	3880	11000	12000	2520	199
34	385	1.7	41.5	—	—	3/A 00 L2	BN90LA4	M3SA4	3740	3810	10800	11800	2480	191
35	371	2.3	40.1	—	—	3/A 01 L2	BN90LA4	M3SA4	3690	3760	10700	11700	2450	199
36	367	1.5	39.6	—	—	3/A 00 L2	BN90LA4	M3SA4	3680	3750	10600	11700	2440	191
39	332	2.3	35.8	—	—	3/A 01 L2	BN90LA4	M3SA4	3560	3630	10300	11300	2360	199
44	294	2.2	31.7	—	—	3/A 00 L2	BN90LA4	M3SA4	3420	3480	9950	10900	2260	191
60	217	2.7	23.4	—	—	3/A 00 L2	BN90LA4	M3SA4	3090	3150	9090	9970	2050	191
74	177	2.7	19.1	—	—	3/A 00 L2	BN90LA4	M3SA4	2890	2940	8550	9380	1910	191



$P_1 = 1.85 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.28	42885	1.3	5046	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.28	43819	1.0	5021	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.31	40110	1.4	4536	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.32	38996	1.1	4410	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.35	35773	1.5	4046	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.35	33994	1.1	4000	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.39	31158	0.9	3570	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.39	30225	1.5	3557	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.40	33911	1.6	3515	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.43	31570	1.0	3273	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.43	31472	1.7	3263	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.43	31077	1.4	3222	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.48	27517	1.6	2887	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.49	27348	1.1	2835	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.50	24522	2.2	2773	—	3/V 13 L4	—	BN90LB4	—	—	—	192000	231000	80000	277
0.56	24216	1.9	2510	—	3/V 11 L4	—	BN90LB4	—	—	—	157000	195000	65000	267
0.57	23960	1.3	2455	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.63	21310	1.1	2209	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.69	19447	1.5	2016	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.77	17616	1.4	1826	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.84	16173	1.4	1657	—	3/V 10 L4	—	BN90LB4	—	—	—	133000	166000	65000	257
0.99	12389	1.0	1411	—	3/V 07 L3	—	BN90LB4	—	50900	63600	109000	145000	45000	236
1.1	11306	1.2	1288	—	3/V 07 L3	—	BN90LB4	—	49400	61600	106300	141400	43800	236
1.2	10586	1.0	1159	—	3/V 07 L3	—	BN90LB4	—	47700	59500	103000	137000	42300	236
1.4	9147	1.6	1015	—	3/V 07 L3	—	BN90LB4	—	45600	56900	99000	131600	40400	236
1.4	8943	1.0	992	—	3/V 06 L3	—	BN90LB4	—	39800	45000	91100	107300	31200	226
1.5	8408	1.5	920	—	3/V 07 L3	—	BN90LB4	—	44200	55100	96100	127900	39100	236
1.8	7127	1.0	791	—	3/V 06 L3	—	BN90LB4	—	36900	41800	85100	100200	28900	226
1.8	7699	1.3	773	—	3/V 07 L3	—	BN90LB4	—	41700	52000	91200	121300	36900	236
1.8	6950	2.0	761	—	3/V 07 L3	—	BN90LB4	—	41400	51700	90800	120800	36700	236
2.0	7033	1.1	698	—	3/V 06 L3	—	BN90LB4	—	35400	40100	81900	96600	27700	226
2.1	6590	1.3	661	—	3/V 06 L3	—	BN90LB4	—	34800	39400	80700	95000	27300	226
2.1	5979	2.3	655	—	3/V 07 L3	—	BN90LB4	—	39400	49200	86800	115400	34900	236
2.5	5669	1.5	569	—	3/V 06 L3	—	BN90LB4	—	33100	37400	77100	90800	25900	226
2.5	6181	1.2	555	—	—	3/A 06 L2	BN90LB4	—	32800	37100	76500	90200	25700	227
2.7	5251	1.4	527	—	3/V 06 L3	—	BN90LB4	—	32200	36500	75300	88800	25300	226
2.8	5055	2.7	507	—	3/V 07 L3	—	BN90LB4	—	36200	45200	80400	106900	32100	236
2.8	5629	1.3	505	—	—	3/A 06 L2	BN90LB4	—	31800	36000	74400	87700	24900	227
3.0	4654	1.0	462	—	3/V 05 L3	—	BN90LB4	—	24600	28400	45900	53000	16600	216
3.0	4586	2.7	460	—	3/V 07 L3	—	BN90LB4	—	35000	43700	78100	103900	31100	236
3.2	4886	1.9	439	—	—	3/A 07 L2	BN90LB4	—	34500	43000	77000	102400	30600	237
3.2	4842	1.6	435	—	—	3/A 06 L2	BN90LB4	—	30200	34200	71100	83800	23700	227
3.3	4302	1.9	427	—	3/V 06 L3	—	BN90LB4	—	30100	34000	70700	83300	23600	226
3.5	4511	2.0	405	—	—	3/A 07 L2	BN90LB4	—	33600	41900	75100	99900	29800	237
3.5	3998	0.9	396	—	3/V 05 L3	—	BN90LB4	—	23400	27000	43800	50700	15800	216
3.5	3985	1.9	395	—	3/V 06 L3	—	BN90LB4	—	29300	33100	69100	81400	23000	226
3.6	4319	1.3	388	—	—	3/A 06 L2	BN90LB4	—	29100	32900	68700	81000	22800	227
3.6	3987	2.3	386	—	3/V 07 L3	—	BN90LB4	—	33100	41300	74100	98500	29300	236
4.1	3801	2.9	341	—	—	3/A 07 L2	BN90LB4	—	31700	39600	71400	94900	28100	237
4.3	3788	1.0	329	—	—	3/A 05 L2	BN90LB4	—	22000	25400	41500	47900	14800	217
4.4	3571	1.8	321	—	—	3/A 06 L2	BN90LB4	—	27300	30900	64900	76500	21400	227
5.0	3137	2.8	282	—	—	3/A 07 L2	BN90LB4	—	29800	37100	67400	89600	26400	237
5.0	3217	1.1	280	—	—	3/A 05 L2	BN90LB4	—	20800	24000	39500	45600	14000	217
5.1	3070	2.5	276	—	—	3/A 06 L2	BN90LB4	—	26000	29400	62000	73100	20400	227
5.2	2974	1.8	267	—	—	3/A 06 L2	BN90LB4	—	25700	29100	61400	72400	20100	227
5.8	2768	1.6	241	—	—	3/A 05 L2	BN90LB4	—	19800	22800	37700	43600	13300	217
6.3	2459	2.6	221	—	—	3/A 06 L2	BN90LB4	—	24100	27300	58000	68400	18900	227
6.6	2442	1.3	212	—	—	3/A 05 L2	BN90LB4	—	19000	21900	36300	42000	12800	217
7.1	2206	2.5	198	—	—	3/A 06 L2	BN90LB4	—	23300	26300	56200	66200	18200	227
8.0	2019	1.8	175	—	—	3/A 05 L2	BN90LB4	—	17800	20600	34300	39700	12000	217
8.6	1868	1.6	162	—	—	3/A 05 L2	BN90LB4	—	17400	20000	33500	38800	11700	217
9.0	1797	1.2	156	—	—	3/A 03 L2	BN90LB4	—	17200	19800	33200	38300	11600	207

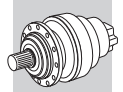


P₁ = 1.85 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
9.9	1627	1.1	141	—	—	3/A 03 L2	BN90LB4	—	16600	19100	32200	37200	11200	207
9.9	1619	2.2	141	—	—	3/A 05 L2	BN90LB4	—	16600	19100	32100	37100	11200	217
11.5	1398	1.5	122	—	—	3/A 03 L2	BN90LB4	—	15800	18200	30700	35600	10600	207
11.6	1392	2.5	121	—	—	3/A 05 L2	BN90LB4	—	15800	18200	30700	35500	10600	217
13.5	1191	2.6	104	—	—	3/A 05 L2	BN90LB4	—	15000	17200	29300	33900	10100	217
13.8	1168	1.0	102	—	—	3/A 01 L2	BN90LB4	—	5040	5130	14100	15500	3340	199
14.4	1115	1.5	96.9	—	—	3/A 03 L2	BN90LB4	—	14600	16900	28700	33200	9850	207
15.8	1018	1.6	88.5	—	—	3/A 03 L2	BN90LB4	—	14200	16400	28000	32300	9560	207
17.2	936	1.4	81.3	—	—	3/A 01 L2	BN90LB4	—	4680	4770	13200	14500	3100	199
18.9	853	1.3	74.2	—	—	3/A 01 L2	BN90LB4	—	4540	4620	12800	14100	3000	199
19.1	842	2.1	73.2	—	—	3/A 03 L2	BN90LB4	—	13300	15400	26400	30500	8970	207
22.3	724	2.1	62.9	—	—	3/A 03 L2	BN90LB4	—	12700	14600	25200	29200	8530	207
22.9	704	0.9	61.2	—	—	3/A 00 L2	BN90LB4	—	4250	4330	12100	13300	2820	191
23.6	684	1.8	59.4	—	—	3/A 01 L2	BN90LB4	—	4210	4290	12000	13200	2790	199
25.8	624	1.9	54.2	—	—	3/A 01 L2	BN90LB4	—	4090	4160	11700	12800	2710	199
26.7	604	2.7	52.5	—	—	3/A 03 L2	BN90LB4	—	11900	13700	23900	27600	8030	207
27.0	597	0.9	51.8	—	—	3/A 00 L2	BN90LB4	—	4030	4100	11500	12600	2670	191
28.5	565	1.3	49.1	—	—	3/A 01 L2	BN90LB4	—	3950	4030	11300	12400	2620	199
32	505	1.8	43.9	—	—	3/A 01 L2	BN90LB4	—	3810	3880	11000	12000	2520	199
34	478	1.4	41.5	—	—	3/A 00 L2	BN90LB4	—	3740	3810	10800	11800	2480	191
35	461	1.9	40.1	—	—	3/A 01 L2	BN90LB4	—	3690	3760	10700	11700	2450	199
35	456	1.2	39.6	—	—	3/A 00 L2	BN90LB4	—	3680	3750	10600	11700	2440	191
39	412	1.8	35.8	—	—	3/A 01 L2	BN90LB4	—	3560	3630	10300	11300	2360	199
44	365	1.8	31.7	—	—	3/A 00 L2	BN90LB4	—	3420	3480	9950	10900	2260	191
60	270	2.1	23.4	—	—	3/A 00 L2	BN90LB4	—	3090	3150	9090	9970	2050	191
73	220	2.1	19.1	—	—	3/A 00 L2	BN90LB4	—	2890	2940	8550	9380	1910	191

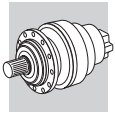
P₁ = 2.2 kW n₁=1400 min⁻¹

0.27	55888	1.8	5152	—	3/V 15 L4	—	BN100LA4	—	—	—	206000	243000	90000	287
0.28	55584	2.4	5124	—	3/V 16 L4	—	BN100LA4	—	—	—	502000	559800	172100	297
0.28	50637	1.1	5046	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.30	51685	2.0	4765	—	3/V 15 L4	—	BN100LA4	—	—	—	206000	243000	90000	287
0.31	47360	1.2	4536	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.32	46044	0.9	4410	—	3/V 11 L4	—	BN100LA4	M3LA4	—	—	157000	195000	65000	267
0.33	46830	2.8	4317	—	3/V 16 L4	—	BN100LA4	—	—	—	476900	531800	162500	297
0.35	42239	1.3	4046	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.35	43549	2.4	4015	—	3/V 15 L4	—	BN100LA4	—	—	—	206000	243000	90000	287
0.40	35688	1.3	3557	—	3/V 11 L4	—	BN100LA4	M3LA4	—	—	157000	195000	65000	267
0.40	40041	1.4	3515	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.43	37160	1.5	3263	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.44	36694	1.2	3222	—	3/V 11 L4	—	BN100LA4	M3LA4	—	—	157000	195000	65000	267
0.49	32490	1.4	2887	—	3/V 11 L4	—	BN100LA4	M3LA4	—	—	157000	195000	65000	267
0.50	32291	0.9	2835	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.51	28954	1.9	2773	—	3/V 13 L4	—	BN100LA4	M3LA4	—	—	192000	231000	80000	277
0.56	28593	1.6	2510	—	3/V 11 L4	—	BN100LA4	M3LA4	—	—	157000	195000	65000	267
0.57	28290	1.1	2455	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.58	25187	1.9	2430	—	3/V 13 L3	—	BN100LA4	—	—	—	192000	231000	80000	276
0.61	24144	1.4	2329	—	3/V 11 L3	—	BN100LA4	—	—	—	157000	195000	65000	266
0.64	25162	0.9	2209	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.70	20924	2.6	2019	—	3/V 13 L3	—	BN100LA4	—	—	—	192000	231000	80000	276
0.70	22962	1.3	2016	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.72	20343	2.1	1963	—	3/V 11 L3	—	BN100LA4	—	—	—	157000	195000	65000	266
0.77	20800	1.2	1826	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.85	19096	1.2	1657	—	3/V 10 L4	—	BN100LA4	M3LA4	—	—	133000	166000	65000	257
0.86	17411	2.5	1636	—	3/V 11 L3	—	BN100LA4	—	—	—	157000	195000	65000	266
0.87	16370	0.9	1623	—	3/V 09 L3	—	BN100LA4	—	—	—	110000	145000	36000	246
1.0	15222	1.4	1411	—	3/V 10 L3	—	BN100LA4	—	—	—	133000	166000	65000	256
1.0	14670	2.9	1378	—	3/V 11 L3	—	BN100LA4	—	—	—	156300	194100	64700	266
1.1	13350	1.0	1288	—	3/V 07 L3	—	BN100LA4	M3LA4	49400	61600	106300	141400	43800	236



P₁ = 2.2 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.1	13891	1.5	1288	—	3/V 09 L3	—	BN100LA4	—	—	—	107300	141400	35000	246
1.1	13567	2.6	1274	—	3/V 11 L3	—	BN100LA4	—	—	—	152600	189600	63000	266
1.1	13236	1.6	1227	—	3/V 10 L3	—	BN100LA4	—	—	—	127800	159600	62200	256
1.2	12986	1.3	1159	—	3/V 09 L3	—	BN100LA4	—	—	—	103900	137000	33800	246
1.3	12079	2.4	1120	—	3/V 10 L3	—	BN100LA4	—	—	—	124400	155300	60300	256
1.4	10800	1.3	1015	—	3/V 07 L3	—	BN100LA4	M3LA4	45600	56900	99000	131600	40400	236
1.4	10824	1.6	1004	—	3/V 09 L3	—	BN100LA4	—	—	—	99500	131200	32200	246
1.4	10824	2.8	1004	—	3/V 10 L3	—	BN100LA4	—	—	—	120400	150200	58200	256
1.5	10314	1.2	920	—	3/V 09 L3	—	BN100LA4	—	—	—	97000	127900	31300	246
1.5	9927	1.2	920	—	3/V 07 L3	—	BN100LA4	M3LA4	44200	55100	96100	127900	39100	236
1.5	10314	2.1	920	—	3/V 10 L3	—	BN100LA4	—	—	—	117300	146400	56500	256
1.8	8626	2.4	800	—	3/V 09 L3	—	BN100LA4	—	—	—	93000	122600	29900	246
1.8	9090	1.1	773	—	3/V 07 L3	—	BN100LA4	M3LA4	41700	52000	91200	121300	36900	236
1.9	8526	1.7	761	—	3/V 09 L3	—	BN100LA4	—	—	—	91600	120800	29400	246
1.9	8207	1.7	761	—	3/V 07 L3	—	BN100LA4	M3LA4	41400	51700	90800	120800	36700	236
2.0	8304	0.9	698	—	3/V 06 L3	—	BN100LA4	M3LA4	35400	40100	81900	96600	27700	226
2.1	7781	1.1	661	—	3/V 06 L3	—	BN100LA4	M3LA4	34800	39400	80700	95000	27300	226
2.2	7059	2.0	655	—	3/V 07 L3	—	BN100LA4	M3LA4	39400	49200	86800	115400	34900	236
2.2	7334	2.4	655	—	3/V 09 L3	—	BN100LA4	—	—	—	87600	115400	27900	246
2.5	6693	1.3	569	—	3/V 06 L3	—	BN100LA4	M3LA4	33100	37400	77100	90800	25900	226
2.5	7299	1.0	555	—	—	3/A 06 L2	BN100LA4	M3LA4	32800	37100	76500	90200	25700	227
2.7	6200	1.2	527	—	3/V 06 L3	—	BN100LA4	M3LA4	32200	36500	75300	88800	25300	226
2.8	5968	2.3	507	—	3/V 07 L3	—	BN100LA4	M3LA4	36200	45200	80400	106900	32100	236
2.8	6646	1.1	505	—	—	3/A 06 L2	BN100LA4	M3LA4	31800	36000	74400	87700	24900	227
3.1	5415	2.3	460	—	3/V 07 L3	—	BN100LA4	M3LA4	35000	43700	78100	103900	31100	236
3.2	5769	1.6	439	—	—	3/A 07 L2	BN100LA4	M3LA4	34500	43000	77000	102400	30600	237
3.2	5717	1.4	435	—	—	3/A 06 L2	BN100LA4	M3LA4	30200	34200	71100	83800	23700	227
3.3	5080	1.6	427	—	3/V 06 L3	—	BN100LA4	M3LA4	30100	34000	70700	83300	23600	226
3.5	5326	1.7	405	—	—	3/A 07 L2	BN100LA4	M3LA4	33600	41900	75100	99900	29800	237
3.6	4706	1.6	395	—	3/V 06 L3	—	BN100LA4	M3LA4	29300	33100	69100	81400	23000	226
3.6	5100	1.1	388	—	—	3/A 06 L2	BN100LA4	M3LA4	29100	32900	68700	81000	22800	227
3.6	4707	1.9	386	—	3/V 07 L3	—	BN100LA4	M3LA4	33100	41300	74100	98500	29300	236
4.1	4488	2.5	341	—	—	3/A 07 L2	BN100LA4	M3LA4	31700	39600	71400	94900	28100	237
4.4	4216	1.5	321	—	—	3/A 06 L2	BN100LA4	M3LA4	27300	30900	64900	76500	21400	227
5.0	3704	2.3	282	—	—	3/A 07 L2	BN100LA4	M3LA4	29800	37100	67400	89600	26400	237
5.0	3799	0.9	280	—	—	3/A 05 L2	BN100LA4	M3LA4	20800	24000	39500	45600	14000	217
5.1	3624	2.1	276	—	—	3/A 06 L2	BN100LA4	M3LA4	26000	29400	62000	73100	20400	227
5.3	3512	1.6	267	—	—	3/A 06 L2	BN100LA4	M3LA4	25700	29100	61400	72400	20100	227
5.8	3176	2.8	241	—	—	3/A 07 L2	BN100LA4	M3LA4	28300	35300	64300	85600	25000	237
5.9	3268	1.3	241	—	—	3/A 05 L2	BN100LA4	M3LA4	19800	22800	37700	43600	13300	217
6.4	2903	2.2	221	—	—	3/A 06 L2	BN100LA4	M3LA4	24100	27300	58000	68400	18900	227
6.6	2884	1.1	212	—	—	3/A 05 L2	BN100LA4	M3LA4	19000	21900	36300	42000	12800	217
7.1	2604	2.1	198	—	—	3/A 06 L2	BN100LA4	M3LA4	23300	26300	56200	66200	18200	227
8.0	2384	1.5	175	—	—	3/A 05 L2	BN100LA4	M3LA4	17800	20600	34300	39700	12000	217
8.7	2206	1.3	162	—	—	3/A 05 L2	BN100LA4	M3LA4	17400	20000	33500	38800	11700	217
9.0	2122	1.0	156	—	—	3/A 03 L2	BN100LA4	M3LA4	17200	19800	33200	38300	11600	207
10.0	1921	0.9	141	—	—	3/A 03 L2	BN100LA4	M3LA4	16600	19100	32200	37200	11200	207
10.0	1912	1.9	141	—	—	3/A 05 L2	BN100LA4	M3LA4	16600	19100	32100	37100	11200	217
11.6	1651	1.3	122	—	—	3/A 03 L2	BN100LA4	M3LA4	15800	18200	30700	35600	10600	207
11.7	1644	2.1	121	—	—	3/A 05 L2	BN100LA4	M3LA4	15800	18200	30700	35500	10600	217
13.6	1406	2.2	104	—	—	3/A 05 L2	BN100LA4	M3LA4	15000	17200	29300	33900	10100	217
14.6	1317	1.3	96.9	—	—	3/A 03 L2	BN100LA4	M3LA4	14600	16900	28700	33200	9850	207
15.9	1202	1.4	88.5	—	—	3/A 03 L2	BN100LA4	M3LA4	14200	16400	28000	32300	9560	207
17.3	1105	1.2	81.3	—	—	3/A 01 L2	BN100LA4	M3LA4	4680	4770	13200	14500	3100	199
19.0	1008	1.1	74.2	—	—	3/A 01 L2	BN100LA4	M3LA4	4540	4620	12800	14100	3000	199
19.3	994	1.8	73.2	—	—	3/A 03 L2	BN100LA4	M3LA4	13300	15400	26400	30500	8970	207
22.4	855	1.8	62.9	—	—	3/A 03 L2	BN100LA4	M3LA4	12700	14600	25200	29200	8530	207
23.7	807	1.6	59.4	—	—	3/A 01 L2	BN100LA4	M3LA4	4210	4290	12000	13200	2790	199
26.0	737	1.6	54.2	—	—	3/A 01 L2	BN100LA4	M3LA4	4090	4160	11700	12800	2710	199
26.9	713	2.3	52.5	—	—	3/A 03 L2	BN100LA4	M3LA4	11900	13700	23900	27600	8030	207
28.7	667	1.1	49.1	—	—	3/A 01 L2	BN100LA4	M3LA4	3950	4030	11300	12400	2620	199
32	596	1.6	43.9	—	—	3/A 01 L2	BN100LA4	M3LA4	3810	3880	11000	12000	2520	199

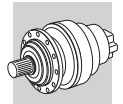


P₁ = 2.2 kW n₁=1400 min⁻¹






n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
32	590	2.9	43.4	—	—	3/A 03 L2	BN100LA4	M3LA4	11200	12900	22600	26100	7540	207
34	564	1.2	41.5	—	—	3/A 00 L2	BN100LA4	M3LA4	3740	3810	10800	11800	2480	191
35	550	3.0	40.5	—	—	3/A 03 L2	BN100LA4	M3LA4	10900	12600	22100	25600	7370	207
35	544	1.6	40.1	—	—	3/A 01 L2	BN100LA4	M3LA4	3690	3760	10700	11700	2450	199
36	538	1.0	39.6	—	—	3/A 00 L2	BN100LA4	M3LA4	3680	3750	10600	11700	2440	191
39	487	1.6	35.8	—	—	3/A 01 L2	BN100LA4	M3LA4	3560	3630	10300	11300	2360	199
44	431	1.5	31.7	—	—	3/A 00 L2	BN100LA4	M3LA4	3420	3480	9950	10900	2260	191
45	423	2.8	31.2	—	—	3/A 01 L2	BN100LA4	M3LA4	3400	3460	9900	10900	2250	199
60	318	1.8	23.4	—	—	3/A 00 L2	BN100LA4	M3LA4	3090	3150	9090	9970	2050	191
61	313	2.8	23.0	—	—	3/A 01 L2	BN100LA4	M3LA4	3070	3130	9040	9910	2030	199
74	260	1.8	19.1	—	—	3/A 00 L2	BN100LA4	M3LA4	2890	2940	8550	9380	1910	191
75	255	2.8	18.8	—	—	3/A 01 L2	BN100LA4	M3LA4	2870	2920	8510	9330	1900	199

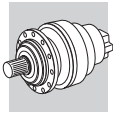
P₁ = 3 kW n₁=1400 min⁻¹

0.27	76211	1.3	5152	—	3/V 15 L4	—	BN100LB4	M3LB4	—	—	206000	243000	90000	287
0.28	75796	1.7	5124	—	3/V 16 L4	—	BN100LB4	M3LB4	—	—	502000	559800	172100	297
0.30	70479	1.5	4765	—	3/V 15 L4	—	BN100LB4	M3LB4	—	—	206000	243000	90000	287
0.32	62519	2.9	4449	—	3/V 17 L4	—	BN100LB4	M3LB4	—	—	442000	470000	150000	305
0.33	63859	2.1	4317	—	3/V 16 L4	—	BN100LB4	M3LB4	—	—	476900	531800	162500	297
0.35	57598	1.0	4046	—	3/V 13 L4	—	BN100LB4	M3LB4	—	—	192000	231000	80000	277
0.35	59385	1.8	4015	—	3/V 15 L4	—	BN100LB4	M3LB4	—	—	206000	243000	90000	287
0.39	53829	2.5	3639	—	3/V 16 L4	—	BN100LB4	M3LB4	—	—	453100	505200	153500	297
0.40	48665	0.9	3557	—	3/V 11 L4	—	BN100LB4	M3LB4	—	—	157000	195000	65000	267
0.40	54601	1.0	3515	—	3/V 13 L4	—	BN100LB4	M3LB4	—	—	192000	231000	80000	277
0.42	49791	2.7	3366	—	3/V 16 L4	—	BN100LB4	M3LB4	—	—	442600	493500	149600	297
0.43	50673	1.1	3263	—	3/V 13 L4	—	BN100LB4	M3LB4	—	—	192000	231000	80000	277
0.44	50038	0.9	3222	—	3/V 11 L4	—	BN100LB4	M3LB4	—	—	157000	195000	65000	267
0.49	44305	1.0	2887	—	3/V 11 L4	—	BN100LB4	M3LB4	—	—	157000	195000	65000	267
0.51	39483	1.4	2773	—	3/V 13 L4	—	BN100LB4	M3LB4	—	—	192000	231000	80000	277
0.56	38990	1.2	2510	—	3/V 11 L4	—	BN100LB4	M3LB4	—	—	157000	195000	65000	267
0.58	34346	1.4	2430	—	3/V 13 L3	—	BN100LB4	M3LB4	—	—	192000	231000	80000	276
0.61	32923	1.0	2329	—	3/V 11 L3	—	BN100LB4	M3LB4	—	—	157000	195000	65000	266
0.70	28533	1.9	2019	—	3/V 13 L3	—	BN100LB4	M3LB4	—	—	192000	231000	80000	276
0.70	31312	0.9	2016	—	3/V 10 L4	—	BN100LB4	M3LB4	—	—	133000	166000	65000	257
0.72	27741	1.6	1963	—	3/V 11 L3	—	BN100LB4	M3LB4	—	—	157000	195000	65000	266
0.84	24420	2.3	1682	—	3/V 13 L3	—	BN100LB4	M3LB4	—	—	192000	231000	80000	276
0.86	23742	1.8	1636	—	3/V 11 L3	—	BN100LB4	M3LB4	—	—	157000	195000	65000	266
0.99	20576	2.7	1418	—	3/V 13 L3	—	BN100LB4	M3LB4	—	—	192000	231000	80000	276
1.0	20757	1.1	1411	—	3/V 10 L3	—	BN100LB4	M3LB4	—	—	133000	166000	65000	256
1.0	20005	2.1	1378	—	3/V 11 L3	—	BN100LB4	M3LB4	—	—	156300	194100	64700	266
1.1	18735	2.8	1291	—	3/V 13 L3	—	BN100LB4	M3LB4	—	—	187400	225400	77900	276
1.1	18943	1.1	1288	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	107300	141400	35000	246
1.1	18500	1.9	1274	—	3/V 11 L3	—	BN100LB4	M3LB4	—	—	152600	189600	63000	266
1.1	18050	1.2	1227	—	3/V 10 L3	—	BN100LB4	M3LB4	—	—	127800	159600	62200	256
1.2	17708	0.9	1159	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	103900	137000	33800	246
1.3	16472	1.7	1120	—	3/V 10 L3	—	BN100LB4	M3LB4	—	—	124400	155300	60300	256
1.4	14727	1.0	1015	—	3/V 07 L3	—	BN100LB4	M3LB4	45600	56900	99000	131600	40400	236
1.4	14760	1.2	1004	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	99500	131200	32200	246
1.4	14760	2.0	1004	—	3/V 10 L3	—	BN100LB4	M3LB4	—	—	120400	150200	58200	256
1.5	13537	0.9	920	—	3/V 07 L3	—	BN100LB4	M3LB4	44200	55100	96100	127900	39100	236
1.5	14065	1.6	920	—	3/V 10 L3	—	BN100LB4	M3LB4	—	—	117300	146400	56500	256
1.8	11762	1.8	800	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	93000	122600	29900	246
1.9	11627	1.2	761	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	91600	120800	29400	246
1.9	11191	1.3	761	—	3/V 07 L3	—	BN100LB4	M3LB4	41400	51700	90800	120800	36700	236
2.2	9626	1.5	655	—	3/V 07 L3	—	BN100LB4	M3LB4	39400	49200	86800	115400	34900	236
2.2	10001	1.7	655	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	87600	115400	27900	246
2.5	9127	0.9	569	—	3/V 06 L3	—	BN100LB4	M3LB4	33100	37400	77100	90800	25900	226
2.8	8139	1.7	507	—	3/V 07 L3	—	BN100LB4	M3LB4	36200	45200	80400	106900	32100	236
3.1	7384	1.7	460	—	3/V 07 L3	—	BN100LB4	M3LB4	35000	43700	78100	103900	31100	236



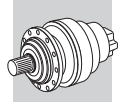
$P_1 = 3 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn_2 [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
3.2	6751	2.5	442	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	77800	102600	24500	246
3.2	7866	1.2	439	—	—	3/A 07 L2	BN100LB4	M3LB4	34500	43000	77000	102400	30600	237
3.2	7796	1.0	435	—	—	3/A 06 L2	BN100LB4	M3LB4	30200	34200	71100	83800	23700	227
3.3	6927	1.2	427	—	3/V 06 L3	—	BN100LB4	M3LB4	30100	34000	70700	83300	23600	226
3.5	7263	1.3	405	—	—	3/A 07 L2	BN100LB4	M3LB4	33600	41900	75100	99900	29800	237
3.6	6417	1.2	395	—	3/V 06 L3	—	BN100LB4	M3LB4	29300	33100	69100	81400	23000	226
3.6	6419	1.4	386	—	3/V 07 L3	—	BN100LB4	M3LB4	33100	41300	74100	98500	29300	236
3.8	5658	2.3	370	—	3/V 09 L3	—	BN100LB4	M3LB4	—	—	73800	97300	23100	246
4.1	6121	1.8	341	—	—	3/A 07 L2	BN100LB4	M3LB4	31700	39600	71400	94900	28100	237
4.4	5749	1.1	321	—	—	3/A 06 L2	BN100LB4	M3LB4	27300	30900	64900	76500	21400	227
5.0	5051	1.7	282	—	—	3/A 07 L2	BN100LB4	M3LB4	29800	37100	67400	89600	26400	237
5.1	4942	1.6	276	—	—	3/A 06 L2	BN100LB4	M3LB4	26000	29400	62000	73100	20400	227
5.3	4789	1.1	267	—	—	3/A 06 L2	BN100LB4	M3LB4	25700	29100	61400	72400	20100	227
5.8	4331	2.1	241	—	—	3/A 07 L2	BN100LB4	M3LB4	28300	35300	64300	85600	25000	237
5.9	4456	1.0	241	—	—	3/A 05 L2	BN100LB4	M3LB4	19800	22800	37700	43600	13300	217
6.3	3999	2.3	223	—	—	3/A 07 L2	BN100LB4	M3LB4	27500	34400	62800	83500	24400	237
6.4	3959	1.6	221	—	—	3/A 06 L2	BN100LB4	M3LB4	24100	27300	58000	68400	18900	227
7.1	3551	1.5	198	—	—	3/A 06 L2	BN100LB4	M3LB4	23300	26300	56200	66200	18200	227
7.1	3543	2.5	198	—	—	3/A 07 L2	BN100LB4	M3LB4	26400	33000	60600	80600	23400	237
7.4	3403	2.3	190	—	—	3/A 06 L2	BN100LB4	M3LB4	22900	26000	55500	65300	18000	227
8.0	3251	1.1	175	—	—	3/A 05 L2	BN100LB4	M3LB4	17800	20600	34300	39700	12000	217
8.6	2936	2.2	164	—	—	3/A 06 L2	BN100LB4	M3LB4	21800	24700	53000	62500	17100	227
8.7	3008	1.0	162	—	—	3/A 05 L2	BN100LB4	M3LB4	17400	20000	33500	38800	11700	217
10.0	2607	1.4	141	—	—	3/A 05 L2	BN100LB4	M3LB4	16600	19100	32100	37100	11200	217
11.3	2307	2.4	125	—	—	3/A 06 L2	BN100LB4	M3LB4	19900	22600	48900	57600	15600	227
11.6	2251	0.9	122	—	—	3/A 03 L2	BN100LB4	M3LB4	15800	18200	30700	35600	10600	207
11.7	2242	1.6	121	—	—	3/A 05 L2	BN100LB4	M3LB4	15800	18200	30700	35500	10600	217
13.6	1918	1.6	104	—	—	3/A 05 L2	BN100LB4	M3LB4	15000	17200	29300	33900	10100	217
14.6	1795	0.9	96.9	—	—	3/A 03 L2	BN100LB4	M3LB4	14600	16900	28700	33200	9850	207
15.9	1640	1.0	88.5	—	—	3/A 03 L2	BN100LB4	M3LB4	14200	16400	28000	32300	9560	207
16.5	1585	2.3	85.6	—	—	3/A 05 L2	BN100LB4	M3LB4	14000	16200	27700	32000	9450	217
18.6	1403	2.2	75.8	—	—	3/A 05 L2	BN100LB4	M3LB4	13500	15500	26700	30800	9080	217
19.3	1355	1.3	73.2	—	—	3/A 03 L2	BN100LB4	M3LB4	13300	15400	26400	30500	8970	207
19.4	1344	2.5	72.5	—	—	3/A 05 L2	BN100LB4	M3LB4	13300	15300	26300	30400	8950	217
22.4	1165	1.3	62.9	—	—	3/A 03 L2	BN100LB4	M3LB4	12700	14600	25200	29200	8530	207
22.5	1160	2.9	62.6	—	—	3/A 05 L2	BN100LB4	M3LB4	12700	14600	25200	29100	8520	217
23.7	1101	1.1	59.4	—	—	3/A 01 L2	BN100LB4	M3LB4	4210	4290	12000	13200	2790	199
26.9	973	1.7	52.5	—	—	3/A 03 L2	BN100LB4	M3LB4	11900	13700	23900	27600	8030	207
32	813	1.1	43.9	—	—	3/A 01 L2	BN100LB4	M3LB4	3810	3880	11000	12000	2520	199
32	804	2.1	43.4	—	—	3/A 03 L2	BN100LB4	M3LB4	11200	12900	22600	26100	7540	207
35	750	2.2	40.5	—	—	3/A 03 L2	BN100LB4	M3LB4	10900	12600	22100	25600	7370	207
35	742	1.2	40.1	—	—	3/A 01 L2	BN100LB4	M3LB4	3690	3760	10700	11700	2450	199
39	664	1.1	35.8	—	—	3/A 01 L2	BN100LB4	M3LB4	3560	3630	10300	11300	2360	199
42	620	2.9	33.5	—	—	3/A 03 L2	BN100LB4	M3LB4	10300	11800	20900	24100	6910	207
44	588	1.1	31.7	—	—	3/A 00 L2	BN100LB4	M3LB4	3420	3480	9950	10900	2260	191
45	577	2.0	31.2	—	—	3/A 01 L2	BN100LB4	M3LB4	3400	3460	9900	10900	2250	199
49	533	2.9	28.8	—	—	3/A 03 L2	BN100LB4	M3LB4	9770	11250	20000	23100	6580	207
60	434	1.3	23.4	—	—	3/A 00 L2	BN100LB4	M3LB4	3090	3150	9090	9970	2050	191
61	426	2.0	23.0	—	—	3/A 01 L2	BN100LB4	M3LB4	3070	3130	9040	9910	2030	199
61	425	2.9	23.0	—	—	3/A 03 L2	BN100LB4	M3LB4	9060	10440	18600	21600	6100	207
73	360	2.9	19.4	—	—	3/A 03 L2	BN100LB4	M3LB4	8570	9870	17700	20500	5770	207
74	355	1.3	19.1	—	—	3/A 00 L2	BN100LB4	M3LB4	2890	2940	8550	9380	1910	191
75	348	2.0	18.8	—	—	3/A 01 L2	BN100LB4	M3LB4	2870	2920	8510	9330	1900	199








$P_1 = 4 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.27	103077	1.0	5152	—	3/V 15 L4	—	BN112M4	—	—	—	206000	243000	90000	287
0.27	102515	1.3	5124	—	3/V 16 L4	—	BN112M4	—	—	—	502000	559800	172100	297
0.29	95324	1.1	4765	—	3/V 15 L4	—	BN112M4	—	—	—	206000	243000	90000	287
0.31	84558	2.1	4449	—	3/V 17 L4	—	BN112M4	—	—	—	442000	470000	150000	305
0.32	86370	1.5	4317	—	3/V 16 L4	—	BN112M4	—	—	—	476900	531800	162500	297
0.35	80320	1.3	4015	—	3/V 15 L4	—	BN112M4	—	—	—	206000	243000	90000	287
0.38	72805	1.8	3639	—	3/V 16 L4	—	BN112M4	—	—	—	453100	505200	153500	297
0.41	67343	2.0	3366	—	3/V 16 L4	—	BN112M4	—	—	—	442600	493500	149600	297
0.49	56720	2.3	2835	—	3/V 16 L4	—	BN112M4	—	—	—	420400	468800	141300	297
0.50	53401	1.0	2773	—	3/V 13 L4	—	BN112M4	M3LC4	—	—	192000	231000	80000	277
0.57	46453	1.1	2430	—	3/V 13 L3	—	BN112M4	—	—	—	192000	231000	80000	276
0.69	38592	1.4	2019	—	3/V 13 L3	—	BN112M4	—	—	—	192000	231000	80000	276
0.71	37520	1.1	1963	—	3/V 11 L3	—	BN112M4	—	—	—	157000	195000	65000	266
0.83	33029	1.7	1682	—	3/V 13 L3	—	BN112M4	—	—	—	192000	231000	80000	276
0.85	32112	1.3	1636	—	3/V 11 L3	—	BN112M4	—	—	—	157000	195000	65000	266
0.98	27830	2.0	1418	—	3/V 13 L3	—	BN112M4	—	—	—	192000	231000	80000	276
1.0	27057	1.6	1378	—	3/V 11 L3	—	BN112M4	—	—	—	156300	194100	64700	266
1.1	25340	2.1	1291	—	3/V 13 L3	—	BN112M4	—	—	—	187400	225400	77900	276
1.1	25022	1.4	1274	—	3/V 11 L3	—	BN112M4	—	—	—	152600	189600	63000	266
1.2	22278	1.3	1120	—	3/V 10 L3	—	BN112M4	—	—	—	124400	155300	60300	256
1.3	21351	2.6	1088	—	3/V 13 L3	—	BN112M4	—	—	—	178000	214100	73500	276
1.4	19714	2.3	1004	—	3/V 11 L3	—	BN112M4	—	—	—	142100	176500	58200	266
1.4	19964	1.5	1004	—	3/V 10 L3	—	BN112M4	—	—	—	120400	150200	58200	256
1.5	19023	1.1	920	—	3/V 10 L3	—	BN112M4	—	—	—	117300	146400	56500	256
1.5	17670	2.2	900	—	3/V 11 L3	—	BN112M4	—	—	—	137500	170800	56100	266
1.7	15909	1.3	800	—	3/V 09 L3	—	BN112M4	—	—	—	93000	122600	29900	246
1.8	15725	0.9	761	—	3/V 09 L3	—	BN112M4	—	—	—	91600	120800	29400	246
1.8	15136	0.9	761	—	3/V 07 L3	—	BN112M4	M3LC4	41400	51700	90800	120800	36700	236
2.1	13020	1.1	655	—	3/V 07 L3	—	BN112M4	M3LC4	39400	49200	86800	115400	34900	236
2.1	13527	1.3	655	—	3/V 09 L3	—	BN112M4	—	—	—	87600	115400	27900	246
2.7	11008	1.2	507	—	3/V 07 L3	—	BN112M4	M3LC4	36200	45200	80400	106900	32100	236
3.0	9987	1.2	460	—	3/V 07 L3	—	BN112M4	M3LC4	35000	43700	78100	103900	31100	236
3.1	9131	1.8	442	—	3/V 09 L3	—	BN112M4	—	—	—	77800	102600	24500	246
3.4	9823	0.9	405	—	—	3/A 07 L2	BN112M4	M3LC4	33600	41900	75100	99900	29800	237
3.6	8682	1.0	386	—	3/V 07 L3	—	BN112M4	M3LC4	33100	41300	74100	98500	29300	236
3.8	7653	1.7	370	—	3/V 09 L3	—	BN112M4	—	—	—	73800	97300	23100	246
4.1	8278	1.3	341	—	—	3/A 07 L2	BN112M4	M3LC4	31700	39600	71400	94900	28100	237
4.9	6831	1.3	282	—	—	3/A 07 L2	BN112M4	M3LC4	29800	37100	67400	89600	26400	237
5.0	6685	1.2	276	—	—	3/A 06 L2	BN112M4	M3LC4	26000	29400	62000	73100	20400	227
5.8	5858	1.5	241	—	—	3/A 07 L2	BN112M4	M3LC4	28300	35300	64300	85600	25000	237
6.2	5408	1.7	223	—	—	3/A 07 L2	BN112M4	M3LC4	27500	34400	62800	83500	24400	237
6.3	5354	1.2	221	—	—	3/A 06 L2	BN112M4	M3LC4	24100	27300	58000	68400	18900	227
7.0	4803	1.1	198	—	—	3/A 06 L2	BN112M4	M3LC4	23300	26300	56200	66200	18200	227
7.0	4791	1.8	198	—	—	3/A 07 L2	BN112M4	M3LC4	26400	33000	60600	80600	23400	237
7.3	4603	1.7	190	—	—	3/A 06 L2	BN112M4	M3LC4	22900	26000	55500	65300	18000	227
7.7	4368	2.4	180	—	—	3/A 07 L2	BN112M4	M3LC4	25600	32000	58900	78400	22700	237
8.5	3971	1.6	164	—	—	3/A 06 L2	BN112M4	M3LC4	21800	24700	53000	62500	17100	227
9.0	3761	2.4	155	—	—	3/A 07 L2	BN112M4	M3LC4	24400	30400	56300	74900	21600	237
9.9	3527	1.0	141	—	—	3/A 05 L2	BN112M4	M3LC4	16600	19100	32100	37100	11200	217
9.9	3413	2.3	141	—	—	3/A 06 L2	BN112M4	M3LC4	20800	23500	50700	59700	16300	227
11.2	3120	1.8	125	—	—	3/A 06 L2	BN112M4	M3LC4	19900	22600	48900	57600	15600	227
11.5	3032	1.2	121	—	—	3/A 05 L2	BN112M4	M3LC4	15800	18200	30700	35500	10600	217
12.4	2722	2.3	112	—	—	3/A 06 L2	BN112M4	M3LC4	19300	21800	47400	55800	15100	227
13.4	2594	1.2	104	—	—	3/A 05 L2	BN112M4	M3LC4	15000	17200	29300	33900	10100	217
14.1	2462	2.2	98.3	—	—	3/A 06 L2	BN112M4	M3LC4	18400	20800	45500	53600	14400	227
15.7	2217	2.8	88.5	—	—	3/A 06 L2	BN112M4	M3LC4	17800	20100	44100	52000	13900	227
16.2	2144	1.7	85.6	—	—	3/A 05 L2	BN112M4	M3LC4	14000	16200	27700	32000	9450	217
17.1	2035	3.0	81.2	—	—	3/A 06 L2	BN112M4	M3LC4	17300	19600	43000	50700	13500	227
18.3	1898	1.6	75.8	—	—	3/A 05 L2	BN112M4	M3LC4	13500	15500	26700	30800	9080	217
19.0	1833	1.0	73.2	—	—	3/A 03 L2	BN112M4	M3LC4	13300	15400	26400	30500	8970	207
19.2	1818	1.8	72.5	—	—	3/A 05 L2	BN112M4	M3LC4	13300	15300	26300	30400	8950	217
19.9	1751	3.0	69.9	—	—	3/A 06 L2	BN112M4	M3LC4	16400	18600	41100	48400	12900	227

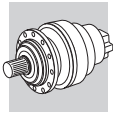


P₁ = 4 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
22.1	1576	1.0	62.9	—	—	3/A 03 L2	BN112M4	M3LC4	12700	14600	25200	29200	8530	207
22.2	1569	2.1	62.6	—	—	3/A 05 L2	BN112M4	M3LC4	12700	14600	25200	29100	8520	217
24.4	1429	2.3	57.0	—	—	3/A 05 L2	BN112M4	M3LC4	12300	14100	24500	28300	8260	217
25.0	1395	3.0	55.7	—	—	3/A 06 L2	BN112M4	M3LC4	15200	17200	38400	45200	11900	227
26.1	1334	2.3	53.3	—	—	3/A 05 L2	BN112M4	M3LC4	12000	13800	24000	27800	8070	217
26.5	1316	1.3	52.5	—	—	3/A 03 L2	BN112M4	M3LC4	11900	13700	23900	27600	8030	207
29.5	1182	3.0	47.2	—	—	3/A 06 L2	BN112M4	M3LC4	14400	16300	36500	43000	11300	227
32	1103	3.0	44.0	—	—	3/A 05 L2	BN112M4	M3LC4	11300	13000	22700	26200	7580	217
32	1088	1.5	43.4	—	—	3/A 03 L2	BN112M4	M3LC4	11200	12900	22600	26100	7540	207
34	1015	1.6	40.5	—	—	3/A 03 L2	BN112M4	M3LC4	10900	12600	22100	25600	7370	207
42	839	2.1	33.5	—	—	3/A 03 L2	BN112M4	M3LC4	10300	11800	20900	24100	6910	207
45	781	1.5	31.2	—	—	3/A 01 L2	BN112M4	M3LC4	3400	3460	9900	10900	2250	199
48	721	2.2	28.8	—	—	3/A 03 L2	BN112M4	M3LC4	9770	11250	20000	23100	6580	207
59	587	1.0	23.4	—	—	3/A 00 L2	BN112M4	M3LC4	3090	3150	9090	9970	2050	191
60	576	1.5	23.0	—	—	3/A 01 L2	BN112M4	M3LC4	3070	3130	9040	9910	2030	199
61	575	2.2	23.0	—	—	3/A 03 L2	BN112M4	M3LC4	9060	10440	18600	21600	6100	207
72	487	2.2	19.4	—	—	3/A 03 L2	BN112M4	M3LC4	8570	9870	17700	20500	5770	207
73	480	1.0	19.1	—	—	3/A 00 L2	BN112M4	M3LC4	2890	2940	8550	9380	1910	191
74	471	1.5	18.8	—	—	3/A 01 L2	BN112M4	M3LC4	2870	2920	8510	9330	1900	199

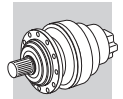
P₁ = 5.5 kW n₁=1400 min⁻¹

0.28	136064	1.0	5124	—	3/V 16 L4	—	BN132S4	—	—	—	502000	559800	172100	297
0.28	141167	1.8	5124	—	3/V 18 L4	—	BN132S4	—	—	—	734200	823200	258300	312
0.29	136936	1.3	4970	—	3/V 17 L4	—	BN132S4	—	—	—	442000	470000	150000	305
0.29	128687	2.7	4970	—	3/V 19 L4	—	BN132S4	—	—	—	638000	702000	200000	320
0.32	126385	2.7	4480	—	3/V 19 L4	—	BN132S4	—	—	—	638000	702000	200000	320
0.32	112230	1.6	4449	—	3/V 17 L4	—	BN132S4	—	—	—	442000	470000	150000	305
0.33	114635	1.2	4317	—	3/V 16 L4	—	BN132S4	—	—	—	476900	531800	162500	297
0.33	118934	2.1	4317	—	3/V 18 L4	—	BN132S4	—	—	—	697400	781900	244000	312
0.35	113763	1.6	4129	—	3/V 17 L4	—	BN132S4	—	—	—	442000	470000	150000	305
0.36	106605	1.0	4015	—	3/V 15 L4	—	BN132S4	—	—	—	206000	243000	90000	287
0.40	96631	1.4	3639	—	3/V 16 L4	—	BN132S4	—	—	—	453100	505200	153500	297
0.40	100255	2.5	3639	—	3/V 18 L4	—	BN132S4	—	—	—	662500	742800	230500	312
0.42	95767	1.0	3435	—	3/V 15 L4	—	BN132S4	—	—	—	206000	243000	90000	287
0.43	89382	1.5	3366	—	3/V 16 L4	—	BN132S4	—	—	—	442600	493500	149600	297
0.43	92734	2.7	3366	—	3/V 18 L4	—	BN132S4	—	—	—	647200	725700	224600	312
0.45	88564	1.2	3176	—	3/V 15 L4	—	BN132S4	—	—	—	206000	243000	90000	287
0.45	87278	2.1	3168	—	3/V 17 L4	—	BN132S4	—	—	—	442000	470000	150000	305
0.51	75281	1.8	2835	—	3/V 16 L4	—	BN132S4	—	—	—	420400	468800	141300	297
0.52	71802	2.5	2773	—	3/V 17 L4	—	BN132S4	—	—	—	442000	470000	150000	305
0.54	74623	1.4	2676	—	3/V 15 L4	—	BN132S4	—	—	—	206000	243000	90000	287
0.59	67642	2.0	2426	—	3/V 16 L4	—	BN132S4	—	—	—	401200	447400	134100	297
0.62	58303	1.4	2329	—	3/V 15 L3	—	BN132S4	—	—	—	206000	243000	90000	286
0.64	62567	2.1	2244	—	3/V 16 L4	—	BN132S4	—	—	—	391900	437000	130700	297
0.71	51221	1.1	2019	—	3/V 13 L3	—	BN132S4	—	—	—	192000	231000	80000	276
0.73	49125	2.0	1963	—	3/V 15 L3	—	BN132S4	—	—	—	206000	243000	90000	286
0.76	52697	2.5	1890	—	3/V 16 L4	—	BN132S4	—	—	—	372200	415100	123400	297
0.86	43838	1.3	1682	—	3/V 13 L3	—	BN132S4	—	—	—	192000	231000	80000	276
0.88	41149	2.8	1644	—	3/V 16 L3	—	BN132S4	—	—	—	357000	398100	117800	296
0.88	42620	1.0	1636	—	3/V 11 L3	—	BN132S4	—	—	—	157000	195000	65000	266
0.88	42620	2.3	1636	—	3/V 15 L3	—	BN132S4	—	—	—	206000	243000	90000	286
0.89	43325	1.1	1620	—	3/V 13 L3	—	BN132S4	—	—	—	192000	231000	80000	276
1.0	36938	1.5	1418	—	3/V 13 L3	—	BN132S4	—	—	—	192000	231000	80000	276
1.0	35912	1.2	1378	—	3/V 11 L3	—	BN132S4	—	—	—	156300	194100	64700	266
1.0	35912	2.8	1378	—	3/V 15 L3	—	BN132S4	—	—	—	205000	241900	89500	286
1.1	34993	2.8	1308	—	3/V 15 L3	—	BN132S4	—	—	—	201900	238100	88000	286
1.1	33632	1.6	1291	—	3/V 13 L3	—	BN132S4	—	—	—	187400	225400	77900	276
1.1	33211	1.0	1274	—	3/V 11 L3	—	BN132S4	—	—	—	152600	189600	63000	266
1.3	29569	1.0	1120	—	3/V 10 L3	—	BN132S4	—	—	—	124400	155300	60300	256



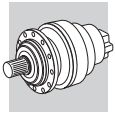
$P_1 = 5.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.3	29485	1.4	1103	—	3/V 11 L3	—	BN132S4	—	—	—	146100	181500	60000	266
1.3	28338	1.9	1088	—	3/V 13 L3	—	BN132S4	—	—	—	178000	214100	73500	276
1.4	28725	1.8	1009	—	3/V 13 L3	—	BN132S4	—	—	—	174100	209400	71700	276
1.4	26166	1.7	1004	—	3/V 11 L3	—	BN132S4	—	—	—	142100	176500	58200	266
1.4	26497	1.1	1004	—	3/V 10 L3	—	BN132S4	—	—	—	120400	150200	58200	256
1.6	23452	1.7	900	—	3/V 11 L3	—	BN132S4	—	—	—	137500	170800	56100	266
1.7	23267	2.4	870	—	3/V 13 L3	—	BN132S4	—	—	—	166500	200300	68300	276
1.7	23531	1.7	827	—	3/V 11 L3	—	BN132S4	—	—	—	134100	166500	54500	266
1.8	21115	1.0	800	—	3/V 09 L3	—	BN132S4	—	—	—	93000	122600	29900	246
1.9	22252	1.0	773	—	3/V 10 L3	—	BN132S4	—	—	—	111300	138900	53300	256
1.9	19806	2.5	741	—	3/V 13 L3	—	BN132S4	—	—	—	158600	190800	64700	276
2.0	19256	2.0	720	—	3/V 11 L3	—	BN132S4	—	—	—	128600	159700	52100	266
2.1	20910	1.1	701	—	3/V 10 L3	—	BN132S4	—	—	—	108100	134900	51600	256
2.2	17954	1.0	655	—	3/V 09 L3	—	BN132S4	—	—	—	87600	115400	27900	246
2.2	18336	2.3	644	—	3/V 11 L3	—	BN132S4	—	—	—	124400	154500	50200	266
2.3	17673	1.2	614	—	3/V 10 L3	—	BN132S4	—	—	—	103800	129600	49400	256
2.6	16129	1.6	560	—	3/V 10 L3	—	BN132S4	—	—	—	101000	126100	47900	256
2.8	14610	0.9	507	—	3/V 07 L3	—	BN132S4	—	36200	45200	80400	106900	32100	236
2.8	14610	1.0	507	—	3/V 09 L3	—	BN132S4	—	—	—	81100	106900	25700	246
2.8	14610	1.8	507	—	3/V 10 L3	—	BN132S4	—	—	—	98100	122400	46300	256
3.1	13255	0.9	460	—	3/V 07 L3	—	BN132S4	—	35000	43700	78100	103900	31100	236
3.3	12119	1.4	442	—	3/V 09 L3	—	BN132S4	—	—	—	77800	102600	24500	246
3.3	12568	2.4	436	—	3/V 10 L3	—	BN132S4	—	—	—	93700	117000	44100	256
3.9	10157	1.3	370	—	3/V 09 L3	—	BN132S4	—	—	—	73800	97300	23100	246
4.2	10987	1.0	341	—	—	3/A 07 L2	BN132S4	M4SA4	31700	39600	71400	94900	28100	237
5.1	9067	1.0	282	—	—	3/A 07 L2	BN132S4	M4SA4	29800	37100	67400	89600	26400	237
6.0	7775	1.2	241	—	—	3/A 07 L2	BN132S4	M4SA4	28300	35300	64300	85600	25000	237
6.5	7178	1.3	223	—	—	3/A 07 L2	BN132S4	M4SA4	27500	34400	62800	83500	24400	237
6.5	7107	0.9	221	—	—	3/A 06 L2	BN132S4	M4SA4	24100	27300	58000	68400	18900	227
7.3	6359	1.4	198	—	—	3/A 07 L2	BN132S4	M4SA4	26400	33000	60600	80600	23400	237
7.6	6109	1.3	190	—	—	3/A 06 L2	BN132S4	M4SA4	22900	26000	55500	65300	18000	227
8.0	5798	1.8	180	—	—	3/A 07 L2	BN132S4	M4SA4	25600	32000	58900	78400	22700	237
8.8	5270	1.2	164	—	—	3/A 06 L2	BN132S4	M4SA4	21800	24700	53000	62500	17100	227
9.3	4992	1.8	155	—	—	3/A 07 L2	BN132S4	M4SA4	24400	30400	56300	74900	21600	237
10.2	4531	1.7	141	—	—	3/A 06 L2	BN132S4	M4SA4	20800	23500	50700	59700	16300	227
10.3	4517	2.5	140	—	—	3/A 07 L2	BN132S4	M4SA4	23600	29400	54700	72700	20900	237
11.1	4174	2.7	130	—	—	3/A 07 L2	BN132S4	M4SA4	23000	28700	53400	71000	20400	237
11.6	4141	1.3	125	—	—	3/A 06 L2	BN132S4	M4SA4	19900	22600	48900	57600	15600	227
12.8	3613	1.7	112	—	—	3/A 06 L2	BN132S4	M4SA4	19300	21800	47400	55800	15100	227
13.2	3501	2.6	109	—	—	3/A 07 L2	BN132S4	M4SA4	21700	27000	50600	67400	19200	237
13.9	3442	0.9	104	—	—	3/A 05 L2	BN132S4	M4SA4	15000	17200	29300	33900	10100	217
14.7	3268	1.7	98.3	—	—	3/A 06 L2	BN132S4	M4SA4	18400	20800	45500	53600	14400	227
16.3	2943	2.1	88.5	—	—	3/A 06 L2	BN132S4	M4SA4	17800	20100	44100	52000	13900	227
16.8	2846	1.3	85.6	—	—	3/A 05 L2	BN132S4	M4SA4	14000	16200	27700	32000	9450	217
17.7	2701	2.2	81.2	—	—	3/A 06 L2	BN132S4	M4SA4	17300	19600	43000	50700	13500	227
19.0	2519	1.2	75.8	—	—	3/A 05 L2	BN132S4	M4SA4	13500	15500	26700	30800	9080	217
19.9	2413	1.4	72.5	—	—	3/A 05 L2	BN132S4	M4SA4	13300	15300	26300	30400	8950	217
20.6	2324	2.2	69.9	—	—	3/A 06 L2	BN132S4	M4SA4	16400	18600	41100	48400	12900	227
23.0	2083	1.6	62.6	—	—	3/A 05 L2	BN132S4	M4SA4	12700	14600	25200	29100	8520	217
25.2	1897	1.7	57.0	—	—	3/A 05 L2	BN132S4	M4SA4	12300	14100	24500	28300	8260	217
25.9	1852	2.2	55.7	—	—	3/A 06 L2	BN132S4	M4SA4	15200	17200	38400	45200	11900	227
27.0	1771	1.8	53.3	—	—	3/A 05 L2	BN132S4	M4SA4	12000	13800	24000	27800	8070	217
31	1568	2.2	47.2	—	—	3/A 06 L2	BN132S4	M4SA4	14400	16300	36500	43000	11300	227
33	1464	2.3	44.0	—	—	3/A 05 L2	BN132S4	M4SA4	11300	13000	22700	26200	7580	217
37	1297	2.4	39.0	—	—	3/A 05 L2	BN132S4	M4SA4	10800	12500	21900	25300	7280	217



P₁ = 7.5 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.28	192500	1.3	5124	—	3/V 18 L4	—	BN132MA4	—	—	—	734200	823200	258300	312
0.29	180219	2.9	5040	—	3/V 21 L4	—	BN132MA4	—	—	—	779000	923000	1200000	328
0.29	186732	1.0	4970	—	3/V 17 L4	—	BN132MA4	—	—	—	442000	470000	150000	305
0.29	175483	2.0	4970	—	3/V 19 L4	—	BN132MA4	—	—	—	638000	702000	200000	320
0.32	172343	2.0	4480	—	3/V 19 L4	—	BN132MA4	—	—	—	638000	702000	200000	320
0.32	153040	1.2	4449	—	3/V 17 L4	—	BN132MA4	—	—	—	442000	470000	150000	305
0.33	162182	1.5	4317	—	3/V 18 L4	—	BN132MA4	—	—	—	697400	781900	244000	312
0.35	155131	1.2	4129	—	3/V 17 L4	—	BN132MA4	—	—	—	442000	470000	150000	305
0.36	151438	2.3	4031	—	3/V 19 L4	—	BN132MA4	—	—	—	638000	702000	200000	320
0.40	131770	1.0	3639	—	3/V 16 L4	—	BN132MA4	—	—	—	453100	505200	153500	297
0.40	136711	1.8	3639	—	3/V 18 L4	—	BN132MA4	—	—	—	662500	742800	230500	312
0.43	121884	1.1	3366	—	3/V 16 L4	—	BN132MA4	—	—	—	442600	493500	149600	297
0.43	126455	2.0	3366	—	3/V 18 L4	—	BN132MA4	—	—	—	647200	725700	224600	312
0.45	122357	2.8	3180	—	3/V 19 L4	—	BN132MA4	—	—	—	638000	702000	200000	320
0.45	119016	1.5	3168	—	3/V 17 L4	—	BN132MA4	—	—	—	442000	470000	150000	305
0.51	102657	1.3	2835	—	3/V 16 L4	—	BN132MA4	—	—	—	420400	468800	141300	297
0.51	106506	2.3	2835	—	3/V 18 L4	—	BN132MA4	—	—	—	614700	689200	212100	312
0.52	97912	1.8	2773	—	3/V 17 L4	—	BN132MA4	—	—	—	442000	470000	150000	305
0.54	101759	1.0	2676	—	3/V 15 L4	—	BN132MA4	—	—	—	206000	243000	90000	287
0.59	92239	1.4	2426	—	3/V 16 L4	—	BN132MA4	—	—	—	401200	447400	134100	297
0.59	93337	2.7	2426	—	3/V 18 L4	—	BN132MA4	—	—	—	586600	657800	201300	312
0.62	79504	1.0	2329	—	3/V 15 L3	—	BN132MA4	—	—	—	206000	243000	90000	286
0.64	85319	1.5	2244	—	3/V 16 L4	—	BN132MA4	—	—	—	391900	437000	130700	297
0.73	66989	1.5	1963	—	3/V 15 L3	—	BN132MA4	—	—	—	206000	243000	90000	286
0.76	71860	1.8	1890	—	3/V 16 L4	—	BN132MA4	—	—	—	372200	415100	123400	297
0.86	59779	0.9	1682	—	3/V 13 L3	—	BN132MA4	—	—	—	192000	231000	80000	276
0.88	56112	2.0	1644	—	3/V 16 L3	—	BN132MA4	—	—	—	357000	398100	117800	296
0.88	58119	1.7	1636	—	3/V 15 L3	—	BN132MA4	—	—	—	206000	243000	90000	286
1.0	50369	1.1	1418	—	3/V 13 L3	—	BN132MA4	—	—	—	192000	231000	80000	276
1.0	47306	2.8	1386	—	3/V 16 L3	—	BN132MA4	—	—	—	339100	378200	111300	296
1.0	48970	2.0	1378	—	3/V 15 L3	—	BN132MA4	—	—	—	205000	241900	89500	286
1.1	47718	2.1	1308	—	3/V 15 L3	—	BN132MA4	—	—	—	201900	238100	88000	286
1.1	45862	1.1	1291	—	3/V 13 L3	—	BN132MA4	—	—	—	187400	225400	77900	276
1.2	47718	3.0	1215	—	3/V 17 L3	—	BN132MA4	—	—	—	423600	450400	143100	304
1.3	40207	1.0	1103	—	3/V 11 L3	—	BN132MA4	—	—	—	146100	181500	60000	266
1.3	40207	2.4	1103	—	3/V 15 L3	—	BN132MA4	—	—	—	191800	226200	83100	286
1.3	39970	2.6	1096	—	3/V 16 L3	—	BN132MA4	—	—	—	316100	352500	102900	296
1.3	38643	1.4	1088	—	3/V 13 L3	—	BN132MA4	—	—	—	178000	214100	73500	276
1.4	39171	1.3	1009	—	3/V 13 L3	—	BN132MA4	—	—	—	174100	209400	71700	276
1.4	35681	1.3	1004	—	3/V 11 L3	—	BN132MA4	—	—	—	142100	176500	58200	266
1.5	38083	2.5	981	—	3/V 15 L3	—	BN132MA4	—	—	—	185200	218400	79900	286
1.6	31981	1.2	900	—	3/V 11 L3	—	BN132MA4	—	—	—	137500	170800	56100	266
1.7	31728	1.7	870	—	3/V 13 L3	—	BN132MA4	—	—	—	166500	200300	68300	276
1.7	32088	1.2	827	—	3/V 11 L3	—	BN132MA4	—	—	—	134100	166500	54500	266
1.7	32088	2.9	827	—	3/V 15 L3	—	BN132MA4	—	—	—	175900	207500	75500	286
1.9	27008	1.9	741	—	3/V 13 L3	—	BN132MA4	—	—	—	158600	190800	64700	276
2.0	26258	1.5	720	—	3/V 11 L3	—	BN132MA4	—	—	—	128600	159700	52100	266
2.2	25004	1.7	644	—	3/V 11 L3	—	BN132MA4	—	—	—	124400	154500	50200	266
2.3	24100	0.9	614	—	3/V 10 L3	—	BN132MA4	—	—	—	103800	129600	49400	256
2.6	21994	1.2	560	—	3/V 10 L3	—	BN132MA4	—	—	—	101000	126100	47900	256
2.8	19923	1.3	507	—	3/V 10 L3	—	BN132MA4	—	—	—	98100	122400	46300	256
3.3	16526	1.0	442	—	3/V 09 L3	—	BN132MA4	—	—	—	77800	102600	24500	246
3.3	17138	1.7	436	—	3/V 10 L3	—	BN132MA4	—	—	—	93700	117000	44100	256
3.9	13850	0.9	370	—	3/V 09 L3	—	BN132MA4	—	—	—	73800	97300	23100	246
6.5	9789	0.9	223	—	—	3/A 07 L2	BN132MA4	M4LA4	27500	34400	62800	83500	24400	237
7.3	8672	1.0	198	—	—	3/A 07 L2	BN132MA4	M4LA4	26400	33000	60600	80600	23400	237
7.6	8331	0.9	190	—	—	3/A 06 L2	BN132MA4	M4LA4	22900	26000	55500	65300	18000	227
8.0	7906	1.3	180	—	—	3/A 07 L2	BN132MA4	M4LA4	25600	32000	58900	78400	22700	237
8.8	7186	0.9	164	—	—	3/A 06 L2	BN132MA4	M4LA4	21800	24700	53000	62500	17100	227
9.3	6807	1.3	155	—	—	3/A 07 L2	BN132MA4	M4LA4	24400	30400	56300	74900	21600	237
10.2	6178	1.3	141	—	—	3/A 06 L2	BN132MA4	M4LA4	20800	23500	50700	59700	16300	227
10.3	6159	1.8	140	—	—	3/A 07 L2	BN132MA4	M4LA4	23600	29400	54700	72700	20900	237

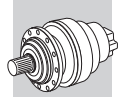


P₁ = 7.5 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
11.1	5692	2.0	130	—	—	3/A 07 L2	BN132MA4	M4LA4	23000	28700	53400	71000	20400	237
11.6	5646	1.0	125	—	—	3/A 06 L2	BN132MA4	M4LA4	19900	22600	48900	57600	15600	227
12.8	4926	1.3	112	—	—	3/A 06 L2	BN132MA4	M4LA4	19300	21800	47400	55800	15100	227
13.2	4774	1.9	109	—	—	3/A 07 L2	BN132MA4	M4LA4	21700	27000	50600	67400	19200	237
14.7	4456	1.2	98.3	—	—	3/A 06 L2	BN132MA4	M4LA4	18400	20800	45500	53600	14400	227
16.3	4013	1.5	88.5	—	—	3/A 06 L2	BN132MA4	M4LA4	17800	20100	44100	52000	13900	227
16.4	3976	2.6	87.7	—	—	3/A 07 L2	BN132MA4	M4LA4	20200	25200	47500	63200	17900	237
16.8	3880	0.9	85.6	—	—	3/A 05 L2	BN132MA4	M4LA4	14000	16200	27700	32000	9450	217
17.7	3684	1.6	81.2	—	—	3/A 06 L2	BN132MA4	M4LA4	17300	19600	43000	50700	13500	227
19.0	3435	0.9	75.8	—	—	3/A 05 L2	BN132MA4	M4LA4	13500	15500	26700	30800	9080	217
19.9	3290	1.0	72.5	—	—	3/A 05 L2	BN132MA4	M4LA4	13300	15300	26300	30400	8950	217
20.6	3168	1.6	69.9	—	—	3/A 06 L2	BN132MA4	M4LA4	16400	18600	41100	48400	12900	227
21.1	3098	2.6	68.3	—	—	3/A 07 L2	BN132MA4	M4LA4	18600	23200	44100	58600	16400	237
23.0	2840	1.2	62.6	—	—	3/A 05 L2	BN132MA4	M4LA4	12700	14600	25200	29100	8520	217
23.9	2728	2.2	60.1	—	—	3/A 06 L2	BN132MA4	M4LA4	15600	17700	39300	46300	12300	227
25.1	2598	2.6	57.3	—	—	3/A 07 L2	BN132MA4	M4LA4	17500	21800	41800	55600	15500	237
25.2	2587	1.3	57.0	—	—	3/A 05 L2	BN132MA4	M4LA4	12300	14100	24500	28300	8260	217
25.9	2525	1.6	55.7	—	—	3/A 06 L2	BN132MA4	M4LA4	15200	17200	38400	45200	11900	227
27.0	2415	1.3	53.3	—	—	3/A 05 L2	BN132MA4	M4LA4	12000	13800	24000	27800	8070	217
27.9	2345	2.2	51.7	—	—	3/A 06 L2	BN132MA4	M4LA4	14900	16800	37600	44200	11700	227
31	2139	1.6	47.2	—	—	3/A 06 L2	BN132MA4	M4LA4	14400	16300	36500	43000	11300	227
33	1996	1.7	44.0	—	—	3/A 05 L2	BN132MA4	M4LA4	11300	13000	22700	26200	7580	217
35	1862	2.6	41.1	—	—	3/A 06 L2	BN132MA4	M4LA4	13800	15600	35000	41300	10800	227
37	1769	1.8	39.0	—	—	3/A 05 L2	BN132MA4	M4LA4	10800	12500	21900	25300	7280	217
41	1584	2.2	34.9	—	—	3/A 06 L2	BN132MA4	M4LA4	13000	14800	33400	39300	10200	227
44	1484	2.6	32.7	—	—	3/A 06 L2	BN132MA4	M4LA4	12800	14400	32700	38600	10000	227
45	1462	2.3	32.2	—	—	3/A 05 L2	BN132MA4	M4LA4	10100	11700	20600	23900	6830	217
52	1257	2.6	27.7	—	—	3/A 06 L2	BN132MA4	M4LA4	12100	13700	31100	36700	9470	227
52	1257	2.3	27.7	—	—	3/A 05 L2	BN132MA4	M4LA4	9640	11100	19700	22800	6490	217
65	1002	2.3	22.1	—	—	3/A 05 L2	BN132MA4	M4LA4	8940	10300	18400	21300	6020	217
77	849	2.3	18.7	—	—	3/A 05 L2	BN132MA4	M4LA4	8460	9750	17500	20300	5700	217

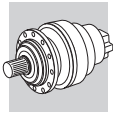
P₁ = 9.2 kW n₁=1400 min⁻¹

0.28	236133	1.1	5124	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	734200	823200	258300	312
0.29	221069	2.4	5040	—	3/V 21 L4	—	BN132MB4	M4LB4	—	—	779000	923000	1200000	328
0.29	215259	1.6	4970	—	3/V 19 L4	—	BN132MB4	M4LB4	—	—	638000	702000	200000	320
0.32	212208	2.5	4550	—	3/V 21 L4	—	BN132MB4	M4LB4	—	—	779000	923000	1200000	328
0.32	211407	1.6	4480	—	3/V 19 L4	—	BN132MB4	M4LB4	—	—	638000	702000	200000	320
0.32	187730	1.0	4449	—	3/V 17 L4	—	BN132MB4	M4LB4	—	—	442000	470000	150000	305
0.33	198944	1.3	4317	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	697400	781900	244000	312
0.35	190294	0.9	4129	—	3/V 17 L4	—	BN132MB4	M4LB4	—	—	442000	470000	150000	305
0.36	185764	1.9	4031	—	3/V 19 L4	—	BN132MB4	M4LB4	—	—	638000	702000	200000	320
0.38	176295	2.9	3780	—	3/V 21 L4	—	BN132MB4	M4LB4	—	—	779000	923000	1200000	328
0.40	167699	1.5	3639	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	662500	742800	230500	312
0.43	155118	1.6	3366	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	647200	725700	224600	312
0.45	150091	2.3	3180	—	3/V 19 L4	—	BN132MB4	M4LB4	—	—	638000	702000	200000	320
0.45	145993	1.2	3168	—	3/V 17 L4	—	BN132MB4	M4LB4	—	—	442000	470000	150000	305
0.51	125925	1.0	2835	—	3/V 16 L4	—	BN132MB4	M4LB4	—	—	420400	468800	141300	297
0.51	130648	1.9	2835	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	614700	689200	212100	312
0.52	120106	1.5	2773	—	3/V 17 L4	—	BN132MB4	M4LB4	—	—	442000	470000	150000	305
0.58	117288	3.0	2485	—	3/V 19 L4	—	BN132MB4	M4LB4	—	—	638000	702000	200000	320
0.59	113146	1.2	2426	—	3/V 16 L4	—	BN132MB4	M4LB4	—	—	401200	447400	134100	297
0.59	114493	2.2	2426	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	586600	657800	201300	312
0.64	104658	1.3	2244	—	3/V 16 L4	—	BN132MB4	M4LB4	—	—	391900	437000	130700	297
0.65	101753	2.5	2208	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	570300	639400	195100	312
0.73	82173	1.2	1963	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	206000	243000	90000	286
0.76	88148	1.5	1890	—	3/V 16 L4	—	BN132MB4	M4LB4	—	—	372200	415100	123400	297
0.79	88901	2.8	1820	—	3/V 18 L4	—	BN132MB4	M4LB4	—	—	538100	603400	182900	312
0.88	68831	1.7	1644	—	3/V 16 L3	—	BN132MB4	M4LB4	—	—	357000	398100	117800	296








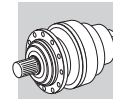
$P_1 = 9.2 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.88	71292	1.4	1636	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	206000	243000	90000	286
1.0	58029	2.3	1386	—	3/V 16 L3	—	BN132MB4	M4LB4	—	—	339100	378200	111300	296
1.0	60070	1.6	1378	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	205000	241900	89500	286
1.1	61847	2.7	1365	—	3/V 17 L3	—	BN132MB4	M4LB4	—	—	438700	466400	148700	304
1.1	58535	1.7	1308	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	201900	238100	88000	286
1.1	56258	0.9	1291	—	3/V 13 L3	—	BN132MB4	M4LB4	—	—	187400	225400	77900	276
1.2	58535	2.4	1215	—	3/V 17 L3	—	BN132MB4	M4LB4	—	—	423600	450400	143100	304
1.3	49321	1.9	1103	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	191800	226200	83100	286
1.3	49030	2.2	1096	—	3/V 16 L3	—	BN132MB4	M4LB4	—	—	316100	352500	102900	296
1.3	47402	1.2	1088	—	3/V 13 L3	—	BN132MB4	M4LB4	—	—	178000	214100	73500	276
1.4	48050	1.1	1009	—	3/V 13 L3	—	BN132MB4	M4LB4	—	—	174100	209400	71700	276
1.4	43768	1.0	1004	—	3/V 11 L3	—	BN132MB4	M4LB4	—	—	142100	176500	58200	266
1.5	46715	2.0	981	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	185200	218400	79900	286
1.6	39229	1.0	900	—	3/V 11 L3	—	BN132MB4	M4LB4	—	—	137500	170800	56100	266
1.7	38920	1.4	870	—	3/V 13 L3	—	BN132MB4	M4LB4	—	—	166500	200300	68300	276
1.7	39362	1.0	827	—	3/V 11 L3	—	BN132MB4	M4LB4	—	—	134100	166500	54500	266
1.7	39362	2.3	827	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	175900	207500	75500	286
1.8	39130	2.6	822	—	3/V 16 L3	—	BN132MB4	M4LB4	—	—	289900	323300	93500	296
1.9	33130	1.5	741	—	3/V 13 L3	—	BN132MB4	M4LB4	—	—	158600	190800	64700	276
2.0	32209	1.2	720	—	3/V 11 L3	—	BN132MB4	M4LB4	—	—	128600	159700	52100	266
2.2	31894	2.8	654	—	3/V 15 L3	—	BN132MB4	M4LB4	—	—	164000	193400	69800	286
2.2	30672	1.4	644	—	3/V 11 L3	—	BN132MB4	M4LB4	—	—	124400	154500	50200	266
2.6	26979	0.9	560	—	3/V 10 L3	—	BN132MB4	M4LB4	—	—	101000	126100	47900	256
2.8	24439	1.1	507	—	3/V 10 L3	—	BN132MB4	M4LB4	—	—	98100	122400	46300	256
3.3	21023	1.4	436	—	3/V 10 L3	—	BN132MB4	M4LB4	—	—	93700	117000	44100	256
8.0	9698	1.1	180	—	—	3/A 07 L2	BN132MB4	M4LB4	25600	32000	58900	78400	22700	237
9.3	8350	1.1	155	—	—	3/A 07 L2	BN132MB4	M4LB4	24400	30400	56300	74900	21600	237
10.2	7578	1.0	141	—	—	3/A 06 L2	BN132MB4	M4LB4	20800	23500	50700	59700	16300	227
10.3	7555	1.5	140	—	—	3/A 07 L2	BN132MB4	M4LB4	23600	29400	54700	72700	20900	237
11.1	6983	1.6	130	—	—	3/A 07 L2	BN132MB4	M4LB4	23000	28700	53400	71000	20400	237
12.8	6043	1.0	112	—	—	3/A 06 L2	BN132MB4	M4LB4	19300	21800	47400	55800	15100	227
13.2	5856	1.5	109	—	—	3/A 07 L2	BN132MB4	M4LB4	21700	27000	50600	67400	19200	237
14.7	5466	1.0	98.3	—	—	3/A 06 L2	BN132MB4	M4LB4	18400	20800	45500	53600	14400	227
16.3	4922	1.3	88.5	—	—	3/A 06 L2	BN132MB4	M4LB4	17800	20100	44100	52000	13900	227
16.4	4878	2.1	87.7	—	—	3/A 07 L2	BN132MB4	M4LB4	20200	25200	47500	63200	17900	237
17.7	4518	1.3	81.2	—	—	3/A 06 L2	BN132MB4	M4LB4	17300	19600	43000	50700	13500	227
20.6	3887	1.3	69.9	—	—	3/A 06 L2	BN132MB4	M4LB4	16400	18600	41100	48400	12900	227
21.1	3800	2.1	68.3	—	—	3/A 07 L2	BN132MB4	M4LB4	18600	23200	44100	58600	16400	237
23.0	3484	0.9	62.6	—	—	3/A 05 L2	BN132MB4	M4LB4	12700	14600	25200	29100	8520	217
23.9	3346	1.8	60.1	—	—	3/A 06 L2	BN132MB4	M4LB4	15600	17700	39300	46300	12300	227
25.1	3187	2.1	57.3	—	—	3/A 07 L2	BN132MB4	M4LB4	17500	21800	41800	55600	15500	237
25.2	3173	1.0	57.0	—	—	3/A 05 L2	BN132MB4	M4LB4	12300	14100	24500	28300	8260	217
25.9	3097	1.3	55.7	—	—	3/A 06 L2	BN132MB4	M4LB4	15200	17200	38400	45200	11900	227
27.0	2962	1.0	53.3	—	—	3/A 05 L2	BN132MB4	M4LB4	12000	13800	24000	27800	8070	217
27.9	2876	1.8	51.7	—	—	3/A 06 L2	BN132MB4	M4LB4	14900	16800	37600	44200	11700	227
31	2624	1.3	47.2	—	—	3/A 06 L2	BN132MB4	M4LB4	14400	16300	36500	43000	11300	227
33	2449	1.4	44.0	—	—	3/A 05 L2	BN132MB4	M4LB4	11300	13000	22700	26200	7580	217
35	2284	2.2	41.1	—	—	3/A 06 L2	BN132MB4	M4LB4	13800	15600	35000	41300	10800	227
37	2170	1.4	39.0	—	—	3/A 05 L2	BN132MB4	M4LB4	10800	12500	21900	25300	7280	217
41	1943	1.8	34.9	—	—	3/A 06 L2	BN132MB4	M4LB4	13000	14800	33400	39300	10200	227
44	1821	2.2	32.7	—	—	3/A 06 L2	BN132MB4	M4LB4	12800	14400	32700	38600	10000	227
45	1794	1.8	32.2	—	—	3/A 05 L2	BN132MB4	M4LB4	10100	11700	20600	23900	6830	217
52	1542	2.2	27.7	—	—	3/A 06 L2	BN132MB4	M4LB4	12100	13700	31100	36700	9470	227
52	1542	1.8	27.7	—	—	3/A 05 L2	BN132MB4	M4LB4	9640	11100	19700	22800	6490	217
65	1229	1.8	22.1	—	—	3/A 05 L2	BN132MB4	M4LB4	8940	10300	18400	21300	6020	217
77	1041	1.8	18.7	—	—	3/A 05 L2	BN132MB4	M4LB4	8460	9750	17500	20300	5700	217



$P_1 = 11 \text{ kW}$ $n_1=1400 \text{ min}^{-1}$

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.29	264322	2.0	5040	—	3/V 21 L4	—	BN160MR4	—	—	—	779000	923000	1200000	328
0.29	257375	1.4	4970	—	3/V 19 L4	—	BN160MR4	—	—	—	638000	702000	200000	320
0.32	253726	2.0	4550	—	3/V 21 L4	—	BN160MR4	—	—	—	779000	923000	1200000	328
0.32	252770	1.3	4480	—	3/V 19 L4	—	BN160MR4	—	—	—	638000	702000	200000	320
0.33	237867	1.1	4317	—	3/V 18 L4	—	BN160MR4	—	—	—	697400	781900	244000	312
0.36	222110	1.6	4031	—	3/V 19 L4	—	BN160MR4	—	—	—	638000	702000	200000	320
0.38	210788	2.5	3780	—	3/V 21 L4	—	BN160MR4	—	—	—	779000	923000	1200000	328
0.40	200510	1.2	3639	—	3/V 18 L4	—	BN160MR4	—	—	—	662500	742800	230500	312
0.40	205530	2.5	3600	—	3/V 21 L4	—	BN160MR4	—	—	—	779000	923000	1200000	328
0.43	185467	1.3	3366	—	3/V 18 L4	—	BN160MR4	—	—	—	647200	725700	224600	312
0.45	179457	1.9	3180	—	3/V 19 L4	—	BN160MR4	—	—	—	638000	702000	200000	320
0.45	174556	1.0	3168	—	3/V 17 L4	—	BN160MR4	—	—	—	442000	470000	150000	305
0.51	156209	1.6	2835	—	3/V 18 L4	—	BN160MR4	—	—	—	614700	689200	212100	312
0.52	143605	1.3	2773	—	3/V 17 L4	—	BN160MR4	—	—	—	442000	470000	150000	305
0.58	145186	1.2	2485	—	3/V 17 L4	—	BN160MR4	—	—	—	442000	470000	150000	305
0.58	140236	2.5	2485	—	3/V 19 L4	—	BN160MR4	—	—	—	638000	702000	200000	320
0.59	135284	1.0	2426	—	3/V 16 L4	—	BN160MR4	—	—	—	401200	447400	134100	297
0.59	136894	1.8	2426	—	3/V 18 L4	—	BN160MR4	—	—	—	586600	657800	201300	312
0.64	125135	1.1	2244	—	3/V 16 L4	—	BN160MR4	—	—	—	391900	437000	130700	297
0.65	121661	2.1	2208	—	3/V 18 L4	—	BN160MR4	—	—	—	570300	639400	195100	312
0.70	120616	1.5	2065	—	3/V 17 L4	—	BN160MR4	—	—	—	442000	470000	150000	305
0.73	98251	1.0	1963	—	3/V 15 L3	—	BN160MR4	—	—	—	206000	243000	90000	286
0.76	105394	1.3	1890	—	3/V 16 L4	—	BN160MR4	—	—	—	372200	415100	123400	297
0.79	106294	2.4	1820	—	3/V 18 L4	—	BN160MR4	—	—	—	538100	603400	182900	312
0.81	100416	1.8	1780	—	3/V 17 L4	—	BN160MR4	—	—	—	442000	470000	150000	305
0.86	98320	2.5	1683	—	3/V 18 L4	—	BN160MR4	—	—	—	525700	589400	178200	312
0.88	82297	1.4	1644	—	3/V 16 L3	—	BN160MR4	—	—	—	357000	398100	117800	296
0.88	85240	1.2	1636	—	3/V 15 L3	—	BN160MR4	—	—	—	206000	243000	90000	286
1.0	69382	1.9	1386	—	3/V 16 L3	—	BN160MR4	—	—	—	339100	378200	111300	296
1.0	71823	1.4	1378	—	3/V 15 L3	—	BN160MR4	—	—	—	205000	241900	89500	286
1.1	73947	2.3	1365	—	3/V 17 L3	—	BN160MR4	—	—	—	438700	466400	148700	304
1.1	69987	1.4	1308	—	3/V 15 L3	—	BN160MR4	—	—	—	201900	238100	88000	286
1.2	69987	2.0	1215	—	3/V 17 L3	—	BN160MR4	—	—	—	423600	450400	143100	304
1.3	61433	2.7	1134	—	3/V 17 L3	—	BN160MR4	—	—	—	414900	441200	139800	304
1.3	58970	1.6	1103	—	3/V 15 L3	—	BN160MR4	—	—	—	191800	226200	83100	286
1.3	58623	1.8	1096	—	3/V 16 L3	—	BN160MR4	—	—	—	316100	352500	102900	296
1.4	58970	2.8	1024	—	3/V 17 L3	—	BN160MR4	—	—	—	402400	427900	135100	304
1.4	57451	0.9	1009	—	3/V 13 L3	—	BN160MR4	—	—	—	174100	209400	71700	276
1.5	55855	1.7	981	—	3/V 15 L3	—	BN160MR4	—	—	—	185200	218400	79900	286
1.6	46905	2.7	900	—	3/V 16 L3	—	BN160MR4	—	—	—	297900	332200	96400	296
1.7	46535	1.2	870	—	3/V 13 L3	—	BN160MR4	—	—	—	166500	200300	68300	276
1.7	47063	2.0	827	—	3/V 15 L3	—	BN160MR4	—	—	—	175900	207500	75500	286
1.8	46786	2.1	822	—	3/V 16 L3	—	BN160MR4	—	—	—	289900	323300	93500	296
1.8	47213	1.0	810	—	3/V 13 L3	—	BN160MR4	—	—	—	162900	196000	66700	276
1.8	47769	2.8	810	—	3/V 17 L3	—	BN160MR4	—	—	—	375100	398800	125000	304
1.9	39612	1.3	741	—	3/V 13 L3	—	BN160MR4	—	—	—	158600	190800	64700	276
2.0	38511	1.0	720	—	3/V 11 L3	—	BN160MR4	—	—	—	128600	159700	52100	266
2.1	39223	1.3	673	—	3/V 13 L3	—	BN160MR4	—	—	—	154100	185400	62700	276
2.2	38134	2.3	654	—	3/V 15 L3	—	BN160MR4	—	—	—	164000	193400	69800	286
2.2	36672	1.1	644	—	3/V 11 L3	—	BN160MR4	—	—	—	124400	154500	50200	266
2.5	33049	1.5	567	—	3/V 13 L3	—	BN160MR4	—	—	—	146400	176100	59200	276
2.6	32131	1.1	551	—	3/V 11 L3	—	BN160MR4	—	—	—	118700	147400	47600	266
2.6	32131	2.7	551	—	3/V 15 L3	—	BN160MR4	—	—	—	155800	183700	66000	286
2.6	31942	2.9	548	—	3/V 16 L3	—	BN160MR4	—	—	—	256700	286300	81700	296
2.8	30092	1.7	516	—	3/V 13 L3	—	BN160MR4	—	—	—	142300	171300	57400	276
2.8	29715	1.2	510	—	3/V 11 L3	—	BN160MR4	—	—	—	116000	144000	46400	266
2.9	29610	2.9	491	—	3/V 15 L3	—	BN160MR4	—	—	—	150400	177400	63500	286
3.3	25136	1.2	436	—	3/V 10 L3	—	BN160MR4	—	—	—	93700	117000	44100	256
3.4	25037	1.7	430	—	3/V 11 L3	—	BN160MR4	—	—	—	110100	136800	43800	266
3.4	25662	1.8	425	—	3/V 13 L3	—	BN160MR4	—	—	—	134300	161600	53800	276
3.7	23694	2.8	388	—	3/V 15 L3	—	BN160MR4	—	—	—	140200	165400	58700	286
3.9	21583	2.1	370	—	3/V 13 L3	—	BN160MR4	—	—	—	128800	155000	51400	276

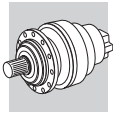


P₁ = 11 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
8.0	11596	0.9	180	—	—	3/A 07 L2	BN160MR4	M4LC4	25600	32000	58900	78400	22700	237
9.3	9983	0.9	155	—	—	3/A 07 L2	BN160MR4	M4LC4	24400	30400	56300	74900	21600	237
10.3	9034	1.2	140	—	—	3/A 07 L2	BN160MR4	M4LC4	23600	29400	54700	72700	20900	237
11.1	8349	1.3	130	—	—	3/A 07 L2	BN160MR4	M4LC4	23000	28700	53400	71000	20400	237
13.2	7002	1.3	109	—	—	3/A 07 L2	BN160MR4	M4LC4	21700	27000	50600	67400	19200	237
16.3	5885	1.1	88.5	—	—	3/A 06 L2	BN160MR4	M4LC4	17800	20100	44100	52000	13900	227
16.4	5832	1.7	87.7	—	—	3/A 07 L2	BN160MR4	M4LC4	20200	25200	47500	63200	17900	237
17.7	5403	1.1	81.2	—	—	3/A 06 L2	BN160MR4	M4LC4	17300	19600	43000	50700	13500	227
20.6	4647	1.1	69.9	—	—	3/A 06 L2	BN160MR4	M4LC4	16400	18600	41100	48400	12900	227
21.1	4543	1.7	68.3	—	—	3/A 07 L2	BN160MR4	M4LC4	18600	23200	44100	58600	16400	237
23.9	4000	1.5	60.1	—	—	3/A 06 L2	BN160MR4	M4LC4	15600	17700	39300	46300	12300	227
25.1	3810	1.7	57.3	—	—	3/A 07 L2	BN160MR4	M4LC4	17500	21800	41800	55600	15500	237
25.9	3703	1.1	55.7	—	—	3/A 06 L2	BN160MR4	M4LC4	15200	17200	38400	45200	11900	227
27.9	3439	1.5	51.7	—	—	3/A 06 L2	BN160MR4	M4LC4	14900	16800	37600	44200	11700	227
29.3	3274	2.7	49.2	—	—	3/A 07 L2	BN160MR4	M4LC4	16600	20800	39900	53100	14700	237
31	3137	1.1	47.2	—	—	3/A 06 L2	BN160MR4	M4LC4	14400	16300	36500	43000	11300	227
33	2928	1.1	44.0	—	—	3/A 05 L2	—	M4LC4	11300	13000	22700	26200	7580	217
35	2731	1.8	41.1	—	—	3/A 06 L2	BN160MR4	M4LC4	13800	15600	35000	41300	10800	227
37	2594	1.2	39.0	—	—	3/A 05 L2	—	M4LC4	10800	12500	21900	25300	7280	217
41	2323	1.5	34.9	—	—	3/A 06 L2	BN160MR4	M4LC4	13000	14800	33400	39300	10200	227
44	2177	1.8	32.7	—	—	3/A 06 L2	BN160MR4	M4LC4	12800	14400	32700	38600	10000	227
45	2145	1.5	32.2	—	—	3/A 05 L2	—	M4LC4	10100	11700	20600	23900	6830	217
52	1844	1.8	27.7	—	—	3/A 06 L2	BN160MR4	M4LC4	12100	13700	31100	36700	9470	227
52	1844	1.5	27.7	—	—	3/A 05 L2	—	M4LC4	9640	11100	19700	22800	6490	217
65	1470	1.5	22.1	—	—	3/A 05 L2	—	M4LC4	8940	10300	18400	21300	6020	217
77	1245	1.5	18.7	—	—	3/A 05 L2	—	M4LC4	8460	9750	17500	20300	5700	217

P₁ = 15 kW n₁=1400 min⁻¹

0.29	355501	1.5	5040	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.29	346158	1.0	4970	—	3/V 19 L4	—	BN160L4	—	—	—	638000	702000	200000	320
0.32	341251	1.5	4550	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.33	339964	1.0	4480	—	3/V 19 L4	—	BN160L4	—	—	—	638000	702000	200000	320
0.36	298728	1.2	4031	—	3/V 19 L4	—	BN160L4	—	—	—	638000	702000	200000	320
0.39	283501	1.8	3780	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.40	269677	0.9	3639	—	3/V 18 L4	—	BN160L4	—	—	—	662500	742800	230500	312
0.41	276429	1.9	3600	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.43	249445	1.0	3366	—	3/V 18 L4	—	BN160L4	—	—	—	647200	725700	224600	312
0.46	241362	1.4	3180	—	3/V 19 L4	—	BN160L4	—	—	—	638000	702000	200000	320
0.51	210094	1.2	2835	—	3/V 18 L4	—	BN160L4	—	—	—	614700	689200	212100	312
0.53	193142	0.9	2773	—	3/V 17 L4	—	BN160L4	—	—	—	442000	470000	150000	305
0.54	212143	2.5	2700	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.58	193501	2.7	2520	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.59	188612	1.9	2485	—	3/V 19 L4	—	BN160L4	—	—	—	638000	702000	200000	320
0.60	184117	1.4	2426	—	3/V 18 L4	—	BN160L4	—	—	—	586600	657800	201300	312
0.64	178750	2.9	2275	—	3/V 21 L4	—	BN160L4	—	—	—	779000	923000	1200000	328
0.66	163629	1.5	2208	—	3/V 18 L4	—	BN160L4	—	—	—	570300	639400	195100	312
0.71	162223	1.1	2065	—	3/V 17 L4	—	BN160L4	—	—	—	442000	470000	150000	305
0.77	141750	0.9	1890	—	3/V 16 L4	—	BN160L4	—	—	—	372200	415100	123400	297
0.80	142961	1.7	1820	—	3/V 18 L4	—	BN160L4	—	—	—	538100	603400	182900	312
0.82	135055	1.3	1780	—	3/V 17 L4	—	BN160L4	—	—	—	442000	470000	150000	305
0.87	132236	1.9	1683	—	3/V 18 L4	—	BN160L4	—	—	—	525700	589400	178200	312
0.89	110686	1.0	1644	—	3/V 16 L3	—	BN160L4	—	—	—	357000	398100	117800	296
1.0	111375	2.2	1418	—	3/V 18 L4	—	BN160L4	—	—	—	499300	559800	168300	312
1.1	93316	1.4	1386	—	3/V 16 L3	—	BN160L4	—	—	—	339100	378200	111300	296
1.1	96599	1.0	1378	—	3/V 15 L3	—	BN160L4	—	—	—	205000	241900	89500	286
1.1	99456	1.7	1365	—	3/V 17 L3	—	BN160L4	—	—	—	438700	466400	148700	304
1.1	94129	1.0	1308	—	3/V 15 L3	—	BN160L4	—	—	—	201900	238100	88000	286
1.2	94129	1.5	1215	—	3/V 17 L3	—	BN160L4	—	—	—	423600	450400	143100	304
1.2	96390	2.6	1213	—	3/V 18 L4	—	BN160L4	—	—	—	476500	534300	159800	312

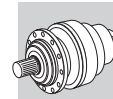


P₁ = 15 kW n₁=1400 min⁻¹

n ₂ min ⁻¹	M ₂ Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
1.3	82625	2.0	1134	—	3/V 17 L3	—	BN160L4	—	—	414900	441200	139800	304	
1.3	89159	2.8	1122	—	3/V 18 L4	—	BN160L4	—	—	465500	521900	155700	312	
1.3	79313	1.2	1103	—	3/V 15 L3	—	BN160L4	—	—	191800	226200	83100	286	
1.3	78845	1.3	1096	—	3/V 16 L3	—	BN160L4	—	—	316100	352500	102900	296	
1.4	79313	2.1	1024	—	3/V 17 L3	—	BN160L4	—	—	402400	427900	135100	304	
1.5	75122	1.3	981	—	3/V 15 L3	—	BN160L4	—	—	185200	218400	79900	286	
1.6	63085	2.0	900	—	3/V 16 L3	—	BN160L4	—	—	297900	332200	96400	296	
1.7	65891	2.4	851	—	3/V 17 L3	—	BN160L4	—	—	380600	404700	127000	304	
1.8	63298	1.5	827	—	3/V 15 L3	—	BN160L4	—	—	175900	207500	75500	286	
1.8	62924	1.6	822	—	3/V 16 L3	—	BN160L4	—	—	289900	323300	93500	296	
1.8	64247	2.1	810	—	3/V 17 L3	—	BN160L4	—	—	375100	398800	125000	304	
2.0	53276	0.9	741	—	3/V 13 L3	—	BN160L4	—	—	158600	190800	64700	276	
2.1	53049	2.3	693	—	3/V 16 L3	—	BN160L4	—	—	275500	307200	88300	296	
2.1	54134	2.9	683	—	3/V 17 L3	—	BN160L4	—	—	356300	378900	118100	304	
2.2	52754	0.9	673	—	3/V 13 L3	—	BN160L4	—	—	154100	185400	62700	276	
2.2	51288	1.7	654	—	3/V 15 L3	—	BN160L4	—	—	164000	193400	69800	286	
2.4	49306	2.6	608	—	3/V 17 L3	—	BN160L4	—	—	344100	365900	113600	304	
2.6	44450	1.1	567	—	3/V 13 L3	—	BN160L4	—	—	146400	176100	59200	276	
2.6	43215	2.0	551	—	3/V 15 L3	—	BN160L4	—	—	155800	183700	66000	286	
2.7	42960	2.2	548	—	3/V 16 L3	—	BN160L4	—	—	256700	286300	81700	296	
2.8	40473	1.3	516	—	3/V 13 L3	—	BN160L4	—	—	142300	171300	57400	276	
3.0	39824	2.1	491	—	3/V 15 L3	—	BN160L4	—	—	150400	177400	63500	286	
3.4	33674	1.2	430	—	3/V 11 L3	—	BN160L4	—	—	110100	136800	43800	266	
3.4	33674	2.9	430	—	3/V 15 L3	—	BN160L4	—	—	144500	170500	60700	286	
3.4	34514	1.3	425	—	3/V 13 L3	—	BN160L4	—	—	134300	161600	53800	276	
3.6	33358	2.8	411	—	3/V 16 L3	—	BN160L4	—	—	235500	262600	74200	296	
3.8	31867	2.1	388	—	3/V 15 L3	—	BN160L4	—	—	140200	165400	58700	286	
3.9	29029	1.6	370	—	3/V 13 L3	—	BN160L4	—	—	128800	155000	51400	276	
10.4	12150	0.9	140	—	—	3/A 07 L2	BN160L4	M5SB4	23600	29400	54700	72700	20900	237
11.3	11229	1.0	130	—	—	3/A 07 L2	BN160L4	M5SB4	23000	28700	53400	71000	20400	237
13.4	9417	1.0	109	—	—	3/A 07 L2	BN160L4	M5SB4	21700	27000	50600	67400	19200	237
16.7	7844	1.3	87.7	—	—	3/A 07 L2	BN160L4	M5SB4	20200	25200	47500	63200	17900	237
21.4	6111	1.3	68.3	—	—	3/A 07 L2	BN160L4	M5SB4	18600	23200	44100	58600	16400	237
24.3	5380	1.1	60.1	—	—	3/A 06 L2	BN160L4	—	15600	17700	39300	46300	12300	227
25.5	5125	1.3	57.3	—	—	3/A 07 L2	BN160L4	M5SB4	17500	21800	41800	55600	15500	237
28.2	4625	1.1	51.7	—	—	3/A 06 L2	BN160L4	—	14900	16800	37600	44200	11700	227
29.7	4403	2.0	49.2	—	—	3/A 07 L2	BN160L4	M5SB4	16600	20800	39900	53100	14700	237
35	3710	2.4	41.5	—	—	3/A 07 L2	BN160L4	M5SB4	15700	19600	37900	50500	13900	237
36	3674	1.3	41.1	—	—	3/A 06 L2	BN160L4	—	13800	15600	35000	41300	10800	227
42	3124	1.1	34.9	—	—	3/A 06 L2	BN160L4	—	13000	14800	33400	39300	10200	227
45	2928	1.3	32.7	—	—	3/A 06 L2	BN160L4	—	12800	14400	32700	38600	10000	227
45	2891	2.7	32.3	—	—	3/A 07 L2	BN160L4	M5SB4	14500	18000	35200	46800	12800	237
53	2480	1.3	27.7	—	—	3/A 06 L2	BN160L4	—	12100	13700	31100	36700	9470	227
54	2424	2.7	27.1	—	—	3/A 07 L2	BN160L4	M5SB4	13600	17000	33400	44400	12100	237

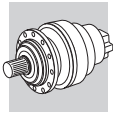
P₁ = 18.5 kW n₁=1400 min⁻¹

0.29	438451	1.2	5040	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.32	420876	1.2	4550	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.36	368431	0.9	4031	—	3/V 19 L4	—	BN180M4	—	—	—	638000	702000	200000	320
0.39	349651	1.5	3780	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.41	340930	1.5	3600	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.46	297680	1.1	3180	—	3/V 19 L4	—	BN180M4	—	—	—	638000	702000	200000	320
0.51	259116	1.0	2835	—	3/V 18 L4	—	BN180M4	—	—	—	614700	689200	212100	312
0.54	261644	2.0	2700	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.58	238651	2.2	2520	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.59	232621	1.5	2485	—	3/V 19 L4	—	BN180M4	—	—	—	638000	702000	200000	320
0.60	227077	1.1	2426	—	3/V 18 L4	—	BN180M4	—	—	—	586600	657800	201300	312
0.64	220459	2.4	2275	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.66	201809	1.2	2208	—	3/V 18 L4	—	BN180M4	—	—	—	570300	639400	195100	312








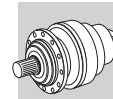
$P_1 = 18.5 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.71	200075	0.9	2065	—	3/V 17 L4	—	BN180M4	—	—	—	442000	470000	150000	305
0.77	183151	2.8	1890	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.80	176319	1.4	1820	—	3/V 18 L4	—	BN180M4	—	—	—	538100	603400	182900	312
0.81	178393	2.9	1800	—	3/V 21 L4	—	BN180M4	—	—	—	779000	923000	1200000	328
0.82	166568	1.1	1780	—	3/V 17 L4	—	BN180M4	—	—	—	442000	470000	150000	305
0.87	163091	1.5	1683	—	3/V 18 L4	—	BN180M4	—	—	—	525700	589400	178200	312
1.0	137363	1.8	1418	—	3/V 18 L4	—	BN180M4	—	—	—	499300	559800	168300	312
1.1	115090	1.1	1386	—	3/V 16 L3	—	BN180M4	—	—	—	339100	378200	111300	296
1.1	122662	1.4	1365	—	3/V 17 L3	—	BN180M4	—	—	—	438700	466400	148700	304
1.2	116093	1.2	1215	—	3/V 17 L3	—	BN180M4	—	—	—	423600	450400	143100	304
1.2	118882	2.1	1213	—	3/V 18 L4	—	BN180M4	—	—	—	476500	534300	159800	312
1.3	101904	1.6	1134	—	3/V 17 L3	—	BN180M4	—	—	—	414900	441200	139800	304
1.3	109963	2.3	1122	—	3/V 18 L4	—	BN180M4	—	—	—	465500	521900	155700	312
1.3	97819	1.0	1103	—	3/V 15 L3	—	BN180M4	—	—	—	191800	226200	83100	286
1.3	97242	1.1	1096	—	3/V 16 L3	—	BN180M4	—	—	—	316100	352500	102900	296
1.4	97819	1.7	1024	—	3/V 17 L3	—	BN180M4	—	—	—	402400	427900	135100	304
1.5	92651	1.0	981	—	3/V 15 L3	—	BN180M4	—	—	—	185200	218400	79900	286
1.6	77805	1.6	900	—	3/V 16 L3	—	BN180M4	—	—	—	297900	332200	96400	296
1.7	81265	2.0	851	—	3/V 17 L3	—	BN180M4	—	—	—	380600	404700	127000	304
1.8	78067	1.2	827	—	3/V 15 L3	—	BN180M4	—	—	—	175900	207500	75500	286
1.8	77607	1.3	822	—	3/V 16 L3	—	BN180M4	—	—	—	289900	323300	93500	296
1.8	79238	1.7	810	—	3/V 17 L3	—	BN180M4	—	—	—	375100	398800	125000	304
2.1	65428	1.9	693	—	3/V 16 L3	—	BN180M4	—	—	—	275500	307200	88300	296
2.1	66765	2.3	683	—	3/V 17 L3	—	BN180M4	—	—	—	356300	378900	118100	304
2.2	63256	1.4	654	—	3/V 15 L3	—	BN180M4	—	—	—	164000	193400	69800	286
2.4	60811	2.1	608	—	3/V 17 L3	—	BN180M4	—	—	—	344100	365900	113600	304
2.6	55467	2.8	567	—	3/V 17 L3	—	BN180M4	—	—	—	337000	358400	111000	304
2.6	53299	1.6	551	—	3/V 15 L3	—	BN180M4	—	—	—	155800	183700	66000	286
2.7	52985	1.8	548	—	3/V 16 L3	—	BN180M4	—	—	—	256700	286300	81700	296
2.8	49916	1.0	516	—	3/V 13 L3	—	BN180M4	—	—	—	142300	171300	57400	276
2.9	51239	2.9	512	—	3/V 17 L3	—	BN180M4	—	—	—	326800	347500	107300	304
3.0	49116	1.7	491	—	3/V 15 L3	—	BN180M4	—	—	—	150400	177400	63500	286
3.2	44669	2.7	462	—	3/V 16 L3	—	BN180M4	—	—	—	243900	272000	77200	296
3.4	41532	1.0	430	—	3/V 11 L3	—	BN180M4	—	—	—	110100	136800	43800	266
3.4	41532	2.3	430	—	3/V 15 L3	—	BN180M4	—	—	—	144500	170500	60700	286
3.4	42567	1.1	425	—	3/V 13 L3	—	BN180M4	—	—	—	134300	161600	53800	276
3.6	41141	2.3	411	—	3/V 16 L3	—	BN180M4	—	—	—	235500	262600	74200	296
3.6	41462	2.9	405	—	3/V 17 L3	—	BN180M4	—	—	—	304700	324000	99200	304
3.8	39303	1.7	388	—	3/V 15 L3	—	BN180M4	—	—	—	140200	165400	58700	286
3.9	35802	1.3	370	—	3/V 13 L3	—	BN180M4	—	—	—	128800	155000	51400	276
16.7	9674	1.1	87.7	—	—	3/A 07 L2	BN180M4	M5LA4	20200	25200	47500	63200	17900	237
21.4	7536	1.1	68.3	—	—	3/A 07 L2	BN180M4	M5LA4	18600	23200	44100	58600	16400	237
24.3	6636	0.9	60.1	—	—	3/A 06 L2	BN180M4	—	15600	17700	39300	46300	12300	227
25.5	6320	1.1	57.3	—	—	3/A 07 L2	BN180M4	M5LA4	17500	21800	41800	55600	15500	237
28.2	5705	0.9	51.7	—	—	3/A 06 L2	BN180M4	—	14900	16800	37600	44200	11700	227
29.7	5430	1.6	49.2	—	—	3/A 07 L2	BN180M4	M5LA4	16600	20800	39900	53100	14700	237
35	4576	2.0	41.5	—	—	3/A 07 L2	BN180M4	M5LA4	15700	19600	37900	50500	13900	237
36	4531	1.1	41.1	—	—	3/A 06 L2	BN180M4	—	13800	15600	35000	41300	10800	227
42	3853	0.9	34.9	—	—	3/A 06 L2	BN180M4	—	13000	14800	33400	39300	10200	227
45	3611	1.1	32.7	—	—	3/A 06 L2	BN180M4	—	12800	14400	32700	38600	10000	227
45	3565	2.2	32.3	—	—	3/A 07 L2	BN180M4	M5LA4	14500	18000	35200	46800	12800	237
53	3059	1.1	27.7	—	—	3/A 06 L2	BN180M4	—	12100	13700	31100	36700	9470	227
54	2990	2.2	27.1	—	—	3/A 07 L2	BN180M4	M5LA4	13600	17000	33400	44400	12100	237



$P_1 = 22 \text{ kW}$ $n_1 = 1400 \text{ min}^{-1}$

n_2 min ⁻¹	M_2 Nm	S	i	Pt kW					Rn ₂ [N]					
									MC	MZ	HC/PC	HZ/PZ	FZ	
0.29	519622	1.0	5040	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.32	498793	1.0	4550	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.39	414382	1.3	3780	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.41	404046	1.3	3600	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.46	352789	1.0	3180	—	3/V 19 L4	—	BN180L4	—	—	—	638000	702000	200000	320
0.54	310082	1.7	2700	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.58	282832	1.8	2520	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.59	275686	1.3	2485	—	3/V 19 L4	—	BN180L4	—	—	—	638000	702000	200000	320
0.60	269116	0.9	2426	—	3/V 18 L4	—	BN180L4	—	—	—	586600	657800	201300	312
0.64	261273	2.0	2275	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.66	239170	1.0	2208	—	3/V 18 L4	—	BN180L4	—	—	—	570300	639400	195100	312
0.78	217057	2.4	1890	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.81	208961	1.2	1820	—	3/V 18 L4	—	BN180L4	—	—	—	538100	603400	182900	312
0.81	211419	2.4	1800	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
0.82	197405	0.9	1780	—	3/V 17 L4	—	BN180L4	—	—	—	442000	470000	150000	305
0.87	193284	1.3	1683	—	3/V 18 L4	—	BN180L4	—	—	—	525700	589400	178200	312
0.97	178140	2.9	1517	—	3/V 21 L4	—	BN180L4	—	—	—	779000	923000	1200000	328
1.0	162793	1.5	1418	—	3/V 18 L4	—	BN180L4	—	—	—	499300	559800	168300	312
1.1	136396	1.0	1386	—	3/V 16 L3	—	BN180L4	—	—	—	339100	378200	111300	296
1.1	145370	1.2	1365	—	3/V 17 L3	—	BN180L4	—	—	—	438700	466400	148700	304
1.2	137585	1.0	1215	—	3/V 17 L3	—	BN180L4	—	—	—	423600	450400	143100	304
1.2	140890	1.8	1213	—	3/V 18 L4	—	BN180L4	—	—	—	476500	534300	159800	312
1.3	120769	1.4	1134	—	3/V 17 L3	—	BN180L4	—	—	—	414900	441200	139800	304
1.3	130320	1.9	1122	—	3/V 18 L4	—	BN180L4	—	—	—	465500	521900	155700	312
1.3	115245	0.9	1096	—	3/V 16 L3	—	BN180L4	—	—	—	316100	352500	102900	296
1.4	115928	1.4	1024	—	3/V 17 L3	—	BN180L4	—	—	—	402400	427900	135100	304
1.6	92209	1.4	900	—	3/V 16 L3	—	BN180L4	—	—	—	297900	332200	96400	296
1.7	96310	1.7	851	—	3/V 17 L3	—	BN180L4	—	—	—	380600	404700	127000	304
1.8	92520	1.0	827	—	3/V 15 L3	—	BN180L4	—	—	—	175900	207500	75500	286
1.8	91974	1.1	822	—	3/V 16 L3	—	BN180L4	—	—	—	289900	323300	93500	296
1.8	93907	1.4	810	—	3/V 17 L3	—	BN180L4	—	—	—	375100	398800	125000	304
2.0	85487	2.9	736	—	3/V 18 L4	—	BN180L4	—	—	—	410200	459900	135300	312
2.1	77540	1.6	693	—	3/V 16 L3	—	BN180L4	—	—	—	275500	307200	88300	296
2.1	79126	2.0	683	—	3/V 17 L3	—	BN180L4	—	—	—	356300	378900	118100	304
2.2	74966	1.2	654	—	3/V 15 L3	—	BN180L4	—	—	—	164000	193400	69800	286
2.4	72068	1.8	608	—	3/V 17 L3	—	BN180L4	—	—	—	344100	365900	113600	304
2.6	65735	2.3	567	—	3/V 17 L3	—	BN180L4	—	—	—	337000	358400	111000	304
2.7	63166	1.4	551	—	3/V 15 L3	—	BN180L4	—	—	—	155800	183700	66000	286
2.7	62794	1.5	548	—	3/V 16 L3	—	BN180L4	—	—	—	256700	286300	81700	296
2.9	60724	2.5	512	—	3/V 17 L3	—	BN180L4	—	—	—	326800	347500	107300	304
3.0	58209	1.5	491	—	3/V 15 L3	—	BN180L4	—	—	—	150400	177400	63500	286
3.2	52939	2.3	462	—	3/V 16 L3	—	BN180L4	—	—	—	243900	272000	77200	296
3.4	49220	2.0	430	—	3/V 15 L3	—	BN180L4	—	—	—	144500	170500	60700	286
3.4	50448	0.9	425	—	3/V 13 L3	—	BN180L4	—	—	—	134300	161600	53800	276
3.4	50448	2.9	425	—	3/V 17 L3	—	BN180L4	—	—	—	309200	328700	100800	304
3.6	48757	1.9	411	—	3/V 16 L3	—	BN180L4	—	—	—	235500	262600	74200	296
3.6	49138	2.4	405	—	3/V 17 L3	—	BN180L4	—	—	—	304700	324000	99200	304
3.8	46579	1.4	388	—	3/V 15 L3	—	BN180L4	—	—	—	140200	165400	58700	286
4.0	42430	1.1	370	—	3/V 13 L3	—	BN180L4	—	—	—	128800	155000	51400	276
29.8	6436	1.4	49.2	—	—	3/A 07 L2	BN180L4	—	16600	20800	39900	53100	14700	237
35	5423	1.7	41.5	—	—	3/A 07 L2	BN180L4	—	15700	19600	37900	50500	13900	237
36	5370	0.9	41.1	—	—	3/A 06 L2	BN180L4	—	13800	15600	35000	41300	10800	227
45	4279	0.9	32.7	—	—	3/A 06 L2	BN180L4	—	12800	14400	32700	38600	10000	227
45	4225	1.9	32.3	—	—	3/A 07 L2	BN180L4	—	14500	18000	35200	46800	12800	237
53	3625	0.9	27.7	—	—	3/A 06 L2	BN180L4	—	12100	13700	31100	36700	9470	227
54	3543	1.9	27.1	—	—	3/A 07 L2	BN180L4	—	13600	17000	33400	44400	12100	237



26.0 - DATI TECNICI RIDUTTORI COMBINATI VITE-PLANETARI - 3/V

26.0 - 3/V - PLANETARY-WORM RATING CHARTS

26.0 - 3/VF - TECHNISCHE DATEN DER GETRIEBE

26.0 - DONNEES TECHNIQUES REDUCTEURS COMBINÉ - 3/V

Guida alla consultazione delle tabelle.

Reading the rating chart




Anleitung für die richtige Konsultation der Tabellen.

Guide pour la consultation des tableaux.

1

3/V 00L3

1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 00L3	415	3.4	700	0.37	—	63-71-80	8060	8210	21500	23600	5340	190
	3/V 00L3	436	3.2	700	0.37	—	63-71	8190	8340	21800	24000	5420	190
	3/V 00L3	509	2.8	988	0.43	—	63-71-80	8620	8780	22900	25100	5710	190
	3/V 00L3	562	2.5	700	0.27	—	63-71-80	8910	9080	23600	25900	5900	190
	3/V 00L3	654	2.1	1000	0.36	—	63-71	9370	9550	24700	27100	6210	190

2

3

4

5

6

7

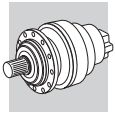
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9

10




11

1	Coppia massima trasmissibile dal riduttore	<i>Gearbox max. transmissible torque</i>	Nenn-Drehmoment am Abtrieb des Bezuggetriebes	<i>Couple maximum du réducteur</i>
2	Velocità di comando riduttore	<i>Gearbox drive speed</i>	Drehzahl am Getriebeantrieb	<i>Vitesse angulaire à l'entrée du réducteur</i>
3	Grandezza riduttore in esecuzione combinata vite +epicicloidale	<i>Frame size of combined worm + planetary gearbox</i>	Baugröße des kombinierten Getriebes 300 + Schneckengetriebe	<i>Taille réducteur combiné série 300 + réducteur à vis sans fin</i>
4	Rapporto di riduzione	<i>Gear ratio</i>	Übersetzung	<i>Rapport de réduction</i>
5	Velocità angolare in uscita riduttore	<i>Gearbox output speed</i>	Drehzahl am Getriebeabtrieb	<i>Vitesse angulaire en sortie réducteur</i>
6	Coppia nominale all'albero lento del riduttore. basata su: - fattore di sicurezza S=1 - durata di 10000 h	<i>Gearbox rated output torque. based on: - safety factor S=1 - 10000 hrs theoretical lifetime</i>	Nenn-Drehmoment am Getriebeabtrieb mit Sicherheitsfaktor S=1 für eine Dauer von 10000 h	<i>Couple nominal à la sortie du réducteur avec facteur de sécurité S=1 pendant une durée de 10000 h</i>
7	Potenza nominale all'albero veloce del riduttore. basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	<i>Gearbox rated input power. based on: - safety factor S=1 - 10000 hrs theoretical lifetime</i>	Nenn-Leistung im Getriebeantrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 h	<i>Puissance nominale en entrée réducteur avec facteur de sécurité S=1 pendant une durée de 10000 h</i>
8	Potenza termica riduttore	<i>Gearbox thermal capacity</i>	Wärmeleistung	<i>Puissance thermique réducteur</i>
9	Grandezza motore elettrico IEC installabile. - Le predisposizioni contrassegnate con * sono dotate di una linguetta ribassata. Le predisposizioni indicate in corsivo possono essere realizzate. a richiesta. con flangia in forma costruttiva B14	<i>Frame size of compatible IEC electric motor. - IEC inputs marked with * feature a lowered key. Input options in italic are available with B14 flange at request.</i>	Baugröße einbaubarer IEC -Elektromotor. - Alle Getriebe, die * gekennzeichnet sind, werden mit einer weiter unten eingebauten Passfeder geliefert. Die Getriebe, deren Vorbereitungen in Kursivschrift hervorgehoben werden, können auf Anfrage mit einem Flansch der Form B14 ausgestattet werden	<i>Taille IEC moteur électrique à installer. - Les moteurs dont les prédispositions sont repérées par * sont dotée en série d'une clavette à hauteur réduite. Les réducteurs dont les prédispositions sont indiquées en italique sont équipés, sur demande, d'une bride forme B14.</i>
10	Carichi radiali applicabili all'albero lento. basati su: - fattore di sicurezza S=1 - durata teorica 10000 h Per forze non applicate in mezzzeria riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	<i>Permitted overhung loading on output shaft. based on: - safety factor S=1 - 10000 hrs theoretical lifetime For forces applying off the shaft midpoint. see diagrams provided in the pages following dimensions of the gearbox under study</i>	Auf die Mitte der Abtriebswelle für eine Dauer von 10000 Std. applizierbare Nenn-Radialkräfte und Sicherheitsfaktor S=1 Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	<i>Charges radiales nominales applicables à la moitié de l'arbre pendant : - facteur de sécurité S=1 - durée de 10000 h Pour d'autres positions de charge, voir diagrammes figurant à la suite des pages dimensionnelles de la taille sélectionnée</i>
11	Pagina delle dimensioni	<i>Page installation drawing can be found at</i>	Maßseiten	<i>Page avec les dimensions</i>






3/V 00L3

1000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 00L3	415	3.4	700	0.37	—	63-71-80	8060	8210	21500	23600	5340	190
	3/V 00L3	436	3.2	700	0.37	—	63-71	8190	8340	21800	24000	5420	190
	3/V 00L3	509	2.8	988	0.43	—	63-71-80	8620	8780	22900	25100	5710	190
	3/V 00L3	562	2.5	700	0.27	—	63-71-80	8910	9080	23600	25900	5900	190
	3/V 00L3	654	2.1	1000	0.36	—	63-71	9370	9550	24700	27100	6210	190
	3/V 00L3	689	2.0	1000	0.32	—	63-71-80	9540	9720	25100	27500	6320	190
	3/V 00L3	818	1.7	1000	0.30	—	63-71	10100	10300	26400	28900	6690	190
	3/V 00L3	903	1.5	700	0.19	—	63-71	10400	10600	27200	29800	6910	190
	3/V 00L3	997	1.4	811	0.17	—	63-71-80	10800	11000	28000	30700	7140	190
	3/V 00L3	1107	1.3	1000	0.22	—	63-71	11200	11400	28900	31700	7400	190
	3/V 00L3	1198	1.2	837	0.16	—	63-71	11500	11700	29600	32400	7600	190
	3/V 00L3	1381	1.0	1000	0.18	—	63-71	12000	12300	30900	33900	7960	190
	3/V 00L3	1495	0.94	860	0.13	—	63-71	12300	12600	31000	34000	8000	190
	3/V 00L3	1869	0.75	860	0.11	—	63-71	13300	13600	31000	34000	8000	190
	3/V 00L3	2333	0.60	700	0.07	—	63-71	14300	14600	31000	34000	8000	190




3/V 01L3

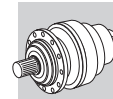
2000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 01L3	430	3.3	1901	0.85	—	63-71-80	8150	8300	21800	23900	5400	198
	3/V 01L3	443	3.2	1910	0.86	—	63-71-80	8230	8380	21900	24100	5450	198
	3/V 01L3	509	2.8	1953	0.84	—	63-71-80	8620	8780	22900	25100	5710	198
	3/V 01L3	562	2.5	1400	0.55	—	63-71-80	8910	9080	23600	25900	5900	198
	3/V 01L3	654	2.1	2000	0.71	—	63-71	9370	9550	24700	27100	6210	198
	3/V 01L3	689	2.0	2000	0.64	—	63-71-80	9540	9720	25100	27500	6320	198
	3/V 01L3	799	1.8	1544	0.40	—	63-71-80	10000	10200	26200	28700	6640	198
	3/V 01L3	903	1.5	1400	0.38	—	63-71	10400	10600	27200	29800	6910	198
	3/V 01L3	997	1.4	1604	0.33	—	63-71-80	10800	11000	28000	30700	7140	198
	3/V 01L3	1105	1.3	2000	0.42	—	63-71	11200	11400	28900	31700	7390	198
	3/V 01L3	1198	1.2	1655	0.32	—	63-71	11500	11700	29600	32400	7600	198
	3/V 01L3	1381	1.0	2000	0.36	—	63-71	12000	12300	30900	33900	7960	198
	3/V 01L3	1495	0.94	1700	0.26	—	63-71	12300	12600	31000	34000	8000	198
	3/V 01L3	1869	0.75	1700	0.23	—	63-71	13300	13600	31000	34000	8000	198
	3/V 01L3	2333	0.60	1150	0.12	—	63-71	14300	14600	31000	34000	8000	198

3/V 03L3




2800 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 03L3	395	3.5	2179	1.1	—	71-80-90	23400	26900	43800	50600	15700	206
	3/V 03L3	460	3.0	2194	1.0	—	71-80-90	24600	28400	45800	53000	16600	206
	3/V 03L3	502	2.8	1941	0.74	—	71-80-90	25300	29200	47100	54400	17100	206
	3/V 03L3	544	2.6	2744	1.1	—	71-80-90	26000	30000	48200	55700	17500	206
	3/V 03L3	623	2.2	2222	0.75	—	71-80-90	27200	31400	50200	58000	18300	206
	3/V 03L3	736	1.9	2680	0.77	—	71-80-90	28800	33100	52800	61000	19400	206
	3/V 03L3	793	1.8	2094	0.56	—	71-80-90	29500	34000	54000	62400	19900	206
	3/V 03L3	923	1.5	2665	0.61	—	71-80-90	31000	35800	56500	65300	20900	206
	3/V 03L3	1023	1.4	2710	0.62	—	71-80	32100	37000	58300	67400	21600	206
	3/V 03L3	1189	1.2	2239	0.44	—	71-80	33800	38900	60900	70500	22700	206
	3/V 03L3	1385	1.0	2845	0.48	—	71-80	35500	40900	63800	73800	23900	206
	3/V 03L3	1610	0.87	2300	0.33	—	71-80	37300	43000	64000	74000	24000	206
	3/V 03L3	1728	0.81	2845	0.38	—	71-80	38200	44100	64000	74000	24000	206
	3/V 03L3	2009	0.70	2300	0.27	—	71-80	40200	46300	64000	74000	24000	206
	3/V 03L3	2430	0.58	2000	0.19	—	71-80	42800	49400	64000	74000	24000	206






3/V 05L3

4600 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 05L3	396	3.5	3745	1.7	—	71-80-90-100-112	23400	27000	43800	50700	15800	216
	3/V 05L3	462	3.0	4742	1.9	—	71-80-90-100-112	24600	28400	45900	53000	16600	216
	3/V 05L3	529	2.6	3925	1.4	—	71-80-90-100-112	25800	29700	47800	55300	17300	216
	3/V 05L3	576	2.4	4902	1.6	—	71-80-90-100-112	26500	30600	49000	56700	17900	216
	3/V 05L3	623	2.2	4492	1.5	—	71-80-90-100-112	27200	31400	50200	58000	18300	216
	3/V 05L3	715	2.0	4123	1.1	—	71-80-90-100-112	28500	32800	52300	60500	19200	216
	3/V 05L3	793	1.8	4193	1.1	—	71-80-90-100-112	29500	34000	54000	62400	19900	216
	3/V 05L3	894	1.6	4276	0.93	—	71-80-90-100-112	30700	35400	55900	64700	20700	216
	3/V 05L3	1057	1.3	4394	0.90	—	71-80-90-100-112	32500	37400	58800	68000	21900	216
	3/V 05L3	1116	1.3	4433	0.77	—	71-80-90-100-112	33100	38100	59800	69100	22300	216
	3/V 05L3	1231	1.1	5493	0.97	—	71-80-90-100-112	34200	39400	61600	71200	23000	216
	3/V 05L3	1431	0.98	4600	0.70	—	71-80-90-100-112	35900	41400	64000	74000	24000	216
	3/V 05L3	1620	0.86	3800	0.48	—	71-80-90-100-112	37400	43100	64000	74000	24000	216
	3/V 05L3	1786	0.78	4600	0.56	—	71-80-90-100-112	38700	44500	64000	74000	24000	216
	3/V 05L3	2160	0.65	3800	0.38	—	71-80-90-100-112	41200	47500	64000	74000	24000	216




3/V 06L3

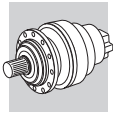
8500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 06L3	395	3.5	7421	3.4	—	71-80-90-100-112	29300	33100	69100	81400	23000	226
	3/V 06L3	427	3.3	8218	3.5	—	71-80-90-100-112	30100	34000	70700	83300	23600	226
	3/V 06L3	527	2.7	7421	2.6	—	71-80-90-100-112	32200	36500	75300	88800	25300	226
	3/V 06L3	569	2.5	8506	2.8	—	71-80-90-100-112	33100	37400	77100	90800	25900	226
	3/V 06L3	661	2.1	8664	2.4	—	71-80-90-100-112	34800	39400	80700	95000	27300	226
	3/V 06L3	698	2.0	7493	2.0	—	71-80-90-100-112	35400	40100	81900	96600	27700	226
	3/V 06L3	791	1.8	7421	1.9	—	71-80-90-100-112	36900	41800	85100	100200	28900	226
	3/V 06L3	930	1.5	7893	1.6	—	71-80-90-100-112	39000	44100	89300	105300	30500	226
	3/V 06L3	992	1.4	9107	1.9	—	71-80-90-100-112	39800	45000	91100	107300	31200	226
	3/V 06L3	1153	1.2	8207	1.5	—	71-80-90-100-112	41900	47400	95300	112300	32800	226
	3/V 06L3	1212	1.2	7421	1.3	—	71-80-90-100-112	42600	48200	96700	114000	33400	226
	3/V 06L3	1395	1.0	8494	1.2	—	71-80-90-100-112	44600	50500	100900	118900	35000	226
	3/V 06L3	1768	0.79	8500	1.0	—	71-80-90-100-112	48300	54600	101000	119000	35000	226
	3/V 06L3	2139	0.65	8500	0.85	—	71-80-90-100-112	51400	58200	101000	119000	35000	226
	3/V 06L3	2588	0.54	7000	0.58	—	71-80-90-100-112	54800	62000	101000	119000	35000	226

3/V 07L3




14000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 07L3	386	3.6	9025	4.2	—	80-90-100-112-132	33100	41300	74100	98500	29300	236
	3/V 07L3	460	3.0	12301	5.0	—	80-90-100-112-132	35000	43700	78100	103900	31100	236
	3/V 07L3	507	2.8	13639	5.0	—	80-90-100-112-132	36200	45200	80400	106900	32100	236
	3/V 07L3	655	2.1	13969	4.3	—	80-90-100-112-132	39400	49200	86800	115400	34900	236
	3/V 07L3	761	1.8	14167	3.8	—	80-90-100-112-132	41400	51700	90800	120800	36700	236
	3/V 07L3	773	1.8	10039	2.4	—	80-90-100-112-132	41700	52000	91200	121300	36900	236
	3/V 07L3	920	1.5	12301	2.7	—	80-90-100-112-132	44200	55100	96100	127900	39100	236
	3/V 07L3	1015	1.4	14285	2.9	—	80-90-100-112-132	45600	56900	99000	131600	40400	236
	3/V 07L3	1159	1.2	10685	1.9	—	80-90-100-112-132	47700	59500	103000	137000	42300	236
	3/V 07L3	1288	1.1	13809	2.3	—	80-90-100-112-132	49400	61600	106300	141400	43800	236
	3/V 07L3	1411	0.99	12301	1.8	—	80-90-100-112-132	50900	63600	109000	145000	45000	236
	3/V 07L3	1545	0.91	11000	1.5	—	80-90-100-112-132	52500	65500	109000	145000	45000	236
	3/V 07L3	1964	0.71	12720	1.4	—	80-90-100-112-132	56800	71000	109000	145000	45000	236
	3/V 07L3	2150	0.65	11000	1.1	—	80-90-100-112-132	58600	73100	109000	145000	45000	236
	3/V 07L3	2472	0.57	11000	0.99	—	80-90-100-112-132	61400	76600	109000	145000	45000	236






3/V 09L3

20000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 09L3	370	3.8	13000	6.8	—	100-112-132	—	—	73800	97300	23100	246
	3/V 09L3	442	3.2	16666	7.4	—	100-112-132	—	—	77800	102600	24500	246
	3/V 09L3	507	2.8	14285	5.2	—	132-160	—	—	81100	106900	25700	246
	3/V 09L3	655	2.1	17460	5.2	—	100-112-132	—	—	87600	115400	27900	246
	3/V 09L3	761	1.8	14285	3.7	—	100-112-132	—	—	91600	120800	29400	246
	3/V 09L3	800	1.8	20635	5.2	—	100-112-132	—	—	93000	122600	29900	246
	3/V 09L3	920	1.5	12301	2.6	—	100-112-132	—	—	97000	127900	31300	246
	3/V 09L3	1004	1.4	17460	3.5	—	100-112-132	—	—	99500	131200	32200	246
	3/V 09L3	1159	1.2	16428	2.8	—	100-112-132	—	—	103900	137000	33800	246
	3/V 09L3	1288	1.1	20723	3.3	—	100-112-132	—	—	107300	141400	35000	246
	3/V 09L3	1411	0.99	12301	1.8	—	100-112-132	—	—	110000	145000	36000	246
	3/V 09L3	1623	0.86	14863	2.0	—	100-112	—	—	110000	145000	36000	246
	3/V 09L3	1964	0.71	12720	1.4	—	100-112	—	—	110000	145000	36000	246
	3/V 09L3	2150	0.65	17000	1.6	—	100-112-132	—	—	110000	145000	36000	246
	3/V 09L3	2472	0.57	17000	1.5	—	100-112	—	—	110000	145000	36000	246




3/V 10L3

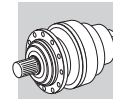
30000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 10L3	436	3.2	29968	12.8	—	132-160	—	—	93700	117000	44100	256
	3/V 10L3	507	2.8	25793	9.4	—	132-160	—	—	98100	122400	46300	256
	3/V 10L3	560	2.5	25383	8.4	—	132-160	—	—	101000	126100	47900	256
	3/V 10L3	614	2.3	21825	6.6	—	132-160	—	—	103800	129600	49400	256
	3/V 10L3	701	2.0	22257	5.7	—	132-160	—	—	108100	134900	51600	256
	3/V 10L3	773	1.8	22749	5.5	—	132-160	—	—	111300	138900	53300	256
	3/V 10L3	920	1.5	21825	4.6	—	100-112-132	—	—	117300	146400	56500	256
	3/V 10L3	1004	1.4	30000	6.1	—	100-112-132	—	—	120400	150200	58200	256
	3/V 10L3	1120	1.3	28440	5.1	—	100-112-132	—	—	124400	155300	60300	256
	3/V 10L3	1227	1.1	21825	3.6	—	100-112-132	—	—	127800	159600	62200	256
	3/V 10L3	1411	0.99	21825	3.1	—	100-112-132	—	—	133000	166000	65000	256

3/V 10L4




30000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 10L4	1657	0.84	22864	2.6	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	1826	0.77	24942	2.6	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	2016	0.69	29500	2.8	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	2209	0.63	22864	2.0	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	2455	0.57	30000	2.3	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	2835	0.49	29342	2.0	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	3273	0.43	30000	1.8	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	3570	0.39	29500	1.8	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	4036	0.35	29500	1.4	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	4637	0.30	29500	1.4	—	71-80-90-100-112	—	—	133000	166000	65000	257
	3/V 10L4	5081	0.28	22864	0.99	—	71-80-90-100-112	—	—	133000	166000	65000	257






3/V 11L3

43000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 11L3	430	3.3	41666	17.8	—	160-180	—	—	110100	136800	43800	266
	3/V 11L3	510	2.7	34523	12.4	—	160-180	—	—	116000	144000	46400	266
	3/V 11L3	551	2.5	36420	12.1	—	160-180	—	—	118700	147400	47600	266
	3/V 11L3	644	2.2	41666	12.2	—	132-160	—	—	124400	154500	50200	266
	3/V 11L3	720	1.9	38195	10.6	—	132-160	—	—	128600	159700	52100	266
	3/V 11L3	827	1.7	39149	8.9	—	132-160	—	—	134100	166500	54500	266
	3/V 11L3	900	1.6	39745	9.1	—	100-112-132	—	—	137500	170800	56100	266
	3/V 11L3	1004	1.4	45000	9.2	—	100-112-132	—	—	142100	176500	58200	266
	3/V 11L3	1103	1.3	41208	7.5	—	132-160	—	—	146100	181500	60000	266
	3/V 11L3	1274	1.1	34647	5.6	—	100-112-132	—	—	152600	189600	63000	266
	3/V 11L3	1378	1.0	42880	6.4	—	100-112-132	—	—	156300	194100	64700	266
	3/V 11L3	1636	0.86	43000	5.4	—	100-112-132	—	—	157000	195000	65000	266
	3/V 11L3	1963	0.71	43000	4.6	—	100-112-132	—	—	157000	195000	65000	266
	3/V 11L3	2329	0.60	34000	3.1	—	100-112-132	—	—	157000	195000	65000	266




3/V 11L4

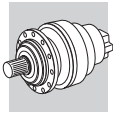
43000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 11L4	2510	0.56	45000	3.4	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	2887	0.48	45000	3.0	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	3222	0.43	45000	2.7	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	3557	0.39	45000	2.8	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	4000	0.35	35714	1.9	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	4410	0.32	43000	2.0	—	80-90-100-112-132	—	—	157000	195000	65000	267
	3/V 11L4	5021	0.28	45000	1.9	—	80-90-100-112-132	—	—	157000	195000	65000	267

3/V 13L3




50000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 13L3	370	3.8	45369	22	—	160-180	—	—	128800	155000	51400	276
	3/V 13L3	425	3.3	46287	19.3	—	160-180	—	—	134300	161600	53800	276
	3/V 13L3	516	2.7	52241	18.6	—	160-180	—	—	142300	171300	57400	276
	3/V 13L3	567	2.5	48255	15.6	—	160-180	—	—	146400	176100	59200	276
	3/V 13L3	673	2.1	49466	13.5	—	160-180	—	—	154100	185400	62700	276
	3/V 13L3	741	1.9	50157	13.5	—	132-160	—	—	158600	190800	64700	276
	3/V 13L3	810	1.7	44916	10.2	—	160-180	—	—	162900	196000	66700	276
	3/V 13L3	870	1.6	55000	12.6	—	132-160	—	—	166500	200300	68300	276
	3/V 13L3	1009	1.4	52456	9.8	—	132-160	—	—	174100	209400	71700	276
	3/V 13L3	1088	1.3	55000	10.4	—	100-112-132	—	—	178000	214100	73500	276
	3/V 13L3	1291	1.1	52241	8.3	—	100-112-132	—	—	187400	225400	77900	276
	3/V 13L3	1418	0.99	55000	8.0	—	100-112-132	—	—	192000	231000	80000	276
	3/V 13L3	1620	0.86	49000	6.0	—	132-160	—	—	192000	231000	80000	276
	3/V 13L3	1682	0.83	55000	6.7	—	100-112-132	—	—	192000	231000	80000	276
	3/V 13L3	2019	0.69	55000	5.7	—	100-112-132	—	—	192000	231000	80000	276
	3/V 13L3	2430	0.58	49000	4.2	—	100-112-132	—	—	192000	231000	80000	276






3/V 13L4

55000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 13L4	2773	0.50	55000	4.1	—	80-90-100-112-132	—	—	192000	231000	80000	277
	3/V 13L4	3263	0.43	55000	3.2	—	80-90-100-112-132	—	—	192000	231000	80000	277
	3/V 13L4	3515	0.40	55000	3.0	—	80-90-100-112-132	—	—	192000	231000	80000	277
	3/V 13L4	4046	0.35	55000	2.8	—	80-90-100-112-132	—	—	192000	231000	80000	277
	3/V 13L4	4536	0.31	55000	2.5	—	80-90-100-112-132	—	—	192000	231000	80000	277
	3/V 13L4	5046	0.28	55000	2.4	—	80-90-100-112-132	—	—	192000	231000	80000	277




3/V 15L3

90000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 15L3	388	3.6	66838	30	—	132-160-180-200-225	—	—	140200	165400	58700	286
	3/V 15L3	430	3.3	96100	41	—	132-160-180-200-225	—	—	144500	170500	60700	286
	3/V 15L3	491	2.9	85147	31	—	132-160-180-200-225	—	—	150400	177400	63500	286
	3/V 15L3	551	2.5	86584	29	—	132-160-180-200-225	—	—	155800	183700	66000	286
	3/V 15L3	654	2.1	88743	25	—	132-160-180-200-225	—	—	164000	193400	69800	286
	3/V 15L3	827	1.7	91782	21	—	132-160-180-200-225	—	—	175900	207500	75500	286
	3/V 15L3	981	1.4	94070	18.0	—	132-160-180-200-225	—	—	185200	218400	79900	286
	3/V 15L3	1103	1.3	95657	17.3	—	132-160-180-200-225	—	—	191800	226200	83100	286
	3/V 15L3	1308	1.1	98042	15.0	—	132-160-180-200-225	—	—	201900	238100	88000	286
	3/V 15L3	1378	1.0	98776	14.7	—	132-160-180-200-225	—	—	205000	241900	89500	286
	3/V 15L3	1636	0.86	99000	12.4	—	132-160-180-200-225	—	—	206000	243000	90000	286
	3/V 15L3	1963	0.71	99000	10.8	—	132-160-180-200-225	—	—	206000	243000	90000	286
	3/V 15L3	2329	0.60	80000	7.3	—	132-160-180-200-225	—	—	206000	243000	90000	286




3/V 15L4

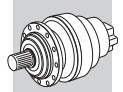
100000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 15L4	2676	0.52	105000	7.5	—	132-160	—	—	206000	243000	90000	287
	3/V 15L4	3176	0.44	105000	6.3	—	132-160	—	—	206000	243000	90000	287
	3/V 15L4	3435	0.41	99000	5.5	—	132-160	—	—	206000	243000	90000	287
	3/V 15L4	4015	0.35	105000	5.3	—	100-112-132	—	—	206000	243000	90000	287
	3/V 15L4	4765	0.29	105000	4.4	—	100-112-132	—	—	206000	243000	90000	287
	3/V 15L4	5152	0.27	99000	3.9	—	100-112-132	—	—	206000	243000	90000	287

3/V 16L3




130000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 16L3	411	3.4	94000	41	—	132-160-180-200-225	—	—	235500	262600	74200	296
	3/V 16L3	462	3.0	122500	49	—	132-160-180-200-225	—	—	243900	272000	77200	296
	3/V 16L3	548	2.6	94000	31	—	132-160-180-200-225	—	—	256700	286300	81700	296
	3/V 16L3	693	2.0	123000	33	—	132-160-180-200-225	—	—	275500	307200	88300	296
	3/V 16L3	822	1.7	100500	23	—	132-160-180-200-225	—	—	289900	323300	93500	296
	3/V 16L3	900	1.6	124500	28	—	132-160-180-200-225	—	—	297900	332200	96400	296
	3/V 16L3	1096	1.3	105500	19.2	—	132-160-180-200-225	—	—	316100	352500	102900	296
	3/V 16L3	1386	1.0	131500	20	—	132-160-180-200-225	—	—	339100	378200	111300	296
	3/V 16L3	1644	0.85	114000	14.8	—	132-160-180-200-225	—	—	357000	398100	117800	296






3/V 16L4

130000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 16L4	1890	0.74	132000	13.4	—	132-160	—	—	372200	415100	123400	297
	3/V 16L4	2244	0.62	132000	11.3	—	132-160	—	—	391900	437000	130700	297
	3/V 16L4	2426	0.58	132000	10.4	—	132-160	—	—	401200	447400	134100	297
	3/V 16L4	2835	0.49	132000	9.4	—	100-112-132	—	—	420400	468800	141300	297
	3/V 16L4	3366	0.42	132000	7.9	—	100-112-132	—	—	442600	493500	149600	297
	3/V 16L4	3639	0.38	132000	7.3	—	100-112-132	—	—	453100	505200	153500	297
	3/V 16L4	4317	0.32	132000	6.2	—	100-112-132	—	—	476900	531800	162500	297
	3/V 16L4	5124	0.27	132000	5.2	—	100-112-132	—	—	502000	559800	172100	297




3/V 17L3

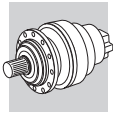
150000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 17L3	405	3.5	120101	51	—	132-160-180-200-225	—	—	304700	324000	99200	304
	3/V 17L3	425	3.3	147863	62	—	132-160-180-200-225	—	—	309200	328700	100800	304
	3/V 17L3	512	2.7	151108	52	—	132-160-180-200-225	—	—	326800	347500	107300	304
	3/V 17L3	567	2.5	152928	49	—	132-160-180-200-225	—	—	337000	358400	111000	304
	3/V 17L3	608	2.3	127730	37	—	132-160-180-200-225	—	—	344100	365900	113600	304
	3/V 17L3	683	2.1	156284	42	—	132-160-180-200-225	—	—	356300	378900	118100	304
	3/V 17L3	810	1.7	133435	30	—	132-160-180-200-225	—	—	375100	398800	125000	304
	3/V 17L3	851	1.6	160363	35	—	132-160-180-200-225	—	—	380600	404700	127000	304
	3/V 17L3	1024	1.4	163883	30	—	132-160-180-200-225	—	—	402400	427900	135100	304
	3/V 17L3	1134	1.2	165857	29	—	132-160-180-200-225	—	—	414900	441200	139800	304
	3/V 17L3	1215	1.2	141912	22	—	132-160-180-200-225	—	—	423600	450400	143100	304
	3/V 17L3	1365	1.0	169497	25	—	132-160-180-200-225	—	—	438700	466400	148700	304

3/V 17L4




180000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 17L4	1780	0.79	180000	19.2	—	160-180	—	—	442000	470000	150000	305
	3/V 17L4	2065	0.68	180000	16.0	—	160-180	—	—	442000	470000	150000	305
	3/V 17L4	2485	0.56	170262	12.5	—	160-180	—	—	442000	470000	150000	305
	3/V 17L4	2773	0.50	180000	13.4	—	132-160	—	—	442000	470000	150000	305
	3/V 17L4	3168	0.44	180000	11.0	—	132-160	—	—	442000	470000	150000	305
	3/V 17L4	3583	0.39	170000	9.0	—	160-180	—	—	442000	470000	150000	305
	3/V 17L4	4129	0.34	180000	8.5	—	132-160	—	—	442000	470000	150000	305
	3/V 17L4	4449	0.31	180000	8.6	—	100-112-132	—	—	442000	470000	150000	305
	3/V 17L4	4970	0.28	180000	7.0	—	132-160	—	—	442000	470000	150000	305






3/V 18L4

250000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 18L4	736	1.9	250000	61	—	132-160-180-200-225	—	—	410200	459900	135300	312
	3/V 18L4	1122	1.2	250000	40	—	132-160-180-200-225	—	—	465500	521900	155700	312
	3/V 18L4	1213	1.2	250000	37	—	132-160-180-200-225	—	—	476500	534300	159800	312
	3/V 18L4	1418	0.99	250000	32	—	132-160-180-200-225	—	—	499300	559800	168300	312
	3/V 18L4	1683	0.83	250000	27	—	132-160-180-200-225	—	—	525700	589400	178200	312
	3/V 18L4	1820	0.77	250000	25	—	132-160-180-200-225	—	—	538100	603400	182900	312
	3/V 18L4	2208	0.63	250000	22	—	132-160-180-200-225	—	—	570300	639400	195100	312
	3/V 18L4	2426	0.58	250000	19.5	—	132-160-180-200-225	—	—	586600	657800	201300	312
	3/V 18L4	2835	0.49	250000	17.1	—	132-160-180-200-225	—	—	614700	689200	212100	312
	3/V 18L4	3366	0.42	250000	14.4	—	132-160-180-200-225	—	—	647200	725700	224600	312
	3/V 18L4	3639	0.38	250000	13.3	—	132-160-180-200-225	—	—	662500	742800	230500	312
	3/V 18L4	4317	0.32	250000	11.2	—	132-160-180-200-225	—	—	697400	781900	244000	312
	3/V 18L4	5124	0.27	250000	9.5	—	132-160-180-200-225	—	—	734200	823200	258300	312




3/V 19L4

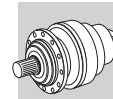
350000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 19L4	2485	0.56	350000	27	—	132-160-180-200-225	—	—	638000	702000	200000	320
	3/V 19L4	3180	0.44	340000	20	—	132-160-180-200-225	—	—	638000	702000	200000	320
	3/V 19L4	4031	0.35	350000	16.9	—	132-160-180-200-225	—	—	638000	702000	200000	320
	3/V 19L4	4480	0.31	340000	14.4	—	132-160-180-200-225	—	—	638000	702000	200000	320
	3/V 19L4	4970	0.28	350000	14.5	—	132-160-180-200-225	—	—	638000	702000	200000	320

3/V 21L4

520000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	Rn ₂ [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/V 21L4	1062	1.3	509297	85	—	132-160-180-200-225	—	—	717000	849500	1104400	328
	3/V 21L4	1260	1.1	515897	73	—	132-160-180-200-225	—	—	754800	894300	1162700	328
	3/V 21L4	1517	0.92	520000	61	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	1800	0.78	517768	51	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	1890	0.74	520000	50	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	2275	0.62	520000	42	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	2520	0.56	520000	39	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	2700	0.52	520000	35	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	3600	0.39	520000	27	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	3780	0.37	520000	26	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	4550	0.31	520000	22	—	132-160-180-200-225	—	—	779000	923000	1200000	328
	3/V 21L4	5040	0.28	520000	21	—	132-160-180-200-225	—	—	779000	923000	1200000	328



27.0 - DATI TECNICI RIDUTTORI COMBINATI - 3/A

27.0 - 3/A - COMBINED UNITS RATING CHARTS

27.0 - 3/A - TECHNISCHE DATEN DER GETRIEBE

27.0 - DONNEES TECHNIQUES REDUCTEURS COMBINÉ - 3/A

Guida alla consultazione delle tabelle.

Reading the rating chart.

Anleitung für die richtige Konsultation der Tabellen.

Guide pour la consultation des tableaux.

3/A 00L2

650 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 00 L2	19.1	73	473	4.0	—	63-71-80-90-100-112	2890	2940	8550	9380	1910	191
	3/A 00 L2	23.4	60	579	4.0	—	63-71-80-90-100-112	3090	3150	9090	9970	2050	191
	3/A 00 L2	31.7	44	650	3.3	—	63-71-80-90-100-112	3420	3480	9950	10900	2260	191
	3/A 00 L2	39.6	35	550	2.2	—	63-71-80-90-100-112	3680	3750	10600	11700	2440	191
	3/A 00 L2	41.5	34	650	2.5	—	63-71-80-90-100-112	3740	3810	10800	11800	2480	191

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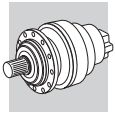
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


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⑪

1	Coppia massima trasmissibile dal riduttore	<i>Gearbox max. transmissible torque</i>	Nenn-Drehmoment am Abtrieb des Bezuggetriebes	<i>Couple maximum du réducteur</i>
2	Velocità di comando riduttore	<i>Gearbox drive speed</i>	Drehzahl am Getriebeantrieb	<i>Vitesse angulaire à l'entrée du réducteur</i>
3	Grandezza riduttore in esecuzione combinata planetario-ortogonale	<i>Frame size of combined planetary+bevel helical unit</i>	Baugröße des kombinierten Getriebes 300 + Kegelaradgetriebe Serie A	<i>Taille réducteur combiné série 300 + réducteur à axes orthogonaux série A</i>
4	Rapporto di riduzione	<i>Gear ratio</i>	Übersetzung	<i>Rapport de réduction</i>
5	Velocità angolare all'albero lento	<i>Gearbox output speed</i>	Drehzahl am Getriebeabtrieb	<i>Vitesse angulaire en sortie réducteur</i>
6	Coppia nominale all'albero lento del riduttore, basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	<i>Gearbox rated output torque, based on: - safety factor S=1 - 10000 h theoretical lifetime</i>	Nenn-Drehmoment am Getriebeabtrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 h	<i>Couple nominal à la sortie du réducteur pendant : - facteur de sécurité S=1 - durée de 10000 h</i>
7	Potenza nominale all'albero veloce del riduttore, basata su: - fattore di sicurezza S=1 - durata teorica di 10000 h	<i>Gearbox rated input power, based on: - safety factor S=1 - 10000 h theoretical lifetime</i>	Nenn-Leistung im Getriebeantrieb mit: - Sicherheitsfaktor S=1 - Dauer von 10000 h	<i>Puissance nominale en entrée réducteur pendant : - facteur de sécurité S=1 - durée de 10000 h</i>
8	Potenza termica riduttore	<i>Gearbox thermal capacity</i>	Wärmeleistung	<i>Puissance thermique réducteur</i>
9	Grandezza motore elettrico IEC installabile	<i>Frame size of available IEC motor</i>	Baugröße einbaubarer IEC-Elektromotor	<i>Taille IEC moteur électrique à installer</i>
10	Carichi radiali applicabili all'albero lento, basati su: - fattore di sicurezza S=1 - durata teorica 10000 h Per forze non applicate in mezz'ora riferirsi ai diagrammi riportati a seguito delle pagine dimensionali del riduttore in oggetto	<i>Permitted overhung loading on output shaft, based on: - safety factor S=1 - 10000 hrs theoretical lifetime For forces applying off the shaft midpoint, see diagrams provided in the pages following dimensions of the gearbox under study</i>	Auf die Mitte der Abtriebswelle für: - Dauer von 10000 Std. applizierbare Nenn-Radialkräfte - Sicherheitsfaktor S=1 Für andere Kraftangriffspunkte verweisen wir auf die Diagramme, die den Seiten mit den Maßen der gewählten Größe folgen	<i>Charges radiales nominales applicables à la moitié de l'arbre pendant : - facteur de sécurité S=1 - durée de 10000 h Pour d'autres positions de charge, voir diagrammes figurant à la suite des pages dimensions de la taille sélectionnée</i>
11	Pagina delle dimensioni	<i>Page installation drawing can be found at</i>	Maßseiten	<i>Page avec les dimensions</i>






3/A 00L2

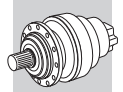
650 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 00 L2	19.1	73	473	4.0	—	63-71-80-90-100-112	2890	2940	8550	9380	1910	191
	3/A 00 L2	23.4	60	579	4.0	—	63-71-80-90-100-112	3090	3150	9090	9970	2050	191
	3/A 00 L2	31.7	44	650	3.3	—	63-71-80-90-100-112	3420	3480	9950	10900	2260	191
	3/A 00 L2	39.6	35	550	2.2	—	63-71-80-90-100-112	3680	3750	10600	11700	2440	191
	3/A 00 L2	41.5	34	650	2.5	—	63-71-80-90-100-112	3740	3810	10800	11800	2480	191
	3/A 00 L2	51.8	27.0	550	1.7	—	63-71-80-90-100-112	4030	4100	11500	12600	2670	191
	3/A 00 L2	61.2	22.9	650	1.7	—	63-71-80-90-100-112	4250	4330	12100	13300	2820	191
	3/A 00 L2	71.0	19.7	650	1.5	—	63-71-80-90-100-112	4470	4550	12700	13900	2960	191
	3/A 00 L2	80.2	17.5	650	1.3	—	63-71-80-90-100-112	4660	4740	13100	14400	3080	191
	3/A 00 L2	88.6	15.8	550	1.0	—	63-71-80-90-100-112	4810	4900	13500	14900	3190	191
	3/A 00 L2	100	14.0	550	0.88	—	63-71-80-90-100-112	5010	5110	14000	15400	3320	191
	3/A 00 L2	107	13.0	650	0.97	—	63-71-80-90-100-112	5130	5230	14300	15700	3400	191
	3/A 00 L2	134	10.5	550	0.66	—	63-71-80-90-100-112	5520	5630	15300	16800	3660	191
	3/A 00 L2	171	8.2	550	0.52	—	63-71-80-90-100-112	6000	6110	16500	18100	3970	191
	3/A 00 L2	203	6.9	650	0.52	—	63-71-80-90-100-112	6340	6460	17400	19000	4200	191
	3/A 00 L2	219	6.4	620	0.46	—	63-71-80-90-100-112	6500	6630	17800	19500	4310	191
	3/A 00 L2	253	5.5	550	0.35	—	63-71-80-90-100-112	6830	6960	18500	20300	4520	191
	3/A 00 L2	296	4.7	656	0.36	—	63-71-80-90-100-112	7200	7330	19400	21300	4770	191
	3/A 00 L2	319	4.4	439	0.22	—	63-71	7380	7520	19900	21800	4890	191
	3/A 00 L2	369	3.8	555	0.24	—	63-71-80-90-100-112	7750	7890	20800	22800	5130	191

3/A 01L2




1100 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC- 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 01 L2	18.8	74	709	6.1	—	80-90-100-112	2870	2920	8510	9330	1900	199
	3/A 01 L2	23.0	61	868	6.1	—	80-90-100-112	3070	3130	9040	9910	2030	199
	3/A 01 L2	31.2	45	1175	6.1	—	80-90-100-112	3400	3460	9900	10900	2250	199
	3/A 01 L2	35.8	39	760	3.4	—	80-90-100-112	3560	3630	10300	11300	2360	199
	3/A 01 L2	40.1	35	868	3.5	—	63-71-80-90-100-112	3690	3760	10700	11700	2450	199
	3/A 01 L2	43.9	32	930	3.4	—	80-90-100-112	3810	3880	11000	12000	2520	199
	3/A 01 L2	49.1	28.5	760	2.5	—	63-71-80-90-100-112	3950	4030	11300	12400	2620	199
	3/A 01 L2	54.2	25.8	1175	3.5	—	63-71-80-90-100-112	4090	4160	11700	12800	2710	199
	3/A 01 L2	59.4	23.6	1259	3.4	—	80-90-100-112	4210	4290	12000	13200	2790	199
	3/A 01 L2	74.2	18.9	1150	2.5	—	80-90-100-112	4540	4620	12800	14100	3000	199
	3/A 01 L2	81.3	17.2	1300	2.6	—	63-71-80-90-100-112	4680	4770	13200	14500	3100	199
	3/A 01 L2	102	13.8	1150	1.8	—	63-71-80-90-100-112	5040	5130	14100	15500	3340	199
	3/A 01 L2	133	10.5	1300	1.6	—	63-71-80-90-100-112	5520	5620	15300	16800	3650	199
	3/A 01 L2	166	8.4	1150	1.1	—	63-71-80-90-100-112	5940	6050	16400	17900	3930	199
	3/A 01 L2	184	7.6	1034	0.90	—	63-71-80-90-100-112	6140	6260	16900	18500	4070	199
	3/A 01 L2	204	6.9	1300	1.02	—	63-71-80-90-100-112	6360	6480	17400	19100	4210	199
	3/A 01 L2	220	6.4	827	0.61	—	63-71-80-90-100-112	6510	6640	17800	19500	4310	199
	3/A 01 L2	255	5.5	1150	0.73	—	63-71-80-90-100-112	6850	6980	18600	20400	4530	199
	3/A 01 L2	269	5.2	1013	0.61	—	63-71-80-90-100-112	6970	7100	18900	20700	4620	199
	3/A 01 L2	311	4.5	1150	0.59	—	63-71-80-90-100-112	7320	7450	19700	21700	4850	199
	3/A 01 L2	364	3.8	1350	0.60	—	63-71-80-90-100-112	7710	7860	20700	22700	5110	199
	3/A 01 L2	393	3.6	827	0.34	—	63-71-	7910	8060	21200	23200	5240	199
	3/A 01 L2	454	3.1	1150	0.41	—	63-71-80-90-100-112	8300	8460	22100	24300	5500	199
	3/A 01 L2	532	2.6	1119	0.34	—	63-71-	8750	8920	23200	25400	5800	199
	3/A 01 L2	665	2.1	1150	0.28	—	63-71-	9420	9600	24800	27200	6240	199






3/A 03L2

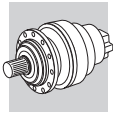
1800 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 03 L2	19.4	72	1048	8.7	—	80-90-100-112	8570	9870	17700	20500	5770	207
	3/A 03 L2	23.0	61	1237	8.7	—	80-90-100-112	9060	10440	18600	21600	6100	207
	3/A 03 L2	28.8	49	1552	8.7	—	80-90-100-112	9770	11250	20000	23100	6580	207
	3/A 03 L2	33.5	42	1800	8.6	—	80-90-100-112	10300	11800	20900	24100	6910	207
	3/A 03 L2	40.5	35	1650	6.6	—	80-90-100-112	10900	12600	22100	25600	7370	207
	3/A 03 L2	43.4	32	1684	6.2	—	80-90-100-112	11200	12900	22600	26100	7540	207
	3/A 03 L2	52.5	26.7	1650	5.1	—	80-90-100-112	11900	13700	23900	27600	8030	207
	3/A 03 L2	62.9	22.3	1552	4.0	—	63-71-80-90-100-112	12700	14600	25200	29200	8530	207
	3/A 03 L2	73.2	19.1	1800	4.0	—	63-71-80-90-100-112	13300	15400	26400	30500	8970	207
	3/A 03 L2	88.5	15.8	1650	3.0	—	63-71-80-90-100-112	14200	16400	28000	32300	9560	207
	3/A 03 L2	96.9	14.4	1690	2.8	—	63-71-80-90-100-112	14600	16900	28700	33200	9850	207
	3/A 03 L2	122	11.5	2121	2.8	—	63-71-80-90-100-112	15800	18200	30700	35600	10600	207
	3/A 03 L2	141	9.9	1800	2.0	—	63-71-80-90-100-112	16600	19100	32200	37200	11200	207
	3/A 03 L2	156	9.0	2121	2.2	—	63-71-80-90-100-112	17200	19800	33200	38300	11600	207
	3/A 03 L2	182	7.7	1800	1.6	—	63-71-80-90-100-112	18000	20800	34700	40100	12200	207
	3/A 03 L2	220	6.4	1650	1.2	—	63-71-80-90-100-112	19200	22200	36700	42500	12900	207
	3/A 03 L2	269	5.2	1800	1.1	—	63-71-80-90-100-112	20600	23700	39000	45100	13900	207
	3/A 03 L2	326	4.3	1650	0.82	—	63-71-80-90-100-112	21900	25300	41300	47800	14800	207
	3/A 03 L2	352	4.0	2018	0.92	—	63-71-80-90-100-112	22500	25900	42300	48900	15100	207
	3/A 03 L2	409	3.4	1877	0.74	—	63-71-80-90-100-112	23700	27300	44300	51200	15900	207
3/A 03 L2	495	2.8	1711	0.56	—	63-71-80-90-100-112	25200	29000	46900	54200	17000	207	
3/A 03 L2	574	2.4	1749	0.49	—	63-71-80-90-100-112	26500	30500	49000	56600	17800	207	
3/A 03 L2	605	2.3	1804	0.48	—	63-71-80-90-100-112	26900	31000	49700	57500	18100	207	
3/A 03 L2	731	1.9	1814	0.40	—	63-71-80-90-100-112	28700	33100	52700	60900	19300	207	

3/A 05L2




3600 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 05 L2	18.7	75	1921	16.5	—	80-90-100-112-132	8460	9750	17500	20300	5700	217
	3/A 05 L2	22.1	63	2267	16.5	—	80-90-100-112-132	8940	10300	18400	21300	6020	217
	3/A 05 L2	27.7	51	2845	16.5	—	80-90-100-112-132	9640	11100	19700	22800	6490	217
	3/A 05 L2	32.2	43	3308	16.5	—	80-90-100-112-132	10100	11700	20600	23900	6830	217
	3/A 05 L2	39.0	36	3100	12.8	—	80-90-100-112-132	10800	12500	21900	25300	7280	217
	3/A 05 L2	44.0	32	3308	12.1	—	80-90-100-112-132	11300	13000	22700	26200	7580	217
	3/A 05 L2	53.3	26.3	3100	9.4	—	80-90-100-112-132	12000	13800	24000	27800	8070	217
	3/A 05 L2	57.0	24.5	3308	9.3	—	80-90-100-112-132	12300	14100	24500	28300	8260	217
	3/A 05 L2	62.6	22.4	3308	8.5	—	80-90-100-112-132	12700	14600	25200	29100	8520	217
	3/A 05 L2	72.5	19.3	3308	7.3	—	63-71-80-90-100-112-132	13300	15300	26300	30400	8950	217
	3/A 05 L2	75.8	18.5	3100	6.6	—	63-71-80-90-100-112-132	13500	15500	26700	30800	9080	217
	3/A 05 L2	85.6	16.4	3600	6.8	—	80-90-100-112-132	14000	16200	27700	32000	9450	217
	3/A 05 L2	104	13.5	3100	4.8	—	80-90-100-112-132	15000	17200	29300	33900	10100	217
	3/A 05 L2	121	11.6	3518	4.7	—	63-71-80-90-100-112-132	15800	18200	30700	35500	10600	217
	3/A 05 L2	141	9.9	3600	4.1	—	63-71-80-90-100-112-132	16600	19100	32100	37100	11200	217
	3/A 05 L2	162	8.6	2898	2.9	—	63-71-80-90-100-112	17400	20000	33500	38800	11700	217
	3/A 05 L2	175	8.0	3600	3.3	—	63-71-80-90-100-112	17800	20600	34300	39700	12000	217
	3/A 05 L2	212	6.6	3100	2.3	—	63-71-80-90-100-112	19000	21900	36300	42000	12800	217
	3/A 05 L2	241	5.8	4294	2.9	—	63-71-80-90-100-112	19800	22800	37700	43600	13300	217
	3/A 05 L2	280	5.0	3600	2.1	—	63-71-80-90-100-112	20800	24000	39500	45600	14000	217
3/A 05 L2	329	4.3	3633	1.8	—	63-71-80-90-100-112	22000	25400	41500	47900	14800	217	
3/A 05 L2	398	3.5	3112	1.3	—	63-71-80-90-100-112	23400	27000	43900	50800	15800	217	
3/A 05 L2	422	3.3	4139	1.6	—	63-71-80-90-100-112	23900	27500	44700	51700	16100	217	
3/A 05 L2	491	2.9	3878	1.3	—	63-71-80-90-100-112	25100	29000	46700	54000	16900	217	
3/A 05 L2	594	2.4	3316	0.90	—	63-71-80-90-100-112	26800	30900	49500	57200	18000	217	






3/A 06L2

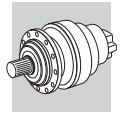
6500 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 06 L2	27.7	51	3317	19.2	—	80-90-100-112-132-160-180	12100	13700	31100	36700	9470	227
	3/A 06 L2	32.7	43	3916	19.2	—	80-90-100-112-132-160-180	12800	14400	32700	38600	10000	227
	3/A 06 L2	34.9	40	3492	16.1	—	80-90-100-112-132-160-180	13000	14800	33400	39300	10200	227
	3/A 06 L2	41.1	34	4915	19.2	—	80-90-100-112-132-160-180	13800	15600	35000	41300	10800	227
	3/A 06 L2	47.2	29.7	3492	11.9	—	80-90-100-112-132-160-180	14400	16300	36500	43000	11300	227
	3/A 06 L2	51.7	27.1	5173	16.1	—	80-90-100-112-132-160-180	14900	16800	37600	44200	11700	227
	3/A 06 L2	55.7	25.1	4123	11.9	—	80-90-100-112-132-160-180	15200	17200	38400	45200	11900	227
	3/A 06 L2	60.1	23.3	6014	16.1	—	80-90-100-112-132-160-180	15600	17700	39300	46300	12300	227
	3/A 06 L2	69.9	20.0	5173	11.9	—	80-90-100-112-132-160-180	16400	18600	41100	48400	12900	227
	3/A 06 L2	81.2	17.2	6014	11.9	—	80-90-100-112-132-160-180	17300	19600	43000	50700	13500	227
	3/A 06 L2	88.5	15.8	6208	11.3	—	80-90-100-112-132-160-180	17800	20100	44100	52000	13900	227
	3/A 06 L2	98.3	14.2	5500	9.0	—	80-90-100-112-132-160-180	18400	20800	45500	53600	14400	227
	3/A 06 L2	112	12.5	6184	9.2	—	80-90-100-112-132-160-180	19300	21800	47400	55800	15100	227
	3/A 06 L2	125	11.2	5500	7.1	—	80-90-100-112-132-160-180	19900	22600	48900	57600	15600	227
	3/A 06 L2	141	9.9	7750	9.1	—	80-90-100-112-132-160-180	20800	23500	50700	59700	16300	227
	3/A 06 L2	164	8.6	6500	6.6	—	80-90-100-112-132-160-180	21800	24700	53000	62500	17100	227
	3/A 06 L2	190	7.4	7750	6.8	—	80-90-100-112-132-160-180	22900	26000	55500	65300	18000	227
	3/A 06 L2	198	7.1	5500	4.6	—	80-90-100-112-132-160-180	23300	26300	56200	66200	18200	227
	3/A 06 L2	221	6.3	6500	4.9	—	80-90-100-112-132-160-180	24100	27300	58000	68400	18900	227
	3/A 06 L2	267	5.2	5500	3.4	—	80-90-100-112-132-160-180	25700	29100	61400	72400	20100	227
	3/A 06 L2	276	5.1	7760	4.7	—	63-71-80-90-100-112-132-160-180	26000	29400	62000	73100	20400	227
	3/A 06 L2	321	4.4	6509	3.4	—	63-71-80-90-100-112-132-160-180	27300	30900	64900	76500	21400	227
	3/A 06 L2	388	3.6	5525	2.4	—	63-71-80-90-100-112-132-160-180	29100	32900	68700	81000	22800	227
	3/A 06 L2	435	3.2	7760	3.0	—	63-71-80-90-100-112-132-160-180	30200	34200	71100	83800	23700	227
	3/A 06 L2	505	2.8	7068	2.3	—	63-71-80-90-100-112-132-160-180	31800	36000	74400	87700	24900	227
	3/A 06 L2	555	2.5	7189	2.2	—	63-71-80-90-100-112-132-160-180	32800	37100	76500	90200	25700	227
	3/A 06 L2	611	2.3	6008	1.6	—	63-71-80-90-100-112-132-160-180	33900	38300	78800	92800	26600	227
	3/A 06 L2	671	2.1	6113	1.5	—	63-71-80-90-100-112-132-160-180	35000	39600	81000	95400	27400	227

3/A 07L2

9000 Nm

n ₁ min ⁻¹		i	n ₂ min ⁻¹	M _{n2} Nm	P _{n1} kW	Pt kW	IEC 	R _{n2} [N]					
								MC	MZ	HC/PC	HZ/PZ	FZ	
1400	3/A 07 L2	27.1	52	6651	39	—	132-160-180	13600	17000	33400	44400	12100	237
	3/A 07 L2	32.3	43	7936	39	—	132-160-180	14500	18000	35200	46800	12800	237
	3/A 07 L2	41.5	34	8988	35	—	132-160-180	15700	19600	37900	50500	13900	237
	3/A 07 L2	49.2	28.4	8700	28	—	132-160-180	16600	20800	39900	53100	14700	237
	3/A 07 L2	57.3	24.4	6651	18.7	—	80-90-100-112-132-160-180	17500	21800	41800	55600	15500	237
	3/A 07 L2	68.3	20.5	7936	18.7	—	80-90-100-112-132-160-180	18600	23200	44100	58600	16400	237
	3/A 07 L2	87.7	16.0	10185	18.7	—	80-90-100-112-132-160-180	20200	25200	47500	63200	17900	237
	3/A 07 L2	109	12.9	9000	13.7	—	80-90-100-112-132-160-180	21700	27000	50600	67400	19200	237
	3/A 07 L2	130	10.8	11111	14.2	—	80-90-100-112-132-160-180	23000	28700	53400	71000	20400	237
	3/A 07 L2	140	10.0	11111	13.2	—	80-90-100-112-132-160-180	23600	29400	54700	72700	20900	237
	3/A 07 L2	155	9.0	9000	9.6	—	80-90-100-112-132-160-180	24400	30400	56300	74900	21600	237
	3/A 07 L2	180	7.8	10500	9.7	—	80-90-100-112-132-160-180	25600	32000	58900	78400	22700	237
	3/A 07 L2	198	7.1	8700	7.3	—	80-90-100-112-132-160-180	26400	33000	60600	80600	23400	237
	3/A 07 L2	223	6.3	9000	6.7	—	80-90-100-112-132-160-180	27500	34400	62800	83500	24400	237
	3/A 07 L2	241	5.8	9000	6.2	—	80-90-100-112-132-160-180	28300	35300	64300	85600	25000	237
	3/A 07 L2	282	5.0	8700	5.1	—	80-90-100-112-132-160-180	29800	37100	67400	89600	26400	237
	3/A 07 L2	341	4.1	11099	5.4	—	80-90-100-112-132-160-180	31700	39600	71400	94900	28100	237
	3/A 07 L2	405	3.5	9091	3.7	—	80-90-100-112-132-160-180	33600	41900	75100	99900	29800	237
	3/A 07 L2	439	3.2	9203	3.5	—	80-90-100-112-132-160-180	34500	43000	77000	102400	30600	237

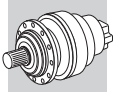


28.0 - DIMENSIONI

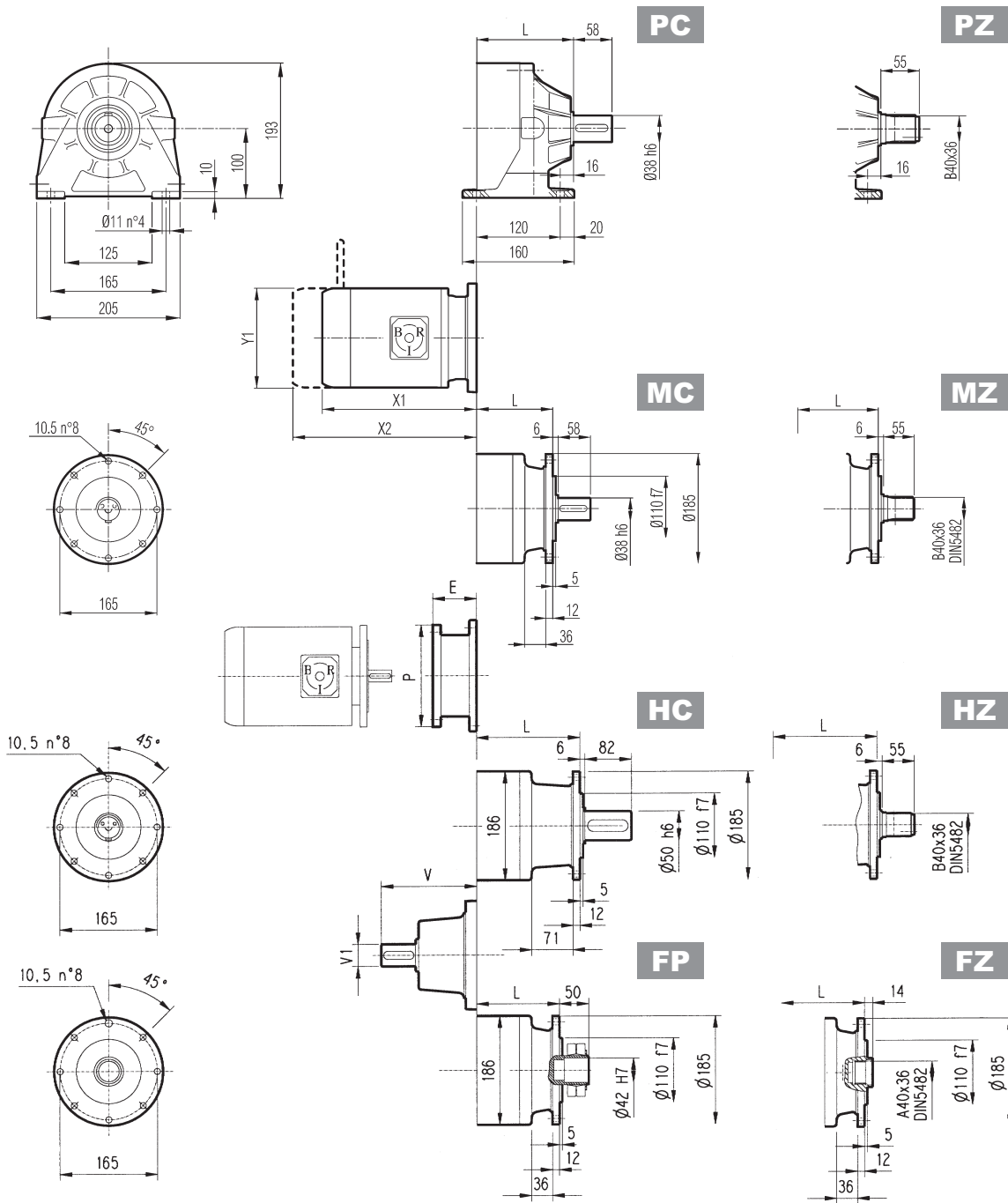
28.0 - DIMENSIONS

28.0 - ABMESSUNGEN

28.0 - DIMENSIONS



300 L

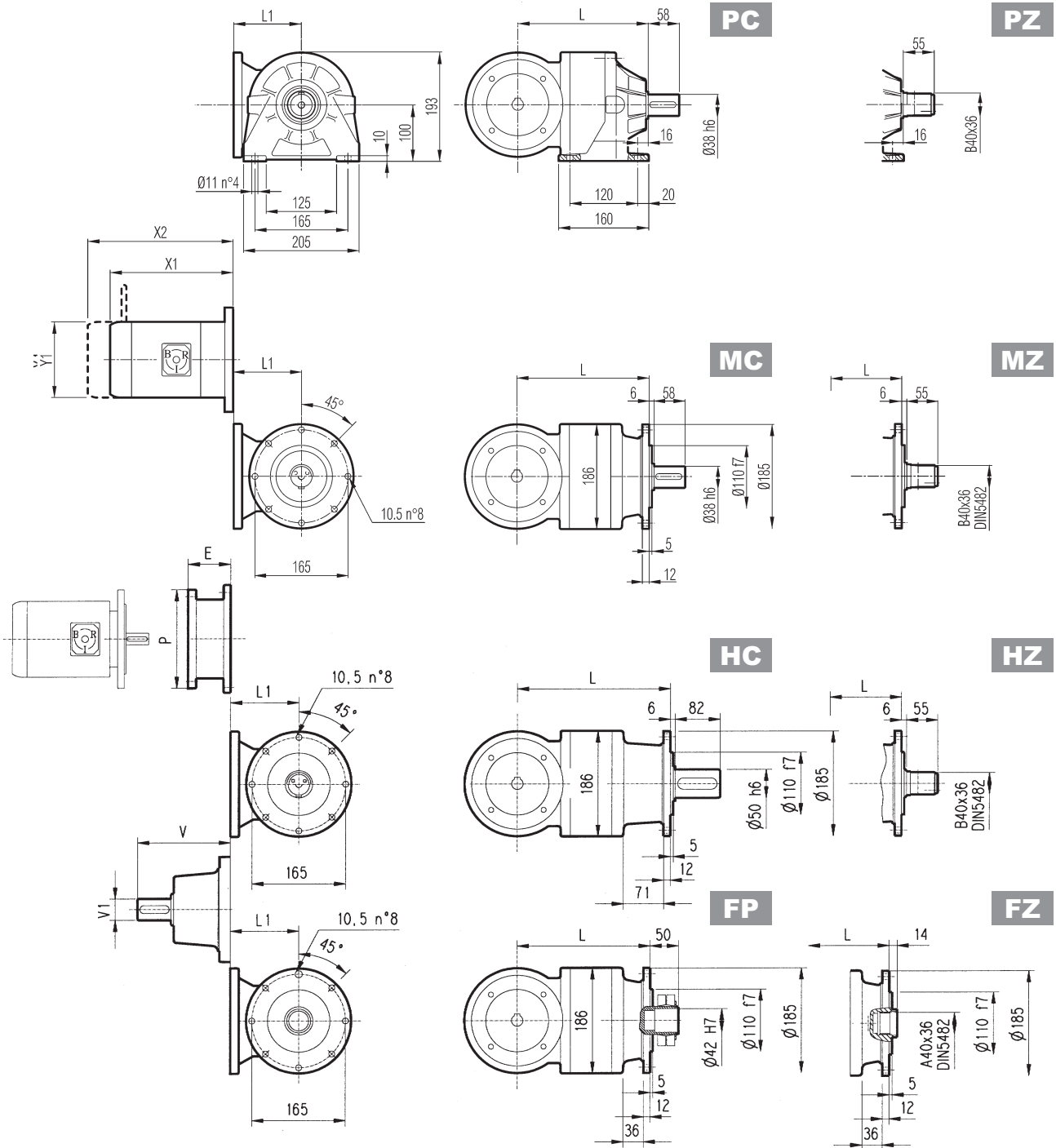
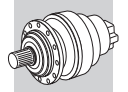


FP $M_{2max} = 1\ 200\ Nm$

	L				Kg				Albero veloce / Input shaft / Antriebswelle / Arbre d'entrée					
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ	V	V1	Kg	V	V1	Kg
300 L1	80	86	115	80	18	23	20	16	137.5	24	6	158	38	7
300 L2	133	139	168	133	22	27	24	20	137.5	24	6	158	38	7
300 L3	186	192	221	186	26	31	28	24	137.5	24	6	158	38	7
300 L4	239	245	274	239	30	35	32	28	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	65	160	84	200	84	200	94	250	94	250	114	300
300 L2	65	160	84	200	84	200	94	250	94	250	114	300
300 L3	65	160	84	200	84	200	-	-	-	-	-	-
300 L4	65	160	84	200	84	200	-	-	-	-	-	-

	S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3S			S3 - M3L			S4 - M4		
	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1
300 L1	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
300 L2	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
300 L3	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
300 L4	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258

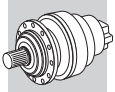


FP $M_{2max} = 1\ 200\ Nm$

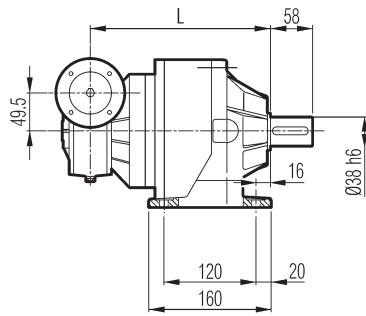
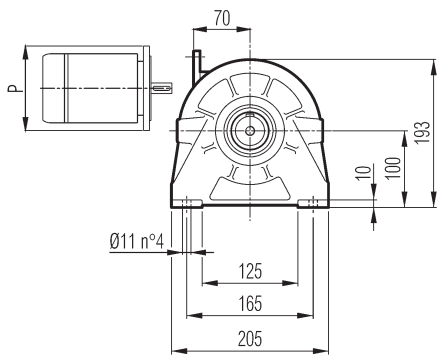
	L				L1	$\overset{\circ}{Kg}$				Albero veloce / Input shaft / Antriebswelle / Arbre d'entrée					
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ	V	V1	$\overset{\circ}{Kg}$	V	V1	$\overset{\circ}{Kg}$
300 R2	172	178	207	172	122	32	37	34	30	137.5	24	6	158	38	7
300 R3	225	231	260	225	122	36	41	38	34	137.5	24	6	158	38	7
300 R4	278	284	313	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	65	160	84	200	84	200	94	250	94	250	114	300
300 R3	65	160	84	200	84	200	94	250	-	-	-	-
300 R4	65	160	84	200	84	200	-	-	-	-	-	-

	S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3S			S3 - M3L			S4 - M4		
	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1
300 R2	229	292	138	253	314	138	328	400	156	373	469	195	405	497	195	508	619	258
300 R3	229	292	138	253	314	138	328	400	156	373	469	195	405	497	195	-	-	-
300 R4	229	292	138	253	314	138	328	400	156	373	469	195	-	-	-	-	-	-

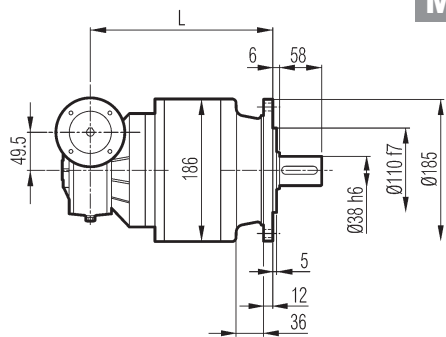
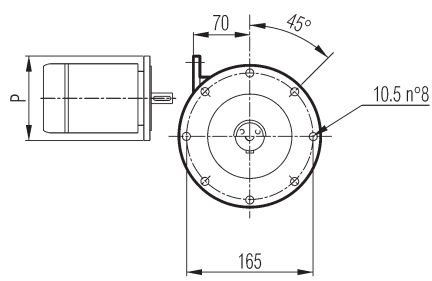
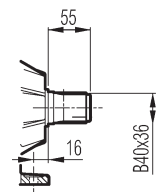


3/V 00L3



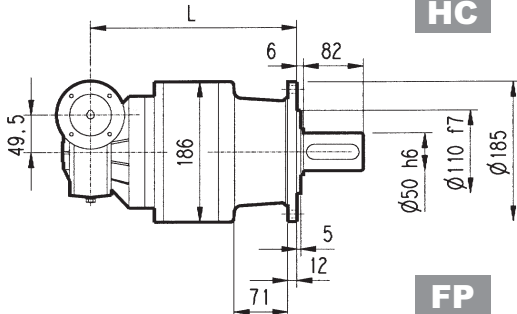
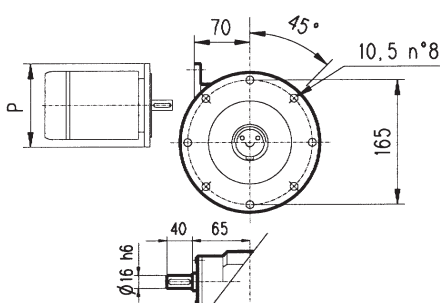
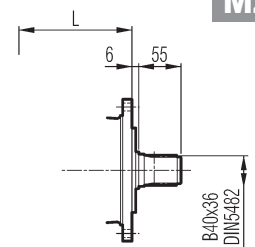
PC

PZ



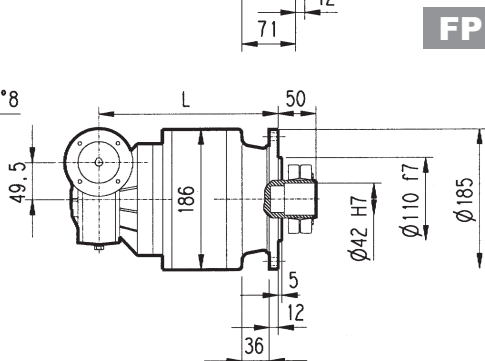
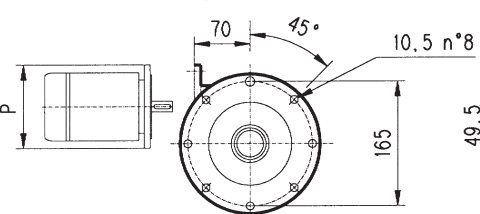
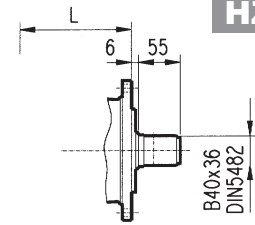
MC

MZ



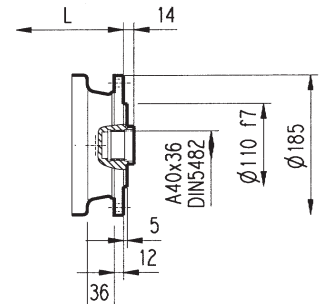
HC

HZ



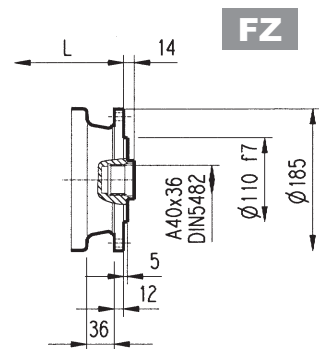
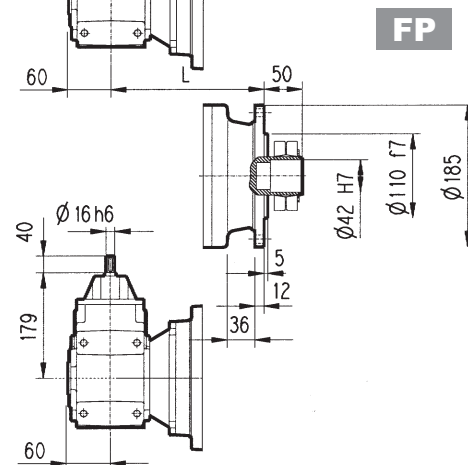
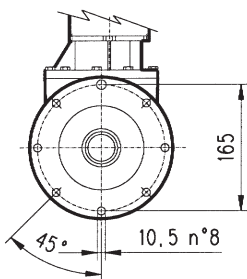
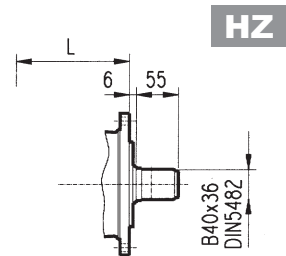
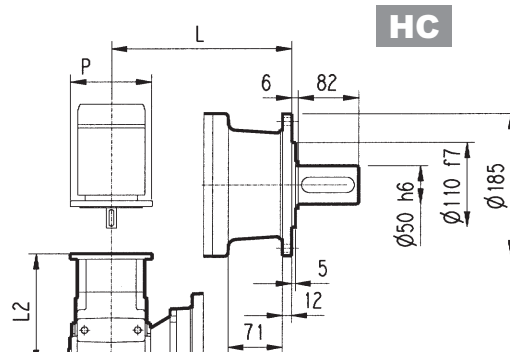
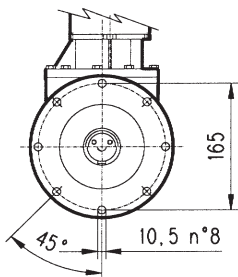
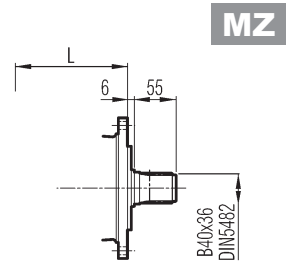
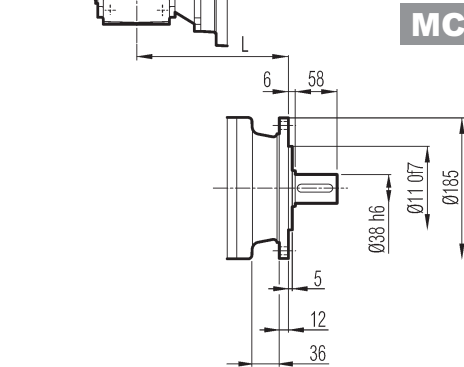
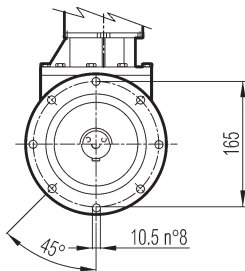
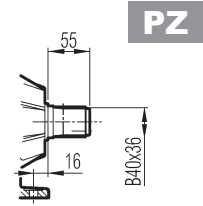
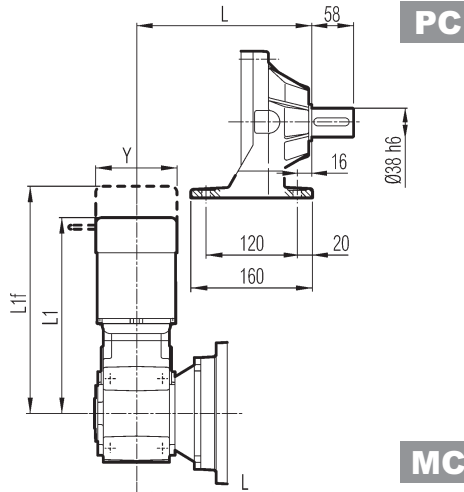
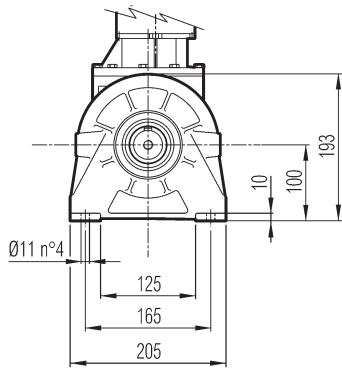
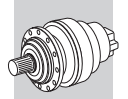
FP

FZ



FP $M_{2max} = 1\ 200\ Nm$

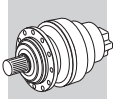
3/V 00L3	L				$\overset{\circ}{Kg}$				P63	P71	P80
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ	P	P	P
	255	261	290	255	25	30	27	23	140	160	200



FP $M_{2max} = 1\,200\text{ Nm}$

3/A 00L2	L								$\overset{\circ}{\text{Kg}}$							
	MC - MZ		PC - PZ		HC - HZ		FP - FZ		MC - MZ		PC - PZ		HC - HZ		FP - FZ	
	193		199		228		193		38		43		40		36	

3/A 00L2	P63		P71		P80		P90		P100		S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3SA			S3 - M3LA		
	L2	P	L2	P	L2	P	L2	P	L2	P	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y
	212.5	140	212.5	160	232	200	232	200	242	250	340	406	138	368	428	138	394	466	156	439	535	195	470	563	195

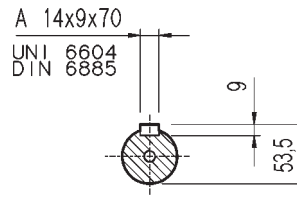
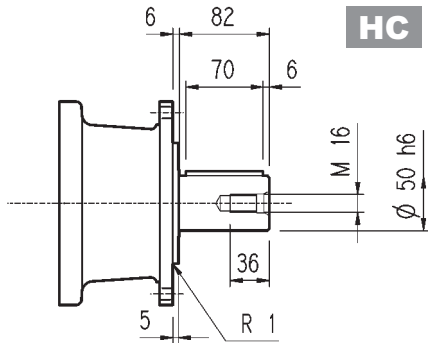
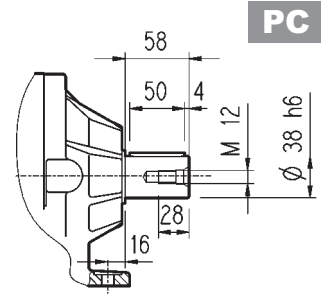
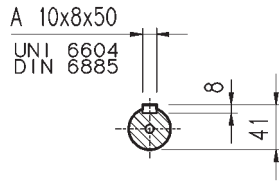
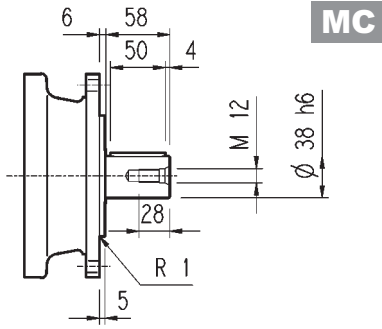


300 L

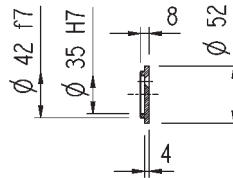
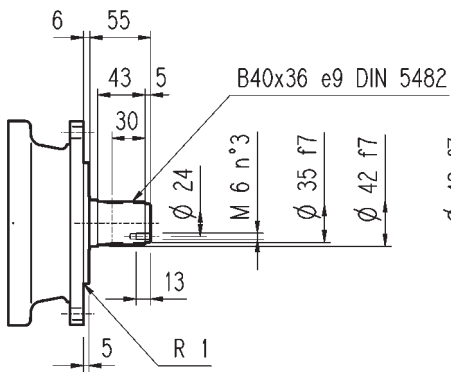
300 R

3/V 00L3

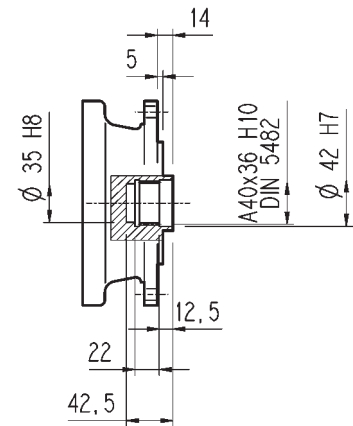
3/A 00L2



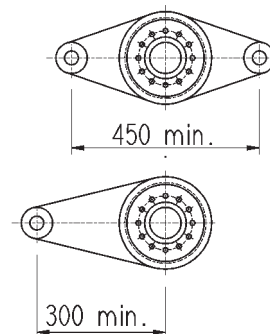
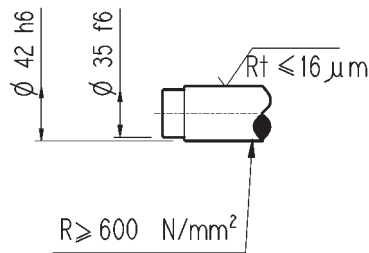
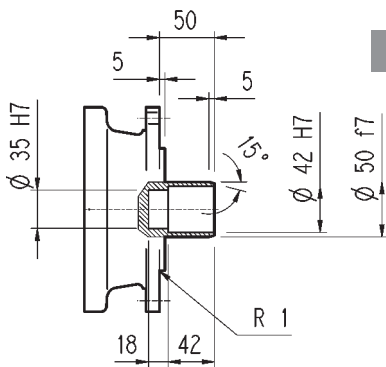
MZ HZ



FZ



FP



FP

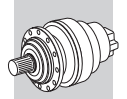
$M_{2max} = 1\ 200\ Nm$

300 L

300 R

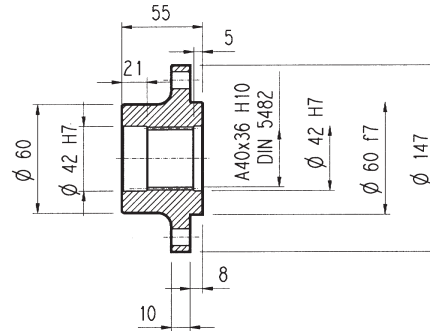
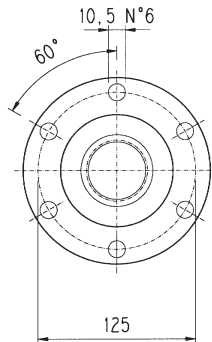
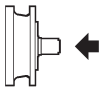
3/V 00L3

3/A 00L2



Flangia / Flange
Flansch / Brides

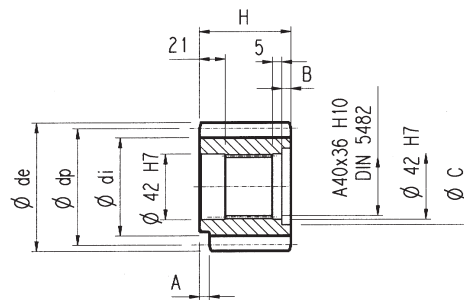
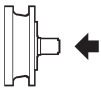
W0A



Materiale : Acciaio C40
Material : Steel C40
Material : Stahl C40
Materia : Acier C40

Pignoni / Pinion gears
Ritzel / Pignons

P...

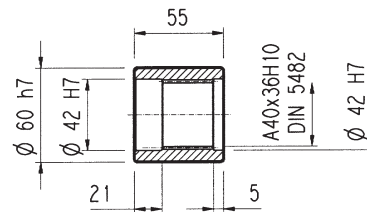
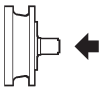


	m	z	x	dp	di	de	H	A	B	C	☆
PBE	4.5	14	0.507	63	56	75.5	55	0	0	0	□
PCE	5	14	0.500	70	62.5	84.8	65	0	10	53	□
PDC	6	12	0.250	72	61	84.8	59	14	4	54	□
PDE	6	14	0.500	84	73	99.6	65	0	10	54	□

☆	Materiale / Material / Material / Matière
□	Acciaio 39NiCrMo3 Bonificato Steel 39NiCrMo3 hardened and tempered Vergüteter Stahl 39NiCrMo3 Acier bonifié 39NiCrMo3
■	Acciaio 18NiCrMo5 Cementato e temprato Steel 18NiCrMo5 Case hardened Einsatzstahl 18NiCrMo5 Einsatzgehärtet Acier cémenté et tempré 18NiCrMo5

Manicotti lisci / Sleeve couplings
Naben / Manchons lisses a cannelure interieure

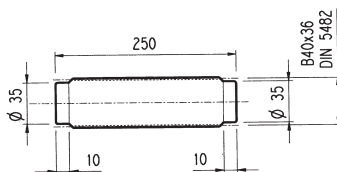
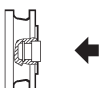
MOA



Materiale : Acciaio 16CrNi4
Material : Steel 16CrNi4
Material : Stahl 16CrNi4
Materia : Acier 16CrNi4

Barre scanalate / Splined bars
Vielkeilwellen / Barre cannelée

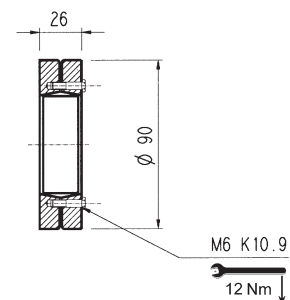
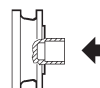
B0A

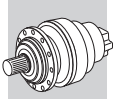


Mat. acciaio 18NiCrMo5 UNI 5331 da cementare e temprare 50-55 HRC
Case hardening steel 18NiCrMo5 UNI 5331 must be case hardened 50-55 HRC
Material: Einsatzstahl 18NiCrMo5 UNI 5331 muss einsatzgehärtet werden 50-55 HRC
Acier 18 NiCrMo5 UNI 5331 doit être cémenté trempé 50-55 HRC

Giunto ad attrito / Shrink disc
Schrumpfscheibe / Frette de serrage

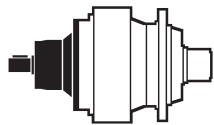
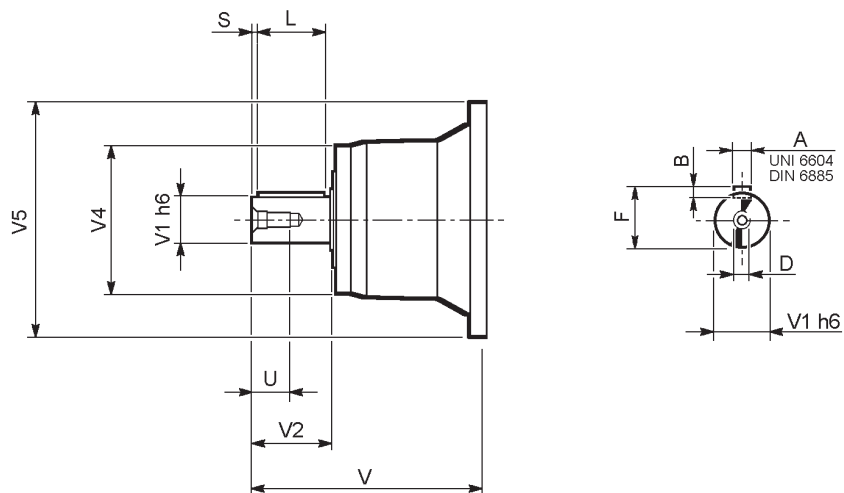
GOA





300 L

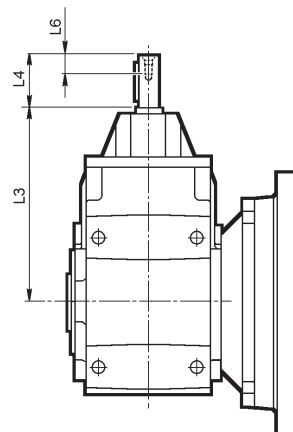
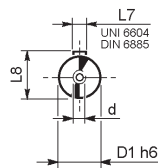
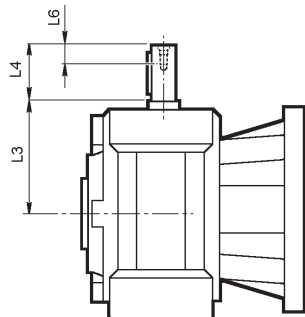
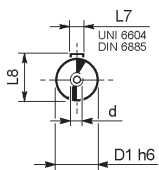
300 R



	CODE	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

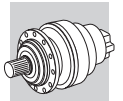
3/V 00L3

3/A 00L2



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

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

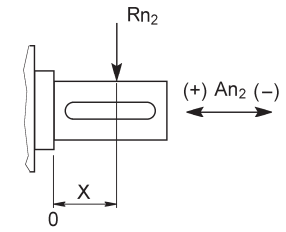
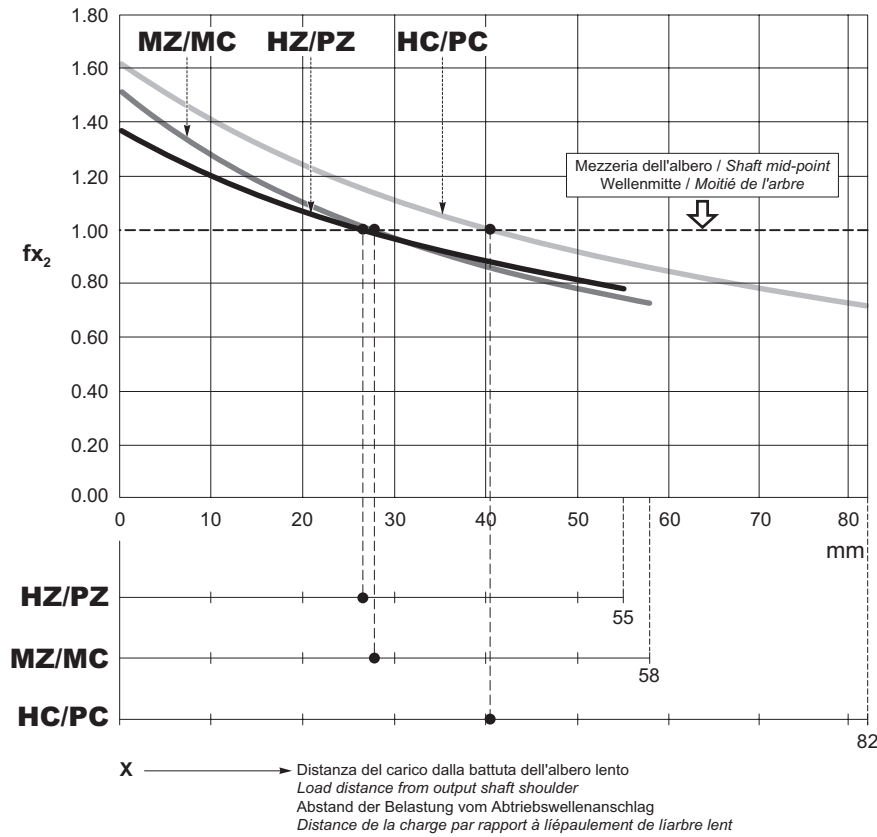


Fattore di posizione per carichi radiali sugli alberi in uscita.

Load application point factor for radial loading on output shaft.

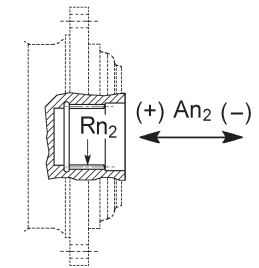
Positionsfaktor für Radialkräfte an der Abtriebswelle.

Facteur de position pour charges radiales sur les arbres en sortie.



$R_{x_2} = Rn_2 \cdot f_{x_2}$

$An_2 (\pm) = Rn_2 \cdot fa_2 (\pm)$		
	$fa_2 (+)$	$fa_2 (-)$
HZ	1.18	1.18
HC	1.29	1.29
MC	2.20	2.20
MZ	2.04	2.04



$An_2 (\pm) = Rn_2 \cdot fa_2 (\pm)$		
	$fa_2 (+)$	$fa_2 (-)$
FZ	1.00	1.00

Carichi radiali ammissibili sull'albero veloce per $n_1 = 1000 \text{ min}^{-1}$ e 10000 h di vita teorica.

Permitted overhung loads on input shaft when $n_1 = 1000 \text{ min}^{-1}$ and theoretical lifetime = 10000 h.

Zulässige Radialkräfte an den Antriebswellen für $n_1 = 1000 \text{ min}^{-1}$ und 10000 std.

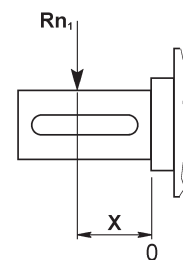
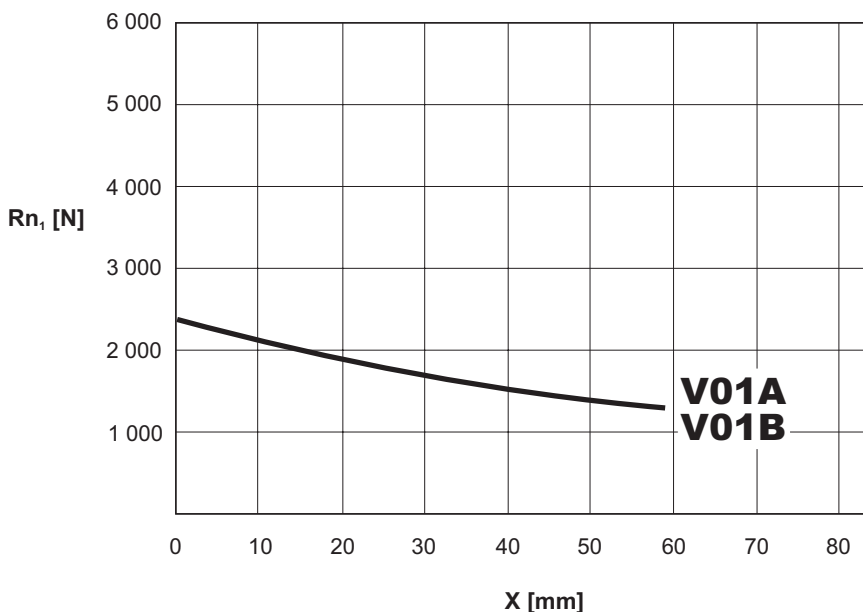
Charges radiales admissibles sur les arbres d'entrée pour $n_1 = 1000 \text{ min}^{-1}$ et 10000 h.

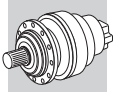
Per velocità di comando e/o durate diverse vedi il capitolo: Verifiche.

For drive speed and/or lifetimes other than those specified here, see Chapter: Verifications.

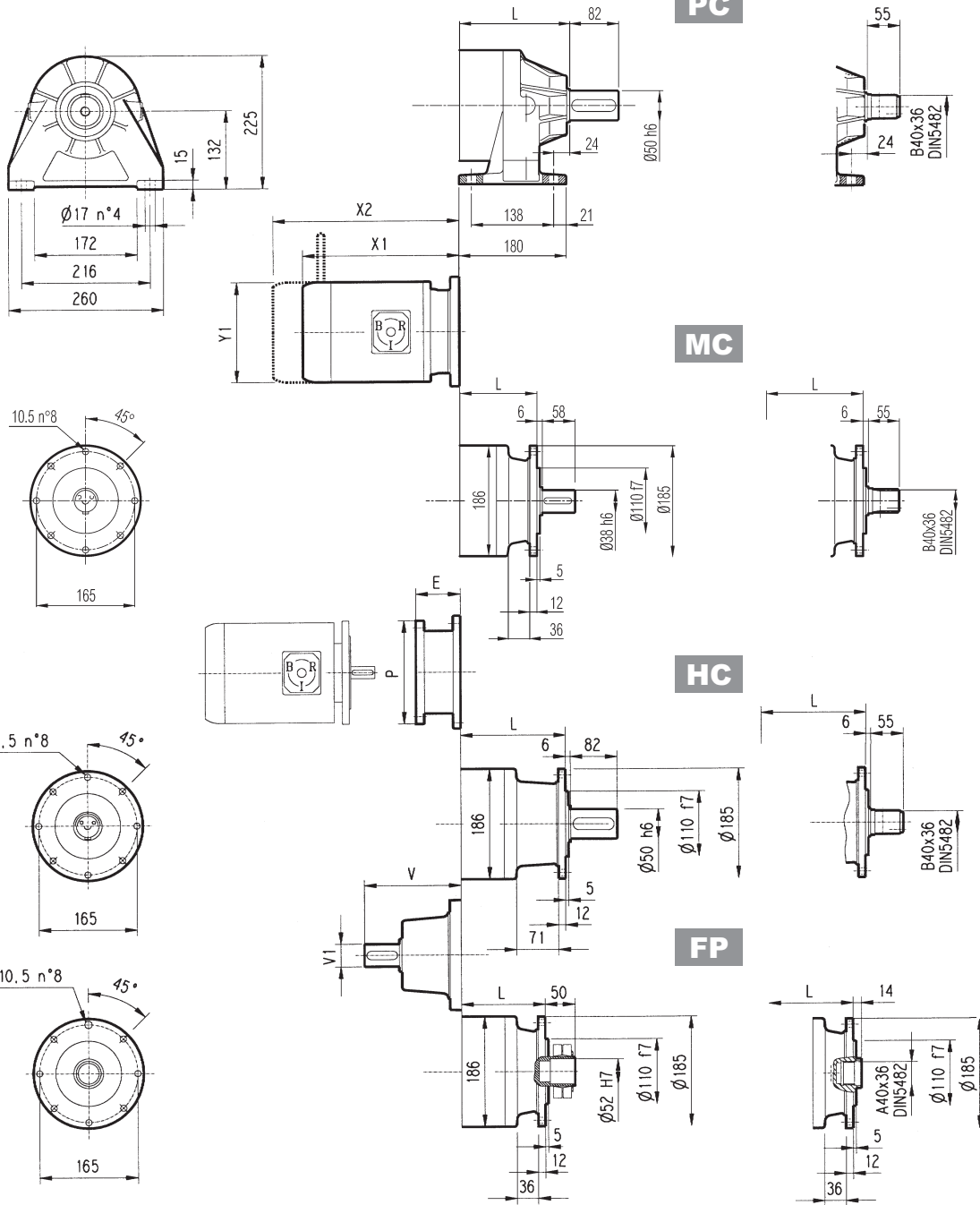
Im Hinblick auf Geschwindigkeit und/oder anderweitige Dauern verweisen wir auf Par: Prüfungen

Pour des vitesses et/ou durées différentes, voir par. Vérifications.





301 L



PC

PZ

MC

MZ

HC

HZ

FP

FZ

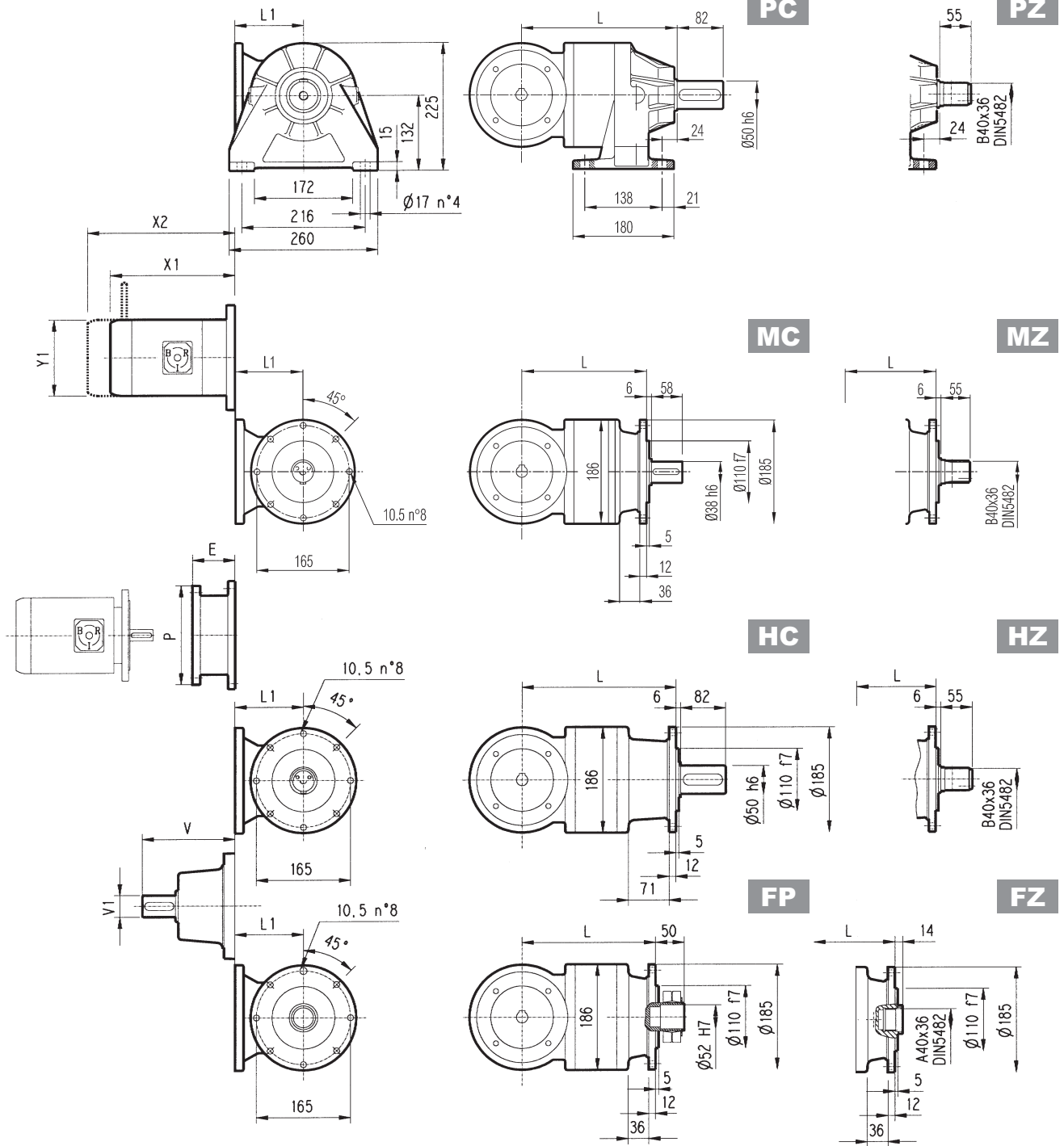
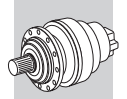
FP

$M_{2max} = 2\ 400\ \text{Nm}$

	L				Kg				Albero veloce / Input shaft / Antriebswelle / Arbre d'entrée					
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ	V	V1	Kg	V	V1	Kg
301 L1	92	132	126	92	21	26	23	19	137.5	24	6	158	38	7
301 L2	145	185	176	145	25	30	27	23	137.5	24	6	158	38	7
301 L3	198	238	232	198	29	34	31	27	137.5	24	6	158	38	7
301 L4	251	291	285	251	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	65	160	84	200	84	200	94	250	94	250	114	300
301 L2	65	160	84	200	84	200	94	250	94	250	114	300
301 L3	65	160	84	200	84	200	-	-	-	-	-	-
301 L4	65	160	84	200	84	200	-	-	-	-	-	-

	S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3S			S3 - M3L			S4 - M4		
	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1
301 L1	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
301 L2	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
301 L3	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258
301 L4	229	292	138	253	314	138	280	352	156	325	421	195	357	449	195	460	571	258

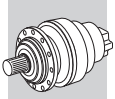


FP $M_{2max} = 2\,400\text{ Nm}$

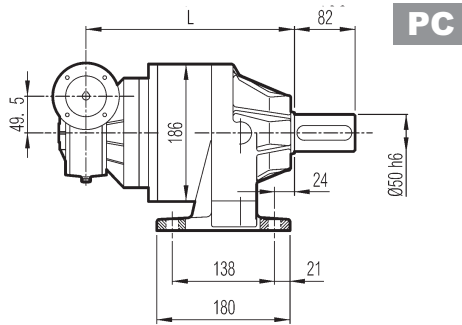
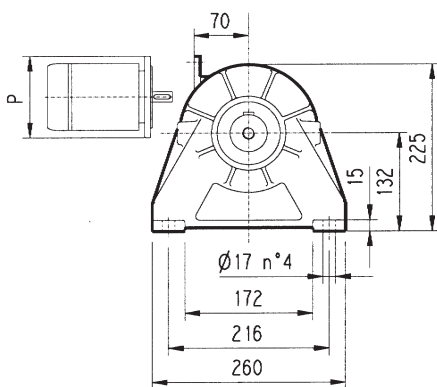
	L				L1	Kg				Albero veloce / Input shaft / Antriebswelle / Arbre d'entrée					
	MC - MZ	PC - PZ	HC - HZ	FP - FZ		MC - MZ	PC - PZ	HC - HZ	FP - FZ	V	V1	Kg	V	V1	Kg
301 R2	184	225	219	184	122	35	42	37	33	137.5	24	6	158	38	7
301 R3	237	278	272	237	122	39	46	41	37	137.5	24	6	158	38	7
301 R4	290	331	325	290	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	65	160	84	200	84	200	94	250	94	250	114	300
301 R3	65	160	84	200	84	200	94	250	-	-	-	-
301 R4	65	160	84	200	84	200	-	-	-	-	-	-

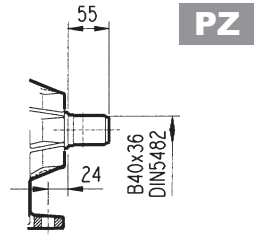
	S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3S			S3 - M3L			S4 - M4		
	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1	X1	X2	Y1
301 R2	229	292	138	253	314	138	328	400	156	373	469	195	405	497	195	508	619	258
301 R3	229	292	138	253	314	138	328	400	156	373	469	195	405	497	195	-	-	-
301 R4	229	292	138	253	314	138	328	400	156	373	469	195	-	-	-	-	-	-



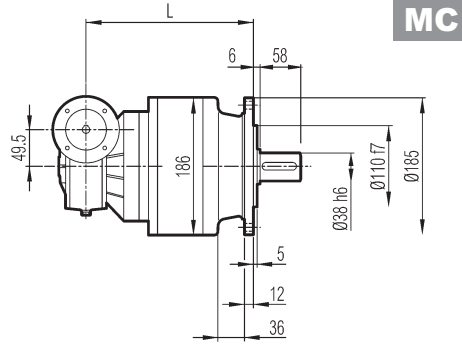
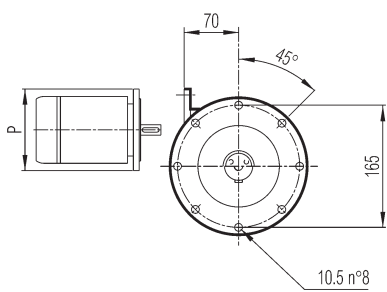
3/V 01L3



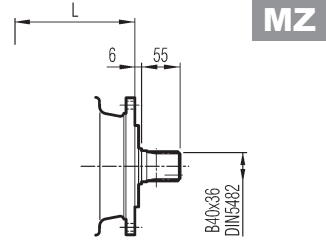
PC



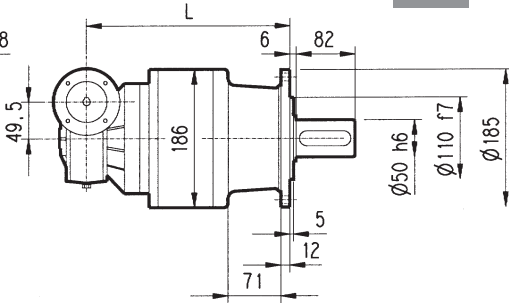
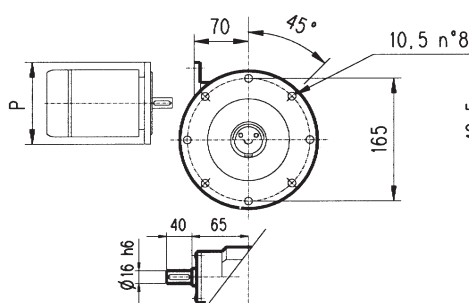
PZ



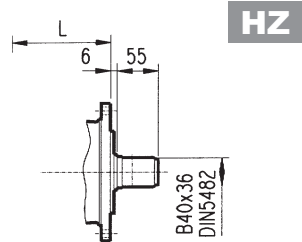
MC



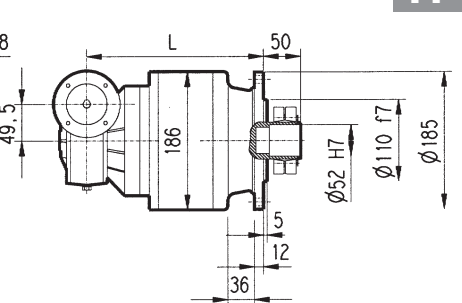
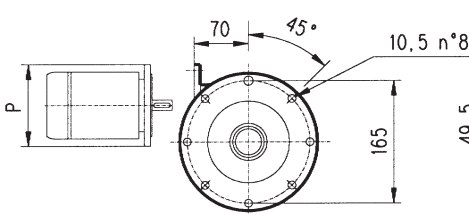
MZ



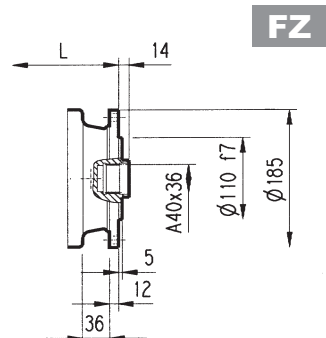
HC



HZ



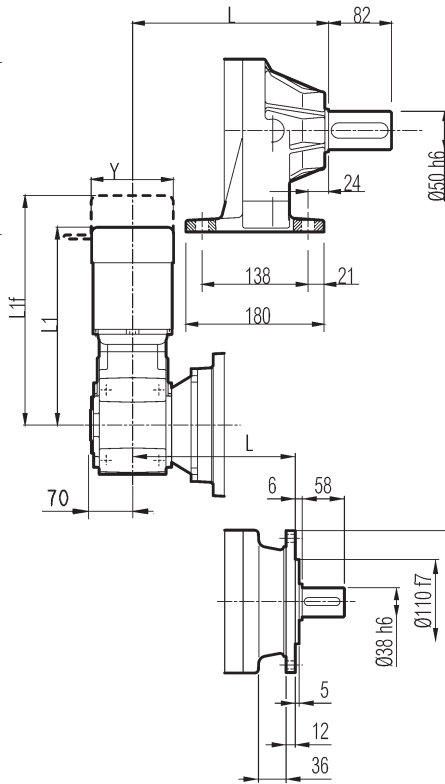
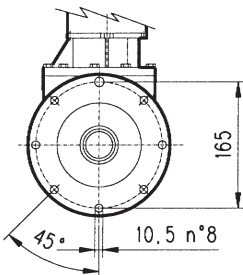
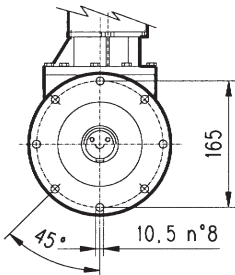
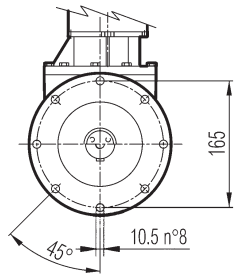
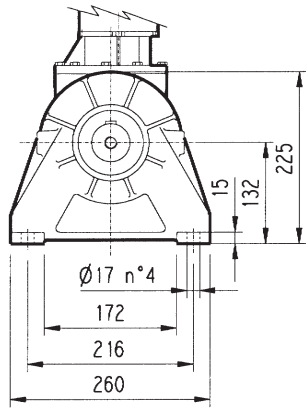
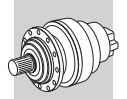
FP



FZ

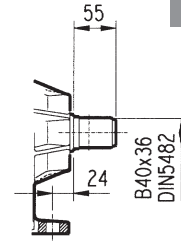
FP $M_{2max} = 2\,400\text{ Nm}$

3/V 01L3	L				$\overset{\circ}{\text{kg}}$				P63	P71	P80
	MC - MZ	PC - PZ	HC - HZ	FP - FZ	MC - MZ	PC - PZ	HC - HZ	FP - FZ	P	P	P
	267	308	302	267	28	35	30	26	140	160	200



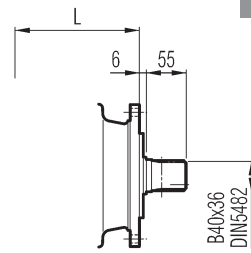
PC

PZ



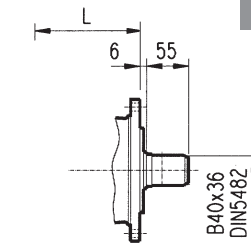
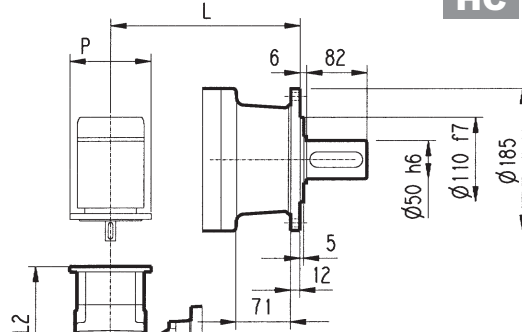
MC

MZ



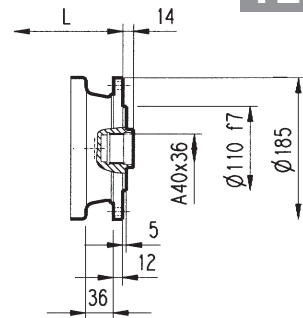
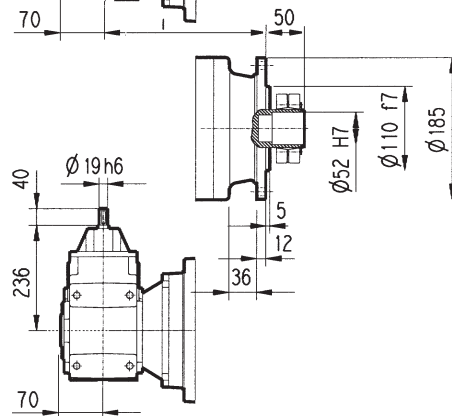
HC

HZ



FP

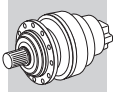
FZ



FP $M_{2max} = 2\,400\text{ Nm}$

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

3/A 01L2	P63		P71		P80		P90		P100		S1 - M1S			S1 - M1L			S2 - M2S			S3 - M3SA			S3 - M3LA		
	L2	P	L2	P	L2	P	L2	P	L2	P	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y	L1	L1f	Y
3/A 01L2	226	140	226	160	245.5	200	245.5	200	255.5	250	354	420	138	382	442	138	408	480	156	453	549	195	484	577	195

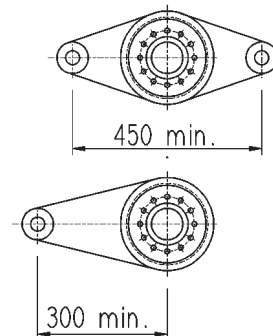
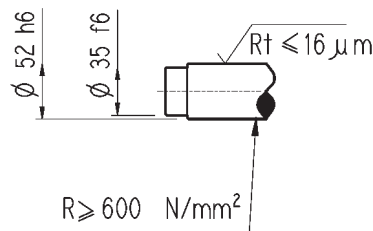
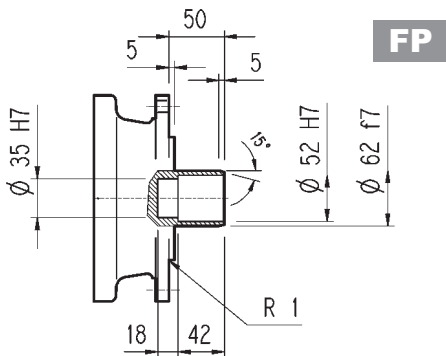
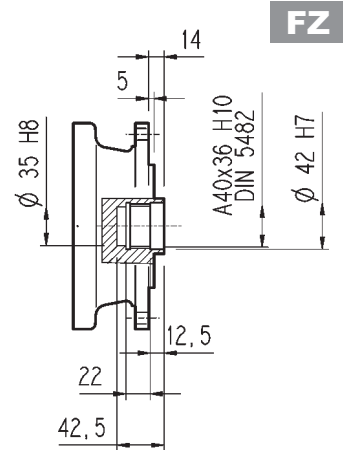
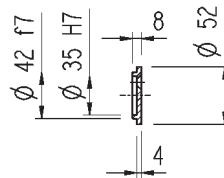
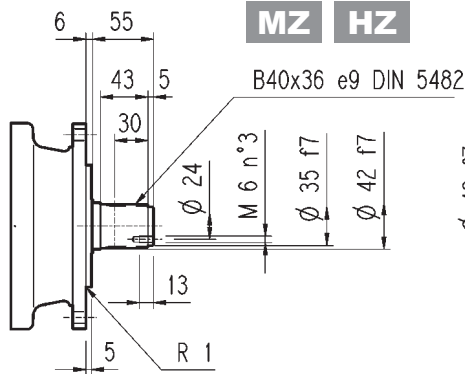
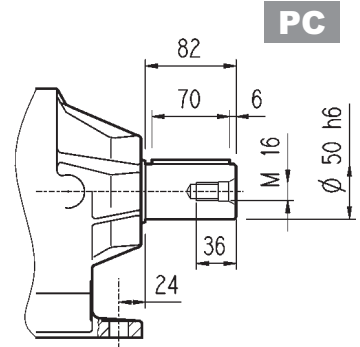
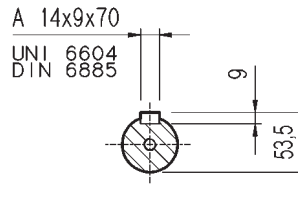
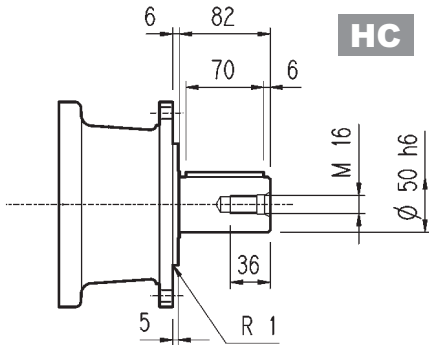
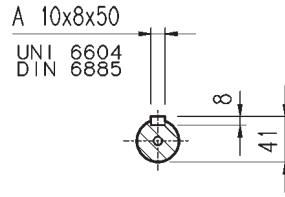
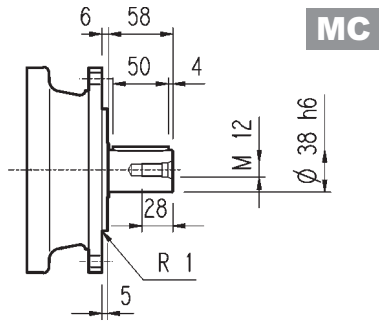


301 L

301 R

3/V 01L3

3/A 01L2



FP

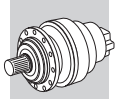
$M_{2max} = 2\,400\text{ Nm}$

301 L

301 R

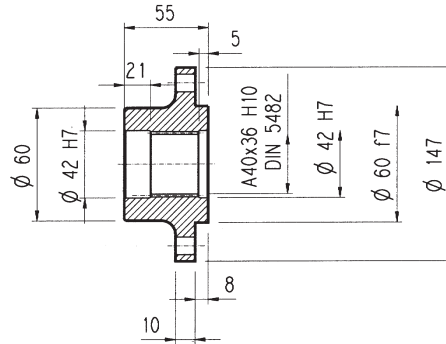
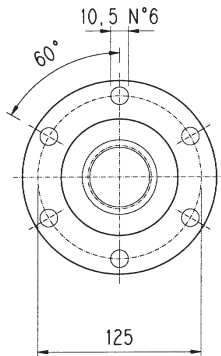
3/V 01L3

3/A 01L2



Flangia / Flange
Flansch / Brides

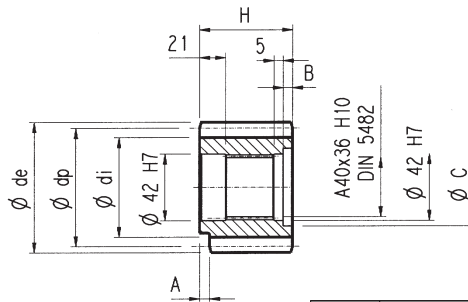
W0A



Materiale : Acciaio C40
Material : Steel C40
Material : Stahl C40
Màterial : Acier C40

Pignoni / Pinion gears
Ritzel / Pignons

P...

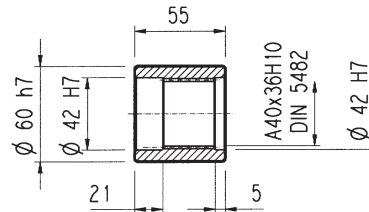


	m	z	x	dp	di	de	H	A	B	C	☆
PBE	4.5	14	0.507	63	56	75.5	55	0	0	0	□
PCE	5	14	0.500	70	62.5	84.8	65	0	10	53	□
PDC	6	12	0.250	72	61	84.8	59	14	4	54	□
PDE	6	14	0.500	84	73	99.6	65	0	10	54	□

☆	Materiale / Material / Material / Matière
□	Acciaio 39NiCrMo3 Bonificato Steel 39NiCrMo3 hardened and tempered Vergüteter Stahl 39NiCrMo3 Acier bonifiée 39NiCrMo3
■	Acciaio 18NiCrMo5 Cementato e temprato Steel 18NiCrMo5 Case hardened Einsatzstahl 18NiCrMo5 Einsatzgehärtet Acier cémenté et tempré 18NiCrMo5

Manicotti lisci / Sleeve couplings
Naben / Manchons lisses a cannelure interieure

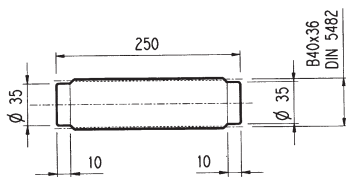
MOA



Materiale : Acciaio 16CrNi4
Material : Steel 16CrNi4
Material : Stahl 16CrNi4
Màterial : Acier 16CrNi4

Barre scanalate / Splined bars
Vielkeilwellen / Barre cannelée

B0A



Mat. acciaio 18NiCrMo5 UNI 5331 da cementare e temprare 50-55 HRC
Case hardening steel 18NiCrMo5 UNI 5331 must be case hardened 50-55 HRC
Material: Einsatzstahl 18NiCrMo5 UNI 5331 muss einsatzgehärtet werden 50-55 HRC
Acier 18 NiCrMo5 UNI 5331 doit être cémenté trempé 50-55 HRC

Giunto ad attrito / Shrink disc
Schrumpfscheibe / Frette de serrage

GOA

