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1.0 GENERAL INFORMATION

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Tab. 1.1

SIMBOLO *SYMBOL* SYMBOL	DEFINIZIONE	*DEFINITION*	DEFINITION	UNITA' DI MISURA *MEASUREMENT UNIT* MAßEINHEIT	
Fr_{1-2}	Carico Radiale	*Radial load*	Radialbelastung	**N**	1N=0.1daN ≅ 0.1kg
Fa_{1-2}	Carico assiale	*Axial load*	Axialbelastung	**N**	
	Dimensioni	*Dimensions*	Abmessungen	**mm**	
FS	Fattore di servizio	*Service factor*	Betriebsfaktor		
FS'	Fattore di servizio riduttore	*Gearbox service factor*	Betriebsfaktor Getriebe		
Kg	Massa	*Mass*	Masse	**kg**	
T_{2M}	Momento torcente riduttore	*Output torque*	Drehmoment Getriebe	**Nm**	1Nm=0.1daNm≅0.1kgm
T_2	Momento torcente motorid.	*Gear motor torque*	Drehmoment Getriebemotor	**Nm**	
P	Potenza motore	*Gear unit power*	Leistung Getriebe	**kW**	
Pto	Potenza limite termico	*Limit thermal capacity*	Thermische Leistungsgrenze	**kW**	
Pc	Potenza corretta	*Correct power*	Tatsächliche Leistung	**kW**	1kW = 1.36 HP (PS)
P_1	Potenza motoriduttore	*Gear motor power*	Leistung Getriebemotor	**kW**	
P'	Potenza richiesta in uscita	*Output power*	Erforderliche Abtriebsleistung	**kW**	
RD	Rendimento dinamico	*Dynamic efficiency*	Dynamischer Wirkungsgrad		
RS	Rendimento statico	*Static efficiency*	Statischer Wirkungsgrad		
ir	Rapporto di trasmissione	*Ratio*	Übersetzungsverhältnis		
n_1	Velocità albero entrata	*Input speed*	Antriebsdrehzahl	**min^{-1}**	1 min^{-1} = 6.283 rad.
n_2	Velocità albero in uscita	*Output speed*	Abtriebsdrehzahl		
Tc	Temperatura ambiente	*Ambient temperature*	Umgebungstemperatur	**°C**	
IEC	Motori accoppiabili	*Motor options*	Passende Motoren		

1.2 Velocità in entrata

Tutte le prestazioni dei riduttori e variatori meccanici sono calcolate in base alle seguenti velocità in entrata:

1.2 Input speed

All performances of gearboxes and variators are calculated according to the following input speeds:

1.2 Antriebsdrehzahl

Alle Wirkungsgrade der Untersetzungs-und Verstellgetriebe werden auf der Grundlage folgender Antriebsdrehzahlen berechnet:

Tab. 1.2

Riduttori *Gearboxes* Getriebe	a vite senza fine *wormgearboxes* Schneckengetriebe	a vite senza fine combinati *combined wormgearboxes* Kombinierte Schneckengetriebe	a vite senza fine con precoppia *Helical wormgearboxes* Stirnrad Schneckengetriebe	coassiali ad ingranaggi *in-line gearboxes* Stirnradgetriebe	ortogonali *Helical bevelgearboxes* Kegelradgetriebe	paralleli pendolari *Shaft and shaft mounted gearboxes* Flach Getriebe	variatori meccanici *mechanical variators* Verstell-Getriebe
	RI	**CRI**	**CR**	**AR**	**OR**	**PR**	**VM**
n_1(rpm)	—	—	2800	2800	2800	2800	2000
	1400	1400	1400	1400	1400	1400	1000
	900	—	900	900	900	900	660
	500	—	—	500	500	500	—

Mentre nei riduttori ad ingranaggi e a vite senza fine con precoppia, come evidenziato nella tab. 1.2 è possibile applicare in entrata velocità massime fino a 2800 rpm, **nei vite senza fine tali velocità sono applicabili soltanto dopo un attento esame dell'applicazione e del tipo di intermittenza del servizio; consigliamo comunque in ogni caso di consultare il nostro servizio tecnico.**
Velocità inferiori a 1400 min^{-1} ottenute con l'ausilio di riduzioni esterne o di azionamenti, sono sicuramente favorevoli al buon funzionamento del riduttore il quale può operare con temperature di funzionamento inferiori a vantaggio di tutto il cinematismo (in particolare nei riduttori a vite senza fine).
E' necessario però considerare che velocità molto basse non consentono un efficace lubrificazione di tutto il gruppo, per cui tale eventualità dovrà essere segnalata per poter effettuare schermature dei cuscinetti superiori nei riduttori delle taglie maggiori o applicare sistemi di lubrificazione forzata (pompa di lubrificazione).

While maximum input speeds up to 2800 min^{-1} can be applied to gearboxes and to pre-stage worm gearboxes, as shown in table 1.2, ***such speeds can be used with worm gearboxes after having carefully checked the type of application and the service intermittence. However, we suggest to contact our technical dept.***
Speeds lower than 1400 rpm obtained by means of external reductions or drives, surely contribute to the good working of the gearbox which can operate at lower working temperatures to the advantage of the whole kinematic movement (in particular in case of the worm gearboxes).
However, please note that very low speeds do not allow an efficacious lubrication of the whole unit. Therefore this case shall be indicated to screen the upper bearings of the gearboxes of larger sizes or to apply systems with forced lubrications (lubrication pump).

Während bei Stirnradgetrieben und Schneckengetrieben mit einer Stirnradstufe auf der Eingangsseite - wie in Tab. 1.2 verdeutlicht - maximale Antriebsdrehzahlen von 2800 min^{-1} anwendbar sind, **können bei Schneckengetrieben solche Drehzahlen nur nach einer sorgfältigen Untersuchung der Anwendung und der Art des Aussetzbetriebs gefahren werden. Wir empfehlen Ihnen deshalb, sich auf jeden Fall an unseren technischen Kundendienst zu wenden.**
Drehzahlen unter 1400 min^{-1}, die mit Hilfe äußerer Untersetzungen oder Antriebe erhalten werden, sind für den optimalen Betrieb des Getriebes vorteilhaft, denn so kann dieses mit niedrigen Betriebstemperaturen arbeiten, was sich zum Vorteil der gesamten Getriebegruppe auswirkt (insbesonders bei Schneckengetrieben).
Es muß jedoch berücksichtigt werden, daß sehr niedrige Drehzahlen keine wirksame Schmierung der gesamten Gruppe zulassen. Wird mit solch niedrigen Drehzahlen gearbeitet, muß dies angegeben werden, damit wir bei den größeren Getrieben die oberen Lager abschirmen oder Zwangsschmiersysteme (Schmierpumpe) einsetzen können.

1.3 Fattore di servizio

Il fattore di servizio FS permette di qualificare, in prima approssimazione, la tipologia dell'applicazione tenendo conto della natura del carico (A, B, C), della durata di funzionamento h/d (ore giornaliere) e del numero di avviamenti/ora. Il coefficiente così trovato dovrà essere uguale o inferiore al fattore di servizio del motoriduttore FS' dato dal rapporto fra la coppia nominale del riduttore T_{2M} indicata a catalogo e la coppia M' richiesta dall'applicazione .
I valori di FS indicati nella tab. 1.3, sono relativi all'azionamento con motore elettrico, se utilizzato un motore a scoppio, si dovrà tenere conto di un fattore di moltiplicazione 1.3 se a più cilindri e 1.5 se monocilindro.
Se il motore elettrico applicato è autofrenante, considerare un numero di avviamenti doppio di quello effettivamente richiesto.

1.3 Service factor

The service factor FS permits approximate qualification of the type of application, taking into account the type of load (A,B,C), length of operation h/d (hours/day) and the number of start-up/hour. The coefficient thus calculated must be equal or less than the motorgear unit service factor FS' given by the rated torque of gear unit T_{2M} as indicated in the catalogue and the torque M' required by the application.
The FS values reported in Table 1.3 refer to a drive unit with an electric motor. If a combustion engine is used, a multiplication factor of 1.3 must be applied for a several-cylinder engine, 1.5 for a single-cylinder engine.
If the electric motor applied is self-braking, consider twice the number of start-up than those actually required.

1.3 Betriebsfaktor

Mit Hilfe des Betriebsfaktors FS kann in einer ersten Annäherung das richtige Untersetzungsgetriebe für die gewünschte Anwendungsart ermittelt werden. Dabei sind folgende Werte zu beachten: Art der Last (A, B, C), Betriebsstunden pro Tag (h/d), Anzahl der Starts pro Stunde. Der so ermittelte Koeffizient sollte dem Betriebsfaktor FS', der sich aus dem Verhältnis zwischen dem Nenndrehmoment des Getriebes T_{2M} (s. Katalog) und dem für die Anwendung erforderlichen Drehmoment M' ergibt, entweder entsprechen oder niedriger liegen.
Die FS-Werte, die in Tabelle 1.3 angegeben werden, beziehen sich auf den Antrieb mit Elektromotor. Wird ein Verbrennungsmotor verwendet, so ist bei mehreren Zylindern ein Multiplikationsfaktor von 1,3 und bei einem Einzylindermotor ein Faktor von 1,5 zu berücksichtigen.
Ist der verwendete Elektromotor ein Bremsmotor, so ist die Zahl der tatsächlichen Startvorgänge zu verdoppeln.

Tab. 1.3

FATTORE DI SERVIZIO / *SERVICE FACTOR* / BETRIEBSFAKTOR **FS**

Classe di carico *Load class* Lastklasse	h/d	N. AVVIAMENTI/ORA / *N. START-UP/HOUR* / ANZAHL DER STARTVORGÄNGE PRO STUNDE								
		2	**4**	**8**	**16**	**32**	**63**	**125**	**250**	**500**
A	**4**	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.2
	8	1.0	1.0	1.1	1.1	1.3	1.3	1.3	1.3	1.3
	16	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	24	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
	APPLICAZIONI / *APPLICATIONS* / ANWENDUNGEN									
Carico uniforme ***Uniform load*** **Gleichmäßig verteilte Last**	Agitatori per liquidi puri	*Pure liquid agitators*	Rührwerke für reine Flüssigkeiten							
	Alimentatori per fornaci	*Fournace feeders*	Beschickungsvorrichtungen für Brennöfen							
	Alimentatori a disco	*Disc feeders*	Telleraufgeber							
	Filtri di lavaggio con aria	*Air laundry filters*	Spülluftfilter							
	Generatori	*Generators*	Generatoren							
	Pompe centrifughe	*Centrifugal pumps*	Kreiselpumpen							
	Trasportatori con carico uniforme	*Uniform load conveyors*	Förderer mit gleichmäßig verteilter Last							

Classe di carico *Load class* Lastklasse	h/d	N. AVVIAMENTI/ORA / *N. START-UP/HOUR* / ANZAHL DER STARTVORGÄNGE PRO STUNDE								
		2	**4**	**8**	**16**	**32**	**63**	**125**	**250**	**500**
B	**4**	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3
	8	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	16	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
	24	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2
	APPLICAZIONI / *APPLICATIONS* / ANWENDUNGEN									
Carico con urti moderati ***Moderate shock load*** **Last mit mäßigen Stößen**	Agitatori per liquidi e solidi	*Liquid and solid agitators*	Rührwerke für Flüssigkeiten und Feststoffe							
	Alimentatori a nastro	*Belt conveyors*	Bandförderer							
	Argani con medio servizio	*Medium service winches*	Mittlere Winden							
	Filtri con pietre e ghiaia	*Stone and gravel filters*	Stein- und Kiesfilter							
	Viti per espulsione acqua	*Dewatering screws*	Abwasserschnecken							
	Flocculatori	*Flocculator*	Flockvorrichtungen							
	Filtri a vuoto	*Vacuum filters*	Vakuumfilter							
	Elevatori a tazze	*Bucket elevators*	Becherwerke							
	Gru	*Cranes*	Krane							

Classe di carico *Load class* Lastklasse	h/d	N. AVVIAMENTI/ORA / *N. START-UP/HOUR* / ANZAHL DER STARTVORGÄNGE PRO STUNDE								
		2	**4**	**8**	**16**	**32**	**63**	**125**	**250**	**500**
C	**4**	1.3	1.3	1.3	1.3	1.5	1.5	1.5	1.5	1.5
	8	1.5	1.5	1.5	1.5	1.8	1.8	1.8	1.8	1.8
	16	1.8	1.8	1.8	1.8	2.2	2.2	2.2	2.2	2.2
	24	2.2	2.2	2.2	2.2	2.5	2.5	2.5	2.5	2.5
	APPLICAZIONI / *APPLICATIONS* / ANWENDUNGEN									
Carico con forti urti ***Heavy shock load*** **Last mit starken Stößen**	Argani per servizio pesante	*Heavy duty hoists*	Winden für schwere Lasten							
	Estrusori	*Extruders*	Extruder							
	Calandre per gomma	*Crusher rubber calenders*	Gummikalander							
	Presse per mattoni	*Brick presses*	Ziegelpressen							
	Piallatrici	*Planing machine*	Hobelmaschinen							
	Mulini a sfera	*Ball mills*	Kugelmühlen							

1.3 Fattore di servizio

Nel caso di riduttori a vite senza fine, occorre tener conto della temperatura ambiente (T_{amb}): il fattore di servizio va allora corretto come segue:

1.3 Service factor

Ambient temperature must also be taken into consideration when choosing wormgearboxes (T_{amb}): the service factor must be corrected as follows:

1.3 Betriebsfaktor

Im Falle der Schneckengetriebe muß die Raumtemperatur (T_{raum}): berücksichtigt werden: der Betriebsfaktor muß also wie folgt bereinigt werden:

T_{amb}	Fattore di servizio / *Service factor* / Betriebsfaktor
30 ÷ 40 °C	FS x 1.10
40 ÷ 50 °C	FS x 1.2
50 ÷ 60 °C	FS x 1.4
> 60 °C	Interpellare ns. Assistenza Tecnica / *Contact our Technical Assistance Service* / Bitte technischen Service hinzuziehen

Nel caso di variatore meccanico è necessario evidenziare inoltre che il numero di avviamenti massimo consentito senza provocare conseguenze sulla durata del variatore, non deve superare gli 8 - 10 al minuto

About mechanical variator, note that the maximum number of starts allowed to preserve variator life is 8 - 10 starts per minute.

Um die maximale Lebensdauer zu gewährleisten, sollten maximal 8-10 Schaltungen pro Minute getätigt werden.

1.4 Rendimento (ed irreversibilità)

Nei riduttori coassiali, pendolari e paralleli ad ingranaggi il rendimento dinamico RD può essere considerato pari a 0.95 nei due stadi di riduzione e 0.93 nei tre stadi con variazioni irrilevanti fra i vari rapporti.
Nei riduttori ortogonali il rendimento dinamico RD può essere considerato pari a 0.87 per tutti i rapporti, mentre nei variatori meccanici vale circa 0.84 alla velocità massima.
Nei riduttori a vite senza fine invece, è opportuno definire il rendimento in base al rapporto di riduzione distinguendo chiaramente la differenza fra il rendimento dinamico e il rendimento statico (questi valori sono riportati nelle tabelle delle prestazioni).
Il rendimento dinamico RD aumenta con il crescere dell'angolo dell'elica (bassi rapporti di riduzione), con il passare da oli minerali a sintetici e con l'incremento della velocità di strisciamento. Durante la fase di rodaggio il suo valore risulta essere sensibilmente inferiore rispetto a quello riportato nelle tabelle delle prestazioni.
Il rendimento statico RS o rendimento dell'avviamento, è molto importante, al fine di una corretta scelta del riduttore, per quelle applicazioni in cui non si raggiungono mai le condizioni di regime (servizi intermittenti).
Un riduttore è irreversibile staticamente (non azionabile dall'albero lento) quando il suo RS è minore di 0.5. In presenza di urti e vibrazioni tale condizione può non essere verificata.
Un riduttore è irreversibile dinamicamente (blocco istantaneo della rotazione della vite qualora non sia più presente la causa della rotazione stessa) quando il suo RD è minore di 0.5.

1.4 Efficiency (and irreversibility)

In in-line gearboxes, parallel shaft gearboxes and shaft mounted gearboxes the dynamic efficiency RD can be considered equal to 0,95 in the two reduction stages and 0,93 in the three reduction stages with negligible changes between the various ratios.
In helical bevel gearboxes the dynamic efficiency RD can be considered equal to 0.87 for every ratio, and equal to 0.84 in case of variators at maximum speed.
It is advisable to determine the efficiency according to the reduction ratio in the worm gearboxes and to make a distinction between the dynamic and static efficiency (these values are shown in the performance tables).
Dynamic efficiency RD increases gradually with an increase of the helix angle (low reduction ratios), with a change from mineral to synthetic lubricants and with an increase of rubbing speed. During running in period RD value is substantially inferior to the one listed in the performance table.
Static efficiency RS or starting efficiency is very important with respect to the correct selection of the gearbox especially on applications where the optimal operating conditions are never attained (intermittent duty).
A gearbox is statically irreversible (cannot be put into operation by output shaft), when its RS is less than 0.5. In the case of shocks or vibrations this can happen anyway.
A gearbox is dynamically irreversible (instantaneous stop lock of wormshaft rotation if the cause of the same rotation is not present anymore), when its RD value is less than 0.5.

1.4 Wirkungsgrad (und Selbsthemmung)

Bei Stirnrad- und Flachgetrieben mit zwei Untersetzungsstufen kann man von einem dynamischen Wirkungsgrad RD von 0,95 ausgehen, bei solchen mit drei Untersetzungsstufen beträgt dieser 0,93. Die Unterschiede zwischen den einzelnen Untersetzungsverhältnissen können dabei vernachlässigt werden. Kegelradgetrieben kann man einen dynamischen Wirkungsgrad von 0,87 zugrunde legen, mechanischen Verstellgetrieben ca. 0,84 bei Maximalgeschwindigkeit.
Bei Schneckengetrieben ist es hingegen zweckmäßig, den Wirkungsgrad ausgehend vom Untersetzungsverhältnis zu bestimmen, wobei zwischen dynamischem und statischem Wirkungsgrad zu unterscheiden ist (die Werte sind jeweils in den Leistungstabellen aufgeführt).
Der dynamische Wirkungsgrad RD erhöht sich bei einer Vergrößerung des Steigungswinkels (bei niedrigen Untersetzungsverhältnissen), bei der Verwendung von synthetischen anstatt Mineralölen und bei Erhöhung der Gleitgeschwindigkeit. Während der Einlaufzeit ist der Wert wesentlich niedriger als derjenige in den Leistungstabellen.
Der statische Wirkungsgrad RS oder Anlaufwirkungsgrad ist bei der richtigen Wahl des Untersetzungsgetriebes sehr wichtig, speziell bei solchen Anwendungen, bei denen der optimale Betriebszustand nicht erreicht wird (Aussetzbetrieb).
Ein Getriebe ist statisch selbsthemmend (kann von der Abtriebswelle nicht in Gang gesetzt werden), wenn sein statischer Wirkungsgrad (RS) unter 0.5 liegt.
Bei Stößen oder Vibrationen kann dies jedoch trotzdem vorkommen.
Ein Getriebe ist dynamisch selbsthemmend (sofortiges Blockieren der Schnekke, wenn die Ursache dieser Drehung nicht mehr vorhanden ist) wenn sein dynamischer Wirkungsgrad RD unter 0.5 liegt.

1.4 Rendimento (ed irreversibilità)

In Tab. 1.5 sono riportate le fasce di reversibilità ed irreversibilità (dinamiche e statiche) in funzione delle caratteristiche delle dentature dei riduttori a vite senza fine.
Poichè la totale irreversibilità è praticamente impossibile da realizzarsi, è sempre preferibile, in applicazioni che lo necessitano, ricorrere all'utilizzo di freni esterni.
Analogamente al caso dinamico, anche il rendimento statico RS (vedi tab. 2.5) tende ad aumentare durante la fase di rodaggio.
Esso tiene conto della resistenza al moto offerta nell'ingranamento vite-corona e sviluppata nei paraoli e cuscinetti; data l'incertezza di queste componenti, si capisce che questi dati sono solo indicativi.

1.4 Efficiency (and irreversibility)

In Table 1.5 reversibility and irreversibility range of values (dynamic and static) is indicated with respect to toothing characteristics.
Since total irreversibility is practically impossible to realize, it is always preferable to adopt external measures, such as brakes, in order to guarantee irreversibility if required by particular applications.
As dynamic efficiency, also static efficiency RS (see tab. 2.5) is going to increase during running period. It include many components: gear meshing, oilseals and bearings.
As the uncertainty of this components, we give this data as approximative.

1.4 Wirkungsgrad (und Selbsthemmung)

In Tabelle 1.5 werden die (dynamischen und statischen) Reversibilitäts- und Selbsthemmungswerte je nach Untersetzung angegeben.
Da eine vollständige Selbsthemmung praktisch nicht möglich ist, wird empfohlen, in entsprechenden Anwendungen externe Bremsen einzusetzen.
Auch der statische Wirkungsgrad RS (siehe Tabelle 2.5) tendiert in der Einlaufzeit anzusteigen, genau wie der dynamische Wert. Dieser Wert berücksichtigt den Anlaufwiderstand von Schnecke- Schneckenwelle sowie in den Öldichtungen und Lagern. Aufgrund der nicht exakten Bestimmbarkeit dieser Faktoren sind diese Daten lediglich richtungsweisend.

Tab. 1.5

RI RMI	**Rapporti di riduzione / *Reduction ratios*/ Übersetzungsverhältnis (ir)**										
	7	**10**	**15**	**20**	**28**	**40**	**49**	**56**	**70**	**80**	**100**
CRI CRMI	**Rapporti di riduzione / *Reduction ratios*/ Übersetzungsverhältnis (i_1, i_2)**										
	7	**10**	**15**	**20**	**28**	**40**	**49**	**56**	**70**	**80**	**100**
CR CB	**Rapporti di riduzione / *Reduction ratios*/ Übersetzungsverhältnis (i_2)**										
			15		**28**		**49**				**100**

Reversibilità totale *Total reversibility* Totale Reversibilität	Zona di incertezza *Uncertainty zone* Übergangsbereich	Irreversibilità statica /Reversibilità dinamica *Static irreversibility / Dynamic reversibility* Statische Selbsthemmung / Dynamische Reversibilität

1.5 Gioco angolare

Nella tab 1.6 riportiamo i valori del gioco angolare riscontrabili sull'albero in uscita nei riduttori a vite senza fine.
Questi valori, espressi in primi di grado (‘), sono indicativi in quanto possono variare in funzione della temperatura, dell'esecuzione e dell'usura.
Nei riduttori a ingranaggi cilindrici e/o ipoidi il gioco angolare è indicativamente contenuto nell'intervallo di 5' ÷ 30'.
Su richiesta, per applicazioni particolari, si possono fornire riduttori con giochi angolari inferiori.

1.5 Backlash

Values of the output shaft backlash on wormgearboxes are shown in table 1.6.
Such values are expressed in minute (') and are approximate as they can change according to temperature, mounting position and wear.
On cylindrical or ipoid gearboxes, output shaft backlash is inside this range: 5' ÷ 30'.

For particular applications, gearboxes with low backlash adjustable backlash are available upon request.

1.5 Flankenspiel

Für die Schneckengetriebe ist das Spiel der Abtriebswelle in Tabelle 1.6 (in Winkelminuten ’) aufgeführt.
Diese Werte sind Richtwerte, da sie von der Temperatur, der Ausführung und vom Verschleiß abhängen.
Bei den Stirnrad- und Kegelradgetrieben liegt das Flankenspiel etwa im Bereich zwischen 5’ und 30’.

Für spezielle Anwendungen liefern wir auf Wunsch spielfreie Untersetzungsgetriebe bzw. mit einstellbarem Flankenspiel.

Tab. 1.6

RI RMI	**CRI CRMI**	**Gioco angolare *Backlash* Flankenspiel (‘)**		**CB CR**	**Gioco angolare *Backlash* Flankenspiel (‘)**	
		Min	**Max**		**Min**	**Max**
28	**.../28**	5.5’	17’			
40	**.../40**	4.5’	14’	**40**	4.5’	14’
50	**.../50**	3.5’	12.5’	**50**	3.5’	12.5’
63	**.../63**	3.5’	12.5’			
70	**.../70**	3’	11.5’	**70**	3’	11.5’
85	**.../85**	3’	11’	**85**	3’	11’
110	**.../110**	2.5’	9.5’	**110**	2.5’	9.5’
130	**.../130**	2.5'	9.5'			
150	**.../150**	2.5'	9.5'			
180	**.../180**	2.5'	9.5'			

1.6 Lubrificazione

La lubrificazione dei riduttori e variatori è consentita mediante un sistema misto bagno olio e sbattimento, che garantisce normalmente la lubrificazione di tutti i componenti interni al riduttore e/o variatore.
Per quelle posizioni di montaggio caratterizzate da assi di rotazione verticali, vengono adottate particolari soluzioni al fine di garantire una buona lubrificazione anche degli organi presenti nelle posizioni più sfavorevoli.
Per tutti i riduttori, le taglie di bassa potenza vengono fornite complete d'olio SHELL a base sintetica tipo Tivela OIL SC viscosità 320 cSt: tali riduttori sono a lubrificazione cosidetta "long life" ossia non richiedono alcuna sostituzione dell'olio per tutto il loro arco di vita.
I riduttori delle taglie superiori vengono invece forniti a secco ed è quindi compito dell'utilizzatore riempirli d'olio, prima della messa in opera, servendosi dei tappi di carico, scarico, livello e sfiato, della quantità corrispondente alla specifica posizione di montaggio.
I riduttori a vite senza fine sono caratterizzati da una elevata componente di strisciamento, variabile a seconda delle caratteristiche di dentatura dell' ingranaggio e delle velocità di rotazione del cinematismo, e per questo motivo necessitano di una accurata lubrificazione. Per questo tipo di riduttori usiamo e consigliamo oli a base sintetica, che migliorano il rendimento e possiedono una maggiore stabilità di viscosità.
E' importante che gli additivi E.P. presenti negli oli siano blandi e non agressivi nei confronti del bronzo e delle guarnizioni.
La lubrificazione a grasso è consigliata solo con grassi a base sintetica e molto fluidi (NLGI 00); vengono preferiti per esercizi con elevati urti e per funzionamenti intermittenti.
Usando il grasso anzichè l'olio, si ha un minor smaltimento del calore, una riduzione del rendimento, un incremento dell'usura e una minore lubrificazione di tutti i componenti.

La Tab. 1.7 è utile per la selezione dei lubrificanti per riduttori da utilizzare in base alla loro stabilità alle varie temperature.

1.6 *Lubrication*

Gearboxes and variators lubrication is provided trough a combination of oil immersion and oil-splash patterns, which normally guarantees the lubrication of all internal components.

For some mounting positions, typically those featuring a vertical shaft, provisions are made to guarantee lubrication of even the least favourably located drive components.

For all gearboxes, smaller size units are supplied with SHELL synthetic based oil filled, type Tivela OIL SC, 320 cSt viscosity. This gearboxes are filled with a "long life" poliglycol based lubricant: this means they are maintenance-free and do not require oil changes during the operating life.
Larger size units are instead supplied dry and it will be the customer care to fill them with lubricant prior to putting them into operation, using fill, drain, level and breather plugs and with quantity according to the particular mounting position.

Wormgearboxes are characterized by an high sliding velocity, which depends by teeth's characteristics and input speed, and this is why they need a proper lubrication.
For this kind of gearboxes STM use and suggest synthetic based oils, which increase the dynamic efficiency and guarantee longer duration and higher viscosity stability.

It is very important that E.P. additives present in lubricants are not aggressive towards bronze and oilseals.
Grease lubrication is advisable only if synthetic based and fluid grease is used (NLGI 00). It is preferable to use such a lubrication when having heavy shocks and intermittent duties.
Grease used in place of oil contributes to a more difficult elimination of heat, a lower efficiency and an increase in wear and tear as well as a lower lubrication of all components.

The Table 1.7 is useful for gearbox lubricant selection.

1.6 Schmierung

Die Schmierung der Getriebe und der Variatoren erfolgt über ein Mischverfahren mit Ölbad- und Tauchbadschmierung. Dadurch kann in der Regel die Schmierung aller internen Bestandteile des Getriebes oder des Variators gewährleistet werden.
Bei Montagepositionen mit vertikalen Drehachsen werden spezielle Lösungen angewandt, um auch die Bestandteile in schwer erreichbaren Positionen ausreichend zu schmieren.

Alle Getriebe im niedrigen Leistungsbereich sind bei der Lieferung bereits mit Öl gefüllt. Dabei wird der Typ Tivela OIL SC auf synthetischer Basis mit Viskosität 320 cSt von SHELL verwendet. Diese Getriebe sind "Lebensdauer"- geschmiert, d.h. sie erfordern während ihrer gesamten Lebensdauer keinen Ölwechsel.
Die Getriebe des höheren Leistungsbereichs werden hingegen ohne werkseitige Ölfüllung geliefert. Der Benutzer hat vor der Inbetriebnahme unter Verwendung der Füll-, Ablaß-, Entlüftungs- und Füllstandsstopfen die Ölmenge einzufüllen, die für die jeweilige Montageposition erforderlich ist.
Die Schneckengetriebe weisen eine hohe Reibungskomponente auf, die jeweils hinsichtlich der Untersetzung und der Drehgeschwindigkeit des Getriebes variiert. Daher erfordert dieser Getriebetyp eine sorgfältige Schmierung. Empfehlenswert ist synthetisches Öl, das den Wirkungsgrad steigert und eine höhere Stabilität im Hinblick auf die Viskosität aufweist.
Wichtig ist, daß die E.P.-Additive der Öle mild sind und die Bronze sowie die Dichtungen nicht angreifen.
Für die Schmierung mit Fett empfehlen wir, nur hochviskose (NLGI 00) Fette mit synthetischer Base zu verwenden, diese werden für den aussetzenden Betrieb vorgezogen. Wird Fett anstelle von Öl verwendet, so resultiert hieraus eine verminderte Schmierung aller Komponenten, eine niedrigere Wärmeabgabe, ein niedrigerer Wirkungsgrad und ein höherer Verschleiß.

Tabelle 1.7 ist bei der Wahl des Schmiermittels nützlich.

Tab. 1.7

		OLIO MINERALE / *MINERAL OIL* / MINERALÖL			OLIO SINTETICO / *SYNTHETIC OIL* / SYNTHETISCHES ÖL			
ISO VG		**460**	**320**	**220**	**460**	**320**	**220**	**150**
Temperatura ambiente ***Amb. temp.*** **Umgebungstemperatur Tc (°C)**		**5° ÷ 45°**	**0° ÷ 40°**	**– 5° ÷ 35°**	**– 10° ÷ 100°**	**– 15° ÷ 90°**	**– 25°÷ 80°**	**– 30°÷ 70°**
FORNITORE / *MANUFACTURER* / HERSTELLER	**ARAL**	Degol BG 460	Degol BG 320	Degol BG 220	Degol GS 460	Degol GS 320	Degol GS 220	
	BP	Energol GRXP 460	Energol GRXP 320	Enerol GRXP 220	Energol SGXP 460	Energol SGXP 320	Energol SGXP 220	Energol SGXP 150
	ESSO	Spartan EP 460	Spartan EP 320	Spartan EP 220				
	IP	Mellana OIL 460	Mellana OIL 320	Mellana OIL 220		IP Telium VSF OIL 320		IP Telium VSF OIL 150
	KLÜBER	Lamora 460	Lamora 320	Lamora 220	Syntheso D460 EP	Syntheso D320 EP	Syntheso D220 EP	Syntheso D150 EP
	MOBIL	Mobilgear 634	Mobilgear 632	Mobilgear 630	Glygoyle 80		Glygoyle 30	
					SHC 634		SHC 630	
	SHELL	Omala OIL 460	Omala OIL 320	Omala OIL 220	Tivela OIL SD	**Tivela OIL SC**	Tivela OIL WB	Tivela OIL SA
	TEXACO	Meropa 460	Meropa 320	Meropa 220	Synlube CLP 460	Synlube CLP 320	Synlube CLP 220	
	CASTROL	Alpha SP 460	Alpha SP 320	Alpha SP 220	Alpha Synt 460		Alpha Synt 220	Alpha Synt 150

I variatori meccanici vengono forniti pieni di lubrificante AGIP Transmission Fluid VE a base minerale. Il principio di funzionamento di questi variatori è quello di trasmettere la coppia attraverso ruote di frizione: ciò comporta la scelta di un particolare tipo di lubrificante, capace di migliorare il rendimento e la durata dei componenti.
La tabella 1.8 è utile per la scelta dei lubrificanti da adottare nei variatori.

Mechanical variators are supplied with AGIP mineral based oil filled, type Transmission Fluid VE, 110 cSt viscosity. The operation principle of this variators consists of torque trasmission by friction wheel: that means to chose a particular kind of oil, able to increase dynamic efficiency and guarantee longer component's duration.
The tab. 1.8 is useful for variator lubricant selection.

Die mechanischen Verstellgetriebe sind bei der Lieferung mit dem Schmiermittel auf Mineralölbasis AGIP TRANSMISSION FLUID V.E. gefüllt. Das Betriebsprinzip dieser Variatoren besteht in der Übertragung des Drehmoments über Kupplungsräder. Daher ist eine besondere Wahl des Schmiermittels erforderlich, der den Wirkungsgrad sowie die Lebensdauer der Bestandteile erhöht.
Die Tabelle 1.8. dient der Auswahl des Schmiermittels für die Variatoren.

Tab. 1.8

Tipi di olio raccomandati / *Recommended oils* / Empfohlene Ölsorten	
AGIP	**TRANSMISSION V.E.**
AGIP	**A.T.F. DEXRON FLUID**
BP	**AUTRAN DX**
CHEVRON	**A.T.F. DEXRON**
ESSO	**A.T.F. DEXRON**
FINA	**A.T.F. DEXRON**
MOBIL	**A.T.F. 220**
SHELL	**A.T.F. DEXRON**
SHELL	**DONAX TM**
SHELL	**DONAX TA**
CASTROL	**TQ DEXRON II**

I riduttori e variatori STM forniti completi di lubrificante, possono essere utilizzati, salvo diverse indicazioni, in ambienti con temperature comprese fra -10C° e + 55C°. Per condizioni ambientali diverse consultare il ns. servizio tecnico.

STM gearboxes and variators, supplied with oil filled, can be used in rooms with a temperature from – 10C° and + 55C°, if not otherwise indicated. In case of different ambient conditions, please contact our technical department.

Werden (Verstell-)Getriebe mit Schmiermittelfüllung geliefert, so wird synthetisches Öl verwendet. Sie können - wenn nicht anders angegeben - in Räumen mit einer Temperatur zwischen –10C° und + 55C° verwendet werden. Bei anderen Raumtemperaturen wenden Sie sich bitte an unseren technischen Kundendienst.

1.7 Limite termico

In determinate condizioni applicative è necessario (particolarmente per i riduttori a vite senza fine serie RI - RMI) verificare che la potenza assorbita dal riduttore non superi la potenza limite termico sotto descritta.
Il rendimento di un riduttore è dato dal rapporto fra potenza in ingresso e quella resa in uscita. La quota mancante, convertita in calore, deve essere ceduta o scambiata all'esterno per non compromettere il riduttore dal punto di vista termico.
Quando la applicazione prevede un funzionamento continuo, o una velocità di rotazione della vite superiore a 1400 min^{-1}, o di tipo di carico pesante, si deve verificare che la potenza applicata al riduttore sia minore o uguale alla potenza del limite termico P_{to}. Non si deve tenere conto di P_{to} se il funzionamento è continuo per un massimo di due ore e con pause di durata sufficiente a ristabilire nel riduttore la temperatura ambiente.
In Tab. 1.9a e tab. 1.9b sono riportati i valori P_{to} della potenza massima applicabile ai riduttori a vite senza fine, vite senza fine con precoppia, coassiali, ortogonali, pendolari e paralleli in servizio continuo in aria libera a 30 °C.

1.7 Thermal capacity

In specific applications (in particular, as far as worm gearboxes series RI and RMI are concerned) check that the absorbed gearbox power does not exceed the below described limit thermal capacity .
Gearbox efficiency is given by the relation between input and output power. The missing quota, converted or exchanged in heat, has to be lost externally in order to avoid excessive temperatures inside the gearbox.
When the application requires a continuous duty or a rotational velocity of worm higher than 1400 min^{-1} or a heavy load, it is advisable to verify that power applied to the gearbox is less than or equal to thermal limit power P_{to} .
P_{to} must not be taken into consideration if duty is continuous for a maximum period of 2 hours and followed by an interval sufficient to restore the ambient temperature inside the gearbox.
In Table 1.9a and Table 1.9b is indicated maximum power P_{to} to be applied to worm gearboxes, helical worm gearboxes, in-line gearboxes, helical bevel gearboxes, parallel shaft gearboxes and shaft mounted gearboxes in continuous duty operating in an external ambient at 30°C.

1.7 Thermische Belastbarkeit

Bei besonderen Anwendungen ist darauf zu achten, daß die Leistungsaufnahme der Getriebe eine thermische Grenze nicht überschreitet (insbesondere bei Schneckengetrieben der Serien RI- RMI).
Der Gesamtwirkungsgrad der Getriebe ergibt sich aus dem Verhältnis zwischen Eingangs- und Ausgangsleistung. Der Leistungsverlust entsteht durch die vorhandene Reibung im Getriebe, welche in Wärme umgewandelt wird. Diese so entstandene Wärme wird, um eine Überhitzung des Getriebes zu vermeiden, über das Gehäuse nach außen abgegeben.
Wenn das Getriebe im Dauerbetrieb mit einer Drehzahl von mehr als 1400 min^{-1} an der Schnecke oder unter starker Belastung laufen soll, so ist zu prüfen, ob die für das Getriebe vorgeschriebene thermische Leistungsgrenze P_{to} nicht überschritten wird. Der P_{to}-Wert kann vernachlässigt werden, falls der kontinuierliche Betrieb max. 2 Stunden dauert und ausreichend Pausen erfolgen, die ein Abkühlen des Getriebes auf normale Raumtemperatur ermöglichen.
In Tabelle 1.9a und Tabelle 1.9b sind die P_{to}-Werte der maximalen Leistung aller Getriebe für kontinuierlichen Betrieb bei freier Luftzufuhr und einer Raumtemperatur von 30°C angegeben.

Tab. 1.9a

POTENZA LIMITE TERMICO / *THERMAL LIMIT POWER* / THERMISCHE LEISTUNGSGRENZE
P_{to} [kW]

RI-RMI	n_1 [min^{-1}]	ir										
		7	10	15	20	28	40	49	56	70	80	100
40	1400	0.98	0.88	0.73	0.62	0.51	0.42	0.39	0.36	0.31	0.30	0.30
	900	0.88	0.79	0.67	0.56	0.46	0.38	0.36	0.34	0.30	0.28	0.28
	500	0.83	0.76	0.62	0.51	0.43	0.36	0.33	0.31	0.27	0.26	0.27
50	1400	1.52	1.35	1.22	1.01	0.81	0.71	0.66	0.61	0.55	0.50	0.47
	900	1.43	1.28	1.16	0.93	0.74	0.66	0.59	0.55	0.51	0.46	0.43
	500	1.35	1.16	1.06	0.84	0.68	0.59	0.54	0.52	0.47	0.43	0.41
63	1400	2.16	2.03	1.73	1.50	1.19	1.05	0.96	0.91	0.82	0.77	0.70
	900	2.16	1.82	1.57	1.38	1.08	0.96	0.89	0.82	0.75	0.70	0.65
	500	2.03	1.73	1.44	1.23	0.99	0.86	0.80	0.75	0.69	0.65	0.61
70	1400	2.54	2.24	1.90	1.65	1.31	1.15	1.06	1.00	0.88	0.83	0.78
	900	2.38	2.11	1.73	1.52	1.19	1.06	0.95	0.91	0.83	0.76	0.72
	500	2.24	1.90	1.58	1.36	1.06	0.95	0.86	0.83	0.75	0.70	0.67
85	1400	3.38	3.17	2.67	2.42	1.81	1.64	1.45	1.49	1.30	1.21	1.08
	900	3.17	2.98	2.42	2.21	1.64	1.49	1.34	1.34	1.18	1.10	1.01
	500	2.98	2.67	2.21	1.95	1.45	1.34	1.21	1.21	1.08	1.01	0.91
110	1400	5.95	5.56	4.63	4.39	3.33	2.98	2.69	2.69	2.32	2.19	1.94
	900	5.56	5.21	4.17	3.97	2.98	2.60	2.45	2.32	2.08	1.98	1.77
	500	5.21	4.63	3.79	3.47	2.69	2.38	2.19	2.08	1.85	1.77	1.63
130	1400	9.05	8.35	6.78	6.39	4.52	4.02	3.62	3.50	3.29	3.02	2.65
	900	8.35	7.24	6.39	6.03	4.34	3.74	3.50	3.39	2.86	2.71	2.41
	500	6.78	6.39	5.43	4.72	3.50	3.10	2.93	2.86	2.58	2.47	2.22
150	1400	12.40	11.45	9.92	9.30	6.20	5.95	5.51	5.51	4.51	4.38	3.92
	900	11.45	10.63	8.75	8.27	5.72	5.51	4.80	4.65	4.02	3.92	3.54
	500	10.63	9.30	7.83	7.09	5.13	4.51	4.25	4.13	3.63	3.46	3.24
180	1400	18.86	17.29	14.82	12.96	9.88	8.30	7.98	7.68	6.48	6.29	5.61
	900	17.29	15.96	13.83	12.20	9.02	7.68	7.41	7.15	6.10	5.93	5.32
	500	14.82	13.83	11.52	10.37	7.68	6.69	6.10	6.10	5.32	5.06	4.51

Tab. 1.9b

POTENZA LIMITE TERMICO / *THERMAL LIMIT POWER* / THERMISCHE LEISTUNGSGRENZE
P_{to} [kW]

CR - CB		ir												
40	**n_1 [min^{-1}]**	**44.3**	**50.5**	**58.2**	**68**	**82.7**	**108.7**	**126.9**	**165.1**	**222.1**	**295.2**	**336.8**	**388.2**	**453**
	2800	0.72	0.72	0.72	0.72	0.51	0.49	0.49	0.39	0.38	0.31	0.31	0.31	0.31
	1400	0.67	0.67	0.67	0.67	0.47	0.47	0.47	0.36	0.36	0.30	0.30	0.30	0.30
	900	0.67	0.59	0.59	0.59	0.47	0.42	0.42	0.33	0.33	0.30	0.28	0.28	0.28
50	**n_1 [min^{-1}]**	**48.3**	**52.1**	**61**	**73.3**	**90.2**	**97.2**	**113.9**	**170.1**	**199.3**	**261.9**	**347**	**406.7**	
	2800	1.20	1.20	1.20	0.81	0.81	0.81	0.79	0.66	0.64	0.48	0.48	0.48	
	1400	1.10	1.10	1.10	0.74	0.74	0.74	0.74	0.60	0.60	0.45	0.45	0.45	
	900	1.02	1.02	1.02	0.74	0.66	0.66	0.66	0.54	0.54	0.45	0.42	0.42	
70	**n_1 [min^{-1}]**	**44.3**	**50.8**	**59.1**	**69.6**	**82.6**	**110.3**	**130**	**166.1**	**227.5**	**295**	**338.9**	**393.8**	**464.3**
	2800	1.79	1.79	1.79	1.79	1.30	1.26	1.26	1.05	1.00	0.79	0.79	0.78	0.78
	1400	1.65	1.65	1.65	1.65	1.16	1.16	1.16	0.95	0.95	0.74	0.74	0.74	0.74
	900	1.65	1.48	1.48	1.48	1.16	1.02	1.02	0.84	0.84	0.74	0.67	0.67	0.67
85	**n_1 [min^{-1}]**	**43**	**51.3**	**59.1**	**69**	**80.2**	**110.4**	**128.8**	**167.6**	**225.4**	**286.4**	**342.1**	**394.1**	**460**
	2800	2.39	2.39	2.39	2.39	1.72	1.67	1.67	1.41	1.37	1.08	1.08	1.04	1.04
	1400	2.20	2.20	2.20	2.20	1.53	1.53	1.53	1.28	1.28	0.96	0.96	0.96	0.96
	900	2.20	1.96	1.96	1.96	1.53	1.31	1.31	1.12	1.12	0.96	0.89	0.89	0.89
110	**n_1 [min^{-1}]**	**43**	**51.3**	**59.1**	**69**	**80.2**	**110.4**	**128.8**	**167.6**	**225.4**	**286.4**	**342.1**	**394.1**	**460**
	2800	4.16	4.16	4.16	4.16	3.16	3.16	3.16	2.61	2.54	1.91	1.91	1.87	1.87
	1400	3.81	3.81	3.81	3.81	2.86	2.86	2.86	2.35	2.35	1.76	1.76	1.76	1.76
	900	3.81	3.39	3.39	3.39	2.86	2.41	2.41	2.03	2.03	1.76	1.55	1.55	1.55

Pt_o [kW]	
AR - AM - AC	tutti i rapporti *all ratios* alle Untersetzungen
25/2	3.0
32/2	4.5
40/2	4.5
50/2	6.3
60/2	9.6
80/2	15.0
100/2	23.0
120/2	33.0

P_{to} [kW]	
OR - OM	**kW**
63	2.2
71	3.0
90	4.1
112	6.1

P_{to} [kW]	
PR - PM	**kW**
63	5.6
71	7.5
90	10.5
112	16.5

* Per la grandezza RI 28 i valori non sono significativi perchè il limite termico è notevolmente superiore a quello meccanico.

** The above data are not valid for size 28 since the thermal limit is much higher than the mechanical one.*

* Für die Größe RI 28 ist die thermische Grenze nicht relevant, da diese wesentlich höher ist als die mechanische Grenze.

I valori di Pto devono essere corretti tramite i seguenti fattori:

Pto values must be corrected through the following factors:

Die Pto-Werte müssen mit folgenden Faktoren korrigiert werden:

Tab. 1.10

Potenza limite termico corretta / *Corrected limit thermal capacity* / Korrigierte thermische Leistungsgrenze

P tc = Pto x ft x fa x fu x fl

ft — Fattore di temperatura ambiente / *Ambient temperature factor* / Raumtemperaturfaktor

ta	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°
ft	**1.30**	**1.23**	**1.15**	**1.08**	**1**	**0.92**	**0.84**	**0.76**	**0.68**	**0.60**

ta: Temperatura ambiente / *Ambient temperature* / Raumtemperatur

fa — Fattore di aerazione / *Aeration factor* / Belüftungsfaktor

1 Riduttore non ventilato / *Non ventilated gearbox* / Nicht belüftetes Getriebe
1.4 Riduttore con ventilazione / *Gearbox with ventilation* / Getriebe mit Belüftung

fu — Fattore di utilizzo / *Duty factor* / Benutzungsfaktor

Dt	10	20	30	40	50	60
fu	**1.7**	**1.4**	**1.25**	**1.15**	**1.08**	**1**

Dt: Minuti di funzionamento in un'ora / *Minutes of operation in one hour* / Einsatzdauer pro Std. (in Min.)

fl — Fattore di lubrificazione / *Lubrication factor* / Schmierungsfaktor

1 Olio minerale / *Mineral oil* / Mineralöl
1.1 Olio sintetico / *Synthetic oil* / Synthetisches Öl
1.4 Olio sintetico e guarnizioni Viton / *Synthetic oil and viton seals* / Synthetisches Öl und Vitondichtungen

1.8 Scelta

Per la scelta del motoriduttore, detta T_2' (Nm) la coppia nominale dell'utilizzatore, si calcola la potenza in ingresso al riduttore con la formula:

$$P' = (kW) = \frac{T_2' \times n_2}{9550 \times RD}$$

dove T_2' (Nm) rappresenta la coppia nominale richiesta dall'applicazione.
Noti P' e n_2 scegliere, utilizzando le tabelle delle prestazioni dei motoriduttori, il motoriduttore per il quale $P_1 \geq P'$. Verificare che il fattore di servizio FS' del motoriduttore sia maggiore o uguale di quello dell'applicazione (FS) altrimenti scegliere un motoriduttore della grandezza superiore possibilmente mantenendo invariata la P_1. Segue la verifica di carichi radiali, assiali e del limite termico (dove previsto).

Per la scelta del riduttore si parte dalla coppia T_2' richiesta dall'utilizzatore e dalla velocità richiesta in uscita n_2 per un dato valore di n_1 (min^{-1}). Dalle tabelle delle prestazioni dei riduttori si adotterà quel riduttore per il quale il prodotto T_2' x FS sarà minore o uguale a T_{2M}, dove FS è il fattore di servizio dell'applicazione.
Segue la verifica di carichi radiali, assiali e del limite termico (dove previsto).

La scelta del variatore può essere eseguita tramite le seguenti alternative:
calcolo dell'applicazione, misura diretta della potenza assorbita su analoga applicazione, confronto con applicazioni esistenti.
Una volta determinata la coppia necessaria per l'applicazione occorre consultare le tabelle di selezione dei variatori nel paragrafo 9.7.
Nel caso del variatore di velocità occorre prestare attenzione alla misura della potenza assorbita tramite rilevamento elettrico in quanto questo tipo di misura è attendibile solo nel caso dei giri massimi.
Nel campo dei giri minimi il rilevamento elettrico non determina il giusto dimensionamento in quanto, se l'applicazione è corretta, l'assorbimento rilevato sarà sempre molto inferiore a quello di targa del motore elettrico e pertanto non rilevabile da termiche o altre sicurezze elettriche.
Le condizioni di funzionamento che rendono precaria, e comunque sempre da valutare con molta attenzione, l'applicazione del variatore sono le seguenti:
— avviamenti: il numero massimo di avviamenti è funzione del tipo di applicazione, indicativamente non deve superare i 8 - 10 al 1' e comunque per casi particolari occorre contattare il ns. servizio tecnico.
— inerzie: nei casi si debbono avviare o fermare elevate masse senza l'interposizione di un riduttore, occorre contattare il ns. servizio tecnico.
Nella scelta del variatore occorre considerare un opportuno fattore di servizio (FS) rilevabile nel paragrafo 1.3. Il fattore di servizio è da applicare sulla coppia nominale sopportabile dal variatore:

M_2 (variatore) ≥ M_2 (applicazione) x FS

1.8 Selection

In order to make the appropriate selection of the gear motor, input power has to be calculated according to the following formula:

$$P' = (kW) = \frac{T_2' \times n_2}{9550 \times RD}$$

where T_2' (Nm) represents the nominal torque requested by the application.
Once P' and n_2 are known, the gear motor must be selected referring the performance tables where $P_1 \geq P'$. It is also important to make sure that the service factor FS' of the gear motor is equal or higher than the one of the application (FS) otherwise a bigger size of the gear motor has to be selected keeping P_1 unchanged. Then the check of radial, axial loads and the thermal capacity (where applicable) follows.
In order to select the right gearbox, the torque T_2' required by the user and the output speed n_2 for a certain value of n_1 (min^{-1}) must be taken into consideration. Given the above values, select the corresponding gearbox referring to the tables of the gearbox performance where T_2' x FS is lower or equal to T_{2M} where FS is the application service factor.
Then check the axial and radial loads and the thermal capacity (where applicable).
There are many ways of choosing the right variator for the job:
technical specifications can be calculated for the applcation in hand; absorbed power can be directly measured on similar applications; or simple comparisons can be made with existing applications.
Once you have determined an application's torque requirements, simply refer to the tables on chapter 9.7.
Take particular care when using measuring absorbed power electrically for the purposes of choosing a variator. Electrical measurements are only reliable at maximum speed. At low speeds electrical measurements do not determine correct variator size because, if the application is correctly calculated, absorbed power is much lower than the rating on the electric motor's data plate, and is not therefere likely to have any effect on thermal cutouts or other electrical protection devices. The following operating conditions are the most critical for variator functioning and must therefore be examined with the greatest care:
— Starts: The maximum number of starts depends on the type of applcation. Approximately, this figure must not exceed 8 - 10 per minute. Contact our Technical Service if you have any special requirements.
— Inertia: Contact our Technical Service if high mass machanical parts have to be standard or stopped without a gear reducer being installed between the variator and the part.
When choosing a variator, always allow for a sufficient service factor (see chapter 1.3. The service factor must be applied to the variator's rated torque value.

M_2 (variator) ≥ M_2 (application) x FS

1.8 Wahl

Bei der Wahl des Getriebemotors wird die erforderliche Leistung am Getriebeeingang mit folgender Formel berechnet:

$$P' = (kW) = \frac{T_2' \times n_2}{9550 \times RD}$$

wobei T_2' (Nm) das für die Anwendung erforderliche Nenndrehmoment ist.
Nachdem P' und n_2 nun bekannt sind, wählt man (mit Hilfe der Leistungstabellen der Getriebemotoren) den Getriebemotor, bei dem $P_1 \geq P'$ ist. Hierbei muß sichergestellt sein, daß der Betriebsfaktor FS' des Getriebemotors höher ist als der Anwendungsfaktor (FS), da sonst ein größerer Getriebemotor gewählt werden muß, wobei P_1 nach Möglichkeit gleich bleiben soll. Anschließend sind die Radial-und Axialbelastungen sowie die thermische Grenze (wenn notwendig) zu prüfen.
Bei der Wahl eines Getriebes geht man von folgenden Werten aus, die vom Anwender vorgegeben werden: Drehmoment T_2' und Abtriebsdrehzahl n_2 für einen bestimmten Wert von n_1 (min^{-1}). Aus den Getriebe-Leistungstabellen wird dann das Getriebe ausgewählt, für das das Produkt $T_{2'}$ x FS kleiner oder gleich T_{2M} ist, wobei FS der Betriebsfaktor der Anwendung ist.
Danach sind die Radial-und Axialbelastungen sowie die thermische Grenze (wenn notwendig) zu prüfen.
Die Auswahl der jeweils geeigneten Verstellgetriebe kann nach folgenden Maßstäben vorgenommen werden:
Berechnung der Anwendung, direkte Messung der Leistungsaufnahme bei ähnlichem Einsatz, Vergleich mit bereits bestehenden Anwendungen, Nach Ermittlung des einsatzspezifischen Drehmomentes wird die Auswahl der Verstellgetriebe mit Hilfe der Übersichten durchgeführt (Kapital 9.7).
Bei Verstellgetrieben ist die elektrische Messung der Leistungsaufnahme nur bei maximaler Abtriebsdrehzahl zulässig. Bei niedriger bis minimaler Drehzahl gestattet die Messung der Stromaufnahme nicht die Größnauslegung des Getriebes, weil auch im Falle einer richtigen Anwendung der eremittelte Wert weit unter der Leistungsschild des E-Motors liegt, und weder von Schutzschaltern noch anderen elektrischen Sicherheiten erfaßt wird. Die für den Einsatz der Verstellgetriebe kritischen bzw. mit größter Sorgfalt zu erwägenden Betriebsbedingungen sind:
— Einschalten: Die maximale Schalthäufigkeit ist je nach Anwendung verschieden, sollte aber auf 8 bis 10 innerhalb einer Minute begrenzt werden. Bei besonderen Anforderungen bitte mit unserem technischen Büro Rücksprache nehmen.
— Trägheitsmomente: Unser technisches Büro gibt gern Auskunft, wenn große Massen angetrieben bzw. abgebremst werden sollen.
Zur Auswahl der Verstellgetriebe ist außerdem der geschilderte Betriebsfaktor maßgeblich (Kapitel 1.3.
Der Betriebsfaktor des Anwendungsfalls ist in Relation zum folgenden Quotienten zu setzen:

M_2 (verstellgetriebe) ≥ M_2 (Anwendung) x FS

Attenzione: si ricorda che i prodotti STM non sono dispositivi di sicurezza.

Attention: STM products are not safety devices.

Achtung: STM-Produkte sind nicht für sicherheitstechnische Anwendungen konzipiert.

1.9 Prestazioni riduttori

Nelle tabelle delle prestazioni dei riduttori sono riportati i seguenti fattori:

ir rapporto di riduzione
n_1 velocità di rotazione dell'albero in entrata (min^{-1})
n_2 velocità di rotazione in uscita (min^{-1})
T_{2M} coppia massima ottenibile con FS = 1 (Nm)
RD% rendimento dinamico valutato per olio minerale e comprensivo delle perdite nei cuscinetti, di quelle per sbattimento dell'olio e per attrito nelle tenute.
P potenza nominale in entrata (kW)
IEC Motori accoppiabili

1.9 Gearboxes performances

In the performance tables the following factors are listed:

ir Reduction ratio
n_1 Input speed (min^{-1})
n_2 Output speed (min^{-1})
T_{2M} Maximum torque obtainable with FS = 1 (Nm)
RD% Dynamic efficiency calculated taking into account mineral oil, oil leaks from bearings, oil leaks due to oil splashes and seal friction
P Nominal input power (kW)
IEC Motor options

1.9 Leistungen der Getriebe

In den Leistungstabellen sind folgende Faktoren angegeben:

ir Untersetzungsverhältnis
n_1 Drehzahl der Antriebswelle (min^{-1})
n_2 Drehzahl der Abtriebswelle (min^{-1})
T_{2M} Maximales Drehmoment bei FS = 1 (Nm)
RD% Dynamischer Wirkungsgrad für Mineralöl, beinhaltet den Verlust durch Reibung und Spritzöl
P Nennleistungen (kW)
IEC Kompatible Motoren

Esempio / *Example* / Beispiel

Tipo / *Type* / Typ — Peso / *Weight* / Mass

RI 28 — 1.4 Kg

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	15	0.39	81	129	18	0.31	79	71	22	0.21	78	63-56-50
10	140	17	0.31	79	90	20	0.24	77	50	24	0.16	76	
15	93	18	0.23	75	60	20	0.18	73	33	24	0.12	71	
20	70	15	0.16	72	45	18	0.12	69	25	21	0.08	67	
28	50	19	0.15	64	32	21	0.12	61	18	25	0.08	58	
40	35	16	0.10	59	23	18	0.08	56	13	21	0.05	53	

1.10 Prestazioni motoriduttori e motovariatori

Nelle Tabelle delle prestazioni dei motoriduttori e motovariatori sono riportati i seguenti fattori:

ir rapporto di riduzione
P_1 potenza del motore trifase (kW)
T_2 coppia erogata dal motoriduttore ottenuta tenendo conto del rendimento RD (Nm)
n_1 velocità di rotazione dell'albero in entrata (min^{-1})
n_2 velocità di rotazione in uscita (min^{-1})
FS' fattore di servizio del motoriduttore

1.10 Performances of gear motors and motovariators

In tables of gearmotors and motovariators performances the following factors are listed:

ir reduction ratio
P_1 power of threephase motor (kW)
T_2 output torque (Nm) of motorized gearbox taking the efficiency RD into consideration
n_1 Input speed (min^{-1})
n_2 output speed (min^{-1})
FS' service factor of gearmotors

1.10 Leistungen der Getriebemotoren und verstellgetriebemotoren

In den Leistungstabellen und verstellgetriebemotoren sind folgende Faktoren aufgeführt:

ir Untersetzungsverhältnis
P_1 Leistung des Drehstrommotors (kW)
T_2 Drehmoment am Getriebeausgang, unter Berücksichtigung des Wirkungsgrades RD (Nm)
n_1 Drehzahl der Antriebswelle (min^{-1})
n_2 Drehzahl der Abtriebswelle (min^{-1})
FS' Betriebsfaktor des Getriebemotors

Esempio motoriduttore / *Example gearmotor* / Beispiel Getriebemotors

n_2 min^{-1}	ir	T_2 Nm	FS'	RMI

Tipo/*Type*/Typ

0.09 kW — P_1

n_1 = 1400 min^{-1}				
200	7	3.5	4.4	**RMI 28**
200	7	3.6	10.3	**RMI 40**
140	10	4.9	3.5	**RMI 28**

Esempio motovariatore / *Example motovariator* / Beispiel verstellgetriebemotoren

P_1	n_1	n_2 (min^{-1})		T_2 (Nm)		VM
kW	min^{-1}	max	min	max	min	
0.15	880	620	125	1.9	3.8	**VM 63**
0.18	2740	1900	380	0.8	3.2	**VM 63**
0.18	1380	950	190	1.5	3.8	**VM 63**

1.11 Installazione

Montare il riduttore e/o variatore in modo tale da eliminare qualsiasi vibrazione.

Curare particolarmente l'allineamento del riduttore con il motore o il motovariatore e la macchina da comandare interponendo dove è possibile giunti elastici od autoallineanti.

Quando il riduttore o il motovariatore è sottoposto a sovraccarichi prolungati, urti o pericoli di bloccaggio, installare salvamotori, limitatori di coppia, giunti idraulici od altri dispositivi similari.

Fare attenzione a non superare i valori consentiti di carico radiale ed assiale che agiscono sugli alberi veloce e lento.

Assicurarsi che gli organi da montare sui riduttori o motovariatori siano lavorati con tolleranza ALBERO ISO h6 FORO ISO H7.

Prima di effettuare il montaggio pulire e lubrificare le superfici al fine di evitare il pericolo di grippaggio e l'ossidazione da contatto.

Il montaggio e lo smontaggio vanno effettuati con l'ausilio di tiranti ed estrattori utilizzando il foro filettato posto in testa alle estremità degli alberi.

Durante la verniciatura si consiglia di proteggere gli anelli di tenuta per evitare che la vernice ne essichi la gomma pregiudicando la tenuta del paraolio stesso.

Nel caso di montaggio dell'albero lento su calettatore:
Pulire accuratamente le superfici di contatto dell'albero e del mozzo.
Applicare sulle stesse una leggera pellicola d'olio.
Inserire l'unità di bloccaggio all'esterno dell'albero cavo.
Serrare le viti in modo graduale ed uniforme con sequenza continua sino a raggiungere la coppia di serraggio **Ms** indicata in tabella 1.11.
Per raggiungere la coppia di serraggio **Ms** richiesta sono necessari più serraggi delle viti.
I valori di **T** indicati in tabella sono calcolati per un montaggio ad olio.
Attenzione: non usare **bisolfuro di molibdeno** o altri grassi, causa di notevoli riduzioni del coefficiente d'attrito.

1.11 Installation

Install the gearbox and/or variator to eliminate all vibrations.

Take special care over alignment between the gear unit, the motor or motovariator and the driven machine, fitting flexible or self-adjusting couplings wherever possible.

When the gearbox or motovariator is subject to prolonged overloads, shocks or possible jammings, fit thermostatic cut-outs, torque limiters, hydraulic couplings or other similar devices.

Take care not to exceed the permitted radial and axial loads on the input and output shafts.

Ensure that the components to assembly on the gearboxes or motovariators are machined with tolerance SHAFT ISO h6 HOLE ISO H7.

Before assembling clean and lubricate the surface to prevent jammings and contact oxidation.

Assembly and disassembly should be made with care and possibly using the tapped hole in the end of the shaft which is provided for this purpose.

When painting, protect the oilseals to prevent the paint from drying the rubber and impairing sealing properties.

When assembling the output shaft on the shrink disk, please use the following instruction:
Carefully clean the contact surfaces of the shaft and the hub.
Pour on the same a light oil pellicle.
Place the block unit outside the hollow shaft.
*Clamp the screws in a gradual and uniform way with a continuous sequence up to reach the tightening torque **Ms** indicated in table 1.11.*
*Many screw clampings are requested to reach the tightening torque **Ms**.*

***T** values indicated in the table are calculated for an oil assembly.*
***Attention:** do not use **molybdenim bisulphate** or other greases; it would cause big reductions of friction coefficient.*

1.11 Montage

Das (Verstell-)Getriebe ist so zu montieren, daß Schwingungen ausgeschlossen werden.

Insbesondere ist darauf zu achten, daß das Getriebe sowohl mit dem Motor als auch mit der Maschine fluchtet, was durch die Verwendung elastischer oder selbstfluchtender Kupplungen erreicht werden kann.

Wenn das (Verstell-)Getriebe längeren Überlasten, Schlägen oder Sperrzeiten ausgesetzt ist, sind Motorschalter, Rutschkupplungen, hydraulische Kupplungen oder ähnliche Vorrichtungen anzubringen.

Achten Sie darauf, daß die zulässigen Quer-und Axialbelastungen an Antriebs- und Abtriebswelle nicht überschritten werden.

Achten Sie auch darauf, daß die an den (Verstell-)Getriebe montierten Elemente mit folgenden Toleranzen bearbeitet sind: WELLE ISO h6, BOHRUNG ISO H7.

Vor der Montage sind die Flächen zu reinigen und zu schmieren, um ein Festfressen bzw. Kontaktoxidation zu vermeiden.

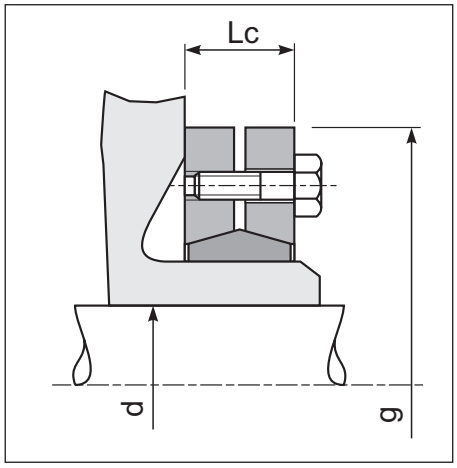
Montage und Demontage sollten mit Hilfe von Zugstangen und Ausziehvorrichtungen unter Verwendung der Gewindebohrungen an den Wellenenden erfolgen.

Während des Lackierens sollten die Dichtungsringe geschützt werden, um zu vermeiden, daß der Lack den Gummi ausstrocknet, was die Funktion der Öldichtung beeinträchtigen könnte.

Bei der Montage der Abtriebswelle mit Hilfe einer Schrumpscheibe ist folgendes zu beachten:
Die 4 Kontaktoberflächen der Welle und der Nabe sollten sorgfältig gereinigt werden.
Einen leichten Ölfilm auf diesen Flächen auftragen.
Die Sperreinheit auf der Außenseite der Hohlwelle anbringen.
Die Schrauben stufenweise und gleichmäßig nacheinander anziehen, bis das Anzugsmoment **Ms**, das in der Tabelle 1.11 angegeben wird, erreicht ist.
Für das Erreichen des erforderlichen Anzugsmoments **Ms** müssen die Schrauben mehrfach angezogen werden.
Die in der Tabelle angegebenen Werte Mt und Fass wurden für eine ölgschmierte Montage berechnet.
Achtung: es sollten aufgrund der signifikanten **Reduzierung des Reibungsbeiwertes** kein Molybdändisulfid oder andere Fette verwendet werden.

Tab. 1.11

OM-OC-OR	PM-PR-PC	d [mm]	T [Nm]	Ms [Nm]	Lc [mm]	g [mm]
63		30	570	12	23.5	72
		(25)	340	4	21.5	60
		(28)	440	12	23.5	72
71		35	780	12	25.5	80
		(30)	570	12	23.5	72
		(32)	620	12	25.5	80
90		40	1160	12	27.5	90
		(42)	1380	12	27.5	90
		(45)	1520	12	30.5	100
		(48)	1880	12	30.5	100
112		50	2200	12	30.5	110
		(55)	2500	12	30.5	115



Prima della messa in funzione della macchina accertarsi che la quantità di lubrificante e la posizione dei tappi di livello e sfiato siano conformi alla posizione di montaggio del riduttore o variatore e che la viscosità del lubrificante sia adeguata al tipo di carico.

I prodotti STM sono coperti da garanzia, così come precisato nelle condizioni generali di vendita riportate sul listino prezzi, ultima revisione.

Per quanto non quì specificato, fare riferimento al manuale d'uso e manutenzione.

Before starting up the machine check that the lubricant quantity and the positions of the filler and breather plugs are correct for the gearbox or variator mounting positions and that the lubricant viscosity is appropriate for the type of load.

The warranty conditions on STM products are specified on the last price list revision, with reference to general sales conditions.

For any instruction not here specified, see use and maintenance manual.

Bevor die Maschine in Betrieb genommen wird, ist sicherzustellen, daß sowohl die Schmiermittelmenge als auch die Position der Öleinfüll-und der Ölablaßschraube der Montageposition des (Verstell-)Getriebes entsprechen und daß die Schmiermittelviskosität der Belastungsart entspricht.
Die Bedingungen der Garantieleistungen sind in der jeweils gültigen Preisliste aufgeführt.

An dieser Stelle nicht aufgeführte Informationen sind den Bedienungs- und Wartungshandbüchern der einzelnen Produkte zu entnehmen.

1.12 Manutenzione

I riduttori e motovariatori previsti per lubrificazione “a vita” non necessitano di manutenzione in quanto vengono forniti con la corretta quantità di lubrificante.
Per i riduttori lubrificati con olio minerale dopo le prime 500 - 1000 ore di funzionamento sostituire l’olio effettuando, se possibile, un accurato lavaggio interno del riduttore.
E’ importante non mischiare oli sintetici con oli minerali; se necessario passare da un tipo all’altro di lubrificante effettuando prima un accurato lavaggio interno.

Per i motovariatori seguire le istruzioni riportate nel paragrafo 9.4.

1.12 Maintenance

“Life” lubricated gearboxes and motovariators do not require any maintenance as they are supplied with the correct quantity of synthetic oil.
On gear units lubricated with mineral oil, after the first 500 - 1000 operating hours change the oil, washing out the inside of the gear unit thoroughly if possible.
Synthetic lubricant are not compatible and cannot be mixed with mineral lubricants; should be necessary to switch from one type of lubricant to the other it is advisable to wash the units accurately.

For motovariators, see instructions on chapter 9.4.

1.12 Wartung

Die von STM mit synthetischem Öl gelieferten (Verstell-)Getriebe sind wartungsfrei.
Bei mit Mineralöl geschmierten Getrieben ist nach den ersten 500 bis 1000 Betriebsstunden ein Ölwechsel durchzuführen, dabei sollte das Getriebe möglichst ausgespült werden.
Wichtig ist, nie synthetisches mit Mineralöl zu mischen. Wird ein neuer Schmieröltyp benutzt, muß das Getriebe innen zuvor sorgfältig gereinigt werden.

Für die Verstellgetriebe sind die in Paragraph 9.4. aufgeführten Hinweise zu beachten.

Nella Tab, 1.12 sono riportati gli intervalli di lubrificazione per riduttori con funzionamento regolare e continuo.

In Tab. 1.12 are indicated the right intervals according to which lubricant change should be carried out. The data refer to gearboxes with continuous and regular duty.

In Tabelle 1.12 sind die Schmierungsintervalle für Getriebe, die bei gleichmäßigem und kontinuierlichem Betrieb arbeiten, angegeben.

Tab. 1.12

INTERVALLO DI LUBRIFICAZIONE (h) / *LUBRICATION INTERVAL (h)* / SCHMIERUNGSINTERVALLE (in Stunden)		
TEMPERATURA OLIO *OIL TEMPERATURE* ÖLTEMPERATUR	**OLIO MINERALE *MINERAL OIL* MINERALÖL**	**OLIO SINTETICO *SYNTHETIC OIL* SYNTHETISCHES ÖL**
< 60 C°	4000	a vita / *long life* / wartungsfrei
60 - 90 C°	2500	10000
> 90 C°	—	5500

Per quanto non quì specificato, fare riferimento al manuale d'uso e manutenzione.

For any instruction not here specified, see use and maintenance manual.

An dieser Stelle nicht aufgeführte Informationen sind den Bedienungs- und Wartungshandbüchern der einzelnen Produkte zu entnehmen.

1.13 Stoccaggio

Al fine di garantire la buona conservazione e l'efficienza dei riduttori e variatori, consigliamo di attenersi alle seguenti indicazioni:
evitare lo stoccaggio all'aperto o in ambienti con presenza di umidità;
proteggere le parti lavorate (alberi, piani, flange) con adeguati protettivi per evitarne l'ossidazione;
quando il riduttore o il variatore restano per lungo tempo inattivo in un ambiente con una elevata percentuale di umidità si consiglia di riempirlo completamente di olio.
Naturalmente al momento della successiva messa in funzione sarà necessario ripristinare il livello del lubrificante.

Per quanto non quì specificato, fare riferimento al manuale d'uso e manutenzione.

1.13 Storage

In order to preserve and keep performances of the gearboxes and variators unaltered, we suggest to follow these instructions:
do not store outdoors or in humid areas;
protect the worked parts (shafts, surfaces and flanges) with antioxidants;

when the gearbox or variator is left unused in an environment with high humidity, fill it completely with oil.

Naturally, it must be returned to the operating level before the unit is used again.

For any instruction not here specified, see use and maintenance manual.

1.13 Lagerung

Um eine korrekte Lagerung und damit Leistung der (Verstell-)Getriebe zu gewährleisten, wird die ßeachtung folgender Reyeln empfollen:
Lagerung im Freiem oder in nassen Räumen vermeiden;
Bearbeitete Teile (Wellen, Flächen, Flansche) mit Schutzmitteln gegen Oxidation schützen;
Steht das (Verstell-)Getriebe längere Zeit in einem Raum mit hoher Luftfeuchtigkeit, so ist es ratsam, es ganz mit Öl zu füllen.
Wird es danach wieder in Betrieb genommen, so ist natürlich vorher der richtige Ölstand wiederherzustellen.

An dieser Stelle nicht aufgeführte Informationen sind den Bedienungs- und Wartungshandbüchern der einzelnen Produkte zu entnehmen.

1.14 Verniciatura

Riduttori e variatori sono verniciati con finitura BLU RAL 5010, ad esclusione dei riduttori a vite senza fine gr. 28 - 40 - 50 e coassiali gr. 25.
Per gli altri richiedere le specifiche della vernice utilizzata alle filiali e ai depositi dove è stato effettuato l'acquisto.

1.14 Painting

Gearboxes and variators are painted with finish RAL 5010 blu, eccept for wormgearboxes sizes 28 - 40 - 50 and for inline gearboxes size 25.
Otherwise, ask for the technical specifications of the paint at the branch offices or warehouses where the products were bought.

1.14 Lackierung

Die (Verstell-)Getriebe werden bis auf die Schneckengetriebe bis einschlieâlich Baugroâe 50 sowie die Stirnradgetriebe der Baugroâe 25 blau (RAL 5010) lackiert.
Ansonsten fragen Sie bitte die technischen Eigenschaften des ver- wendeten Lacks bei den Zweigniederlassungen oder Lagern, wo Sie die Getriebe bezogen haben, nach.

1.15 Direttive CE- marcatura CE- ISO9001

Direttiva bassa tensione 73/23/CEE
I motoriduttori, motovariatori e i motori elettrici STM sono conformi alle prescrizioni della direttiva Bassa Tensione .
Direttiva Compatibilità Elettromagnetica 89/336/CEE.
I motoriduttori, motovariatori e i motori elettrici STM sono conformi alle specifiche della direttiva di Compatibilità Elettromagnetica.
Direttiva macchine 89/392/CEE
I motoriduttori, motovariatori e i motori elettrici STM non sono macchine ma organi da installare o assemblare nelle macchine.

Marchio CE, dichiarazione del fabbricante e dichiarazione di conformità.

I motoriduttori, motovariatori e i motori elettrici hanno il marchio CE.
Questo marchio indica la loro conformità alla direttiva Bassa Tensione e alla direttiva Compatibilità Elettromagnetica.
Su richiesta, STM può fornire la dichiarazione di conformità dei prodotti e la dichiarazione del fabbricante secondo la direttiva macchine.
ISO 9001
I prodotti STM sono realizzati all'interno di un sistema di qualità conforme allo standard ISO 9001. A tal fine su richiesta è possibile rilasciare copia del certificato.

1.15 EC Directives - CE mark- ISO 9001

Low Voltage Directive 73/23 EEC
STM geared motors, motovariators and electric motors meet the specification of the low voltage directive.
EMC Directive 89/336/EEC
STM geared motors, motovariators and electric motors correspond to the specifications of the EMC directive.

Machine Directive 89/392/EEC
STM geared motors, motovariators and electric motors are not application-ready in reference to the above mentioned directive on individual machines. They are exclusively for installation into a machine or for assembly on a machine.

CE Mark, Conformity Declarations and Manufacturer's Declaration.

STM geared motors, motovariators and electric motors carry the CE Mark.
Herewith is conformity to the low voltage directive and to electromagnetic compatibility directive.
On request STM supplies both the conformity declarations and the manufacturer's declaration to the machine directives.

ISO 9001
STM products have been designed and manufactured with respect to a ISO 9001quality system standard.
On request a copy ot the certification can be issued.

1.15 EWG Richtlinien- CE-Kennzeichnung- ISO 9001

Niederspannungsrichtlinie 73/23/ EWG
Die STM Verstellgetriebe, Getriebe- und Elektromotoren erfüllen die Anforderungen der Niederspannungsrichtlinie.
Richtlinie EMV 89/336/EWG
Die Verstellgetriebe, Getriebe- und Elektromotoren aus dem Hause STM entsprechen den Vorschriften der Richtlinie EMV.

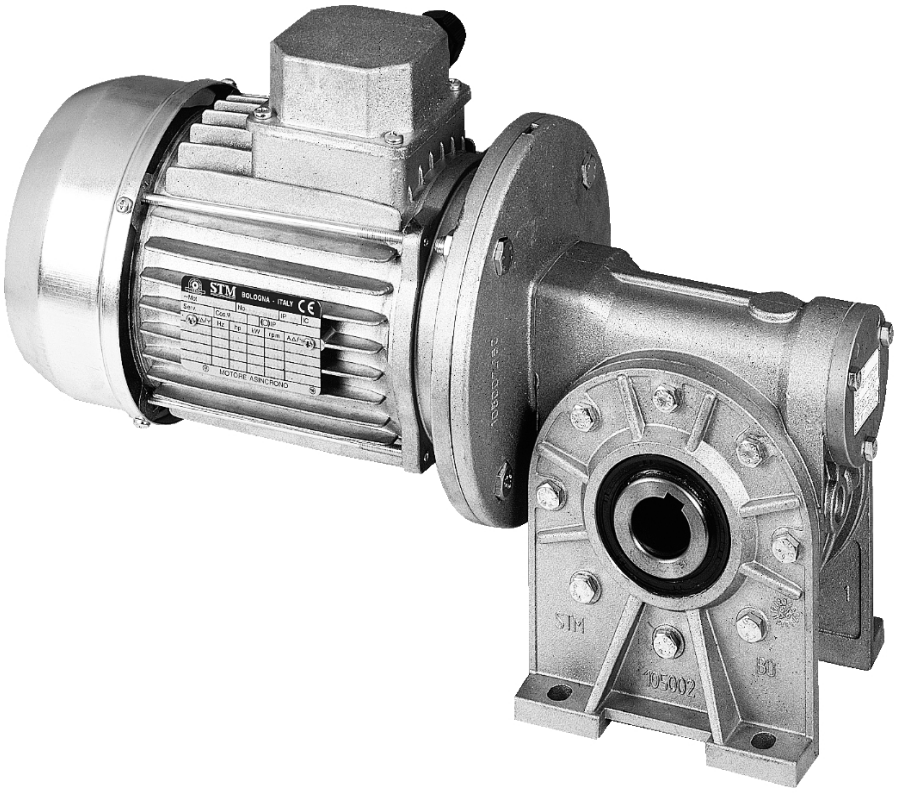
Maschinenrichtlinie 89/392 EWG
Die STM Verstellgetriebe, Getriebe- und Elektromotoren sind nicht verwendungsfertige Einzelmaschinen. Sie sind ausschließlich für den Einbau in eine Maschine oder für den Zusammenbau zu einer Maschine bestimmt.

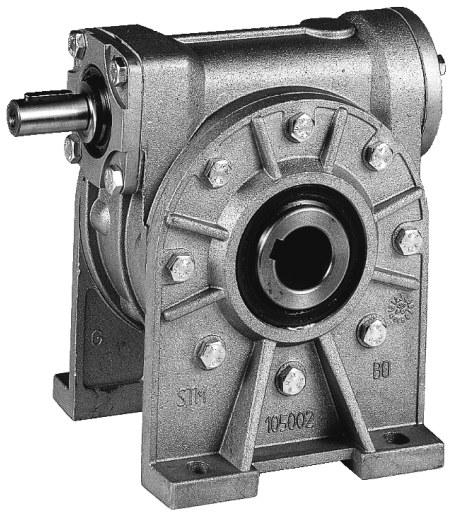
CE-Kennzeichnung, Konformitäts- und Herstellererklärung

Die Verstellgetriebe, Getriebe- und Elektromotoren der STM tragen die CE-Kennzeichnung, die die Übereinstimmung mit der Niederspannungsrichtllinie belegt.
Das Unternehmen STM liefert auf Anfrage sowohl die Konformitäts- als auch die Herstellererklärung gemäß der Maschinenrichtlinie.
ISO 9001
Die Produkte aus dem Hause STM werden nach DIN 9001 konstruiert und produziert.
Eine Kopie der Zertifizierung kann angefordert werden.

2.0 RIDUTTORI A VITE SENZA FINE
WORM GEARBOXES
SCHNECKENGETRIEBE

RI
RMI





2.1 Caratteristiche tecniche

I nostri riduttori a vite senza fine combinati vengono realizzati seguendo il criterio della massima affidabilità nel tempo, risultato ottenuto utilizzando ottimi materiali e moderni criteri di progettazione.
Carcasse, flange e piedi sono realizzati in ghisa meccanica G20 UNI 5007 ad esclusione dei modelli di bassa potenza (28-40-50-63-70) per i quali è invece utilizzato l'alluminio SG-AlSi UNI 1706.
Le viti senza fine sono realizzate in acciaio e vengono cementate, temprate e rettificate. La rettifica sul filetto, nei rapporti di riduzione per i quali il valore del modulo lo consente, viene eseguita con profilo ZI migliorando così i contatti tra le superfici dentate e, conseguentemente, il rendimento e la silenziosità di funzionamento.
La corona ha il mozzo in ghisa G20 sul quale viene riportata una fusione in bronzo GCuSn12 UNI7013.
Sono utilizzati cuscinetti a rulli conici o radiali a sfere di qualità per garantire una lunga durata.
Il programma di fabbricazione prevede anche, l'applicazione di un limitatore di coppia con allarme di arresto e l'assemblaggio con variatore.

2.1 Technical characteristics

Our gearboxes are manufactured with high quality material and modern design in order to guarantee the maximum reliability and duration.
Housings, flanges and feet are made out of engineering cast iron G20 UNI 5007 excluding the smaller sized models (28-40-50-63-70) for which aluminium SG-AlSi UNI 1706 is utilized instead.
Wormshafts are made of steel and are casehardened, hardened and ground.
The thread grinding in the gear ratios that the module value permits is carried out with ZI-Profile. This improves the contact between the toothed surfaces and therefore performance and reduces operating noise.
The wormwheel has a G20 cast iron hub onto which a casting in GCsSn12 UNI7013 bronze is fitted.
To guarantee a long life, taper roller bearing or radial ball bearings are used.
Our range also provides possible application of torque limiters equipped with stop devices and assembly on to variators.

2.1 Technische Eigenschaften

Unsere Untersetzungsgetriebe werden unter Verwendung von besten Materialien und mit modernsten Herstellungsmethoden hergestellt, um eine maximale Zuverlässigkeit sowie eine lange Lebensdauer zu garantieren. Außer bei den Modellen mit niedriger Leistung, bei welchen Aluminium SG-AlSi UNI 1706 verwendet wird, werden alle Gehäuse, Flansche und Sockel aus Maschinenguß G20 UNI 5007 gefertigt.
Die Schnecken sind aus einsatzgehärtetem, gehärtetem und geschliffenem Stahl.
Das Gewindeschleifen erfolgt in den vom Modulwert zulässigen Übersetzunsverhältnissen mit ZI-Profil, wodurch die Kontakte zwischen den verzahnten Oberflächen und folglich die Leistung und der geräuscharme Betrieb verbessert werden.
Das Schneckenrad hat eine Nabe aus Gußeisen G20, auf die ein Guß aus Bronze GcuSn12 UNI7013 aufgetragen wird.
Um eine lange Lebensdauer zu gewährleisten, werden Kegelrollenlager oder Radialkugellager von hoher Qualität verwendet.
Die Getriebe können mit einer Rutschkupplung, einem einstellbaren Drehmomentbegrenzer und mit einem Drehzahlregler ausgerüstet werden.

2.2 Designazione

2.2 Designation

2.2 Bezeichnung

	Grandezza *Size* Größe	Versione *Version* Ausführung	i	* IEC	kW	n° Poli *Poles* Polig	
RMI	28 40 50 63 70 85 110 130	S I D FL P PP (F1) (F2) (F3)	7 10 15 20 28 40 49 56	63 (B5) 63(B14) 	 0.13 0.18 	 2 4 	 63 (B5) 63 (B14) ....
RI	150 180		70 80 100				

Esempio / *Example* / Beispiel

RMI 40S 1:20 PAM 63 (B5)

RMI 40S 1:20 kW 0.18 4 63 (B5)

RI 40S 1:20

*** Se non conforme alle specifiche dimensionali IEC precisare diametro foro e flangia (es. 14/120)**

Altre specifiche:

- Versione flangiata con montaggio sinistro (opposto a catalogo)
- posizione della morsettiera del motore se diversa da quella standard (1)
- lubrificante (non per i tipi 28,40,50,63, 70,85 già lubrificati a vita)
- elica della vite sinistra (esecuzione speciale)
- posizione di montaggio con indicazione tappi di livello e sfiato;se non specificato si considerano standard le posizioni 01
- cuscinetti conici corona
- bisporgenza vite
- alberi lenti
- lubrificazione forzata
- limitatore di coppia
- limitatore di coppia RDB

**** If not conform to IEC specifications please specify diameter of wormshaft's bore and flange (i.e. :14/200)***

Further specification:

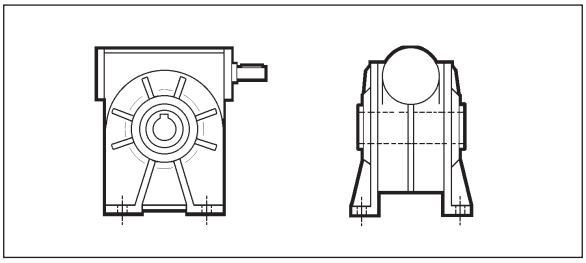
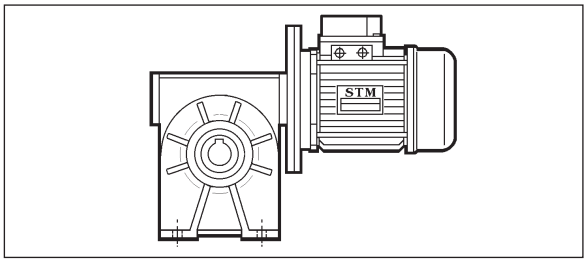
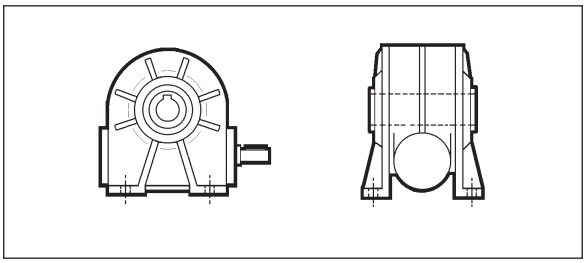
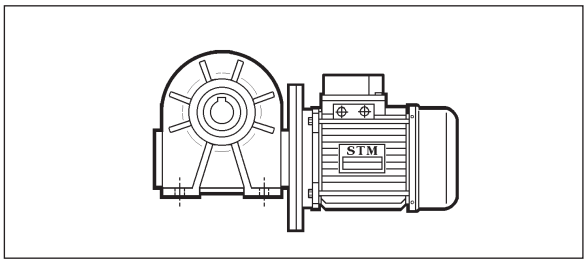
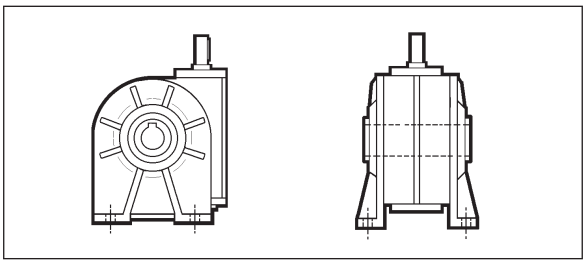
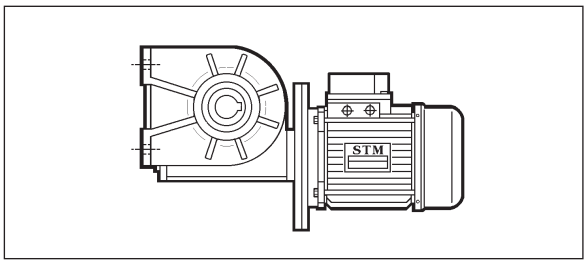
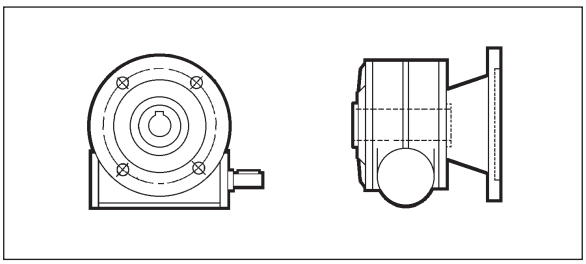
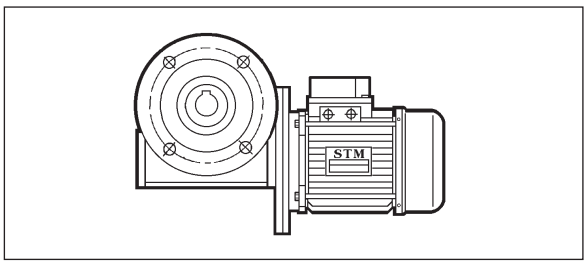
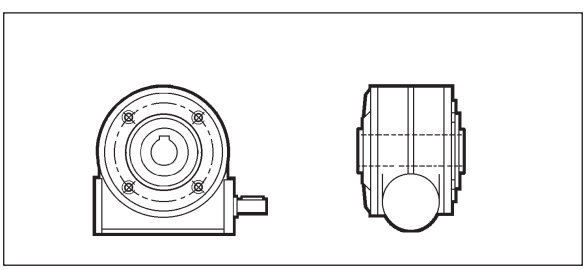
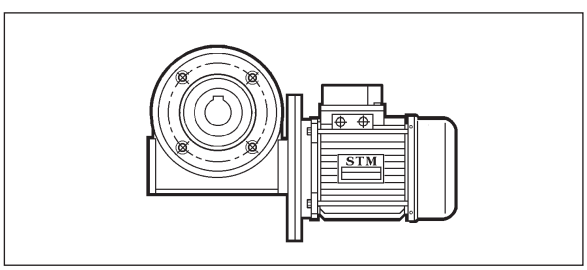
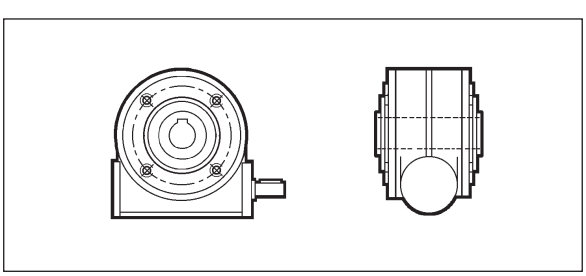
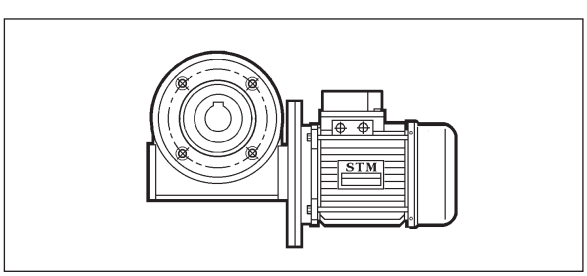
- *flanged version. Left mounting opposite to catalogue*
- *terminal board box position if different from standard (1)*
- *lubrication (except for size 28,40,50,63, 70,85 lubricated for life)*
- *left helix (special version)*
- *mounting position. Indications must be given regarding level and breather plugs. If not specified positions 01 are considered standard*
- *wormwheel taper roller bearings*
- *double extended input shaft*
- *output shafts*
- *forzed lubrication*
- *torque limiter*
- *torque limiter RDB*

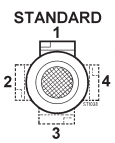
*** Falls nicht nach IEC, bitte Durchmesser der Eingangswellenbohrung und des Flansches angeben (z.B.: 14/200)**

Weitere Spezifikationen:

- Geflanschte Ausführung mit Montage links (nicht wie im Katalog)
- Stellung des Klemmenkastens des Motors, falls diese von der Standard- Ausführung abweicht (1)
- Schmiermittelfüllung (außer bei den wartungsfreien Typen 28,40,50,63,70,85)
- Linksgängige Schraubenlinie der Schnek- ke (Spezialausführung)
- Montagestellung mit Angabe der Ölpegel und Entlüfterstöpsel. Falls nicht anders angegeben, gelten die Pos. 01 als Standard.
- Kegelrollenlager auf der Schnecke
- Beidseitige Zapfen auf Eingangswelle
- Abtriebswellen
- Zwangsschmierung
- Rutschkupplung
- Rutschkupplung RDB

2.3 Versioni — *2.3 Versions* — 2.3 Ausführungen

	RI	RMI
S 28 - 180		
I 28 - 180		
D 28 - 180		
FL (F1, F2, F3) 28 - 180		
P 28, 85 - 180		
PP 40 - 70		



Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

2.4 Lubrificazione

Si consiglia l'uso di oli a base sintetica. Vedere a tale proposito le indicazioni riportate nel capitolo 1.6.
La viscosità ISO consigliata è 320 cSt.

Dal punto di vista della lubrificazione le posizioni di montaggio più favorevoli sono la 02, 05 e 06 in quanto il cinematismo vite-corona è costantemente immerso nel lubrificante.
Nella posizione 01 i cuscinetti della vite sono lubrificati in maniera soddisfacente nei riduttori di piccole dimensioni (<Gr.85) con elevato numero di giri (n_1>700 min^{-1}).
Nei riduttori di grandi dimensioni e in tutti i riduttori con basse velocità in ingresso, è necessario aumentare la quantità del lubrificante.
Nelle posizioni 03 e 04 il cuscinetto superiore della vite viene a trovarsi al di sopra del livello del lubrificante per cui nei riduttori più piccoli è lubrificato dall'olio proiettato dalla rotazione veloce della vite. In questo caso, per velocità n_1<700 min^{-1} è necessario schermare il cuscinetto.
Nei riduttori dalla grandezza RI 85 alla grandezza RI 180 è disponibile a richiesta la lubrificazione forzata utilizzabile con velocità n_1 da 1 a 3000 min^{-1}.
In Fig. 2.1 è riportata la soluzione costruttiva adottata.
Le quantità di lubrificante riportate nella Tab.2.2 sono indicative per la posizione 01. Per le altre posizioni, in fase di installazione immettere l'esatta quantità di lubrificante riferendosi alla spia di livello (dove prevista).
In fase di ordine specificare sempre la posizione di montaggio desiderata. Se omessa, il riduttore verrà fornito con i tappi predisposti per la posizione 01.

2.4 Lubrication

It is recommended to use synthetic based oil. See instructions in *chapter 1, paragraph 1.6.*
Recommended ISO VG viscosity is 320 cSt.

As far as lubrication is concerned, the more suitable assembly positions are 02, 05 and 06 as the wormshaft / wormwheel unit is constantly dipped in the lubricant.

In position 01 the wormshaft bearings are lubricated in a satisfactory way for gearboxes of small sizes (<Size 85) with a high number of rev (n_1>700 min^{-1}).
In gearboxes of bigger sizes and in every gearbox with low input speed it is necessary to increase the quantity of the lubricant.
In positions 03 and 04 the upper bearing of the wormshaft is over the lubricant level therefore in smaller gearbox sizes it is lubricated by the oil projected by the wormshaft fast rotation. In this case, it is necessary to screen the bearing for speeds n_1<700 min^{-1}.
For gearboxes from size RI 85 to RI 180 a forced lubrication for speed n_1 from 1 to 3000 min^{-1} is available upon request.

Fig 2.1 shows the adopted constructive solution.
The lubricant quantities listed in table 2.2 are indicative of position 01. For the other positions, during the mounting fill in the exact quantity of lubrifiant referring to the oil window (if present).

During the order, the desired mounting position must be always specified. Otherwise, the gearbox will be supplied with the plug suitable for position 01.

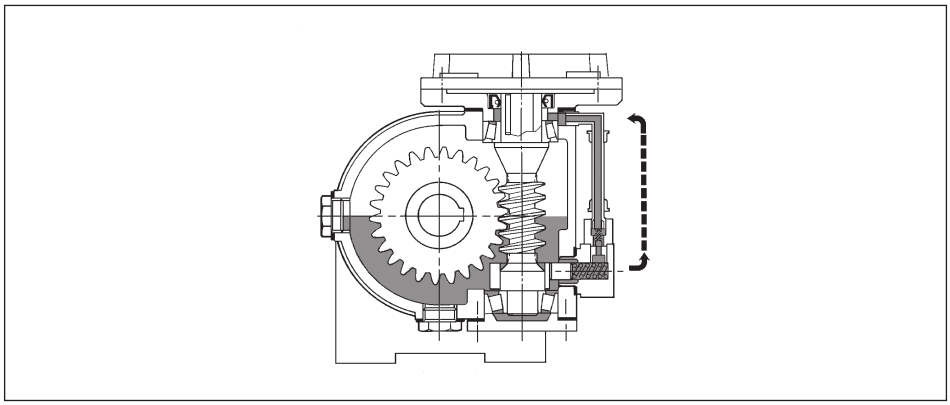
2.4 Schmierung

Wir empfehlen den Einsatz von synthetischem Öl (siehe Abschnitt 1.6). Die empfohlene ISO-Viskosität beträgt 320.

Im Bezug auf die Schmierung sind die günstigsten Montagestellungen 02, 05 und 06, weil hier Schnecke und Schne- ckenrad ständig im Schmiermittel laufen.
Bei kleineren Getrieben (<Gr.85) mit einer Drehzahl von mehr als 700 min^{-1} sind in Montageposition 01 die Lager der Schneckenwelle ausreichend geschmiert.
Bei größeren Getrieben sowie solchen mit niedrigen Eingangsdrehzahlen ist es notwendig, die Ölmenge zu erhöhen.
In den Stellungen 03 und 04 befindet sich das obere Lager der Schnecke über dem Schmiermittelpegel. Bei den kleineren Getrieben wird es durch das aufgrund der Schneckenrotation hochgeschleuderte Öl geschmiert. In diesem Fall muß das Lager bei Drehzahlen n_1<700 min^{-1} abgeschirmt werden.
Bei Getrieben von Größe RI 85 bis RI 180 ist auf Anfrage eine Zwangsschmierung erhältlich, die bei Drehzahlen n_1 von 1 bis 3000 min^{-1} verwendet werden kann.
In Fig. 2.1 ist die konstruktive Lösung abgebildet.
Die Füllmengen, gültig für Montageposition 01, sind in Tab. 2.2 augelistet. Bei den anderen Montagepositionen ist während der Montage die richtige Ölmenge anhand des Schauglases (wenn vorhanden) aufzufüllen.

Bei der Bestellung immer die gewünschte Montageposition angeben. Bei fehlenden Angaben wird das Getriebe mit einer Schraubenanordnung für Position 01 geliefert.

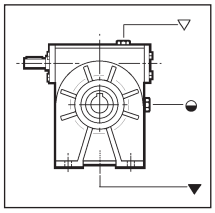
Fig. 2.1

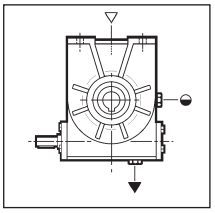


2.5 Posizioni di montaggio

2.5 Mounting positions

2.5 Montagepositionen


S01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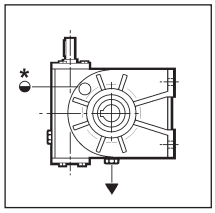
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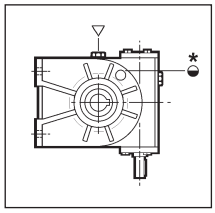
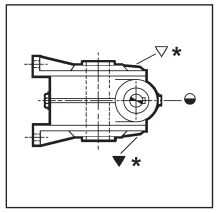

S04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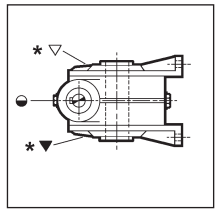
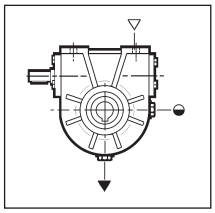
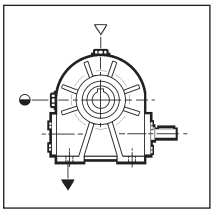

S06


I01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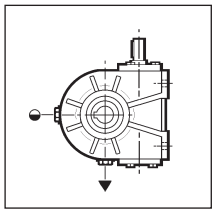
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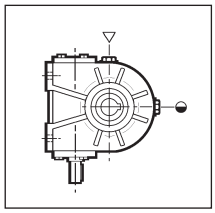
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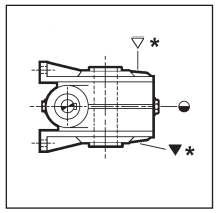
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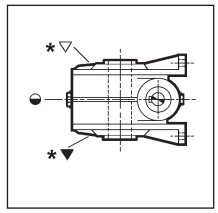
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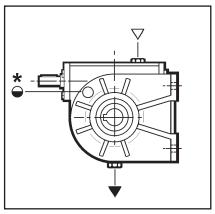
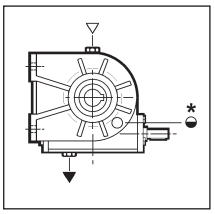

D01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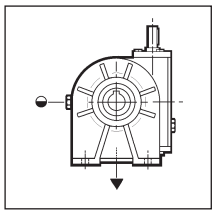
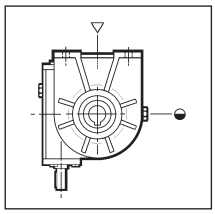
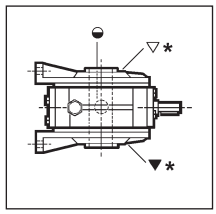
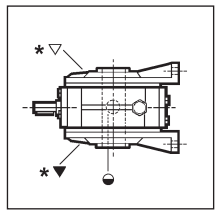

D03


D04


D05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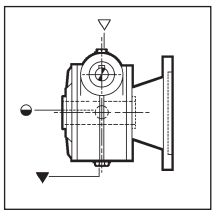
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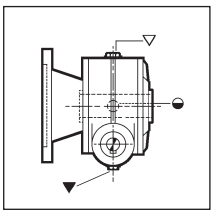
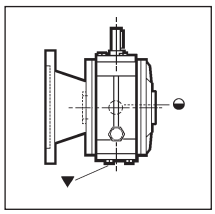
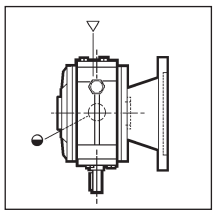

F02


F03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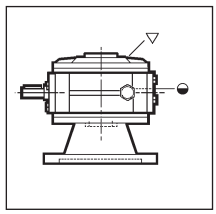
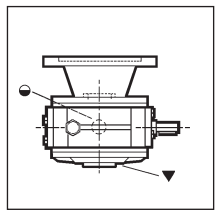

F05


F06

Tab. 2.2

Quantità di lubrificante per la posizione 01 / *Lubricant Quantity* / Schmiermittelmenge (kg)			
RI - RMI	Posizioni di montaggio /*Mounting Positions* / Montagepositionen		* n°. tappi olio * *No. of plugs* * Anzahl Schrauben
28	0.045	Riduttori forniti completi di lubrificante sintetico *Gearboxes suplied with synthetic oil* Getriebe werden mit synthetischem Öl geliefert	1
40	0.100		1
50	0.190		1
63	0.385		1
70	0.500		1
85	1.000		3 (S,I,D) 4 (FL,F1,F2,F3)
110	2.600	Riduttori predisposti per lubrificazione ad olio *Gearboxes suplied ready for oil lubrication* Getriebe sind für Ölschmierung vorgerüstet	3 (S,I,D) 4 (FL,F1,F2,F3)
130	4.100		3 (S,I,D) 4 (FL)
150	6.000		3 (S,I,D) 4 (FL)
180	11.000		3 (S,I,D) 4 (FL,F1)

I riduttori nelle grandezze 110, 130, 150, 180 sono forniti predisposti per lubrificazione ad olio ma privi di lubrificante il quale potrà essere fornito a richiesta.
Il tappo di sfiato è allegato solo nei riduttori che hanno più di un tappo olio.
* Eventuali forniture con predisposizioni tappi diverse da quelle indicata in tabella, dovranno essere concordate.

The gearboxes size 110, 130, 150 and 180 are oil lubricated but are supplied without lubricant which can be delivered upon request.
The drain plug is annexed only in the gearbox with move than one oil plug.
** Supplies with oil plugs different from those listed in the table are to be agreed upon.*

Die Getriebe in den Größen 110, 130, 150 und 180 sind ölgeschmiert, werden aber ohne Ölfüllung ausgeliefert. Auf Anfrage ist diese ebenfalls erhältlich.
Eine Entlüftungsschraube gibt es nur bei Getrieben mit mehr als einer Ölschraube.
* Schraubenpositionen, die von denen in der Tabelle aufgeführten Positionen abweichen, müssen mit uns vereinbart werden.

▽ Carico / *Breather plug* / Nachfüllen - Entlüftung
◒ Livello / *Level plug* / Pegel
▼ Scarico / *Drain plug* / Auslauf
* Disponibile su richiesta / *Available on request* / Erbältheb auf Anfrage

2.6 Carichi radiali e assiali

Quando la trasmissione del moto avviene tramite meccanismi che generano carichi radiali sull'estremità dell'albero,è necessario verificare che i valori risultanti non eccedono quelli indicati nelle tabelle.

Nella Tab. 2.3 sono riportati i valori dei carichi radiali ammissibili per l'albero veloce (Fr_1). Come carico assiale ammissibile contemporaneo si ha:

$$Fa_1 = 0.2 \times Fr_1$$

In Tab. 2.4 sono riportati i valori dei carichi radiali ammissibili per l'albero lento (Fr_2) . Come carico assiale ammissibile contemporaneo si ha:

$$Fa_2 = 0.2 \times F_{r2}$$

2.6 Axial and overhung loads

Should transmission movement determine radial loads on the angular shaft end, it is necessary to make sure that resulting values do not exceed the ones indicated in the tables.

In Table 2.3 permissible radial load for input shaft are listed (Fr_1). Contemporary permissible axial load is given by the following formula:

$$Fa_1 = 0.2 \times Fr_1$$

In Table 2.4 permissible radial loads for output shaft *are listed (Fr_2).*
Permissible axial load is given by the following formula:

$$Fa_2 = 0.2 \times Fr_2$$

2.6 Radiale und Axiale Belastungen

Wird das Wellenende auch durch Radialkräfte belastet, so muß sichergestellt werden, daß die resultierenden Werte die in der Tabelle angegebenen nicht überschreiten.

In Tabelle 2.3 sind die Werte der zulässigen Radialbelastungen für die Antriebswelle (Fr_1) angegeben. Die Axialbelastung beträgt dann:

$$Fa_1 = 0.2 \times Fr_1$$

In Tabelle 2.4 sind die Werte der zulässigen Radialbelastungen für die Abtriebswelle angegeben.
Als zulässige Axialbelas- tung gilt:

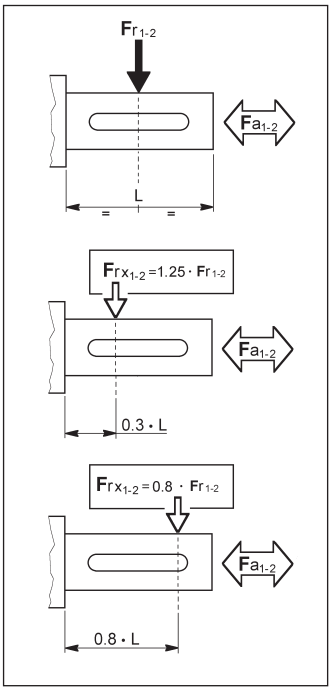
$$Fa_2 = 0.2 \times Fr_2$$

Tab. 2.3

n_1 min^{-1}	Fr_1 (N) RI - RMI									
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**	**180**
1400	60	220	320	420	500	700	1000	1600	2200	2500
900	60	250	350	460	530	800	1200	1800	2350	2700
700	70	280	400	500	570	900	1300	2000	2500	3000
500	70	310	450	530	600	1000	1450	2200	2700	3200

Tab. 2.4

n_2 min^{-1}	Fr_2 (N) RI - RMI									
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**	**180**
200	700	950	1280	1310	1770	2250	3000	4000	5900	6250
140	750	1050	1450	1680	2350	2400	3150	4250	6700	6900
93	800	1200	1620	1740	2700	2500	3600	4800	7500	7500
70	900	1350	1850	1930	3100	2650	4150	5300	8400	8500
50	950	1500	2100	2150	3300	3560	4850	6600	9400	10300
35	1000	1600	2230	2300	3700	3850	5700	7500	10100	11500
29	1070	1700	2400	2500	3900	4400	6200	8200	11100	12500
25	1130	1800	2580	2700	4100	4620	6600	8750	12000	13400
20	1200	1950	2700	2900	4300	5150	7200	9600	12700	15200
18	1280	2100	2850	3100	4450	5500	7800	10300	14000	16300
14	1430	2300	3200	3300	4700	5800	8250	10700	15000	17000



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero e sono riferiti ai riduttori operanti con fattore di servizio 1.
Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 500 min^{-1} e Fr_2 a 14 min^{-1} rappresentano i carichi massimi consentiti.
Per i carichi non agenti sulla mezzeria dell'albero lento o veloce si ha:

a 0.3 della sporgenza:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

a 0.8 dalla sporgenza:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

The radial loads shown in the tables are applied on the centre line of the shaft extension and are related to gearboxes working with service factor 1.
Intermediate values of speeds that are not listed can be obtained through interpolation but it must be considered that Fr_1 at 500 min^{-1} and Fr_2 at 14 min^{-1} represent the maximum allowable loads.
For loads which are not applied on the centre line of the output or input shaft, following values will be obtained:

at 0.3 from extension:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

at 0.8 from extension:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

Bei den in der Tabelle angegebenen Ra dialbelastungen wird eine Krafteinwirkung auf die Mitte des Wellenendes zugrunde gelegt; außerdem arbeiten die Getriebe mit Betriebsfaktor 1. Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation ermittelt werden. Hierbei ist jedoch zu berücksichtigen, daß die Werte von Fr_1 bei 500 min^{-1} und von Fr_2 bei 14 min^{-1} die Maximalbelastungen repräsentieren.
Bei Lasten, die nicht auf die Mitte der Ab- bzw. Antriebswellen wirken, legt man folgende Werte zugrunde:

0.3 vom Wellenabsatz:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

0.8 vom Wellenabsatz:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

2.6 Carichi radiali e assiali

A richiesta possono essere fornite versioni rinforzate con cuscinetti a rulli conici sulla corona in grado di sopportare carichi superiori a quelli ammessi dalle versioni normali.
Si veda a tal proposito la tabella 2.5, in cui sono riportati i valori dei carichi radiali e assiali ammissibili sull'albero uscita nel caso di cuscinetti conici sulla corona. Si consiglia, in questi casi, di adottare versioni flangiate, verificando che il carico assiale venga interamente assorbito dal cuscinetto alloggiato nella flangia di fissaggio. Si sconsiglia, invece, la versione a piede, in quanto la resistenza meccanica della struttura non è sufficiente a garantire la necessaria sicurezza sia statica sia dinamica (urti e sovraccarichi).
Tale soluzione non è prevista sulla grandezza 28.

2.6 Axial and overhung loads

In order to increase the load capacity of the gearboxes it is possible to fit taper roller bearings on to the output shaft. Such reinforced versions are available upon request.
With regard to this reinforced version, let see output radial and axial load values shown on tab. 2.5. It's advisable to use flange mounted versions and to make sure that the axial load is absorbed by the bearing, housed in the fixing flange.
The foot mounted version is not recommended, because the structural safety is very reduced, with regard both to static and dynamic conditions.

Please note that this solution is not available for size 28.

2.6 Radiale und Axiale Belastungen

Für größere Belastungen stehen auf Wunsch auch verstärkte Ausführungen mit Kegelrollenlagern für die Schneckenwelle zur Verfügung.
Tabelle 2.5 listet die zulässigen Radial- und Axiallasten bei Verwendung von Kegelrollenlagern auf. Es wird in diesen Fällen empfohlen, Flanschausführungen zu verwenden und sicherzustellen, daß die axiale Last vollständig vom Lager, das sich im Befestigungsflansch befindet, aufgenommen wird. Die Fuâversion empfiehlt sich in diesem Falle nicht, da deren Festigkeit nicht ausreicht, um die erforderliche Sicherheit gegen Stoße und Überlasten sowohl in statischer wie in dynamischer Hinsicht zu gewährleisten.
Hinweis:
Für die Baugröße 28 ist diese Lösung nicht vorgesehen.

Tab. 2.5

CARICHI RADIALI - ASSIALI CON CUSCINETTI CONICI SULLA CORONA
AXIAL AND OVERHUNG LOADS WITH TAPER ROLLER BEARINGS ON WORMWHEEL
RADIALE UND AXIALE BELASTUNGEN MIT KEGELROLLENLAGERN AUF DEM SCHNECKENRAD [N]

n_2 (rpm)	RI - RMI																	
	40		50		63		70		85		110		130		150		180	
	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
200	2300	3000	5100	5900	5200	6000	6000	7300	6000	8000	8500	10900	8300	11700	16000	20800	19000	24800
140	2300	3000	5600	6500	5750	6650	6700	8200	6600	8800	9200	11800	8400	11850	17500	22700	20000	26000
93	2300	3000	6300	7300	6500	7550	7500	9150	7600	10100	9200	11800	9000	12700	18500	24000	21000	27400
70	2300	3000	6550	7600	6200	7200	7600	9300	6500	8650	9200	11800	9500	13400	19200	25000	22000	28700
50	2300	3000	6900	8000	6900	8000	8700	10600	7900	10500	10600	13600	10000	14100	20000	26000	23000	30000
35	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	13900	17800	12600	17750	20000	26000	23000	30000
29	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	14800	19000	13600	19200	20000	26000	23000	30000
25	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	14800	19000	14600	20600	20000	26000	23000	30000
20	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	14800	19000	15600	22000	20000	26000	23000	30000
18	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	14800	19000	15600	15600	20000	26000	23000	30000

RI 28

Kg 1.4

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	15	0.39	81	129	18	0.31	79	71	22	0.21	78	63-56-50
10	140	17	0.31	79	90	20	0.24	77	50	24	0.16	76	
15	93	18	0.23	75	60	20	0.18	73	33	24	0.12	71	
20	70	15	0.16	72	45	18	0.12	69	25	21	0.08	67	
28	50	19	0.15	64	32	21	0.12	61	18	25	0.08	58	
40	35	16	0.10	59	23	18	0.08	56	13	21	0.05	53	
49	29	15	0.08	56	18	17	0.06	52	10	20	0.04	49	56-50
56	25	15	0.07	54	16	17	0.05	52	8.9	19	0.04	47	
70	20	13	0.06	49	13	15	0.04	46	7.1	17	0.03	43	
80	18	12	0.05	45	11	13	0.04	41	6.3	15	0.02	38	
100	14	10	0.03	41	9.0	10	0.03	38	5.0	11	0.02	35	

RI 40

Kg 2.1

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	37	0.93	83	129	44	0.73	81	71	54	0.50	80	71-63-56
10	140	42	0.75	81	90	49	0.58	79	50	59	0.40	78	
15	93	42	0.54	77	60	49	0.41	75	33	59	0.28	73	
20	70	37	0.37	73	45	43	0.29	70	25	51	0.20	67	
28	50	43	0.34	67	32	50	0.26	64	18	59	0.18	61	
40	35	40	0.24	60	23	45	0.19	56	13	53	0.13	53	
49	29	38	0.20	57	18	43	0.16	53	10	50	0.11	49	63-56
56	25	36	0.17	54	16	40	0.13	51	8.9	47	0.09	47	
70	20	28	0.13	47	13	32	0.10	44	7.1	37	0.07	39	
80	18	26	0.11	44	11	29	0.09	40	6.3	34	0.06	36	
100	14	28	0.09	45	9.0	30	0.07	41	5.0	31	0.04	38	

RI 50

Kg 3.8

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	68	1.7	84	129	81	1.3	83	71	100	0.91	82	80-71
10	140	73	1.3	82	90	86	1.0	81	50	100	0.66	79	
15	93	76	0.93	80	60	89	0.70	79	33	100	0.45	77	
20	70	74	0.71	76	45	86	0.55	74	25	100	0.37	71	
28	50	80	0.60	70	32	92	0.46	67	18	100	0.29	64	80-71-63
40	35	81	0.45	66	23	92	0.34	63	13	100	0.22	59	
49	29	72	0.34	63	18	82	0.27	59	10	96	0.19	55	71-63
56	25	69	0.30	60	16	78	0.24	56	8.9	91	0.16	53	
70	20	64	0.24	56	13	72	0.19	52	7.1	84	0.13	48	
80	18	58	0.21	51	11	66	0.16	47	6.3	75	0.11	43	
100	14	52	0.16	48	9.0	59	0.13	44	5.0	60	0.08	40	

RI 63

Kg 6.0

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	115	2.9	84	129	137	2.2	84	71	169	1.5	83	90-80-71
10	140	126	2.2	83	90	149	1.7	81	50	182	1.2	80	
15	93	131	1.6	80	60	153	1.2	78	33	184	0.84	76	
20	70	136	1.3	77	45	158	1.0	75	25	189	0.69	72	
28	50	135	1.0	71	32	156	0.77	68	18	186	0.53	65	
40	35	145	0.79	67	23	166	0.61	64	13	195	0.42	60	
49	29	125	0.58	64	18	142	0.45	61	10	166	0.31	57	80-71
56	25	127	0.54	62	16	145	0.42	58	8.9	169	0.29	54	
70	20	117	0.42	58	13	133	0.33	54	7.1	154	0.23	50	
80	18	110	0.37	55	11	124	0.29	51	6.3	144	0.20	47	
100	14	99	0.28	51	9.0	112	0.22	47	5.0	125	0.15	43	

2.7 Prestazioni riduttori RI — *2.7 RI gearboxes performances* — 2.7 Leistungen der RI-Getriebe

RI 70

Kg 7.5

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	132	3.2	85	129	158	2.5	84	71	195	1.8	83	100-90-80
10	140	142	2.5	83	90	168	1.9	82	50	205	1.3	80	
15	93	145	1.8	80	60	170	1.4	78	33	205	0.94	76	
20	70	151	1.4	77	45	175	1.1	75	25	210	0.76	72	90-80
28	50	147	1.1	71	32	170	0.84	68	18	202	0.59	64	
40	35	162	0.89	67	23	186	0.68	64	13	219	0.48	60	
49	29	166	0.78	64	18	190	0.61	60	10	223	0.43	56	80-71
56	25	167	0.71	62	16	191	0.55	58	8.9	223	0.39	54	
70	20	149	0.55	57	13	169	0.42	54	7.1	197	0.30	49	
80	18	141	0.48	54	11	160	0.38	50	6.3	185	0.26	46	
100	14	128	0.37	51	9.0	144	0.29	47	5.0	166	0.20	43	

RI 85

Kg 19

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	247	6.1	85	129	297	4.8	84	71	369	3.3	83	112-100-90
10	140	280	4.9	84	90	332	3.8	83	50	407	2.6	81	
15	93	282	3.4	81	60	333	2.7	79	33	403	1.8	77	
20	70	310	2.9	79	45	362	2.2	77	25	434	1.5	74	
28	50	275	2.0	72	32	319	1.6	69	18	381	1.1	65	
40	35	312	1.7	69	23	359	1.3	66	13	424	0.90	62	
49	29	287	1.3	65	18	329	1.0	62	10	387	0.71	58	90-80
56	25	283	1.1	66	16	322	0.87	62	8.9	377	0.61	58	
70	20	261	0.90	61	13	297	0.70	57	7.1	346	0.49	53	
80	18	243	0.77	58	11	276	0.60	54	6.3	320	0.42	50	
100	14	217	0.60	53	9.0	243	0.46	50	5.0	281	0.33	44	

RI 110

Kg 38

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	478	11.6	86	129	577	9.1	85	71	720	6.4	84	112-100
10	140	537	9.3	85	90	640	7.2	84	50	788	5.0	82	
15	93	535	6.4	82	60	632	5.0	80	33	769	3.4	78	
20	70	617	5.6	81	45	722	4.3	79	25	869	3.0	76	
28	50	570	4.0	75	32	665	3.1	72	18	796	2.2	69	
40	35	638	3.3	72	23	737	2.6	68	13	873	1.8	65	112-100-90
49	29	581	2.5	69	18	667	1.9	66	10	786	1.4	62	
56	25	465	1.8	69	16	532	1.4	64	8.9	624	0.97	60	
70	20	483	1.6	64	13	551	1.2	60	7.1	644	0.88	55	
80	18	491	1.5	62	11	559	1.1	58	6.3	651	0.80	53	
100	14	444	1.1	57	9.0	503	0.89	53	5.0	583	0.62	49	

RI 130

Kg 48

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	706	16.8	88	129	855	13.2	87	71	1070	9.5	84	132-112-100
10	140	791	13.3	87	90	846	10.5	85	50	1167	7.4	83	
15	93	840	9.8	84	60	993	7.5	83	33	1210	5.3	80	
20	70	915	8.1	83	45	1073	6.2	82	25	1296	4.4	77	
28	50	805	5.6	76	32	941	4.2	75	18	1131	3.1	69	
40	35	903	4.5	73	23	1045	3.5	71	13	1243	2.5	65	112-100
49	29	880	3.8	70	18	1014	2.8	69	10	1200	2.0	63	
56	25	814	3.1	69	16	935	2.3	68	8.9	1100	1.7	62	
70	20	812	2.5	67	13	928	2.0	62	7.1	1086	1.4	58	
80	18	778	2.2	64	11	886	1.7	60	6.3	1034	1.2	56	
100	14	691	1.7	59	9.0	785	1.4	55	5.0	913	0.94	51	

2.7 Prestazioni riduttori RI — *2.7 RI gearboxes performances* — 2.7 Leistungen der RI-Getriebe

RI 150

Kg 77

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	1070	25	88	129	1300	20	87	71	1630	14.2	86	
10	140	1180	19.9	87	90	1420	15.6	86	50	1755	10.9	84	132
15	93	1270	14.6	85	60	1500	11.4	83	33	1830	7.9	81	
20	70	1430	12.5	84	45	1680	9.7	82	25	2040	6.8	79	
28	50	1280	8.8	76	32	1500	6.8	74	18	1810	4.8	71	
40	35	1400	6.8	75	23	1630	5.3	73	13	1950	3.8	67	132-112-100
49	29	1320	5.6	71	18	1530	4.3	69	10	1800	3.0	65	
56	25	1306	4.7	73	16	1500	3.7	68	8.9	1768	2.6	64	
70	20	1183	3.7	67	13	1355	2.9	63	7.1	1591	2.0	59	
80	18	1136	3.2	66	11	1297	2.5	62	6.3	1518	1.7	57	112-100
100	14	1029	2.4	62	9.0	1169	1.9	58	5.0	1361	1.3	54	

RI 180

Kg 130

	n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7	200	1510	36	89	129	1840	28	88	71	2320	20	86	
10	140	1650	27	88	90	1990	22	87	50	2470	15.2	85	
15	93	1800	20	86	60	2140	15.8	85	33	2620	11.2	82	
20	70	2037	17.8	84	45	2400	13.6	83	25	2910	9.5	80	
28	50	1870	12.4	79	32	2200	9.6	77	18	2660	6.8	73	160-132
40	35	2000	9.8	75	23	2330	7.5	73	13	2790	5.3	69	
49	29	2080	7.4	74	18	2415	6.5	72	10	2870	4.7	66	
56	25	2103	7.5	73	16	2423	5.7	71	8.9	2864	4.1	66	
70	20	1900	5.9	68	13	2182	4.5	66	7.1	2570	3.2	61	
80	18	1816	5.0	67	11	2079	3.8	65	6.3	2440	2.7	59	132
100	14	1622	3.8	63	9.0	1850	2.9	61	5.0	2163	2.1	54	

I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

Listed weights are for reference only and can vary according to the gearbox version.

Die angegebenen Gewichte sind Richtwerte und können je nach Getriebeversion etwas variieren.

La Tab. 2.5.1 riporta il valore del rendimento statico attribuito ad ogni rapporto di riduzione.
Per ulteriori dettagli su questo argomento consultare il par. 1.4 del presente catalogo.

Table 2.5.1 shows the static efficiency given to every reduction ratio.

For more details on the matter, please refer to chapter 1.4 of this catalogue.

In Tabelle 2.5.1 ist der jedem Untersetzungsverhältnis zugeordnete statische Wirkungsgrad aufgeführt.
Weitere Einzelheiten siehe Kap. 1.4 dieses Katalogs.

Tab. 2.5.1

Valori del rendimento statico RS (%) / *Static efficiency RS (%)* / Statischer Wirkungsgrad RS (%)

ir	7	10	15	20	28	40	49	56	70	80	100
RI 28	70	67	61	57	46	41	38	36	32	27	25
RI 40	72	69	62	55	48	39	36	34	27	26	25
RI 50	73	70	68	60	51	46	42	40	36	30	28
RI 63	74	70	64	60	50	46	42	40	36	33	29
RI 70	74	70	64	60	49	45	40	39	34	31	29
RI 85	73	70	64	62	48	46	41	43	38	35	30
RI 110	74	72	64	63	52	48	45	44	39	37	33
RI 130	74	72	68	64	51	47	44	45	40	39	34
RI 150	75	73	68	65	53	48	46	47	41	39	36
RI 180	75	73	69	65	54	49	46	47	41	39	35

Nella tab. 2.6 sono riportate le dimensioni IEC e le possibili combinazioni albero/flangia riduttore predisposto per accoppiamento motore.

In table 2.6 are listed the IEC dimensions as well as the possible shaft/flange combinations of the gearbox to be coupled with a motor.

In Tabelle 2.6 sind sowohl die IEC-Anschlußmaße als auch weitere mögliche Welle/Flansch-Kombinationen zur Motorbefestigung aufgeführt.

Tab. 2.6

Possibili accoppiamenti con motori IEC / *Possible couplings with IEC motors* / Mögliche Verbindungen mit IEC-Motoren.

	IEC	ir 7	10	15	20	28	40	49	56	70	80	100
RMI 28	63	**11/90** (B14)										
	56	**9/120** (B5) - **9/80•** (B14)										
RI 40	71	**14/160** (B5) - **14/105** (B14) - 14/140 - 14/120 - 14/90•										
	63	**11/140** (B5) - **11/90** (B14) 11/120 - 11/80•										
	56	**9/120** (B5) - **9/80•** (B14) 9/140 - 9/90										
RMI 50	80	**19/120** (B14) - **19/200** (B5) 19/160										
	71	**14/160** (B5) - **14/105** (B14) 14/140 - 14/120 -14/90•										
	63*					**11/140** (B5) - **11/90•** B14 11/160 - 11/120 -11/105							
RMI 63	90	**24/200** (B5) - **24/140** (B14) 24/160 - 24/120 - 24/105•										
	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140 - 19/105•										
	71*	**14/160** (B5) - **14/105•** (B14) 14/200 - 14/140 - 14/120										
RMI 70	100	**28/160** (B14)										
	90	**24/200** (B5) - **24/140** (B14) 24/160 - 24/120 - 24/105•										
	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140 - 19/105•										
	71*						**14/160** (B5) - **14/105•** (B14) 14/200 - 14/140 - 14/120					
RMI 85	100	**28/250** (B5) - **28/160** (B14) 28/200										
	90	**24/200** (B5) - **24/140** (B14) 24/250 - 24/160 - 24/120										
	80*						**19/200** (B5) - **19/120** B14 19/250 - 19/160 - 19/140					
RMI 110	112	**28/250** (B5) - **28/160** (B14) 28/200										
	100	**28/250** (B5) - **28/160** (B14) 28/200										
	90*						**24/200** (B5) 24/250 - 24/160					
RMI 130	132	**38/300** (B5)										
	112	**28/250** (B5) 28/200										
	100	**28/250** (B5) 28/200										
RMI 150	132	**38/300** (B5) 38/250 - 38/200										
	112*				**28/250** (B5) 28/300 - 28/200							
	100*				**28/250** (B5) 28/300 - 28/200							
RMI 180	160	**42/350** (B5) 42/300 - 42/250										
	132	**38/300** (B5) 38/350 - 38/250										

* I riduttori RMI con vite bisporgente vengono realizzati con boccola di riduzione in acciaio (es. per RMI 110 boccola riduzione ø 28/24).

Legenda:

11/140 (B5) 11/120

11/140 : combinazioni albero/flangia standard
(B5) : forma costruttiva motore IEC
11/120 : combinazioni albero/flangia a richiesta

N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par. 2.3).
Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

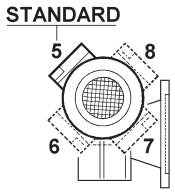
* *The RMI worm gearboxes with double extended input shaft have a steel axle box (e.g. for RMI 110 axle box ø 28/24).*

Key:

***11/140** (B5) 11/120*

***11/140** : standard shaft/flange combination*
(B5) : IEC motor constructive shape
11/120 : shaft/flange combinations upon request

NOTE.
The standard configuration for the 4 holes is 45° to the axles (like an x: see par. 2.3).
For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please, choose the terminal board position refering to the following sketch (in which N° 5 is the standard position):



* RMI-Getriebe mit beidseitiger Antriebswelle haben eine Stahl-Reduziermuffe (z.B. RMI 110 Muffe 28/24)

Legende:

11/140 (B5) 11/120

11/140 : Standardkombinationen Welle/Flansch
(B5) : Konstruktionsform IEC-Motor
11/120 : Sonderkombinationen Welle/Flansch

HINWEIS.
In der Standardkonfiguration sind die 4 Flanschbohrungen im 45°-Winkel zu den Achsen angeordnet (wie ein x: siehe Kapital 2.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeordnet (wie ein +). Es sollte deshalb der Platzbedarf des Motorklemmenkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die Lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos.5 ist Standardposition):

2.8 Prestazioni motoriduttori RMI

2.8 RMI Gearmotors performances

2.8 Leistungen der RMI Getriebemotoren

0.09 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	3.5	4.4	**RMI 28**
200	7	3.6	10.3	**RMI 40**
140	10	4.9	3.5	**RMI 28**
140	10	5.0	8.4	**RMI 40**
93	15	6.9	2.5	**RMI 28**
93	15	7.1	6.0	**RMI 40**
70	20	8.8	1.7	**RMI 28**
70	20	9.0	4.2	**RMI 40**
50	28	11	1.7	**RMI 28**
50	28	12	3.8	**RMI 40**
35	40	15	1.1	**RMI 28**
35	40	15	2.7	**RMI 40**
29	49	17	0.9	**RMI 28**
29	49	17	2.2	**RMI 40**
25	56	19	0.8	**RMI 28**
25	56	19	1.9	**RMI 40**
20	70	20	1.4	**RMI 40**
18	80	22	1.2	**RMI 40**
14	100	28	1.0	**RMI 40**
n_1 = 900 min^{-1}				
129	7	5.3	3.4	**RMI 28**
129	7	5.4	8.1	**RMI 40**
90	10	7.4	2.7	**RMI 28**
90	10	7.5	6.5	**RMI 40**
60	15	11	2.0	**RMI 28**
60	15	11	4.6	**RMI 40**
45	20	13	1.3	**RMI 28**
45	20	13	3.2	**RMI 40**
32	28	16	1.3	**RMI 28**
32	28	17	2.9	**RMI 40**
32	28	18	5.1	**RMI 50**
23	40	21	0.8	**RMI 28**
23	40	21	2.1	**RMI 40**
23	40	24	3.8	**RMI 50**
18	49	25	1.7	**RMI 40**
18	49	28	3.0	**RMI 50**
16	56	27	1.5	**RMI 40**
16	56	30	2.6	**RMI 50**
13	70	29	1.1	**RMI 40**
13	70	35	2.1	**RMI 50**
11	80	31	1.0	**RMI 40**
11	80	36	1.8	**RMI 50**
9	100	39	0.8	**RMI 40**
9	100	42	1.4	**RMI 50**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	5.0	3.0	**RMI 28**
200	7	5.2	7.1	**RMI 40**
140	10	7.0	2.4	**RMI 28**
140	10	7.2	5.8	**RMI 40**
93	15	10	1.8	**RMI 28**
93	15	10	4.1	**RMI 40**
70	20	13	1.2	**RMI 28**
70	20	13	2.9	**RMI 40**
50	28	16	1.2	**RMI 28**
50	28	17	2.6	**RMI 40**
50	28	17	4.6	**RMI 50**
35	40	21	0.8	**RMI 28**
35	40	21	1.9	**RMI 40**
35	40	23	3.4	**RMI 50**
29	49	25	1.5	**RMI 40**
29	49	27	2.6	**RMI 50**
25	56	27	1.3	**RMI 40**
25	56	30	2.3	**RMI 50**
20	70	29	1.0	**RMI 40**
20	70	35	1.8	**RMI 50**
18	80	31	0.8	**RMI 40**
18	80	36	1.6	**RMI 50**
14	100	43	1.2	**RMI 50**
n_1 = 900 min^{-1}				
129	7	7.6	2.4	**RMI 28**
129	7	7.8	5.6	**RMI 40**
90	10	11	1.9	**RMI 28**
90	10	11	4.5	**RMI 40**
60	15	15	1.4	**RMI 28**
60	15	16	3.2	**RMI 40**
45	20	19	0.9	**RMI 28**
45	20	19	2.2	**RMI 40**
32	28	24	0.9	**RMI 28**
32	28	25	2.0	**RMI 40**
32	28	26	3.6	**RMI 50**
23	40	31	1.5	**RMI 40**
23	40	35	2.6	**RMI 50**
18	49	36	1.2	**RMI 40**
18	49	40	2.1	**RMI 50**
16	56	39	1.0	**RMI 40**
16	56	43	1.8	**RMI 50**
13	70	42	0.8	**RMI 40**
13	70	50	1.4	**RMI 50**
11	80	52	1.3	**RMI 50**
9	100	61	1.0	**RMI 50**

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	7.0	2.2	**RMI 28**
200	7	7.1	5.2	**RMI 40**
140	10	9.7	1.7	**RMI 28**
140	10	9.9	4.2	**RMI 40**
93	15	14	1.3	**RMI 28**
93	15	14	3.0	**RMI 40**
70	20	18	0.9	**RMI 28**
70	20	18	2.1	**RMI 40**
50	28	22	0.8	**RMI 28**
50	28	23	1.9	**RMI 40**
50	28	24	3.3	**RMI 50**
35	40	29	1.4	**RMI 40**
35	40	32	2.5	**RMI 50**
29	49	34	1.1	**RMI 40**
29	49	38	1.9	**RMI 50**
25	56	37	1.0	**RMI 40**
25	56	41	1.7	**RMI 50**
20	70	48	1.3	**RMI 50**
18	80	50	1.2	**RMI 50**
14	100	59	0.9	**RMI 50**
n_1 = 900 min^{-1}				
129	7	11	4.0	**RMI 40**
129	7	11	7.3	**RMI 50**
129	7	11	12.2	**RMI 63**
90	10	15	3.2	**RMI 40**
90	10	15	5.6	**RMI 50**
90	10	15	9.6	**RMI 63**
60	15	21	2.3	**RMI 40**
60	15	23	3.9	**RMI 50**
60	15	22	6.8	**RMI 63**
45	20	27	1.6	**RMI 40**
45	20	28	3.0	**RMI 50**
45	20	29	5.5	**RMI 63**
32	28	34	1.5	**RMI 40**
32	28	36	2.6	**RMI 50**
32	28	36	4.3	**RMI 63**
23	40	48	1.9	**RMI 50**
23	40	49	3.4	**RMI 63**
23	40	49	3.8	**RMI 70**
18	49	55	1.5	**RMI 50**
18	49	57	2.5	**RMI 63**
18	49	56	3.4	**RMI 70**
16	56	60	1.3	**RMI 50**
16	56	62	2.3	**RMI 63**
16	56	62	3.1	**RMI 70**
13	70	70	1.0	**RMI 50**

2.8 Prestazioni motoriduttori RMI

2.8 RMI Gearmotors performances

2.8 Leistungen der RMI Getriebemotoren

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
13	70	72	1.8	**RMI 63**
13	70	72	2.3	**RMI 70**
11	80	72	0.9	**RMI 50**
11	80	78	1.6	**RMI 63**
11	80	76	2.1	**RMI 70**
9	100	90	1.2	**RMI 63**
9	100	90	1.6	**RMI 70**

0.25 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	10.0	6.8	**RMI 50**
140	10	14	3.0	**RMI 40**
140	10	14	5.2	**RMI 50**
93	15	20	2.1	**RMI 40**
93	15	20	3.7	**RMI 50**
70	20	25	1.5	**RMI 40**
70	20	26	2.9	**RMI 50**
50	28	32	1.4	**RMI 40**
50	28	33	2.4	**RMI 50**
35	40	45	1.8	**RMI 50**
35	40	46	3.2	**RMI 63**
29	49	53	1.4	**RMI 50**
29	49	53	2.3	**RMI 63**
29	49	53	3.1	**RMI 70**
25	56	57	1.2	**RMI 50**
25	56	59	2.1	**RMI 63**
25	56	59	2.8	**RMI 70**
20	70	67	1.0	**RMI 50**
20	70	69	1.7	**RMI 63**
20	70	68	2.2	**RMI 70**
18	80	70	0.8	**RMI 50**
18	80	75	1.5	**RMI 63**
18	80	74	1.9	**RMI 70**
14	100	87	1.1	**RMI 63**
14	100	87	1.5	**RMI 70**
n_1 = 900 min^{-1}				
129	7	15	2.9	**RMI 40**
129	7	15	5.3	**RMI 50**
90	10	21	2.3	**RMI 40**
90	10	21	4.0	**RMI 50**
60	15	30	1.6	**RMI 40**
60	15	31	2.8	**RMI 50**
45	20	37	1.2	**RMI 40**
45	20	39	2.2	**RMI 50**

0.25 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
32	28	48	1.0	**RMI 40**
32	28	50	1.8	**RMI 50**
32	28	51	3.1	**RMI 63**
23	40	67	1.4	**RMI 50**
23	40	68	2.4	**RMI 63**
23	40	68	2.7	**RMI 70**
18	49	77	1.1	**RMI 50**
18	49	79	1.8	**RMI 63**
18	49	78	2.4	**RMI 70**
16	56	83	0.9	**RMI 50**
16	56	86	1.7	**RMI 63**
16	56	86	2.2	**RMI 70**
13	70	100	1.3	**RMI 63**
13	70	100	1.7	**RMI 70**
11	80	108	1.1	**RMI 63**
11	80	106	1.5	**RMI 70**
9	100	125	0.9	**RMI 63**
9	100	125	1.2	**RMI 70**

0.37 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	15	2.5	**RMI 40**
200	7	15	4.6	**RMI 50**
140	10	20	2.0	**RMI 40**
140	10	21	3.5	**RMI 50**
93	15	29	1.4	**RMI 40**
93	15	30	2.5	**RMI 50**
70	20	37	1.0	**RMI 40**
70	20	38	1.9	**RMI 50**
70	20	39	3.5	**RMI 63**
50	28	47	0.9	**RMI 40**
50	28	49	1.6	**RMI 50**
50	28	50	2.7	**RMI 63**
35	40	67	1.2	**RMI 50**
35	40	68	2.1	**RMI 63**
35	40	68	2.4	**RMI 70**
29	49	78	0.9	**RMI 50**
29	49	79	1.6	**RMI 63**
29	49	79	2.1	**RMI 70**
25	56	85	0.8	**RMI 50**
25	56	88	1.5	**RMI 63**
25	56	88	1.9	**RMI 70**
20	70	102	1.1	**RMI 63**
20	70	101	1.5	**RMI 70**
18	80	111	1.0	**RMI 63**

0.37 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
18	80	109	1.3	**RMI 70**
14	100	129	1.0	**RMI 70**
n_1 = 900 min^{-1}				
129	7	23	3.6	**RMI 50**
90	10	32	2.7	**RMI 50**
60	15	47	1.9	**RMI 50**
60	15	46	3.3	**RMI 63**
45	20	58	1.5	**RMI 50**
45	20	59	2.7	**RMI 63**
45	20	59	3.0	**RMI 70**
32	28	74	1.2	**RMI 50**
32	28	75	2.1	**RMI 63**
32	28	75	2.3	**RMI 70**
23	40	101	1.6	**RMI 63**
23	40	101	1.8	**RMI 70**
23	40	104	3.5	**RMI 85**
18	49	117	1.2	**RMI 63**
18	49	115	1.6	**RMI 70**
18	49	119	2.8	**RMI 85**
16	56	128	1.1	**RMI 63**
16	56	128	1.5	**RMI 70**
16	56	136	2.4	**RMI 85**
13	70	148	0.9	**RMI 63**
13	70	148	1.1	**RMI 70**
13	70	157	1.9	**RMI 85**
11	80	157	1.0	**RMI 70**
11	80	170	1.6	**RMI 85**
9	100	196	1.2	**RMI 85**
9	100	196	1.2	**RMI 85**

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	22	3.1	**RMI 50**
200	7	22	5.2	**RMI 63**
140	10	31	2.4	**RMI 50**
140	10	31	4.1	**RMI 63**
93	15	45	1.7	**RMI 50**
93	15	45	2.9	**RMI 63**
93	15	45	3.2	**RMI 70**
70	20	57	1.3	**RMI 50**
70	20	58	2.4	**RMI 63**
70	20	58	2.6	**RMI 70**
50	28	74	1.1	**RMI 50**
50	28	75	1.8	**RMI 63**

2.8 Prestazioni motoriduttori RMI

2.8 RMI Gearmotors performances

2.8 Leistungen der RMI Getriebemotoren

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
50	28	75	2.0	**RMI 70**
35	40	101	1.4	**RMI 63**
35	40	101	1.6	**RMI 70**
35	40	104	3.0	**RMI 85**
29	49	118	1.1	**RMI 63**
29	49	118	1.4	**RMI 70**
29	49	119	2.4	**RMI 85**
25	56	130	1.0	**RMI 63**
25	56	130	1.3	**RMI 70**
25	56	139	2.0	**RMI 85**
20	70	150	1.0	**RMI 70**
20	70	160	1.6	**RMI 85**
18	80	162	0.9	**RMI 70**
18	80	174	1.4	**RMI 85**
14	100	199	1.1	**RMI 85**
n_1 = 900 min^{-1}				
129	7	34	2.4	**RMI 50**
90	10	47	1.8	**RMI 50**
90	10	47	3.2	**RMI 63**
60	15	69	1.3	**RMI 50**
60	15	68	2.2	**RMI 63**
60	15	68	2.5	**RMI 70**
45	20	86	1.0	**RMI 50**
45	20	88	1.8	**RMI 63**
45	20	88	2.0	**RMI 70**
32	28	109	0.8	**RMI 50**
32	28	111	1.4	**RMI 63**
32	28	111	1.5	**RMI 70**
23	40	149	1.1	**RMI 63**
23	40	149	1.2	**RMI 70**
23	40	154	2.3	**RMI 85**
18	49	174	0.8	**RMI 63**
18	49	172	1.1	**RMI 70**
18	49	177	1.9	**RMI 85**
16	56	190	0.8	**RMI 63**
16	56	190	1.0	**RMI 70**
16	56	203	1.6	**RMI 85**
13	70	221	0.8	**RMI 70**
13	70	233	1.3	**RMI 85**
11	80	252	1.1	**RMI 85**
9	100	292	0.8	**RMI 85**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	30	2.3	**RMI 50**
200	7	30	3.8	**RMI 63**
140	10	42	1.7	**RMI 50**
140	10	42	3.0	**RMI 63**
93	15	61	1.2	**RMI 50**
93	15	61	2.1	**RMI 63**
93	15	61	2.4	**RMI 70**
70	20	78	1.0	**RMI 50**
70	20	79	1.7	**RMI 63**
70	20	79	1.9	**RMI 70**
50	28	100	0.8	**RMI 50**
50	28	102	1.3	**RMI 63**
50	28	102	1.4	**RMI 70**
35	40	137	1.1	**RMI 63**
35	40	137	1.2	**RMI 70**
35	40	141	2.2	**RMI 85**
29	49	160	1.0	**RMI 70**
29	49	163	1.8	**RMI 85**
25	56	178	0.9	**RMI 70**
25	56	189	1.5	**RMI 85**
20	70	218	1.2	**RMI 85**
18	80	237	1.0	**RMI 85**
14	100	271	0.8	**RMI 85**
n_1 = 900 min^{-1}				
129	7	47	2.9	**RMI 63**
90	10	64	2.3	**RMI 63**
90	10	65	2.6	**RMI 70**
60	15	93	1.6	**RMI 63**
60	15	93	1.8	**RMI 70**
45	20	119	1.3	**RMI 63**
45	20	119	1.5	**RMI 70**
45	20	123	3.0	**RMI 85**
32	28	152	1.0	**RMI 63**
32	28	152	1.1	**RMI 70**
32	28	154	2.1	**RMI 85**
23	40	210	1.7	**RMI 85**
23	40	216	3.4	**RMI 110**
18	49	242	1.4	**RMI 85**
18	49	257	2.6	**RMI 110**
16	56	276	1.2	**RMI 85**
16	56	285	1.9	**RMI 110**
13	70	318	0.9	**RMI 85**
13	70	334	1.6	**RMI 110**
11	80	344	0.8	**RMI 85**
11	80	369	1.5	**RMI 110**
9	100	422	1.2	**RMI 110**

1.1 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	44	2.6	**RMI 63**
200	7	45	2.9	**RMI 70**
140	10	62	2.0	**RMI 63**
140	10	62	2.3	**RMI 70**
93	15	90	1.4	**RMI 63**
93	15	90	1.6	**RMI 70**
93	15	91	3.1	**RMI 85**
70	20	116	1.2	**RMI 63**
70	20	116	1.3	**RMI 70**
70	20	119	2.6	**RMI 85**
50	28	149	0.9	**RMI 63**
50	28	149	1.0	**RMI 70**
50	28	151	1.8	**RMI 85**
35	40	207	1.5	**RMI 85**
35	40	216	3.0	**RMI 110**
29	49	239	1.2	**RMI 85**
29	49	254	2.3	**RMI 110**
25	56	277	1.0	**RMI 85**
25	56	290	1.6	**RMI 110**
20	70	320	0.8	**RMI 85**
20	70	336	1.4	**RMI 110**
18	80	372	1.3	**RMI 110**
14	100	428	1.0	**RMI 110**
n_1 = 900 min^{-1}				
129	7	69	2.0	**RMI 63**
129	7	69	2.3	**RMI 70**
90	10	95	1.6	**RMI 63**
90	10	96	1.8	**RMI 70**
60	15	137	1.1	**RMI 63**
60	15	137	1.2	**RMI 70**
60	15	138	2.4	**RMI 85**
45	20	175	0.9	**RMI 63**
45	20	175	1.0	**RMI 70**
45	20	180	2.0	**RMI 85**
32	28	226	1.4	**RMI 85**
23	40	308	1.2	**RMI 85**
23	40	317	2.3	**RMI 110**
18	49	355	0.9	**RMI 85**
18	49	377	1.8	**RMI 110**
16	56	418	1.3	**RMI 110**
13	70	490	1.1	**RMI 110**
11	80	542	1.0	**RMI 110**
9	100	619	0.8	**RMI 110**

2.8 Prestazioni motoriduttori RMI

2.8 RMI Gearmotors performances

2.8 Leistungen der RMI Getriebemotoren

1.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	60	1.9	RMI 63
200	7	61	2.2	RMI 70
140	10	85	1.5	RMI 63
140	10	85	1.7	RMI 70
140	10	86	3.3	RMI 85
93	15	123	1.1	RMI 63
93	15	123	1.2	RMI 70
93	15	124	2.3	RMI 85
70	20	158	0.9	RMI 63
70	20	158	1.0	RMI 70
70	20	162	1.9	RMI 85
50	28	206	1.3	RMI 85
35	40	282	1.1	RMI 85
35	40	295	2.2	RMI 110
29	49	326	0.9	RMI 85
29	49	346	1.7	RMI 110
25	56	395	1.2	RMI 110
20	70	458	1.1	RMI 110
18	80	508	1.0	RMI 110
n_1 = 900 min^{-1}				
129	7	94	3.2	RMI 85
90	10	132	2.5	RMI 85
60	15	189	1.8	RMI 85
60	15	191	3.3	RMI 110
45	20	245	1.5	RMI 85
45	20	251	2.9	RMI 110
32	28	308	1.0	RMI 85
32	28	321	2.1	RMI 110
32	28	334	2.8	RMI 130
23	40	433	1.7	RMI 110
23	40	452	2.3	RMI 130
18	49	515	1.3	RMI 110
18	49	538	1.9	RMI 130
18	49	538	2.8	RMI 150
16	56	570	0.9	RMI 110
16	56	606	1.5	RMI 130
16	56	606	2.5	RMI 150
13	70	691	1.3	RMI 130
13	70	702	1.9	RMI 150
11	80	764	1.2	RMI 130
11	80	789	1.6	RMI 150
9	100	875	0.9	RMI 130
9	100	923	1.3	RMI 150

1.8 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	74	1.5	RMI 63
200	7	75	1.8	RMI 70
200	7	75	3.3	RMI 85
140	10	105	1.2	RMI 63
140	10	105	1.4	RMI 70
140	10	106	2.6	RMI 85
93	15	151	0.9	RMI 63
93	15	151	1.0	RMI 70
93	15	153	1.8	RMI 85
70	20	194	0.8	RMI 70*
70	20	199	1.6	RMI 85
50	28	254	1.1	RMI 85
35	40	348	0.9	RMI 85*
35	40	363	1.8	RMI 110
29	49	427	1.4	RMI 110
25	56	488	1.0	RMI 110
20	70	565	0.9	RMI 110
n_1 = 900 min^{-1}				
129	7	115	2.6	RMI 85
90	10	163	2.0	RMI 85
60	15	233	1.4	RMI 85
60	15	236	2.7	RMI 110
45	20	302	1.2	RMI 85
45	20	310	2.3	RMI 110
45	20	322	3.3	RMI 130
32	28	379	0.8	RMI 85*
32	28	396	1.7	RMI 110
32	28	412	2.3	RMI 130
23	40	534	1.4	RMI 110
23	40	558	1.9	RMI 130
23	40	573	2.8	RMI 150
18	49	635	1.1	RMI 110
18	49	664	1.5	RMI 130
18	49	664	2.3	RMI 150
16	56	748	1.3	RMI 130
16	56	748	2.0	RMI 150
13	70	852	1.1	RMI 130
13	70	866	1.6	RMI 150
11	80	942	0.9	RMI 130
11	80	974	1.3	RMI 150
9	100	1139	1.0	RMI 150

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	89	1.5	RMI 70
200	7	89	2.8	RMI 85
140	10	125	1.1	RMI 70
140	10	126	2.2	RMI 85
93	15	180	0.8	RMI 70*
93	15	182	1.6	RMI 85
70	20	237	1.3	RMI 85
70	20	243	2.5	RMI 110
70	20	249	3.7	RMI 130
50	28	303	0.9	RMI 85*
50	28	315	1.8	RMI 110
50	28	319	2.5	RMI 130
35	40	432	1.5	RMI 110
35	40	438	2.1	RMI 130
35	40	450	3.1	RMI 150
29	49	507	1.1	RMI 110
29	49	515	1.7	RMI 130
29	49	522	2.5	RMI 150
25	56	580	0.8	RMI 110
25	56	580	1.4	RMI 130
25	56	613	2.1	RMI 150
20	70	704	1.2	RMI 130
20	70	704	1.7	RMI 150
18	80	768	1.0	RMI 130
18	80	792	1.4	RMI 150
14	100	930	1.1	RMI 150
n_1 = 900 min^{-1}				
129	7	137	2.2	RMI 85
129	7	139	4.2	RMI 110
90	10	194	1.7	RMI 85
90	10	196	3.3	RMI 110
60	15	277	1.2	RMI 85
60	15	280	2.3	RMI 110
60	15	291	3.4	RMI 130
45	20	360	1.0	RMI 85
45	20	369	2.0	RMI 110
45	20	383	2.8	RMI 130
32	28	471	1.4	RMI 110
32	28	490	1.9	RMI 130
32	28	484	3.1	RMI 150
23	40	635	1.2	RMI 110
23	40	663	1.6	RMI 130
23	40	682	2.4	RMI 150
18	49	755	0.9	RMI 110
18	49	789	1.3	RMI 130

2.8 Prestazioni motoriduttori RMI

2.8 RMI Gearmotors performances

2.8 Leistungen der RMI Getriebemotoren

2.2kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
18	49	789	1.9	**RMI 150**
16	56	889	1.1	**RMI 130**
16	56	889	1.7	**RMI 150**
13	70	1013	0.9	**RMI 130**
13	70	1029	1.3	**RMI 150**
11	80	1121	0.8	**RMI 130**
11	80	1158	1.1	**RMI 150**
9	100	1354	0.9	**RMI 150**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	122	1.2	**RMI 70***
200	7	122	2.0	**RMI 85**
140	10	170	0.8	**RMI 70***
140	10	172	1.6	**RMI 85**
93	15	249	1.1	**RMI 85 ***
93	15	252	2.1	**RMI 110**
93	15	258	3.3	**RMI 130**
70	20	323	1.0	**RMI 85***
70	20	332	1.9	**RMI 110**
70	20	340	2.7	**RMI 130**
50	28	430	1.3	**RMI 110**
50	28	435	1.8	**RMI 130**
50	28	435	2.9	**RMI 150**
35	40	589	1.1	**RMI 110**
35	40	598	1.5	**RMI 130**
35	40	614	2.3	**RMI 150**
29	49	692	0.8	**RMI 110***
29	49	702	1.3	**RMI 130**
29	49	712	1.9	**RMI 150**
25	56	791	1.0	**RMI 130**
25	56	837	1.6	**RMI 150**
20	70	960	0.8	**RMI 130**
20	70	960	1.2	**RMI 150**
18	80	1081	1.1	**RMI 150**
14	100	1269	0.8	**RMI 150**
n_1 = 900 min^{-1}				
129	7	194	4.4	**RMI 130**
129	7	194	6.7	**RMI 150**
90	10	271	3.5	**RMI 130**
90	10	274	5.2	**RMI 150**
60	15	396	2.5	**RMI 130**
60	15	396	3.8	**RMI 150**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
45	20	522	2.1	**RMI 130**
45	20	522	3.2	**RMI 150**
32	28	669	1.4	**RMI 130**
32	28	660	2.3	**RMI 150**
32	28	686	3.2	**RMI 180**
23	40	930	1.8	**RMI 150**
23	40	930	2.5	**RMI 180**
18	49	1076	1.4	**RMI 150**
18	49	1123	2.2	**RMI 180**
16	56	1212	1.2	**RMI 150**
16	56	1266	1.9	**RMI 180**
13	70	1404	1.0	**RMI 150**
13	70	1471	1.5	**RMI 180**
11	80	1655	1.3	**RMI 180**
9	100	1942	1.0	**RMI 180**

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	162	1.5	**RMI 85***
200	7	164	2.9	**RMI 110**
140	10	229	1.2	**RMI 85***
140	10	232	2.3	**RMI 110**
140	10	237	3.3	**RMI 130**
93	15	332	0.9	**RMI 85***
93	15	336	1.6	**RMI 110**
93	15	344	2.4	**RMI 130**
70	20	442	1.4	**RMI 110**
70	20	453	2.0	**RMI 130**
70	20	458	3.1	**RMI 150**
50	28	573	1.0	**RMI 110***
50	28	581	1.4	**RMI 130**
50	28	581	2.2	**RMI 150**
35	40	786	0.8	**RMI 110***
35	40	797	1.1	**RMI 130**
35	40	819	1.7	**RMI 150**
29	49	936	0.9	**RMI 130***
29	49	949	1.4	**RMI 150**
25	56	1115	1.2	**RMI 150**
20	70	1280	0.9	**RMI 150**
18	80	1441	0.8	**RMI 150**

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
129	7	258	3.3	**RMI 130**
129	7	258	5.0	**RMI 150**
90	10	361	2.6	**RMI 130**
90	10	365	3.9	**RMI 150**
60	15	528	1.9	**RMI 130**
60	15	528	2.8	**RMI 150**
45	20	696	1.5	**RMI 130**
45	20	696	2.4	**RMI 150**
45	20	705	3.4	**RMI 180**
32	28	891	1.1	**RMI 130**
32	28	879	1.7	**RMI 150**
32	28	915	2.4	**RMI 180**
23	40	1239	1.3	**RMI 150**
23	40	1239	1.9	**RMI 180**
18	49	1435	1.1	**RMI 150**
18	49	1497	1.6	**RMI 180**
16	56	1616	0.9	**RMI 150**
16	56	1688	1.4	**RMI 180**
13	70	1961	1.1	**RMI 180**
11	80	2207	0.9	**RMI 180**

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	231	3.1	**RMI 130**
200	7	231	4.6	**RM I150**
140	10	326	2.4	**RMI 130**
140	10	326	3.6	**RMI 150**
93	15	473	1.8	**RMI 130**
93	15	478	2.7	**RMI 150**
70	20	623	1.5	**RMI 130**
70	20	630	2.3	**RMI 150**
70	20	630	3.2	**RMI 180**
50	28	798	1.0	**RMI 130***
50	28	798	1.6	**RMI 150**
50	28	830	2.3	**RMI 180**
35	40	1126	1.2	**RMI 150**
35	40	1126	1.8	**RMI 180**
29	49	1305	1.0	**RMI 150**
29	49	1360	1.5	**RMI 180**
25	56	1534	0.9	**RMI 150**
25	56	1534	1.4	**RMI 180**
20	70	1786	1.1	**RMI 180**
18	80	2011	0.9	**RMI 180**

2.8 Prestazioni motoriduttori RMI

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
129	7	355	2.4	**RMI 130**
129	7	355	3.7	**RMI 150**
90	10	496	1.9	**RMI 130**
90	10	502	2.8	**RMI 150**
60	15	727	1.4	**RMI 130**
60	15	727	2.1	**RMI 150**
60	15	744	2.9	**RMI 180**
45	20	957	1.1	**RMI 130**
45	20	957	1.8	**RMI 150**
45	20	969	2.5	**RMI 180**
32	28	1226	0.8	**RMI 130***
32	28	1209	1.2	**RMI 150**
32	28	1258	1.7	**RMI 180**
23	40	1704	1.0	**RMI 150**
23	40	1704	1.4	**RMI 180**
18	49	2059	1.2	**RMI 180**
16	56	2320	1.0	**RMI 180**
13	70	2696	0.8	**RMI 180**

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	315	2.2	**RMI 130**
200	7	315	3.4	**RMI 150**
140	10	445	1.8	**RMI 130**
140	10	445	2.7	**RMI 150**
140	10	450	3.7	**RMI 180**
93	15	645	1.3	**RMI 130***
93	15	652	1.9	**RMI 150**
93	15	660	2.7	**RMI 180**
70	20	849	1.1	**RMI 130***
70	20	860	1.7	**RMI 150**
70	20	860	2.4	**RMI 180**
50	28	1089	1.2	**RMI 150***
50	28	1132	1.7	**RMI 180**
35	40	1535	0.9	**RMI 150***
35	40	1535	1.3	**RMI 180**
29	49	1855	1.1	**RMI 180**
25	56	2091	1.0	**RMI 180**

n_1 = 900 min^{-1}				
129	7	490	3.8	**RMI 180**
90	10	692	2.9	**RMI 180**
60	15	1015	2.1	**RMI 180**
45	20	1321	1.8	**RMI 180**

2.8 RMI Gearmotors performances

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 900 min^{-1}				
32	28	1716	1.3	**RMI 180**
23	40	2324	1.0	**RMI 180**
18	49	2808	0.9	**RMI 180**

9.2 kW

n_1 = 1400 min^{-1}				
200	7	387	1.8	**RMI 130**
200	7	387	2.8	**RMI 150**
200	7	391	3.9	**RMI 180**
140	10	546	1.4	**RMI 130***
140	10	546	2.2	**RMI 150**
140	10	552	3.0	**RMI 180**
93	15	791	1.1	**RMI 130***
93	15	800	1.6	**RMI 150**
93	15	810	2.2	**RMI 180**
70	20	1042	0.9	**RMI 130***
70	20	1054	1.4	**RMI 150**
70	20	1054	1.9	**RMI 180**
50	28	1335	1.0	**RMI 150***
50	28	1388	1.3	**RMI 180**
35	40	1883	1.1	**RMI 180***
29	49	2276	0.9	**RMI 180***
25	56	2566	0.8	**RMI 180***

11 kW

n_1 = 1400 min^{-1}				
200	7	467	3.2	**RMI 180**
140	10	660	2.5	**RMI 180**
93	15	968	1.9	**RMI 180**
70	20	1261	1.6	**RMI 180**
50	28	1660	1.1	**RMI 180***
35	40	2251	0.9	**RMI 180***
29	49	2721	0.8	**RMI 180***

n_1 = 900 min^{-1}				
129	7	719	2.6	**RMI 180**
90	10	1015	2.0	**RMI 180**
60	15	1488	1.4	**RMI 180**
45	20	1938	1.2	**RMI 180**
32	28	2517	0.9	**RMI 180***

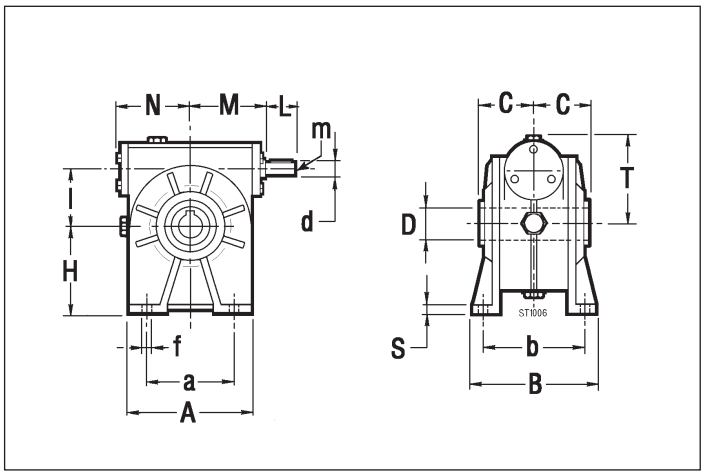
2.8 Leistungen der RMI Getriebemotoren

15 kW

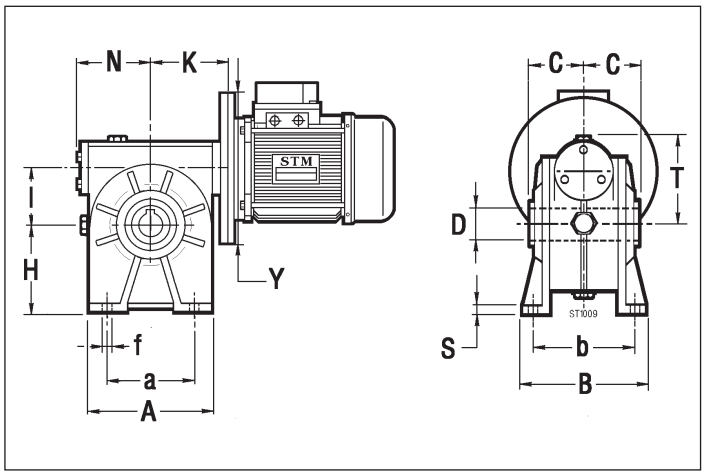
n_2 min^{-1}	ir	T2 Nm	FS'	RMI
n_1 = 1400 min^{-1}				
200	7	637	2.4	**RMI 180**
140	10	900	1.8	**RMI 180**
93	15	1320	1.4	**RMI 180**
70	20	1719	1.2	**RMI 180***
50	28	2263	0.8	**RMI 180***

N.B.
Tutte le potenze indicate si riferiscono alla potenza meccanica dei riduttori.
Per i riduttori contrassegnati con **(*)** è opportuno effettuare la verifica della potenza limite termico secondo le indicazioni riportate nel par. 1.7
NOTE.
The indicated power is based on the mechanical capacities of the gearboxes.
For the gearboxes marked with (*) it is aslo necessary to obey the therminal capacity like shown on chapter 1.7.
HINWEIS.
Die Leistungsangaben beziehen sich auf die mecanische Belasbarkeit der Getriebe.
Bei den mit (*) gekennzeichneten Getrieben ist außerdem die thermische Leistungsgrenze zu beachten (s. Kap. 1.7).

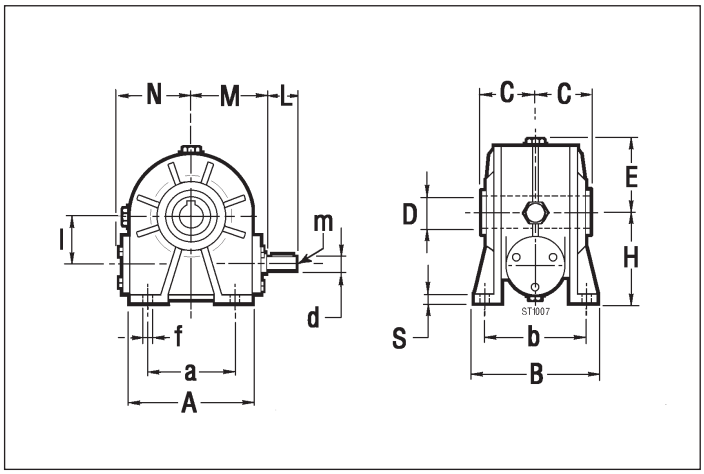
RI S



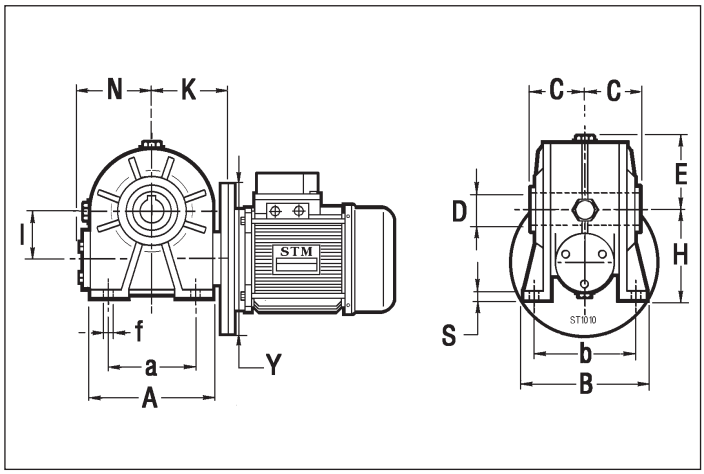
RMI S



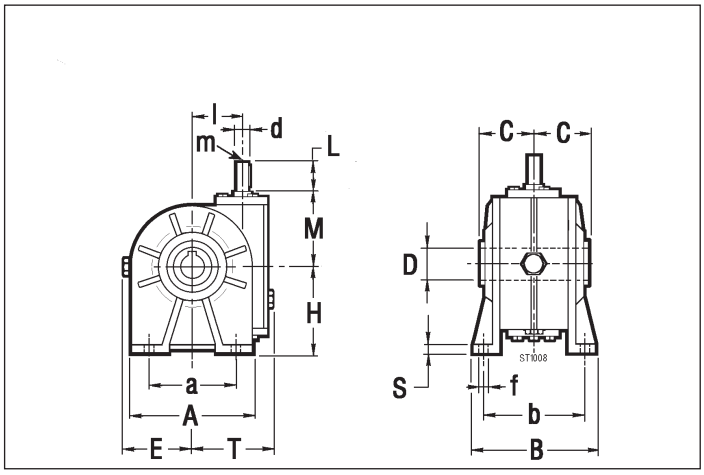
RI I



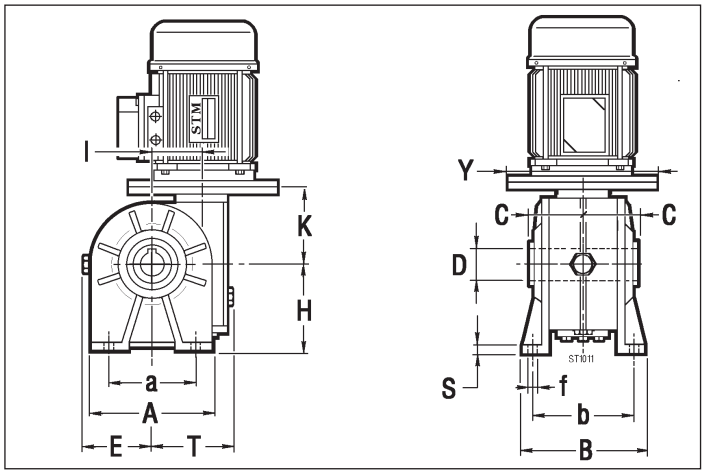
RMI I



RI D



RMI D



2.9 Dimensioni — *2.9 Dimensions* — 2.9 Abmessungen

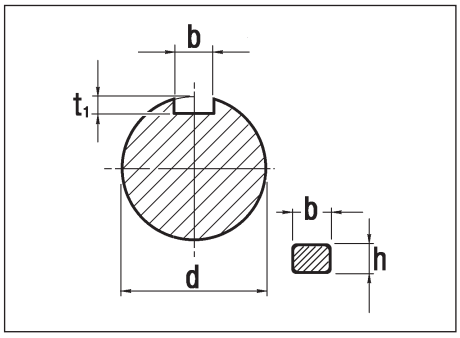
RI RMI	A	a	B	b	C	D H7	d j6	E	f	H	I	L	M	m	N	S	T
28	67	52	78	66 $^{+2}_{-6}$	30	14	9	40	5.5	52	28	20	47	M4	44.5(46)*	6	49
40	100	70	102	84 ± 3	41	19 (18)	11	59	7	71	40	22	64	M5	61.5	8	68.5
50	120	85	119	99 ± 3	49	24 (25)	14	69	9	85	50	30	74	M6	72.5	10	81.5
63	140	95	136	111 $^{+0}_{-5}$	60	25	18	81	11	100	63	45	96	M6	84	11	99
70	158	120	140	116 $^{+2}_{-8}$	60	28	19	87	11	115	70	40	97	M8	92	13	108
85	193	140	168	140	61	32 (35)	24	105	13	135	85	50	115	M8	111	15	135
110	250	200	200	162	77.5	42	28	135	14	172	110	60	146	M8	142	17	170
130	286	235	230	190	90	48	38	150	15	200	130	80	166	M10	159	19	200
150	336	260	250	210	105	55	42	178	19	230	150	100	195	M12	189	20	224
180	400	310	320	260	120	65	48	210	22	265	180	110	235	M14	232	22	265

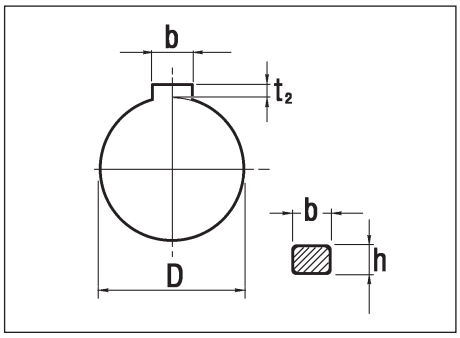
***RI 28 - RMI 28 IEC56: N=44.5, RMI 28 IEC63: N=46**

	RMI																			
	28		**40**		**50**		**63**		**70**		**85**		**110**		**130**		**150**		**180**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	49	120	63.5	140	77	160	95	160	100	160	116	200	145	—	—	—	—	—	—
	—	—	140	63.5	160	77	200	95	200	100	200	116	250	145	250	163	250	190	300	234
	—	—	160	71	200	81	—	—	—	—	250	118	—	—	300	163	300	190	350	234
B14	80•	49	80•	63.5	90•	77	105•	95	105	100	120	116	160	145	—	—	—	—	—	—
	90	51	90	63.5	105	77	120	95	120	100	140	116	—	—	—	—	—	—	—	—
	—	—	105	71	120	81	140	95	140	100	160	118	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	160	100	—	—	—	—	—	—	—	—	—	—

(•) Vedi nota in fondo a tabella 2.6. — *(•) See note at the bottom of table 2.6.* — (•) Siehe Bemerkungen Tabelle 2.6 unten.

Linguette — *Keys* — Federn





Albero entrata
Input shaft
Antriebswelle

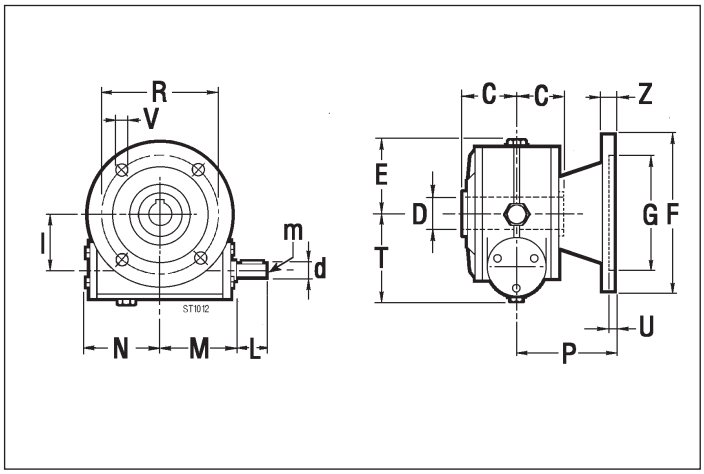
d	b x h	t_1	
9	3 x 3	1.8	
11	4 x 4	2.5	
14	5 x 5	3.0	+ 0.1 0
18	6 x 6	3.5	
19	6 x 6	3.5	
24	8 x 7	4.0	
28	8 x 7	4.0	
38	10 x 8	5.0	+ 0.2 0
42	12 x 8	5.0	
48	14 x 9	5.5	

Albero uscita
Output shaft
Abtriebswelle

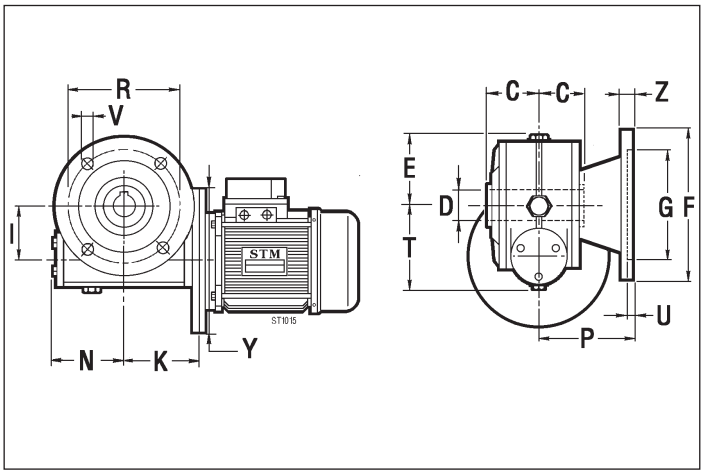
D	b x h	t_2	
14	5 x 5	2.3	
18	6 x 6	2.8	+ 0.1 0
19	6 x 6	2.8	
24	8 x 7	3.3	
25	8 x 7	3.3	
28	8 x 7	3.3	
32	10 x 8	3.3	
35	10 x 8	3.3	+ 0.2 0
42	12 x 8	3.3	
48	14 x 9	3.8	
55	16 x 10	4.3	
65	18 x 11	4.4	

2.9 Dimensioni — *2.9 Dimensions* — 2.9 Abmessungen

RI FL



RMI FL

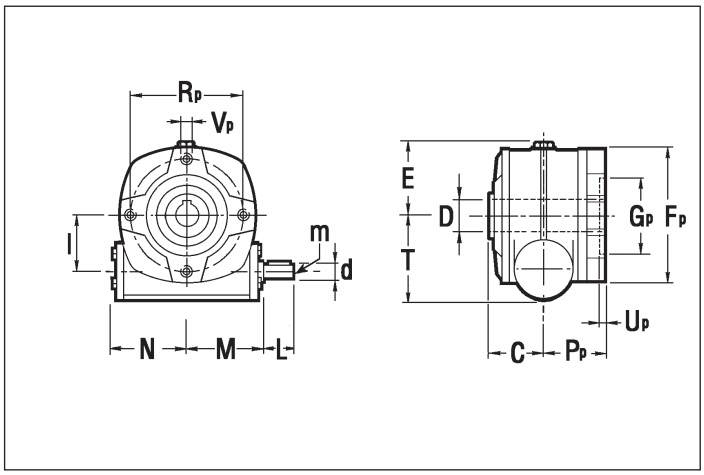


N.B.
Nelle grandezze 40, 50, 63, 70 la versione FL viene ottenuta applicando una flangia modulare sulla flangia pendolare della versione PP.

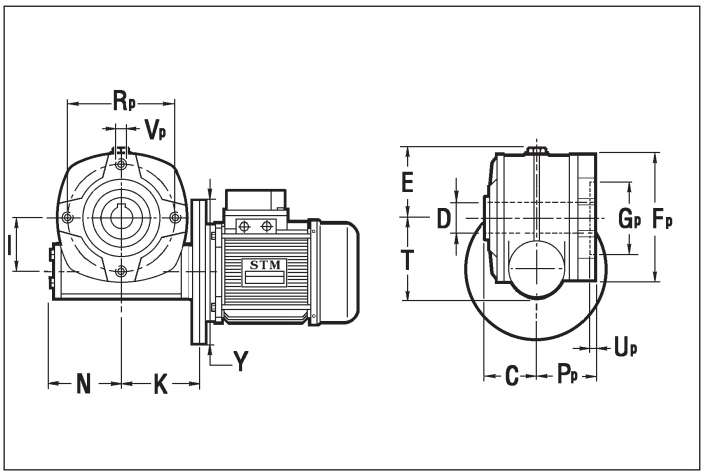
NOTE.
In sizes 40, 50, 63, 70, the FL version is obtained by applying a modular flange onto the shaft-mounted flange of the PP version.

HINWEIS.
Bei den Größen 40, 50, 63 und 70 erhält man die FL-Version, indem ein Modulflansch an den Flansch mit Drehmomentstütze der PP-Version befestigt wird.

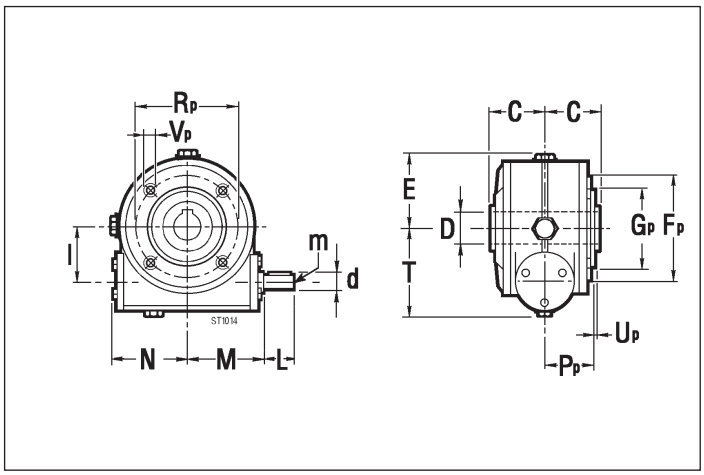
RI 28P



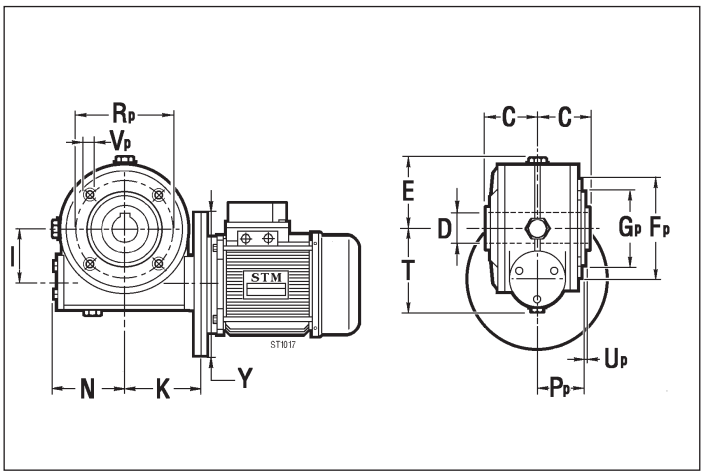
RMI 28P



RI 40PP - 70PP, 85P - 180P



RMI 40PP - 70PP, 85P - 180P



2.9 Dimensioni — *2.9 Dimensions* — 2.9 Abmessungen

RI RMI	C	D H7	d j6	E	I	L	M	m	N	T
28	30	14	9	40	28	20	47	M4	44.5 (46)*	49
40	41	19 (18)	11	59	40	22	64	M5	61.5	68.5
50	49	24 (25)	14	69	50	30	74	M6	72.5	81.5
63	60	25	18	81	63	45	96	M6	84	99
70	60	28	19	87	70	40	97	M8	92	108
85	61	32 (35)	24	105	85	50	115	M8	111	135
110	77.5	42	28	135	110	60	146	M8	142	170
130	90	48	38	150	130	80	166	M10	159	200
150	105	55	42	178	150	100	195	M12	189	224
180	120	65	48	210	180	110	235	M14	232	265

***RI 28 - RMI 28 IEC56: N=44.5, RMI 28 IEC63: N=46**

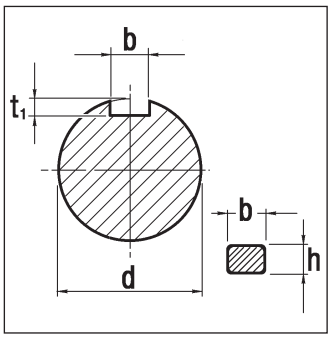
RI RMI	F	G H8	P	R	U	V	Z	Fp	Gp h8	Pp	Rp	Up	Vp
28	70	40	49	56	5	6	5	67	42(H8)	36	56	7	M6
40	140	95	82	115	5	8.5	9	95	60	38	83	2	M6
50	160	110	91.5	130	5	10	10	105	70	49	85	2.5	M8
63	180	115	116	150	5	11	11	105	70	57.5	85	3.5	M8
70	200	130	111	165	5	13	11	120	80	57	100	4	M8
85	200	130	100	165	5	13	12	144	110	56.5	130	3.5	M10
110	250	180	150	215	5	15	16	200	130	74	165	3	M12
130	300	230	150	265	5	15	18	242	180	87	215	5	M12
150	350	250	160	300	6	19	18	250	180	102	215	5	M14
180	400	300	180	350	6.5	22	22	300	230	117	265	5	M16

	RMI																			
	28		**40**		**50**		**63**		**70**		**85**		**110**		**130**		**150**		**180**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	49	120	63.5	140	77	160	95	160	100	160	116	200	145	—	—	—	—	—	—
	—	—	140	63.5	160	77	200	95	200	100	200	116	250	145	250	163	250	190	300	234
	—	—	160	71	200	81	—	—	—	—	250	118	—	—	300	163	300	190	350	234
B14	80•	49	80•	63.5	90•	77	105•	95	105	100	120	116	160	145	—	—	—	—	—	—
	90	51	90	63.5	105	77	120	95	120	100	140	116	—	—	—	—	—	—	—	—
	—	—	105	71	120	81	140	95	140	100	160	118	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	160	100	—	—	—	—	—	—	—	—	—	—

(•) Vedi nota in fondo a tabella 2.6. — *(•) See note at the bottom of table 2.6.* — (•) Siehe Bemerkungen Tabelle 2.6 unten.

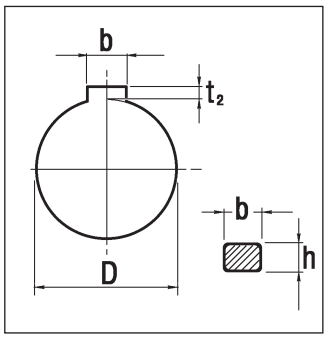
Linguette — *Keys* — Federn

Albero entrata
Input shaft
Antriebswelle



d	b x h	t_1	
9	3 x 3	1.8	
11	4 x 4	2.5	
14	5 x 5	3.0	+ 0.1 0
18	6 x 6	3.5	
19	6 x 6	3.5	
24	8 x 7	4.0	
28	8 x 7	4.0	
38	10 x 8	5.0	+ 0.2 0
42	12 x 8	5.0	
48	14 x 9	5.5	

Albero uscita
Output shaft
Abtriebswelle



D	b x h	t_2	
14	5 x 5	2.3	
18	6 x 6	2.8	+ 0.1 0
19	6 x 6	2.8	
24	8 x 7	3.3	
25	8 x 7	3.3	
28	8 x 7	3.3	
32	10 x 8	3.3	
35	10 x 8	3.3	
42	12 x 8	3.3	+ 0.2 0
48	14 x 9	3.8	
55	16 x 10	4.3	
65	18 x 11	4.4	

2.9 Dimensioni

Versioni speciali (a richiesta)

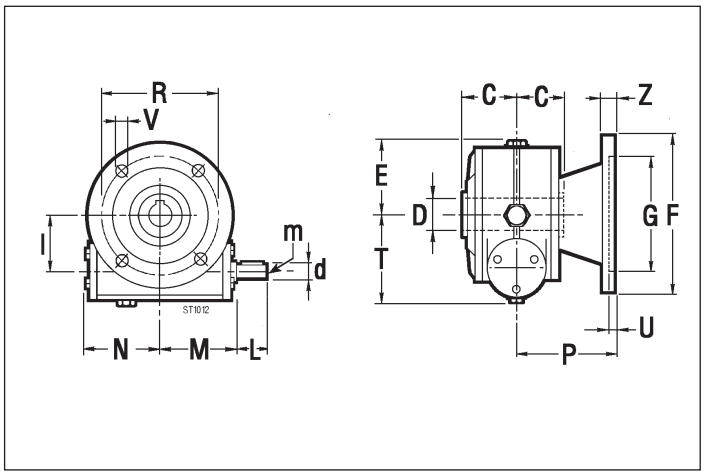
2.9 Dimensions

Non standard versions (on request)

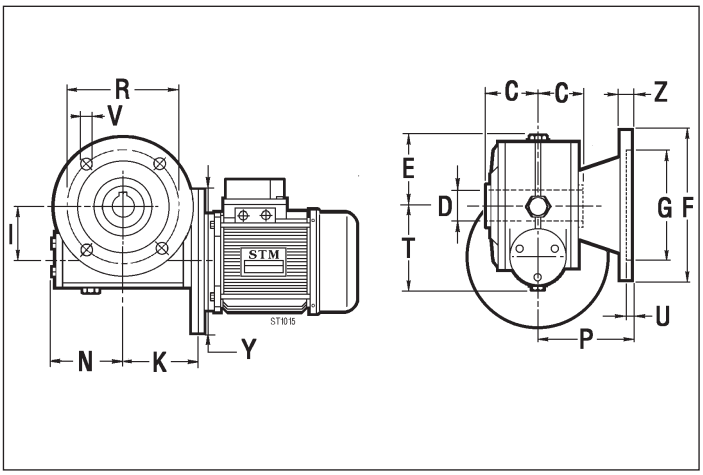
2.9 Abmessungen

Spezialausführungen (auf Anfrage)

RI F1 - F2 - F3



RMI F1 - F2 - F3



N.B.
Le versioni F1, F2, F3 contrassegnate con il simbolo (°) sono ottenute applicando una flangia modulare sulla flangia pendolare della versione PP.

NOTE.
F1, F2 and F3 versions that are marked with (°) are obtained by applying a modular flange onto the shaft-mounted flange of the PP version.

HINWEIS.
Die mit (°) gekennzeichneten Versionen F1, F2 und F3 erhält man, indem ein Modulflansch an den Flansch mit Drehmomentstütze der PP-Version befestigt wird.

RI RMI		F	G H8	P	R	U	V	Z	C	D H7	d j6	E	I	L	M	m	N	T
28	**F1**	80	50	53	62^{0}_{+6}	4	6	7	30	14	9	40	28	20	47	M4	44.5(46)*	49
40	**F1** **F2**	106 120	60 80	69 62	87 100	5 5	8.5 9	9 9	41	19 (18)	11	59	40	22	64	M5	61.5	68.5
50	**F1** **F2** **F3**	125 125 140	70 70 95	93 73 81	90^{0}_{+9} 100 115	5 4 4	10.5 9 9	10 9 9	49	24 (25)	14	69	50	30	74	M6	72.5	81.5
63	**F1°** **F2°** **F3°**	175 200 160	115 130 110	86 102 82	150 165 130	5 5 5	11 13 10	11 11 11	60	25	18	81	63	45	96	M6	81	99
70	**F1°** **F2°** **F3**	175 175 160	115 115 110	116 85 101	150 150 130	5 5 6	11 11 11	10 10 11	60	28	19	87	70	40	97	M8	92	108
85	**F1** **F2** **F3**	200 210 160	130 152 110	141 120 91	165 176 130	6 5 5	13 13 11.5	12 14 10	61	32 (35)	24	105	85	50	115	M8	111	135
110	**F1** **F2** **F3**	200 270 270	130 170 170	115 132 178	165 230 230	5 10 10	13 13.5 13.5	12 18 18	77.5	42	28	135	110	60	146	M8	142	170
180	**F2**	400	300	150	350	6.5	22	22	120	65	48	210	180	110	235	M14	232	265

***RI 28 - RMI 28 IEC56: N=44.5, RMI 28 IEC63: N=46**

	RMI																			
	28		**40**		**50**		**63**		**70**		**85**		**110**		**130**		**150**		**180**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	49	120	63.5	140	77	160	95	160	100	160	116	200	145	—	—	—	—	—	—
	—	—	140	63.5	160	77	200	95	200	100	200	116	250	145	250	163	250	190	300	234
	—	—	160	71	200	81	—	—	—	—	250	118	—	—	300	163	300	190	350	234
B14	80•	49	80•	63.5	90•	77	105•	95	105	100	120	116	160	145	—	—	—	—	—	—
	90	51	90	63.5	105	77	120	95	120	100	140	116	—	—	—	—	—	—	—	—
	—	—	105	71	120	81	140	95	140	100	160	118	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	160	100	—	—	—	—	—	—	—	—	—	—

(•) Vedi nota in fondo a tabella 2.6.

(•) See note at the bottom of table 2.6.

(•) Siehe Bemerkungen Tabelle 2.6 unten.

2.9 Dimensioni

Esecuzione con vite bisporgente

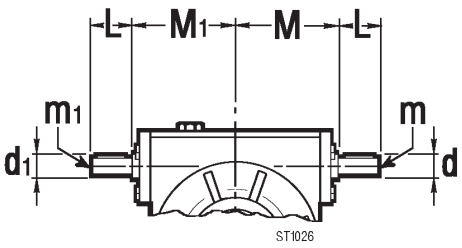
2.9 Dimensions

Double extended input shaft

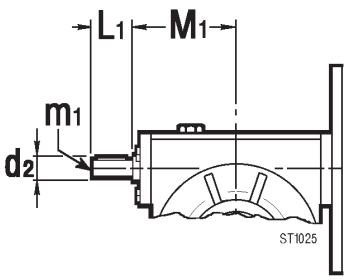
2.9 Abmessungen

Ausführung mit beidseitiger Antriebswelle

RI



RMI



RI RMI	d j6	d_1 j6	d_2 j6	L	L_1	m	m_1	M	M_1
28	9	9	9	20	20	M4	—-	47	47
40	11	11	11	22	22	M5	M5	64	64*
50	14	14	14	30	30	M6	M6	74	74
63	18	18	18	45	45	M6	M6	96	85
70	19	19	19	40	40	M8	M8	97	97
85	24	24	24	50	50	M8	M8	115	115
110	28	28	28	60	60	M8	M8	146	146
130	38	38	38	80	80	M10	M10	166	166
150	42	42	42	100	100	M12	M12	195	195
180	48	48	48	110	110	M14	M14	235	235

* RMI 40 IEC 71 : M_1=67

Per i riduttori RMI con vite bisporgente vedi nota tab. 2.6.

The RMI worm gearboxwith double extended input shaft see table 2.6.

Bei der Ausführung mit beidseitiger Antriebswelle bitte dieBemerkung auf Tab. 2.6 beachten.

2.10 Gioco ridotto

I riduttori vite senza fine sono anche disponibili con gioco ridotto/registrabile. Per informazioni sulle quantità e prezzi contattare il nostro uff. commerciale.

2.10 Low backlash

The worm gearboxes are also available with low/adjustable backlash. For informations of quantities and prices please contact our sales department.

2.10 Spielarme Getriebe

Die Schneckengetriebe sind auch spielarm bzw. mit einstellbarem Spiel erhältlich. Für informationen bzl. Abnahmemenge und Preis wenden Sie sich bitte an unseren Vertrieb.

2.11 Accessori
Braccio di reazione

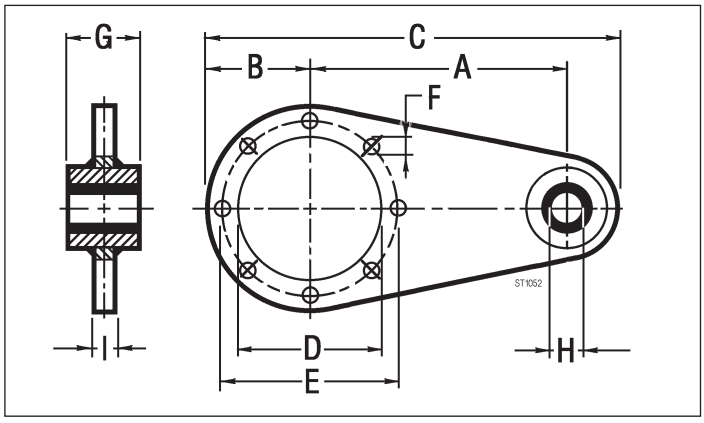
Con boccola VKL

2.11 Accessories
Torque arm

With VKL bushing

2.11 Zubehör
Drehmomentstütze

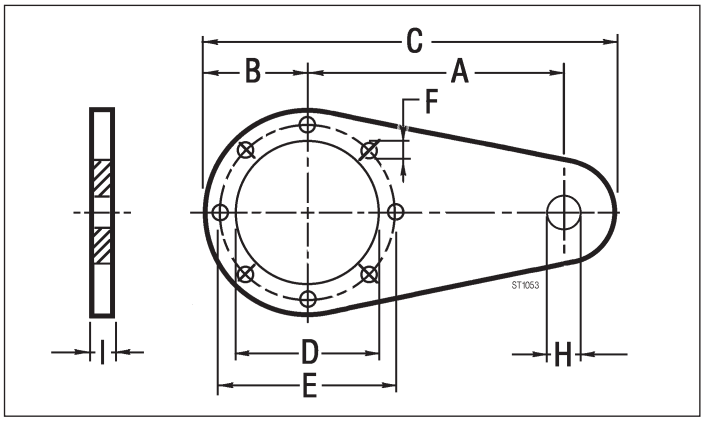
Mit VKL-Buchse



Standard

Standard

Standard



	RI - RMI									
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**	**180**
A	70	90	100	150	150	200	250	300	350	400
B	34.5	50	60	53	60	75	100	120	125	150
C	119.5	165	185	230	240	313	388	465	525	610
D	42.15	60	70	70	80	110	130	180	180	230
E	56	83	85	85	100	130	165	215	215	265
F	6.5	7	9	9	9	11	13	13	15	17
G	—	15	15	20	20	25	25	30	30	35
H	9	10	10	10	10	20	20	25	25	35
I	4	4	4	6	6	6	6	6	6	10

2.11 Accessori
Alberi lenti

Tutti i riduttori a vite senza fine sono forniti con albero lento cavo. A richiesta, possono essere forniti alberi lenti come indicato nei disegni dimensionali.
Le dimensioni delle linguette sono conformi alle norme UNI 6604-69.

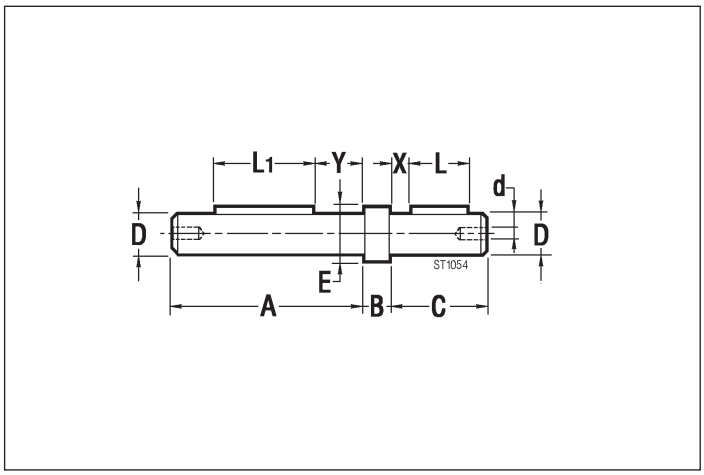
2.11 Accessories
Output shafts

All worm gearboxes are supplied with hollow output shaft. Output shafts as shown in the size drawings can be supplied upon request.
Sizes of feathers comply with standards UNI 6604-69.

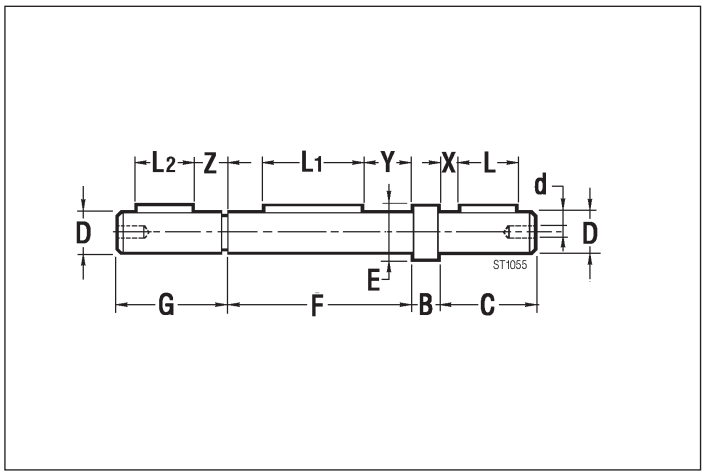
2.11 Zubehör
Abtriebswellen

Alle Schneckengetriebe werden mit hohler Abtriebswelle geliefert. Auf Anfrage können Abtriebswellen gemäß den Maßzeichnungen geliefert werden.
Die Abmessungen der Federn entsprechen den Normen UNI 6604-69.

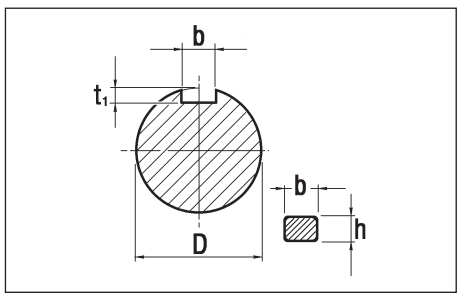
Albero lento
Single output shaft
Einseitige Abtriebswelle



Albero lento bisporgente
Double output shaft
Beidseitige Abtriebswelle



	RI - RMI									
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**	**180**
A	58	80	95	117	117	119	153	177	207	239
B	1.5	10	10	10	10	10	10	20	20	20
C	29.5	40	45	60	60	71	100	110	110	130
D_{g6}	14	19	24	25	28	32	42	48	55	65
d	M6	M8	M8	M8	M8	M10	M10	M10	M12	M14
E	17	22	28	34	34	38	50	58	63	78
F	60	82	98	120	120	122	155	180	210	240
G	31	50	55	70	70	81	110	130	130	150
L	20	25	30	40	40	50	80	90	90	100
L1	20	40	50	60	60	70	80	90	100	120
L2	20	25	30	40	40	50	80	90	90	100
X	4.5	8	7.5	10	10	10	10	10	10	15
Y	20	21	24	30	30	26	37	45	55	60
Z	6	18	18	20	20	20	20	30	30	35



D	b x h	t_1	
14	5 x 5	3.0	+ 0.1 0
19	6 x 6	3.5	
24	8 x 7	4.0	+ 0.2 0
25	8 x 7	4.0	
28	8 x 7	4.0	
32	10 x 8	5.0	
42	12 x 8	5.0	
48	14 x 9	5.5	
55	16 x 10	6.0	
65	18 x 11	7.0	

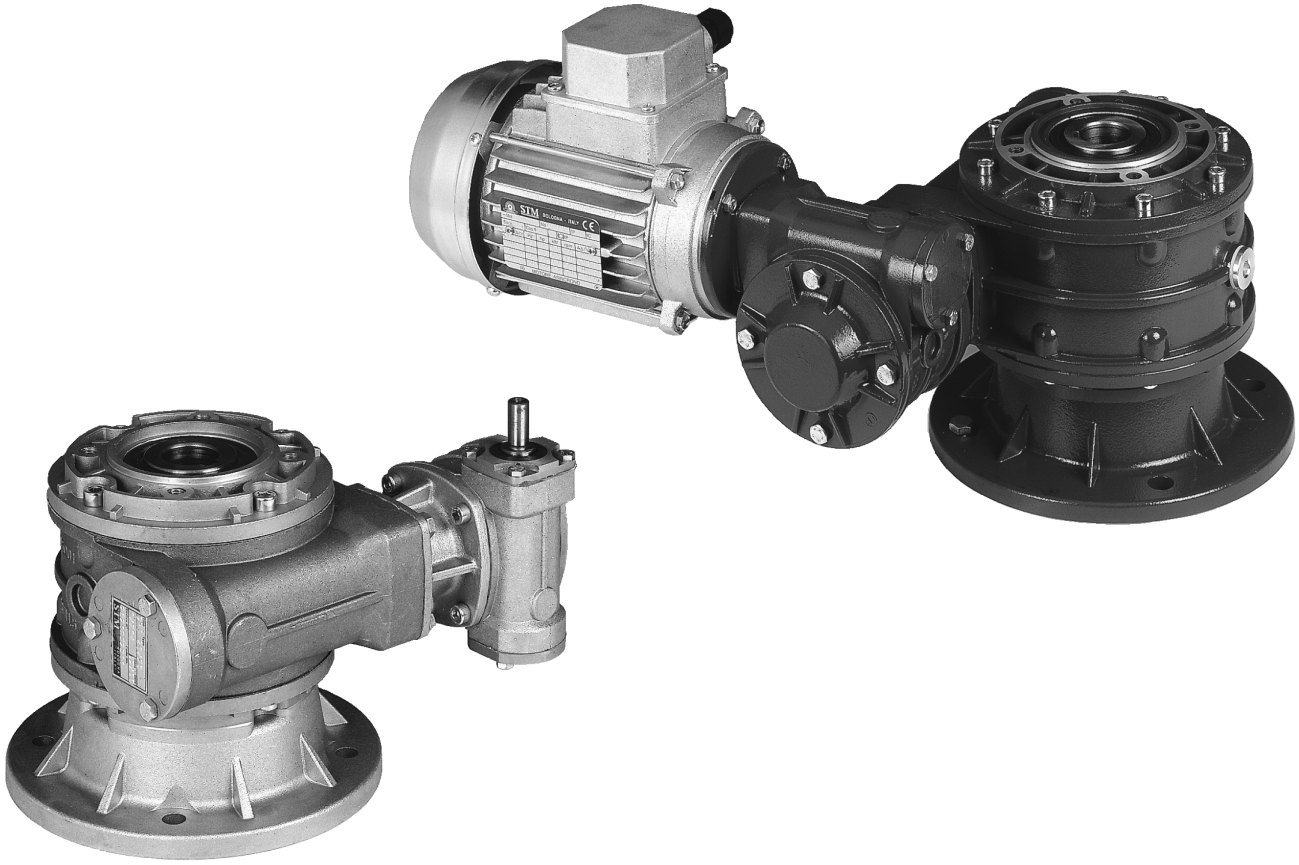
N.B.
Tutti gli alberi lenti vengono forniti in kit di montaggio completi di linguette,. rondelle, viti (e anelli elastici seeger per l'albero bisporgente).

NOTE.
All output shafts are supplied in kit complete with feathers, washers and screws (as well as snap rings for the double extended shaft).

HINWEIS.
Alle Abtriebswellen werden als Bausätze komplett mit Federn, Scheiben und Schrauben geliefert (bei der beidseitigen Abtriebswelle auch die Seegerringe).

3.0 RIDUTTORI A VITE SENZA FINE COMBINATI
COMBINED WORM GEARBOXES
KOMBINIERTE SCHNECKENGETRIEBE

CRI
CRMI



3.1 Caratteristiche tecniche

I nostri riduttori a vite senza fine combinati vengono realizzati seguendo il criterio della massima affidabilità nel tempo, risultato ottenuto utilizzando ottimi materiali e moderni criteri di progettazione.
Carcasse, flange e piedi sono realizzati in ghisa meccanica G20 UNI 5007 ad esclusione dei modelli di bassa potenza (28-40-50-63-70) per i quali è invece utilizzato l'alluminio SG-AlSi UNI 1706.
Le viti senza fine sono realizzate in acciaio e vengono cementate, temprate e rettificate. La rettifica sul filetto, nei rapporti di riduzione per i quali il valore del modulo lo consente, viene eseguita con profilo ZI migliorando così i contatti tra le superfici dentate e, conseguentemente, il rendimento e la silenziosità di funzionamento.
La corona ha il mozzo in ghisa G20 sul quale viene riportata una fusione in bronzo GCuSn12 UNI7013.
Sono utilizzati cuscinetti a rulli conici o radiali a sfere di qualità per garantire una lunga durata.
Il programma di fabbricazione prevede anche, l'applicazione di un limitatore di coppia con allarme di arresto e l'assemblaggio con variatore.

3.1 Technical characteristics

Our gearboxes are manufactured with high quality material and modern design in order to guarantee the maximum reliability and duration.
Housings, flanges and feet are made out of engineering cast iron G20 UNI 5007 excluding the smaller sized models (28--40-50-63-70) for which aluminium SG-AlSi UNI 1706 is utilized instead.
Wormshafts are made of steel and are casehardened, hardened and ground.
The thread grinding in the gear ratios that the module value permits is carried out with ZI-Profile.
This improves the contact between the toothed surfaces and therefore performance and reduces operating noise.
The wormwheel has a G20 cast iron hub onto which a casting in GCsSn12 UNI7013 bronze is fitted.
To guarantee a long life, taper roller bearing or radial ball bearings are used.
Our range also provides possible application of torque limiters equipped with stop devices and assembly on to variators.

3.1 Technische Eigenschaften

Unsere Untersetzungsgetriebe werden unter Verwendung von besten Materialien und mit modernsten Herstellungsmethoden hergestellt, um eine maximale Zuverlässigkeit sowie eine lange Lebensdauer zu garantieren.
Außer bei den Modellen mit niedriger Leistung, bei welchen Aluminium SG-AlSi UNI 1706 verwendet wird, werden alle Gehäuse, Flansche und Sockel aus Maschinenguß G20 UNI 5007 gefertigt.
Die Schnecken sind aus einsatzgehärtetem, gehärtetem und geschliffenem Stahl.
Das Gewindeschleifen erfolgt in den vom Modulwert zulässigen Übersetzunsverhältnissen mit ZI-Profil, wodurch die Kontakte zwischen den verzahnten Oberflächen und folglich die Leistung und der geräuscharme Betrieb verbessert werden.
Das Schneckenrad hat eine Nabe aus Gußeisen G20, auf die ein Guß aus Bronze GcuSn12 UNI7013 aufgetragen wird.
Um eine lange Lebensdauer zu gewährleisten, werden Kegelrollenlager oder Radial- kugellager von hoher Qualität verwendet. Die Getriebe können mit einer Rutsch- kupplung, einem einstellbaren Drehmomen- tbegrenzer und mit einem Drehzahlregler ausgerüstet werden.

3.2 Designazione

3.2 Designation

3.2 Bezeichnung

	Grandezza *Size* Größe	Versione *Version* Ausführung	Vers. di montaggio *Mounting vers.* Montageausf.	ir	* (IEC)	kW	n° Poli *Poles* Polig	
CRMI	**28/28** **28/40** **28/50** **28/63** **40/70** **40/85** **50/110** **63/130** **85/150** **85/180** **.....**	**S** **I** **D** **A** (FL,P,PP) **A**(F1,F2,F3)	**1** **2** **3** **4** **5** **6**	**140** **200** **280** **400** **600** **980** **1372** **1960** **2800** **4000** **5600** **7000** **8000** **10000**	63 (B5) 63 (B14)	0.13 0.18	2 4	63 (B5) 63 (B14) ....
CRI								

Esempio / *Example* / Beispiel

CRMI 40/85S 1:980 PAM 63 (B5)

CRMI 40/85S 1:980 kW 0.18 4 63 (B5)

CRI 40/85S 1:980

*** Se non conforme alle specifiche dimensionali IEC precisare diametro foro e flangia (es. 14/120)**
Altre specifiche:

- Versione flangiata con montaggio sinistro (opposto a catalogo)
- posizione della morsettiera del motore se diversa da quella standard, (par. 2.3)
- lubrificante (non per i tipi 28,40,50,63,70,85 già lubrificati a vita)
- elica della vite sinistra (esecuzione speciale)
- posizione di montaggio con indicazione tappi di livello e sfiato; se non specificato si considerano standard le posizioni S01 e I02
- cuscinetti conici corona
- bisporgenza vite [1)]
- albero lento bisporgente
- lubrificazione forzata [1)]
- limitatore di coppia [1)2)]
- limitatore di coppia RDB [1) 2)]

N.B.
1) Specificare se l'opzione desiderata è richiesta sul riduttore entrata (1° riduttore) o sul riduttore uscita (2° riduttore).
2) Se richiesto sul riduttore in entrata è da considerare come esecuzione speciale.

**** If not conform to IEC specifications please specify diameter of wormshaft's bore and flange (i.e. :14/200)***
Further specification:

- *flanged version. Left mounting opposite to catalogue*
- *terminal board position if different from standard (chapter 2.3)*
- *lubricant filling (except for size 28,40,50,63,70,85 lubricated for life)*
- *left helix (special version)*
- *mounting position. Indications must be given regarding level and breather plugs. If not specified positions S01 and I02 are considered standard*
- *wormwheel taper roller bearings*
- *double extended input shaft [1)]*
- *double extended output shaft*
- *forced lubrication [1)]*
- *torque limiter [1)2)]*
- *torque limiter RDB [1)2)]*

NOTE.
1) Specify if the required option is on the input gearbox (1st gearbox) or on the output gearbox (2nd gearbox).
2) If requested on the input gearbox, it must be considered as special version.

*** Falls nicht nach IEC, bitte Durchmesser der Eingangswellenbohrung und des Flansches angeben (z.B.: 14/200)**
Weitere Spezifikationen:

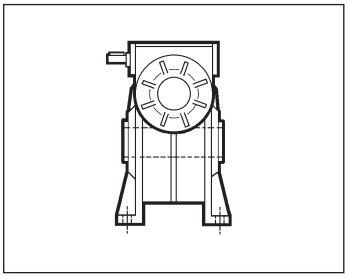
- Geflanschte Ausführung mit Montage links (nicht wie im Katalog)
- Stellung des Klemmenkastens des Motors, falls diese von der Standard-Ausführung abweicht (kapitel 2.3)
- Schmiermittelfüllung (gilt nicht für die wartungsfreien Typen 28,40,50,63,70,85)
- Linkgsgängige Schraubenlinie der Schnecke (Spezialausführung)
- Montagestellung mit Angabe der Ölpegel und Entlüfterstöpsel. Falls nichts anderes angegeben ist, gelten die Pos. S01 und I02 als Standard.
- Kegelrollenlager auf der Schnecke
- Beidseitige Eingangswelle [1)]
- Beidseitige Abtriebswelle
- Zwangsschmierung [1)]
- Rutschkupplung [1)2)]
- Rutschkupplung RDB [1)2)]

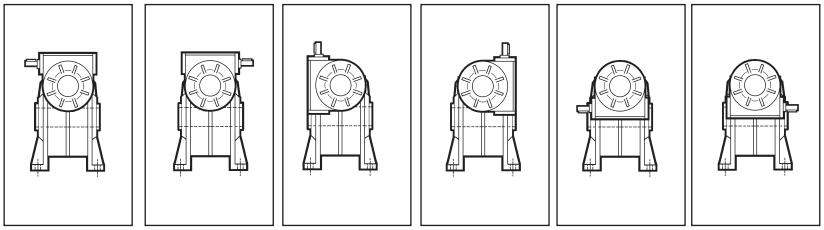
HINWEIS.
1) Angeben, ob die gewünschte Option am Eingangsgetriebe (1. Getriebe) oder am Ausgangsgetriebe (2. G.) benötigt wird.
2) Wird diese am Eingangsgetriebe benötigt, so gilt dies als Sonderausführung.

CRI - CRMI

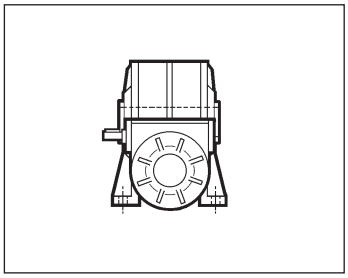
Versione di montaggio / *Mounting version* / Montageausführungen

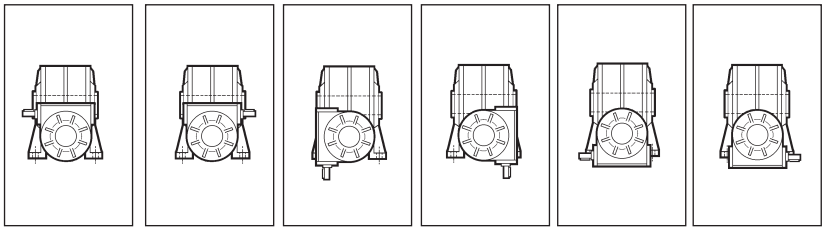
S
28 - 180



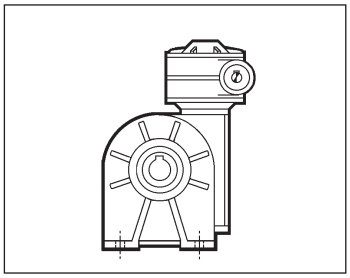


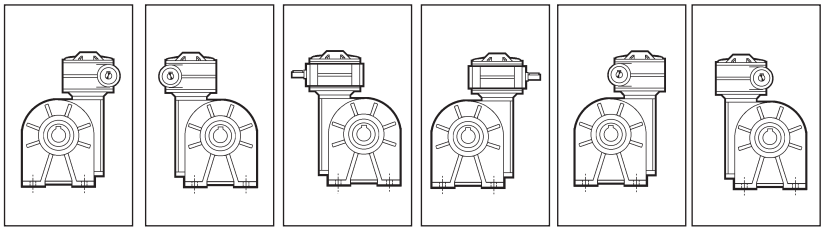
I
28 - 180



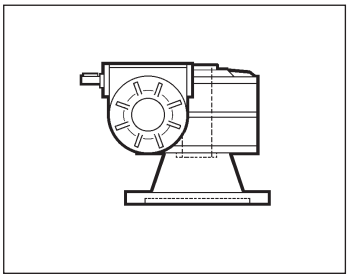


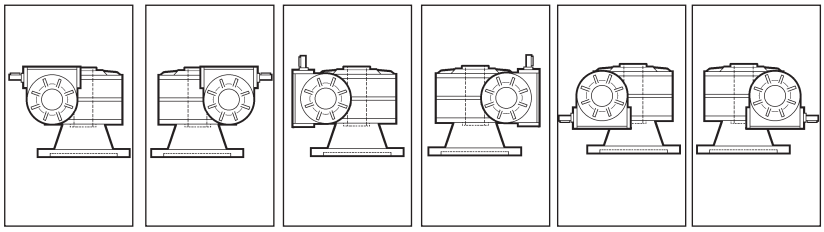
D
28 - 180



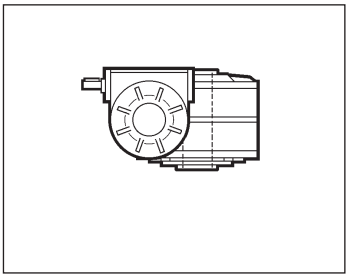


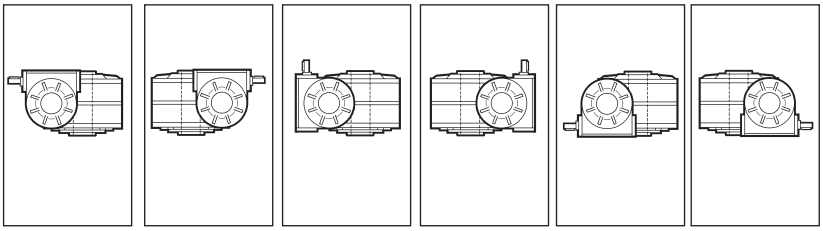
A(FL)
A(F1,F2,F3)
28 - 180



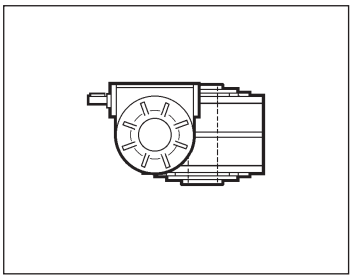


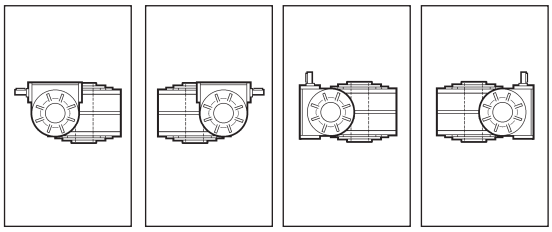
A(P)
28, 85 - 180

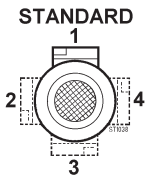




A(PP)
40 - 70







Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

3.3 Versioni

Oltre alle versioni di montaggio standard è possibile avere ulteriori configurazioni a richiesta previo benestare del ns. servizio tecnico che dovrà verificare possibili interferenze dell'eventuale flangia attacco motore con la struttura del secondo riduttore.

3.3 Versions

Beside the standard mounting versions it is possible to obtain further configurations upon request prior to approval of our technical department that has to check if the motor connecting flange interferes with the structure of the second gearbox.

3.3 Ausführung

Neben den angegebenen Standard- Montageversionen sind auf Anfrage weitere Konfigurationen erhältlich. Es bedarf dazu jedoch der Rücksprache mit unserer technischen Abteilung, um die geometrische Realierbarkeit zu gewährleisten.

3.4 Lubrificazione

Per la lubrificazione dei riduttori combinati utilizzare le stesse indicazioni già illustrate per i riduttori a vite senza fine nel par. 2.4. Unica variante è quella relativa ai combinati 50/110, 63/110, 70,110, 63/130, 70/130 nei quali anche il secondo riduttore (normalmente predisposto per lubrificazione ad olio) viene fornito completo di lubrificante.

Vedi la tabella seguente:

3.4 Lubrication

For the lubrication of combined gearboxes, please refer to the same instructions for the worm gearboxes on par.2.4, except for the combined type 50/110, 63/110, 70,110, 63/130, 70/130 where the second gearbox (which usually is supplied without oil) is supplied with lubricant.

In tab.3.1 is listed an overview:

3.4 Schmierung

Für die Schmierung der Getriebekombinationen gelten die bereits auf kapitel 2.4 für die Schneckengetriebe gemachten Angaben. Hierbei ist zu ergänzen, daß bei den Kombinationen 50/110, 63/110, 70,110, 63/130, 70/130 auch das zweite Getriebe (welches normalerweise ohne Ölfüllung ausgeliefert wird) komplett mit Ölfüllung geliefert wird.

Tab.3.1 gibt einen Überblich:

Tab. 3.1

Riduttori forniti completi di lubrificante sintetico *Gearboxes supplied with synthetic oil* Getriebe werden mit synthetischem Öl geliefert	Riduttori predisposti per lubrificazione ad olio *Gearboxes supplied ready for oil lubrication* Getriebe sind für Ölschmierung vorgesehen
28/28, 28/40, 40/40, 28/50, 40/50, 28/63, 40/63, 28/70, 40/70, 50/70 63/70, 40/85, 50/85, 63/85, 70/85, 50/110, 63/110, 70/110, 63/130, 70/130	**85/110, 85/130, 85/150, 110/150, 85/180, 110/180, 130/180**

3.5 Posizioni di montaggio

Per le posizioni di montaggio attenersi a quelle relative ai riduttori a vite senza fine nel par. 2.5. Ovviamente, nel caso dei combinati esse sono riferite al secondo riduttore.

3.5 Mounting positions

For the mounting positions, please refer to the worm gearboxes on par. 2.5 Of course, they refer to the second gearbox in case of combined gearboxes.

3.5 Montagepositionen

Für die Einbaupositionen gelten die Angaben für die Schneckengetriebe auf kapitel 2.5. Selbstverständlich beziehen sie sich bei Kombinationen auf das zweite Getriebe.

3.6 Carichi radiali e assiali

Sono riferiti al secondo riduttore per quanto concerne i carichi in uscita F_{r2} e al primo riduttore per quanto concerne i carichi sugli alberi in entrata F_{r1}.

3.6 Axial and overhung loads

They refer to the second gearbox as for the output loads F_{r2} and to the first gearbox as for the loads on the input shafts F_{r1}.

3.6 Radiale und Axiale Belastungen

Die Angaben beziehen sich auf die Belastungen an der Eingangswelle des ersten Getriebes F_{r1} und an der Ausgangswelle des zweiten Getriebes F_{r2} .

Tab. 3.2

n_1 min^{-1}	Fr_1 (N) CRI - CRMI							
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**
1400	60	220	320	420	500	700	1000	1600
900	60	250	350	460	530	800	1200	1800
700	70	280	400	500	570	900	1300	2000
500	70	310	450	530	600	1000	1450	2200

Per quanto concerne i valori dei carichi assiali ed ulteriori informazioni sui carichi radiali, fare riferimento al par. 2.6.

As for the values of the axial loads and for further information on the radial loads, please refer to par. 2.6.

Die Werte der Axialbelastungen und weitere Informationen bezüglich Radialbelastungen sind auf katitel 2.6 ersichtlich.

Tab. 3.3

n_2 min^{-1}	Fr_2 (N) CRI - CRMI									
	28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**	**180**
10	1430	2300	3200	3300	4700	5800	8250	10700	15000	17000

I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero e sono riferiti ai riduttori operanti con fattore di servizio 1.
Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 500 min^{-1} e Fr_2 a 10 min^{-1} rappresentano i carichi massimi consentiti.

The radial loads shown in the tables are applied on the centre line of the shaft extension and are related to gearboxes working with service factor 1.
Intermediate values of speeds that are not listed can be obtained through interpolation but it must be considered that Fr_1 at 500 min^{-1} and Fr_2 at 10 min^{-1} represent the maximum allowable loads.

Bei den in der Tabelle angegebenen Radialbelastungen wird eine Krafteinwirkung auf die Mitte des Wellenendes zugrunde gelegt; die Getriebe arbeiten mit Betriebsfaktor 1.
Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation ermittelt werden. Hierbei ist jedoch zu berücksichtigen, daß die maximale Belastung den Werten für Fr_1 bei 500 min^{-1} und für Fr_2 bei 10 min^{-1} entspricht.

3.6 Carichi radiali e assiali

A richiesta possono essere fornite versioni rinforzate con cuscinetti a rulli conici sulla corona in grado di sopportare carichi superiori a quelli ammessi dalle versioni normali.
Si veda a tal proposito la tabella 3.3.1, in cui sono riportati i valori dei carichi radiali e assiali ammissibili sull'albero uscita nel caso di cuscinetti conici sulla corona. Si consiglia, in questi casi, di adottare versioni flangiate, verificando che il carico assiale venga interamente assorbito dal cuscinetto alloggiato nella flangia di fissaggio. Si sconsiglia, invece, la versione a piede, in quanto la resistenza meccanica della struttura non è sufficiente a garantire la necessaria sicurezza sia statica sia dinamica (urti e sovraccarichi).

Tale soluzione non è prevista sulla grandezza 28.

3.6 Axial and overhung loads

In order to increase the load capacity of the gearboxes it is possible to fit taper roller bearings on to the output shaft. Such reinforced versions are available upon request.
With regard to this reinforced version, let see output radial and axial load values shown on tab. 3.3.1. It's advisable to use flange mounted versions and to make sure that the axial load is absorbed by the bearing, housed in the fixing flange.
The foot mounted version is not recommended, because the structural safety is greatly reduced, with regard both to static and dynamic conditions.

Please note that this solutione is not available for size 28.

3.6 Radiale und Axiale Belastungen

Für größere Belastungen stehen auf Wunsch auch verstärkte Ausführungen mit Kegel- rollenlagern für die Schneckenwelle zur Verfügung.
Tabelle 3.3.1 listet die zulässigen Radial- und Axiallasten bei Verwendung von Kegelrollenlagern auf. Es wird in diesen Fällen empfohlen, Flanschausführungen zu verwenden und sicherzustellen, daß die axiale Last vollständig vom Lager, das sich im Befestigungsflansch befindet, aufgenommen wird. Die Fuâversion empfiehlt sich in diesem Falle nicht, da deren Festigkeit nicht ausreicht, um die erforderliche Sicherheit gegen Stoße und Überlasten sowohl in statischer wie in dynamischer Hinsicht zu gewährleisten.
Hinweis:

Für die Baugröße 28 ist diese Lösung nicht vorgesehen.

Tab. 3.3.1

CARICHI RADIALI - ASSIALI CON CUSCINETTI CONICI SULLA CORONA
AXIAL AND OVERHUNG LOADS WITH TAPER ROLLER BEARINGS ON WORMWHEEL
RADIALE UND AXIALE BELASTUNGEN MIT KEGELROLLENLAGERN AUF DEM SCHNECKENRAD [N]

n_2 [min^{-1}]	**CRI - CRMI**																	
	40		**50**		**63**		**70**		**85**		**110**		**130**		**150**		**180**	
	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
10	2300	3000	6900	8000	6900	8000	9000	11000	9000	12000	14800	19000	15600	22000	20000	26000	23000	30000

3.7 Prestazioni riduttori CRI — *3.7 CRI gearboxes performances* — 3.7 Leistungen der CRI-Getriebe

CRI 28/28

Kg 2.8

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	25	0.05	52	63 - 56 - 50
200	10x20	7.0	25	0.04	49	
280	10x28	5.0	25	0.03	42	
400	20x20	3.5	25	0.02	44	
600	15x40	2.3	25	0.02	35	
980	49x20	1.4	25	0.01	33	56 - 50
1372	49x28	1.0	25	0.01	27	
1960	49x40	0.7	25	0.01	25	
2800	70x40	0.5	25	0.01	21	
4000	100x40	0.4	25	0.01	17	
5600	100x56	0.3	25	0.01	15	
7000	100x70	0.2	20	0.01	14	
8000	100x80	0.2	16	0.01	11	
10000	100x100	0.1	12	0.01	11	

CRI 28/40

Kg 3.5

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	60	0.12	51	63 - 56 - 50
200	10x20	7.0	60	0.09	49	
280	10x28	5.0	60	0.07	43	
400	20x20	3.5	60	0.05	43	
600	15x40	2.3	60	0.04	33	
980	49x20	1.4	60	0.03	32	56 - 50
1372	49x28	1.0	60	0.02	28	
1960	49x40	0.7	60	0.02	23	
2800	70x40	0.5	60	0.02	20	
4000	100x40	0.4	60	0.01	16	
5600	100x56	0.3	60	0.01	14	
7000	100x70	0.2	50	0.01	11	
8000	100x80	0.2	45	0.01	10	
10000	100x100	0.1	35	0.01	11	

CRI 40/40

Kg 4.2

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	60	0.12	52	71 - 63 - 56
200	10x20	7.0	60	0.09	50	
280	10x28	5.0	60	0.07	45	
400	20x20	3.5	60	0.05	44	
600	15x40	2.3	60	0.04	34	
980	49x20	1.4	60	0.03	33	63 - 56
1372	49x28	1.0	60	0.02	29	
1960	49x40	0.7	60	0.02	23	
2800	70x40	0.5	60	0.02	19	
4000	100x40	0.4	60	0.01	18	
5600	100x56	0.3	60	0.01	16	
7000	100x70	0.2	50	0.01	12	
8000	100x80	0.2	45	0.01	11	
10000	100x100	0.1	35	0.01	13	

CRI 28/50

Kg 5.2

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	100	0.19	54	63 - 56 - 50
200	10x20	7.0	100	0.14	52	
280	10x28	5.0	100	0.11	46	
400	20x20	3.5	100	0.08	46	
600	15x40	2.3	100	0.06	38	
980	49x20	1.4	100	0.04	35	56 - 50
1372	49x28	1.0	100	0.04	30	
1960	49x40	0.7	100	0.03	27	
2800	70x40	0.5	100	0.02	24	
4000	100x40	0.4	100	0.02	19	
5600	100x56	0.3	100	0.02	17	
7000	100x70	0.2	100	0.01	15	
8000	100x80	0.2	75	0.01	13	
10000	100x100	0.1	60	0.01	12	

CRI 40/50

Kg 5.9

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	100	0.19	56	71 - 63 - 56
200	10x20	7.0	100	0.14	53	
280	10x28	5.0	100	0.11	47	
400	20x20	3.5	100	0.08	47	
600	15x40	2.3	100	0.06	39	
980	49x20	1.4	100	0.04	35	63 - 56
1372	49x28	1.	100	0.04	30	
1960	49x40	0.7	100	0.03	27	
2800	70x40	0.5	100	0.02	23	
4000	100x40	0.4	100	0.02	21	
5600	100x56	0.3	100	0.01	18	
7000	100x70	0.2	100	0.01	17	
8000	100x80	0.2	75	0.01	14	
10000	100x100	0.1	76	0.01	13	

CRI 28/63

Kg 7.4

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	210	0.39	56	63 - 56 - 50
200	10x20	7.0	226	0.31	53	
280	10x28	5.0	230	0.26	46	
400	20x20	3.5	186	0.16	46	
600	15x40	2.3	230	0.15	38	
980	49x20	1.4	193	0.08	35	56
1372	49x28	1.0	218	0.08	29	
1960	49x40	0.7	230	0.06	27	
2800	70x40	0.5	230	0.05	23	
4000	100x40	0.4	190	0.04	19	
5600	100x56	0.3	230	0.04	17	
7000	100x70	0.2	220	0.03	15	
8000	100x80	0.2	200	0.03	14	
10000	100x100	0.1	140	0.02	12	

3.7 Prestazioni riduttori CRI — *3.7 CRI gearboxes performances* — 3.7 Leistungen der CRI-Getriebe

CRI 40/63

Kg 8.1

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	230	0.42	57	71 - 63 - 56
200	10x20	7.0	230	0.31	54	
280	10x28	5.0	230	0.26	47	
400	20x20	3.5	230	0.18	47	
600	15x40	2.3	230	0.14	39	
980	49x20	1.4	230	0.10	36	63 - 56
1372	49x28	1.0	230	0.08	30	
1960	49x40	0.7	230	0.06	27	
2800	70x40	0.5	230	0.05	22	
4000	100x40	0.4	230	0.04	21	
5600	100x56	0.3	230	0.03	18	
7000	100x70	0.2	220	0.03	17	
8000	100x80	0.2	200	0.02	15	
10000	100x100	0.1	140	0.02	14	

CRI 28/70

Kg 14.4

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	207	0.39	55	63 - 56 - 50
200	10x20	7.0	226	0.31	53	
280	10x28	5.0	270	0.31	45	
400	20x20	3.5	196	0.16	46	
600	15x40	2.3	290	0.19	38	
980	49x20	1.4	186	0.08	35	56 - 50
1372	49x28	1.0	214	0.08	29	
1960	49x40	0.7	282	0.08	26	
2800	70x40	0.5	282	0.06	26	
4000	100x40	0.4	184	0.04	19	
5600	100x56	0.3	224	0.04	16	
7000	100x70	0.2	246	0.04	14	
8000	100x80	0.2	256	0.04	13	
10000	100x100	0.1	190	0.02	12	

CRI 40/70

Kg 16.1

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	266	0.49	56	71 - 63 - 56
200	10x20	7.0	290	0.39	54	
280	10x28	5.0	290	0.33	46	
400	20x20	3.5	290	0.23	47	
600	15x40	2.3	290	0.18	39	
980	49x20	1.4	290	0.12	35	63 - 56
1372	49x28	1.0	290	0.11	29	
1960	49x40	0.7	290	0.08	27	
2800	70x40	0.5	290	0.07	22	
4000	100x40	0.4	290	0.05	21	
5600	100x56	0.3	290	0.04	18	
7000	100x70	0.2	290	0.04	16	
8000	100x80	0.2	270	0.03	14	
10000	100x100	0.1	190	0.02	14	

CRI 50/70

Kg 16.8

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	266	0.49	57	80 - 71
200	10x20	7.0	290	0.39	55	
280	10x28	5.0	290	0.32	47	
400	20x20	3.5	290	0.32	49	
600	15x40	2.3	290	0.17	41	
980	49x20	1.4	290	0.11	39	71 - 63
1372	49x28	1.0	290	0.10	32	
1960	49x40	0.7	290	0.07	30	
2800	70x40	0.5	290	0.06	26	
4000	100x40	0.4	290	0.05	22	
5600	100x56	0.3	290	0.04	19	
7000	100x70	0.2	290	0.04	17	
8000	100x80	0.2	270	0.03	15	
10000	100x100	0.1	190	0.02	14	

CRI 63/70

Kg 19.0

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	266	0.49	57	90 - 80 - 71
200	10x20	7.0	290	0.38	56	
280	10x28	5.0	290	0.32	47	
400	20x20	3.5	290	0.22	49	
600	15x40	2.3	290	0.17	41	
980	49x20	1.4	290	0.11	40	80 - 71
1372	49x28	1.0	290	0.09	33	
1960	49x40	0.7	290	0.07	30	
2800	70x40	0.5	290	0.06	27	
4000	100x40	0.4	290	0.05	23	
5600	100x56	0.3	290	0.04	20	
7000	100x70	0.2	290	0.03	18	
8000	100x80	0.2	270	0.03	16	
10000	100x100	0.1	190	0.02	15	

CRI 40/85

Kg 21

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	460	0.82	59	71 - 63 - 56
200	10x20	7.0	460	0.60	56	
280	10x28	5.0	460	0.52	46	
400	20x20	3.5	460	0.34	49	
600	15x40	2.3	460	0.28	40	
980	49x20	1.4	460	0.19	36	63 - 56
1372	49x28	1.0	460	0.17	29	
1960	49x40	0.7	460	0.13	27	
2800	70x40	0.5	460	0.11	22	
4000	100x40	0.4	460	0.08	21	
5600	100x56	0.3	460	0.06	20	
7000	100x70	0.2	460	0.06	17	
8000	100x80	0.2	460	0.05	16	
10000	100x100	0.1	350	0.04	14	

CRI 50/85

Kg 23

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	460	0.81	60	80 - 71
200	10x20	7.0	460	0.60	57	
280	10x28	5.0	460	0.52	47	
400	20x20	3.5	460	0.33	51	
600	15x40	2.3	460	0.27	42	
980	49x20	1.4	460	0.17	40	71 - 63
1372	49x28	1.0	460	0.16	32	
1960	49x40	0.7	460	0.11	30	
2800	70x40	0.5	460	0.09	26	
4000	100x40	0.4	460	0.18	22	
5600	100x56	0.3	460	0.06	21	
7000	100x70	0.2	460	0.05	18	
8000	100x80	0.2	460	0.05	17	
10000	100x100	0.1	350	0.03	15	

CRI 63/85

Kg 25

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	460	0.81	60	90 - 80 - 71
200	10x20	7.0	460	0.59	57	
280	10x28	5.0	460	0.51	47	
400	20x20	3.5	460	0.33	52	
600	15x40	2.3	460	0.27	42	
980	49x20	1.4	460	0.17	41	71 - 80
1372	49x28	1.0	460	0.15	32	
1960	49x40	0.7	460	0.11	31	
2800	70x40	0.5	460	0.09	27	
4000	100x40	0.4	460	0.07	23	
5600	100x56	0.3	460	0.05	22	
7000	100x70	0.2	460	0.05	19	
8000	100x80	0.2	460	0.05	18	
10000	100x100	0.1	350	0.03	16	

CRI 70/85

Kg 32

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	460	0.80	60	100-90-80
200	10x20	7.0	460	0.59	57	
280	10x28	5.0	460	0.51	47	
400	20x20	3.5	460	0.33	52	90 - 80
600	15x40	2.3	460	0.27	42	100-90-80
980	49x20	1.4	460	0.17	41	80 - 71
1372	49x28	1.0	460	0.15	32	
1960	49x40	0.7	460	0.11	31	
2800	70x40	0.5	460	0.09	27	
4000	100x40	0.4	460	0.07	23	
5600	100x56	0.3	460	0.05	22	
7000	100x70	0.2	460	0.05	19	
8000	100x80	0.2	460	0.05	18	
10000	100x100	0.1	350	0.03	16	

CRI 50/110

Kg 42

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	960	1.7	60	80 - 71
200	10x20	7.0	960	1.2	58	
280	10x28	5.0	960	1.0	50	
400	20x20	3.5	960	0.68	52	
600	15x40	2.3	960	0.53	44	
980	49x20	1.4	936	0.34	41	71 - 63
1372	49x28	1.0	960	0.31	33	
1960	49x40	0.7	960	0.23	32	
2800	70x40	0.5	960	0.18	27	
4000	100x40	0.4	960	0.15	24	
5600	100x56	0.3	960	0.12	22	
7000	100x70	0.2	960	0.10	19	
8000	100x80	0.2	860	0.09	18	
10000	100x100	0.1	700	0.06	16	

CRI 63/110

Kg 44

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	960	1.7	60	90 - 80 - 71
200	10x20	7.0	960	1.2	59	
280	10x28	5.0	960	0.99	51	
400	20x20	3.5	960	0.67	52	
600	15x40	2.3	960	0.53	44	
980	49x20	1.4	960	0.35	42	80 - 71
1372	49x28	1.0	960	0.30	34	
1960	49x40	0.7	960	0.22	32	
2800	70x40	0.5	960	0.18	28	
4000	100x40	0.4	960	0.14	25	
5600	100x56	0.3	960	0.11	23	
7000	100x70	0.2	960	0.10	20	
8000	100x80	0.2	860	0.08	19	
10000	100x100	0.1	700	0.06	17	

CRI 70/110

Kg 51

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	960	1.6	61	90 - 80
200	10x20	7.0	960	1.2	59	
280	10x28	5.0	960	0.99	51	
400	20x20	3.5	960	0.67	52	
600	15x40	2.3	960	0.53	44	
980	49x20	1.4	960	0.35	42	80 - 71
1372	49x28	1.	960	0.30	34	
1960	49x40	0.7	960	0.22	32	
2800	70x40	0.5	960	0.18	28	
4000	100x40	0.4	960	0.14	25	
5600	100x56	0.3	960	0.11	23	
7000	100x70	0.2	960	0.10	20	
8000	100x80	0.2	860	0.08	19	
10000	100x100	0.1	700	0.06	17	

3.7 Prestazioni riduttori CRI — *3.7 CRI gearboxes performances* — 3.7 Leistungen der CRI-Getriebe

CRI 85/110

Kg 57

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	960	1.6	61	112-100- 90
200	10x20	7.0	960	1.2	60	
280	10x28	5.0	960	0.98	51	
400	20x20	3.5	960	0.65	54	
600	15x40	2.3	960	0.53	45	
980	49x20	1.4	960	0.34	42	90 - 80
1372	49x28	1.0	960	0.30	34	
1960	49x40	0.7	960	0.22	33	
2800	70x40	0.5	960	0.17	30	
4000	100x40	0.4	960	0.14	26	
5600	100x56	0.3	960	0.11	24	
7000	100x70	0.2	960	0.09	21	
8000	100x80	0.2	860	0.08	20	
10000	100x100	0.1	700	0.06	18	

CRI 63/130

Kg 54

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	1660	2.8	61	90 - 80 - 71
200	10x20	7.0	1600	2.0	59	
280	10x28	5.0	1600	1.7	51	
400	20x20	3.5	1600	1.1	53	
600	15x40	2.3	1600	0.90	43	
980	49x20	1.4	1600	0.58	42	80 - 71
1372	49x28	1.0	1600	0.51	33	
1960	49x40	0.7	1600	0.38	31	
2800	70x40	0.5	1600	0.30	28	
4000	100x40	0.4	1600	0.24	24	
5600	100x56	0.3	1600	0.18	23	
7000	100x70	0.2	1600	0.16	21	
8000	100x80	0.2	1600	0.14	20	
10000	100x100	0.1	1250	0.10	18	

CRI 70/130

Kg 61

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	1660	2.8	62	100-90-80
200	10x20	7.0	1600	2.0	59	
280	10x28	5.0	1600	1.7	51	90 - 80
400	20x20	3.5	1600	1.1	53	
600	15x40	2.3	1600	0.90	43	
980	49x20	1.4	1600	0.58	42	80 - 71
1372	49x28	1.0	1600	0.51	33	
1960	49x40	0.7	1600	0.38	31	
2800	70x40	0.5	1600	0.31	27	
4000	100x40	0.4	1600	0.24	24	
5600	100x56	0.3	1600	0.18	23	
7000	100x70	0.2	1600	0.16	21	
8000	100x80	0.2	1600	0.14	20	
10000	100x100	0.1	1250	0.10	18	

CRI 85/130

Kg 67

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	1660	2.8	62	112-100-90
200	10x20	7.0	1600	2.0	60	
280	10x28	5.0	1600	1.6	51	
400	20x20	3.5	1600	1.1	55	
600	15x40	2.3	1600	0.89	44	
980	49x20	1.4	1600	0.57	42	90 - 80
1372	49x28	1.0	1600	0.51	34	
1960	49x40	0.7	1600	0.38	32	
2800	70x40	0.5	1600	0.29	29	
4000	100x40	0.4	1600	0.23	25	
5600	100x56	0.3	1600	0.18	24	
7000	100x70	0.2	1600	0.15	22	
8000	100x80	0.2	1600	0.14	21	
10000	100x100	0.1	1250	0.10	19	

CRI 85/150

Kg 96

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	2620	4.3	64	112-100-90
200	10x20	7.0	2600	3.1	61	
280	10x28	5.0	2510	2.5	53	
400	20x20	3.5	2600	1.7	55	
600	15x40	2.3	2600	1.4	45	
980	49x20	1.4	2600	0.89	44	90 - 80
1372	49x28	1.0	2600	0.78	36	
1960	49x40	0.7	2600	0.60	33	
2800	70x40	0.5	2600	0.45	31	
4000	100x40	0.4	2600	0.37	26	
5600	100x56	0.3	2600	0.27	25	
7000	100x70	0.2	2600	0.25	22	
8000	100x80	0.2	2600	0.22	21	
10000	100x100	0.1	1950	0.15	20	

CRI 110/150

Kg 115

ir	$i_1 x i_2$	n_1 = 1400 min^{-1} n_2 min^{-1}	T_{2M} Nm	P kW	RD %	IEC
140	7x20	10.0	2620	4.3	65	112 - 100
200	10x20	7.0	2600	3.1	62	
280	10x28	5.0	2510	2.5	54	
400	20x20	3.5	2600	1.7	57	
600	15x40	2.3	2600	1.4	46	
980	49x20	1.4	2600	0.84	46	112-100-90
1372	49x28	1.	2600	0.73	38	
1960	49x40	0.7	2600	0.56	35	
2800	70x40	0.5	2600	0.43	32	
4000	100x40	0.4	2600	0.34	28	
5600	100x56	0.3	2600	0.25	27	
7000	100x70	0.2	2600	0.23	23	
8000	100x80	0.2	2600	0.21	23	
10000	100x100	0.1	1950	0.14	21	

CRI 85/180

Kg 149

ir	$i_1 x i_2$	n_1 = 1400 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
140	7x20	10.0	3750	6.1	65	112-100-90
200	10x20	7.0	4095	4.8	62	
280	10x28	5.0	3700	3.5	55	
400	20x20	3.5	4200	2.7	56	
600	15x40	2.3	4160	2.2	46	
980	49x20	1.4	3850	1.3	44	90 - 80
1372	49x28	1.0	4200	1.2	37	
1960	49x40	0.7	4200	0.97	33	
2800	70x40	0.5	4200	0.72	31	
4000	100x40	0.4	4200	0.59	26	
5600	100x56	0.3	4200	0.43	25	
7000	100x70	0.2	4200	0.40	22	
8000	100x80	0.2	4200	0.36	21	
10000	100x100	0.1	3300	0.26	16	

CRI 110/180

Kg 168

ir	$i_1 x i_2$	n_1 = 1400 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
140	7x20	10.0	3750	6.0	65	112 - 100
200	10x20	7.0	4095	4.8	63	
280	10x28	5.0	3700	3.5	55	
400	20x20	3.5	4200	2.7	58	
600	15x40	2.3	4160	2.2	47	
980	49x20	1.4	4200	1.4	46	112-100-90
1372	49x28	1.0	4200	1.1	39	
1960	49x40	0.7	4200	0.91	35	
2800	70x40	0.5	4200	0.69	32	
4000	100x40	0.4	4200	0.55	28	
5600	100x56	0.3	4200	0.40	27	
7000	100x70	0.2	4200	0.37	24	
8000	100x80	0.2	4200	0.34	23	
10000	100x100	0.1	3300	0.24	20	

CRI 130/180

Kg 178

ir	$i_1 x i_2$	n_1 = 1400 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
140	7x20	10.0	3750	5.9	67	132-112-100
200	10x20	7.0	4095	4.7	64	
280	10x28	5.0	3700	3.4	57	
400	20x20	3.5	4200	2.6	59	
600	15x40	2.3	4160	2.1	48	
980	49x20	1.4	4200	1.3	47	112-100
1372	49x28	1.0	4200	1.14	40	
1960	49x40	0.7	4200	0.90	35	
2800	70x40	0.5	4200	0.66	34	
4000	100x40	0.4	4200	0.53	29	
5600	100x56	0.3	4200	0.39	28	
7000	100x70	0.2	4200	0.35	25	
8000	100x80	0.2	4200	0.33	24	
10000	100x100	0.1	3300	0.23	21	

I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

Listed weights are for reference only and can vary according to the gearbox version.

Die angegebenen Gewichte sind Richtwerte und können sich je nach Getriebeversion ändern.

Nella tab. 3.4 sono riportate le dimensioni IEC e le possibili combinazioni albero/flangia riduttore predisposto per accoppiamento motore. I dati riportati si riferiscono al riduttore in entrata.
i_1: Rappresenta il rapporto di riduzione del riduttore in entrata e può essere dedotto dalle tabelle relative alle prestazioni dei riduttori CRI (paragrafo 3.7).

In table 3.4 are listed the IEC dimensions as well as the possible shaft/flange combinations of the gearbox to be coupled with a motor. The listed values refers to the input gearbox.
***i_1**: represents the reduction ratio of the input gearbox and it is shown in the tables of the CRI gearbox efficiency (chapter 3.7).*

In Tabelle 3.4 sind sowohl die IEC-Anschlußmaße als auch weitere mögliche Welle/Flansch-Kombinationen zur Motorbefestigung aufgeführt, die Maße beziehen sich jeweils auf das Eingangsgetriebe.
i_1: Steht für das Untersetzungsverhältnis des Eingangsgetriebes und kann aus den Leistungstabellen der CRI-Getriebe (Kapitel 3.7) entnommen werden.

Tab. 3.4

Possibili accoppiamenti con motori IEC - / *Possible couplings with IEC motors* / Mögliche Verbindungen mit IEC-Motoren.

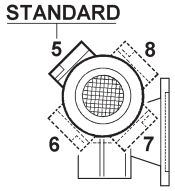
CRMI	IEC	i_1 7	10	15	20	28	40	49	56	70	80	100
28/...	63	**11/90** (B14)										
	56	**9/120** (B5) - **9/80•** (B14)										
40/...	71	**14/160** (B5) - **14/105** (B14)			14/140 - 14/120 - 14/90							
	63	**11/140** (B5) - **11/90** (B14)			11/120 - 11/80•							
	56	**9/120** (B5) - **9/80•** (B14)			9/140 - 9/90							
50/...	80	**19/120** (B14) - **19/200** (B5)			19/160							
	71	**14/160** (B5) - **14/105** (B14)			14/140 - 14/120 - 14/90•							
	63*					**11/140** (B5) - **11/90•** B14		11/160 - 11/105 - 11/120				
63/...	90	**24/200** (B5) - **24/140** (B14)			24/160 - 24/120 - 24/105•							
	80	**19/200** (B5) - **19/120** (B14)			19/160 - 19/140 - 19/105•							
	71*	**14/160** (B5) - **14/105•** (B14)			14/200 - 14/140 - 14/120							
70/...	100	**28/160** (B14)										
	90	**24/200** (B5) - **24/140** (B14)			24/160 - 24/120 - 24/105•							
	80	**19/200** (B5) - **19/120** (B14)			19/160 - 19/140 - 19/105•							
	71*						**14/160** (B5) - **14/105•** (B14)		14/200 - 14/140 - 14/120			
85/...	100	**28/250** (B5) - **28/160** (B14)			28/200							
	90	**24/200** (B5) - **24/140** (B14)			24/250 - 24/160 - 24/120							
	80*						**19/200** (B5) - **19/120** B14		19/250 - 19/160 - 19/140			
110/...	112	**28/250** (B5) - **28/160** (B14)			28/200							
	100	**28/250** (B5) - **28/160** (B14)			28/200							
	90*						**24/200** (B5)		24/250 - 24/160			
130/...	132	**38/300** (B5)										
	112	**28/250** (B5)			28/200							
	100	**28/250** (B5)			28/200							

* I riduttori RMI con vite bisporgente vengono realizzati con boccola di riduzione in acciaio (es. per RMI 110/... boccola riduzione ø 28/24).

N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par. 3.3).
Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

** The RMI worm gearboxwith double extended input shaft have a steel axle box (e.g. for RMI 110/... axle box ø 28/24).*

NOTE:
The standard configuration for the 4 holes is 45° to the axles (like an x: see par. 3.3).
For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please choose the terminal board position refering to the following sketch (in which n° 5 is the standard position):



* RMI-Getriebe mit beidseitiger Antriebswelle haben eine Stahl-Reduziermuffe (z.B. RMI 110/... Muffe 28/24).

HINWEIS.
In der Standardkonfiguration sind die 4 Flansch- bohrungen im 45°-Winkel zu den Achsen angeordnet (wie ein x:siehe kapitel 3.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeord- net (wie ein +). Es sollte deshalb der Platzbedarf des Motorklemmenkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die Lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos. 5 ist Standardposition):

3.8 Prestazioni motoriduttori CRMI

3.8 CRMI gearmotors performances

3.8 Leistungen der CRMI Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI

0.09 kW

n_1 = 1400 min^{-1}				
10.0	140	44	1.4	**28/40**
10.0	140	47	2.1	**28/50**
7.0	200	60	1.0	**28/40**
7.0	200	64	1.6	**28/50**
5.0	280	75	0.8	**28/40**
5.0	280	79	1.3	**28/50**
5.0	280	79	2.9	**28/63**
3.5	400	113	0.9	**28/50**
3.5	400	113	2.0	**28/63**
3.5	400	115	2.5	**40/70**
2.3	600	141	1.6	**28/63**
2.3	600	145	2.0	**40/70**
1.4	980	212	1.1	**28/63**
1.4	980	213	1.4	**40/70**
1.4	980	219	2.1	**40/85**
1.0	1372	245	0.9	**28/63**
1.0	1372	245	1.2	**40/70**
1.0	1372	240	1.9	**40/85**
0.7	1960	322	0.9	**40/70**
0.7	1960	329	1.4	**40/85**
0.5	2800	380	1.2	**40/85**
0.4	4000	508	0.9	**40/85**
0.3	5600	460*	*	**40/85**
0.2	7000	460*	*	**40/85**
0.2	8000	406*	*	**40/85**
0.1	10000	350*	*	**40/85**

0.12 kW

n_1 = 1400 min^{-1}				
10.0	140	59	1.0	**28/40**
10.0	140	62	1.7	**28/50**
7.0	200	85	1.2	**28/50**
7.0	200	87	2.7	**28/63**
7.0	200	89	3.3	**40/70**
5.0	280	105	1.0	**28/50**
5.0	280	105	2.2	**28/63**
5.0	280	106	2.7	**40/70**
3.5	400	151	1.5	**28/63**
3.5	400	153	1.9	**40/70**
3.5	400	160	2.9	**40/85**
2.3	600	188	1.2	**28/63**
2.3	600	193	1.5	**40/70**
2.3	600	197	2.3	**40/85**
1.4	980	313	0.9	**50/70**
1.4	980	284	1.0	**40/70**
1.4	980	293	1.6	**40/85**

0.12 kW

n_1 = 1400 min^{-1}				
1.0	1372	361	0.8	**50/70**
1.0	1372	327	0.9	**40/70**
1.0	1372	320	1.4	**40/85**
1.0	1372	375	2.6	**50/110**
0.7	1960	439	1.1	**40/85**
0.7	1960	505	1.9	**50/110**
0.5	2800	506	0.9	**40/85**
0.5	2800	629	1.5	**50/110**
0.4	4000	770	1.3	**50/110**
0.3	5600	990	1.0	**50/110**
0.2	7000	1100	0.9	**50/110**
0.2	8000	860*	*	**50/110**
0.1	10000	700*	*	**50/110**

0.18 kW

n_1 = 1400 min^{-1}				
10.0	140	93	1.1	**28/50**
10.0	140	96	2.4	**28/63**
10.0	140	97	2.7	**40/70**
7.0	200	130	1.8	**28/63**
7.0	200	133	2.2	**40/70**
5.0	280	158	1.5	**28/63**
5.0	280	159	1.8	**40/70**
5.0	280	159	2.9	**40/85**
3.5	400	226	1.0	**28/63**
3.5	400	229	1.3	**40/70**
3.5	400	240	1.9	**40/85**
2.3	600	282	0.8	**28/63**
2.3	600	289	1.0	**40/70**
2.3	600	295	1.6	**40/85**
1.4	980	439	1.0	**40/85**
1.4	980	493	1.9	**50/110**
1.0	1372	480	1.0	**40/85**
1.0	1372	562	1.7	**50/110**
0.7	1960	758	1.3	**50/110**
0.5	2800	943	1.0	**50/110**
0.4	4000	1155	0.8	**50/110**
0.3	5600	960*	*	**50/110**
0.2	7000	960*	*	**50/110**
0.2	8000	860*	*	**50/110**
0.1	10000	700*	*	**50/110**

0.25 kW

n_1 = 1400 min^{-1}				
10.0	140	135	2.0	**40/70**
10.0	140	141	3.3	**40/85**
7.0	200	185	1.6	**40/70**
7.0	200	191	2.4	**40/85**
5.0	280	220	1.3	**40/70**
5.0	280	220	2.1	**40/85**
3.5	400	319	0.9	**40/70**
3.5	400	334	1.4	**40/85**
3.5	400	353	2.7	**50/110**
2.3	600	410	1.1	**40/85**
2.3	600	450	2.1	**50/110**
1.4	980	684	1.4	**50/110**
1.4	980	695	2.3	**63/130**
1.0	1372	781	1.2	**50/110**
1.0	1372	779	2.1	**63/130**
0.7	1960	1053	0.9	**50/110**
0.7	1960	1048	1.5	**63/130**
0.5	2800	1329	1.2	**63/130**
0.4	4000	1670	1.0	**63/130**
0.3	5600	1600*	*	**63/130**
0.2	7000	1600*	*	**63/130**
0.2	8000	1600*	*	**63/130**
0.1	10000	1250*	*	**63/130**

0.37 kW

n_1 = 1400 min^{-1}				
10.0	140	199	1.3	**40/70**
10.0	140	208	2.2	**40/85**
7.0	200	274	1.1	**40/70**
7.0	200	282	1.6	**40/85**
7.0	200	294	3.3	**50/110**
5.0	280	326	0.9	**40/70**
5.0	280	326	1.4	**40/85**
5.0	280	353	2.7	**50/110**
3.5	400	494	0.9	**40/85**
3.5	400	522	1.8	**50/110**
3.5	400	536	3.0	**63/130**
2.3	600	606	0.8	**40/85**
2.3	600	666	1.4	**50/110**
2.3	600	654	2.4	**63/130**
1.4	980	1013	0.9	**50/110**
1.4	980	1029	1.6	**63/130**
1.0	1372	1156	0.8	**50/110**
1.0	1372	1152	1.4	**63/130**
0.7	1960	1551	1.0	**63/130**
0.5	2800	1967	0.8	**63/130**

3.8 Prestazioni motoriduttori CRMI

3.8 CRMI gearmotors performances

3.8 Leistungen der CRMI Getriebe

0.37 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
0.4	4000	1600*	*	**63/130**
0.3	5600	1600*	*	**63/130**
0.2	7000	1600*	*	**63/130**
0.2	8000	1600*	*	**63/130**
0.1	10000	1250*	*	**63/130**

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
10.0	140	313	1.5	**50/85**
10.0	140	318	3.0	**50/110**
7.0	200	425	1.1	**50/85**
7.0	200	437	2.2	**50/110**
5.0	280	491	0.9	**50/85**
5.0	280	525	1.8	**50/110**
5.0	280	532	3.0	**63/130**
3.5	400	776	1.2	**50/110**
3.5	400	797	2.0	**63/130**
2.3	600	990	1.0	**50/110**
2.3	600	972	1.6	**63/130**
1.4	980	1530	1.0	**63/130**
1.4	980	1601	1.6	**85/150**
1.4	980	1601	2.6	**85/180**
1.0	1372	1713	0.9	**63/130**
1.0	1372	1840	1.4	**85/150**
1.0	1372	1907	2.2	**85/180**
0.7	1960	2390	1.1	**85/150**
0.7	1960	2390	1.8	**85/180**
0.5	2800	3204	0.8	**85/150**
0.5	2800	3204	1.3	**85/180**
0.4	4000	3897	1.1	**85/180**
0.3	5600	4200*	*	**85/180**
0.2	7000	4200*	*	**85/180**
0.2	8000	4200*	*	**85/180**
0.1	10000	3300*	*	**85/180**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
10.0	140	427	1.1	**50/85**
10.0	140	433	2.2	**50/110**
7.0	200	579	0.8	**50/85**
7.0	200	596	1.6	**50/110**
7.0	200	603	2.7	**63/130**
5.0	280	717	1.3	**50/110**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
5.0	280	725	2.2	**63/130**
3.5	400	1058	0.9	**50/110**
3.5	400	1087	1.5	**63/130**
2.3	600	1326	1.2	**63/130**
1.4	980	2183	1.2	**85/150**
1.4	980	2183	1.9	**85/180**
1.0	1372	2509	1.0	**85/150**
1.0	1372	2601	1.6	**85/180**
0.7	1960	3259	0.8	**85/150**
0.7	1960	3259	1.3	**85/180**
0.5	2800	4369	1.0	**85/180**
0.4	4000	4200*	*	**85/180**
0.3	5600	4200*	*	**85/180**
0.2	7000	4200*	*	**85/180**
0.2	8000	4200*	*	**85/180**
0.1	10000	3300*	*	**85/180**

1.1 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
10.0	140	635	1.5	**63/110**
10.0	140	644	2.6	**63/130**
7.0	200	884	1.1	**63/110**
7.0	200	884	1.8	**63/130**
7.0	200	920	2.8	**85/150**
5.0	280	1064	0.9	**63/110**
5.0	280	1064	1.5	**63/130**
5.0	280	1112	2.3	**85/150**
3.5	400	1595	1.0	**63/130**
3.5	400	1660	1.6	**85/150**
3.5	400	1684	2.5	**85/180**
2.3	600	1945	0.8	**63/130**
2.3	600	2042	1.3	**85/150**
2.3	600	2079	2.0	**85/180**
1.4	980	3202	0.8	**85/150**
1.4	980	3202	1.3	**85/180**
1.0	1372	3814	1.1	**85/180**
0.7	1960	4780	0.9	**85/180**
0.5	2800	4200*	*	**85/180**
0.4	4000	4200*	*	**85/180**
0.3	5600	4200*	*	**85/180**
0.2	7000	4200*	*	**85/180**
0.2	8000	4200*	*	**85/180**
0.1	10000	3300*	*	**85/180**

1.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
10.0	140	866	1.1	**63/110**
10.0	140	878	1.9	**63/130**
10.0	140	913	2.9	**85/150**
7.0	200	1206	0.8	**63/110**
7.0	200	1206	1.3	**63/130**
7.0	200	1255	2.1	**85/150**
5.0	280	1451	1.1	**63/130**
5.0	280	1516	1.7	**85/150**
5.0	280	1564	2.4	**85/180**
3.5	400	2263	1.1	**85/150**
3.5	400	2296	1.8	**85/180**
2.3	600	2785	0.9	**85/150**
2.3	600	2835	1.5	**85/180**
1.4	980	4367	1.0	**85/180**
1.0	1372	5201	0.8	**85/180**
0.7	1960	4200*	*	**85/180**
0.5	2800	4200*	*	**85/180**
0.4	4000	4200*	*	**85/180**
0.3	5600	4200*	*	**85/180**
0.2	7000	4200*	*	**85/180**
0.2	8000	4200*	*	**85/180**
0.1	10000	3300*	*	**85/180**

1.8 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
n_1 = 1400 min^{-1}				
10.0	140	1069	0.9	**63/110**
10.0	140	1083	1.5	**63/130**
10.0	140	1126	2.3	**85/150**
7.0	200	1487	1.1	**63/130**
7.0	200	1548	1.7	**85/150**
5.0	280	1789	0.9	**63/130**
5.0	280	1870	1.3	**85/150**
5.0	280	1929	1.9	**85/180**
3.5	400	2791	0.9	**85/150**
3.5	400	2831	1.5	**85/180**
2.3	600	3435	0.8	**85/150**
2.3	600	3496	1.2	**85/180**
1.4	980	5386	0.8	**85/180**

3.8 Prestazioni motoriduttori CRMI

3.8 CRMI gearmotors performances

3.8 Leistungen der CRMI Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	CRMI
2.2 kW				
n_1 = **1400** min^{-1}				
10.0	140	1304	1.3	**70/130**
10.0	140	134	2.0	**85/150**
10.0	140	1357	2.8	**85/180**
7.0	200	1790	0.9	**70/130**
7.0	200	1841	1.4	**85/150**
7.0	200	1866	2.2	**85/180**
5.0	280	2224	1.1	**85/150**
5.0	280	2294	1.6	**85/180**
3.5	400	3367	1.3	**85/180**
2.3	600	4157	1.0	**85/180**
3 kW				
n_1 = **1400** min^{-1}				
10.0	140	1778	0.9	**85/130**
10.0	140	1826	1.4	**85/150**
10.0	140	1851	2.0	**85/180**
7.0	200	2510	1.0	**85/150**
7.0	200	2544	1.6	**85/180**
5.0	280	3032	0.8	**85/150**
5.0	280	3129	1.2	**85/180**
3.5	400	4591	0.9	**85/180**
4 kW				
n_1 = **1400** min^{-1}				
10.0	140	2435	1.1	**85/150**
10.0	140	2468	1.5	**85/180**
7.0	200	3392	1.2	**85/180**
5.0	280	4171	0.9	**85/180**

N.B.
I valori contrassegnati dal simbolo (*) indicano la coppia massima applicabile al riduttore con FS=1. In questi casi la potenza del motore applicato non dovrà mai essere utilizzata integralmente onde evitare danneggiamenti al riduttore.

NOTE.
Values marked with (*) show the maximum torque that can be applied to the gearbox with FS=1. In these cases, the power of the motor applied shall never be used completely in order to avoid damages to the gearbox.

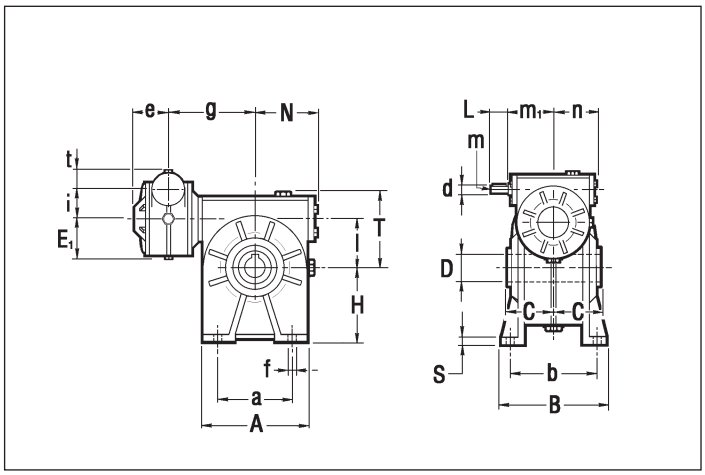
HINWEIS.
Die mit (*) gekennzeichneten Werte zeigen das für ein Getriebe bei FS=1 mögliche Maximaldrehmoment an. Um Schäden am Getriebe zu vermeiden, darf in diesen Fällen der Motor nicht mit voller Leistung gefahren werden.

3.9 Dimensioni

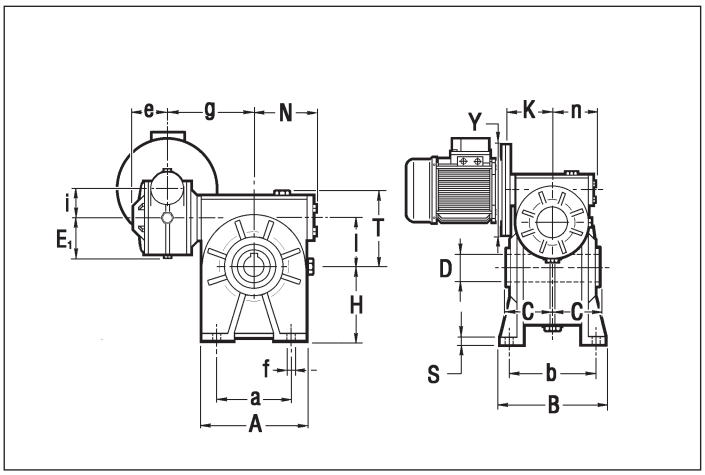
3.9 Dimensions

3.9 Abmessungen

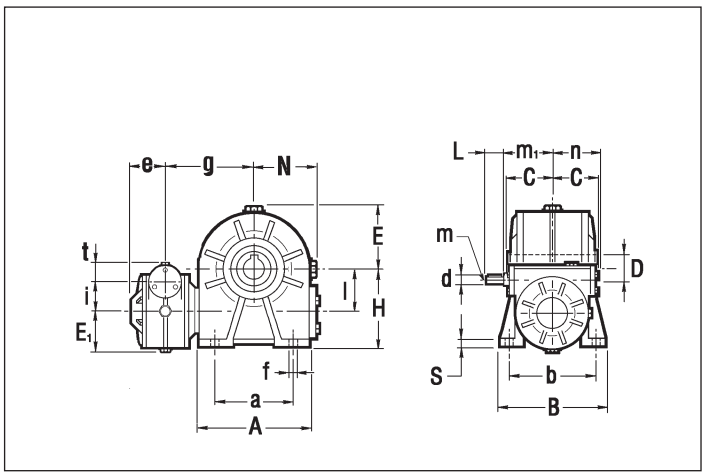
CRI S



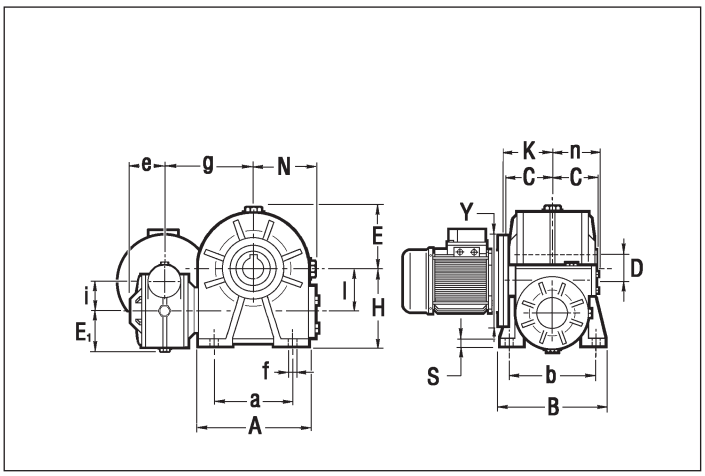
CRMI S



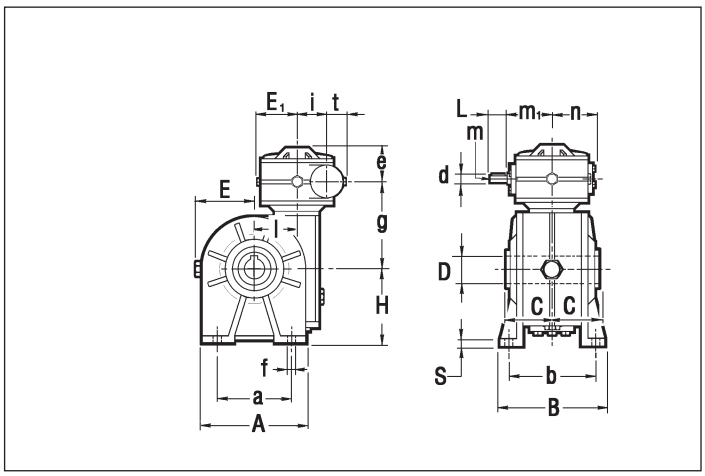
CRI I



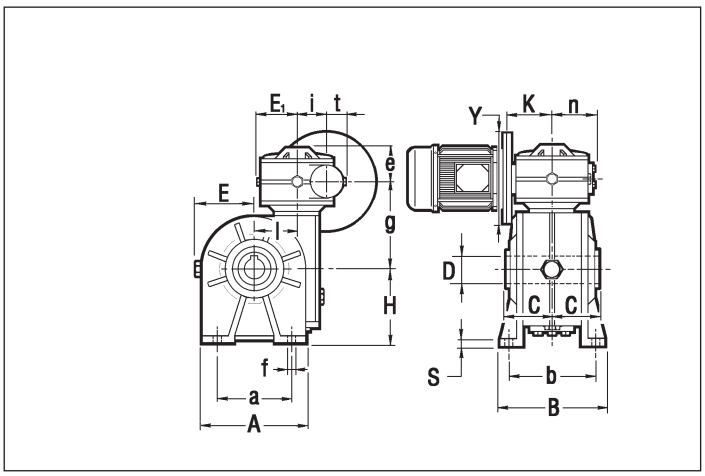
CRMI I



CRI D



CRMI D



3.9 Dimensioni — *3.9 Dimensions* — 3.9 Abmessungen

CRI CRMI	A	a	B	b	C	D H7	d j6	E	E_1	e	f	g	H	I	i	L	m	m_1	N	n	S	T	t
28/28	67	52	78	66 $^{+2}_{-6}$	30	14	9	40	40	35	5.5	90	52	28	28	20	M4	47	44.5	44.5*	6	49	21
28/40	100	70	102	84 ±3	41	19(18)	9	59	40	35	7	104.5	71	40	28	20	M4	47	61.5	44.5*	8	66	21
40/40 °	100	70	102	84 ±3	41	19(18)	11	59	59	49	7	145.5	71	40	40	22	M5	64	61.5	61.5	8	66	26
28/50	120	85	119	99 ±3	49	24(25)	9	69	40	35	9	115	85	50	28	20	M4	43	72.5	44.5*	10	80	21
40/50	120	85	119	99 ±3	49	24(25)	11	69	59	49	9	106	85	50	40	22	M5	64	72.5	61.5	10	80	26
28/63	140	95	136	111	60	25	9	81	40	35	11	135.5	100	63	28	20	M4	47	84	44.5*	11	99	20
40/63	140	95	136	111 $^{+2}_{-8}$	60	25	11	81	59	49	11	146	100	63	40	22	M5	64	84	61.5	11	99	26
28/70	158	120	140	116 $^{+2}_{-8}$	60	28	9	87	40	35	11	140.5	115	70	28	20	M4	47	92	44.5*	13	108	21
40/70	158	120	140	116 $^{+2}_{-8}$	60	28	11	87	59	49	11	151	115	70	40	22	M5	64	92	61.5	13	108	26
50/70	158	120	140	116 $^{+2}_{-8}$	60	28	14	87	69	59	11	149	115	70	50	30	M6	74	92	72.5	13	108	30
63/70 °	158	120	140	116	60	28	18	87	81	69	11	182	115	70	63	45	M6	96	92	81	13	108	36
40/85 °	193	140	168	140	61	32(35)	11	105	59	49	13	198	135	85	40	22	M5	64	111	61.5	15	135	26
50/85	193	140	168	140	61	32(35)	14	105	69	59	13	173	135	85	50	30	M6	74	111	72.5	15	135	30
63/85 °	193	140	168	140	61	32(35)	18	105	81	69	13	198	135	85	63	45	M6	96	111	81	15	135	36
70/85	193	140	168	140	61	32(35)	19	105	87	68	13	165	135	85	70	40	M8	97	111	92	15	135	43
50/110 °	250	200	200	162	77.5	42	14	135	69	59	14	236.5	172	110	50	30	M6	74	142	72.5	17	170	30
63/110 °	250	200	200	162	77.5	42	18	135	81	69	14	227	172	110	63	45	M6	96	142	81	17	170	36
70/110	250	200	200	162	77.5	42	19	135	87	68	14	191	172	110	70	40	M8	97	142	92	17	170	38
85/110	250	200	200	162	77.5	42	24	135	105	71	14	195	172	110	85	50	M8	115	142	111	17	170	50
63/130 °	286	235	230	190	90	48	18	150	81	69	15	265	200	130	63	45	M6	96	159	81	19	200	36
70/130	286	235	230	190	90	48	19	150	87	68	15	214	200	130	70	40	M8	97	159	92	19	200	38
85/130	286	235	230	190	90	48	24	150	105	71	15	213	200	130	85	50	M8	115	159	111	19	200	50
85/150	336	260	250	210	105	55	24	178	105	71	19	240	230	150	85	50	M8	115	189	111	20	224	50
110/150	336	260	250	210	105	55	28	178	135	92	19	254	230	150	110	60	M8	146	189	142	20	224	60
85/180	400	310	320	260	120	65	24	210	105	71	22	283	265	180	85	50	M8	115	232	111	22	265	50
110/180	400	310	320	260	120	65	28	210	135	92	22	296	265	180	110	60	M8	146	232	142	22	265	60
130/180	400	310	320	260	120	65	38	210	150	102	22	306	265	180	130	80	M10	166	232	159	22	265	70

* CRI 28/... - CRMI 28/... IEC56: n=44.5, CRMI 28/... IEC 63: n=46

	CRMI															
	28/28 28/40 28/50 28/63 28/70		**40/40 ° 40/50 40/63 40/70 40/85 °**		**50/70 50/85 50/110 °**		**63/70 ° 63/85 ° 63/110 ° 63/130 °**		**70/85 70/110 70/130**		**85/110 85/130 85/150 85/180**		**110/150 110/180**		**130/180**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	49	120	63.5	140	77	160	95	160	100	160	116	200	145	200	163
	—	—	140	63.5	160	77	200	95	200	100	200	116	250	145	250	163
	—	—	160	71	200	81	—	—	—	—	250	118	—	—	300	163
B14	80•	49	80•	63.5	90•	77	105•	95	105	100	120	116	160	145	—	—
	90	51	90	63.5	105	77	120	95	120	100	140	116	—	—	—	—
	—	—	105	71	120	81	140	95	140	100	160	118	—	—	—	—
	—	—	—	—	—	—	—	—	160	100	—	—	—	—	—	—

(•) Vedi nota in fondo a tabella 3.4. — *(•) See note at the bottom of table 3.4.* — (•) Siehe Bemerkungen Tabelle 3.4 unten.

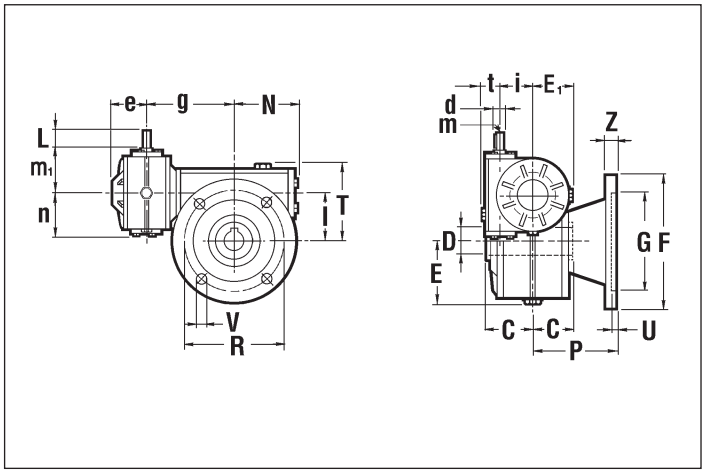
(°) Riduttori con accoppiamento eseguito con kit di montaggio, vedi par. 3.11.
N.B. Le dimensioni delle linguette sono riportate di seguito.

(°) Gearboxes assembled with combination kit, see also chapter 3.11.
NOTE. Sizes of feathers are shown below.

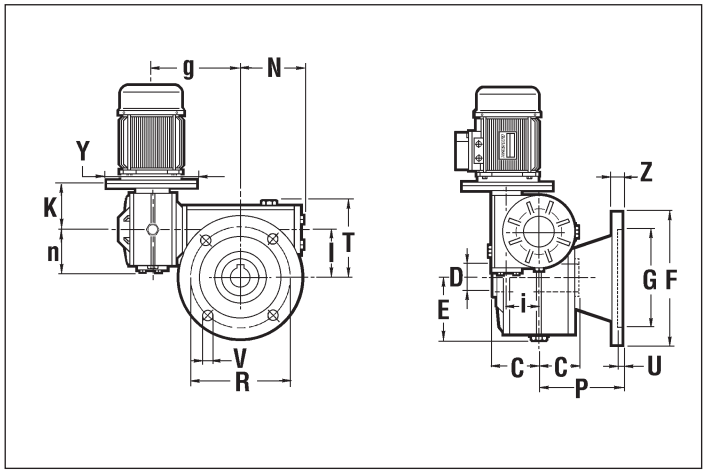
(°) Getriebe angebaut mit kombinationskit, siehe auch Abschnitt 3.11.
HINWEIS. Die Abmessungen der Federn sind auf angegeben.

3.9 Dimensioni | *3.9 Dimensions* | 3.9 Abmessungen

CRI A(FL)



CRMI A(FL)

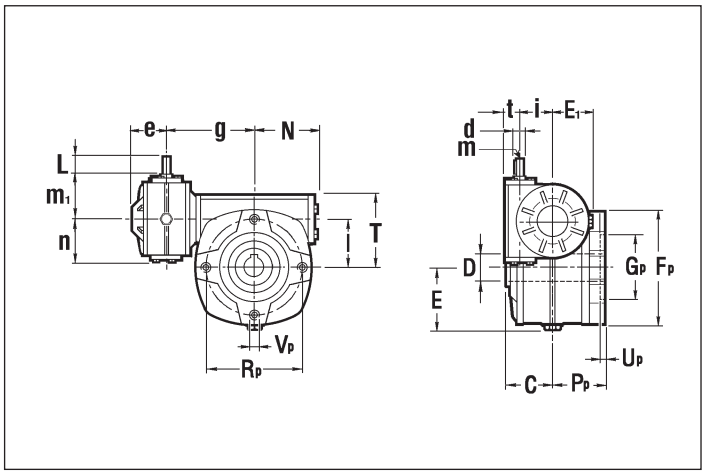


N.B.
Nelle grandezze .../40, .../50, .../63, .../70 la versione A(FL) viene ottenuta applicando una flangia modulare sulla flangia pendolare della versione A(PP).

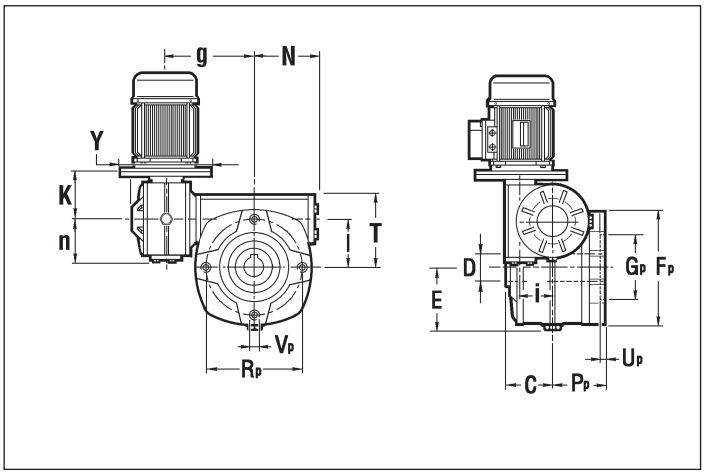
NOTE.
In sizes .../40, .../50, .../63, .../70 the FL version is obtained by applying a modular flange onto the shaft-mounted flange of the A(PP) version.

HINWEIS.
Bei den Größen .../40, .../50, .../63, .../70 erhält man die FL-Version, indem ein Modulflansch an den Flansch mit Drehmomentstütze der A(PP)-Version befestigt wird.

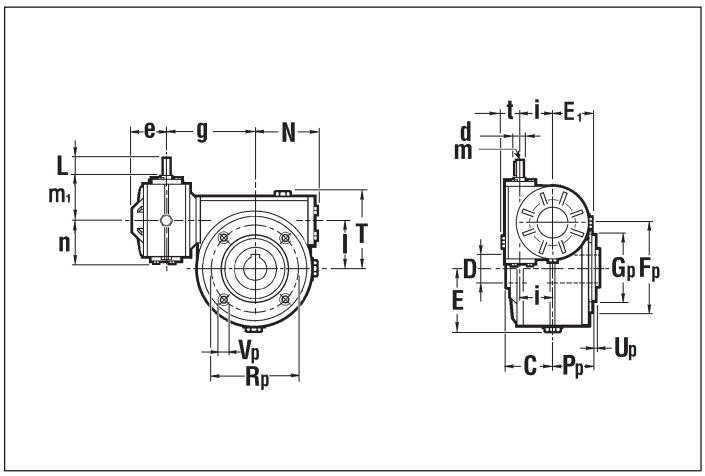
CRI .../28A(P)



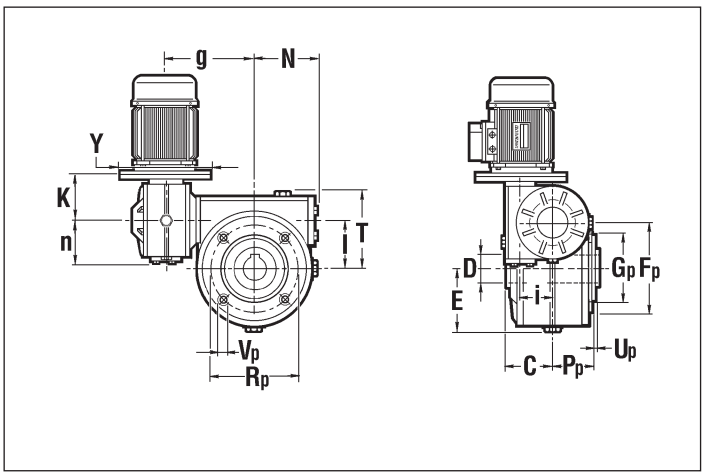
CRMI .../28A(P)



CRI .../40A(PP) - .../70A(PP)
CRI .../85A(P) - .../180A(P)



CRMI .../40A(PP) - .../70A(PP)
CRMI .../85A(P) - .../180A(P)



3.9 Dimensioni — *3.9 Dimensions* — 3.9 Abmessungen

CRI CRMI	C	D H7	d j6	E	E_1	e	g	l	i	L	m	m_1	N	n	T	t
28/28	30	14	9	40	40	35	90	28	28	20	M4	47	44.5	44.5*	49	21
28/40	41	19 (18)	9	59	40	35	104.5	40	28	20	M4	47	61.5	44.5*	66	21
40/40 °	41	19 (18)	11	59	59	49	145.5	40	40	22	M5	64	61.5	61.5	66	26
28/50	49	24 (25)	9	69	40	35	115	50	28	20	M4	43	72.5	44.5*	80	21
40/50	49	24 (25)	11	69	59	49	106	50	40	22	M5	64	72.5	61.5	80	26
28/63	60	25	9	81	40	35	135.5	63	28	20	M4	47	84	44.5*	99	21
40/63	60	25	11	81	59	49	145.5	63	40	22	M5	64	84	61.5	99	26
28/70	60	28	9	87	40	35	140.5	70	28	20	M4	47	92	44.5*	108	21
40/70	60	28	11	87	59	49	151	70	40	22	M5	64	92	61.5	108	26
50/70	60	28	14	87	69	59	149	70	50	30	M6	74	92	72.5	108	30
63/70 °	60	28	18	87	81	69	182	70	63	45	M6	96	92	81	108	36
40/85 °	61	32 (35)	11	105	59	49	198	85	40	22	M5	64	111	61.5	135	26
50/85	61	32 (35)	14	105	69	59	173	85	50	30	M6	74	111	72.5	135	30
63/85 °	61	32 (35)	18	105	81	69	198	85	63	45	M6	96	111	81	135	36
70/85	61	32 (35)	19	105	87	68	165	85	70	40	M8	97	111	92	135	43
50/110 °	77.5	42	14	135	69	59	236.5	110	50	30	M6	74	142	72.5	170	30
63/110 °	77.5	42	18	135	81	69	227	110	63	45	M6	96	142	81	170	36
70/110	77.5	42	19	135	87	68	191	110	70	40	M8	97	142	92	170	38
85/110	77.5	42	24	135	105	71	195	110	85	50	M8	115	142	111	170	50
63/130 °	90	48	18	150	81	69	265	130	63	45	M6	96	159	81	200	36
70/130	90	48	19	150	87	68	214	130	70	40	M8	97	159	92	200	38
85/130	90	48	24	150	105	71	213	130	85	50	M8	115	159	111	200	50
85/150	105	55	24	178	105	71	240	150	85	50	M8	115	189	111	224	50
110/150	105	55	28	178	135	92	254	150	110	60	M8	146	189	142	224	60
85/180	120	65	24	210	105	71	283	180	85	50	M8	115	232	111	265	50
110/180	120	65	28	210	135	92	296	180	110	60	M8	146	232	142	265	60
130/180	120	65	38	210	150	102	306	180	130	80	M10	166	232	159	265	70

* CRI 28/... - CRMI 28/... IEC56: n=44.5, CRMI 28/... IEC 63: n=46

CRI CRMI	F	G H8	P	R	U	V	Z	Fp	Gp h8	Pp	Rp	Up	Vp
28/28	70	40	49	56	5	6	5	67	42(H8)	36	56	7	M6
28/40 **40/40** °	140	95	82	115	5	8.5	9	95	60	38	83	2	M6
28/50 **40/50**	160	110	91.5	130	5	10	10	105	70	49	85	2.5	M8
28/63 **40/63**	180	115	116	150	5	11	11	105	70	57.5	85	3.5	M8
28/70 **40/70** **50/70** **63/70** °	200	130	111	165	5	13	11	120	80	57	100	4	M8
40/85 ° **50/85** **63/85** ° **70/85**	200	130	100	165 $^{0}_{+1}$	5	13	12	144	110	56.5	130	3.5	M10
50/110 ° **63/110** ° **70/110** **85/110**	250	180	150	215	5	15	16	200	130	74	165	3	M12
63/130 ° **70/130** **85/130**	300	230	150	265	5	15	18	242	180	87	215	5	M12
85/150 **110/150**	350	250	160	300	6	19	18	250	180	102	215	5	M14
85/180 **110/180** **130/180**	400	300	180	350	6.5	22	22	300	230	117	265	5	M16

	CRMI															
	28/28 28/40 28/50 28/63 28/70		**40/40 ° 40/50 40/63 40/70 40/85 °**		**50/70 50/85 50/110 °**		**63/70 ° 63/85 ° 63/110 ° 63/130 °**		**70/85 70/110 70/130**		**85/110 85/130 85/150 85/180**		**110/150 110/180**		**130/180**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	49	120	63.5	140	77	160	95	160	100	160	116	200	145	200	163
	—	—	140	63.5	160	77	200	95	200	100	200	116	250	145	250	163
	—	—	160	71	200	81	—	—	—	—	250	118	—	—	300	163
B14	80 •	49	80 •	63.5	90 •	77	105 •	95	105	100	120	116	160	145	—	—
	90	51	90	63.5	105	77	120	95	120	100	140	116	—	—	—	—
	—	—	105	71	120	81	140	95	140	100	160	118	—	—	—	—
	—	—	—	—	—	—	—	—	160	100	—	—	—	—	—	—

(•) Vedi nota in fondo a tabella 3.4.

(°) Riduttori con accoppiamento eseguito con kit di montaggio, vedi par. 3.11.
N.B. Le dimensioni delle linguette sono riportate di seguito.

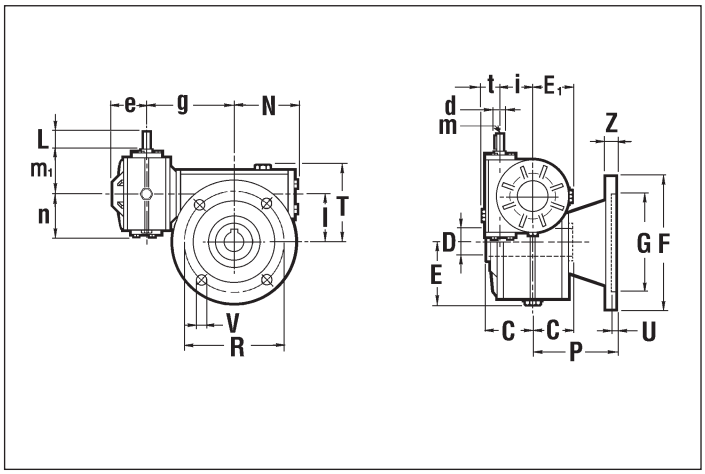
(•) See note at the bottom of table 3.4.

(°) Gearboxes assembled with combination kit, see also chapter 3.11.
NOTE. Sizes of feathers are shown below.

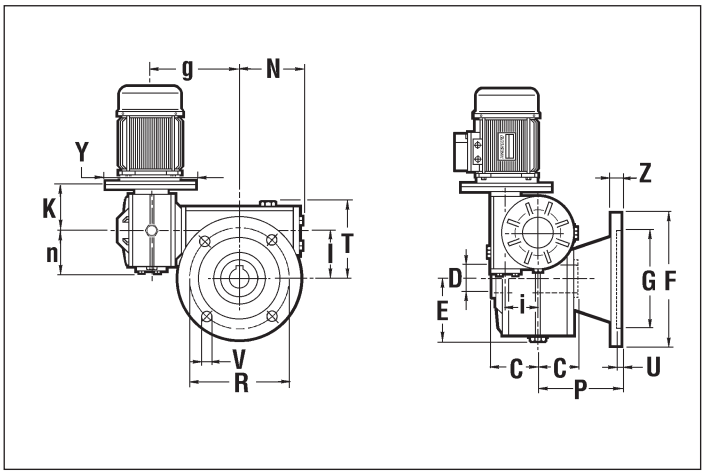
(•) Siehe Bemerkungen Tabelle 3.4 unten.

(°) Getriebe angebaut mit kombinationskit, siehe auch Abschnitt 3.11.
HINWEIS. Die Abmessungen der Federn sind angegeben.

CRI A(F1 - F2 - F3)



CRMI A(F1 - F2 - F3)



	CRI - CRMI																		
	28/28	**28/40 40/40 °**		**28/50 40/50**			**28/63 40/63**			**28/70 40/70 50/70 63/70 °**			**40/85 ° 50/85 63/85 ° 70/85**			**50/110 ° 63/110 ° 70/110 85/110**			**85/180 110/180 130/180**
	F1	**F1**	**F2**	**F1**	**F2**	**F3**	**F1#**	**F2#**	**F3#**	**F1#**	**F2#**	**F3**	**F1**	**F2**	**F3**	**F1**	**F2**	**F3**	**F2**
F	80	106	120	125	125	140	175	200	160	175	175	160	200	210	160	200	270	270	400
G (H8)	50	60	80	70	70	95	115	130	110	115	115	110	130	152	110	130	170	170	300
P	53	69	62	93	73	81	86	102	82	116	85	101	141	120	91	115	132	178	150
R	$63^{\pm 5}$	87	100	$90^{\ 0}_{+9}$	100	115	150	165	130	150	150	130	165	176	130	165	230	230	350
U	4	5	5	5	4	4	5	5	5	5	5	6	6	5	5	5	10	10	6.5
V	6	8.5	9	10.5	9	9	11	13	10	11	11	11	13	13	11.5	13	13.5	13.5	22
Z	7	9	9	10	9	9	11	11	11	10	10	11	12	14	10	12	18	18	22

Le versioni F1, F2, F3 contrassegnate con il simbolo (#) sono ottenute applicando una flangia modulare sulla flangia pendolare della versione PP.

F1, F2 and F3 versions that are marked with (#) are obtained by applying a modular flange onto the shaft-mounted flange of the PP version.

Die mit (#) gekennzeichneten Versionen F1, F2 und F3 erhält man, indem ein Modulflansch an den Flansch mit Drehmomentstütze der PP-Version befestigt wird.

CRI CRMI	C	D H7	d j6	E	E_1	e	g	l	i	L	m	m_1	N	n	T	t
28/28	30	14	9	40	40	35	90	28	28	20	M4	47	44.5	44.5*	49	21
28/40	41	19 (18)	9	59	40	35	104.5	40	28	20	M4	47	61.5	44.5*	66	21
40/40 °	41	19 (18)	11	59	59	49	145.5	40	40	22	M5	64	61.5	61.5	66	26
28/50	49	24 (25)	9	69	40	35	115	50	28	20	M4	43	72.5	44.5*	80	21
40/50	49	24 (25)	11	69	59	49	106	50	40	22	M5	64	72.5	61.5	80	26
28/63	60	25	9	81	40	35	135.5	63	28	20	M4	47	81	44.5*	99	21
40/63	60	25	11	81	59	49	146	63	40	22	M5	64	81	61.5	99	26
28/70	60	28	9	87	40	35	140.5	70	28	20	M4	47	92	44.5*	108	21
40/70	60	28	11	87	59	49	151	70	40	22	M5	64	92	61.5	108	26
50/70	60	28	14	87	69	59	149	70	50	30	M6	74	92	72.5	108	30
63/70 °	60	28	18	87	81	69	182	70	63	45	M6	96	92	81	108	36
40/85 °	61	32 (35)	11	105	59	49	198	85	40	22	M5	64	111	61.5	135	26
50/85	61	32 (35)	14	105	69	59	173	85	50	30	M6	74	111	72.5	135	30
63/85 °	61	32 (35)	18	105	81	69	198	85	63	45	M6	96	111	81	135	36
70/85	61	32 (35)	19	105	87	68	165	85	70	40	M8	97	111	92	135	43
50/110 °	77.5	42	14	135	69	59	236.5	110	50	30	M6	74	142	72.5	170	30
63/110 °	77.5	42	18	135	81	69	227	110	63	45	M6	96	142	81	170	36
70/110	77.5	42	19	135	87	68	191	110	70	40	M8	97	142	92	170	38
85/110	77.5	42	24	135	105	71	195	110	85	50	M8	115	142	111	170	50
85/180	120	65	24	210	105	71	283	180	85	50	M8	115	232	111	265	50
110/180	120	65	28	210	135	92	296	180	110	60	M8	146	232	142	265	60
130/180	120	65	38	210	150	102	306	180	130	80	M10	166	232	159	265	70

* CRI 28/... - CRMI 28/... IEC56: n=44.5, CRMI 28/... IEC 63: n=46

(°) Riduttori con accoppiamento eseguito con kit di montaggio, vedi par.3.11.
N.B. Le dimensioni delle linguette sono riportate di seguito.

(°) Gearboxes assembled with combination kit, see also chapter 3.11.
NOTE. Sizes of feathers are shown below.

(°) Getriebe angebaut mit kombinationskit, siehe auch Abschnitt 3.11.
HINWEIS. Die Abmessungen der Federn sind auf angegeben.

3.9 Dimensioni

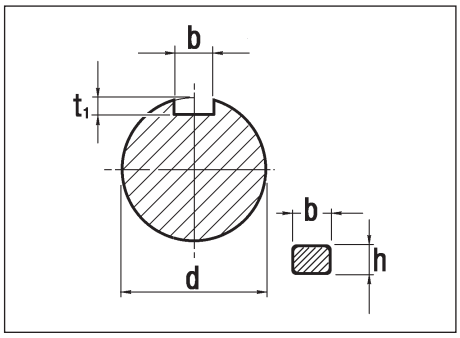
3.9 Dimensions

3.9 Abmessungen

Linguette

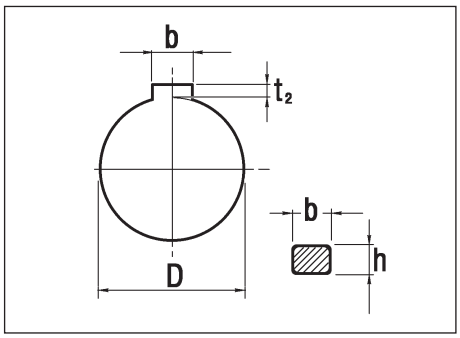
Keys

Federn



Albero entrata
Input shaft
Antriebswelle

d	b x h	t_1	
9	3 x 3	1.8	
11	4 x 4	2.5	
14	5 x 5	3.0	+ 0.1 0
18	6 x 6	3.5	
19	6 x 6	3.5	
24	8 x 7	4.0	
28	8 x 7	4.0	
38	10 x 8	5.0	+ 0.2 0
42	12 x 8	5.0	
48	14 x 9	5.5	



Albero uscita
Output shaft
Abtriebswelle

D	b x h	t_2	
14	5 x 5	2.3	
18	6 x 6	2.8	+ 0.1 0
19	6 x 6	2.8	
24	8 x 7	3.3	
25	8 x 7	3.3	
28	8 x 7	3.3	
32	10 x 8	3.3	
35	10 x 8	3.3	+ 0.2 0
42	12 x 8	3.3	
48	14 x 9	3.8	
55	16 x 10	4.3	
65	18 x 11	4.4	

Esecuzione con vite bisporgente

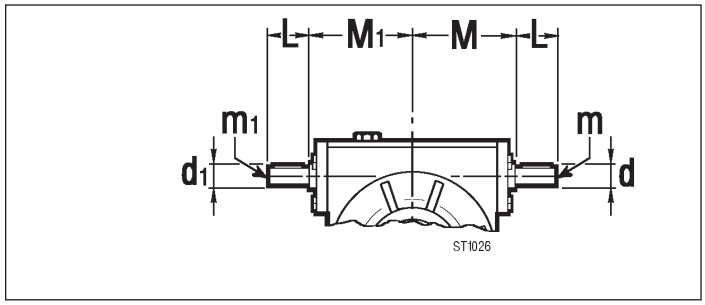
Nei riduttori combinati è necessario specificare se questa configurazione è riferita al primo riduttore (in entrata) o al secondo riduttore (in uscita).

Double extended input shaft

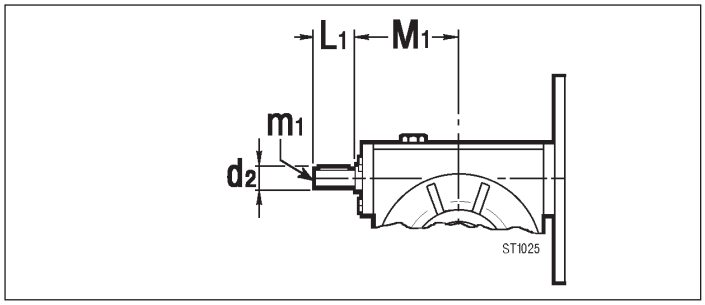
In combined gearboxes, it is necessary to specify if such configuration refers to the first gearbox (input gearbox) or to the second one (output gearbox).

Ausführung mit Wellenzapfen auf beiden Seiten

Bei den Kombinationsgetrieben muß angegeben werden, ob sich die Konfiguration auf das erste Getriebe (Eingang) oder auf das zweite (Ausgang) bezieht.



Configurazione realizzabile solo sul primo riduttore (CRI).
This configuration can only be obtained on the first gearbox (CRI).
Nur am ersten Getriebe (CRI) realisierbare Konfiguration.



Configurazione realizzabile sul primo riduttore (CRMI) e sul secondo riduttore (CRI e CRMI).
This configuration can be obtained both on the first gearbox (CRMI) and on the second gearbox (CRI and CRMI).

Grandezza *Size* Größe	d	d_1	d_2	L	L_1	m	m_1	M	M_1
28	9	9	9	20	20	M4	—	47	47
40	11	11	11	22	22	M5	M5	64	64•
50	14	14	14	30	30	M6	M6	74	74
63	18	18	18	45	45	M6	M6	96	85
70	19	19	19	40	40	M8	M8	97	97
85	24	24	24	50	50	M8	M8	115	115
110	28	28	28	60	60	M8	M8	146	146
130	38	38	38	80	80	M10	M10	166	166
150	42	42	42	100	100	M12	M12	195	195
180	48	48	48	110	110	M14	M14	235	235

(•) RMI 40/... IEC71: M_1 =67

3.10 Gioco ridotto

I riduttori vite senza fine combinati sono anche disponibili con gioco ridotto/registrabile. Per informazioni sulle quantità e prezzi contattare il nostro uff. commerciale.

3.10 Low backlash

The combined worm gearboxes are also available with low/adjustable backlash. For informations of quantities and prices please contact our sales department.

3.10 Spielarme Getriebe

Die kombinierten Schneckengetriebe sind auch spielarm bzw. mit einstellbarem Spiel erhältlich. Für informationen bzl. Abnahmemenge und Preis wenden Sie sich bitte an unseren Vertrieb.

3.11 Accoppiamenti

E' inoltre disponibile un kit che permette di combinare modularmente i riduttori, utilizzando un riduttore in entrata in versione flangiata e il riduttore in uscita predisposto con flangia attacco motore IEC.
La tabella seguente indica le possibili combinazioni.

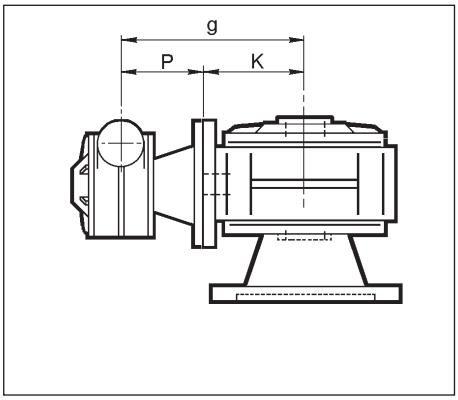
3.11 Coupling

To make you more flexible it is also possible to supply the gearboxes seperately and to combine them with an assembling kit. For this we deliver the input gearbox in the flanged version and the output gearbox with IEC motor connecting flange.
The possible combinations and the assembling kits are listed below.

3.11 Kupplung

Um bei der Kombination der Getrebe vorort flexibler zu sein, beiten wir einen Montage-Kit an, mit dessen Hilfe ein Standardgetriebe mit Abtriebsflansch in der ersten Übersetzungsstufe und ein Standardgetriebe mit IEC-Eingangsflansch in der zweiten Übersetzungsstufe kombiniert werden können.
Die Kombinationsmöglichkeiten sowie die zugehörigen Montage-Kits sind in der folgenden Tabelle aufgelistet.

Nei riduttori e motovariatori combinati 28/28 e 28/40 (accoppiati con kit di montaggio) l'asse della vite del 1° riduttore è sempre inclinata di 45° rispetto all'asse orizzontale o verticale. Specificare la posizione in fase di ordine.
In the combined worm gearboxes and motor-variators 28/28 and 28/40 (coupled with an assembly kit) the wormshaft axis of the first gearbox has always a tilt of 45° compared to the horizontal or vertical axis.
The position has to be specified in the order.
Wird das Kombinationsgetriebe 28/28 und 28/40 mit Hilfe des Montagekits gebildet, so befindet sich die Achse des ersten Getriebes immer in 45º bezüglich zur Horizontalen bzw. Vertikalen. Bei Auftragserteilung bitte die Montageposition angeben.



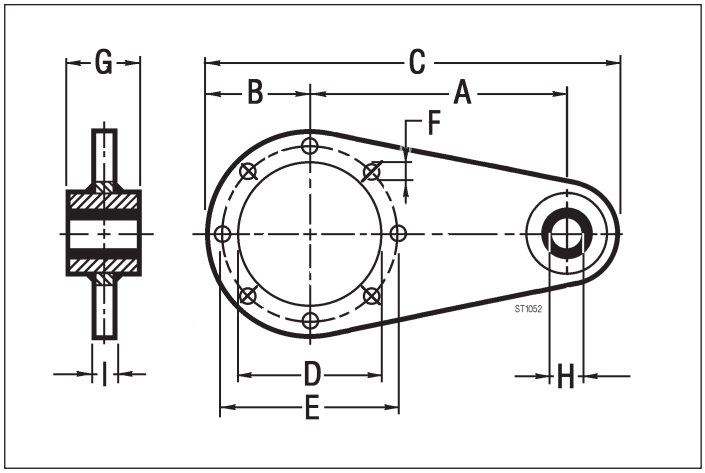
CRI CRMI	P	K	g	Riduttore in entrata *Input gearbox* Erstes Getriebe	Kit di montaggio *Assembling kit* Montage-kit	Riduttore uscita *Output gearbox* Zweites Getriebe
28/28	53	49	102	**28 F1**	KIT 28/28	**28 IEC56 B14**
40/40	82	63.5	145.5	**40 FL**	KIT 40/40	**40 IEC63 B5**
40/50	82	77	159	**40 FL**	KIT 40/50	**50 IEC140/14**
50/50	91.5	77	168.5	**50 FL**	KIT 50/50	**50 IEC71 B5**
40/63	82	95	177	**40 FL**	KIT 40/63	**63 IEC140/19**
50/63	91.5	95	186.5	**50 FL**	KIT 50/63	**63 IEC160/19**
63/63	82	95	177	**63 F3**	KIT 63/63	**63 IEC160/19**
40/70	82	100	182	**40 FL**	KIT 40/70	**70 IEC140/19**
50/70	91.5	100	191.5	**50 FL**	KIT 50/70	**70 IEC160/19**
63/70	82	100	182	**63 F3**	KIT 63/70	**70 IEC160/19**
70/70	111	100	211	**70 FL**	KIT 70/70	**70 IEC80 B5**
40/85	82	116	198	**40 FL**	KIT 40/85	**85 IEC90 B14**
50/85	91.5	116	207.5	**50 FL**	KIT 50/85	**85 IEC160/24**
63/85	82	116	198	**63 F3**	KIT 63/85	**85 IEC160/24**
70/85	111	116	227	**70 FL**	KIT 70/85	**85 IEC90 B5**
85/85	100	116	216	**85 FL**	KIT 85/85	**85 IEC90 B5**
50/110	91.5	145	236.5	**50 FL**	KIT 50/110	**110 IEC100 B14**
63/110	82	145	227	**63 F3**	KIT 63/110	**110 IEC100 B14**
70/110	111	145	256	**70 FL**	KIT 70/110	**110 IEC200/28**
85/110	100	145	245	**85 FL**	KIT 85/110	**110 IEC200/28**
63/130	102	163	265	**63 F2**	KIT 63/130	**130 IEC200/28**

3.12 Accessori
Braccio di reazione

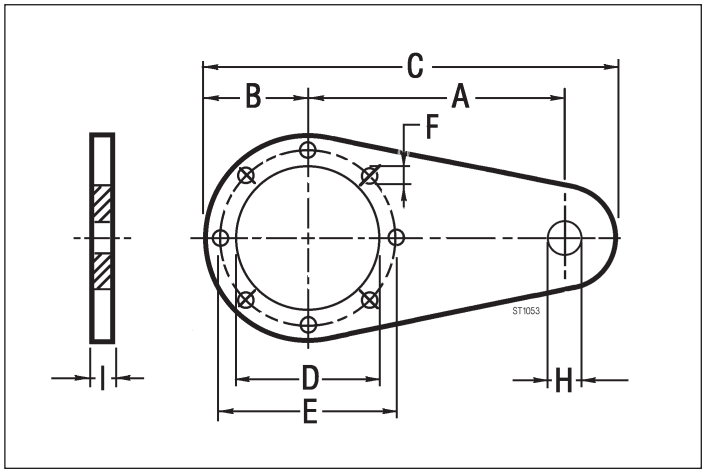
3.12 Accessories
Torque arm

3.12 Zubehör
Drehmomentstütze

Con boccola VKL
With VKL bushing
Mit VKL-Buchse



Standard



	CRI - CRMI									
	28/28	**28/40 40/40**	**28/50 40/50**	**28/63 40/63**	**28/70 40/70 50/70 63/70**	**40/85 50/85 63/85 70/85**	**50/110 63/110 70/110 85/110**	**63/130 70/130 85/130**	**85/150 110/150**	**85/180 110/180 130/180**
A	70	90	100	150	150	200	250	300	350	400
B	34.5	50	60	53	60	75	100	120	125	150
C	119.5	165	185	230	240	313	388	465	525	610
D	42.15	60	70	70	80	110	130	180	180	230
E	56	83	85	85	100	130	165	215	215	265
F	6.5	7	9	9	9	11	13	13	15	17
G	—	15	15	20	20	25	25	30	30	35
H	9	10	10	10	10	20	20	25	25	35
I	4	4	4	6	6	6	6	6	6	10

3.12 Accessori
Alberi lenti

Tutti i riduttori a vite senza fine sono forniti con albero lento cavo. A richiesta, possono essere forniti alberi lenti come indicato nei disegni dimensionali.
Le dimensioni delle linguette sono conformi alle norme UNI 6604-69 (vedi par. 2.11).

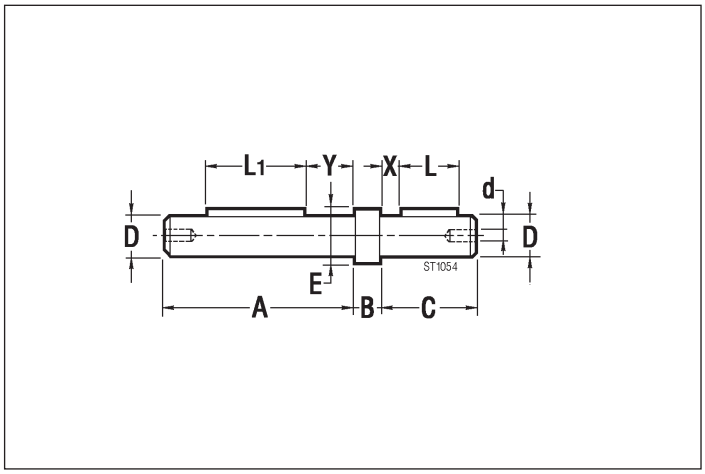
3.12 Accessories
Output shafts

All worm gearboxes are supplied with hollow output shaft. Output shafts as shown in the size drawings can be supplied upon request.
Sizes of feathers comply with standards UNI 6604-69 (see chapter 2.11).

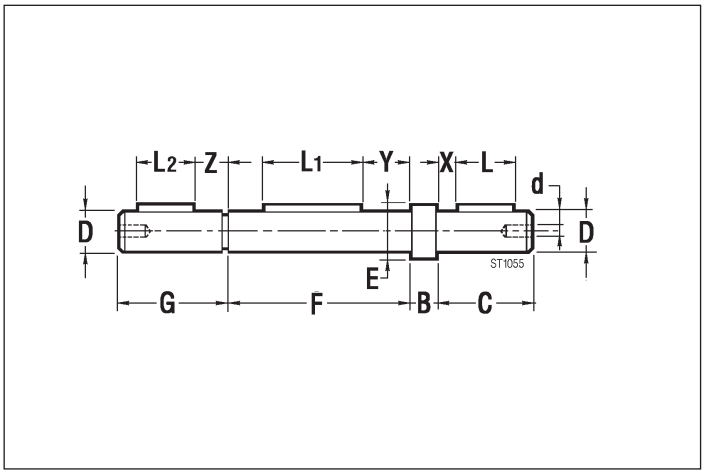
3.12 Zubehör
Abtriebswellen

Alle Schneckengetriebe werden mit hohler Abtriebswelle geliefert. Auf Anfrage können Abtriebswellen gemäß den Maßzeichnungen geliefert werden.
Die Abmessungen der Federn entsprechen den Normen UNI 6604-69 (siehe Kapitel 2.11).

Albero lento
Single output shaft
Einseitige Abtriebswelle



Albero lento bisporgente
Double output shaft
Beidseitige Abtriebswelle



	CRI - CRMI									
	28/28	**28/40 40/40**	**28/50 40/50**	**28/63 40/63**	**28/70 40/70 50/70 63/70**	**40/85 50/85 63/85 70/85**	**50/110 63/110 70/110 85/110**	**63/130 70/130 85/130**	**85/150 110/150**	**85/180 110/180 130/180**
A	58	80	95	117	117	119	153	177	207	239
B	1.5	10	10	10	10	10	10	20	20	20
C	29.5	40	45	60	60	71	100	110	110	130
D_{g6}	14	19	24	25	28	32	42	48	55	65
d	M6	M8	M8	M8	M8	M10	M10	M10	M12	M14
E	17	22	28	34	34	38	50	58	63	78
F	60	82	98	120	120	122	155	180	210	240
G	31	50	55	70	70	81	110	130	130	150
L	20	25	30	40	40	50	80	90	90	100
L1	20	40	50	60	60	70	80	90	100	120
L2	20	25	30	40	40	50	80	90	90	100
X	4.5	8	7.5	10	10	10	10	10	10	15
Y	20	21	24	30	30	26	37	45	55	60
Z	6	18	18	20	20	20	20	30	30	35

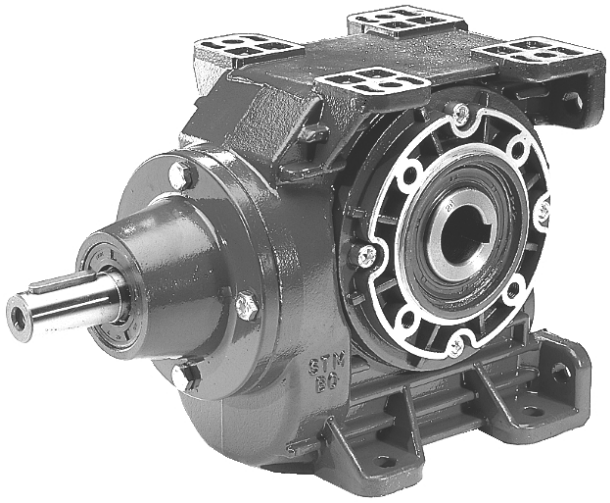
N.B.
Tutti gli alberi lenti vengono forniti in kit di montaggio completi di linguette, rondelle, viti (e anelli elastici seeger per l'albero bisporgente).

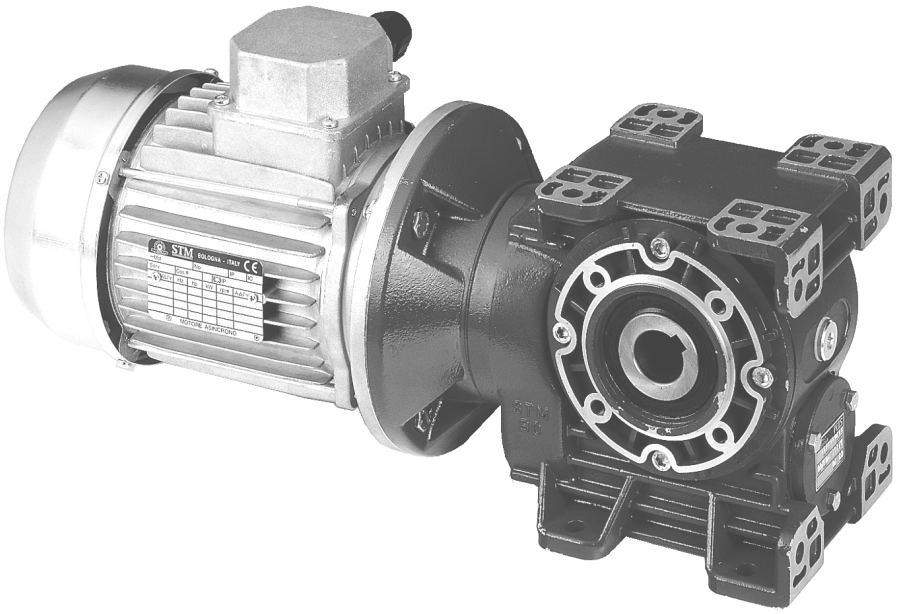
NOTE.
All output shafts are supplied in kit complete with feathers, washers and screws (as well as snap rings for the double extended shaft).

HINWEIS.
Alle Abtriebswellen werden als Bausätze komplett mit Federn, Scheiben, Schrauben (bei beidseitiger Abtriebswelle auch die Seegerringe) geliefert.

4.0 RIDUTTORI A VITE SENZA FINE CON PRECOPPIA
HELICAL WORM GEARBOXES
STIRNRAD-SCHNECKENGETRIEBE

CR
CB





4.1 Caratteristiche tecniche

I nostri riduttori a vite senza fine con precoppia vengono realizzati seguendo il criterio della massima affidabilità nel tempo, risultato ottenuto utilizzando ottimi materiali e moderni criteri di progetta zione.
Le carcasse sono realizzate in ghisa meccanica G20 UNI 5007 ad esclusione dei modelli di bassa potenza (40-50) per i quali è utilizzato l'alluminio SG-AlSi UNI 1706.
Le viti senza fine sono realizzate in acciaio e vengono cementate, temprate e rettificate. La rettifica sul filetto, nei rapporti di riduzione per i quali il valore del modulo lo consente, viene eseguita con profilo ZI migliorando così i contatti tra le superfici dentate e, conseguentemente, il rendimento e la silenziosità di funzionamento.
La corona ha il mozzo in ghisa G20 sul quale viene riportata una fusione in bronzo GCuSn12 UNI7013.
Sono utilizzati cuscinetti a rulli conici o radiali a sfere di qualità per garantire una lunga durata.
Il programma di fabbricazione prevede anche l'applicazione di un limitatore di coppia con allarme di arresto e l'assemblaggio con variatore.

4.1 Technical characteristics

Our gearboxes are manufactured with high quality material and modern design in order to guarantee the maximum reliability and duration.
Housings are made out of engineering cast iron G20 UNI 5007 excluding the smaller sized models (40-50) for which aluminium SG-AlSi UNI 1706 is utilized.
Wormshafts are made of steel and are casehardened, hardened and ground.
The thread grinding in the gear ratios that the module value permits is carried out with ZI-Profile. This improves the contact between the toothed surfaces and therefore performance and reduces operating noise.
The wormwheel has a G20 cast iron hub onto which a casting in GCsSn12 UNI7013 bronze is fitted.
To guarantee a long life, taper roller bearing or radial ball bearings are used.
Our range also provides possible application of torque limiters equipped with stop devices and assembly on to variators.

4.1 Technische Eigenschaften

Unsere Untersetzungsgetriebe werden unter Verwendung von besten Materialien und mit modernsten Produktionsmethoden hergestellt, um eine maximale Zuverlässigkeit sowie eine lange Lebensdauer zu garantieren. Außer bei den Modellen mit niedriger Leistung (40-50), bei welchen Aluminium SG-AlSi UNI 1706 verwendet wird, werden alle Gehäuse aus Maschinenguß G20 UNI 5007 gefertigt.
Die Schneckenwellen sind aus einsatzgehärtetem, gehärtetem und geschliffenem Stahl.
Das Gewindeschleifen erfolgt in den vom Modulwert zulässigen Übersetzunsverhältnissen mit ZI-Profil, wodurch die Kontakte zwischen den verzahnten Oberflächen und damit Leistung und geräuscharmer Betrieb verbessert werden.
Das Schneckenrad hat eine Nabe aus Gußeisen G20, auf die ein Guß aus Bronze GcuSn12 UNI7013 aufgetragen wird. Um eine lange Lebensdauer zu gewährleisten, werden Kegelrollenlager oder Radialkugellager hoher Qualität verwendet. Die Getriebe können mit einer Rutschkupplung einem einstellbaren Drehmomentbegrenzer und mit einem Drehzahlregler ausgerüstet werden.

4.2 Designazione

4.2 Designation

4.2 Bezeichnung

	Versione *Version* Ausführung	Grandezza *Size* Größe	ir	IEC*	kW	N°Poli *Poles* Polig	
							Esempio / *Example* / Beispiel
CB				63 (B5)			**CB 40 1:82.7 PAM 63 (B5)**
CB	**—** **F** **/F** **P** **F1, F2, F3**	40 50 70 85 110	vedi tabelle *see tables* siehe Tabellen		0.13 0.18	2 4	63 (B5) 63 (B5) .... **CB 40 1:82.7 kW 0.18 4 63 (B5)**
CR							**CR 40 1:82.7**

*** Se non conforme alle specifiche dimensionali IEC precisare diametro foro entrata e flangia motore (es. 14/120)**

Altre specifiche:

- Versione flangiata con montaggio sinistro (opposto a catalogo)
- posizione della morsettiera del motore se diversa da quella standard (1)
- lubrificante (non per i tipi 40,50 già lubrificati a vita)
- elica della vite sinistra (esecuzione speciale)
- posizione di montaggio con indicazione tappi di livello e sfiato;se non specificato si considera standard la posizione B3
- albero lento bisporgente
- limitatore di coppia
- limitatore di coppia RDB

**** If not conform to IEC specifications please specify diameter of input bore and flange (i.e. :14/200)***

Further specification:

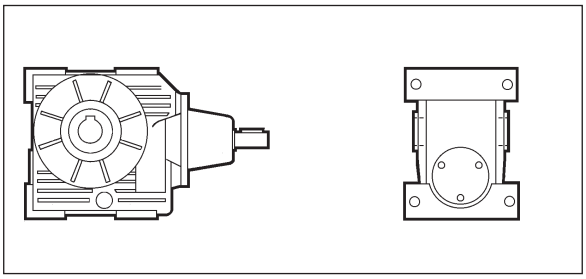
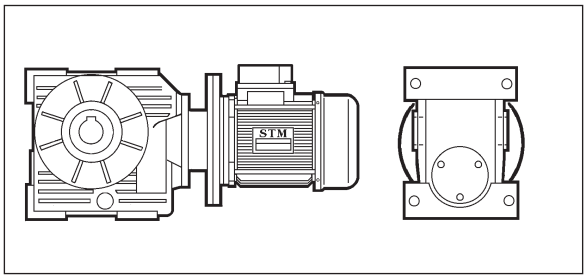
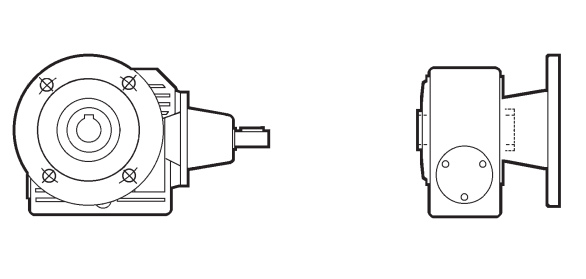
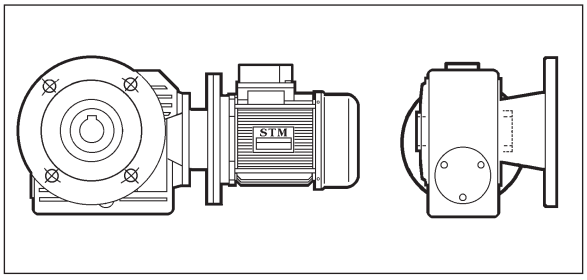
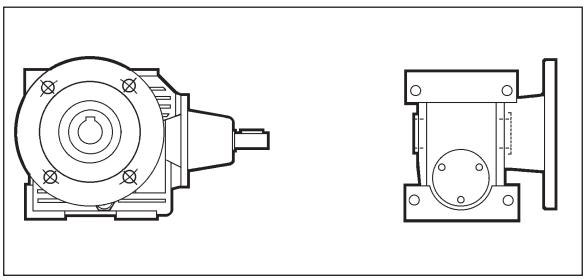
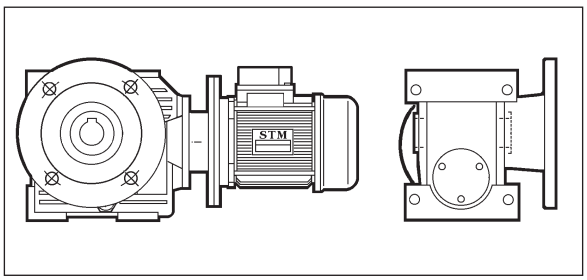
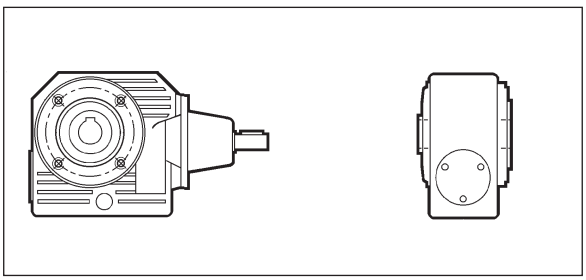
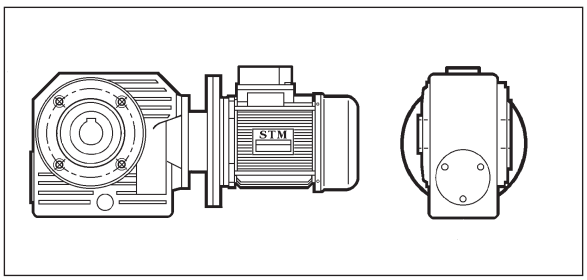
- *flanged version left mounting opposite to catalogue*
- *terminal board box position if different from standard (1)*
- *lubrication filling (except for size 40,50 lubricated for life)*
- *left helix (special version)*
- *mounting position. Indications must be given regarding level and breather plugs. If not specified position B3 is considered standard*
- *double output shaft*
- *torque limiter*
- *torque limiter RDB*

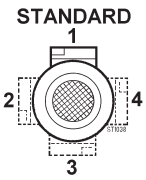
*** Falls nicht nach IEC, bitte Durchmesser der Eingangswellenbohrung und des Flansches angeben (z.B.: 14/200)**

Weitere Spezifikationen:

- Flanschausführung mit Montage links (nicht wie im Katalog)
- Stellung des Klemmenkastens des Motors, falls diese von der Standard-Ausführung abweicht (1)
- Schmiermittelfüllung (außer bei den wartungsfreien Typen 40,50)
- Linksgängige Schraubenlinie der Schnekke (Spezialausführung)
- Montagestellung mit Angabe der Ölpegel und Entlüfterstöpsel. Falls nichts an deres angegeben, gelten die Pos. B3 als Standard.
- Beidseitige Abtriebswelle
- Rutschkupplung
- Rutschkupplung RDB

4.3 Versioni — *4.3 Versions* — 4.3 Ausführungen

	CR	CB
—		
F		
/F		
P		



Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

4.4 Lubrificazione

Questi riduttori sono composti da un cinematismo misto costituito da una precoppia ad ingranaggi anteposta ad una coppia vite senza fine - corona. Si consiglia l'uso di oli a base sintetica. Vedere a tale proposito le indicazioni riportate nel capitolo 1, paragrafo 1.6. La viscosità consigliata è 320 cSt.

Se si prevedono basse velocità in ingresso è necessario aumentare la viscosità del lubrificante e/o aumentarne la quantità.
In tutte le grandezze i cuscinetti esterni dell'albero entrata vengono forniti di serie già schermati per garantirne la corretta lubrificazione anche nelle posizioni di montaggio più sfavorevoli come la V1.
Le quantità di lubrificante riportate nella Tab. 4.1 sono indicative. In fase di installazione immettere l'esatta quantità di lubrificante riferendosi alla spia di livello (dove prevista).
In fase di ordine specificare sempre la posizione di montaggio desiderata. Se omessa, il riduttore verrà fornito con i tappi predisposti per la posizione B3.

4.4 *Lubrication*

These gearboxes are made of a mixed kinematic motion which consists of a prestage gearbox located before a wormshaft / wormwheel unit. We suggest to use synthetic based oil. Take a look about it to the advice written on chapter 1, paragraph 1.6. Recommended ISO VG viscosity is 320 cSt.

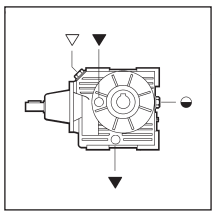
If low input speeds are expected, it is necessary to increase the lubricant viscosity or quantity.
Imput shaft outer bearings of all sizes are supplied already lubricated in order to guarantee the correct lubrication even with unfavorable mounting positions such as V1.
The lubricant quantities listed in table 4.1 are for reference only. During assembly, pour the exact lubricant quantity referring to the oil window.
When ordering, the desired mounting position must be always specified. Otherwise, the gearbox will be supplied with the plug suitable for position B3.

4.4 Schmierung

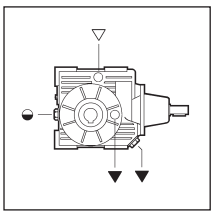
Bei dieser Getriebekombination ist dem Schneckengetriebe ein Stirnradsatz vorgelagert. Wir empfehlen den Einsatz von synthetischem Öl (siehe Kapitel 1.6). Die empfohlene ISO-Viskosität beträgt 320.

Sind niedrige Antriebsdrehzahlen vorgesehen, muß die Viskosität und/oder die Menge des Schmiermittels erhöht werden.
Damit auch bei ungünstigen Montagestellungen wie z. B. V1 eine korrekte Schmierung gewährleistet werden kann, sind bei allen Größen die Außenlager der Antriebswelle geschmiert und geschlossen.
Die in Tabelle 4.1 angegebenen Schmiermittelmengen sind Richtwerte. Bei der Montage anhand der Standanzeige die exakte Schmiermittelmenge einfüllen.
Bei der Bestellung bitte immer die gewünschte Montageposition angeben.
Bei fehlenden Angaben wird das Getriebe mit einer Schraubenanordnung für Position B3 geliefert.

4.5 Posizioni di montaggio

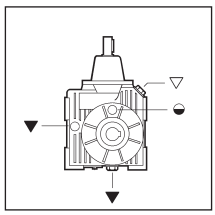


B3

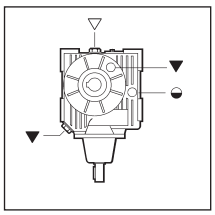


B8

4.5 Mounting positions

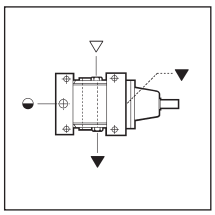


V1

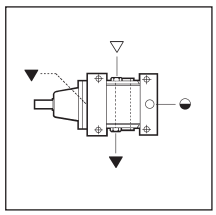


V3

4.5 Montagepositionen



V5



V6

Tab. 4.1

Quantità di lubrificante / *Lubricant Quantity* / Schmiermittelmenge (Kg)								
CR - CB	Posizioni di montaggio /*Mounting Positions* / Montagepositionen							* n°. tappi olio * *No. of plugs* * Anzahl Schrauben
	B3	**B8**	**V1**	**V3**	**V5**	**V6**		
40	0.260	0.260	0.260	0.260	0.260	0.260	Riduttori forniti completi di lubrificante sintetico *Gearboxes suplied with synthetic oil* Getriebe werden mit synthetischem Öl geliefert	1
50	0.440	0.440	0.600	0.440	0.440	0.440		1
70	0.950	1.050	1.300	1.300	0.950	0.950		1
85	1.550	1.800	1.950	1.950	1.550	1.550	Riduttori predisposti per lubrificazione ad olio *Gearboxes suplied ready for oil lubrication* Getriebe sind für Ölschmierung vorbereitet	4
110	3.600	4.200	4.900	5.100	3.600	3.600		4

I riduttori nelle grandezze 85, 110 sono forniti predisposti per lubrificazione ad olio ma privi di lubrificante il quale potrà essere fornito a richiesta.
Il tappo di sfiato è allegato solo nei riduttori che hanno più di un tappo olio.
*Eventuali forniture con predisposizioni tappi diverse da quella indicata in tabella, dovranno essere concordate.

The gearboxes size 85, 110 are oil lubricated but are supplied without lubricant which can be delivered upon request.
The drain plug is annexed only in the gearbox with more than one oil plug.
** Supplies with oil plugs different from those listed in the table are to be agreed upon.*

Die Getriebe in den Größen 85, 110 sind für Ölschmierung vorgesehen, werden aber ohne Öl geliefert. Dieses ist auf Anfrage erhältlich.
Eine Entlüftungsschraube gibt es nur bei Getrieben mit mehr als einer Ölschrauibe.
* Lieferungen mit Betriebsschrauben, die von denen in der Tabelle abweichen, müssen mit uns vereinbart werden.

▽ Carico / *Breather plug* / Nachfüllen - Entlüftung
◒ Livello / *Level plug* / Pegel
▼ Scarico / *Drain plug* / Auslauf

4.6 Carichi radiali e assiali

Quando la trasmissione del moto avviene tramite meccanismi che generano carichi radiali sull'estremità dell'albero,è necessario verificare che i valori risultanti non eccedano quelli indicati nelle tabelle.

Nella Tab. 4.2 sono riportati i valori dei carichi radiali ammissibili per l'albero veloce (F_{r1}). Come carico assiale ammissibile contemporaneo si ha:

$$F_{a1} = 0.2 \times F_{r1}$$

In Tab. 4.3 sono riportati i valori dei carichi radiali ammissibili per l'albero lento (F_{r2}) . Come carico assiale ammissibile contemporaneo si ha:

$$F_{a2} = 0.2 \times F_{r2}$$

4.6 Axial and overhung loads

Should transmission movement determine radial loads on the angular shaft end, it is necessary to make sure that resulting values do not exceed the ones indicated in the tables.

In Table 4.2 permissible radial load for input shaft are listed (Fr_1). Contemporary permissible axial load is given by the following formula:

$$F_{a1} = 0.2 \times F_{r1}$$

I*n Table 4.3 permissible radial loads for* output shaft *are listed (F_{r2}). Permissible axial load is given by the following formula:*

$$F_{a2} = 0.2 \times F_{r2}$$

4.6 Radiale und Axiale Belastungen

Wird das Wellenende auch durch Radialkräfte belastet, so muß sichergestellt werden, daß die resultierenden Werte die in der Tabelle angegebenen nicht überschreiten.

In Tabelle 4.2 sind die Werte der zulässigen Radialbelastungen für die Antriebswelle (F_{r1}) angegeben. Die Axialbelastung beträgt:

$$F_{a1} = 0.2 \times F_{r1}$$

In Tabelle 4.3 sind die Werte der zulässigen Radialbelastungen für die Abtriebswelle (F_{r2}) angegeben. Als zulässige Axialbelastung gilt:

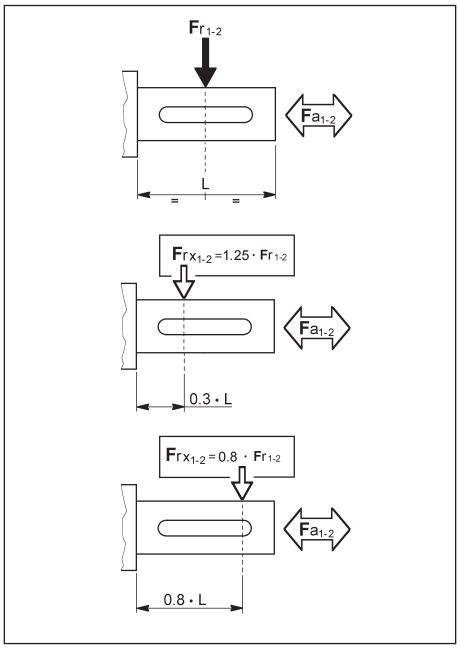
$$F_{a2} = 0.2 \times F_{r2}$$

Tab. 4.2

n_1 min^{-1}	Fr_1 (N) CR - CB				
	40	**50**	**70**	**85**	**110**
1400	550	600	850	950	1500

Tab. 4.3

n_2 min^{-1}	Fr_2 (N) CR - CB				
	40	**50**	**70**	**85**	**110**
30	1800	2160	3030	3390	4020
27	1880	2290	3140	3590	4170
23	1970	2400	3340	3690	4560
20	1970	2890	3580	3890	4800
16	2010	2930	3960	4490	6000
13	2010	2930	3960	4620	6230
10	2010	2930	3960	4620	6230
8	2180	3110	4350	5800	7460



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero e sono riferiti ai riduttori operanti con fattore di servizio 1.
Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 1400 min^{-1} e Fr_2 a 8 min^{-1} rappresentano i carichi massimi consentiti.
Per i carichi non agenti sulla mezzeria dell'albero lento o veloce si ha:

a 0.3 della sporgenza:

$$F_{rx} = 1.25 \times F_{r1-2}$$

a 0.8 dalla sporgenza:

$$F_{rx} = 0.8 \times F_{r1-2}$$

The radial loads shown in the tables are applied on the centre line of the shaft extension and are related to gearboxes working with service factor 1.
Intermediate values of speeds that are not listed can be obtained through interpolation but it must be considered that F_{r1} at 1400 min^{-1} and Fr_2 at 8 min^{-1} represent the maximum allowable loads.
For loads which are not applied on the centre line of the output or input shaft, following values will be obtained:

at 0.3 from extension:

$$F_{rx} = 1.25 \times F_{r1-2}$$

at 0.8 from extension:

$$F_{rx} = 0.8 \times F_{r1-2}$$

Bei den in der Tabelle angegebenen Radialbelastungen wird eine Krafteinwirkung auf die Mitte des Wellenendes zugrunde gelegt; die Getriebe arbeiten mit Betriebsfaktor 1.
Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation erhalten werden, wobei jedoch die angegebenen Belastungen für F_{r1} bei 1400 min^{-1} und für F_{r2} bei 8 min^{-1} nicht überschritten werden dürfen.
Für Lasten, die nicht auf die Mitte der Ab- bzw. Antriebswellen wirken, legt man folgende Werte zugrunde:

0.3 vom Wellenabsatz:

$$F_{rx} = 1.25 \times F_{r1-2}$$

0.8 vom Wellenabsatz:

$$F_{rx} = 0.8 \times F_{r1-2}$$

4.6 Carichi radiali e assiali

A richiesta possono essere fornite versioni rinforzate con cuscinetti a rulli conici sulla corona in grado di sopportare carichi ruperiori a quelli ammessi dalle versioni normali.
Si veda a tal proposito la tabella 4.3.1, in cui sono riportati i valori dei carichi radiali e assiali ammissibili sull'albero uscita nel caso di cuscinetti conici sulla corona. Si consiglia, in questi casi, di adottare versioni flangiate, verificando che il carico assiale venga interamente assorbito dal cuscinetto alloggiato nella flangia di fissaggio.

4.6 Axial and overhung loads

In order to increase the load capacity of the gearboxes it is possible to fit taper roller bearings on to the output shaft. Such reinforced versions are available upon request.
With regard to this reinforced version, let see output radial and axial load values shown on tab. 4.3.1. It's advisable to use flange mounted versions and to make sure that the axial load is absorbed by the bearing, housed in the fixing flange.

4.6 Radiale und Axiale Belastungen

Für größere Belastungen stehen auf Wunsch auch verstärkte Ausführungen mit Kegelrollenlagern für die Schneckenwelle zur Verfügung.

Tabelle 4.3.1 listet die zulässigen Radial- und Axiallasten bei Verwendung von Kegelrollenlagern auf. Es wird in diesen Fällen empfohlen, Flanschausführungen zu verwenden und sicherzustellen, daß die axiale Last vollständig vom Lager, das sich im Befestigungsflansch befindet, aufgenommen wird.

Tab. 4.3.1

CARICHI RADIALI - ASSIALI CON CUSCINETTI CONICI SULLA CORONA
AXIAL AND OVERHUNG LOADS WITH TAPER ROLLER BEARINGS ON WORMWHEEL
RADIALE UND AXIALE BELASTUNGEN MIT KEGELROLLENLAGERN AUF DEM SCHNECKENRAD [N]

n_2 (min^{-1})	CR - CB									
	40		50		70		85		110	
	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
60	2300	3000	6900	8000	8600	10500	8600	11500	12200	15600
50	2300	3000	6900	8000	9000	11000	9000	12000	12800	16400
40	2300	3000	6900	8000	9000	11000	9000	12000	13700	17600
30	2300	3000	6900	8000	9000	11000	9000	12000	14400	18500
25	2300	3000	6900	8000	9000	11000	9000	12000	14800	19000
20	2300	3000	6900	8000	9000	11000	9000	12000	14800	19000
15	2300	3000	6900	8000	9000	11000	9000	12000	14800	19000
10	2300	3000	6900	8000	9000	11000	9000	12000	14800	19000
5	2300	3000	6900	8000	9000	11000	9000	12000	14800	19000

CR 40

Kg 3.5

ir	$i_1 x i_2$	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
44.3	2.9x15	63	49	0.44	74	32	59	0.27	72	20	59	0.17	72	63 - 56
50.5	3.4X15	55	49	0.39	74	28	59	0.24	72	18	60	0.17	68	
58.2	3.9X15	48	52	0.36	74	24	59	0.20	72	15	60	0.14	68	
68.0	4.5X15	41	52	0.31	74	21	59	0.17	72	13	60	0.12	68	
82.7	3.0X28	34	50	0.28	63	17	59	0.17	60	11	59	0.11	60	
108.7	3.9X28	26	52	0.23	62	13	59	0.13	60	8	60	0.09	55	
126.9	4.5X28	22	52	0.19	62	11	59	0.11	60	7	60	0.08	55	
165.1	3.4X49	17	43	0.15	52	8	50	0.09	48	5	60	0.08	43	
222.1	4.5X49	13	45	0.12	51	6	50	0.07	48	4	60	0.06	43	
295.2	3.0X100	9	30	0.07	40	5	31	0.04	37	3	34	0.03	37	
336.8	3.4X100	8	30	0.06	40	4	31	0.04	37	3	34	0.03	33	
388.2	3.9X100	7	30	0.06	40	4	31	0.03	37	2	34	0.02	33	
453	4.5X100	6	30	0.05	40	3	31	0.03	37	2	34	0.02	33	

CR 50

Kg 5

ir	$i_1 x i_2$	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
48.3	3.2x15	58	89	0.69	77	29	100	0.40	75	19	100	0.27	73	71 - 63 - 56
52.1	3.5X15	54	89	0.64	77	27	100	0.38	75	17	100	0.25	73	
61.0	4.1X15	46	94	0.58	77	23	100	0.32	75	15	100	0.21	73	
73.3	2.6X28	38	92	0.56	66	19	100	0.32	63	12	100	0.20	63	
90.2	3.2X28	31	92	0.46	66	16	100	0.26	63	10	100	0.18	58	
97.2	3.5X28	29	92	0.42	66	14	100	0.24	63	9	100	0.17	58	
113.9	4.1X28	25	97	0.39	65	12	100	0.20	63	8	100	0.14	58	
170.1	3.5X49	16	82	0.24	58	8	96	0.15	54	5	100	0.11	49	
199.3	4.1X49	14	86	0.22	57	7	96	0.13	54	5	100	0.10	49	
261.9	2.8X100	11	59	0.15	43	5	60	0.09	39	3	60	0.05	39	
347.0	3.5X100	8	59	0.11	43	4	60	0.06	39	3	60	0.05	34	
406.7	4.1X100	7	60	0.10	42	3	60	0.06	39	2	60	0.04	34	

CR 70

Kg 16

ir	$i_1 x i_2$	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
44.3	3.0x15	63	170	1.5	76	32	205	0.91	74	20	205	0.59	74	90 - 80 71 - 63
50.8	3.4X15	55	170	1.3	76	28	205	0.79	74	18	263	0.69	71	
59.1	3.9X15	47	181	1.3	76	24	205	0.68	74	15	263	0.59	71	
69.6	4.6X15	40	181	0.99	76	20	205	0.58	74	13	263	0.50	71	
82.6	3.0X28	34	170	0.90	67	17	202	0.57	63	11	254	0.46	63	
110.3	3.9X28	25	180	0.72	66	13	202	0.43	63	8	254	0.37	58	
130.0	4.6X28	22	180	0.61	66	11	202	0.36	63	7	254	0.32	58	
166.1	3.4X49	17	190	0.57	59	8	223	0.36	55	5	276	0.32	49	
227.5	4.6X49	12	200	0.45	57	6	223	0.26	55	4	276	0.23	49	
295.0	3.0X100	9	144	0.31	46	5	166	0.20	42	3	183	0.14	42	
338.9	3.4X100	8	144	0.27	46	4	166	0.17	42	3	183	0.14	36	
393.8	3.9X100	7	151	0.25	45	4	166	0.15	42	2	183	0.12	36	
446.3	4.6X100	6	151	0.21	45	3	166	0.12	42	2	183	0.10	36	

CR 85

Kg 36

ir	$i_1 x i_2$	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
43.0	2.9x15	65	333	2.9	77	33	403	1.83	75	21	403	1.2	75	90 - 80 71 - 63
51.3	3.4X15	55	333	2.5	77	27	403	1.54	75	18	460	1.2	72	
59.1	3.9X15	47	354	2.3	77	24	403	1.33	75	15	460	1.0	72	
69.0	4.6X15	41	354	1.9	77	20	403	1.14	75	13	460	0.88	72	
80.2	2.9X28	35	338	1.8	68	17	381	1.09	64	11	460	0.84	64	
110.4	3.9X28	25	338	1.3	67	13	381	0.79	64	8	460	0.68	58	
128.8	4.6X28	22	338	1.2	67	11	381	0.68	64	7	460	0.58	58	
167.6	3.4X49	17	329	0.95	61	8	387	0.59	57	5	460	0.51	51	
225.4	4.6X49	12	347	0.76	60	6	387	0.44	57	4	460	0.38	51	
286.4	2.9X100	10	243	0.51	49	5	281	0.33	43	3	327	0.25	43	
342.1	3.4X100	8	243	0.43	49	4	281	0.28	43	3	327	0.24	38	
394.1	3.9X100	7	255	0.40	47	4	281	0.24	43	2	327	0.20	38	
460.0	4.6X100	6	255	0.35	47	3	281	0.21	43	2	327	0.18	38	

CR 110

Kg 50

ir	$i_1 x i_2$	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				IEC
		n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
43.0	2.9x15	65	632	5.5	78	33	769	3.4	76	21	769	2.2	76	112 - 100 90 - 80
51.3	3.4X15	55	632	4.6	78	27	769	2.9	76	18	960	2.4	73	
59.1	3.9X15	47	674	4.3	78	24	769	2.5	76	15	960	2.1	73	
69.0	4.6X15	41	665	3.7	78	20	769	2.1	76	13	960	1.8	73	
80.2	2.9X28	35	705	3.4	71	17	796	2.2	68	11	960	1.7	68	
110.4	3.9X28	25	705	2.7	71	13	796	1.6	68	8	960	1.3	62	
128.8	4.6X28	22	667	2.3	71	11	796	1.3	68	7	960	1.1	62	
167.6	3.4X49	17	704	1.8	65	8	786	1.1	61	5	976	1.0	55	
225.4	4.6X49	12	503	1.4	64	6	786	0.84	61	4	976	0.74	55	
286.4	2.9X100	10	503	0.99	52	5	583	0.62	48	3	650	0.45	48	
342.1	3.4X100	8	515	0.83	52	4	583	0.52	48	3	650	0.44	41	
394.1	3.9X100	7	528	0.77	51	4	583	0.45	48	2	650	0.38	41	
460.0	4.6X100	6	528	0.66	51	3	583	0.39	48	2	650	0.32	41	

I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

Listed weights are for reference only and can vary according to the gearbox version.

Die angegebenen Gewichte sind Richtwerte und können je nach Getriebeversion etwas variieren.

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come nel par. 1.7). Per maggiori informazioni contattare l'ufficio tecnico STM.

NOTE. Please pay attention to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. chapter 1.7). For details please contact our technical department.

HINWEIS. Sind in den Tabellen Nennleistungen eingerahmt, so ist die thermische Leistungsgrenze der Getriebe zu beachten (s. S. 1.7).
Für weitere Informationen wenden Sie sich bitte and unser technisches Büro.

Nella tab. 4.4 sono riportate le grandezze motore accopiabili (IEC) unitamente alle dimensioni albero/flangia motore standard.

IEC motor dimensions that can be coupled are listed in table 4.4 as well as the dimensions of the standard motor shaft/flange.

In Tabelle 4.4 sind die kombinierbaren Motorgrößen (IEC) zusammen mit den Abmessungen Welle/Flansch Standardmotor aufgelistet

Tab. 4.4

	Possibili accoppiamenti con motori IEC ***Possible couplings with IEC motor*** **Mögliche Verbindungen mit IEC-Motoren**		
	IEC	ir	
		Tutti / *All* / Alle	
CB 40	63	**11/140** (B5)	11/120 - 11/80
	56	**9/120** (B5) - **9/80** (B14)	9/140
CB 50	71	**14/160** (B5)	14/140
	63	**11/140** (B5)	11/160
	56	**9/120** (B5) - **9/80** • (B14)	9/160 - 9/140
CB 70	90	**24/200** (B5)	
	80	**19/200** (B5)	19/160
	71	**14/160** (B5)	14/140
	63	**11/140** (B5)	11/160

	Possibili accoppiamenti con motori IEC ***Possible couplings with IEC motor*** **Mögliche Verbindungen mit IEC-Motoren**		
	IEC	ir	
		Tutti / *All* / Alle	
CB 85	90	**24/200** (B5)	24/160
	80	**19/200** (B5)	
	71	**14/160** (B5)	14/140
	63	**11/160** (B5)	11/160
CB 110	112	**28/250** (B5)	
	100	**28/250** (B5)	
	90	**24/200** (B5)	
	80	**19/200** (B5)	

Legenda:

11/140 (B5) 11/120

11/140 : combinazioni albero/flangia standard
(B5) : forma costruttiva motore IEC
11/120 : combinazioni albero/flangia a richiesta

Key:

11/140 *(B5)* *11/120*

11/140 *: standard shaft/flange combination*
(B5) : IEC motor constructive shape
11/120 : shaft/flange combinations upon request

Legende:

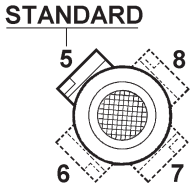
11/140 (B5) 11/120

11/140 : Standardkombinationen Welle/Flansch
(B5) : Konstruktionsform IEC-Motor
11/120 : Sonderkombinationen Welle/Flansch

N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par. 4.3).
Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

Note.
The standard configuration for the 4 holes is 45° to the axles (like an x: see par. 4.3).
For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please, choose the terminal board position refering to the following sketch (in which N° 5 is the standard position):

HINWEIS.
In der Standardkonfiguration sind die 4 Flanschbohrungen im 45°-Winkel zu den Achsen an- geordnet (wie ein x: siehe kapitel 4.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeordnet (wie ein +). Es sollte deshalb der Platzbedarf des Motorklemmenkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die Lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos.5 ist Standardposition):



4.8 Prestazioni motoriduttori CB

4.8 CB Gearmotors performances

4.8 Leistungen der CB Getriebemotoren

0.09 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
63	44.3	10.1	4.9	**CB40**
55	50.5	11.5	4.3	**CB40**
48	58.2	13.2	3.9	**CB40**
41	68.0	15.4	3.4	**CB40**
34	82.7	16.0	3.1	**CB40**
26	108.7	20.7	2.5	**CB40**
25	113.9	22.7	4.3	**CB50**
22	126.9	24.2	2.2	**CB40**
17	165.1	26.4	1.6	**CB40**
16	170.1	30.3	2.7	**CB50**
14	199.3	34.9	2.5	**CB50**
13	222.1	34.8	1.3	**CB40**
11	261.9	34.6	1.7	**CB50**
9	295.2	36.2	0.8	**CB40**
n_1 = 1400 min^{-1}				
32	44.3	19.6	3.0	**CB40**
28	50.5	22.3	2.6	**CB40**
27	52.1	24.0	4.2	**CB50**
24	58.2	25.7	2.3	**CB40**
23	61.0	28.1	3.6	**CB50**
21	68.0	30.1	2.0	**CB40**
19	73.3	28.4	3.5	**CB50**
17	82.7	30.5	1.9	**CB40**
16	90.2	34.9	2.9	**CB50**
14	97.2	37.6	2.7	**CB50**
13	108.7	40.0	1.5	**CB40**
12	113.9	44.1	2.3	**CB50**
11	126.9	46.7	1.3	**CB40**
8	165.1	48.7	1.0	**CB40**
8	170.1	56.4	1.7	**CB50**
n_1 = 900 min^{-1}				
20	44.3	30.5	1.9	**CB40**
19	48.3	33.7	3.0	**CB50**
18	50.5	32.8	1.8	**CB40**
17	52.1	36.3	2.8	**CB50**
15	58.2	37.8	1.6	**CB40**
15	61.0	42.5	2.4	**CB50**
13	68.0	44.2	1.4	**CB40**
12	73.3	44.1	2.3	**CB50**
11	82.7	47.4	1.2	**CB40**
10	90.2	50.0	2.0	**CB50**
9	97.2	53.8	1.9	**CB50**
8	108.7	57.1	1.1	**CB40**

0.09 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
8	110.3	61.1	4.2	**CB70**
8	113.9	63.1	1.6	**CB50**
7	126.9	66.7	0.9	**CB40**
7	130	72.0	3.5	**CB70**
5	165.1	67.8	0.9	**CB40**
5	166.1	77.7	3.6	**CB70**
5	170.1	79.6	1.3	**CB50**
5	199.3	93.3	1.1	**CB50**
4	225.4	109.8	4.2	**CB85**
4	227.5	106.5	2.6	**CB70**
3	286.4	117.6	2.8	**CB85**
3	295	118.3	1.5	**CB70**
3	338.9	116.5	1.6	**CB70**
3	342.1	124.1	2.6	**CB85**
2	393.8	135.4	1.4	**CB70**
2	394.1	143.0	2.3	**CB85**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
63	44.3	14.5	3.4	**CB40**
55	50.5	16.6	3.0	**CB40**
48	58.2	19.1	2.7	**CB40**
46	61.0	20.8	4.5	**CB50**
41	68.0	22.3	2.3	**CB40**
38	73.3	21.5	4.3	**CB50**
34	82.7	23.1	2.2	**CB40**
31	90.2	26.4	3.5	**CB50**
29	97.2	28.4	3.2	**CB50**
26	108.7	29.9	1.7	**CB40**
25	113.9	32.8	3.0	**CB50**
22	126.9	34.9	1.5	**CB40**
17	165.1	38.1	1.1	**CB40**
16	170.1	43.7	1.9	**CB50**
14	199.3	50.4	1.7	**CB50**
13	222.1	50.2	0.9	**CB40**
11	261.9	49.9	1.2	**CB50**
8	347	66.2	0.9	**CB50**
7	406.7	75.7	0.8	**CB50**
n_1 = 1400 min^{-1}				
32	44.3	28.3	2.1	**CB40**
29	48.3	32.1	3.1	**CB50**
28	50.5	32.2	1.8	**CB40**
27	52.1	34.7	2.9	**CB50**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 1400 min^{-1}				
24	58.2	37.2	1.6	**CB40**
23	61.0	40.6	2.5	**CB50**
21	68.0	43.4	1.4	**CB40**
20	69.6	45.7	4.5	**CB70**
19	73.3	41.0	2.4	**CB50**
17	82.6	46.1	4.4	**CB70**
17	82.7	44.0	1.3	**CB40**
16	90.2	50.4	2.0	**CB50**
14	97.2	54.3	1.8	**CB50**
13	108.7	57.8	1.0	**CB40**
13	110.3	61.6	3.3	**CB70**
12	113.9	63.6	1.6	**CB50**
11	126.9	67.5	0.9	**CB40**
11	130	72.6	2.8	**CB70**
8	166.1	81.0	2.8	**CB70**
8	170.1	81.5	1.2	**CB50**
7	199.3	95.4	1.0	**CB50**
6	225.4	113.9	3.4	**CB85**
6	227.5	111.0	2.0	**CB70**
5	286.4	109.2	2.6	**CB85**
5	295	109.9	1.5	**CB70**
4	338.9	126.2	1.3	**CB70**
4	342.1	130.4	2.2	**CB85**
4	393.8	146.7	1.1	**CB70**
4	394.1	150.3	1.9	**CB85**
3	460	175.4	1.6	**CB85**
3	464.3	172.9	1.0	**CB70**
n_1 = 900 min^{-1}				
20	44.3	44.0	1.3	**CB40**
19	48.3	48.6	2.1	**CB50**
18	50.5	47.4	1.3	**CB40**
17	52.1	52.5	1.9	**CB50**
15	58.2	54.6	1.1	**CB40**
15	59.1	57.9	4.5	**CB70**
15	61.0	61.4	1.6	**CB50**
13	68.0	63.8	0.9	**CB40**
13	69.6	68.2	3.9	**CB70**
12	73.3	63.7	1.6	**CB50**
11	82.6	71.8	3.5	**CB70**
11	82.7	68.4	0.9	**CB40**
10	90.2	72.2	1.4	**CB50**
9	97.2	77.8	1.3	**CB50**
8	110.3	88.2	2.9	**CB70**
8	113.9	91.1	1.1	**CB50**
7	128.8	103.1	4.5	**CB85**

4.8 Prestazioni motoriduttori CB

4.8 CB Gearmotors performances

4.8 Leistungen der CB Getriebemotoren

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
7	130	104.0	2.4	CB70
5	166.1	112.3	2.5	CB70
5	167.6	117.9	3.9	CB85
5	170.1	115.0	0.9	CB50
4	225.4	158.6	2.9	CB85
4	227.5	153.8	1.8	CB70
3	286.4	169.9	1.9	CB85
3	295	170.9	1.1	CB70
3	338.9	168.3	1.1	CB70
3	342.1	179.3	1.8	CB85
2	393.8	195.6	0.9	CB70
2	394.1	206.6	1.6	CB85
2	460	241.1	1.4	CB85
2	464.3	230.6	0.8	CB70

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
63	44.3	20.1	2.4	CB40
58	48.3	22.8	3.9	CB50
55	50.5	22.9	2.1	CB40
54	52.1	24.6	3.6	CB50
48	58.2	26.4	2.0	CB40
46	61.0	28.8	3.3	CB50
41	68.0	30.9	1.7	CB40
38	73.3	29.7	3.1	CB50
34	82.7	32.0	1.6	CB40
31	90.2	36.5	2.5	CB50
29	97.2	39.4	2.3	CB50
26	108.7	41.4	1.3	CB40
25	110.3	44.7	4.0	CB70
25	113.9	45.5	2.1	CB50
22	126.9	48.3	1.1	CB40
22	130	52.7	3.4	CB70
17	165.1	52.7	0.8	CB40
17	166.1	60.2	3.2	CB70
16	170.1	60.6	1.4	CB50
14	199.3	69.7	1.2	CB50
12	225.4	83.0	4.2	CB85
12	227.5	79.6	2.5	CB70
11	261.9	69.1	0.9	CB50
10	286.4	86.2	2.8	CB85
9	295	83.3	1.7	CB70
8	338.9	95.7	1.5	CB70

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
8	342.1	102.9	2.4	CB85
7	393.8	108.8	1.4	CB70
7	394.1	113.7	2.2	CB85
6	460	132.7	1.9	CB85
6	464.3	128.3	1.2	CB70
n_1 = 1400 min^{-1}				
32	44.3	39.2	1.5	CB40
29	48.3	44.5	2.2	CB50
28	50.5	44.6	1.3	CB40
28	50.8	46.2	4.4	CB70
27	52.1	48.0	2.1	CB50
24	58.2	51.5	1.1	CB40
24	59.1	53.7	3.8	CB70
23	61.0	56.2	1.8	CB50
21	68.0	60.1	1.0	CB40
20	69.6	63.2	3.2	CB70
19	73.3	56.7	1.8	CB50
17	82.6	63.9	3.2	CB70
17	82.7	60.9	1.0	CB40
16	90.2	69.8	1.4	CB50
14	97.2	75.2	1.3	CB50
13	110.3	85.3	2.4	CB70
12	113.9	88.1	1.1	CB50
11	128.8	101.2	3.8	CB85
11	130.0	100.6	2.0	CB70
8	166.1	112.2	2.0	CB70
8	167.6	117.3	3.3	CB85
8	170.1	112.8	0.9	CB50
6	225.4	157.8	2.5	CB85
6	227.5	153.6	1.5	CB70
5	286.4	151.2	1.9	CB85
5	295.0	152.1	1.1	CB70
4	338.9	174.8	0.9	CB70
4	342.1	180.6	1.6	CB85
4	393.8	203.1	0.8	CB70
4	394.1	208.1	1.4	CB85
3	460	242.9	1.2	CB85
n_1 = 900 min^{-1}				
21	43.0	61.6	6.5	CB85
20	44.3	62.6	3.3	CB70
19	48.3	67.3	1.5	CB50
18	50.8	68.9	3.8	CB70

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
17	52.1	72.6	1.4	CB50
15	59.1	80.1	3.3	CB70
15	61.0	85.1	1.2	CB50
13	69.6	94.4	2.8	CB70
12	73.3	88.2	1.1	CB50
11	82.6	99.4	2.6	CB70
10	90.2	99.9	1.0	CB50
9	97.2	107.7	0.9	CB50
8	110.3	122.2	2.1	CB70
8	110.4	122.3	3.8	CB85
8	113.9	126.2	0.8	CB50
7	128.8	142.7	3.2	CB85
7	130.0	144.0	1.8	CB70
5	166.1	155.5	1.8	CB70
5	167.6	163.3	2.8	CB85
4	225.4	219.6	2.1	CB85
4	227.5	212.9	1.3	CB70
3	286.4	235.2	1.4	CB85
3	295.0	236.6	0.8	CB70
3	338.9	233.0	0.8	CB70
3	342.1	248.3	1.3	CB85

0.25 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
63	44.3	28.0	1.8	CB40
58	48.3	31.7	2.8	CB50
55	50.5	31.9	1.5	CB40
54	52.1	34.2	2.6	CB50
48	58.2	36.7	1.4	CB40
47	59.1	38.3	4.7	CB70
46	61.0	40.1	2.3	CB50
41	68.0	42.9	1.2	CB40
40	69.6	45.1	4.0	CB70
38	73.3	41.3	2.2	CB50
34	82.6	47.2	3.6	CB70
34	82.7	44.4	1.1	CB40
31	90.2	50.8	1.8	CB50
29	97.2	54.7	1.7	CB50
26	108.7	57.5	0.9	CB40
25	110.3	62.1	2.9	CB70
25	113.9	63.1	1.5	CB50
22	126.9	67.1	0.8	CB40

4.8 Prestazioni motoriduttori CB

n_2 min^{-1}	ir	T2 Nm	FS'	CB
0.25 kW				
n_1 = 2800 min^{-1}				
22	130.0	73.2	2.5	**CB70**
17	166.1	83.6	2.3	**CB70**
17	167.6	87.2	3.8	**CB85**
16	170.1	84.1	1.0	**CB50**
14	199.3	96.9	0.9	**CB50**
12	225.4	115.3	3.0	**CB85**
12	227.5	110.6	1.8	**CB70**
10	286.4	119.7	2.0	**CB85**
9	295	115.7	1.2	**CB70**
8	338.9	132.9	1.1	**CB70**
8	342.1	142.9	1.7	**CB85**
7	393.8	151.1	1.0	**CB70**
7	394.1	157.9	1.6	**CB85**
6	460.0	184.3	1.4	**CB85**
6	464.3	178.2	0.8	**CB70**
n_1 = 1400 min^{-1}				
32	44.3	55.9	3.7	**CB70**
29	48.3	61.8	1.6	**CB50**
28	50.8	64.1	3.2	**CB70**
27	52.1	66.6	1.5	**CB50**
24	59.1	74.6	2.7	**CB70**
23	61.0	78.0	1.3	**CB50**
20	69.0	88.3	4.6	**CB85**
20	69.6	87.8	2.3	**CB70**
19	73.3	78.8	1.3	**CB50**
17	80.2	87.5	4.4	**CB85**
17	82.6	88.7	2.3	**CB70**
16	90.2	96.9	1.0	**CB50**
14	97.2	104.4	1.0	**CB50**
13	110.3	118.5	1.7	**CB70**
13	110.4	120.5	3.2	**CB85**
12	113.9	122.4	0.8	**CB50**
11	128.8	140.6	2.7	**CB85**
11	130	139.7	1.4	**CB70**
8	166.1	155.8	1.4	**CB70**
8	167.6	162.9	2.4	**CB85**
6	225.4	219.1	1.8	**CB85**
6	227.5	213.4	1.0	**CB70**
5	286.4	210.0	1.3	**CB85**
5	295	211.3	0.8	**CB70**
4	342.1	250.9	1.1	**CB85**
4	394.1	289.0	1.0	**CB85**
3	460	337.3	0.8	**CB85**

4.8 CB Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	CB
0.25 kW				
n_1 = 900 min^{-1}				
21	43.0	85.6	4.7	**CB85**
20	44.3	87.0	2.4	**CB70**
19	48.3	93.5	1.1	**CB50**
18	50.8	95.7	2.7	**CB70**
17	52.1	100.9	1.0	**CB50**
15	59.1	111.3	2.4	**CB70**
15	59.1	112.9	4.1	**CB85**
15	61.0	118.1	0.8	**CB50**
13	69.0	131.8	3.5	**CB85**
13	69.6	131.1	2.0	**CB70**
12	73.3	122.5	0.8	**CB50**
11	80.2	136.2	3.4	**CB85**
11	82.6	138.0	1.8	**CB70**
8	110.3	169.7	1.5	**CB70**
8	110.4	169.9	2.7	**CB85**
7	128.8	198.2	2.3	**CB85**
7	130.0	200.0	1.3	**CB70**
5	166.1	215.9	1.3	**CB70**
5	167.6	226.7	2.0	**CB85**
4	225.4	304.9	1.5	**CB85**
4	227.5	295.7	0.9	**CB70**
3	286.4	326.7	1.0	**CB85**
3	342.1	344.9	0.9	**CB85**
2	394.1	397.3	0.8	**CB85**
0.37 kW				
n_1 = 2800 min^{-1}				
63	44.3	42.5	4.0	**CB70**
58	48.3	46.9	1.9	**CB50**
55	50.8	48.7	3.5	**CB70**
54	52.1	50.6	1.8	**CB50**
47	59.1	56.7	3.2	**CB70**
46	61.0	59.3	1.6	**CB50**
40	69.6	66.8	2.7	**CB70**
38	73.3	61.1	1.5	**CB50**
34	82.6	69.8	2.4	**CB70**
31	90.2	75.1	1.2	**CB50**
29	97.2	81.0	1.1	**CB50**
25	110.3	91.9	2.0	**CB70**
25	110.4	93.3	3.6	**CB85**
25	113.9	93.4	1.0	**CB50**
22	128.8	108.9	3.1	**CB85**
22	130	108.3	1.7	**CB70**

4.8 Leistungen der CB Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	CB
0.37 kW				
n_1 = 2800 min^{-1}				
17	166.1	123.7	1.5	**CB70**
17	167.6	129.0	2.6	**CB85**
12	225.4	170.7	2.0	**CB85**
12	227.5	163.6	1.2	**CB70**
10	286.4	177.1	1.4	**CB85**
9	295	171.2	0.8	**CB70**
8	342.1	211.5	1.1	**CB85**
7	394.1	233.7	1.1	**CB85**
6	460	272.8	0.9	**CB85**
n_1 = 1400 min^{-1}				
33	43.0	81.4	5.0	**CB85**
32	44.3	82.7	2.5	**CB70**
29	48.3	91.4	1.1	**CB50**
28	50.8	94.9	2.2	**CB70**
27	51.3	97.1	4.2	**CB85**
27	52.1	98.6	1.0	**CB50**
24	59.1	110.4	1.9	**CB70**
24	59.1	111.9	3.6	**CB85**
23	61.0	115.5	0.9	**CB50**
20	69.0	130.6	3.1	**CB85**
20	69.6	130.0	1.6	**CB70**
19	73.3	116.6	0.9	**CB50**
17	80.2	129.5	2.9	**CB85**
17	82.6	131.3	1.5	**CB70**
13	110.3	175.4	1.2	**CB70**
13	110.4	178.3	2.1	**CB85**
11	128.8	208.1	1.8	**CB85**
11	130	206.7	1.0	**CB70**
8	166.1	230.6	1.0	**CB70**
8	167.6	241.1	1.6	**CB85**
6	225.4	324.3	1.2	**CB85**
5	286.4	310.8	0.9	**CB85**
4	342.1	371.3	0.8	**CB85**
n_1 = 900 min^{-1}				
21	43.0	126.6	3.2	**CB85**
20	44.3	128.7	1.6	**CB70**
18	50.8	141.6	1.9	**CB70**
18	51.3	145.0	3.2	**CB85**
15	59.1	164.7	1.6	**CB70**
15	59.1	167.1	2.8	**CB85**
13	69.0	195.0	2.4	**CB85**
13	69.6	194.0	1.4	**CB70**

4.8 Prestazioni motoriduttori CB

4.8 CB Gearmotors performances

4.8 Leistungen der CB Getriebemotoren

0.37 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
11	80.2	201.5	2.3	CB85
11	80.2	214.1	4.5	CB110
11	82.6	204.3	1.2	CB70
8	110.3	251.2	1.0	CB70
8	110.4	251.4	1.8	CB85
8	110.4	268.7	3.6	CB110
7	128.8	293.3	1.6	CB85
7	128.8	313.5	3.1	CB110
7	130.0	296.0	0.9	CB70
5	166.1	319.5	0.9	CB70
5	167.6	335.6	1.4	CB85
5	167.6	361.9	2.7	CB110
4	225.4	451.3	1.0	CB85
4	225.4	486.7	2.0	CB110
3	286.4	539.7	1.2	CB110
3	342.1	550.7	1.2	CB110
2	394.1	634.4	1.0	CB110
2	460	740.5	0.9	CB110

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
63	44.3	63.2	2.7	CB70
58	48.3	69.8	1.3	CB50
55	50.8	72.4	2.3	CB70
55	51.3	74.1	4.5	CB85
54	52.1	75.3	1.2	CB50
47	59.1	84.3	2.1	CB70
47	59.1	85.4	4.1	CB85
46	61.0	88.1	1.1	CB50
41	69.0	99.7	3.6	CB85
40	69.6	99.2	1.8	CB70
38	73.3	90.8	1.0	CB50
35	80.2	102.3	3.3	CB85
34	82.6	103.8	1.6	CB70
31	90.2	111.7	0.8	CB50
29	97.2	120.3	0.8	CB50
25	110.3	136.6	1.3	CB70
25	110.4	138.8	2.4	CB85
22	128.8	161.9	2.1	CB85
22	130.0	161.0	1.1	CB70
17	166.1	183.8	1.0	CB70
17	167.6	191.8	1.7	CB85

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
12	225.4	253.7	1.4	CB85
12	227.5	243.3	0.8	CB70
10	286.4	263.3	0.9	CB85
8	342.1	314.5	0.8	CB85
n_1 = 1400 min^{-1}				
33	43.0	121.0	3.3	CB85
32	44.3	123.0	1.7	CB70
28	50.8	141.0	1.5	CB70
27	51.3	144.3	2.8	CB85
24	59.1	164.1	1.2	CB70
24	59.1	166.3	2.4	CB85
20	69.0	194.2	2.1	CB85
20	69.0	196.7	3.9	CB110
20	69.6	193.2	1.1	CB70
17	80.2	192.6	2.0	CB85
17	80.2	204.6	3.9	CB110
17	82.6	195.2	1.0	CB70
13	110.3	260.7	0.8	CB70
13	110.4	265.1	1.4	CB85
13	110.4	281.7	2.8	CB110
11	128.8	309.3	1.2	CB85
11	128.8	328.6	2.4	CB110
8	167.6	358.4	1.1	CB85
8	167.6	383.6	2.0	CB110
6	225.4	482.0	0.8	CB85
6	225.4	515.8	1.5	CB110
5	286.4	515.8	1.1	CB110
4	342.1	616.1	0.9	CB110
4	394.1	709.7	0.8	CB110
n_1 = 900 min^{-1}				
21	43.0	188.2	2.1	CB85
21	43.0	190.7	4.0	CB110
20	44.3	191.3	1.1	CB70
18	50.8	210.5	1.2	CB70
18	51.3	215.6	2.1	CB85
18	51.3	218.6	4.4	CB110
15	59.1	244.9	1.1	CB70
15	59.1	248.3	1.9	CB85
15	59.1	251.8	3.8	CB110
13	69.0	289.9	1.6	CB85
13	69.0	294.0	3.3	CB110
13	69.6	288.4	0.9	CB70
11	80.2	299.6	1.5	CB85

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
11	80.2	318.3	3.0	CB110
11	82.6	303.7	0.8	CB70
8	110.4	373.7	1.2	CB85
8	110.4	399.5	2.4	CB110
7	128.8	436.0	1.1	CB85
7	128.8	466.0	2.1	CB110
5	167.6	498.8	0.9	CB85
5	167.6	538.0	1.8	CB110
4	225.4	723.5	1.3	CB110
3	286.4	802.3	0.8	CB110
3	342.1	818.6	0.8	CB110

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
65	43.0	84.7	3.9	CB85
63	44.3	86.1	2.0	CB70
58	48.3	95.1	0.9	CB50
55	50.8	98.8	1.7	CB70
55	51.3	101.0	3.3	CB85
54	52.1	102.6	0.9	CB50
47	59.1	114.9	1.6	CB70
47	59.1	116.4	3.0	CB85
46	61.0	120.2	0.8	CB50
41	69.0	135.9	2.6	CB85
40	69.6	135.3	1.3	CB70
35	80.2	139.5	2.4	CB85
34	82.6	141.6	1.2	CB70
25	110.3	186.2	1.0	CB70
25	110.4	189.2	1.8	CB85
25	110.4	200.5	3.5	CB110
22	128.8	220.7	1.5	CB85
22	128.8	233.9	2.9	CB110
22	130.0	219.5	0.8	CB70
17	166.1	250.7	0.8	CB70
17	167.6	261.5	1.3	CB85
17	167.6	278.7	2.5	CB110
12	225.4	345.9	1.0	CB85
12	225.4	369.0	1.4	CB110
10	286.4	381.0	1.3	CB110
8	342.1	455.1	1.1	CB110
7	394.1	514.1	1.0	CB110
6	460.0	600.1	0.9	CB110

4.8 Prestazioni motoriduttori CB

4.8 CB Gearmotors performances

4.8 Leistungen der CB Getriebemotoren

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 1400 min^{-1}				
33	43.0	165.0	2.4	**CB85**
32	44.3	167.7	1.2	**CB70**
28	50.8	192.3	1.1	**CB70**
27	51.3	196.8	2.0	**CB85**
27	51.3	199.5	3.9	**CB110**
24	59.1	223.7	0.9	**CB70**
24	59.1	226.8	1.8	**CB85**
24	59.1	229.8	3.3	**CB110**
20	69.0	264.8	1.5	**CB85**
20	69.0	268.3	2.9	**CB110**
20	69.6	263.5	0.8	**CB70**
17	80.2	262.6	1.5	**CB85**
17	80.2	279.0	2.9	**CB110**
17	82.6	266.2	0.8	**CB70**
13	110.4	361.5	1.1	**CB85**
13	110.4	384.1	2.1	**CB110**
11	128.8	421.7	0.9	**CB85**
11	128.8	448.1	1.8	**CB110**
8	167.6	488.7	0.8	**CB85**
8	167.6	523.0	1.5	**CB110**
6	225.4	703.4	1.1	**CB110**
5	286.4	703.3	0.8	**CB110**
n_1 = 900 min^{-1}				
21	43.0	256.7	1.6	**CB85**
21	43.0	260.1	3.0	**CB110**
20	44.3	260.9	0.8	**CB70**
18	50.8	287.0	0.9	**CB70**
18	51.3	293.9	1.6	**CB85**
18	51.3	298.0	3.2	**CB110**
15	59.1	333.9	0.8	**CB70**
15	59.1	338.6	1.4	**CB85**
15	59.1	343.3	2.8	**CB110**
13	69.0	395.4	1.2	**CB85**
13	69.0	400.9	2.4	**CB110**
11	80.2	408.5	1.1	**CB85**
11	80.2	434.0	2.2	**CB110**
8	110.4	509.6	0.9	**CB85**
8	110.4	544.7	1.8	**CB110**
7	128.8	594.5	0.8	**CB85**
7	128.8	635.5	1.5	**CB110**
5	167.6	733.6	1.3	**CB110**
4	225.4	986.6	1.0	**CB110**

0.95 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
65	43.0	107.3	3.1	**CB85**
63	44.3	109.1	1.6	**CB70**
55	50.8	125.1	1.4	**CB70**
55	51.3	128.0	2.6	**CB85**
47	59.1	145.5	1.2	**CB70**
47	59.1	147.5	2.4	**CB85**
41	69.0	172.2	2.1	**CB85**
41	69.0	174.4	3.8	**CB110**
40	69.6	171.4	1.1	**CB70**
35	80.2	176.7	1.9	**CB85**
35	80.2	184.5	3.8	**CB110**
34	82.6	179.3	0.9	**CB70**
25	110.3	235.9	0.8	**CB70**
25	110.4	239.7	1.4	**CB85**
25	110.4	254.0	2.8	**CB110**
22	128.8	279.6	1.2	**CB85**
22	128.8	296.3	2.3	**CB110**
17	167.6	331.3	1.0	**CB85**
17	167.6	353.0	2.0	**CB110**
12	225.4	438.2	0.8	**CB85**
12	225.4	467.4	1.1	**CB110**
10	286.4	482.6	1.0	**CB110**
8	342.1	576.4	0.9	**CB110**
7	394.1	651.2	0.8	**CB110**
n_1 = 1400 min^{-1}				
33	43.0	209.0	1.9	**CB85**
33	43.0	211.8	3.6	**CB110**
32	44.3	212.4	1.0	**CB70**
28	50.8	243.6	0.8	**CB70**
27	51.3	249.3	1.6	**CB85**
27	51.3	252.7	3.0	**CB110**
24	59.1	287.2	1.4	**CB85**
24	59.1	291.1	2.6	**CB110**
20	69.0	335.4	1.2	**CB85**
20	69.0	339.8	2.3	**CB110**
17	80.2	332.6	1.1	**CB85**
17	80.2	353.4	2.3	**CB110**
13	110.4	457.9	0.8	**CB85**
13	110.4	486.5	1.6	**CB110**
11	128.8	567.6	1.4	**CB110**
8	167.6	662.5	1.2	**CB110**
6	225.4	891.0	0.9	**CB110**

0.95 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 900 min^{-1}				
21	43.0	325.1	1.2	**CB85**
21	43.0	329.4	2.3	**CB110**
18	51.3	372.3	1.2	**CB85**
18	51.3	377.5	2.5	**CB110**
15	59.1	428.9	1.1	**CB85**
15	59.1	434.9	2.2	**CB110**
13	69.0	500.8	0.9	**CB85**
13	69.0	507.8	1.9	**CB110**
11	80.2	517.4	0.9	**CB85**
11	80.2	549.8	1.7	**CB110**
8	110.4	690.0	1.4	**CB110**
7	128.8	805.0	1.2	**CB110**
5	167.6	929.2	1.1	**CB110**
4	225.4	1249.7	0.8	**CB110**

1.1 kW

n_2 min^{-1}	ir	T2 Nm	FS'	CB
n_1 = 2800 min^{-1}				
65	43.0	124.2	2.7	**CB85**
63	44.3	126.3	1.3	**CB70**
55	50.8	144.8	1.2	**CB70**
55	51.3	148.2	2.2	**CB85**
55	51.3	150.1	4.2	**CB110**
47	59.1	168.5	1.1	**CB70**
47	59.1	170.7	2.1	**CB85**
47	59.1	172.9	3.9	**CB110**
41	69.0	199.3	1.8	**CB85**
41	69.0	201.9	3.3	**CB110**
40	69.6	198.5	0.9	**CB70**
35	80.2	204.6	1.7	**CB85**
35	80.2	213.6	3.3	**CB110**
34	82.6	207.6	0.8	**CB70**
25	110.4	277.5	1.2	**CB85**
25	110.4	294.1	2.4	**CB110**
22	128.8	323.8	1.0	**CB85**
22	128.8	343.1	1.9	**CB110**
17	167.6	383.6	0.9	**CB85**
17	167.6	408.7	1.7	**CB110**
12	225.4	541.2	0.9	**CB110**
10	286.4	558.7	0.9	**CB110**
8	342.1	667.4	0.8	**CB110**

4.8 Prestazioni motoriduttori CB

n_2 min^{-1}	ir	T2 Nm	FS'	CB
1.1 kW				
n_1 = **1400** min^{-1}				
33	43.0	242.0	1.7	**CB85**
33	43.0	245.2	3.1	**CB110**
32	44.3	246.0	0.8	**CB70**
27	51.3	288.7	1.4	**CB85**
27	51.3	292.5	2.6	**CB110**
24	59.1	332.6	1.2	**CB85**
24	59.1	337.0	2.3	**CB110**
20	69.0	388.3	1.0	**CB85**
20	69.0	393.5	2.0	**CB110**
17	80.2	385.1	1.0	**CB85**
17	80.2	409.2	1.9	**CB110**
13	110.4	563.3	1.4	**CB110**
11	128.8	657.2	1.2	**CB110**
8	167.6	767.1	1.0	**CB110**
6	225.4	1031.7	0.8	**CB110**
n_1 = **900** min^{-1}				
21	43.0	376.4	1.1	**CB85**
21	43.0	381.4	2.0	**CB110**
18	51.3	431.1	1.1	**CB85**
18	51.3	437.1	2.2	**CB110**
15	59.1	496.7	0.9	**CB85**
15	59.1	503.6	1.9	**CB110**
13	69.0	579.9	0.8	**CB85**
13	69.0	587.9	1.6	**CB110**
11	80.2	599.1	0.8	**CB85**
11	80.2	636.6	1.5	**CB110**
8	110.4	798.9	1.2	**CB110**
7	128.8	932.1	1.0	**CB110**
5	167.6	1075.9	0.9	**CB110**
1.5 kW				
n_1 = **2800** min^{-1}				
65	43.0	169.4	2.0	**CB85**
65	43.0	171.6	3.7	**CB110**
63	44.3	172.2	1.0	**CB70**
55	50.8	197.5	0.9	**CB70**
55	51.3	202.1	1.6	**CB85**
55	51.3	204.7	3.1	**CB110**
47	59.1	229.8	0.8	**CB70**
47	59.1	232.8	1.5	**CB85**
47	59.1	235.8	2.9	**CB110**

4.8 CB Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	CB
1.5 kW				
n_1 = **2800** min^{-1}				
35	80.2	409.2	0.8	**CB85 ***
65	43.0	251.7	2.5	**CB110**
55	51.3	300.2	2.1	**CB110**
47	59.1	345.9	1.9	**CB110**
41	69.0	403.8	1.6	**CB110**
35	80.2	427.3	1.7	**CB110**
25	110.4	588.2	1.2	**CB110**
22	128.8	686.2	1.0	**CB110**
17	167.6	817.4	0.9	**CB110**
n_1 = **1400** min^{-1}				
33	43.0	330.0	1.2	**CB85**
33	43.0	334.4	2.3	**CB110**
27	51.3	393.7	1.0	**CB85**
27	51.3	398.9	1.9	**CB110**
24	59.1	453.5	0.9	**CB85**
24	59.1	459.6	1.7	**CB110**
20	69.0	529.5	0.8	**CB85**
20	69.0	536.6	1.4	**CB110**
17	80.2	558.0	1.4	**CB110**
13	110.4	768.1	1.0	**CB110**
11	128.8	896.2	0.9	**CB110**
8	167.6	1046.1	0.8	**CB110**
n_1 = **900** min^{-1}				
21	43.0	520.2	1.5	**CB110**
18	51.3	596.1	1.6	**CB110**
15	59.1	686.7	1.4	**CB110**
13	69.0	801.7	1.2	**CB110**
11	80.2	868.0	1.1	**CB110**
8	110.4	1089.5	0.9	**CB110**
7	128.8	1271.0	0.8	**CB110**
1.8 kW				
n_1 = **1400** min^{-1}				
33	43.0	396.0	1.0	**CB85**
33	43.0	401.3	1.9	**CB110**
27	51.3	472.4	0.9	**CB85**
27	51.3	478.7	1.6	**CB110**
24	59.1	551.5	1.4	**CB110**
20	69.0	643.9	1.2	**CB110**

4.8 Leistungen der CB Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	CB
1.8 kW				
n_1 = **1400** min^{-1}				
17	80.2	669.6	1.2	**CB110**
13	110.4	921.8	0.9	**CB110**
2.2 kW				
n_1 = **2800** min^{-1}				
65	43.0	248.4	1.3	**CB85**
55	51.3	296.4	1.1	**CB85**
47	59.1	341.5	1.0	**CB85**
41	69.0	398.7	0.9	**CB85**
n_1 = **1400** min^{-1}				
33	43.0	490.4	1.6	**CB110**
27	51.3	585.1	1.3	**CB110**
24	59.1	674.1	1.1	**CB110**
20	69.0	787.0	1.0	**CB110**
17	80.2	818.4	1.0	**CB110**
n_1 = **900** min^{-1}				
21	43.0	762.9	1.0	**CB110**
18	51.3	874.2	1.1	**CB110**
15	59.1	1007.1	1.0	**CB110**
13	69.0	1175.9	0.8	**CB110**
11	80.2	1273.1	0.8	**CB110**
3 kW				
n_1 = **2800** min^{-1}				
65	43.0	343.2	1.8	**CB110**
55	51.3	409.4	1.5	**CB110**
47	59.1	471.7	1.4	**CB110**
41	69.0	550.7	1.2	**CB110**
35	80.2	582.6	1.2	**CB110**
25	110.4	802.0	0.9	**CB110**
n_1 = **1400** min^{-1}				
33	43.0	668.8	1.1	**CB110**
27	51.3	797.9	1.0	**CB110**
24	59.1	919.2	0.8	**CB110**

4.8 Prestazioni motoriduttori CB

4.8 CB Gearmotors performances

4.8 Leistungen der CB Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	CB
4 kW				
n_1 = **2800** min^{-1}				
65	43.0	457.6	1.4	**CB110**
55	51.3	545.9	1.2	**CB110**
47	59.1	628.9	1.1	**CB110**
41	69.0	734.3	0.9	**CB110**
35	80.2	776.9	0.9	**CB110***
n_1 = **1400** min^{-1}				
33	43.0	891.7	0.9	**CB110***

N.B.:
Tutte le potenze indicate si riferiscono alla potenza meccanica dei riduttori.
Per i riduttori contrassegnati con **(*)** è opportuno effettuare la verifica della potenza limite termico secondo le indicazioni riportate nel par. 1.7

NOTE.
The indicated power is based on the mechanical capacities of the gearboxes.
For the gearboxes marked with (*) it is aslo necessary to obey the therminal capacity like shown on chapter 1.7.

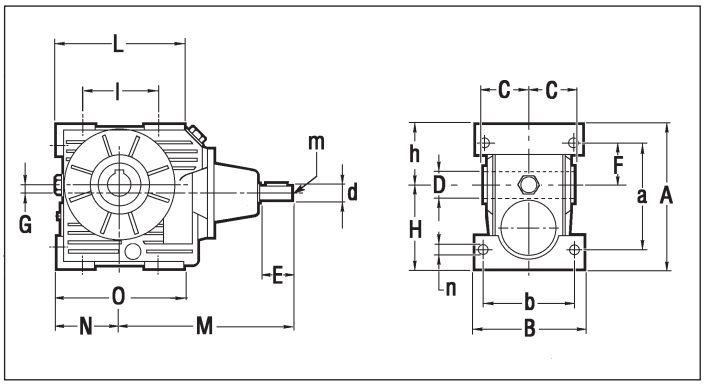
HINWEIS.
Die Leistungsangaben beziehen sich auf die mecanische Belasbarkeit der Getriebe.
Bei den mit (*) gekennzeichneten Getrieben ist außerdem die thermische Leistungsgrenze zu beachten (s. Kap. 1.7).

4.9 Dimensioni

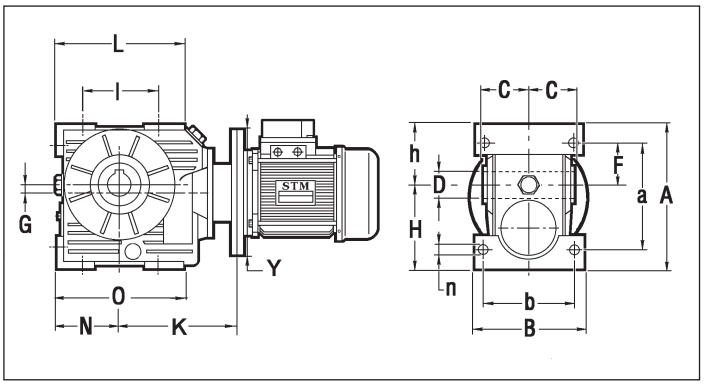
4.9 Dimensions

4.9 Abmessungen

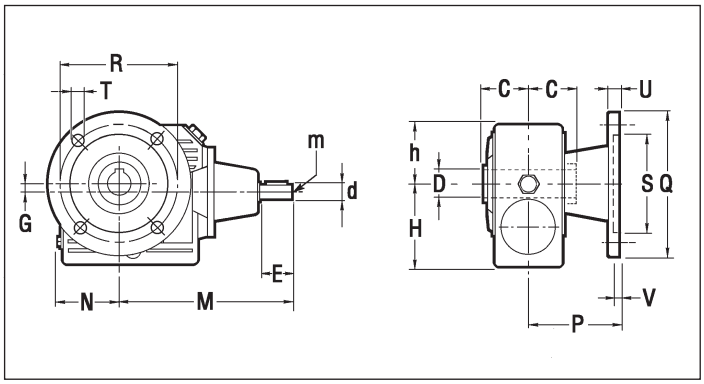
CR



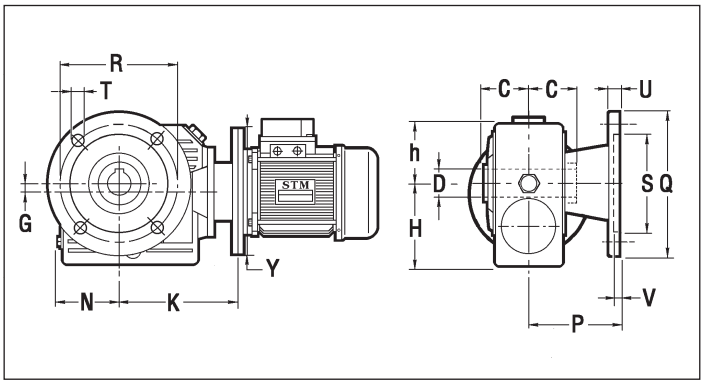
CB



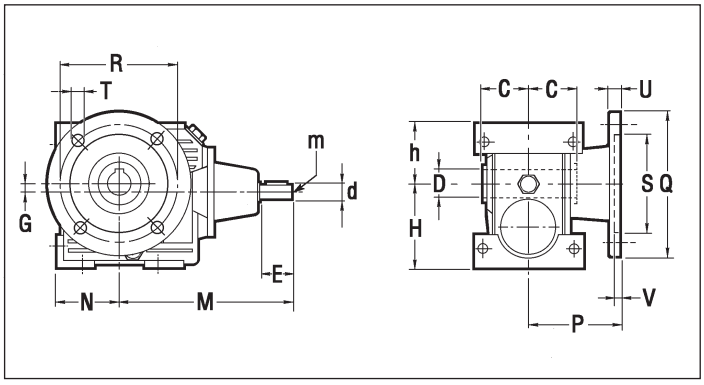
CRF



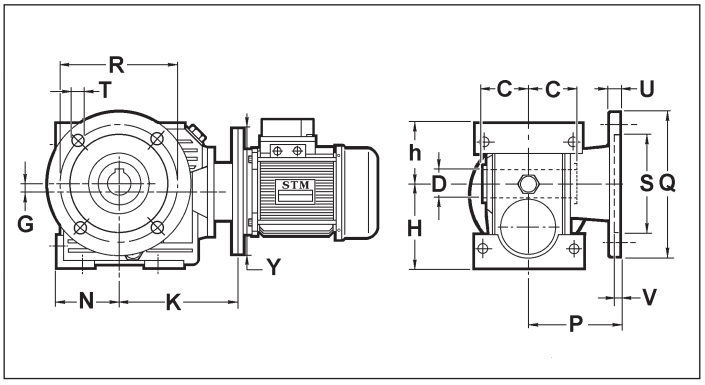
CBF



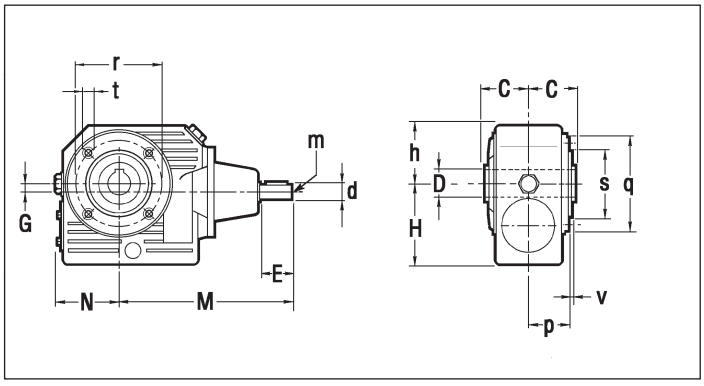
CR/F



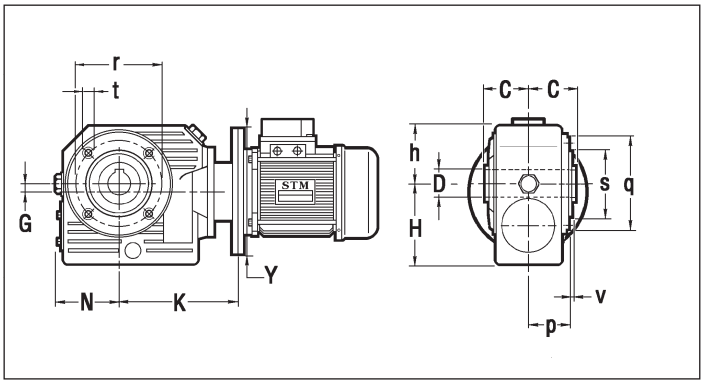
CB/F



CRP



CBP



4.9 Dimensioni — *4.9 Dimensions* — 4.9 Abmessungen

CR CB	A	a	B	b	C	D H7	d J6	E	F	G	H	h	I	L	M	m	N	n	O
40	135	100	102	84	41	19 (18)	14	30	40	7	78	57	70	117	160	M6	59	7	117
50	166	120	120	99	49	24 (25)	19	40	46	9	97	69	85	130	183	M8	69	9	130
70	215	160	140	116	60	28	24	50	61	17.5	127	88	120	186	238	M8	93	11	193
85	252	188	170	140	61	32 (35)	28	60	74	29	145	107	140	221	273	M8	116	13	231
110	330	244	200	162	77.5	42	32	70	97	43	190	140	200	277	336	M10	142	14	282

CR CB	P	Q	R	S H8	T	U	V	p	q	r	s h8	t	v
40	82	140	115	95	8.5	9	5	38	95	83	60	M6	2
50	91.5	160	130	110	10	10	5	49	105	85	70	M8	2.5
70	111	200	165^{0}_{+11}	130	13	11	5	57	120	100	80	M8	5
85	100	200	165	130	13	12	5	56.5	144	130	110	M10	3.5
110	150	250	215	180	15	16	5	74	200	165	130	M12	3

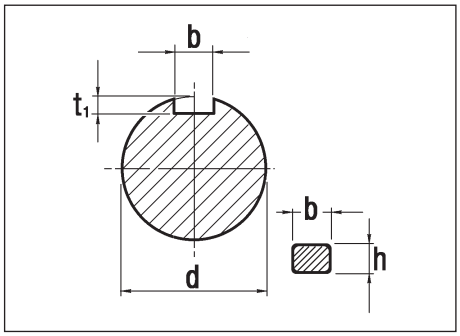
	CB									
	40		**50**		**70**		**85**		**110**	
	Y	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**	**Y**	**K**
B5	120	108	120	133	140	153	140	173	200	229
	140	108	140	133	160	153	160	173	250	239
	—	—	160	133	200	165	200	193	—	—

N.B.
Nelle grandezze 40, 50, 70 la versione FL viene ottenuta applicando una flangia modulare sulla flangia pendolare della versione PP.

NOTE.
In sizes 40, 50, 70 the FL version is obtained by applying a modular flange onto the shaft mounted flange on the PP version.

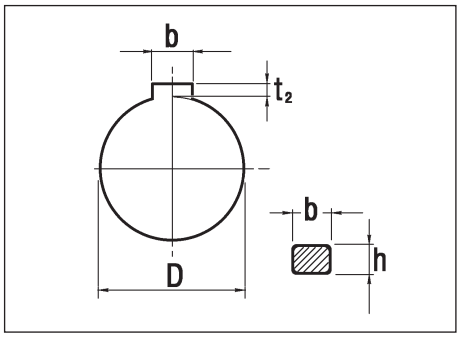
HINWEIS.
Bei den Größen 40, 50, 70 erhält man die FL-Version, indem ein Modulflansch an den Flansch mit Drehmomentstütze der PP-Version befestigt wird.

Linguette — *Keys* — Federn



Albero entrata
Input shaft
Antriebswelle

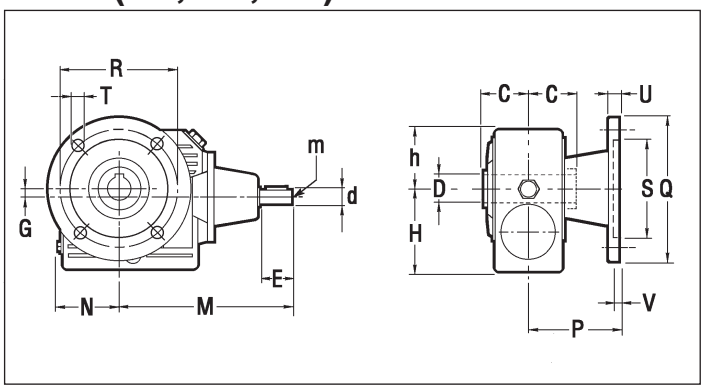
d	b x h	t_1	
14	5 x 5	3.0	+ 0.1 0
19	6 x 6	3.5	
24	8 x 7	4.0	+ 0.2 0
28	8 x 7	4.0	
32	10 x 8	5.0	



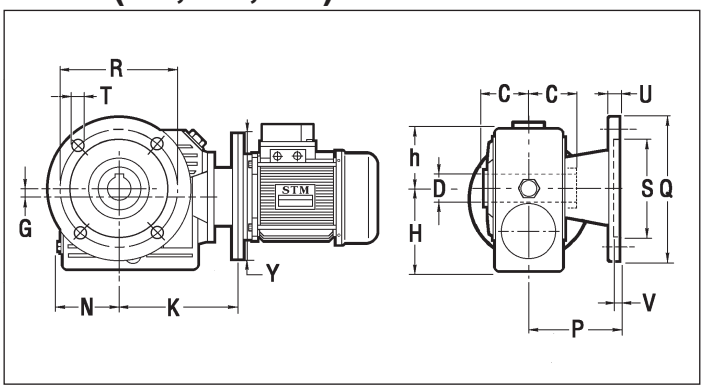
Albero uscita
Output shaft
Abtriebswelle

D	b x h	t_2	
19	6 x 6	2.8	+ 0.1 0
24	8 x 7	3.3	
28	8 x 7	3.3	+0.2 0
32	10 x 8	3.3	
42	12 x 8	3.3	

CRF (F1, F2, F3)



CBF (F1, F2, F3)



	CR - CB													
	40		50			70			85			110		
	F1	F2	F1	F2	F3	F1°	F2°	F3	F1	F2	F3	F1	F2	F3
P	69	62	93	73	81	116	85	101	141	120	91	115	132	178
Q	106	120	125	125	140	175	175	160	200	210	160	200	270	270
R	87	100	90	100	115	150	150	130	165	176	130	165	230	230
S (H8)	60	80	70^{0}_{+9}	70	95	115	115	110	130	152	110	130	170	170
T	8.5	9	10.5	9	9	11	11	11	13	13	11.5	13	13.5	13.5
U	9	9	10	9	9	10	10	11	12	14	10	12	18	18
V	5	5	5	4	4	5	5	6	6	5	5	5	10	10

N.B.
Le versioni F1, F2contrassegnate con il simbolo (°) sono ottenute applicando una flangia modulare sulla flangia pendolare della versione PP.

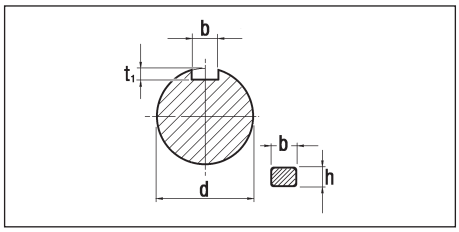
NOTE.
F1, F2 versions that are marked with (°) are obtained by applying a modular flange onto the shaft mounted flange on the PP version.

HINWEIS.
Die mit (°) gekennzeichneten Versionen F1, F2 erhält man, indem ein Modulflansch an den Flansch mit Drehmomentstütze der PP-Version befestigt wird.

CR CB	C	D H7	d J6	E	G	H	h	M	m	N
40	41	19 (18)	14	30	7	78	57	160	M6	59
50	49	24 (25)	19	40	9	97	69	183	M8	69
70	60	28	24	50	17.5	127	88	238	M8	93
85	61	32 (35)	28	60	29	145	107	273	M8	116
110	77.5	42	32	70	43	190	140	336	M10	142

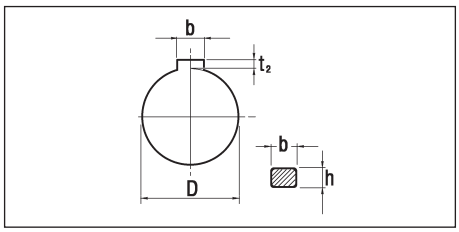
	CB									
	40		50		70		85		110	
	Y	K	Y	K	Y	K	Y	K	Y	K
B5	120	108	120	134	140	153	140	173	200	229
	140	108	140	134	160	153	160	173	250	239
	—	—	160	134	200	165	200	193	—	—

Linguette — *Keys* — Federn



Albero entrata
Input shaft
Antriebswelle

d	b x h	t_1	
14	5 x 5	3.0	$^{+0.1}_{0}$
19	6 x 6	3.5	
24	8 x 7	4.0	$^{+0.2}_{0}$
28	8 x 7	4.0	
32	10 x 8	5.0	



Albero uscita
Output shaft
Abtriebswelle

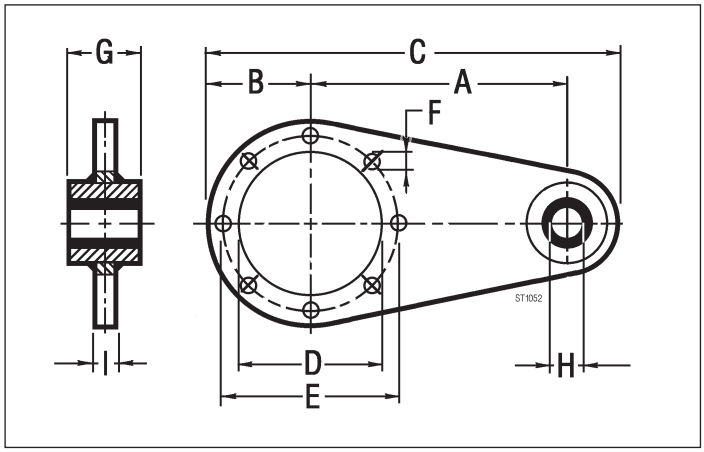
D	b x h	t_2	
19	6 x 6	2.8	$^{+0.1}_{0}$
24	8 x 7	3.3	
28	8 x 7	3.3	$^{+0.2}_{0}$
32	10 x 8	3.3	
42	12 x 8	3.3	

4.10 Accessori
Braccio di reazione

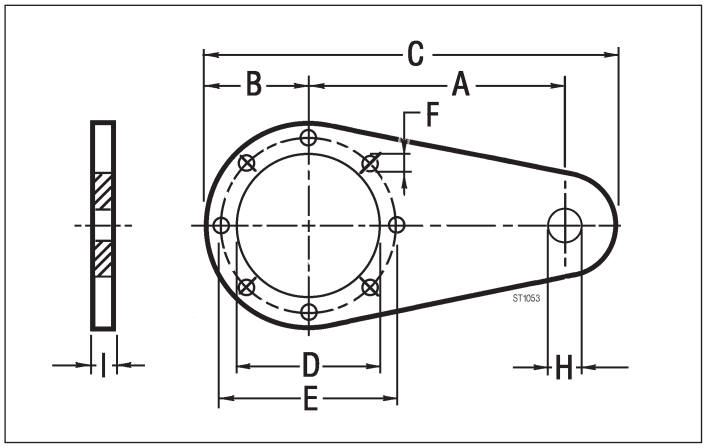
4.10 Accessories
Torque arm

4.10 Zubehör
Drehmomentstütze

Con boccola VKL
With VKL bushing
Mit VKL-Buchse



Standard



	CR - CB				
	40	**50**	**70**	**85**	**110**
A	90	100	150	200	250
B	50	60	60	75	100
C	165	185	240	313	388
D	60	70	80	110	130
E	83	85	100	130	165
F	7	9	9	11	13
G	15	15	20	25	25
H	10	10	10	20	20
I	4	4	6	6	6

4.10 Accessori
Alberi lenti

Tutti i riduttori a vite senza fine sono forniti con albero lento cavo.
A richiesta, possono essere forniti alberi lenti come indicato nei disegni dimensionali.
Le dimensioni delle linguette sono conformi alle norme UNI 6604-69 (vedi par. 2.11).

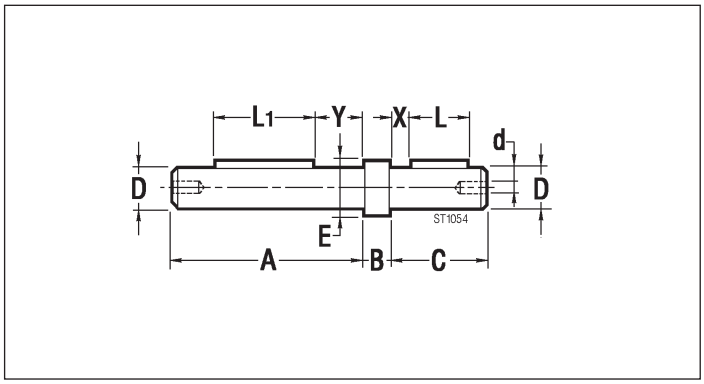
4.10 Accessories
Output shafts

All worm gearboxes are supplied with hollow output shaft.
Output shafts as shown in the size drawings can be supplied upon request.
Sizes of feathers comply with standards UNI 6604-69 (see chapter 2.11).

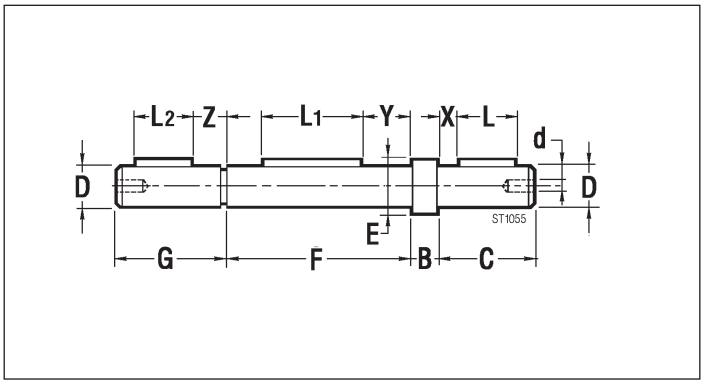
4.10 Zubehör
Abtriebswellen

Alle Schneckengetriebe werden mit hohler Abtriebswelle geliefert.
Auf Anfrage können Abtriebswellen gemäß den Maßzeich-nungen geliefert werden.
Die Abmessungen der Federn entsprechen den Normen UNI 6604-69 (Kapitel 2.11).

Albero lento normale
Single output shaft
Einseitige Abtriebswelle



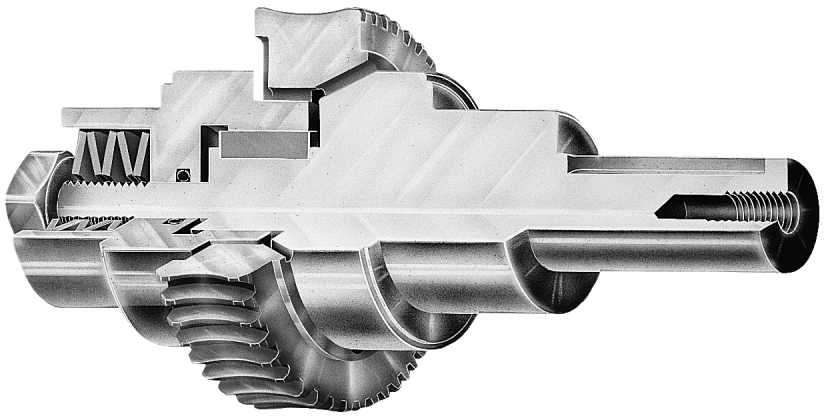
Albero lento bisporgente
Double output shaft
Beidseitige Abtriebswelle



	CR - CB				
	40	**50**	**70**	**85**	**110**
A	80	95	117	119	153
B	10	10	10	10	10
C	40	45	60	71	100
D_{g6}	19	24	28	32	42
d	M8	M8	M8	M10	M10
E	22	28	34	38	50
F	82	98	120	122	155
G	50	55	70	81	110
L	25	30	40	50	80
L1	40	50	60	70	80
L2	25	30	40	50	80
X	8	7.5	10	10	10
Y	21	24	30	26	37
Z	18	18	20	20	20

5.0 LIMITATORE DI COPPIA
TORQUE LIMITER
RUTSCHKUPPLUNG

LP
LC
LF



ATTENZIONE !

Il limitatore di coppia non può essere considerato in alcun caso un dispositivo per la sicurezza dell'operatore ma solo un sistema di protezione della macchina.

ATTENTION !

The torque limiter can not be considered as a security device for the operator but as a protection system for the machine.

ACHTUNG !

Bei der Rutschkupplung handelt es sich nicht um eine Sicherheits-vorrichtung für das Bedienpersonal, sondern um ein Schutzsystem für die Anlage.

5.1 Caratteristiche tecniche

Il limitatore di coppia STM è utile in tutti i casi nei quali si voglia proteggere una trasmissione da sovraccarichi, urti e qualunque irregolarità della coppia assorbita dall'utilizzatore.
Nei confronti delle frizioni tradizionali presenta numerosi vantaggi:

- è incorporato, senza variazioni dimensionali, nei riduttori a vite senza fine semplici RI/RMI, combinati CRI/CRMI e con precoppia CR/CB nella gamma delle grandezze 28,40,50,63,70,85, 110,130,150.
- è protetto da qualunque contaminante (acqua, polvere, olio, grasso),ecc.
- è concepito per lavorare a bagno d'olio, cosa che lo rende affidabile nel tempo ed esente da usura.
- è facilmente regolabile dall'esterno tramite il serraggio di un dado esagonale.
- può slittare anche per diversi minuti senza danneggiarsi.

Il limitatore di coppia è montato nel riduttore utilizzando cuscinetti radiali **ed escludendo l'applicazione di cuscinetti conici** in quanto i carichi assiali generati da questi ultimi provocherebbero alterazioni nella taratura del limitatore stesso.
Nel par. 5.5 sono riportati i valori della coppia di slittamento del limitatore in funzione del numero di giri del dado di regolazione o della ghiera.
Ricordiamo inoltre che su specifica richiesta, nei riduttori combinati, è possibile montare il limitatore di coppia sul primo riduttore (più piccolo) con la possibilità di mantenere l'irreversibilità del gruppo, qualora la scelta dei rapporti la preveda, e con un costo più contenuto del dispositivo.

5.1 Technical characteristics

STM torque limiter is useful in all those cases where it is necessary to protect a transmission from overloads, shocks and any other torque irregularities.

Several are the advantages that it offers when compared with traditional clutches:

- *it is built-in in the wormgearboxes type RI-RMI, in the combined units type CRI/CRMI and with primary reduction type CR/CB in sizes 28,40,50, 63,70,85,110,130,150 without any design modification*s.
- *it is protected from any possible polluting agents (water, dust, oil, grease) etc.*
- *it has been designed for oil-bath operation therefore reliable and wearfree.*
- *it is easily adjustable from outside by turning a standard hexagonal nut.*
- *it can slip for several minutes at a time without damage.*

*The torque limiter is assembled on to the gearbox by means of radial bearings **and not taper roller bearings** since the axial loads created by them could alter the calibration of the torque limiter itself.*
On chapter 5.5 are listed the values of the slipping torque of the torque limiter in operation and of the nut's number of turns.
It is important to draw the attention on the fact that, upon request, it is possible to assemble the torque limiter on to the first gearbox (the smaller one) in the combined units and this will not affect the irreversibility of the unit depending on the ratios of the gearboxes. As a result the unit will certainly be less expensive.

5.1 Technische Eigenschaften

Ist ein Schutz vor Überlastungen, stoßartigen Belastungen etc. erforderlich, so ist die integrierte Rutschkupplung von STM eine unentbehrliche Zusatzausstattung.

Sie bietet immer dann Vorteile, wenn die normale Belastung eines Antriebes überschritten wird.

- Integriert in die Standardschneckengetriebe RI/RMI, Doppelschneckengetriebe CRI/CRMI und Stirnradschneckengetriebe CR/CB; alle Ausführungen in den Größen 28, 40, 50, 63, 70, 85, 110, 130 und 150.
- durch die integrierte Bauweise geschützt gegen äußere Einflüsse wie Staub, Wasser, Öl, Fett, etc.
- im Ölbad laufend, dadurch zuverlässig und wartungsfrei.
- einfache Drehmomenteinstellung durch eine von außen zugängliche Einstellmutter.
- Schlupf über einen längeren Zeitraum hinweg fügt der Kupplung keinen Schaden zu, allerdings ist die erhöhte Erwärmung bei Dauerschlupf zu beachten.

Schneckengetriebe mit Rutschkupplung können nur mit Radiallagern ausgestattet werden. Zur Einstellung des Schlupfmomentes ist eine Axialverschiebung des Druckringes erforderlich, was den Einsatz von Kegelrollenlagern verhindert.
Das gewünschte Schlupfmoment kann mit Hilfe der Einstellmutter auf Basis der Werte kapitel 5.5 eingestellt werden.
Bei Doppelschneckengetrieben ist es auf Wunsch möglich, die Rutschkupplung in die erste Stufe zu integrieren. Dadurch wird die mögliche Selbsthemmung des Getriebes erhalten und die Rutschkupplung kann kleiner dimensioniert werden.
Dies ist jedoch nur bei geeigneten Untersetzungsverhältnissen möglich.

5.2 Descrizione

Il limitatore di coppia STM è costruito nelle configurazioni:

LP (albero sporgente),
LC (albero cavo, non passante)
LF (albero cavo passante).

Facendo riferimento alle figure, la trasmissione del moto avviene per attrito fra le superfici dell'albero (6) della corona dentata (5) e della bussola (7) che vengono sottoposte ad una determinata compressione (regolabile) per mezzo dell'azione esercitata sulle molle a tazza (2) dal dado di regolazione o dalla ghiera (1).

5.2 Description

STM torque limiter is manufactured in the following versions:

***LP** (extended shaft)*
***LC** (hollow shaft)*
***LF** (through hollow shaft)*

With reference to pictures shown below, transmission of movement takes place by means of friction between the shaft, the wormwheel and the bushing.
They are infact subject of a determined compression (which can be adjusted) created by the effect of the nut on the washers.

5.2 Beschreibung

Die STM Rutschkupplung wird mit unterschiedlichen Ausgangswellenausführungen produziert:

LP Vollwelle
LC Hohlwelle einseitig
LF Hohlwelle durchgehend

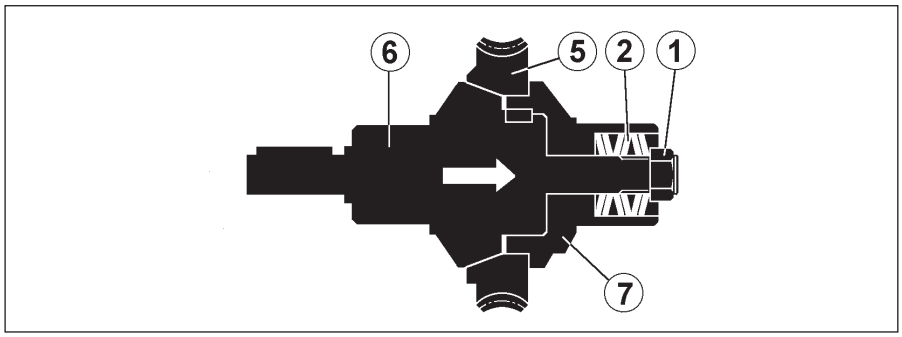
Die Drehmomentübertragung findet durch Reibschluß zwischen dem Konus der Abtriebswelle und dem Schneckenrad statt.
Die (einstellbare) Reibkraft wird durch die auf den Druckring wirkende Kraft der Tellerfedern erzeugt.

La scelta ottimale dei materiali della corona (bronzo GCuSn12 UNI 7013) e dell'albero e della bussola (acciaio temprato e rettificato) consente di garantire delle durate molto elevate anche in presenza di frequenti slittamenti.

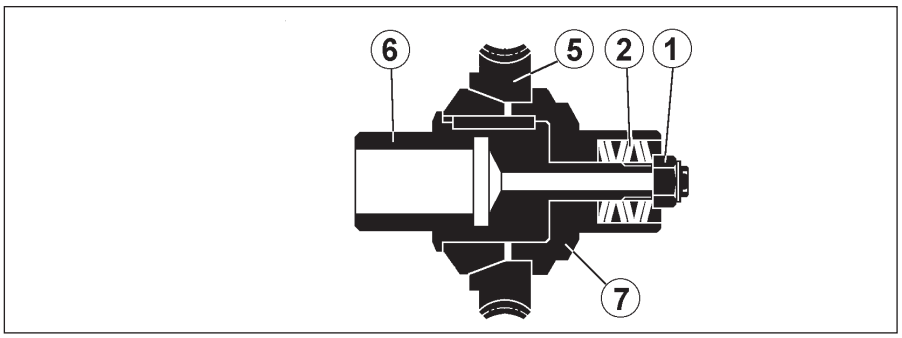
The perfect choice of the wormheel material (bronze GCuSn12 UNI 7013) together with the shaft and bushings which are made out of ground and hardened steel, enable the manufacturer to guarantee long life even with frequent slippings.

Eine optimale Werkstoffkombination - beim Schneckenrad Bronze GCuSn 12 Uni 7013 und bei der Welle gehärteter und geschliffener Stahl - garantieren auch bei häufigem Schlupf eine hohe Lebens-dauer.

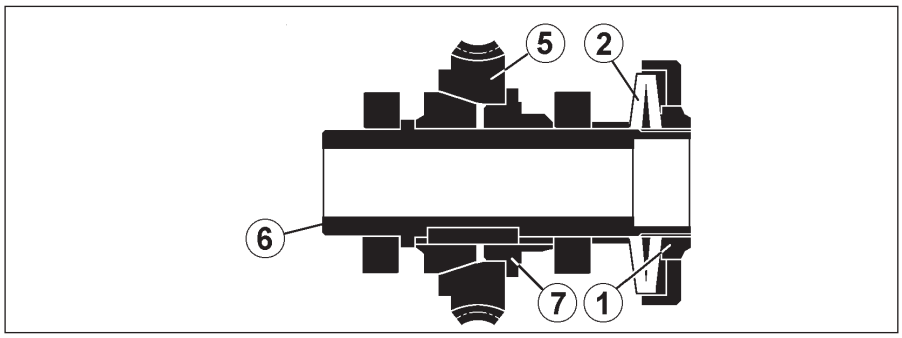
LP



LC



LF



5.3 Designazione

5.3 Configuration

5.3 Beschreibung

	Riduttore *Gearbox* Getriebe	*Versione* *Version* Version	Lato uscita moto *Motion output* Abtriebsseite	Taratura maggiorata *Heavy calibration* Erhöhtes Ansprechmoment
RI **RMI** **CRI** **CRMI** **CR** **CB**	Grandezza / *Size* Größe Versione / *Version* Ausführung DIN / IEC kW	**L P** **L C** **L F**	**A** **B**	**TM** Opzionale solo per RI, RMI *Optional only for RI, RMI* Als Option nur für RI, RMI

Esempio / *Example* / Beispiel

RMI 40S 1:20 PAM 63 (B5) LPA

RMI 40S 1:20 kW 0.18 4 63 (B5) LCA (TM)

RI 40S 1:20 LFA (TM)

Alla designazione del riduttore, determinata reperendo i dati necessari nei rispettivi cataloghi, deve seguire la lettera **L** che contraddistingue il limitatore incorporato, unitamente alla versione desiderata:

*Once the right designation of the gearbox has been selected following the indications reported in the respective catalogues, letter **L** must be added to indicate the built-in limiter together with the required version:*

Nach der Wahl des Getriebetyps (basierend auf den im jeweiligen Katalogabschnitt zu findenden Angaben) wird der Getriebespezifikation bei Bedarf einer Rutschkupplung der Buchstabe **L** hinzugefügt. Der Typ der Rutschkupplung muß folgendermaßen gekennzeichnet werden:

P albero sporgente
C albero cavo non passante
F albero cavo passante

P *double extended shaft*
C *hollow shaft*
F *through hollow shaft*

P Vollwelle
C einseitig Hohlwelle
F durchgehend Hohlwelle

E' molto importante precisare anche il lato dove si desidera l'uscita del moto **A, B,** avvalendosi degli schemi riportati nelle pagine seguenti, ricordando che, ovviamente, dalla parte opposta dell'uscita sarà possibile effettuare la taratura del limitatore agendo sull'apposito dado o ghiera.

*It is also essential to specify where the output of motion **A** and **B** is required according to the diagram shown in the following page reminding that on the opposite side of the output it is possible to carry out the limiter calibration by acting on to the appropriate nut or ring nut.*

Außerdem muß die Abtriebsseite **A**, **B** mit Hilfe der anschließend aufgeführten Skizzen angegeben werden - unter Berücksichtigung, daß die Einstellmutter sich auf der dem Abtrieb gegenüberliegenden Seite befindet .

Per la determinazione della posizione dell' albero di uscita nelle versioni a piedi o PP, è sufficiente osservare il riduttore dalla parte entrata-moto o (per la versione di montaggio **D**) lato vite ; se l'albero è desiderato sul lato sinistro, la posizione di montaggio del limitatore sarà in esecuzione **A**, viceversa, se l' albero è a destra si dovrà richiedere l'esecuzione **B**.

*In order to determine the position of the output shaft in foot or PP version, it is enough to look at the gearbox from the input side or wormshaft side (mounting position **D**), if shaft is required on to the left hand side, mounting position of limiter will be **A**, on the contrary, if shaft is required on to the right hand side, version **B** should be required.*

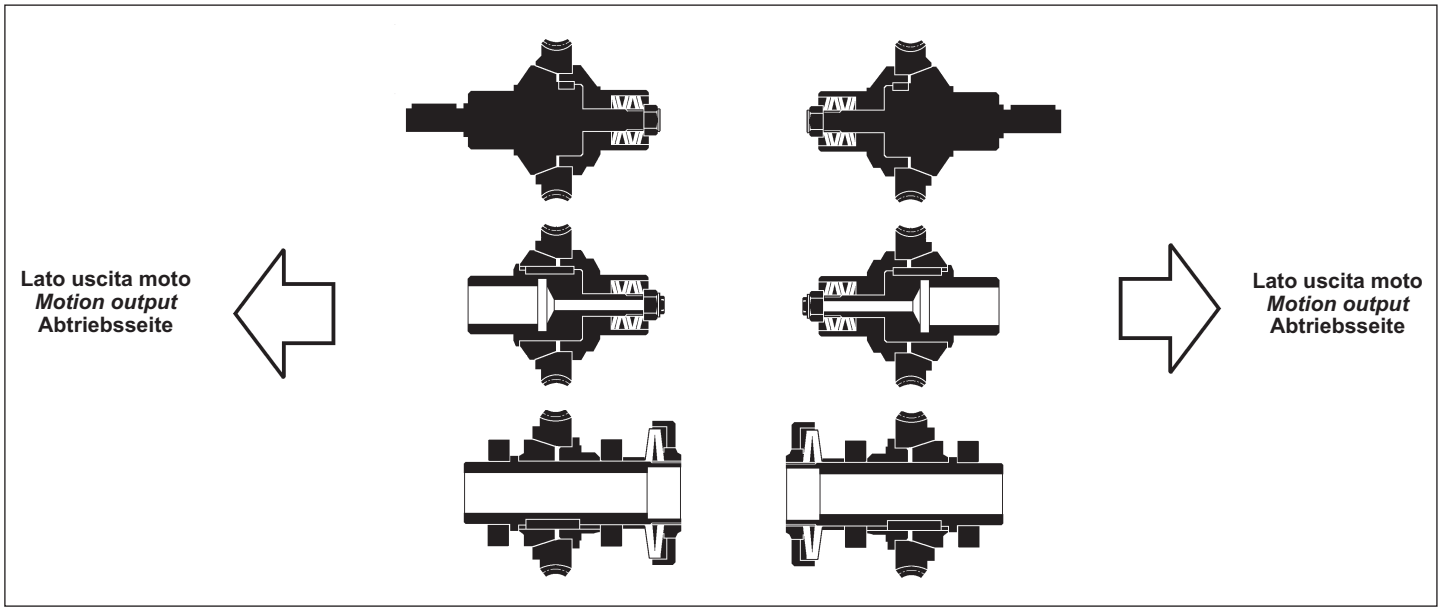
Zur Bestimmung der Lage der Abtriebswelle wird ein Getriebe in Fußversion oder Version PP von der Eingangsseite oder (bei der Montageversion **D**) von der Schraubenseite betrachtet: befindet sich die Welle auf der linken Seite, ist die Montagestellung des Drehmomentbegrenzers Ausführung **A**, andernfalls - wenn die Welle sich auf der rechten Seite befindet-handelt es sich um Ausführung **B.**

Nelle versioni FL o P, l'esecuzione A è considerata quella che prevede l'uscita-moto dal lato del coperchio chiuso o coperchio FO (lato opposto alla flangia); l'esecuzione B è invece quella in cui l'uscita-moto è dalla stessa parte della flangia FL o P.
A tale proposito si desidera evidenziare che nelle versioni FL non è stata riportata l'uscita A (anche se tecnicamente fattibile) in quanto la ghiera o il dado si troverebbero all'interno della flangia stessa, pertanto difficilmente accessibili.

In the FL or P versions, execution A is the one that provides the output of motion from the closed cover or FO cover (on the opposite side of the flange); execution B, instead, is the one that provides the output of motion from FL or P side.
On this purpose, it is important to draw user's attention on the fact that in these versions output A has not been highlighted although available as the nut or ring nut would be located inside the same flange and therefore hardly accessible.

Bei den Versionen in einfacher P- oder Flanschausfuhrung ist zu beachten, daß bei der Ausführung A der Abtrieb auf der Seite des geschlossenen oder FO-Deckels (gegen- über dem Flansch), liegt folglich befindet sich die Einstellmutter dann im Flansch. Da die Einstellmutter in diesem Fall nur sehr schwer zugänglich ist, wurde diese Ausführung hier nicht aufgelistet, ist jedoch technisch realisierbar und auf Wunsch auch erhältlich.

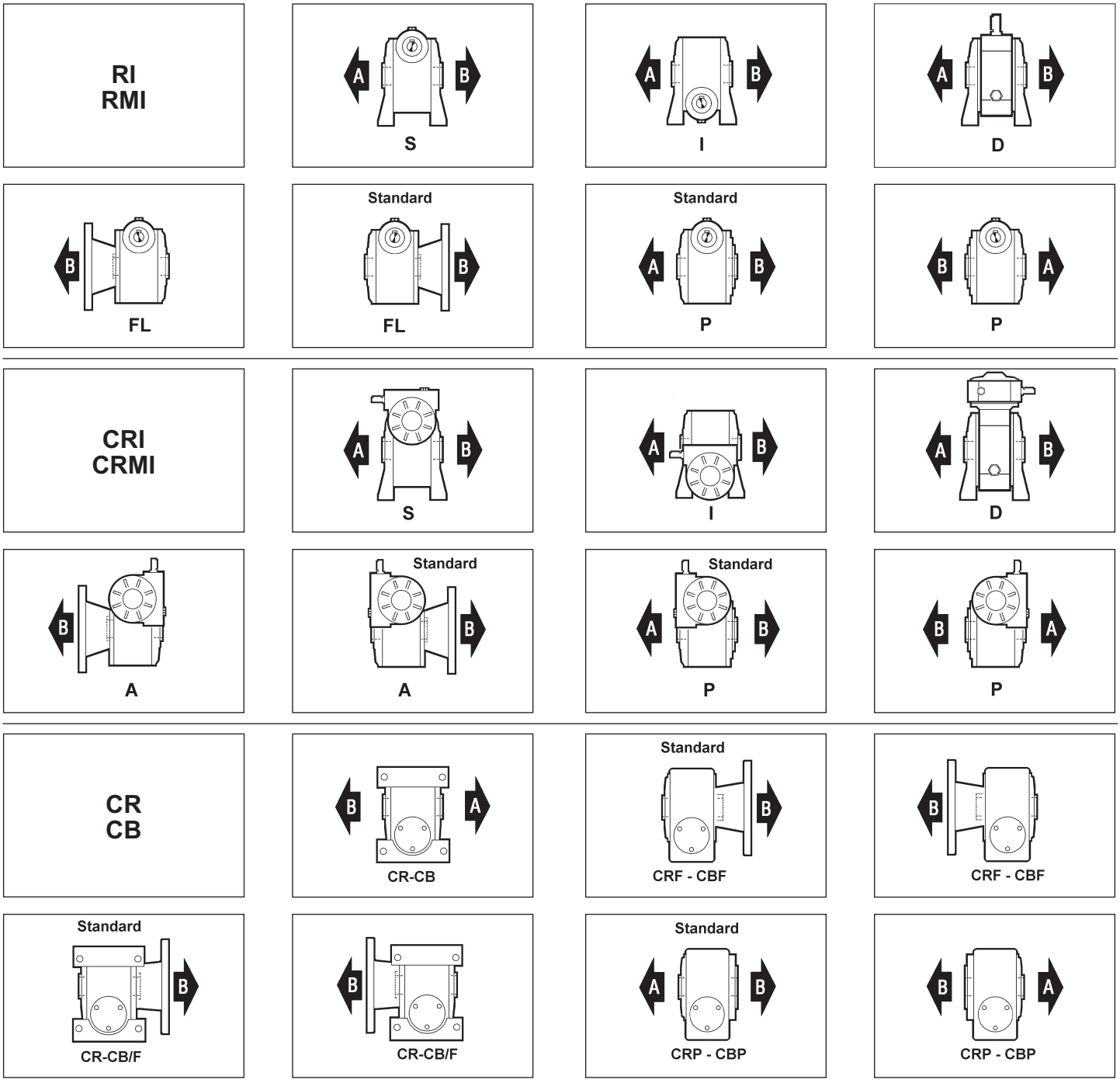
Fig. 5.1



N.B. La scelta della posiz. A e B dell' albero uscita è indipendente dalla versione di montaggio del riduttore.

NOTE. Choice of shaft positions A and B are not related to mounting position of gearbox.

HINWEIS. Die Wahl der Abtriebsposition A oder B ist unabhängig von der Montageposition des Getriebes.



Per i riduttori 40, 50, 63, 70 previsti con doppia flangia pendolare fare riferimento alla versione P standard.

For gearboxes 40, 50, 63, 70 with double shaft-mounted flange, refer to the standard P version.

Für Getriebe 40, 50, 63, 70 PP wird auf die Standardausführung P verwiesen.

5.4 Lubrificazione

Tutti i riduttori con limitatore di coppia devono essere lubrificati ad olio.

La lubrificazione a grasso non è possibile.
E' possibile utilizzare i lubrificanti indicati nella tab. 1.7 par. 1.6 attenendosi comunque alle indicazioni generali di manutenzione.

5.4 Lubrication

All gearboxes equipped with a torque limiter must be oil lubricated.

Grease lubrication is not possible.

The lubricants listed in the tab. 1.7 on the chapter 1.6 can be used but it is always advisable to follow the general indications of maintenance.

5.4 Schmierung

Alle mit Rutschkupplungen ausgestatteten Schneckengetriebe müssen ölgeschmiert sein.
Eine Fettschmierung ist nicht möglich.

Unter Berücksichtigung der allgemeinen Instandhaltungsanweisungen können die in Tabelle 1.7 kapitel 1.6 aufgelisteten Schmiermittel verwendet werden.

5.5 Caratteristiche tecniche

Nelle tabelle seguenti sono riportate le coppie di slittamento M_{2S} in funzione del numero dei giri del dado, o della ghiera di regolazione ottenibili con la disposizione standard delle molle (par. 5.6).
Tali valori prescindono dalle prestazioni delle dentature.
Valori più elevati di M_{2S} si possono ottenere, a richiesta, con una diversa disposizione delle molle.
I valori di taratura si riferiscono ad una condizione statica(durante lo slittamento la coppia trasmessa decade considerevolmente) ed hanno un significato indicativo in quanto ottenuti per via teorica.
E' opportuno verificare periodicamente la coppia di taratura soprattutto durante la prima fase di funzionamento.

5.5 Technical characteristics

In the following tables the slipping torques M_{2S} are listed according to number of turns of nut or ring nut obtainable with a standard arrangement of the springs (chapter 5.6).
Such data prescind from tothing performances.
M_{2S} higher values can eventually be obtained with a different arrangement of the springs.
Calibration values refer to a static condition (during slippage torque reports a considerable decrease) and are approximate being calculated on a theoric basis. It is important therefore to check the calibration torque periodically especially during first phase of running.

5.5 Technische Besonderheiten

In der folgenden Tabelle sind die Rutschmomente M_{2S} dargestellt, wie sie je nach Stellung der Sechskant- oder Nutmutter mit der Standardanordnung der Tellerfedern erreicht werden (siehe kapitel 5.6).
Diese Werte lassen die maximal übertragbare Leistung der Getriebe in Abhängigkeit von der Untersetzung jedoch außer acht.
Mit einer anderen Anordnung der Tellerfedern können auch größere Rutschmomente M_{2S} erreicht werden.
Die angegebenen Werte sind statische Momente (das Rutschmoment nimmt während des Schlupfvorganges ab) und sind nur als Näherungswerte zu betrachten. Das eingestellte Rutschmoment sollte in der Einlaufphase in periodischen Abständen überprüft und gegebenenfalls korrigiert werden.

LP

LC

M_{2S} (Nm)												
RI RMI	**ir**	**N. GIRI DEL DADO DI REGOLAZIONE** *NUMBER OF TURNS OF ADJUSTEMENT RING NUT* **DREHUNGEN DER EINSTELLMUTTER**										
		1/2	**2/3**	**1**	**1 1/3**	**1 2/3**	**2**	**2 1/3**	**2 2/3**	**3**	**3 1/3**	**3 2/3**
28	tutti i rapporti *all ratios* alle Untersetzungen	4	5.5	7.5	10	13						
40		12	16	24	31	38	46					
50		16	20	29	39	47	55	63				
63		21	27	41	55	65	79	89	101	112	124	
70		21	27	41	55	65	79	89	101	112	124	
85	7-10-15-28	60	79	113.5	148	175	210	236	265	298	323	345
	20-40-49	66	87	125	163	192.5	231	260	292	328	356	380
	56 - 100	72	95	136	178	210	253	284	319	358	388	415
110	7-10-15-28	106	141	207	271	334	392	454	516	572	630	
	20-40-49	114	152	224	293	361	423	490	557	618	680	
	56 - 100	131	174	257	336	414	486	640	709	781		
130	tutti/*all*/alle	240	310	450	590	720	850	950				
150	tutti/*all*/alle	550	730	1070	1390	1700	1990	2200				

M_{2S} (Nm)											
RI RMI Taratura maggiorata *Heavy calibration* Erhoete eichung	**CRI CRMI**	**ir**	**N. GIRI DEL DADO DI REGOLAZIONE** *NUMBER OF TURNS OF ADJUSTEMENT RING NUT* **DREHUNGEN DER EINSTELLMUTTER**							**ir**	**CR CB**
			1/2	**2/3**	**1**	**1 1/3**	**1 2/3**	**2**	**2 1/3**		
28	**28**	tutti i rapporti *all ratios* alle Untersetzungen	12.5	17	24						
40	**40**		40	53	77	91				tutti/*all*/alle	**40**
50	**50**		50	65	93	128					**50**
63	**63**		96	125	178	231	288				
70	**70**		96	125	178	231	288			tutti/*all*/alle	**70**
85	**85**	7-10-15-28	146	185	263	350	414	471	542	43.0 - 128.8	**85**
		20-40-49	161	204	289	385	456	518	596	167.6 - 225.4	
		56 - 100	176	223	316	420	497	566	651	286.4 - 460.0	
110	**110**	7-10-15-28	261	342	501	653	805	945		43.0 - 128.8	**110**
		20-40-49	282	369	541	705	869	1021		167.6 - 225.4	
		56 - 100	323	424	621	810	998	1172		286.4 - 460.0	
130	**130**	tutti/*all*/alle	470	620	910	1180	1450	1700	1900		
150	**150**	tutti/*all*/alle	830	110	1600	2050	2500	3000	3350		

5.5 Caratteristiche tecniche

ATTENZIONE!

Quando è richiesto il minimo errore di taratura è opportuno verificare in pratica, staticamente, che la frizione slitti effettivamente al valore desiderato è comunque consigliabile testare la coppia trasmissibile direttamente sulla macchina utilizzatrice.

5.5 Technical characteristics

ATTENTION!

When minimum calibration error is required it is always advisable to actually verify, statically, that clutch slips at the required value. We suggest, however, to test the torque directly on to the machine.

5.5 Technische Besonderheiten

ACHTUNG!

Um Abweichungen zu vermeiden, müssen die eingestellten Momente im eingebauten Zustand kontrolliert und eventuell korrigiert werden.

LF

RI RMI	ir	M_{2S} (Nm) N. GIRI DELLA GHIERA DI REGOLAZIONE *N. OF TURNS OF ADJUSTEMENT RING NUT* DREHUNGEN DER EINSTELLMUTTER												
		1/4	1/2	2/3	1	1 1/3	1 2/3	2	2 1/3	2 2/3	3	3 1/3	3 2/3	4
40	tutti i rapporti *all ratios* alle Untersetzungen	15	28	36	51	64	75	86	97					
50		21	40	52	74	93	110	126	141	154	167			
63		27	51	66	93	120	140	160	175	195	210			
70		24	45	58	81	100	115	125	135	145	151	155	160	
85	7-10-15-28	50	85	115	160	200	240	280	310	340	370	395	420	
	20-40-49	60	95	120	170	220	265	300	340	370	400	430	460	
	56-70-80-100	80	100	130	190	240	290	330	370	400	440	470	500	
110	*7-10-15-28*	140	260	340	490	630	750	860	960	1060	1150	1230	1310	1390
	20-40-49	150	285	370	530	670	800	930	1040	1140	1230	1330	1410	1500
	56-70-80-100	170	330	430	600	770	930	1060	1190	1300	1415	1520	1620	1720
130	tutti /*all* /alle	244	476	625	910	1180	1438	1686	1920	2160	2390			
150	tutti /*all* /alle	550	860	1130	1660	2170	2660	3140	3600	4050	4500	4930	5370	

RI RMI Taratura maggiorata *Heavy calibration* Erhoete eichung	CRI CRMI	ir	M_{2S} (Nm) N. GIRI DELLA GHIERA DI REGOLAZIONE *N. OF TURNS OF ADJUSTEMENT RING NUT* DREHUNGEN DER EINSTELLMUTTER													ir	CR CB
			1/4	1/2	2/3	1	1 1/3	1 2/3	2	2 1/3	2 2/3	3	3 1/3	3 2/3	4		
40	**40**	tutti i rapporti *all ratios* alle Untersetzungen	15	28	36	51	64	75	86	97						tutti /*all* /alle	**40**
50	**50**		21	40	52	74	93	110	126	141	154	167					**50**
63	**63**		51	100	130	190	245	295	345	385	440	480					
70	**70**		38	74	96	135	175	210	240	270	300	320	350			tutti /*all* /alle	**70**
85	**85**	7-10-15-28	100	125	160	230	300	360	410	460	510	560	600	640	680	43.0 - 128.8	**85**
		20-40-49	110	135	180	255	330	390	450	510	560	610	650	700	750	167.6 - 225.4	
		56-70-80-100	120	150	195	280	350	425	490	550	610	665	715	765	815	286.4 - 460.0	
110	**110**	7-10-15-28	190	380	500	740	930	1150	1350	1500	1700	1850	2020	2180	—	43.0 - 128.8	**110**
		20-40-49	200	400	540	780	1000	1230	1430	1620	1800	2000	2170	2360	—	167.6 - 225.4	
		56-70-80-100	220	450	600	900	1150	1380	1620	1840	2070	2300	2500	2700	—	286.4 - 460.0	
130	**130**	tutti /*all* /alle	244	476	625	910	1180	1438	1686	1920	2160	2390					
150	**150**	tutti /*all* /alle	550	860	1130	1660	2170	2660	3140	3600	4050	4500	4930	5370			

5.6 Disposizione delle molle

La disposizione standard delle molle garantisce una buona sensibilità di regolazione e consente di trasmettere la massima coppia nominale del riduttore.

5.6 Springs arrangement

Standard arrangement of springs guarantees an acceptable setting and enables the gearbox to transmit the maximum nominal torque

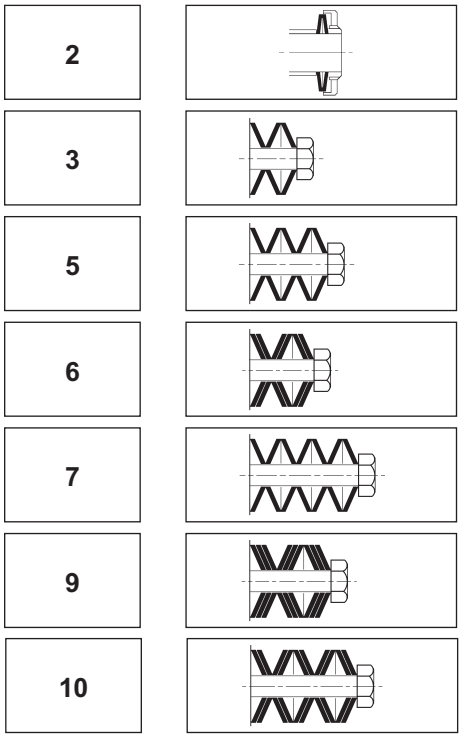
5.6 Anordnung der Tellerfedern

Die Standardanordnung der Tellerfedern erlaubt eine feinfühlige Einstellung des Rutschmomentes bis zum maximalen Nennmoment des Getriebes.

LP

LC

	RI- RMI	RI - RMI Taratura maggiorata *Heavy calibration* Erhoete eichung	CRI - CRMI	CR - CB
28	5 molle/*springs* 20/10.2/1.1	6 molle/*springs* 20/10.2/1.1		
40	5 molle/*springs* 23/12.2/1.5	6 molle/*springs* 23/12.2/1.5		
50	5 molle/*springs* 31.5/16.3/1.75	6 molle/*springs* 31.5/16.3/1.75		
63	7 molle/*springs* 31.5/16.3/2	6 molle/*springs* 31.5/16.3/2		—
70	7 molle/*springs* 34/16.3/2	6 molle/*springs* 34/16.3/2		
85	10 molle/*springs* 40/18.3/2	9 molle/*springs* 40/18.3/2		
110	10 molle/*springs* 45/22.4/2.5	9 molle/*springs* 45/22.4/2.5		
130	3 molle/*springs* 60/30.5/3.5	6 molle/*springs* 60/30.5/3.5		—
150	6 molle/*springs* 60/30.5/3.5	9 molle/springs 60/30.5/3.5		—

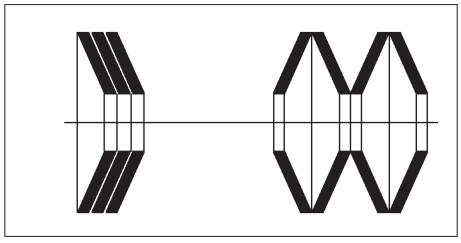


LF

	RI- RMI	RI - RMI Taratura maggiorata *Heavy calibration* Erhoete eichung	CRI - CRMI	CR - CB
40	2 molle/*springs* 63/31/2.5			
50	2 molle/*springs* 80/41/3			
63	2 molle/*springs* 80/41/3	2 molle/*springs* 80/41/4		—
70	2 molle/*springs* 90/46/2.5	2 molle/*springs* 90/46/3.5		
85	2 molle/*springs* 100/51/3.5	2 molle/*springs* 100/51/4		
110	2 molle/*springs* 125/61/5	2 molle/*springs* 125/61/6		
130	2 molle/*springs* 125/75.5/6			—
150	2 molle/*springs* 150/81/8			—

IN PARALLELO
max. coppia
min. sensibilita'
PARALLEL
max. torque
min. sensitivity
PARALLEL
max. Moment
min. Empfindlichkeit

IN SERIE
min. coppia
max. sensibilita'
SERIES
min. torque
max. sensitivity
SERIE
min. Moment
max. Empfindlichkeit

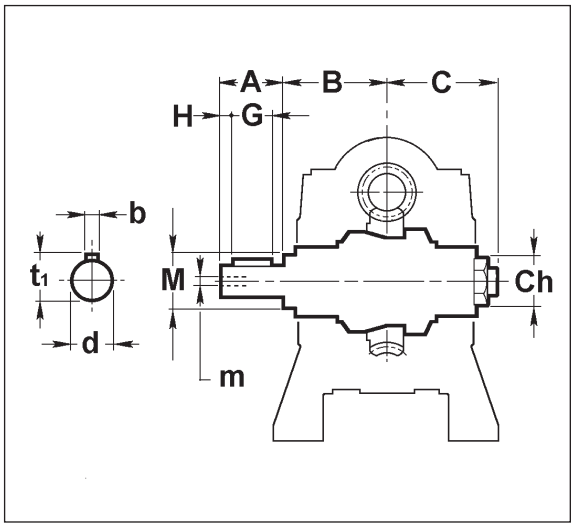


Per problemi specifici è opportuno consultarci, ma a livello indicativo si può affermare che accoppiando più molle con lo stesso verso (in parallelo) si incrementa la coppia massima di slittamento raggiungibile; viceversa alternandone il posizionamento in serie si aumenta la sensibilità di taratura.

Should the user require any specific information, we suggest to contact our technical department. On a general basis, how- ever, if the springs are arranged in the same direction, a higher maximum torque of slippage can be reached; on the contrary by alternating their arrangement the calibration sensitivity is increased.

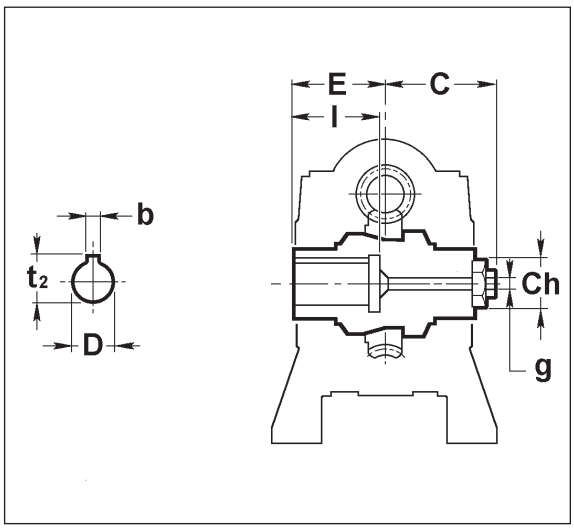
Das Rutschmoment ist umso größer, je mehr Tellerfedern parallel angeordnet sind (progressive Federkennlinie). Wird ein niedrigeres Moment oder eine erhöhte Justiergenauigkeit gewünscht, so können die Federn auch gegensinnig angeordnet werden (degressive Federkennlinie).
Sollten spezifische Fragen bestehen, so empfehlen wir, unser technisches Büro zu Rate zu ziehen.

LP



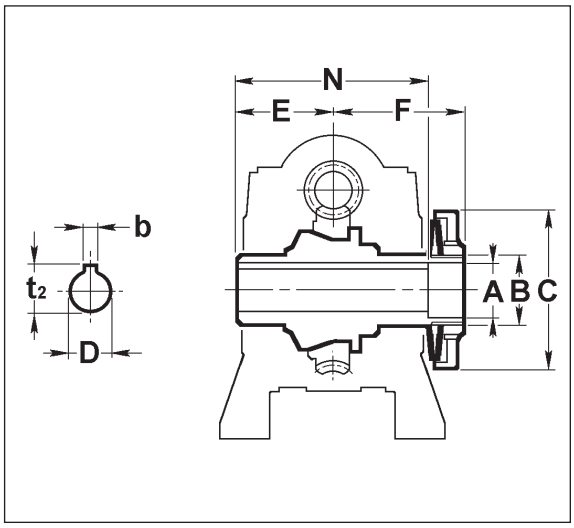
		RI - RMI - CRI - CRMI								
		28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**
LP	**Ch**	17	19	22	24	24	27	32	46	46
	b	5	6	8	8	8	10	12	14	16
	d_{k6}	14	19	24	25	28	32	42	48	55
	t_1	16	21.5	27	28	31	35	45	51.5	59
	A	29.5	40	45	60	60	71	100	110	110
	B	31.5	51	59	65	70	71	87.5	110	125
	C	41	49	60	70	66	75	94.5	119	112
	H	5	7	7.5	8	10	10	10	10	10
	G	20	25	30	40	40	50	80	90	90
	M	17	22	28	32	34	38	50	60	63
	m	M6	M8	M8	M8	M8	M10	M10	M10	M12
			40	**50**		**70**	**85**	**110**		
			CR -CB							

LC



		RI - RMI - CRI - CRMI								
		28	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**
LC	**Ch**	17	19	22	24	24	27	32	46	46
	b	5	6	8	8	8	10	12	14	16
	D_{H7}	14	19	24	25	28	32	42	48	55
	t_2	16.3	21.8	27.3	28.3	31.3	35.3	45.3	51.8	59.3
	E	30	41	49	60	60	61	77.5	90	105
	C	41	49	60	70	66	75	94.5	119	112
	I	27	38	46	53	56	60	90	97	110
	g	4.5	5.5	7	7	9	9	11	11	11
			40	**50**		**70**	**85**	**110**		
			CR - CB							

LF



		RI - RMI - CRI - CRMI							
		40	**50**	**63**	**70**	**85**	**110**	**130**	**150**
LF	**D_{H7}**	19	24	25	28	32	42	48	55
	b	6	8	8	8	10	12	14	16
	t_2	21.8	27.3	28.3	31.3	35.3	45.3	51.8	59.3
	A	25	31	32	36	40	51	59	66
	B	M30	M40	M40	M45	M50	M60	M75	M80
	C	70	90	90	100	110	135	140	165
	E	41	49	60	60	61	77.5	90	105
	F	60	74	85	85	84	107.5	130	155
	N	82	98	120	120	122	155	180	210
		40	**50**		**70**	**85**	**110**		
		CR - CB							

5.8 Rivelatore di blocco

Questo accessorio consiste in un'apparecchiatura elettronica studiata per la rilevazione e la segnalazione della condizione di albero uscita fermo nei motoriduttori provvisti di limitatore di coppia.
Esso è composto da due parti: il sensore (**a**), incorporato nel riduttore (**b**) senza ulteriori ingombri e l'unità elettronica di monitoraggio (**c**).

5.8 Locked shaft detector

It consists of an electronic device designed to detect and warn off a locked shaft in motorized gearboxes equipped with torque limiters.
*It is mainly composed of two parts: the sensor (**a**) which is built-in the gearbox (**b**) without any additional need of space and the electronic monitoring unit (**c**).*

5.8 Wellenblockiererfassung

Es handelt sich hierbei um eine elektronische Schaltung bei Schneckengetrieben mit integrierter Rutschkupplung, welche blockierte Abtriebswellen erkennt und eine Warnmeldung ausgibt.
Die Blockiererfassung besteht hauptsächlich aus zwei Teilen: dem Sensor (**a**), welcher im Getriebegehäuse (**b**) integriert ist, und der elektronischen Anzeige-bzw. Auswertungseinheit (**c**)

Fig. 5.2

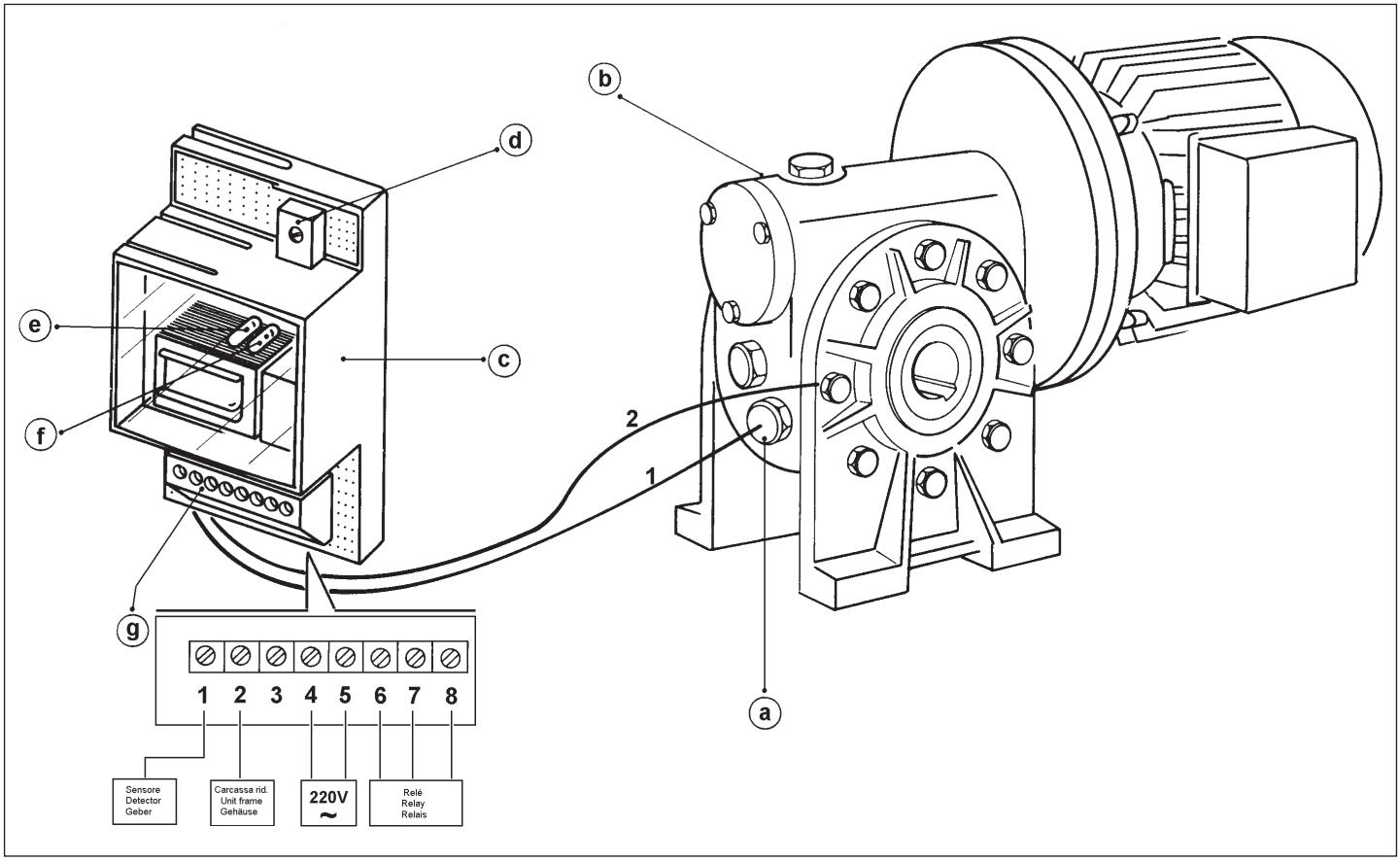
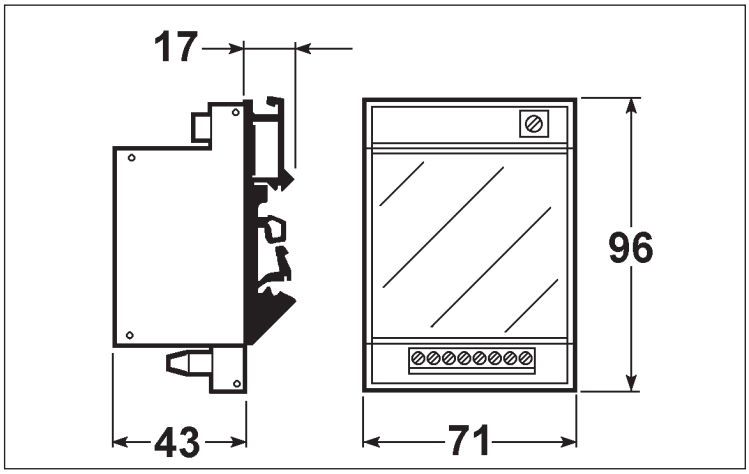


Fig. 5.3



a - Rivelatore / *Detector* / Geber
b - Riduttore / *Gearbox* / Getriebe
c - Unità monitor /*Monitor* / Anzeige
d - Regolazione / *Adjustament* / Einstellung
e - Spia verde / *Green led* / Grüne LED
f - Spia rossa / *Red led* /Rote LED

g - **Morsettiera / *Terminal board* / Klemmenkasten**
1 - Al contatto isolato / *Insulated contact* / Sensorkabel
2 - Alla carcassa riduttore / *To gearbox housing* / zum Gehäuse
3 -
4 - Alimentazione c.a. 230 V. / *Power Suply 230 VAC Spannungsversorgung 230V WS*
5 - Alimentazione c.a. 230 V. / *Power Suply 230 VAC Spannungsversorgung 230V WS*
6 - N.C. / Normally closed / normalerweise geschlossen
7 - N.A. / Normally closed / normalerweise offen
8 - Comune / *Common / Sicherheitsleiter*

5.8 Rivelatore di blocco

Il sensore genera un segnale elettrico digitale discontinuo con una frequenza proporzionale alla velocità di rotazione dell'albero d'uscita del riduttore; la mancanza di segnale è interpretata dall'unità elettronica come condizione di blocco, evidenziata con l'accensione di una spia luminosa rossa (f) e l'attivazione di un relè di uscita i cui contatti possono essere utilizzati per un segnale d'allarme, per avviare una procedura automatica di blocco del ciclo produttivo o per interrompere l'alimentazione al motore che aziona il riduttore entrato in blocco.
Come già accennato, il sensore genera un segnale ripetitivo di natura discontinua; ciò è da tenere in particolare considerazione in tutte le applicazioni caratterizzate da basse velocità in uscita dal riduttore in quanto l'intervallo di tempo che separa gli impulsi prodotti, può innescare il processo di riconoscimento del blocco.
Questa eventualità può essere evitata imponendo al circuito un ritardo in base alle caratteristiche della motorizzazione, al fine di coprire con un certo margine gli intervalli di ripetizione del segnale compatibilmente con la sicurezza di funzionamento dell' apparecchiatura.
La regolazione del tempo di intervento consentita dall'unità elettronica, può anche essere effettuata per imporre un ritardo alla segnalazione di blocco in casi dove brusche variazioni di velocità, di inerzia, o momentanee punte di carico determinano l'intervento del limitatore di coppia con conseguente arresto temporaneo dell'albero comandato.
Ovviamente il ritardo dovrà essere sufficiente a consentire il ripristino delle normali condizioni di funzionamento, considerando che il protrarsi della condizione di blocco oltre il tempo impostato viene rilevato e segnalato dall'unità, la quale mantiene in memoria questo evento (anche se la rotazione dell'albero riprende) evidenziandolo visivamente con la spia rossa fino allo spegnimento dell' apparecchiatura.
Il riduttore con limitatore di coppia può essere predisposto per l'utilizzo di sensori di prossimità induttivi (PNP, NPN o altri) anzichè con RDB.

5.8 Locked shaft detector

The sensor generates a digital discontinuous electronic signal at a frequency which is proportional to the rotational speed of the output shaft of the gearbox; every time the signal is not generated, the electronic unit activates an output relay, highlighted by means of a red led, that warns off the condition of locked shaft.
The contact of the above relay may be used to activate an alarm that starts an automatic shutdown procedure or simply cuts off power to the motor which drives the locked gearbox.
As mentioned above, the sensor generates a discontinuous repetitive signal.
This is particularly important in all those applications characterized by low output speed since the time interval between the impulses generated by the detector could trigger detection of a locked shaft condition which does not actually exist.
In order to prevent this possibility , the circuit can be programmed with a slight delay, according to motorization characteristics, to cover the signal repetition intervals without compromising the operating safety of the equipment.
Regulation of interval time provided by the electronic unit can also be effected in order to impose a delay to the signalling of an actual locked shaft condition in all those cases where , during normal operation, sudden changes of speed or inertia or when there are temporary excesses in the load's resisting moment, could determine the intervention of the torque limiter with subsequent temporary sotp of the shaft.
Such delay should obviuosly be adequately long to reset the normal operating conditions. Infact, if the shaft reamins locked for longer than the set time, the condition is deteced and signalled to the equipment .
The limiter has actually a memory function which is used to prevent the locked shaft condition from being cancelled even if the gearbox resume rotation and it is highlighted by means of a red led.
On a gearbox with torque limiter is possible to mount an inductor sensor (type PNP or NPN) instead of RDB.

5.8 Wellenblockiererfassung

Der Sensor erzeugt ein Rechtecksignal, das in seiner Frequenz proportional zur Abtriebsdrehzahl des Getriebes ist.
Bleibt dieses Signal aus oder sind die Signalpausen zu lang, so aktiviert die Auswertungseinheit neben einer roten LED (als optischen Hinweis) einen Relaiskontakt. Dieser kann eine übergeordnete Steuerungseinheit aktivieren oder die Stromversorgung des Motors unterbrechen.
Wie bereits erwähnt, erzeugt der Sensor ein periodisches Rechtecksignal.
Dies ist besonders bei solchen Einsatzarten wichtig, die durch langsame Ausgangsdrehzahlen gekennzeichnet sind. Wenn nämlich die Zeit zwischen zwei vom Sensor erzeugten Impulsen zu lange wäre, würde die Auswertungseinheit fälschlicherweise eine blockierte Welle melden. Um dem vorzubeugen, kann die Elektronik so programmiert werden, daß sie erst nach einer kurzen Verzögerung anspricht, aber dennoch schnell genug reagiert, um den Antrieb nicht zu gefährden.
Die Einstellung der Rechtecksignaldauer dient auch zur Anlaufüberbrückung, um ein Ansprechen der Blockiererfassung während des Anlaufvorganges bzw. bei plötzlichen Drehzahländerungen zu verhindern.
Die Ansprechverzögerung muß so justiert werden, daß sie erst nach einer gewissen Stillstandszeit der Welle, wie sie unter normalen Betriebsbedingungen auftreten kann, anspricht und diesen Zustand meldet. Dieses Ansprechen wird dann gespeichert, wodurch die Information auch nach dem Wiederanfahren der Einheit noch zur Verfügung steht.
Optisch signalisiert wird dies durch das Aufleuchten der roten LED.
Es ist auch möglich, anstelle des RDB einen Induktionssensor (PNP, NPN oder andere) zu verwenden.

5.8 Rivelatore di blocco

Condizioni di funzionamento:

Temperatura di funzionamento della unità:

0° ÷ +50°C

Temperatura di stoccaggio:

-20° ÷ +70°C

Tensione di alimentazione:

220V (+30V ÷ - 40V)

Tensione di lavoro del sensore:

8V (alternata)

Tempo di intervento:

0.2 sec. min.
8 sec. max.

Relativamente al tempo di intervento, è opportuno considerare che il minimo slittamento rilevabile con i sensori standard è di 25° quando la velocità di rotazione è tale da far rientrare il tempo impiegato per questo slittamento tra quelli possibili.

N° di giri minimo rilevabili:

0.4 min^{-1}

E' opportuno effettuare il collegamento fra il sensore e l'unità elettronica con un cavo schermato onde evitare interferenze di altre apparecchiature (inverter, azionamenti in corrente continua, saldatrici ad ultrasuoni o radiofrequenza, ecc.), considerando inoltre che la lunghezza massima ammissibile è in funzione della qualità del cavo stesso; indicativamente possiamo assumere 35 metri per un cavo schermato normale e 100 metri per un cavo coassiale da 75 ohm (del tipo usato per gli impianti di antenne televisive).
La calza schermante di tale cavo deve essere connessa sia alla carcassa del riduttore, che al morsetto n° 2 dell'unità elettronica. Nel caso in cui il sensore richiesto sia un interrutore di prossimità induttivo, esso viene fornito, senza specifica richiesta, con cavo non schermato: è consigliabile quindi sostituirlo con uno schermato.
Per quanto riguarda le indicazioni sull'utilizzo del rivelatore di blocco si rimanda alle istruzioni allegate allo strumento stesso.

5.8 Locked shaft detector

Operating conditions:

Unit operating temperature:

0° ÷ +50°C

Storage temperature:

-20° ÷ +70°C

Feeding tension:

220V (+30V ÷ - 40V)

Sensor operating tension:

8V (alternate)

Intervention time:

0.2 sec. min.
8 sec. max.

With reference to the interval duration it is important to consider that the minimum slippage which can be detected with standard sensor is 25° when rotation speed permits enough time to carry out the slippage.

Minimum number of detected turns:

0.4 min^{-1}

It is advisable to effect the connection between sensor and electronic unit throughout a screened cable in order to prevent interferences of other devices such as inverters, CC devices, ultrasound or radiofrequency welding machines, etc.. It is also important to take into consideration the fact that the maximum length possible is given by the quality of the same cable. Generally a standard screened cable is 35 m and a coaxial cable of 75 ohm is 100 m (same type used for TV antennas).
Its' advisable to use electric shielded cable to connect the terminal board both to sensor and to the gearbox housing; upon request, inductor sensor is supplied if not specified, without electric shielding: it's advisable to replace it with a shielded conductor.
About use and installation of the locked shaft detector, see the instruction enclosed to device box.

5.8 Wellenblockiererfassung

Betriebsbedingungen:

Betriebstemperatur des Getriebes:

0° ÷ +50°C

Lagertemperatur:

-20° ÷ +70°C

Betriebsspannung:

220V (+30V ÷ - 40V)

Betriebsspannung des Sensors:

8V

Rechtecksignaldauer:

0.2 Sek. min.
8 Sek. max.

Zur Signalerfassung ist zu beachten, daß der kleinste, mit Standardsensoren erfassbare Schlupf bei 25° liegt, soweit n2 nicht zu hoch ist.

Kleinste erfassbare Abtriebnsdrehzahl:

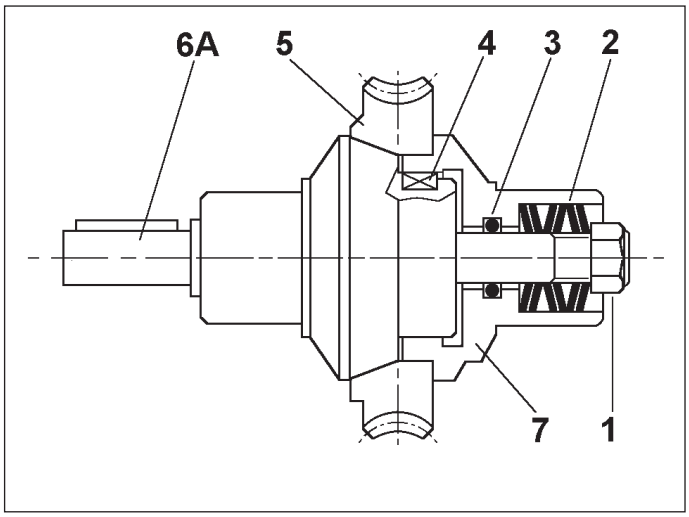
0.4 min^{-1}

Für eine zuverlässige Verbindung zwischen Sensor und Auswertungseinheit wird die Benutzung eines abgeschirmten Kabels empfohlen. Hierdurch werden Störungen durch andere Einrichtungen (z.B. durch Frequenzumrichter, Ultraschalloder Hochfrequenzschweißgeräte, etc.) verhindert.
Die maximale Leitungslange zwischen Sensor und Auswertungseinheit hängt von der Qualität des Kabels ab. Mit einem abgeschirmten Standardkabel sind Reichweiten bis ca. 35 m möglich, mit einem 75 Ohm-Koaxialkabel ca. 100 m (gleicher Kabeltyp wie für TV-Antennenanlagen).
Die Abschirmung dieses Kabels muß sowohl an das Gehäuse des Getriebes als auch an die Klemme Nr. 2 der Elektronikeinheit angeschlossen werden.
Sollte es sich beim erforderlichen Sensor um einen induktiven Näherungsschalter handeln, so wird dieser normalerweise mit einem nicht abgeschirmtem Kabel geliefert. Dieses sollte jedoch durch ein abgeschirmtes Kabel ersetzt werden.
Hinsichtlich des Betriebs und der Installation der Wellenblockiererfassung sind die dem Getriebe beigelgten Hinweise zu beachten.

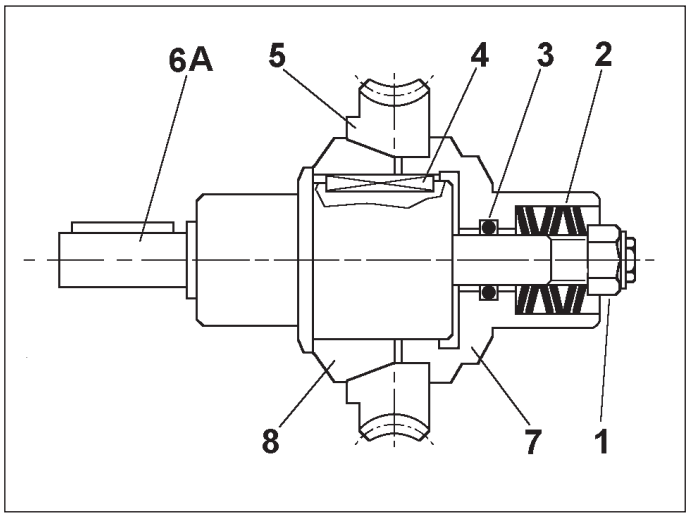
5.9 Lista parti di ricambio — *5.9 Spare parts list* — 5.9 Liste der Ersatzteile

LP

28 - 85

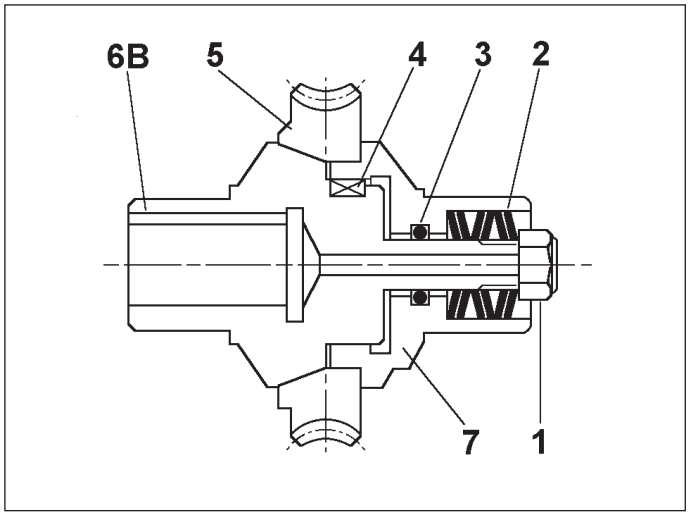


110 - 150

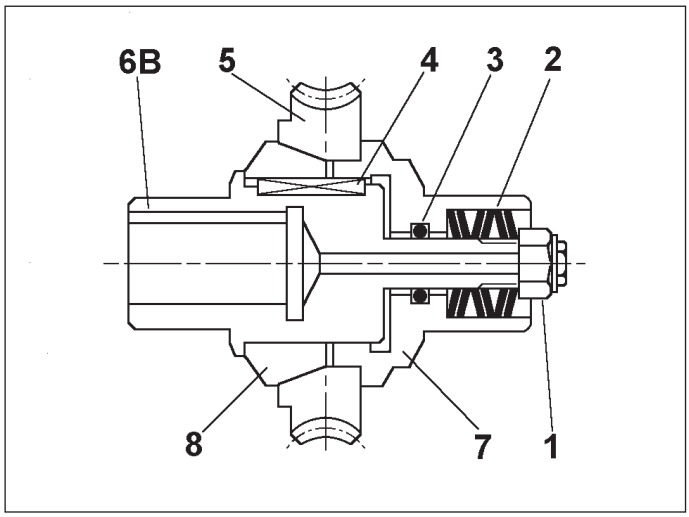


LC

28 - 85



110 - 150



1	Dado di regolazione	*Adjustment nut*	Einstelmutter
2	Molle a tazza	*Washers*	Tellerfedern
3	Guarnizione	Gasket	Öldichtung
4	Linguetta	*Key*	Paßfeder
5	Corona dentata	*Wheel*	Schneckenrad
6A	Albero uscita pieno	*Output shaft*	Ausgangsvollwelle
6B	Albero uscita cavo non passante	*Hollow shaft*	Ausgangshohlwelle
7	Bussola	*Bushing*	Büchse
8	Cono frizione	*Clutch cone*	Reibkonus

Part. N°	28	40	50	63	70	85	110	130	150
3	11.91 x 2.62	13.95 x 2.62	15.08 x 2.62	15.08 x 2.62	17.86 x 2.62	20.24 x 2.62	28.17 x 3.53	34.60 x 2.62	39.69 x 3.53

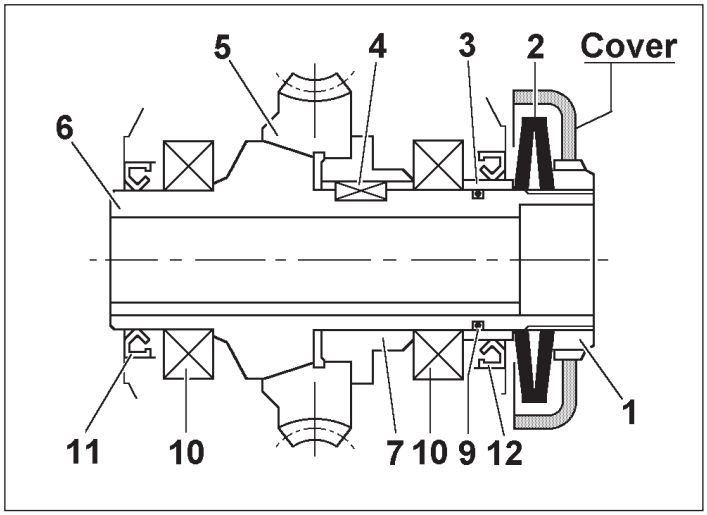
Per i cuscinetti e anelli di tenuta fare riferimento al catalogo riduttori a vite senza fine.

For the bearings and the oilseals please refer to our worm gearboxes catalogue.

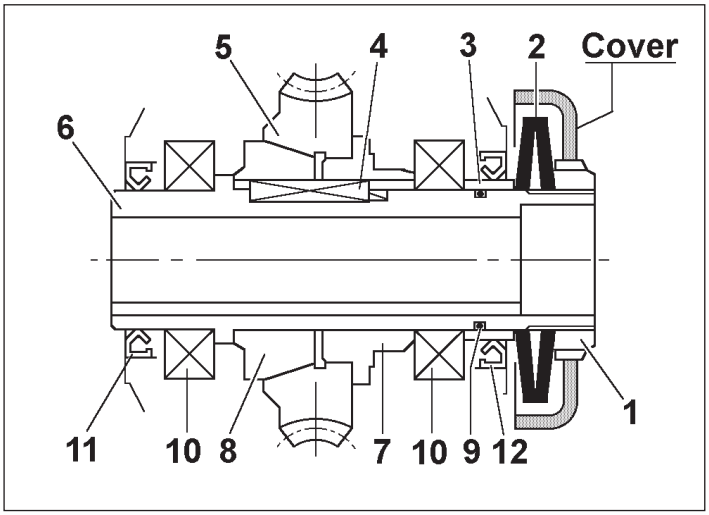
Für die Lager und Öldichtungen siehe unseren Schneckengetriebe - Katalog.

LF

40 - 63



70 - 150

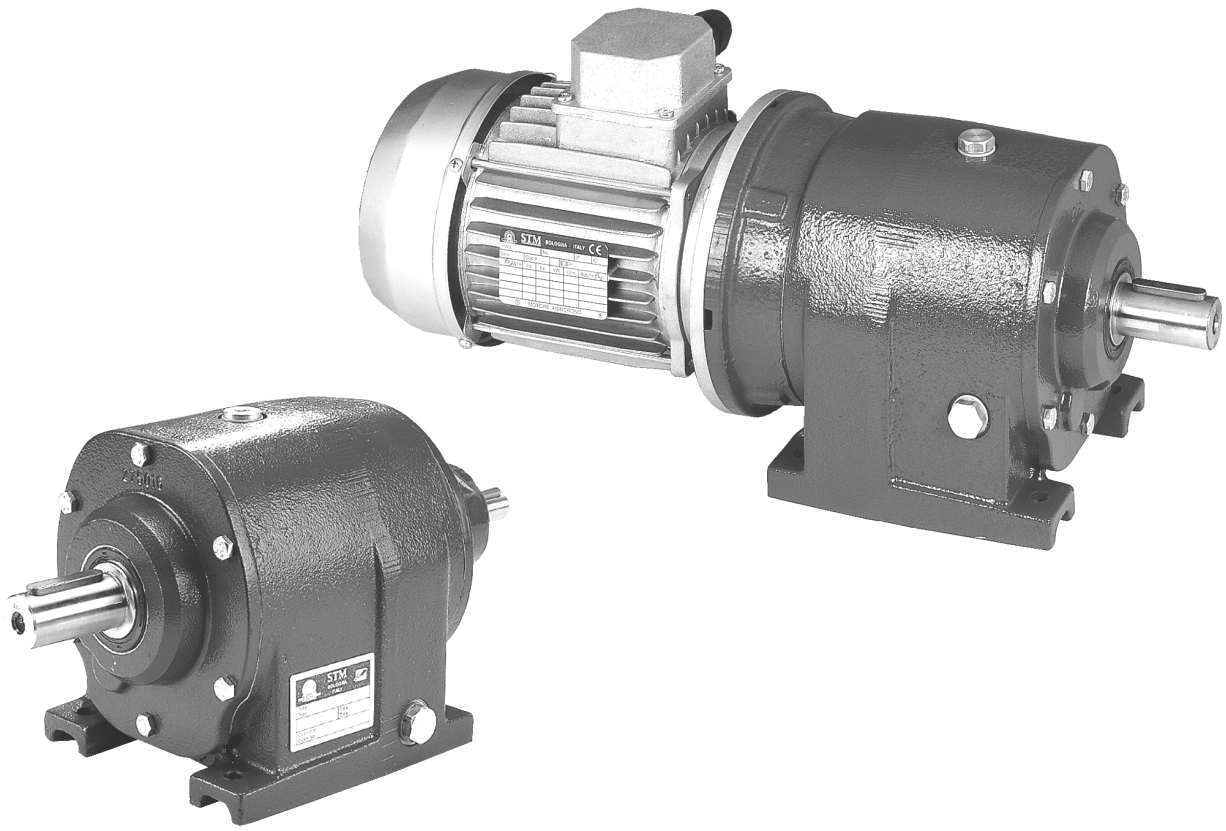


1	Ghiera di regolazione	*Ring nut*	Sechakant oder nut
2	Molle a tazza	*Washers springs*	Tellerfedern
3	Distanziale	*Spacer*	Abstandscheibe
4	Linguetta	*Key*	Paßfeder
5	Corona dentata	*Wheel*	Schneckenrad
6	Albero cavo passante	*Through hollow shaft*	Durchgehende Hohlwelle
7	Bussola	*Bushing*	Büchse
8	Cono frizione	*Clutch cone*	Reibkonus
9	Guarnizione	*Gasket*	Öldichtung
10	Cuscinetto	*Bearing*	Kügellager
11	Anello di tenuta	*Oilseal*	Öldichtung
12	Anello di tenuta	*Oilseal*	Öldichtung

Part. N°	**40**	**50**	**63**	**70**	**85**	**110**	**130**	**150**
9	26.70 x 1.78	37.82 x 1.78	37.82 x 1.78	41 x 1.78	47.35 x 1.78	56.87 x 1.78	71.12 x 2.62	72.62 x 3.53
10	**6006** 30/55/13	**6008** 40/68/15	**6008** 40/68/15	**6009** 45/75/16	**6010** 50/80/16	**6012** 60/95/18	**6015** 75/115/20	**6216** 80/140/26
11	30/47/7	40/56/8	40/56/8	45/60/7	50/65/8	60/75/8	75/95/10	80/100/10
12	35/47/7	45/60/7	45/60/7	50/65/8	60/75/8	70/85/8	85/105/13	100/120/12

6.0 RIDUTTORI COASSIALI
IN-LINE GEARBOXES
STIRNRADGETRIEBE

AR
AM, AC



6.1 Caratteristiche tecniche

La progettazione di questi riduttori è stata impostata su una struttura monolitica particolarmente rigida che permette l'applicazione di elevati carichi.
Carcasse e flange sono realizzate in ghisa meccanica G20 UNI 5007 ad eccezione dei tipi 25, 32 e 40 per i quali è stato utilizzato l'alluminio SG-AlSi UNI 1706.
La lavorazione di tutte le carcasse avviene su moderni centri di lavoro a controllo numerico che permettono di ottenere la massima precisione costruttiva.
L'albero di entrata e quello di uscita sono realizzati a seconda dei casi in acciaio 16CrNi4 UNI 7846 cementato e temprato o in acciaio 39NiCrMo3 UNI EN 10083 bonificato per conseguire la più elevata resistenza meccanica.
Gli ingranaggi sono tutti realizzati in acciaio 18 NiCrMo5 UNI 7846.
Tutti gli ingranaggi sono cementati, temprati e rettificati per migliorarne il rendimento e la silenziosità anche sotto carico.

6.1 Technical characteristics

The design of this series of gearboxes has been based on a particularly rigid monolithic structure enabling the application of heavy loads.
Housings and flanges are manufactured in engineering cast iron G20 UNI 5007 except for sizes 25, 32 and 40 for which, because of their reduced overall dimensions, aluminium SG AlSi UNI 1706 is utilized.
The machining of the housings takes place on modern machining center obtaining, in this way, the maximum constructive accuracy.
Input and output shaft are made of casehardened and tempered steel 16 CrNi4 UNI 7846, or hardened and tempered steel 39 NiCrMo3 UNI EN 10083 in order to reach the best mechanical performances.
All gears are manufactured in steel 18 NiCrMo5 UNI 7846 steel is used.
All gears are manufactured in casehardened and tempered steel subsequently grounded in order to optimize efficiency and quietness under load.

6.1 Technische Eigenschaften

Der Entwicklung dieser Getriebeserie wurde eine kompakte Bauweise sowie eine besonders hohe Stabilität zugrunde gelegt, um auch hohe Belastungen zu ermöglichen.
Mit Ausnahme der Modelle 25, 32 und 40, bei denen aufgrund der geringen Abmessungen Aluminium SG AlSi UNI 1706 verwendet wird, sind Gehäuse und Flansche aus Maschinenguß G20 UNI 5007.
Die Bearbeitung der Gehäuse erfolgt auf modernsten, numerisch gesteuerten Fertigungsmaschinen, wodurch eine hohe Fertigungsgenauigkeit und -qualität erzielt wird.
Um eine hohe mechanische Resistenz zu ermöglichen, sind die Eintriebsund Abtriebswellen aus einsatzgehärtetem und vergütetem Stahl 16CrNi4 UNI7846 oder aus vergütetem Stahl 39NiCrMo3 UNI EN 10083. Alle Zahnräder sind aus 18 NiCrMo5 Stahl UNI 7846 verwendet wird.
Um auch unter schwerer Last einen effektiven und geräuscharmen Betrieb zu garantieren, sind alle Getrieberäder einsatzgehärtet und geschliffen.

6.2 Designazione

6.2 Designation

6.2 Bezeichnung

	Versione *Version* Ausführung	Grandezza *Size* Größe		ir	IEC	kW	n° Poli *Poles* Polig	
								Esempio / *Example* / Beispiel
AM	P	25	/2	vedi tabelle prestazioni *See performance tables* Siehe Leistungs-tabellen	80 (B5) 80 (B14)			**AMP 50/2 1:20 PAM 80 B5**
	F1	32				0.55 0.55	2 4	80 (B5) 80 (B14) .... **AMP 50/2 1:20 kW 0.55 4 80 (B5)**
	F2	40						
	F3	50						
AR	P/F1	60	/3		**ARP 50/2 1:20**			
	P/F2	80						
AC	P/F3	100				0.55 0.55	2 4	80 (B5) 80 (B14) .... **ACP 50/2 1:20 kW 0.55 4 80 (B5)**
		120						

Altre specifiche:

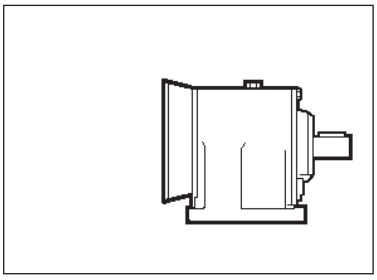
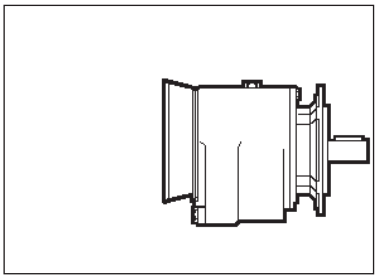
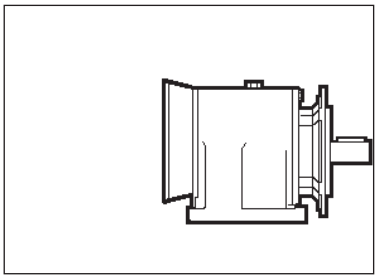
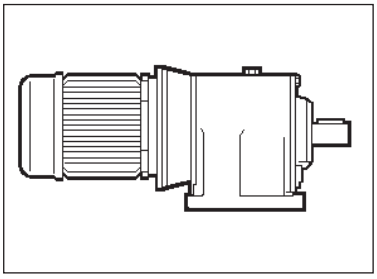
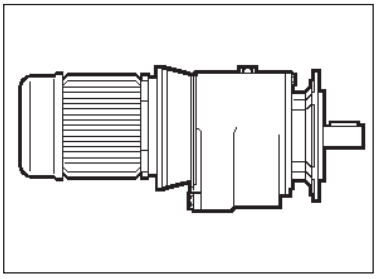
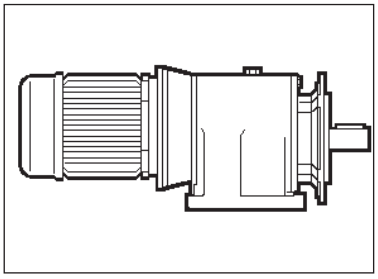
Posizione della morsettiera del motore se diversa da quella standard (1).
Lubrificante (non per i tipi 25, 32, 40, 50 già lubrificati a vita).
Posizione di montaggio con indicazione tappi di livello e carico; se non specificato si considera standard la posizione B3 (B5).
N.B.
Non sono previste le versioni AC 120, AR 25

Further specifications:

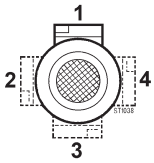
Terminal board box position if different from standard (1).
With lubricant (except for size 25, 32, 40, 50 lubricated for life).
Mounting position. Indications must be given regarding level and breather plugs. If not specified positions, B3 (B5) is considered standard.
NOTE.
We don't supply the following type:
AC 120, AR 25

Weitere Spezifikationen:

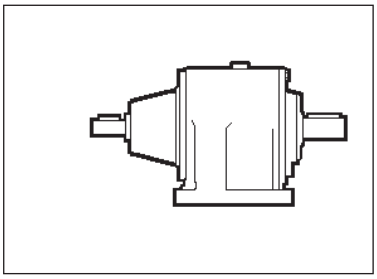
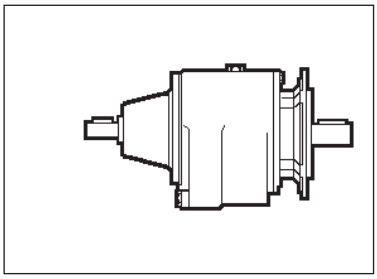
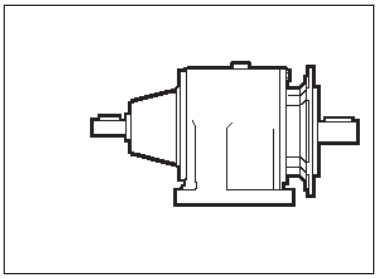
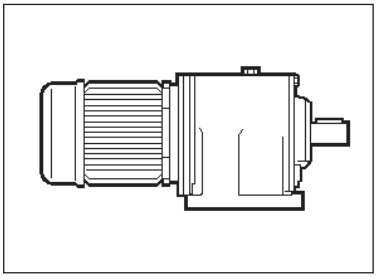
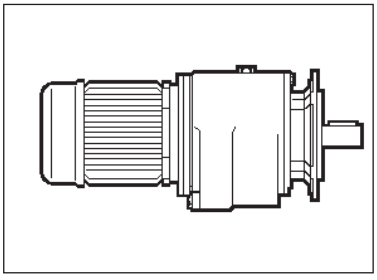
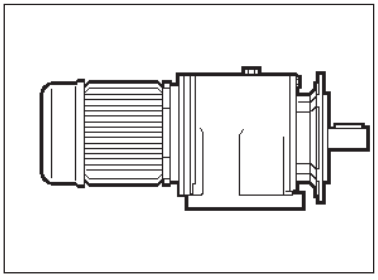
Stellung des Klemmenkastens des Motors, falls diese von der Standard-Ausführung abweicht (1).
Schmiermittel füllung (gilt nicht für Type 25, 32, 40, 50 denn diese haben eine wartungsfreie Schmierung).
Montagestellung mit Angabe der Ölpegel und Entlüfterstöpsel. Falls nichts anderes angegeben wird, gilt die Pos. B3 (B5) als Standard.
HINWEIS.
Die Getriebetypen AR 25 und AC 120 sind nicht erhältlich.

	P	F1, F2, F3	P/F1, P/F2, P/F3
AM... (IEC) 25 - 120			
AM... 25 - 120			

1– STANDARD



Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

AR... 32 - 120			
AC... 25 - 100			

6.4 Lubrificazione

Si consiglia l'uso di oli a base sintetica. Vedere a tale proposito le indicazioni riportate nel capitolo 1, paragrafo 1.6.
La viscosità ISO consigliata è 320 cSt.

Le quantità di lubrificante riportate nella Tab. 6.1 sono indicative. In fase di installazione immettere l'esatta quantità di lubrificante riferendosi alla spia di livello (dove prevista).
In fase di ordine specificare sempre la posizione di montaggio desiderata. Se omessa, il riduttore verrà fornito con i tappi predisposti per la posizione B3.

6.4 Lubrication

We suggest to use synthetic based oil. Take a look about it to the advice written on chapter 1, paragraph 1.6.
Recommended ISO VG viscosity is 320 cSt.

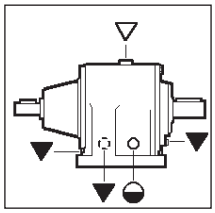
The lubricant quantities listed in table 6.1 are for reference only. During assembly, pour the exact lubricant quantity referring to the oil window.
When ordering, the desired mounting position must be always specified. Otherwise, the gearbox will be supplied with the plug suitable for position B3.

6.4 Schmierung

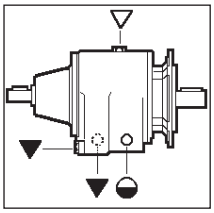
Wir empfehlen den Einsatz von synthetischem Öl (siehe Kapitel 1.6).
Die empfohlene ISO-Viskosität beträgt 320.

Die in Tabelle 6.1 angegebenen Schmiermittelmengen sind Richtwerte. Bei der Montage die exakte Schmiermittelmenge anhand der Ölstandsanzeige einfüllen.
Bei der Bestellung immer die gewünschte Montageposition angeben. Bei fehlenden Angaben wird das Getriebe mit einer Schraubenanordnung für Position B3 geliefert.

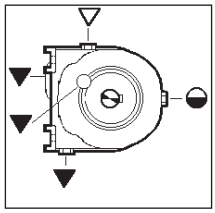
6.5 Posizioni di montaggio



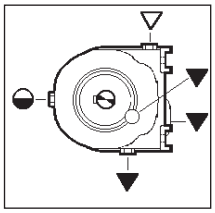
B3



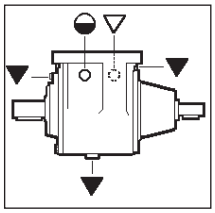
B5



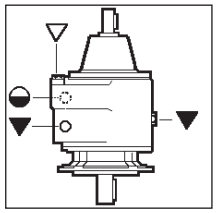
B6



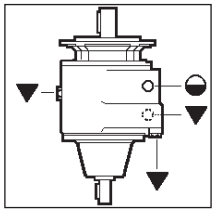
B7



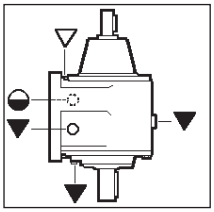
B8



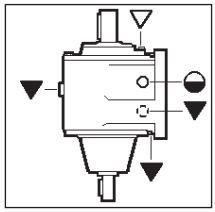
V1



V3



V5



V6

6.5 Mounting positions

6.5 Montagepositionen

Tab. 6.1

Quantità di lubrificante / *Lubricant Quantity* / Schmiermittelmenge (kg)											
AR AM - AC	Posizioni di montaggio / *Mounting Positions* / Montagepositionen										* n°. tappi olio * *No.of plugs* Anzahl Betriebschraube
	B3	**B5**	**B6**	**B7**	**B8**	**V1**	**V3**	**V5**	**V6**		
25	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	0.120	Riduttori forniti completi di olio sintetico *Gearboxes suplied with synthetic oil* Getriebe werden mit synthetischem Öl geliefert	1
32	0.400	0.400	0.400	0.400	0.400	0.600	0.600	0.600	0.600		1
40	0.550	0.550	0.550	0.550	0.550	0.800	0.800	0.800	0.800		1
50	0.950	0.950	0.950	0.950	0.950	1.350	1.350	1.350	1.350		4 (AMF, ACF, ARF) 5 (AMP,ACP, ARP)
60	1.550	1.550	1.550	1.550	1.550	2.610	2.150	2.610	2.150	Riduttori predisposti per lubrificazione ad olio *Gearboxes suplied ready for oil lubrication* Getriebe sind für Ölschmierung vorgesehen	4 (AMF, ACF, ARF) 5 (AMP,ACP, ARP)
80	2.600	2.600	2.600	2.600	2.600	4.850	4.400	4.850	4.400		4 (AMF, ACF, ARF) 5 (AMP,ACP, ARP)
100	5.550	5.550	5.550	5.550	5.550	9.600	9.600	9.600	9.600		4 (AMF, ACF, ARF) 5 (AMP,ACP, ARP)
120	10.0	10.0	10.0	10.0	10.0	16.500	16.500	16.500	16.500		4 (AMF, ACF, ARF) 5 (AMP,ACP, ARP)

I riduttori nelle grandezze 60, 80, 100, 120 sono forniti predisposti per lubrificazione ad olio ma privi di lubrificante il quale potrà essere fornito a richiesta.
Il tappo di sfiato è allegato solo nei riduttori che hanno più di un tappo olio.
* Eventuali forniture con predisposizioni tappi diverse da quella indicata in tabella, dovranno essere concordate.

The gearboxes size 60, 80, 100 and 120 are oil lubricated but are supplied without lubricant which can be delivered upon request.
The drain plug is annexed only in the gearbox with move than one oil plug.
** Supplies with oil plugs different from those listed in the table are to be agreed upon.*

Die Getriebe in den Größen 60, 80, 100, 120 sind für Ölschmierung vorgesehen, werden aber ohne Öl geliefert. Dieses ist auf Anfrage erhältlich.
Eine Entlüftungsschraube gibt es nur bei Getrieben mit mehr als einer Ölschraube.
* Lieferungen mit Betriebsschrauben, die von denen in der Tabelle abweichen, müssen mit uns vereinbart werden.

▽ Carico / *Breather plug* / Nachfüllen - Entlüftung
◒ Livello / *Level plug* / Pegel
▼ Scarico / *Drain plug* / Auslauf

6.6 Carichi radiali e assiali

Quando la trasmissione del moto avviene tramite meccanismi che generano carichi radiali sull'estremità dell'albero,è necessario verificare che i valori risultanti non eccedono quelli indicati nelle tabelle.

Nella Tab. 6.2 sono riportati i valori dei carichi radiali ammissibili per l'albero veloce (Fr_1). Come carico assiale ammissibile contemporaneo si ha:

$$Fa_1 = 0.2 \times Fr_1$$

In Tab. 6.3 sono riportati i valori dei carichi radiali ammissibili per l'albero lento (Fr_2) . Come carico assiale ammissibile contemporaneo si ha:

$$Fa_2 = 0.2 \times F_{r2}$$

6.6 Axial and overhung loads

Should transmission movement determine radial loads on the angular shaft end, it is necessary to make sure that resulting values do not exceed the ones indicated in the tables.

In Table 6.2 permissible radial load for input shaft are listed (Fr_1). Contemporary permissible axial load is given by the following formula:

$$Fa_1 = 0.2 \times Fr_1$$

I*n Table 6.3 permissible radial loads for* output shaft *are listed (Fr_2). Permissible axial load is given by the following formula:*

$$Fa_2 = 0.2 \times Fr_2$$

6.6 Radiale und Axiale Belastungen

Wird das Wellenende auch durch Radialkräfte belastet, so muß sichergestellt werden, daß die resultierenden Werte die in der Tabelle angegebenen nicht überschreiten.

In Tabelle 6.2 sind die Werte der zulässigen Radialbelastungen für die Antriebswelle (Fr_1) angegeben. Die Axialbelastung beträgt dann:

$$Fa_1 = 0.2 \times Fr_1$$

In Tabelle 6.3 sind die Werte der zulässigen Radialbelastungen für die Abtriebswelle (Fr_2) angegeben. Als zulässige Axialbelastung gilt:

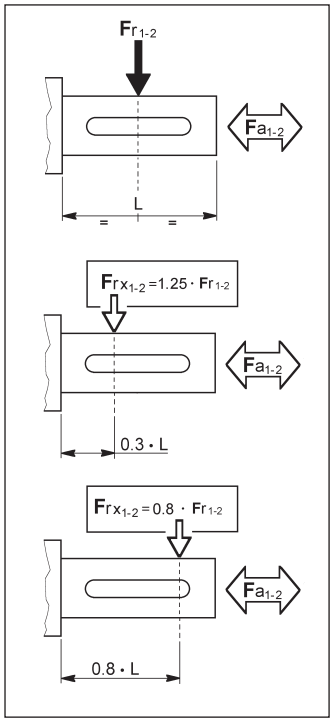
$$Fa_2 = 0.2 \times Fr_2$$

Tab. 6.2

n_1 min^{-1}	**Fr_1 (N)** AR							
	25	**32**	**40**	**50**	**60**	**80**	**100**	**120**
2800	—-	170	320	430	520	600	1000	1250
1400	—-	220	400	550	700	800	1200	1500
900	—-	250	450	600	800	920	1300	1600
500	—-	300	500	850	1100	1300	1500	1800

Tab. 6.3

n_2 min^{-1}	**Fr_2 (N)** AR - AM - AC							
	25	**32**	**40**	**50**	**60**	**80**	**100**	**120**
1000	420	450	580	750	1100	2000	3800	4500
700	540	580	750	1000	1500	2500	5000	5800
500	650	700	900	1200	1800	3000	6000	7000
350	650	740	1100	1400	2300	3700	7000	8200
250	650	800	1300	1800	2600	4500	8200	9500
200	650	850	1500	2200	3300	6000	9000	10000
150	650	930	1600	3000	4000	7500	10000	11500
100	650	1000	1700	3400	4500	8300	11500	12500
80	650	1050	1850	3700	5000	9000	12000	13500
60	650	1100	1900	3900	5400	9600	13000	15000
30	650	1400	2300	4100	6000	10000	14000	21000
15	650	1800	2700	4300	6500	11000	15000	25000



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero standard e sono riferiti ai riduttori operanti con fattore di servizio 1. Per le sporgenze fornite in alternativa, fare riferimento alla sporgenza standard.
Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 500 min^{-1} e Fr_2 a 15 min^{-1} rappresentano i carichi massimi consentiti.
Per i carichi non agenti sulla mezzeria dell'albero lento o veloce si ha:

a 0.3 della sporgenza:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

a 0.8 dalla sporgenza:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

The radial loads shown in the tables are applied on the centre line of the standard shaft extension and are related to gearboxes working with service factor 1. With reference to alternative values of shaft extension, refer to standard shaft extension.
Intermediate values of speeds that are not listed can be obtained through interpolation but it must be considered that Fr_1 at 500 min^{-1} and Fr_2 at 15 min^{-1} represent the maximum allowable loads.
For loads which are not applied on the centre line of the output or input shaft, following values will be obtained:

at 0.3 from extension:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

at 0.8 from extension:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

Bei den in der Tabelle angegebenen Radialbelastungen wird eine Krafteinwirkung auf die Mitte des Wellenendes zugrunde gelegt; außerdem arbeiten die Getriebe mit Betriebsfaktor 1. Bei Einsatz von Sonderabtriebswellen beziehen Sie sich bitte auf die oben aufgeführten Abstände der Standardabtriebswellen.
Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation ermittelt werden. Hierbei ist jedoch zu berücksichtigen, daß der maximale Wert für Fr_1 bei 500 min^{-1} und für Fr_{2max} bei 15 min^{-1} gilt.
Bei Lasten, die nicht auf die Mitte der Ab- und Antriebswellen wirken, legt man folgende Werte zugrunde:

0.3 vom Wellenabsatz entfernt:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

0.8 vom Wellenabsatz entfernt:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

6.7 Prestazioni riduttori AR — *6.7 AR gearboxes performances* — 6.7 Leistungen der AR-Getriebe

AM 25/2

1.8

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
3.4	819	12	1.10	95	409	12	0.55	95	263	13	0.38	95	146	16	0.26	95	56 (B5 - B14) 63 (B5 - B14)
3.9	716	12.2	0.96	95	358	12.2	0.48	95	230	13	0.33	95	128	16	0.23	95	
4.8	579	12.2	0.78	95	289	12.2	0.39	95	186	13	0.27	95	103	16	0.18	95	
5.6	498	12.2	0.67	95	249	12.2	0.33	95	160	13	0.23	95	89	16	0.16	95	
7.2	389	12.2	0.52	95	194	12.2	0.26	95	125	13	0.18	95	69	16	0.12	95	
8.7	324	12.2	0.44	95	162	12.2	0.22	95	104	13	0.15	95	58	16	0.10	95	
9.0	310	12.2	0.42	95	155	14	0.24	95	100	14	0.15	95	55	14	0.09	95	
10.5	267	13	0.38	95	133	14	0.21	95	86	14	0.13	95	48	14	0.07	95	
13.4	208	13	0.30	95	104	15	0.17	95	67	15	0.11	95	37	15	0.06	95	
16.2	173	13	0.25	95	87	15	0.14	95	56	15	0.09	95	31	15	0.05	95	
17.9	157	14	0.24	95	78	15	0.13	95	50	15	0.08	95	28	15	0.05	95	

AM 25/3

1.8

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
18.9	148	15	0.25	93	74	19	0.16	93	48	22	0.12	93	26	22	0.07	93	56 (B5 - B14) 63 (B5 - B14)
23.4	120	15	0.20	93	60	19	0.13	93	38	22	0.10	93	21	22	0.05	93	
27.2	103	15	0.17	93	51	20	0.12	93	33	22	0.08	93	18	22	0.05	93	
31.9	88	18	0.18	93	44	17	0.08	93	28	17	0.05	93	16	17	0.03	93	
35.3	79	15	0.13	93	40	17	0.08	93	25	17	0.05	93	14	17	0.03	93	
41.8	67	18	0.14	93	33	22	0.08	93	22	22	0.05	93	12	22	0.03	93	
50.7	55	16	0.10	93	28	18	0.06	93	18	18	0.04	93	10	18	0.02	93	
59.6	47	17	0.09	93	23	19	0.05	93	15	19	0.03	93	8	19	0.02	93	
64.9	43	17	0.08	93	22	19	0.05	93	14	19	0.03	93	8	19	0.02	93	
78	36	17	0.07	93	18	20	0.04	93	12	20	0.03	93	6	20	0.01	93	
86.2	32	18	0.07	93	16	20	0.04	93	10	20	0.02	93	6	20	0.01	93	

N.B. Il riduttore grandezza 25 viene fornito esclusivamente nella configurazione motoriduttore o riduttore predisposto IEC.

NOTE. The gearbox size 25 is supplied only in the configuration gearmotor or gearbox arranged for the IEC motor connection.

HINWEIS. Das Getriebe der Größe 25 wird ausschließlich in der Konfiguration Getrie- bemotor oder Getriebe mit IEC-Motoranschluß geliefert.

6.7 Prestazioni riduttori AR — *6.7 AR gearboxes performances* — 6.7 Leistungen der AR-Getriebe

AR 32/2

3.2

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
3.6	769	29	2.5	95	385	35	1.5	95	247	39	1.1	95	137	54	0.82	95	80 (B5 - B14)
4.3	656	30	2.2	95	328	36	1.3	95	211	40	0.93	95	117	56	0.72	95	
5.1	553	32	2.0	95	277	38	1.2	95	178	43	0.84	95	99	59	0.64	95	
6.1	461	34	1.7	95	230	40	1.0	95	148	45	0.73	95	82	60	0.54	95	
6.9	404	35	1.6	95	202	42	0.94	95	130	47	0.67	95	72	60	0.48	95	
8.0	350	36	1.4	95	175	43	0.83	95	113	48	0.60	95	63	60	0.41	95	71 (B5 - B14)
9.3	300	37	1.2	95	150	44	0.73	95	96	50	0.53	95	54	60	0.35	95	
11.0	255	39	1.1	95	127	47	0.66	95	82	52	0.47	95	45	60	0.30	95	63 (B5 - B14)
12.6	223	41	1.0	95	111	49	0.60	95	72	54	0.43	95	40	60	0.26	95	
14.5	194	42	0.90	95	97	50	0.53	95	62	56	0.38	95	35	60	0.23	95	56 (B5)
16.9	166	44	0.80	95	83	52	0.47	95	53	58	0.34	95	30	60	0.20	95	
19.8	141	46	0.72	95	71	54	0.42	95	45	60	0.30	95	25	60	0.17	95	
24.2	116	48	0.61	95	58	57	0.36	95	37	60	0.25	95	21	60	0.14	95	
29.4	65	50	0.52	95	48	60	0.31	95	31	60	0.20	95	17	60	0.11	95	

AR 32/3

3.2

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
27.0	104	52	0.61	93	52	62	0.36	93	33	62	0.23	93	19	62	0.13	93	80 (B5 - B14)
32.4	86	54	0.53	93	43	62	0.30	93	28	62	0.19	93	15	62	0.11	93	
37.0	76	56	0.48	93	38	62	0.26	93	24	62	0.17	93	14	62	0.09	93	
41.2	68	58	0.44	93	34	62	0.24	93	22	62	0.15	93	12	62	0.08	93	
48.9	57	61	0.39	93	29	62	0.20	93	18	62	0.13	93	10	62	0.07	93	
58.7	48	62	0.33	93	24	62	0.17	93	15	62	0.11	93	8.5	62	0.06	93	71 (B5 - B14)
67.0	42	62	0.29	93	21	62	0.15	93	13	62	0.09	93	7.5	62	0.05	93	
77.2	36	62	0.25	93	18	62	0.13	93	12	62	0.08	93	6.5	62	0.05	93	63 (B5 - B14)
90.1	31	62	0.22	93	16	62	0.11	93	10	62	0.07	93	5.5	62	0.04	93	
105.5	27	62	0.19	93	13	62	0.09	93	8.5	62	0.06	93	4.7	62	0.03	93	56 (B5)
128.9	22	62	0.15	93	11	62	0.08	93	7.0	62	0.05	93	3.9	62	0.03	93	
156.8	18	62	0.12	93	8.9	62	0.06	93	5.7	62	0.04	93	3.2	62	0.02	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

AR 40/2

Kg 9.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.4	1181	48	6.3	95	591	57	3.7	95	380	63	2.6	95	211	87	2.0	95	
2.7	1041	50	5.7	95	520	59	3.4	95	335	66	2.4	95	186	90	1.8	95	
3.8	729	54	4.3	95	365	64	2.6	95	234	71	1.8	95	130	90	1.3	95	
4.5	621	57	3.9	95	310	68	2.3	95	200	75	1.6	95	111	90	1.1	95	
5.9	471	59	3.1	95	236	71	1.8	95	152	79	1.3	95	84	90	0.84	95	
6.9	409	62	2.8	95	204	73	1.6	95	131	82	1.2	95	73	90	0.72	95	100 (B5 - B14)
8.5	330	64	2.3	95	165	76	1.4	95	106	85	0.99	95	59	90	0.58	95	
9.7	290	66	2.1	95	145	78	1.2	95	93	87	0.89	95	52	90	0.51	95	90 (B5 - B14
10.6	265	69	2.0	95	132	82	1.2	95	85	92	0.86	95	47	90	0.47	95	
12.0	233	71	1.8	95	116	84	1.1	95	75	94	0.78	95	42	101	0.46	95	80 (B5 - B14)
13.8	203	73	1.6	95	102	87	0.98	95	65	98	0.71	95	36	101	0.40	95	
16.2	173	76	1.4	95	87	90	0.86	95	56	101	0.62	95	31	101	0.34	95	71 (B5)
17.2	163	70	1.3	95	82	83	0.75	95	52	90	0.52	95	29	90	0.29	95	63 (B5)
20.2	139	72	1.1	95	69	85	0.65	95	45	90	0.44	95	25	90	0.25	95	
21.3	131	82	1.2	95	66	98	0.71	95	42	101	0.47	95	23	101	0.26	95	
24.6	114	95	1.2	95	57	101	0.63	95	37	101	0.41	95	20	101	0.23	95	
26.6	105	76	0.88	95	53	90	0.52	95	34	90	0.34	95	19	90	0.19	95	
30.6	92	76	0.77	95	46	90	0.45	95	29	90	0.29	95	16	90	0.16	95	

AR 40/3

Kg 9.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
29.1	96	88	0.95	93	48	105	0.57	93	31	105	0.37	93	17	105	0.20	93	
33.1	85	91	0.87	93	42	105	0.60	93	27	105	0.32	93	15	105	0.18	93	
36.3	77	84	0.73	93	39	94	0.41	93	25	94	0.26	93	14	89	0.15	93	
41.2	68	86	0.66	93	34	94	0.36	93	22	94	0.23	93	12	94	0.13	93	
46.7	60	99	0.67	93	30	105	0.36	93	19	105	0.23	93	11	105	0.13	93	
50.4	56	102	0.64	93	28	105	0.33	93	18	105	0.21	93	9.9	105	0.12	93	
54.3	52	105	0.61	93	26	105	0.31	93	17	105	0.20	93	9.2	105	0.11	93	71 (B5)
61.6	45	94	0.48	93	23	94	0.24	93	15	94	0.15	93	8.1	94	0.09	93	
70.9	39	105	0.47	93	20	105	0.23	93	13	105	0.15	93	7.0	105	0.08	93	63 (B5)
78.2	36	105	0.42	93	18	105	0.21	93	12	105	0.14	93	6.4	105	0.08	93	
93.4	30	105	0.35	93	15	105	0.18	93	9.6	105	0.11	93	5.4	105	0.06	93	
103.0	27	94	0.29	93	14	94	0.14	93	8.7	94	0.09	93	4.9	94	0.05	93	
115.2	24	105	0.29	93	12	105	0.14	93	7.8	105	0.09	93	4.3	105	0.05	93	
121.8	23	105	0.27	93	11	105	0.14	93	7.4	105	0.09	93	4.1	105	0.05	93	
151.7	18	94	0.20	93	9.2	94	0.10	93	5.9	94	0.06	93	3.3	94	0.03	93	
181.4	15	94	0.16	93	7.7	94	0.08	93	5.0	94	0.05	93	2.8	94	0.03	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

6.7 Prestazioni riduttori AR — *6.7 AR gearboxes performances* — 6.7 Leistungen der AR-Getriebe

AR 50/2

13

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.6	1077	99	11.8	95	538	118	7.0	95	346	132	5.0	95	192	182	3.9	95	
2.9	952	104	10.9	95	476	124	6.5	95	306	138	4.7	95	170	190	3.6	95	
4.4	636	112	7.9	95	318	133	4.7	95	205	148	3.3	95	114	200	2.5	95	
5.1	546	118	7.1	95	273	140	4.2	95	175	157	3.0	95	97	200	2.1	95	112 (B5 - B14)
6.3	448	124	6.1	95	224	147	3.6	95	144	164	2.6	95	80	200	1.8	95	
7.4	379	128	5.4	95	190	153	3.2	95	122	171	2.3	95	68	200	1.5	95	100 (B5 - B14)
8.3	336	133	4.9	95	168	158	2.9	95	108	176	2.1	95	60	20	1.3	95	
9.2	304	137	4.6	95	152	163	2.7	95	98	182	2.0	95	54	200	1.2	95	90 (B5 - B14)
10.4	269	144	4.3	95	134	171	2.5	95	86	191	1.8	95	48	200	1.1	95	
12.5	224	147	3.6	95	112	175	2.2	95	72	195	1.6	95	40	210	0.93	95	80 (B5 - B14)
14.6	192	153	3.2	95	96	182	1.9	95	62	203	1.4	95	34	210	0.80	95	
16.8	167	158	2.9	95	83	188	1.7	95	54	210	1.2	95	30	210	0.69	95	71 (B5)
18.2	154	156	2.6	95	77	184	1.6	95	50	200	1.1	95	28	200	0.61	95	63 (B5)
20.8	135	159	2.4	95	67	189	1.4	95	43	200	0.96	95	24	200	0.63	95	
23.8	118	171	2.2	95	59	203	1.3	95	38	210	0.87	95	21	210	0.49	95	
25.9	108	168	2.0	95	54	200	1.2	95	35	200	0.77	95	19	200	0.43	95	
29.8	94	168	1.7	95	47	200	1.0	95	30	200	0.67	95	17	200	0.37	95	

AR 50/3

13

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
28.5	98	182	2.0	93	49	216	1.2	93	32	216	0.77	93	18	216	0.43	93	
32.4	86	188	1.8	93	43	216	1.1	93	28	216	0.68	93	15	216	0.38	93	
35.6	79	186	1.6	93	39	208	0.92	93	25	208	0.59	93	14	208	0.33	93	
40.5	69	191	1.5	93	35	208	0.81	93	22	208	0.52	93	12	208	0.29	93	
46.2	61	205	1.4	93	30	216	0.74	93	19	216	0.47	93	11	216	0.26	93	90 (B5 - B14)
50.8	55	210	1.3	93	28	216	0.67	93	18	216	0.43	93	9.8	216	0.24	93	
54.3	52	216	1.3	93	26	216	0.63	93	17	216	0.40	93	9.2	216	0.22	93	80 (B5 - B14)
65.9	42	208	1.0	93	21	208	0.50	93	14	208	0.32	93	7.6	208	0.18	93	
71.5	39	216	0.95	93	20	216	0.48	93	13	216	0.31	93	7.0	216	0.17	93	71 (B5)
77.5	36	216	0.88	93	18	216	0.44	93	12	216	0.28	93	6.5	216	0.16	93	63 (B5)
89.3	31	216	0.76	93	16	216	0.38	93	10	216	0.25	93	5.6	216	0.14	93	
102.1	27	208	0.64	93	14	208	0.32	93	8.8	208	0.21	93	4.9	208	0.11	93	
117.6	24	216	0.58	93	12	216	0.29	93	7.7	216	0.19	93	4.3	216	0.10	93	
127.5	22	216	0.53	93	11	216	0.27	93	7.1	216	0.17	93	3.9	216	0.10	93	
146.9	19	208	0.45	93	9.5	208	0.22	93	6.1	208	0.14	93	3.4	208	0.08	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

AR 60/2

Kg 20

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.6	1061	213	25	95	530	253	14.8	95	341	283	10.6	95	189	389	8.1	95	
3.7	763	223	18.8	95	381	265	11.1	95	245	296	8.0	95	136	407	6.1	95	
4.3	657	239	17.3	95	329	285	10.3	95	211	318	7.4	95	117	410	5.3	95	
4.6	609	253	17.0	95	304	301	10.1	95	196	336	7.2	95	109	410	4.9	95	
6.6	427	265	12.5	95	213	315	7.4	95	137	352	5.3	95	76	410	3.4	95	
7.5	372	275	11.3	95	186	327	6.7	95	120	366	4.8	95	66	410	3.0	95	132 (B5 - B14)
7.9	355	285	11.1	95	177	338	6.6	95	114	378	4.8	95	63	410	2.9	95	
8.9	315	293	10.2	95	157	349	6.1	95	101	389	4.3	95	56	410	2.5	95	112 (B5)
10.1	279	301	9.2	95	139	359	5.5	95	90	400	3.9	95	50	410	2.2	95	100 (B5)
11.3	247	308	8.4	95	123	367	5.0	95	79	409	3.6	95	44	410	2.0	95	
12.4	226	315	7.9	95	113	375	4.7	95	73	418	3.4	95	40	450	2.0	95	90 (B5)
14.3	195	327	7.0	95	98	389	4.2	95	63	435	3.0	95	35	450	1.7	95	80 (B5)
15.5	181	338	6.7	95	90	402	4.0	95	58	449	2.9	95	32	450	1.6	95	
18.3	153	318	5.4	95	77	378	3.2	95	49	410	2.2	95	27	410	1.2	95	71 (B5)
19.7	142	326	5.1	95	71	388	3.0	95	46	410	2.1	95	25	410	1.1	95	
22.1	127	367	5.1	95	63	436	3.0	95	41	450	2.0	95	23	450	1.1	95	
25.3	111	378	4.6	95	55	450	2.7	95	36	450	1.8	95	20	450	0.98	95	
28.1	100	345	3.8	95	50	410	2.2	95	32	410	1.4	95	18	410	0.80	95	
32.3	87	345	3.3	95	43	410	2.0	95	28	410	1.3	95	16	410	0.70	95	

AR 60/3

Kg 20

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
28.0	100	387	4.4	93	50	460	2.6	93	32	460	1.7	93	18	460	0.92	93	
31.6	89	400	4.0	93	44	460	2.3	93	28	460	1.5	93	16	460	0.82	93	
35.7	78	376	3.3	93	39	420	1.9	93	25	420	1.2	93	14	420	0.66	93	
40.3	69	386	3.0	93	35	420	1.6	93	22	420	1.1	93	12	420	0.59	93	
45.1	62	436	3.0	93	31	460	1.6	93	20	460	1.0	93	11	460	0.57	93	
51.0	55	447	2.8	93	27	460	1.4	93	18	460	0.91	93	9.8	460	0.51	93	100 (B5-B14)
55.2	51	460	2.6	93	25	460	1.3	93	16	460	0.84	93	9.1	460	0.47	93	
60.3	46	420	2.2	93	23	420	1.1	93	15	420	0.71	93	8.3	420	0.39	93	90 (B5)
72.7	39	460	2.0	93	19	460	1.0	93	12	460	0.64	93	6.9	460	0.36	93	80 (B5)
78.6	36	460	1.8	93	18	460	0.92	93	11	460	0.59	93	6.4	460	0.33	93	
90.4	31	460	1.6	93	15	460	0.80	93	10	460	0.52	93	5.5	460	0.29	93	71 (B5)
100.2	28	420	1.3	93	14	420	0.66	93	9.0	420	0.42	93	5.0	420	0.24	93	
112.2	25	460	1.3	93	12	460	0.65	93	8.0	460	0.42	93	4.5	460	0.23	93	
128.8	22	460	1.1	93	11	460	0.56	93	7.0	460	0.36	93	3.9	460	0.20	93	
143.0	20	420	0.93	93	9.8	420	0.46	93	6.3	420	0.30	93	3.5	420	0.17	93	
164.1	17	420	0.81	93	8.5	420	0.40	93	5.5	420	0.26	93	3.0	420	0.14	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

6.7 Prestazioni riduttori AR — *6.7 AR gearboxes performances* — 6.7 Leistungen der AR-Getriebe

AR 80/2

Kg 30

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.6	1081	444	53	95	541	529	32	95	347	590	23	95	193	813	17.3	95	
3.7	759	465	39	95	379	553	23	95	244	618	16.6	95	136	851	12.7	95	
4.2	665	500	37	95	333	595	22	95	214	664	15.6	95	119	915	12.0	95	
4.5	621	529	36	95	310	629	22	95	200	702	15.4	95	111	940	11.5	95	
6.7	415	553	25	95	208	658	15.1	95	134	735	10.8	95	74	940	7.7	95	
7.4	378	575	24	95	189	684	14.3	95	122	764	10.2	95	68	940	7.0	95	160 (B5)
7.8	359	595	24	95	179	707	14.0	95	115	790	10.0	95	64	940	6.6	95	132 (B5)
8.7	322	612	22	95	161	728	12.9	95	103	813	9.3	95	57	940	6.0	95	
10.0	281	629	19.5	95	141	748	11.6	95	90	835	8.3	95	50	940	5.2	95	112 (B5)
11.1	252	644	17.9	95	126	766	10.7	95	81	855	7.6	95	45	940	4.7	95	
12.4	226	658	16.4	95	113	782	9.7	95	73	874	7.0	95	40	940	4.2	95	100 (B5)
14.2	198	684	14.9	95	99	813	8.9	95	64	908	6.4	95	35	940	3.7	95	90 (B5)
15.2	184	707	14.4	95	92	841	8.5	95	59	939	6.1	95	33	940	3.4	95	80 (B5)
18.1	155	728	12.4	95	78	866	7.4	95	50	940	5.2	95	28	940	2.9	95	
19.4	145	748	11.9	95	72	889	7.1	95	46	940	4.8	95	26	940	2.7	95	
22.7	123	766	10.4	95	62	910	6.2	95	40	940	4.1	95	22	940	2.3	95	
24.9	112	790	9.8	95	56	940	5.8	95	36	940	3.7	95	20	940	2.1	95	
28.9	97	790	8.4	95	48	940	5.0	95	31	940	3.2	95	17	940	1.8	95	
31.8	88	790	7.7	95	44	940	4.6	95	28	940	2.9	95	16	940	1.6	95	

AR 80/3

Kg 30

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
28.1	100	813	9.1	93	50	967	5.4	93	32	967	3.5	93	18	967	1.9	93	
31.7	88	841	8.4	93	44	967	4.8	93	28	967	3.1	93	16	967	1.7	93	
35.7	78	866	7.6	93	39	967	4.3	93	25	967	2.7	93	14	967	1.5	93	
40.3	69	889	6.9	93	35	967	3.8	93	22	967	2.4	93	12	967	1.3	93	
44.0	64	916	6.6	93	32	967	3.5	93	20	967	2.2	93	11	V	1.2	93	
50.9	55	940	5.8	93	27	967	3.0	93	18	967	1.9	93	9.8	967	1.1	93	112 (B5)
55.1	51	967	5.5	93	25	967	2.8	93	16	967	1.8	93	9.1	967	0.99	93	100 (B5)
65.7	43	967	4.6	93	21	967	2.3	93	14	967	1.5	93	7.6	967	0.83	93	
76.0	37	967	4.0	93	18	967	2.0	93	12	967	1.3	93	6.6	967	0.72	93	90 (B5)
82.2	34	967	3.7	93	17	967	1.9	93	11	967	1.2	93	6.1	967	0.66	93	80 (B5)
90.0	31	967	3.4	93	16	967	1.7	93	10	967	1.1	93	5.6	967	0.61	93	
104.8	27	967	2.9	93	13	967	1.6	93	8.6	967	0.94	93	4.8	967	0.52	93	
117.2	24	967	2.6	93	12	967	1.3	93	7.7	967	0.84	93	4.3	967	0.46	93	
134.3	21	967	2.3	93	10	967	1.1	93	6.7	967	0.73	93	3.7	967	0.41	93	
149.3	19	967	2.0	93	9.4	967	1.0	93	6.0	967	0.66	93	3.3	967	0.36	93	
171.2	16	967	1.8	93	8.2	967	0.89	93	5.3	967	0.57	93	2.9	967	0.32	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

AR 100/2

Kg 60

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.4	1148	913	115	95	574	1085	69	95	369	1212	49	95	205	1670	38	95	
2.7	1026	956	108	95	513	1136	64	95	330	1269	46	95	183	1747	35	95	
3.7	753	1026	85	95	376	1221	51	95	242	1363	36	95	134	1878	28	95	
4.9	569	1085	68	95	285	1291	40	95	183	1441	29	95	102	1930	22	95	
6.9	409	1136	51	95	204	1351	30	95	131	1509	22	95	73	1930	15.5	95	
7.5	375	1181	49	95	187	1404	29	95	120	1568	21	95	67	1930	14.2	95	
7.9	354	1221	48	95	177	1452	28	95	114	1621	20	95	63	1930	13.5	95	
8.9	316	1257	44	95	158	1495	26	95	101	1670	18.7	95	56	1930	12.0	95	200 (B5)
9.9	284	1291	40	95	142	1535	24	95	91	1714	17.2	95	51	1930	10.8	95	180 (B5)
11.1	253	1322	37	95	126	1572	22	95	81	1755	15.7	95	45	1930	9.6	95	
12.1	232	1351	35	95	116	1606	21	95	75	1794	14.7	95	41	1930	8.8	95	160 (B5)
14.1	199	1404	31	95	99	1670	18.3	95	64	1865	13.1	95	35	1930	7.5	95	
15.9	176	1352	28	95	88	1726	16.7	95	56	1928	12.0	95	31	1930	6.7	95	132 (B5)
17.6	159	1395	26	95	80	1778	15.6	95	51	1930	10.9	95	28	1930	6.0	95	
19.9	141	1535	24	95	70	1825	14.1	95	45	1930	9.6	95	25	1930	5.3	95	
22.2	126	1572	22	95	63	1869	13.0	95	41	1930	8.6	95	23	1930	4.8	95	
24.2	116	1623	21	95	58	1930	12.3	95	37	1930	7.9	95	21	1930	4.4	95	
28.3	99	1623	17.7	95	50	1930	10.5	95	32	1930	6.8	95	18	1930	3.8	95	
30.3	93	1623	16.6	95	46	1930	9.8	95	30	1930	6.3	95	17	1930	3.5	95	
35.3	79	1623	14.2	95	40	1930	8.4	95	25	1930	5.4	95	14	1930	3.0	95	
38.3	73	1623	13.1	95	37	1930	7.8	95	24	1930	5.0	95	13	1930	2.8	95	

AR 100/3

Kg 60

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
29.1	96	1669	18.1	93	48	1985	10.7	93	31	1985	6.9	93	17	1985	3.8	93	
32.5	86	1726	16.8	93	43	1985	9.6	93	28	1985	6.2	93	15	1985	3.4	93	
36.4	77	1777	15.4	93	38	1985	8.6	93	25	1985	5.5	93	14	1985	3.1	93	
40.6	69	1825	14.2	93	35	1985	7.7	93	22	1985	5.0	93	12	1985	2.8	93	
45.2	62	1879	13.1	93	31	1985	6.9	93	20	1985	4.4	93	11	1985	2.5	93	
52.8	53	1930	11.5	93	26	1985	5.9	93	17	1985	3.8	93	9.5	1985	2.1	93	132 (B5)
56.7	49	1985	11.0	93	25	1985	5.5	93	16	1985	3.5	93	8.8	1985	2.0	93	112 (B5)
64.5	43	1985	9.7	93	22	1985	4.9	93	14	1985	3.1	93	7.8	1985	1.7	93	
73.6	38	1985	8.5	93	19	1985	4.3	93	12	1985	2.7	93	6.8	1985	1.5	93	100 (B5)
78.9	35	1985	7.9	93	18	1985	4.0	93	11	1985	2.5	93	6.3	1985	1.4	93	90 (B5)
91.9	30	1985	6.7	93	15	1985	3.4	93	9.7	1985	2.2	93	5.4	1985	1.2	93	
98.6	28	1985	6.3	93	14	1985	3.2	93	9.1	1985	2.0	93	5.1	1985	1.1	93	
117.8	24	1985	5.3	93	12	1985	2.7	93	7.6	1985	1.7	93	4.2	1985	0.95	93	
129.5	22	1985	4.8	93	11	1985	2.4	93	7.0	1985	1.6	93	3.9	1985	0.86	93	
147.2	19	1985	4.3	93	9.5	1985	2.1	93	6.1	1985	1.4	93	3.4	1985	0.76	93	
161.8	17	1985	3.9	93	8.7	1985	1.9	93	5.6	1985	1.2	93	3.1	1985	0.69	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

6.7 Prestazioni riduttori AR — *6.7 AR gearboxes performances* — 6.7 Leistungen der AR-Getriebe

AR 120/2

Kg 155

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.8	1005	1380	152	95	503	1700	94	95	323	1700	60	95	179	1700	34	95	
3.9	726	1380	110	95	363	1700	68	95	233	1700	44	95	130	1700	24	95	
5.2	537	1460	86	95	268	1800	53	95	172	1800	34	95	96	1800	19	95	
6.1	457	1620	81	95	229	2000	50	95	147	2280	37	95	82	2720	24	95	
7.7	366	1780	72	95	183	2200	44	95	118	2500	32	95	65	3000	22	95	
8.5	330	2030	74	95	165	2500	45	95	106	2850	33	95	59	3000	21	95	
10.6	264	2270	66	95	132	2280	41	95	85	3000	29	95	47	3000	17	95	225 (B5)
11.5	244	2430	65	95	122	3000	40	95	78	3000	28	95	44	3000	16	95	
14.1	199	2430	53	95	100	3000	33	95	64	3000	23	95	36	3000	13	95	200 (B5)
17.7	158	2430	42	95	79	3000	26	95	51	3000	18	95	28	3000	10	95	180 (B5)
19.3	145	2430	39	95	73	3000	24	95	47	3000	17	95	26	3000	9.4	95	
21.0	133	2430	36	95	67	3000	22	95	43	3000	16	95	24	3000	8.6	95	160 (B5)
22.1	127	2430	34	95	63	3000	21	95	41	3000	15	95	23	3000	8.2	95	132 (B5)
23.1	121	2430	32	95	61	3000	20	95	39	3000	14	95	22	3000	7.8	95	
24.0	116	2430	31	95	58	3000	19	95	37	3000	14	95	21	3000	7.5	95	
27.0	104	2430	28	95	52	3000	17	95	33	3000	12	95	19	3000	6.7	95	
28.9	97	2430	26	95	48	3000	16	95	31	3000	11	95	17	3000	6.3	95	
29.6	95	2430	25	95	47	3000	16	95	30	3000	11	95	17	3000	6.1	95	
33.7	83	2430	22	95	41	3000	14	95	27	3000	10	95	15	3000	5.4	95	
37.0	76	2430	20	95	38	3000	12	95	24	3000	8.8	95	14	3000	4.9	95	

AR 120/3

Kg 155

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
40.7	69	2550	20	93	34	3300	13	93	22	3300	8.2	93	12	3300	4.6	93	
45.7	61	2640	18	93	31	3300	11	93	20	3300	7.3	93	11	3300	4.1	93	
50.9	55	2700	17	93	28	3300	10	93	18	3300	6.6	93	10	3300	3.7	93	
57.1	49	2760	15	93	25	3300	9.1	93	16	3300	5.9	93	8.8	3300	3.3	93	
62.2	45	2840	14	93	23	3300	8.4	93	14	3300	5.4	93	8.0	3300	3.0	93	
72.6	39	2900	13	93	19	3300	7.2	93	12	3300	4.6	93	6.9	3300	2.6	93	
77.7	36	2960	12	93	18	3300	6.7	93	12	3300	4.3	93	6.4	3300	2.4	93	
82.2	34	3040	12	93	17	3300	6.3	93	11	3300	4.1	93	6.1	3300	2.3	93	
90.7	31	3100	11	93	15	3300	5.7	93	10	3300	3.7	93	5.5	3300	2.0	93	132 (B5)
102.6	27	3180	10	93	14	3300	5.1	93	8.8	3300	3.3	93	4.9	3300	1.8	93	112 (B5)
114.4	24	3250	9.0	93	12	3300	4.5	93	7.9	3300	2.9	93	4.4	3300	1.6	93	
124.9	22	3300	8.3	93	11	3300	4.2	93	7.2	3300	2.7	93	4.0	3300	1.5	93	100 (B5)
142.9	20	3300	7.3	93	10	3300	3.6	93	6.3	3300	2.3	93	3.5	3300	1.3	93	90 (B5)
156.0	18	3300	6.7	93	9.0	3300	3.3	93	5.8	3300	2.1	93	3.2	3300	1.2	93	
175.7	16	3300	5.9	93	8.0	3300	3.0	93	5.1	3300	1.9	93	2.8	3300	1.1	93	
182.0	15	3300	5.7	93	7.7	3300	2.9	93	4.9	3300	1.8	93	2.7	3300	1.0	93	
197.1	14	3300	5.3	93	7.1	3300	2.6	93	4.6	3300	1.7	93	2.5	3300	0.9	93	
205.0	14	3300	5.1	93	6.8	3300	2.5	93	4.4	3300	1.6	93	2.4	3300	0.9	93	
222.0	13	3300	4.7	93	6.3	3300	2.3	93	4.1	3300	1.5	93	2.3	3300	0.8	93	
256.0	11	3300	4.1	93	5.5	3300	2.0	93	3.5	3300	1.3	93	2.0	3300	0.7	93	
277.3	10	3300	3.8	93	5.0	3300	1.9	93	3.2	3300	1.2	93	1.8	3300	0.7	93	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come a pag. 6). Per maggiori informazioni contattare il nostro uff. tecnico.

NOTE. Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. p. 6). For details please contact our technical office.

HINWEIS. Für den Fall, daß die in den Tabellen angegebenen Nennleistungen eingerahmt sind, ist die thermische Leistungsgrenze der Getriebe zu beachten. (vgl. S.6). Für weitere Informationen wenden Sie sich bitte an unser technisches Büro.

N.B.
I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

NOTE
Listed weights are for reference only and can vary according to the gearbox version.

HINWEIS.
Die angegebenen Gewichtsmaße sind Richtwerte und können sich je nach Getriebeversion ändern.

Nella tab. 6.4 sono riportate le grandezze motore accoppiabili (IEC) unitamente alle dimensioni albero/flangia motore standard.

In table 6.4 the possible shaft/flange dimensions IEC standard are listed.

In Tabelle 6.4 sind die möglichen Welle/Flansch-Abmessungen IEC-Standard aufgelistet.

Tab. 6.4

Possibili accoppiamenti con motori IEC - *Possible couplings with IEC motors* - Mögliche Verbindungen mit IEC-Motoren

	IEC	ir Tutti / *All* / Alle		IEC	ir Tutti / *All* / Alle
AM 25/2	56	**9/120** (B5) - **9/80** • (B14) 9/140 - 9/90	**AM 80/2**	160	**42/350** (B5) 42/300 - 42/250
AM 25/3	63	**11/140** (B5) - **11/90** (B14) 11/120 - 11/80 •		132	**38/300** (B5) 38/350 - 38/250
AM 32/2	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140 - 19/105 •		112	**28/250** (B5) 28/350 - 28/300
AM 32/3	71	**14/160** (B5) - **14/105** (B14) 14/140 - 14/120 - 14/90 •		100	**28/250** (B5) 28/350 - 28/300
	63	**11/140** (B5) - **11/90** • (B14) 11/160 - 11/120 - 11/105		90	**24/200** (B5)
	56	**9/120** (B5) 9/160 - 9/140 - 9/90 •		80	**19/200** (B5)
AM 40/2	100	**28/250** (B5) - **28/160** (B14)	**AM 80/3**	112	**28/250** (B5)
	90	**24/200** (B5) - **24/140** (B14) 24/156 - 24/120		100	**28/250** (B5)
	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140		90	**24/200** (B5)
	71	**14/160** (B5)		80	**19/200** (B5)
	63	**11/140** (B5)	**AM 100/2**	200	**55/400** (B5)
AM 40/3	71	**14/160** (B5)		180	**48/350** (B5)
	63	**11/140** (B5)		160	**42/350** (B5)
AM 50/2	112	**28/250** (B5) - **28/160** (B14)		132	**38/300** (B5)
	100	**28/250** (B5) - **28/160** (B14)	**AM 100/3**	132	**38/300** (B5) 28/300
	90	**24/200** (B5) - **24/140** (B14) 24/160 - 24/120		112	**28/250** (B5) 38/250
	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140		100	**28/250** (B5) 38/250
	71	**14/160** (B5) 14/200 - 14/140 - 14/120		90	**24/200** (B5)
	63	**11/140** (B5)	**AM 120/2**	225	**60/450** (B5)
AM 50/3	90	**24/200** (B5) - **24/140** (B14) 24/160 - 24/120		200	**55/400** (B5) 55/450
	80	**19/200** (B5) - **19/120** (B14) 19/160 - 19/140		180	**48/350** (B5) 48/450 - 48/400
	71	**14/160** (B5)		160	**42/350** (B5) 42/450 - 42/400
	63	**11/140** (B5)		132	**38/300** (B5) 38/450 - 38/400 - 38/350
AM 60/2	132	**38/300** (B5) - **38/200** (B14) 38/250	**AM 120/3**	132	**38/300** (B5)
	112	**28/250** (B5) - **28/160** (B14) 28/200 - 28/300		112	**28/250** (B5)
	100	**28/250** (B5) - **28/160** (B14) 28/200 - 28/300		100	**28/250** (B5)
	90	**24/200** (B5) 24/300 - 24/250		90	**24/200** (B5)
	80	**19/200** (B5)			
	71	**14/160** (B5)			
AM 60/3	100	**28/250** (B5) - **28/160** (B14)			
	90	**24/200** (B5)			
	80	**19/200** (B5)			
	71	**14/160** (B5)			

Legenda:

11/140 (B5) 11/120

11/140 : combinazioni albero/flangia standard
(B5) : forma costruttiva motore IEC
11/120 : combinazioni albero/flangia a richiesta

Key:

11/140 *(B5)* *11/120*

11/140 *: standard shaft/flange combination*
(B5) : IEC motor constructive shape
11/120 : shaft/flange combinations upon request

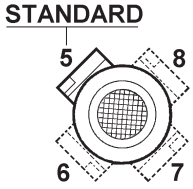
Legende:

11/140 (B5) 11/120

11/140 : Standardkombinationen Welle/Flansch
(B5) : Konstruktionsform IEC-Motor
11/120 : Sonderkombinationen Welle/Flansch

N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par 6.3).
Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

Note.
The standard configuration for the 4 holes is 45° to the axles (like an x: see par 6.3).
For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please choose the terminal board position refering to the following sketch (in which n° 5 is the standard position):



HINWEIS.
In der Standardkonfiguration sind die 4 Flansch- bohrungen im 45°-Winkel zu den Achsen angeordnet (wie ein x: siehe kapitel 6.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeord- net (wie ein +). Es sollte deshalb der Platzbedarf des Motorklemmenkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die Lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos. 5 ist Standardposition):

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.09 kW				
n_1 = **2800** min^{-1}				
824	3.4	1.0	12.1	**25/2**
718	3.9	1.1	10.7	**25/2**
583	4.8	1.4	8.7	**25/2**
500	5.6	1.6	7.5	**25/2**
389	7.2	2.1	5.8	**25/2**
322	8.7	2.5	4.8	**25/2**
311	9.0	2.6	4.6	**25/2**
267	10.5	3.1	4.2	**25/2**
209	13.4	3.9	3.3	**25/2**
173	16.2	4.7	2.8	**25/2**
156	17.9	5.2	2.7	**25/2**
148	18.9	5.4	3.5	**25/3**
120	23.4	6.7	2.8	**25/3**
103	27.2	7.8	2.6	**25/3**
88	31.9	9.1	1.9	**25/3**
79	35.3	10	1.7	**25/3**
67	41.8	12	1.8	**25/3**
55	50.7	14	1.2	**25/3**
48	58.7	17	3.7	**32/3**
47	59.6	17	1.1	**25/3**
43	64.9	19	1.0	**25/3**
42	67.0	19	3.2	**32/3**
36	77.2	22	2.8	**32/3**
36	78.0	22	0.9	**25/3**
32	86.2	25	0.8	**25/3**
31	90.1	26	2.4	**32/3**
27	105.5	30	2.1	**32/3**
22	128.9	37	1.7	**32/3**
18	156.8	45	1.4	**32/3**
n_1 = **1400** min^{-1}				
412	3.4	2.0	6.1	**25/2**
359	3.9	2.3	5.4	**25/2**
292	4.8	2.8	4.4	**25/2**
250	5.6	3.3	3.7	**25/2**
194	7.2	4.2	2.9	**25/2**
161	8.7	5.1	2.4	**25/2**
156	9.0	5.2	2.7	**25/2**
133	10.5	6.1	2.3	**25/2**
104	13.4	7.8	1.9	**25/2**
86	16.2	9.4	1.6	**25/2**
78	17.9	10	1.4	**25/2**
74	18.9	11	1.8	**25/3**
60	23.4	13	1.4	**25/3**
58	24.2	14	4.0	**32/2**
51	27.2	16	1.3	**25/3**
48	29.4	17	3.5	**32/2**
44	31.9	18	0.9	**25/3**
43	32.4	18	3.4	**32/3**
40	35.3	20	0.8	**25/3**
38	37.0	21	2.9	**32/3**
34	41.2	24	2.6	**32/3**
33	41.8	24	0.9	**25/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.09 kW				
n_1 = **1400** min^{-1}				
29	48.9	28	2.2	**32/3**
24	58.7	34	1.8	**32/3**
21	67.0	38	1.6	**32/3**
18	77.2	44	1.4	**32/3**
16	90.1	51	1.2	**32/3**
13	105.5	60	1.0	**32/3**
11	128.9	74	0.8	**32/3**
n_1 = **900** min^{-1}				
265	3.4	3.1	4.2	**25/2**
231	3.9	3.5	3.7	**25/2**
188	4.8	4.4	3.0	**25/2**
161	5.6	5.1	2.6	**25/2**
125	7.2	6.5	2.0	**25/2**
103	8.7	7.9	1.6	**25/2**
100	9.0	8.2	1.7	**25/2**
86	10.5	9.5	1.5	**25/2**
67	13.4	12	1.2	**25/2**
56	16.2	15	1.0	**25/2**
53	16.9	15	3.8	**32/2**
50	17.9	16	0.9	**25/2**
48	18.9	17	1.3	**25/3**
45	19.8	18	3.3	**32/2**
38	23.4	21	1.1	**25/3**
37	24.2	22	2.7	**32/2**
34	26.6	24	3.7	**40/2**
33	27.0	24	2.6	**32/3**
33	27.2	24	0.9	**25/3**
31	29.1	26	4.1	**40/3**
31	29.4	27	2.2	**32/2**
29	30.6	28	3.2	**40/2**
28	32.4	29	2.2	**32/3**
27	33.1	29	3.6	**40/3**
25	36.3	32	2.9	**40/3**
24	37.0	33	1.9	**32/3**
22	41.2	37	1.7	**32/3**
22	41.2	37	2.6	**40/3**
19	46.7	41	2.5	**40/3**
18	48.9	43	1.4	**32/3**
18	50.4	45	2.3	**40/3**
17	54.3	48	2.2	**40/3**
15	58.7	52	1.2	**32/3**
15	61.6	55	1.7	**40/3**
14	65.9	59	3.6	**50/3**
13	67.0	60	1.0	**32/3**
13	70.9	63	1.7	**40/3**
13	71.5	64	3.4	**50/3**
12	77.2	69	0.9	**32/3**
12	77.5	69	3.1	**50/3**
12	78.2	69	1.5	**40/3**
10	89.3	79	2.7	**50/3**
10	90.1	80	0.8	**32/3**
10	93.4	83	1.3	**40/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.09 kW				
n_1 = **900** min^{-1}				
8.8	102.1	91	2.3	**50/3**
8.7	103.0	91	1.0	**40/3**
7.8	115.2	102	1.0	**40/3**
7.7	117.6	104	2.1	**50/3**
7.4	121.8	108	1.0	**40/3**
7.1	127.5	113	1.9	**50/3**
6.1	146.9	130	1.6	**50/3**
0.13 kW				
n_1 = **2800** min^{-1}				
824	3.4	1.4	8.4	**25/2**
718	3.9	1.6	7.4	**25/2**
583	4.8	2.0	6.0	**25/2**
500	5.6	2.4	5.2	**25/2**
389	7.2	3.0	4.0	**25/2**
322	8.7	3.7	3.3	**25/2**
311	9.0	3.8	3.2	**25/2**
267	10.5	4.4	2.9	**25/2**
209	13.4	5.6	2.3	**25/2**
173	16.2	6.8	1.9	**25/2**
156	17.9	7.5	1.9	**25/2**
148	18.9	7.8	2.4	**25/3**
120	23.4	10	2.0	**25/3**
103	27.2	11	1.8	**25/3**
95	29.4	12	4.0	**32/2**
88	31.9	13	1.3	**25/3**
86	32.4	13	4.0	**32/3**
79	35.3	15	1.2	**25/3**
68	41.2	17	3.4	**32/3**
67	41.8	17	1.3	**25/3**
57	48.9	20	3.0	**32/3**
55	50.7	21	0.9	**25/3**
48	58.7	24	2.6	**32/3**
47	59.6	25	0.8	**25/3**
42	67.0	28	2.2	**32/3**
36	77.2	32	1.9	**32/3**
31	90.1	37	1.7	**32/3**
27	105.5	44	1.4	**32/3**
22	128.9	53	1.2	**32/3**
18	156.8	65	1.0	**32/3**

6.8 Prestazioni motoriduttori AM - AC

6.8 AM - AC gearmotors performances

6.8 Leistungen der AM - AC Getriebe

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 1400 min^{-1}				
412	3.4	2.9	4.2	**25/2**
359	3.9	3.3	3.7	**25/2**
292	4.8	4.0	3.0	**25/2**
250	5.6	4.7	2.6	**25/2**
194	7.2	6.1	2.0	**25/2**
161	8.7	7.3	1.7	**25/2**
156	9.0	7.6	1.8	**25/2**
133	10.5	8.8	1.6	**25/2**
104	13.4	11	1.3	**25/2**
97	14.5	12	4.1	**32/2**
86	16.2	14	1.1	**25/2**
83	16.9	14	3.7	**32/2**
78	17.9	15	1.0	**25/2**
74	18.9	16	1.2	**25/3**
71	19.8	17	3.2	**32/2**
60	23.4	19	1.0	**25/3**
58	24.2	20	2.8	**32/2**
52	27.0	22	2.8	**32/3**
51	27.2	22	0.9	**25/3**
48	29.4	25	2.4	**32/2**
46	30.6	26	3.5	**40/2**
43	32.4	27	2.3	**32/3**
42	33.1	27	3.8	**40/3**
39	36.3	30	3.1	**40/3**
38	37.0	31	2.0	**32/3**
34	41.2	34	1.8	**32/3**
34	41.2	34	2.8	**40/3**
30	46.7	39	2.7	**40/3**
29	48.9	40	1.5	**32/3**
28	50.4	42	2.5	**40/3**
26	54.3	45	2.3	**40/3**
24	58.7	48	1.3	**32/3**
23	61.6	51	1.9	**40/3**
21	65.9	54	3.8	**50/3**
21	67.0	55	1.1	**32/3**
20	70.9	58	1.8	**40/3**
20	71.5	59	3.7	**50/3**
18	77.2	64	1.0	**32/3**
18	77.5	64	3.4	**50/3**
18	78.2	64	1.6	**40/3**
16	89.3	74	2.9	**50/3**
16	90.1	74	0.8	**32/3**
15	93.4	77	1.4	**40/3**
14	102.1	84	2.5	**50/3**
14	103.0	85	1.1	**40/3**
12	115.2	95	1.1	**40/3**
12	117.6	97	2.2	**50/3**
11	121.8	100	1.0	**40/3**
11	127.5	105	2.1	**50/3**
9.5	146.9	121	1.7	**50/3**
9.2	151.7	125	0.8	**40/3**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 900 min^{-1}				
265	3.4	4.5	2.9	**25/2**
231	3.9	5.1	2.5	**25/2**
188	4.8	6.3	2.1	**25/2**
161	5.6	7.3	1.8	**25/2**
125	7.2	9.4	1.4	**25/2**
103	8.7	11	1.1	**25/2**
100	9.0	12	1.2	**25/2**
97	9.3	12	4.1	**32/2**
86	10.5	14	1.0	**25/2**
82	11.0	14	3.6	**32/2**
71	12.6	17	3.3	**32/2**
67	13.4	18	0.9	**25/2**
62	14.5	19	2.9	**32/2**
53	16.9	22	2.6	**32/2**
52	17.2	23	4.0	**40/2**
48	18.9	24	0.9	**25/3**
45	19.8	26	2.3	**32/2**
45	20.2	26	3.4	**40/2**
42	21.3	28	3.6	**40/2**
37	24.2	32	1.9	**32/2**
37	24.6	32	3.1	**40/2**
34	26.6	35	2.6	**40/2**
33	27.0	35	1.8	**32/3**
31	29.1	37	2.8	**40/3**
31	29.4	39	1.6	**32/2**
29	30.6	40	2.2	**40/2**
28	32.4	42	1.5	**32/3**
27	33.1	42	2.5	**40/3**
25	36.3	47	2.0	**40/3**
24	37.0	47	1.3	**32/3**
22	40.5	52	4.0	**50/3**
22	41.2	53	1.2	**32/3**
22	41.2	53	1.8	**40/3**
19	46.2	59	3.6	**50/3**
19	46.7	60	1.8	**40/3**
18	48.9	63	1.0	**32/3**
18	50.4	65	1.6	**40/3**
18	50.8	65	3.3	**50/3**
17	54.3	70	1.5	**40/3**
17	54.3	70	3.1	**50/3**
15	58.7	75	0.8	**32/3**
15	61.6	79	1.2	**40/3**
14	65.9	85	2.5	**50/3**
13	70.9	91	1.2	**40/3**
13	71.5	92	2.4	**50/3**
12	77.5	99	2.2	**50/3**
12	78.2	100	1.0	**40/3**
10	89.3	115	1.9	**50/3**
9.6	93.4	120	0.9	**40/3**
8.8	102.1	131	1.6	**50/3**
7.7	117.6	151	1.4	**50/3**
7.1	127.5	164	1.3	**50/3**
6.1	146.9	188	1.1	**50/3**

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
824	3.4	2.0	6.1	**25/2**
718	3.9	2.3	5.4	**25/2**
583	4.8	2.8	4.4	**25/2**
500	5.6	3.3	3.7	**25/2**
389	7.2	4.2	2.9	**25/2**
322	8.7	5.1	2.4	**25/2**
311	9.0	5.2	2.3	**25/2**
267	10.5	6.1	2.1	**25/2**
209	13.4	7.8	1.7	**25/2**
173	16.2	9.4	1.4	**25/2**
156	17.9	10	1.3	**25/2**
148	18.9	11	1.8	**25/3**
141	19.8	12	4.0	**32/2**
120	23.4	13	1.4	**25/3**
116	24.2	14	3.4	**32/2**
104	27.0	15	3.4	**32/3**
103	27.2	16	1.3	**25/3**
95	29.4	17	2.9	**32/2**
88	31.9	18	0.9	**25/3**
86	32.4	18	2.9	**32/3**
79	35.3	20	0.8	**25/3**
77	36.3	21	4.1	**40/3**
76	37.0	21	2.7	**32/3**
68	41.2	24	2.5	**32/3**
68	41.2	24	3.7	**40/3**
67	41.8	24	0.9	**25/3**
60	46.7	27	3.7	**40/3**
57	48.9	28	2.2	**32/3**
56	50.4	29	3.5	**40/3**
52	54.3	31	3.4	**40/3**
48	58.7	34	1.8	**32/3**
45	61.6	35	2.7	**40/3**
42	67.0	38	1.6	**32/3**
39	70.9	40	2.6	**40/3**
36	77.2	44	1.4	**32/3**
36	78.2	45	2.4	**40/3**
31	89.3	51	4.2	**50/3**
31	90.1	51	1.2	**32/3**
30	93.4	53	2.0	**40/3**
27	102.1	58	3.6	**50/3**
27	103.0	59	1.6	**40/3**
27	105.5	60	1.0	**32/3**
24	115.2	66	1.6	**40/3**
24	117.6	67	3.2	**50/3**
23	121.8	70	1.5	**40/3**
22	127.5	73	3.0	**50/3**
22	128.9	74	0.8	**32/3**
19	146.9	84	2.5	**50/3**
18	151.7	87	1.1	**40/3**
15	181.4	104	0.9	**40/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.18 kW				
n_1 = **1400** min^{-1}				
412	3.4	4.0	3.0	**25/2**
359	3.9	4.5	2.7	**25/2**
292	4.8	5.6	2.2	**25/2**
250	5.6	6.5	1.9	**25/2**
194	7.2	8.4	1.5	**25/2**
161	8.7	10	1.2	**25/2**
156	9.0	10	1.3	**25/2**
151	9.3	11	4.1	**32/2**
133	10.5	12	1.1	**25/2**
127	11.0	13	3.7	**32/2**
111	12.6	15	3.3	**32/2**
104	13.4	16	1.0	**25/2**
97	14.5	17	3.0	**32/2**
86	16.2	19	0.8	**25/2**
83	16.9	20	2.6	**32/2**
74	18.9	22	0.9	**25/3**
71	19.8	23	2.3	**32/2**
58	24.2	28	2.0	**32/2**
52	27.0	31	2.0	**32/3**
48	29.1	33	3.2	**40/3**
48	29.4	34	1.7	**32/2**
43	32.4	37	1.7	**32/3**
42	33.1	38	2.8	**40/3**
39	36.3	41	2.3	**40/3**
38	37.0	42	1.5	**32/3**
34	41.2	47	1.3	**32/3**
34	41.2	47	2.0	**40/3**
30	46.2	53	4.1	**50/3**
30	46.7	53	2.0	**40/3**
29	48.9	56	1.1	**32/3**
28	50.4	58	1.8	**40/3**
28	50.8	58	3.7	**50/3**
26	54.3	62	1.7	**40/3**
26	54.3	62	3.5	**50/3**
24	58.7	67	0.9	**32/3**
23	61.6	70	1.3	**40/3**
21	65.9	75	2.8	**50/3**
21	67.0	77	0.8	**32/3**
20	70.9	81	1.3	**40/3**
20	71.5	82	2.6	**50/3**
18	77.5	88	2.4	**50/3**
18	78.2	89	1.2	**40/3**
16	89.3	102	2.1	**50/3**
15	93.4	107	1.0	**40/3**
14	102.1	117	1.8	**50/3**
14	103.0	118	0.8	**40/3**
12	115.2	132	0.8	**40/3**
12	117.6	134	1.6	**50/3**
11	121.8	139	0.8	**40/3**
11	127.5	146	1.5	**50/3**
9.5	146.9	168	1.2	**50/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.18 kW				
n_1 = **900** min^{-1}				
375	2.4	4.4	14.5	**40/2**
333	2.7	4.9	13.5	**40/2**
148	6.1	11	4.1	**32/2**
130	6.9	13	3.8	**32/2**
113	8.0	15	3.3	**32/2**
97	9.3	17	3.0	**32/2**
82	11.0	20	2.6	**32/2**
75	12.0	22	4.3	**40/2**
71	12.6	23	2.4	**32/2**
65	13.8	25	3.9	**40/2**
62	14.5	26	2.1	**32/2**
56	16.2	29	3.4	**40/2**
53	16.9	31	1.9	**32/2**
52	17.2	31	2.9	**40/2**
45	19.8	36	1.7	**32/2**
45	20.2	37	2.5	**40/2**
42	21.3	39	2.6	**40/2**
37	24.2	44	1.4	**32/2**
37	24.6	45	2.3	**40/2**
34	26.6	48	1.9	**40/2**
33	27.0	48	1.3	**32/3**
31	29.1	52	2.0	**40/3**
31	29.4	53	1.1	**32/2**
30	29.8	54	3.7	**50/2**
29	30.6	56	1.6	**40/2**
28	32.4	58	1.1	**32/3**
28	32.4	58	3.8	**50/3**
27	33.1	59	1.8	**40/3**
25	35.6	63	3.3	**50/3**
25	36.3	64	1.5	**40/3**
24	37.0	66	0.9	**32/3**
22	40.5	72	2.9	**50/3**
22	41.2	73	0.8	**32/3**
22	41.2	73	1.3	**40/3**
19	46.2	82	2.6	**50/3**
19	46.7	83	1.3	**40/3**
18	50.4	90	1.2	**40/3**
18	50.8	90	2.4	**50/3**
17	54.3	96	1.1	**40/3**
17	54.3	96	2.2	**50/3**
15	60.3	107	3.9	**60/3**
15	61.6	109	0.9	**40/3**
14	65.9	117	1.8	**50/3**
13	70.9	126	0.8	**40/3**
13	71.5	127	1.7	**50/3**
12	72.7	129	3.6	**60/3**
12	77.5	138	1.6	**50/3**
12	78.2	139	0.8	**40/3**
11	78.6	140	3.3	**60/3**
10	89.3	159	1.4	**50/3**
10	90.4	161	2.9	**60/3**
9.0	100.2	178	2.4	**60/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.18 kW				
n_1 = **900** min^{-1}				
8.8	102.1	181	1.1	**50/3**
8.0	112.2	199	2.3	**60/3**
7.7	117.6	209	1.0	**50/3**
7.1	127.5	226	1.0	**50/3**
7.0	128.8	229	2.0	**60/3**
6.3	143.0	254	1.7	**60/3**
6.1	146.9	261	0.8	**50/3**
5.5	164.1	291	1.4	**60/3**
0.25 kW				
n_1 = **2800** min^{-1}				
824	3.4	2.8	4.4	**25/2**
718	3.9	3.2	3.9	**25/2**
583	4.8	3.9	3.1	**25/2**
500	5.6	4.5	2.7	**25/2**
389	7.2	5.8	2.1	**25/2**
322	8.7	7.0	1.7	**25/2**
311	9.0	7.3	1.7	**25/2**
267	10.5	8.5	1.5	**25/2**
222	12.6	10	4.0	**32/2**
209	13.4	11	1.2	**25/2**
193	14.5	12	3.6	**32/2**
173	16.2	13	1.0	**25/2**
166	16.9	14	3.2	**32/2**
156	17.9	14	1.0	**25/2**
148	18.9	15	1.3	**25/3**
141	19.8	16	2.9	**32/2**
120	23.4	19	1.0	**25/3**
116	24.2	20	2.4	**32/2**
105	26.6	22	3.5	**40/2**
104	27.0	21	2.4	**32/3**
103	27.2	22	0.9	**25/3**
96	29.1	23	3.8	**40/3**
95	29.4	24	2.1	**32/2**
92	30.6	25	3.1	**40/2**
86	32.4	26	2.1	**32/3**
85	33.1	26	3.5	**40/3**
77	36.3	29	2.9	**40/3**
76	37.0	29	1.9	**32/3**
68	41.2	33	1.8	**32/3**
68	41.2	33	2.6	**40/3**
60	46.7	37	2.7	**40/3**
57	48.9	39	1.6	**32/3**
56	50.4	40	2.6	**40/3**
52	54.3	43	2.4	**40/3**
48	58.7	47	1.3	**32/3**
45	61.6	49	1.9	**40/3**
42	65.9	52	4.0	**50/3**
42	67.0	53	1.2	**32/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.25 kW				
n_1 = 2800 min^{-1}				
39	70.9	56	1.9	**40/3**
39	71.5	57	3.8	**50/3**
36	77.2	61	1.0	**32/3**
36	77.5	61	3.5	**50/3**
36	78.2	62	1.7	**40/3**
31	89.3	71	3.1	**50/3**
31	90.1	71	0.9	**32/3**
30	93.4	74	1.4	**40/3**
27	102.1	81	2.6	**50/3**
27	103.0	82	1.2	**40/3**
24	115.2	91	1.1	**40/3**
24	117.6	93	2.3	**50/3**
23	121.8	97	1.1	**40/3**
22	127.5	101	2.1	**50/3**
19	146.9	116	1.8	**50/3**
18	151.7	120	0.8	**40/3**
n_1 = 1400 min^{-1}				
583	2.4	3.9	14.7	**40/2**
519	2.7	4.4	13.5	**40/2**
389	3.6	5.8	6.0	**32/2**
326	4.3	7.0	5.2	**32/2**
275	5.1	8.3	4.6	**32/2**
230	6.1	10	4.0	**32/2**
203	6.9	11	3.8	**32/2**
175	8.0	13	3.3	**32/2**
151	9.3	15	2.9	**32/2**
127	11.0	18	2.6	**32/2**
111	12.6	20	2.4	**32/2**
101	13.8	22	3.9	**40/2**
97	14.5	23	2.1	**32/2**
86	16.2	26	3.4	**40/2**
83	16.9	27	1.9	**32/2**
81	17.2	28	3.0	**40/2**
71	19.8	32	1.7	**32/2**
69	20.2	33	2.6	**40/2**
66	21.3	35	2.8	**40/2**
58	24.2	39	1.5	**32/2**
57	24.6	40	2.5	**40/2**
53	26.6	43	2.1	**40/2**
52	27.0	43	1.4	**32/3**
48	29.1	46	2.3	**40/3**
48	29.4	48	1.3	**32/2**
47	29.8	48	4.1	**50/2**
46	30.6	50	1.8	**40/2**
43	32.4	51	1.2	**32/3**
43	32.4	51	4.2	**50/3**
42	33.1	52	2.0	**40/3**
39	35.6	56	3.7	**50/3**
39	36.3	58	1.6	**40/3**
38	37.0	59	1.1	**32/3**
35	40.5	64	3.2	**50/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.25 kW				
n_1 = 1400 min^{-1}				
34	41.2	65	0.9	**32/3**
34	41.2	65	1.4	**40/3**
30	46.2	73	2.9	**50/3**
30	46.7	74	1.4	**40/3**
29	48.9	78	0.8	**32/3**
28	50.4	80	1.3	**40/3**
28	50.8	81	2.7	**50/3**
26	54.3	86	1.2	**40/3**
26	54.3	86	2.5	**50/3**
23	61.6	98	1.0	**40/3**
21	65.9	105	2.0	**50/3**
20	70.9	112	0.9	**40/3**
20	71.5	113	1.9	**50/3**
19	72.7	115	4.0	**60/3**
18	77.5	123	1.8	**50/3**
18	78.2	124	0.8	**40/3**
18	78.6	125	3.7	**60/3**
16	89.3	142	1.5	**50/3**
15	90.4	143	3.2	**60/3**
14	100.2	159	2.6	**60/3**
14	102.1	162	1.3	**50/3**
12	112.2	178	2.6	**60/3**
12	117.6	187	1.2	**50/3**
11	127.5	202	1.1	**50/3**
11	128.8	204	2.3	**60/3**
9.8	143.0	227	1.9	**60/3**
9.5	146.9	233	0.9	**50/3**
8.5	164.1	260	1.6	**60/3**
n_1 = 900 min^{-1}				
375	2.4	6.0	10.4	**40/2**
333	2.7	6.8	9.7	**40/2**
250	3.6	9.1	4.3	**32/2**
209	4.3	11	3.7	**32/2**
176	5.1	13	3.3	**32/2**
148	6.1	15	2.9	**32/2**
130	6.9	17	2.7	**32/2**
113	8.0	20	2.4	**32/2**
106	8.5	21	4.0	**40/2**
97	9.3	23	2.1	**32/2**
93	9.7	24	3.6	**40/2**
85	10.6	27	3.4	**40/2**
82	11.0	28	1.9	**32/2**
75	12.0	30	3.1	**40/2**
71	12.6	32	1.7	**32/2**
65	13.8	35	2.8	**40/2**
62	14.5	37	1.5	**32/2**
56	16.2	41	2.5	**40/2**
53	16.9	43	1.4	**32/2**
52	17.2	43	2.1	**40/2**
45	19.8	50	1.2	**32/2**
45	20.2	51	1.8	**40/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.25 kW				
n_1 = 900 min^{-1}				
43	20.8	52	3.8	**50/2**
42	21.3	54	1.9	**40/2**
38	23.8	60	3.5	**50/2**
37	24.2	61	1.0	**32/2**
37	24.6	62	1.6	**40/2**
35	25.9	65	3.1	**50/2**
34	26.6	67	1.3	**40/2**
33	27.0	67	0.9	**32/3**
32	28.5	70	3.1	**50/3**
31	29.1	72	1.5	**40/3**
31	29.4	74	0.8	**32/2**
30	29.8	75	2.7	**50/2**
29	30.6	77	1.2	**40/2**
28	32.4	80	0.8	**32/3**
28	32.4	80	2.7	**50/3**
27	33.1	82	1.3	**40/3**
25	35.6	88	2.4	**50/3**
25	36.3	90	1.0	**40/3**
22	40.3	99	4.2	**60/3**
22	40.5	100	2.1	**50/3**
22	41.2	102	0.9	**40/3**
20	45.1	111	4.1	**60/3**
19	46.2	114	1.9	**50/3**
19	46.7	115	0.9	**40/3**
18	50.4	124	0.8	**40/3**
18	50.8	125	1.7	**50/3**
18	51.0	126	3.7	**60/3**
17	54.3	134	0.8	**40/3**
17	54.3	134	1.6	**50/3**
16	55.2	136	3.4	**60/3**
15	60.3	149	2.8	**60/3**
14	65.9	163	1.3	**50/3**
13	71.5	176	1.2	**50/3**
12	72.7	179	2.6	**60/3**
12	77.5	191	1.1	**50/3**
11	78.6	194	2.4	**60/3**
10	89.3	220	1.0	**50/3**
10	90.4	223	2.1	**60/3**
9.0	100.2	247	1.7	**60/3**
8.8	102.1	252	0.8	**50/3**
8.0	112.2	277	1.7	**60/3**
7.0	128.8	318	1.4	**60/3**
6.3	143.0	353	1.2	**60/3**
5.5	164.1	405	1.0	**60/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.37 kW				
n_1 = **2800** min^{-1}				
778	3.6	4.3	6.7	**32/2**
651	4.3	5.2	5.8	**32/2**
549	5.1	6.1	5.2	**32/2**
459	6.1	7.3	4.6	**32/2**
406	6.9	8.3	4.2	**32/2**
350	8.0	9.6	3.8	**32/2**
301	9.3	11	3.3	**32/2**
255	11.0	13	3.0	**32/2**
222	12.6	15	2.7	**32/2**
193	14.5	17	2.4	**32/2**
173	16.2	19	3.9	**40/2**
166	16.9	20	2.2	**32/2**
163	17.2	21	3.4	**40/2**
141	19.8	24	1.9	**32/2**
139	20.2	24	3.0	**40/2**
131	21.3	26	3.2	**40/2**
116	24.2	29	1.7	**32/2**
114	24.6	29	3.2	**40/2**
105	26.6	32	2.4	**40/2**
104	27.0	32	1.6	**32/3**
96	29.1	34	2.6	**40/3**
95	29.4	35	1.4	**32/2**
92	30.6	37	2.1	**40/2**
86	32.4	38	1.4	**32/3**
85	33.1	39	2.3	**40/3**
77	36.3	43	2.0	**40/3**
76	37.0	43	1.3	**32/3**
69	40.5	48	4.0	**50/3**
68	41.2	48	1.2	**32/3**
68	41.2	48	1.8	**40/3**
61	46.2	54	3.8	**50/3**
60	46.7	55	1.8	**40/3**
57	48.9	57	1.1	**32/3**
56	50.4	59	1.7	**40/3**
55	50.8	60	3.5	**50/3**
52	54.3	64	1.6	**40/3**
52	54.3	64	3.4	**50/3**
48	58.7	69	0.9	**32/3**
45	61.6	72	1.3	**40/3**
42	65.9	77	2.7	**50/3**
42	67.0	79	0.8	**32/3**
39	70.9	83	1.3	**40/3**
39	71.5	84	2.6	**50/3**
36	77.5	91	2.4	**50/3**
36	78.2	92	1.1	**40/3**
31	89.3	105	2.1	**50/3**
31	90.4	106	4.3	**60/3**
30	93.4	110	1.0	**40/3**
28	100.2	118	3.6	**60/3**
27	102.1	120	1.7	**50/3**
27	103.0	121	0.8	**40/3**
25	112.2	132	3.5	**60/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.37 kW				
n_1 = **2800** min^{-1}				
24	115.2	135	0.8	**40/3**
24	117.6	138	1.6	**50/3**
22	127.5	150	1.4	**50/3**
22	128.8	151	3.0	**60/3**
20	143.0	168	2.5	**60/3**
19	146.9	172	1.2	**50/3**
17	164.1	193	2.2	**60/3**
n_1 = **1400** min^{-1}				
583	2.4	5.8	9.9	**40/2**
519	2.7	6.5	9.1	**40/2**
389	3.6	8.6	4.1	**32/2**
326	4.3	10	3.5	**32/2**
275	5.1	12	3.1	**32/2**
230	6.1	15	2.7	**32/2**
203	6.9	17	2.5	**32/2**
175	8.0	19	2.2	**32/2**
165	8.5	20	3.7	**40/2**
151	9.3	22	2.0	**32/2**
144	9.7	23	3.4	**40/2**
132	10.6	25	3.2	**40/2**
127	11.0	26	1.8	**32/2**
117	12.0	29	2.9	**40/2**
111	12.6	30	1.6	**32/2**
101	13.8	33	2.6	**40/2**
97	14.5	35	1.4	**32/2**
86	16.2	39	2.3	**40/2**
83	16.9	41	1.3	**32/2**
81	17.2	41	2.0	**40/2**
77	18.2	44	4.2	**50/2**
71	19.8	47	1.1	**32/2**
69	20.2	48	1.8	**40/2**
67	20.8	50	3.8	**50/2**
66	21.3	51	1.9	**40/2**
59	23.8	57	3.6	**50/2**
58	24.2	58	1.0	**32/2**
57	24.6	59	1.7	**40/2**
54	25.9	62	3.2	**50/2**
53	26.6	64	1.4	**40/2**
52	27.0	63	1.0	**32/3**
49	28.5	67	3.2	**50/3**
48	29.1	68	1.5	**40/3**
48	29.4	70	0.9	**32/2**
47	29.8	71	2.8	**50/2**
46	30.6	73	1.2	**40/2**
43	32.4	76	0.8	**32/3**
43	32.4	76	2.8	**50/3**
42	33.1	78	1.4	**40/3**
39	35.6	84	2.5	**50/3**
39	36.3	85	1.1	**40/3**
35	40.5	95	2.2	**50/3**
34	41.2	97	1.0	**40/3**
31	45.1	106	4.3	**60/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.37 kW				
n_1 = **1400** min^{-1}				
30	46.2	108	2.0	**50/3**
30	46.7	110	1.0	**40/3**
28	50.4	118	0.9	**40/3**
28	50.8	119	1.8	**50/3**
27	51.0	120	3.8	**60/3**
26	54.3	127	0.8	**40/3**
26	54.3	127	1.7	**50/3**
25	55.2	130	3.6	**60/3**
23	60.3	142	3.0	**60/3**
21	65.9	155	1.3	**50/3**
20	71.5	168	1.3	**50/3**
19	72.7	171	2.7	**60/3**
18	77.5	182	1.2	**50/3**
18	78.6	184	2.5	**60/3**
16	89.3	210	1.0	**50/3**
15	90.4	212	2.2	**60/3**
14	100.2	235	1.8	**60/3**
14	102.1	240	0.9	**50/3**
12	112.2	263	1.7	**60/3**
12	117.6	276	0.8	**50/3**
11	128.8	302	1.5	**60/3**
10	143.0	336	1.3	**60/3**
8.5	164.1	385	1.1	**60/3**
n_1 = **900** min^{-1}				
375	2.4	9.0	7.0	**40/2**
333	2.7	10	6.6	**40/2**
250	3.6	13	2.9	**32/2**
209	4.3	16	2.5	**32/2**
176	5.1	19	2.3	**32/2**
153	5.9	22	3.6	**40/2**
148	6.1	23	2.0	**32/2**
130	6.9	26	1.8	**32/2**
130	6.9	26	3.2	**40/2**
113	8.0	30	1.6	**32/2**
106	8.5	32	2.7	**40/2**
97	9.3	35	1.4	**32/2**
93	9.7	36	2.4	**40/2**
85	10.6	40	2.3	**40/2**
82	11.0	41	1.3	**32/2**
75	12.0	45	2.1	**40/2**
72	12.5	47	4.2	**50/2**
71	12.6	47	1.1	**32/2**
65	13.8	51	1.9	**40/2**
63	14.3	53	8.2	**60/2**
62	14.5	54	1.0	**32/2**
62	14.6	54	3.7	**50/2**
58	15.5	58	7.8	**60/2**
56	16.2	60	1.7	**40/2**
54	16.8	63	3.4	**50/2**
53	16.9	63	0.9	**32/2**
52	17.2	64	1.4	**40/2**
49	18.2	68	2.9	**50/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

0.37 kW

n_1 = 900 min^{-1}				
45	19.8	74	0.8	**32/2**
45	20.2	75	1.2	**40/2**
43	20.8	78	2.6	**50/2**
42	21.3	79	1.3	**40/2**
38	23.8	89	2.4	**50/2**
37	24.6	92	1.1	**40/2**
35	25.9	97	2.1	**50/2**
34	26.6	99	0.9	**40/2**
32	28.1	105	3.9	**60/2**
32	28.5	104	2.1	**50/3**
30	29.8	111	1.8	**50/2**
29	30.6	114	0.8	**40/2**
28	32.3	120	3.4	**60/2**
28	32.4	118	1.8	**50/3**
25	35.6	130	1.6	**50/3**
25	35.7	130	3.2	**60/3**
22	40.3	147	2.9	**60/3**
22	40.5	148	1.4	**50/3**
20	45.1	165	2.8	**60/3**
19	46.2	169	1.3	**50/3**
18	50.8	185	1.2	**50/3**
18	51.0	186	2.5	**60/3**
17	54.3	198	1.1	**50/3**
16	55.2	202	2.3	**60/3**
15	60.3	220	1.9	**60/3**
14	65.7	240	4.0	**80/3**
14	65.9	241	0.9	**50/3**
13	71.5	261	0.8	**50/3**
12	72.7	265	1.7	**60/3**
12	76.0	277	3.5	**80/3**
12	77.5	283	0.8	**50/3**
11	78.6	287	1.6	**60/3**
11	82.2	300	3.2	**80/3**
10	90.0	329	2.9	**80/3**
10	90.4	330	1.4	**60/3**
9.0	100.2	366	1.1	**60/3**
8.6	104.8	383	2.5	**80/3**
8.0	112.2	410	1.1	**60/3**
7.7	117.2	428	2.3	**80/3**
7.0	128.8	470	1.0	**60/3**
6.7	134.3	490	2.0	**80/3**
6.3	143.0	522	0.8	**60/3**
6.0	149.3	545	1.8	**80/3**
5.3	171.2	625	1.5	**80/3**

0.55 kW

n_1 = 2800 min^{-1}				
1167	2.4	4.3	11.2	**40/2**
1037	2.7	4.8	10.4	**40/2**
778	3.6	6.4	4.5	**32/2**
651	4.3	7.7	3.9	**32/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

0.55 kW

n_1 = 2800 min^{-1}				
549	5.1	9.1	3.5	**32/2**
459	6.1	11	3.1	**32/2**
406	6.9	12	2.8	**32/2**
350	8.0	14	2.5	**32/2**
329	8.5	15	4.2	**40/2**
301	9.3	17	2.2	**32/2**
289	9.7	17	3.8	**40/2**
264	10.6	19	3.7	**40/2**
255	11.0	20	2.0	**32/2**
233	12.0	21	3.3	**40/2**
222	12.6	22	1.8	**32/2**
203	13.8	25	3.0	**40/2**
193	14.5	26	1.6	**32/2**
173	16.2	29	2.6	**40/2**
166	16.9	30	1.5	**32/2**
163	17.2	31	2.3	**40/2**
141	19.8	35	1.3	**32/2**
139	20.2	36	2.0	**40/2**
131	21.3	38	2.2	**40/2**
118	23.8	42	4.0	**50/2**
116	24.2	43	1.1	**32/2**
114	24.6	44	2.2	**40/2**
108	25.9	46	3.6	**50/2**
105	26.6	47	1.6	**40/2**
104	27.0	47	1.1	**32/3**
98	28.5	50	3.7	**50/3**
96	29.1	51	1.7	**40/3**
95	29.4	52	1.0	**32/2**
94	29.8	53	3.2	**50/2**
92	30.6	55	1.4	**40/2**
86	32.4	57	1.0	**32/3**
86	32.4	57	3.3	**50/3**
85	33.1	58	1.6	**40/3**
79	35.6	62	3.0	**50/3**
77	36.3	63	1.3	**40/3**
76	37.0	65	0.9	**32/3**
69	40.5	71	2.7	**50/3**
68	41.2	72	0.8	**32/3**
68	41.2	72	1.2	**40/3**
61	46.2	81	2.5	**50/3**
60	46.7	81	1.2	**40/3**
56	50.4	88	1.2	**40/3**
55	50.8	89	2.4	**50/3**
52	54.3	95	1.1	**40/3**
52	54.3	95	2.3	**50/3**
46	60.3	105	4.0	**60/3**
45	61.6	107	0.9	**40/3**
42	65.9	115	1.8	**50/3**
39	70.9	124	0.8	**40/3**
39	71.5	125	1.7	**50/3**
39	72.7	127	3.6	**60/3**
36	77.5	135	1.6	**50/3**
36	78.2	136	0.8	**40/3**
36	78.6	137	3.4	**60/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

0.55 kW

n_1 = 2800 min^{-1}				
31	89.3	156	1.4	**50/3**
31	90.4	158	2.9	**60/3**
28	100.2	175	2.4	**60/3**
27	102.1	178	1.2	**50/3**
25	112.2	196	2.4	**60/3**
24	117.6	205	1.1	**50/3**
22	127.5	222	1.0	**50/3**
22	128.8	225	2.0	**60/3**
20	143.0	249	1.7	**60/3**
19	146.9	256	0.8	**50/3**
17	164.1	286	1.5	**60/3**

n_1 = 1400 min^{-1}				
583	2.4	8.6	6.7	**40/2**
519	2.7	10	6.1	**40/2**
389	3.6	13	2.7	**32/2**
326	4.3	15	2.3	**32/2**
311	4.5	16	4.2	**40/2**
275	5.1	18	2.1	**32/2**
237	5.9	21	3.4	**40/2**
230	6.1	22	1.8	**32/2**
203	6.9	25	1.7	**32/2**
203	6.9	25	3.0	**40/2**
175	8.0	29	1.5	**32/2**
165	8.5	30	2.5	**40/2**
151	9.3	33	1.3	**32/2**
144	9.7	35	2.3	**40/2**
132	10.6	38	2.2	**40/2**
127	11.0	39	1.2	**32/2**
117	12.0	43	2.0	**40/2**
112	12.5	45	3.9	**50/2**
111	12.6	45	1.1	**32/2**
101	13.8	49	1.8	**40/2**
97	14.5	52	1.0	**32/2**
96	14.6	52	3.5	**50/2**
86	16.2	58	1.6	**40/2**
83	16.8	60	3.1	**50/2**
83	16.9	60	0.9	**32/2**
81	17.2	61	1.4	**40/2**
77	18.2	65	2.8	**50/2**
71	19.8	71	0.8	**32/2**
69	20.2	72	1.2	**40/2**
67	20.8	74	2.5	**50/2**
66	21.3	76	1.3	**40/2**
59	23.8	85	2.4	**50/2**
57	24.6	88	1.2	**40/2**
54	25.9	92	2.2	**50/2**
53	26.6	95	0.9	**40/2**
50	28.1	100	4.1	**60/2**
49	28.5	99	2.2	**50/3**
47	29.8	106	1.9	**50/2**
46	30.6	109	0.8	**40/2**
43	32.3	115	3.6	**60/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.55 kW				
n_1 = 1400 min^{-1}				
43	32.4	113	1.9	**50/3**
39	35.6	124	1.7	**50/3**
39	35.7	125	3.4	**60/3**
35	40.3	141	3.0	**60/3**
35	40.5	141	1.5	**50/3**
31	45.1	157	2.9	**60/3**
30	46.2	161	1.3	**50/3**
28	50.8	177	1.2	**50/3**
27	51.0	178	2.6	**60/3**
26	54.3	189	1.1	**50/3**
25	55.2	193	2.4	**60/3**
23	60.3	210	2.0	**60/3**
21	65.7	229	4.2	**80/3**
21	65.9	230	0.9	**50/3**
20	71.5	249	0.9	**50/3**
19	72.7	254	1.8	**60/3**
18	76.0	265	3.6	**80/3**
18	77.5	270	0.8	**50/3**
18	78.6	274	1.7	**60/3**
17	82.2	287	3.4	**80/3**
16	90.0	314	3.1	**80/3**
15	90.4	315	1.5	**60/3**
14	100.2	350	1.2	**60/3**
13	104.8	366	2.6	**80/3**
12	112.2	391	1.2	**60/3**
12	117.2	409	2.4	**80/3**
11	128.8	449	1.0	**60/3**
10	134.3	469	2.1	**80/3**
9.8	143.0	499	0.8	**60/3**
9.4	149.3	521	1.9	**80/3**
8.2	171.2	597	1.6	**80/3**
n_1 = 900 min^{-1}				
375	2.4	13	4.7	**40/2**
333	2.7	15	4.4	**40/2**
250	3.6	20	2.0	**32/2**
237	3.8	21	3.4	**40/2**
209	4.3	24	1.7	**32/2**
200	4.5	25	3.0	**40/2**
176	5.1	28	1.5	**32/2**
153	5.9	33	2.4	**40/2**
148	6.1	34	1.3	**32/2**
130	6.9	38	1.2	**32/2**
130	6.9	38	2.1	**40/2**
122	7.4	41	4.2	**50/2**
113	8.0	44	1.1	**32/2**
108	8.3	46	3.8	**50/2**
106	8.5	47	1.8	**40/2**
98	9.2	51	3.6	**50/2**
97	9.3	52	1.0	**32/2**
93	9.7	54	1.6	**40/2**
87	10.4	58	3.3	**50/2**
85	10.6	59	1.6	**40/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.55 kW				
n_1 = 900 min^{-1}				
82	11.0	61	0.9	**32/2**
75	12.0	67	1.4	**40/2**
72	12.5	69	2.8	**50/2**
71	12.6	70	0.8	**32/2**
65	13.8	77	1.3	**40/2**
62	14.6	81	2.5	**50/2**
56	16.2	90	1.1	**40/2**
54	16.8	93	2.3	**50/2**
52	17.2	95	0.9	**40/2**
49	18.2	101	2.0	**50/2**
46	19.7	109	3.8	**60/2**
45	20.2	112	0.8	**40/2**
43	20.8	115	1.7	**50/2**
42	21.3	118	0.9	**40/2**
41	22.1	123	3.7	**60/2**
38	23.8	132	1.6	**50/2**
36	25.3	140	3.2	**60/2**
35	25.9	144	1.4	**50/2**
32	28.0	152	3.0	**60/3**
32	28.1	156	2.6	**60/2**
32	28.5	155	1.4	**50/3**
30	29.8	165	1.2	**50/2**
28	31.6	172	2.7	**60/3**
28	32.3	179	2.3	**60/2**
28	32.4	176	1.2	**50/3**
25	35.6	193	1.1	**50/3**
25	35.7	194	2.2	**60/3**
22	40.3	219	1.9	**60/3**
22	40.5	220	0.9	**50/3**
20	44.0	239	4.0	**80/3**
20	45.1	245	1.9	**60/3**
19	46.2	251	0.9	**50/3**
18	50.8	276	0.8	**50/3**
18	50.9	276	3.5	**80/3**
18	51.0	277	1.7	**60/3**
16	55.1	299	3.2	**80/3**
16	55.2	300	1.5	**60/3**
15	60.3	327	1.3	**60/3**
14	65.7	357	2.7	**80/3**
12	72.7	395	1.2	**60/3**
12	76.0	412	2.3	**80/3**
11	78.6	427	1.1	**60/3**
11	82.2	446	2.2	**80/3**
10	90.0	488	2.0	**80/3**
10	90.4	491	0.9	**60/3**
9.0	100.2	544	0.8	**60/3**
8.6	104.8	569	1.7	**80/3**
8.0	112.2	609	0.8	**60/3**
7.7	117.2	636	1.5	**80/3**
6.7	134.3	729	1.3	**80/3**
6.0	149.3	810	1.2	**80/3**
5.3	171.2	929	1.0	**80/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.75 kW				
n_1 = 2800 min^{-1}				
1167	2.4	5.8	8.2	**40/2**
1037	2.7	6.6	7.6	**40/2**
778	3.6	8.7	3.3	**32/2**
651	4.3	10	2.9	**32/2**
549	5.1	12	2.6	**32/2**
475	5.9	14	4.1	**40/2**
459	6.1	15	2.3	**32/2**
406	6.9	17	2.1	**32/2**
406	6.9	17	3.7	**40/2**
350	8.0	19	1.9	**32/2**
329	8.5	21	3.1	**40/2**
301	9.3	23	1.6	**32/2**
289	9.7	24	2.8	**40/2**
264	10.6	26	2.7	**40/2**
255	11.0	27	1.5	**32/2**
233	12.0	29	2.4	**40/2**
222	12.6	31	1.3	**32/2**
203	13.8	34	2.2	**40/2**
193	14.5	35	1.2	**32/2**
192	14.6	35	4.3	**50/2**
173	16.2	39	1.9	**40/2**
167	16.8	41	3.9	**50/2**
166	16.9	41	1.1	**32/2**
163	17.2	42	1.7	**40/2**
154	18.2	44	3.5	**50/2**
141	19.8	48	1.0	**32/2**
139	20.2	49	1.5	**40/2**
135	20.8	51	3.1	**50/2**
131	21.3	52	1.6	**40/2**
118	23.8	58	3.0	**50/2**
116	24.2	59	0.8	**32/2**
114	24.6	60	1.6	**40/2**
108	25.9	63	2.7	**50/2**
105	26.6	65	1.2	**40/2**
104	27.0	64	0.8	**32/3**
98	28.5	68	2.7	**50/3**
96	29.1	69	1.3	**40/3**
94	29.8	72	2.3	**50/2**
92	30.6	74	1.0	**40/2**
86	32.4	77	2.4	**50/3**
85	33.1	79	1.2	**40/3**
79	35.6	85	2.2	**50/3**
77	36.3	86	1.0	**40/3**
69	40.3	96	4.0	**60/3**
69	40.5	96	2.0	**50/3**
68	41.2	98	0.9	**40/3**
62	45.1	107	4.1	**60/3**
61	46.2	110	1.9	**50/3**
60	46.7	111	0.9	**40/3**
56	50.4	120	0.9	**40/3**
55	50.8	121	1.7	**50/3**
55	51.0	121	3.7	**60/3**
52	54.3	129	0.8	**40/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.75 kW				
n_1 = 2800 min^{-1}				
52	54.3	129	1.7	**50/3**
51	55.2	131	3.5	**60/3**
46	60.3	143	2.9	**60/3**
42	65.9	157	1.3	**50/3**
39	71.5	170	1.3	**50/3**
39	72.7	173	2.7	**60/3**
36	77.5	184	1.2	**50/3**
36	78.6	187	2.5	**60/3**
31	89.3	212	1.0	**50/3**
31	90.4	215	2.1	**60/3**
28	100.2	238	1.8	**60/3**
27	102.1	243	0.9	**50/3**
27	104.8	249	3.9	**80/3**
25	112.2	267	1.7	**60/3**
24	117.2	279	3.5	**80/3**
24	117.6	280	0.8	**50/3**
22	128.8	306	1.5	**60/3**
21	134.3	319	3.0	**80/3**
20	143.0	340	1.2	**60/3**
19	149.3	355	2.7	**80/3**
17	164.1	390	1.1	**60/3**
16	171.2	407	2.4	**80/3**
n_1 = 1400 min^{-1}				
583	2.4	12	4.9	**40/2**
519	2.7	13	4.5	**40/2**
389	3.6	17	2.0	**32/2**
368	3.8	18	3.5	**40/2**
326	4.3	21	1.7	**32/2**
311	4.5	22	3.1	**40/2**
275	5.1	25	1.5	**32/2**
237	5.9	29	2.5	**40/2**
230	6.1	30	1.3	**32/2**
203	6.9	34	1.3	**32/2**
203	6.9	34	2.2	**40/2**
189	7.4	36	4.3	**50/2**
175	8.0	39	1.1	**32/2**
169	8.3	40	3.9	**50/2**
165	8.5	41	1.8	**40/2**
152	9.2	45	3.6	**50/2**
151	9.3	45	1.0	**32/2**
144	9.7	47	1.7	**40/2**
135	10.4	51	3.4	**50/2**
132	10.6	52	1.6	**40/2**
127	11.0	53	0.9	**32/2**
117	12.0	58	1.4	**40/2**
112	12.5	61	2.9	**50/2**
111	12.6	61	0.8	**32/2**
101	13.8	67	1.3	**40/2**
96	14.6	71	2.6	**50/2**
86	16.2	79	1.1	**40/2**
83	16.8	82	2.3	**50/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.75 kW				
n_1 = 1400 min^{-1}				
81	17.2	84	1.0	**40/2**
77	18.2	88	2.1	**50/2**
77	18.3	89	4.2	**60/2**
71	19.7	96	4.1	**60/2**
69	20.2	98	0.9	**40/2**
67	20.8	101	1.9	**50/2**
66	21.3	104	0.9	**40/2**
63	22.1	107	4.1	**60/2**
59	23.8	116	1.8	**50/2**
57	24.6	120	0.8	**40/2**
55	25.3	123	3.7	**60/2**
54	25.9	126	1.6	**50/2**
50	28.0	133	3.5	**60/3**
50	28.1	137	3.0	**60/2**
49	28.5	136	1.6	**50/3**
47	29.8	145	1.4	**50/2**
44	31.6	150	3.1	**60/3**
43	32.3	157	2.6	**60/2**
43	32.4	154	1.4	**50/3**
39	35.6	169	1.2	**50/3**
39	35.7	170	2.5	**60/3**
35	40.3	192	2.2	**60/3**
35	40.5	193	1.1	**50/3**
31	45.1	215	2.1	**60/3**
30	46.2	220	1.0	**50/3**
28	50.8	242	0.9	**50/3**
28	50.9	242	4.0	**80/3**
27	51.0	243	1.9	**60/3**
26	54.3	258	0.8	**50/3**
25	55.1	262	3.7	**80/3**
25	55.2	263	1.8	**60/3**
23	60.3	287	1.5	**60/3**
21	65.7	313	3.1	**80/3**
19	72.7	346	1.3	**60/3**
18	76.0	362	2.7	**80/3**
18	78.6	374	1.2	**60/3**
17	82.2	391	2.5	**80/3**
16	90.0	428	2.3	**80/3**
15	90.4	430	1.1	**60/3**
14	100.2	477	0.9	**60/3**
13	104.8	499	1.9	**80/3**
12	112.2	534	0.9	**60/3**
12	117.2	558	1.7	**80/3**
11	128.8	613	0.8	**60/3**
10	134.3	639	1.5	**80/3**
9.4	149.3	710	1.4	**80/3**
8.2	171.2	815	1.2	**80/3**
n_1 = 900 min^{-1}				
375	2.4	18	3.5	**40/2**
333	2.7	20	3.2	**40/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.75 kW				
n_1 = 900 min^{-1}				
237	3.8	29	2.5	**40/2**
200	4.5	34	2.2	**40/2**
176	5.1	39	4.1	**50/2**
153	5.9	45	1.8	**40/2**
143	6.3	48	3.4	**50/2**
130	6.9	52	1.6	**40/2**
122	7.4	56	3.1	**50/2**
108	8.3	63	2.8	**50/2**
106	8.5	64	1.3	**40/2**
98	9.2	70	2.6	**50/2**
93	9.7	73	1.2	**40/2**
87	10.4	79	2.4	**50/2**
85	10.6	80	1.1	**40/2**
75	12.0	91	1.0	**40/2**
72	12.5	95	2.1	**50/2**
65	13.8	104	0.9	**40/2**
63	14.3	108	4.0	**60/2**
62	14.6	110	1.8	**50/2**
58	15.5	117	3.8	**60/2**
56	16.2	122	0.8	**40/2**
54	16.8	127	1.7	**50/2**
49	18.2	138	1.5	**50/2**
49	18.3	138	3.0	**60/2**
46	19.7	149	2.8	**60/2**
43	20.8	157	1.3	**50/2**
41	22.1	167	2.7	**60/2**
38	23.8	180	1.2	**50/2**
36	25.3	191	2.4	**60/2**
35	25.9	196	1.0	**50/2**
32	28.0	207	2.2	**60/3**
32	28.1	212	1.9	**60/2**
32	28.5	211	1.0	**50/3**
31	28.9	218	4.3	**80/2**
30	29.8	225	0.9	**50/2**
28	31.6	234	2.0	**60/3**
28	31.8	240	3.9	**80/2**
28	32.3	244	1.7	**60/2**
28	32.4	240	0.9	**50/3**
25	35.6	263	0.8	**50/3**
25	35.7	264	1.6	**60/3**
25	35.7	264	3.7	**80/3**
22	40.3	298	1.4	**60/3**
22	40.3	298	3.2	**80/3**
20	44.0	326	3.0	**80/3**
20	45.1	334	1.4	**60/3**
18	50.9	377	2.6	**80/3**
18	51.0	377	1.2	**60/3**
16	55.1	408	2.4	**80/3**
16	55.2	409	1.1	**60/3**
15	60.3	446	0.9	**60/3**
14	64.5	477	4.2	**100/3**
14	65.7	486	2.0	**80/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.75 kW				
n_1 = **900** min^{-1}				
12	72.7	538	0.9	**60/3**
12	73.6	545	3.6	**100/3**
12	76.0	562	1.7	**80/3**
11	78.6	582	0.8	**60/3**
11	78.9	584	3.4	**100/3**
11	82.2	608	1.6	**80/3**
10	90.0	666	1.5	**80/3**
10	93.0	688	2.9	**100/3**
9.1	98.6	730	2.7	**100/3**
8.6	104.8	776	1.2	**80/3**
7.9	114.4	847	3.9	**120/3**
7.7	117.2	867	1.1	**80/3**
7.6	117.8	872	2.3	**100/3**
7.2	124.9	924	3.6	**120/3**
6.9	129.5	958	2.1	**100/3**
6.7	134.3	994	1.0	**80/3**
6.3	142.9	1058	3.1	**120/3**
6.1	147.2	1089	1.8	**100/3**
6.0	149.3	1105	0.9	**80/3**
5.8	156.0	1154	2.9	**120/3**
5.6	161.7	1197	1.7	**100/3**
5.3	171.2	1267	0.8	**80/3**
5.1	175.7	1300	2.5	**120/3**
4.9	182.0	1347	2.5	**120/3**
4.6	197.1	1459	2.3	**120/3**
4.4	205.0	1517	2.2	**120/3**
4.1	222.0	1643	2.0	**120/3**
3.5	256.0	1895	1.7	**120/3**
3.2	277.3	2052	1.6	**120/3**
0.95 kW				
n_1 = **1400** min^{-1}				
583	2.4	15	3.9	**40/2**
519	2.7	17	3.5	**40/2**
389	3.6	22	1.6	**32/2**
368	3.8	23	2.7	**40/2**
326	4.3	26	1.4	**32/2**
311	4.5	28	2.5	**40/2**
275	5.1	31	1.2	**32/2**
237	5.9	36	2.0	**40/2**
230	6.1	38	1.1	**32/2**
222	6.3	39	3.8	**50/2**
203	6.9	42	1.0	**32/2**
203	6.9	42	1.7	**40/2**
189	7.4	46	3.4	**50/2**
175	8.0	49	0.9	**32/2**
169	8.3	51	3.1	**50/2**
165	8.5	52	1.5	**40/2**
152	9.2	57	2.9	**50/2**
151	9.3	57	0.8	**32/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
0.95 kW				
n_1 = **1400** min^{-1}				
144	9.7	60	1.3	**40/2**
135	10.4	64	2.7	**50/2**
132	10.6	65	1.3	**40/2**
117	12.0	74	1.1	**40/2**
112	12.5	77	2.3	**50/2**
101	13.8	85	1.0	**40/2**
96	14.6	90	2.0	**50/2**
86	16.2	100	0.9	**40/2**
83	16.8	103	1.8	**50/2**
81	17.2	106	0.8	**40/2**
77	18.2	112	1.6	**50/2**
67	20.8	128	1.5	**50/2**
59	23.8	147	1.4	**50/2**
54	25.9	159	1.3	**50/2**
50	28.0	169	2.7	**60/3**
49	28.5	172	1.3	**50/3**
47	29.8	183	1.1	**50/2**
44	31.6	190	2.4	**60/3**
43	32.4	195	1.1	**50/3**
39	35.6	215	1.0	**50/3**
39	35.7	215	2.0	**60/3**
35	40.3	243	1.7	**60/3**
35	40.3	243	4.0	**80/3**
35	40.5	244	0.9	**50/3**
32	44.0	265	3.6	**80/3**
31	45.1	272	1.7	**60/3**
30	46.2	278	0.8	**50/3**
28	50.9	307	3.2	**80/3**
27	51.0	307	1.5	**60/3**
25	55.1	332	2.9	**80/3**
25	55.2	333	1.4	**60/3**
23	60.3	363	1.2	**60/3**
21	65.7	396	2.4	**80/3**
19	72.7	438	1.0	**60/3**
18	76.0	458	2.1	**80/3**
18	78.6	474	1.0	**60/3**
17	82.2	495	2.0	**80/3**
16	90.0	542	1.8	**80/3**
15	90.4	545	0.8	**60/3**
13	104.8	632	1.5	**80/3**
12	117.2	706	1.4	**80/3**
10	134.3	809	1.2	**80/3**
9.4	149.3	900	1.1	**80/3**
8.2	171.2	1032	0.9	**80/3**
n_1 = **2800** min^{-1}				
1167	2.4	8.6	5.6	**40/2**
1037	2.7	9.6	5.2	**40/2**
778	3.6	13	2.3	**32/2**
737	3.8	14	4.0	**40/2**
651	4.3	15	2.0	**32/2**
622	4.5	16	3.6	**40/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.1 kW				
n_1 = **2800** min^{-1}				
549	5.1	18	1.8	**32/2**
475	5.9	21	2.8	**40/2**
459	6.1	22	1.6	**32/2**
406	6.9	25	1.4	**32/2**
406	6.9	25	2.5	**40/2**
350	8.0	29	1.3	**32/2**
329	8.5	30	2.1	**40/2**
304	9.2	33	4.2	**50/2**
301	9.3	33	1.1	**32/2**
289	9.7	35	1.9	**40/2**
269	10.4	37	3.9	**50/2**
264	10.6	38	1.8	**40/2**
255	11.0	39	1.0	**32/2**
233	12.0	43	1.7	**40/2**
224	12.5	45	3.3	**50/2**
222	12.6	45	0.9	**32/2**
203	13.8	49	1.5	**40/2**
193	14.5	52	0.8	**32/2**
192	14.6	52	2.9	**50/2**
173	16.2	58	1.3	**40/2**
167	16.8	60	2.6	**50/2**
163	17.2	61	1.1	**40/2**
154	18.2	65	2.4	**50/2**
139	20.2	72	1.0	**40/2**
135	20.8	74	2.1	**50/2**
131	21.3	76	1.1	**40/2**
118	23.8	85	2.0	**50/2**
114	24.6	88	1.1	**40/2**
111	25.3	90	4.2	**60/2**
108	25.9	92	1.8	**50/2**
105	26.6	95	0.8	**40/2**
100	28.0	98	4.0	**60/3**
100	28.1	100	3.4	**60/2**
98	28.5	99	1.8	**50/3**
94	29.8	106	1.6	**50/2**
89	31.6	110	3.6	**60/3**
87	32.3	115	3.0	**60/2**
86	32.4	113	1.7	**50/3**
79	35.6	124	1.5	**50/3**
78	35.7	125	3.0	**60/3**
69	40.3	141	2.7	**60/3**
69	40.5	141	1.4	**50/3**
62	45.1	157	2.8	**60/3**
61	46.2	161	1.3	**50/3**
55	50.8	177	1.2	**50/3**
55	51.0	178	2.5	**60/3**
52	54.3	189	1.1	**50/3**
51	55.2	193	2.4	**60/3**
46	60.3	210	2.0	**60/3**
43	65.7	229	4.2	**80/3**
42	65.9	230	0.9	**50/3**
39	71.5	249	0.9	**50/3**
39	72.7	254	1.8	**60/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.1 kW				
n_1 = 2800 min^{-1}				
37	76.0	265	3.6	**80/3**
36	77.5	270	0.8	**50/3**
36	78.6	274	1.7	**60/3**
34	82.2	287	3.4	**80/3**
31	90.0	314	3.1	**80/3**
31	90.4	315	1.5	**60/3**
28	100.2	350	1.2	**60/3**
27	104.8	366	2.6	**80/3**
25	112.2	391	1.2	**60/3**
24	117.2	409	2.4	**80/3**
22	128.8	449	1.0	**60/3**
21	134.3	469	2.1	**80/3**
20	143.0	499	0.8	**60/3**
19	149.3	521	1.9	**80/3**
16	171.2	597	1.6	**80/3**
n_1 = 1400 min^{-1}				
583	2.4	17	3.3	**40/2**
519	2.7	19	3.1	**40/2**
368	3.8	27	2.4	**40/2**
318	4.4	31	4.2	**50/2**
311	4.5	32	2.1	**40/2**
275	5.1	36	3.9	**50/2**
237	5.9	42	1.7	**40/2**
222	6.3	45	3.3	**50/2**
203	6.9	49	1.5	**40/2**
189	7.4	53	2.9	**50/2**
169	8.3	59	2.7	**50/2**
165	8.5	61	1.3	**40/2**
152	9.2	66	2.5	**50/2**
144	9.7	69	1.1	**40/2**
135	10.4	74	2.3	**50/2**
132	10.6	76	1.1	**40/2**
117	12.0	86	1.0	**40/2**
113	12.4	88	4.2	**60/2**
112	12.5	89	2.0	**50/2**
101	13.8	98	0.9	**40/2**
98	14.3	102	3.8	**60/2**
96	14.6	104	1.7	**50/2**
90	15.5	110	3.6	**60/2**
86	16.2	115	0.8	**40/2**
83	16.8	120	1.6	**50/2**
77	18.2	130	1.4	**50/2**
77	18.3	130	2.9	**60/2**
71	19.7	140	2.8	**60/2**
67	20.8	148	1.3	**50/2**
63	22.1	158	2.8	**60/2**
59	23.8	170	1.2	**50/2**
55	25.3	180	2.5	**60/2**
54	25.9	185	1.1	**50/2**
50	28.0	195	2.4	**60/3**
50	28.1	200	2.0	**60/2**
49	28.5	199	1.1	**50/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.1 kW				
n_1 = 1400 min^{-1}				
47	29.8	212	0.9	**50/2**
44	31.6	221	2.1	**60/3**
44	31.8	227	4.1	**80/2**
43	32.3	230	1.8	**60/2**
43	32.4	226	1.0	**50/3**
39	35.6	248	0.8	**50/3**
39	35.7	249	1.7	**60/3**
39	35.7	249	3.9	**80/3**
35	40.3	281	1.5	**60/3**
35	40.3	281	3.4	**80/3**
32	44.0	307	3.1	**80/3**
31	45.1	315	1.5	**60/3**
28	50.9	355	2.7	**80/3**
27	51.0	356	1.3	**60/3**
25	55.1	385	2.5	**80/3**
25	55.2	385	1.2	**60/3**
23	60.3	421	1.0	**60/3**
21	65.7	458	2.1	**80/3**
19	72.7	507	0.9	**60/3**
19	73.6	514	3.9	**100/3**
18	76.0	530	1.8	**80/3**
18	78.6	548	0.8	**60/3**
18	78.9	551	3.6	**100/3**
17	82.2	574	1.7	**80/3**
16	90.0	628	1.5	**80/3**
15	93.0	649	3.1	**100/3**
14	98.6	688	2.9	**100/3**
13	104.8	731	1.3	**80/3**
12	114.4	799	4.1	**120/3**
12	117.2	818	1.2	**80/3**
12	117.8	822	2.4	**100/3**
11	124.9	871	3.8	**120/3**
11	129.5	904	2.2	**100/3**
10	134.3	937	1.0	**80/3**
10	142.9	997	3.3	**120/3**
10	147.2	1027	1.9	**100/3**
9.4	149.3	1042	0.9	**80/3**
9.0	156.0	1088	3.0	**120/3**
8.7	161.7	1128	1.8	**100/3**
8.2	171.2	1195	0.8	**80/3**
8.0	175.7	1226	2.7	**120/3**
7.7	182.0	1270	2.6	**120/3**
7.1	197.1	1376	2.4	**120/3**
6.8	205.0	1430	2.3	**120/3**
6.3	222.0	1549	2.1	**120/3**
5.5	256.0	1786	1.8	**120/3**
5.0	277.3	1935	1.7	**120/3**
n_1 = 900 min^{-1}				
375	2.4	27	2.4	**40/2**
333	2.7	30	2.2	**40/2**
310	2.9	32	4.3	**50/2**
237	3.8	42	1.7	**40/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.1 kW				
n_1 = 900 min^{-1}				
205	4.4	49	3.0	**50/2**
200	4.5	50	1.5	**40/2**
176	5.1	57	2.8	**50/2**
153	5.9	65	1.2	**40/2**
143	6.3	70	2.3	**50/2**
130	6.9	77	1.1	**40/2**
122	7.4	82	2.1	**50/2**
114	7.9	88	4.3	**60/2**
108	8.3	92	1.9	**50/2**
106	8.5	94	0.9	**40/2**
101	8.9	99	3.9	**60/2**
98	9.2	102	1.8	**50/2**
93	9.7	108	0.8	**40/2**
89	10.1	112	3.6	**60/2**
87	10.4	115	1.7	**50/2**
85	10.6	118	0.8	**40/2**
80	11.3	125	3.3	**60/2**
73	12.4	137	3.0	**60/2**
72	12.5	139	1.4	**50/2**
63	14.3	159	2.7	**60/2**
62	14.6	162	1.3	**50/2**
58	15.5	172	2.6	**60/2**
54	16.8	186	1.1	**50/2**
49	18.2	202	1.0	**50/2**
49	18.3	203	2.0	**60/2**
46	19.7	218	1.9	**60/2**
43	20.8	231	0.9	**50/2**
41	22.1	245	1.8	**60/2**
40	22.7	252	3.7	**80/2**
38	23.8	264	0.8	**50/2**
36	24.9	276	3.4	**80/2**
36	25.3	281	1.6	**60/2**
32	28.0	304	1.5	**60/3**
32	28.1	312	1.3	**60/2**
32	28.1	305	3.2	**80/3**
31	28.9	320	2.9	**80/2**
28	31.6	343	1.3	**60/3**
28	31.7	344	2.8	**80/3**
28	31.8	353	2.7	**80/2**
28	32.3	358	1.1	**60/2**
25	35.7	388	1.1	**60/3**
25	35.7	388	2.5	**80/3**
22	40.3	437	1.0	**60/3**
22	40.3	437	2.2	**80/3**
20	44.0	478	2.0	**80/3**
20	45.1	490	0.9	**60/3**
20	45.2	491	4.0	**100/3**
18	50.9	553	1.8	**80/3**
18	51.0	554	0.8	**60/3**
17	52.8	573	3.5	**100/3**
16	55.1	598	1.6	**80/3**
16	55.2	599	0.8	**60/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.1 kW				
n_1 = 900 min^{-1}				
16	56.7	615	3.2	**100/3**
14	64.5	700	2.8	**100/3**
14	65.7	713	1.4	**80/3**
12	72.6	788	4.2	**120/3**
12	73.6	799	2.5	**100/3**
12	76.0	825	1.2	**80/3**
12	77.7	844	3.9	**120/3**
11	78.9	856	2.3	**100/3**
11	82.2	892	3.7	**120/3**
11	82.2	892	1.1	**80/3**
10	90.0	977	1.0	**80/3**
9.9	90.7	984	3.4	**120/3**
9.7	93.0	1010	2.0	**100/3**
9.1	98.6	1070	1.9	**100/3**
8.8	102.6	1114	3.0	**120/3**
8.6	104.8	1138	0.9	**80/3**
7.9	114.4	1242	2.7	**120/3**
7.7	117.2	1272	0.8	**80/3**
7.6	117.8	1279	1.6	**100/3**
7.2	124.9	1355	2.4	**120/3**
6.9	129.5	1406	1.4	**100/3**
6.3	142.9	1551	2.1	**120/3**
6.1	147.2	1598	1.2	**100/3**
5.8	156.0	1693	1.9	**120/3**
5.6	161.7	1755	1.1	**100/3**
5.1	175.7	1907	1.7	**120/3**
4.9	182.0	1975	1.7	**120/3**
4.6	197.1	2140	1.5	**120/3**
4.4	205.0	2225	1.5	**120/3**
4.1	222.0	2410	1.4	**120/3**
3.5	256.0	2779	1.2	**120/3**
3.2	277.3	3010	1.1	**120/3**
1.5 kW				
n_1 = 2800 min^{-1}				
1167	2.4	12	4.1	**40/2**
1037	2.7	13	3.8	**40/2**
737	3.8	18	2.9	**40/2**
622	4.5	22	2.6	**40/2**
475	5.9	29	2.1	**40/2**
444	6.3	31	4.0	**50/2**
406	6.9	34	1.8	**40/2**
378	7.4	36	3.6	**50/2**
337	8.3	40	3.3	**50/2**
329	8.5	41	1.5	**40/2**
304	9.2	45	3.1	**50/2**
289	9.7	47	1.4	**40/2**
269	10.4	51	2.8	**50/2**
264	10.6	52	1.3	**40/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.5 kW				
n_1 = 2800 min^{-1}				
233	12.0	58	1.2	**40/2**
224	12.5	61	2.4	**50/2**
203	13.8	67	1.1	**40/2**
192	14.6	71	2.2	**50/2**
173	16.2	79	1.0	**40/2**
167	16.8	82	1.9	**50/2**
163	17.2	84	0.8	**40/2**
154	18.2	88	1.8	**50/2**
153	18.3	89	3.6	**60/2**
142	19.7	96	3.4	**60/2**
135	20.8	101	1.6	**50/2**
131	21.3	104	0.8	**40/2**
127	22.1	107	3.4	**60/2**
118	23.8	116	1.5	**50/2**
114	24.6	120	0.8	**40/2**
111	25.3	123	3.1	**60/2**
108	25.9	126	1.3	**50/2**
100	28.0	133	2.9	**60/3**
100	28.1	137	2.5	**60/2**
98	28.5	136	1.3	**50/3**
94	29.8	145	1.2	**50/2**
89	31.6	150	2.7	**60/3**
87	32.3	157	2.2	**60/2**
86	32.4	154	1.2	**50/3**
79	35.6	169	1.1	**50/3**
78	35.7	170	2.2	**60/3**
69	40.3	192	2.0	**60/3**
69	40.5	193	1.0	**50/3**
62	45.1	215	2.0	**60/3**
61	46.2	220	0.9	**50/3**
55	50.8	242	0.9	**50/3**
55	50.9	242	3.9	**80/3**
55	51.0	243	1.8	**60/3**
52	54.3	258	0.8	**50/3**
51	55.1	262	3.7	**80/3**
51	55.2	263	1.8	**60/3**
46	60.3	287	1.5	**60/3**
43	65.7	313	3.1	**80/3**
39	72.7	346	1.3	**60/3**
37	76.0	362	2.7	**80/3**
36	78.6	374	1.2	**60/3**
34	82.2	391	2.5	**80/3**
31	90.0	428	2.3	**80/3**
31	90.4	430	1.1	**60/3**
28	98.6	469	4.2	**100/3**
28	100.2	477	0.9	**60/3**
27	104.8	499	1.9	**80/3**
25	112.2	534	0.9	**60/3**
24	117.2	558	1.7	**80/3**
24	117.8	560	3.5	**100/3**
22	128.8	613	0.8	**60/3**
22	129.5	616	3.2	**100/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.5 kW				
n_1 = 2800 min^{-1}				
21	134.3	639	1.5	**80/3**
19	147.2	700	2.8	**100/3**
19	149.3	710	1.4	**80/3**
17	161.7	769	2.6	**100/3**
16	171.2	815	1.2	**80/3**
16	175.7	836	3.9	**120/3**
15	182.0	866	3.8	**120/3**
14	197.1	938	3.5	**120/3**
14	205.0	975	3.4	**120/3**
13	222.0	1056	3.1	**120/3**
11	256.0	1218	2.7	**120/3**
10	277.3	1319	2.5	**120/3**
n_1 = 1400 min^{-1}				
583	2.4	23	2.4	**40/2**
519	2.7	26	2.2	**40/2**
368	3.8	37	1.7	**40/2**
318	4.4	43	3.1	**50/2**
311	4.5	44	1.6	**40/2**
275	5.1	50	2.8	**50/2**
237	5.9	57	1.2	**40/2**
222	6.3	61	2.4	**50/2**
203	6.9	67	1.1	**40/2**
189	7.4	72	2.1	**50/2**
169	8.3	81	2.0	**50/2**
165	8.5	83	0.9	**40/2**
157	8.9	87	4.0	**60/2**
152	9.2	89	1.8	**50/2**
144	9.7	94	0.8	**40/2**
139	10.1	98	3.6	**60/2**
135	10.4	101	1.7	**50/2**
132	10.6	103	0.8	**40/2**
124	11.3	110	3.3	**60/2**
113	12.4	121	3.1	**60/2**
112	12.5	122	1.4	**50/2**
98	14.3	139	2.8	**60/2**
96	14.6	142	1.3	**50/2**
90	15.5	151	2.7	**60/2**
83	16.8	163	1.2	**50/2**
77	18.2	177	1.0	**50/2**
77	18.3	178	2.1	**60/2**
71	19.7	191	2.0	**60/2**
67	20.8	202	0.9	**50/2**
63	22.1	215	2.0	**60/2**
62	22.7	221	4.1	**80/2**
59	23.8	231	0.9	**50/2**
56	24.9	242	3.9	**80/2**
55	25.3	246	1.8	**60/2**
54	25.9	252	0.8	**50/2**
50	28.0	266	1.7	**60/3**
50	28.1	273	1.5	**60/2**
50	28.1	267	3.6	**80/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.5 kW				
n_1 = **1400** min^{-1}				
49	28.5	271	0.8	**50/3**
48	28.9	281	3.3	**80/2**
44	31.6	301	1.5	**60/3**
44	31.7	302	3.2	**80/3**
44	31.8	309	3.0	**80/2**
43	32.3	314	1.3	**60/2**
39	35.7	340	1.2	**60/3**
39	35.7	340	2.8	**80/3**
35	40.3	383	1.1	**60/3**
35	40.3	383	2.5	**80/3**
32	44.0	419	2.3	**80/3**
31	45.1	429	1.1	**60/3**
28	50.9	484	2.0	**80/3**
27	51.0	485	0.9	**60/3**
27	52.8	502	4.0	**100/3**
25	55.1	524	1.8	**80/3**
25	55.2	525	0.9	**60/3**
25	56.7	540	3.7	**100/3**
22	64.5	614	3.2	**100/3**
21	65.7	625	1.5	**80/3**
19	73.6	700	2.8	**100/3**
18	76.0	723	1.3	**80/3**
18	78.9	751	2.6	**100/3**
17	82.2	782	4.2	**120/3**
17	82.2	782	1.2	**80/3**
16	90.0	856	1.1	**80/3**
15	90.7	863	3.8	**120/3**
15	93.0	885	2.2	**100/3**
14	98.6	938	2.1	**100/3**
14	102.6	977	3.4	**120/3**
13	104.8	997	1.0	**80/3**
12	114.4	1089	3.0	**120/3**
12	117.2	1115	0.9	**80/3**
12	117.8	1121	1.8	**100/3**
11	124.9	1188	2.8	**120/3**
11	129.5	1232	1.6	**100/3**
10	134.3	1278	0.8	**80/3**
9.8	142.9	1360	2.4	**120/3**
9.5	147.2	1401	1.4	**100/3**
9.0	156.0	1484	2.2	**120/3**
8.7	161.7	1539	1.3	**100/3**
8.0	175.7	1671	2.0	**120/3**
7.7	182.0	1732	1.9	**120/3**
7.1	197.1	1876	1.8	**120/3**
6.8	205.0	1950	1.7	**120/3**
6.3	222.0	2113	1.6	**120/3**
5.5	256.0	2436	1.4	**120/3**
5.0	277.3	2639	1.3	**120/3**
n_1 = **900** min^{-1}				
375	2.4	36	1.7	**40/2**
346	2.6	39	3.4	**50/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.5 kW				
n_1 = **900** min^{-1}				
333	2.7	41	1.6	**40/2**
310	2.9	44	3.1	**50/2**
237	3.8	57	1.2	**40/2**
205	4.4	67	2.2	**50/2**
200	4.5	68	1.1	**40/2**
176	5.1	77	2.0	**50/2**
153	5.9	89	0.9	**40/2**
143	6.3	95	1.7	**50/2**
136	6.6	100	3.5	**60/2**
130	6.9	104	0.8	**40/2**
122	7.4	112	1.5	**50/2**
120	7.5	113	3.2	**60/2**
114	7.9	119	3.2	**60/2**
108	8.3	126	1.4	**50/2**
101	8.9	135	2.9	**60/2**
98	9.2	139	1.3	**50/2**
89	10.1	153	2.6	**60/2**
87	10.4	157	1.2	**50/2**
80	11.3	171	2.4	**60/2**
73	12.4	187	2.2	**60/2**
72	12.5	189	1.0	**50/2**
63	14.2	215	4.2	**80/2**
63	14.3	216	2.0	**60/2**
62	14.6	221	0.9	**50/2**
59	15.2	230	4.1	**80/2**
58	15.5	234	1.9	**60/2**
54	16.8	254	0.8	**50/2**
50	18.1	274	3.4	**80/2**
49	18.3	277	1.5	**60/2**
46	19.4	293	3.2	**80/2**
46	19.7	298	1.4	**60/2**
41	22.1	334	1.3	**60/2**
40	22.7	343	2.7	**80/2**
36	24.9	377	2.5	**80/2**
36	25.3	383	1.2	**60/2**
32	28.0	414	1.1	**60/3**
32	28.1	425	1.0	**60/2**
32	28.1	416	2.3	**80/3**
31	28.9	437	2.2	**80/2**
28	31.6	468	1.0	**60/3**
28	31.7	469	2.1	**80/3**
28	31.8	481	2.0	**80/2**
28	32.3	488	0.8	**60/2**
28	32.5	481	4.1	**100/3**
25	35.7	528	0.8	**60/3**
25	35.7	528	1.8	**80/3**
25	36.4	539	3.7	**100/3**
22	40.3	597	1.6	**80/3**
22	40.6	601	3.3	**100/3**
20	44.0	651	1.5	**80/3**
20	45.2	669	3.0	**100/3**
18	50.9	753	1.3	**80/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.5 kW				
n_1 = **900** min^{-1}				
17	52.8	782	2.5	**100/3**
16	55.1	816	1.2	**80/3**
16	56.7	839	2.4	**100/3**
16	57.1	845	3.9	**120/3**
14	62.2	921	3.6	**120/3**
14	64.5	955	2.1	**100/3**
14	65.7	973	1.0	**80/3**
12	72.6	1075	3.1	**120/3**
12	73.6	1089	1.8	**100/3**
12	76.0	1125	0.9	**80/3**
12	77.7	1150	2.9	**120/3**
11	78.9	1168	1.7	**100/3**
11	82.2	1216	2.7	**120/3**
11	82.2	1217	0.8	**80/3**
9.9	90.7	1342	2.5	**120/3**
9.7	93.0	1377	1.4	**100/3**
9.1	98.6	1460	1.4	**100/3**
8.8	102.6	1519	2.2	**120/3**
7.9	114.4	1694	1.9	**120/3**
7.6	117.8	1744	1.1	**100/3**
7.2	124.9	1848	1.8	**120/3**
6.9	129.5	1917	1.0	**100/3**
6.3	142.9	2116	1.6	**120/3**
6.1	147.2	2179	0.9	**100/3**
5.8	156.0	2309	1.4	**120/3**
5.6	161.7	2394	0.8	**100/3**
5.1	175.7	2600	1.3	**120/3**
4.9	182.0	2694	1.2	**120/3**
4.6	197.1	2918	1.1	**120/3**
4.4	205.0	3034	1.1	**120/3**
4.1	222.0	3287	1.0	**120/3**
3.5	256.0	3789	0.9	**120/3**
3.2	277.3	4105	0.8	**120/3**
1.8 kW				
n_1 = **1400** min^{-1}				
583	2.4	28	2.0	**40/2**
538	2.6	30	3.9	**50/2**
519	2.7	31	1.9	**40/2**
483	2.9	34	3.7	**50/2**
368	3.8	44	1.4	**40/2**
318	4.4	51	2.6	**50/2**
311	4.5	52	1.3	**40/2**
275	5.1	59	2.4	**50/2**
237	5.9	69	1.0	**40/2**
222	6.3	73	2.0	**50/2**
212	6.6	77	4.1	**60/2**
203	6.9	80	0.9	**40/2**
189	7.4	86	1.8	**50/2**
187	7.5	87	3.7	**60/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.8 kW				
n_1 = **1400** min^{-1}				
177	7.9	92	3.7	**60/2**
169	8.3	97	1.6	**50/2**
165	8.5	99	0.8	**40/2**
157	8.9	104	3.4	**60/2**
152	9.2	107	1.5	**50/2**
139	10.1	118	3.0	**60/2**
135	10.4	121	1.4	**50/2**
124	11.3	132	2.8	**60/2**
113	12.4	145	2.6	**60/2**
112	12.5	146	1.2	**50/2**
98	14.3	167	2.3	**60/2**
96	14.6	170	1.1	**50/2**
90	15.5	181	2.2	**60/2**
83	16.8	196	1.0	**50/2**
77	18.1	211	4.1	**80/2**
77	18.2	212	0.9	**50/2**
77	18.3	213	1.8	**60/2**
72	19.4	226	3.9	**80/2**
71	19.7	230	1.7	**60/2**
67	20.8	243	0.8	**50/2**
63	22.1	258	1.7	**60/2**
62	22.7	265	3.4	**80/2**
56	24.9	290	3.2	**80/2**
55	25.3	295	1.5	**60/2**
50	28.0	320	1.4	**60/3**
50	28.1	328	1.3	**60/2**
50	28.1	321	3.0	**80/3**
48	28.9	337	2.8	**80/2**
44	31.6	361	1.3	**60/3**
44	31.7	362	2.7	**80/3**
44	31.8	371	2.5	**80/2**
43	32.3	377	1.1	**60/2**
39	35.7	408	1.0	**60/3**
39	35.7	408	2.4	**80/3**
35	40.3	460	0.9	**60/3**
35	40.3	460	2.1	**80/3**
34	40.6	464	4.3	**100/3**
32	44.0	502	1.9	**80/3**
31	45.1	515	0.9	**60/3**
31	45.2	516	3.8	**100/3**
28	50.9	581	1.7	**80/3**
27	51.0	582	0.8	**60/3**
27	52.8	603	3.3	**100/3**
25	55.1	629	1.5	**80/3**
25	56.7	647	3.1	**100/3**
22	64.5	737	2.7	**100/3**
21	65.7	750	1.3	**80/3**
19	72.6	829	4.0	**120/3**
19	73.6	840	2.4	**100/3**
18	76.0	868	1.1	**80/3**
18	77.7	887	3.7	**120/3**
18	78.9	901	2.2	**100/3**
17	82.2	938	3.5	**120/3**
17	82.2	939	1.0	**80/3**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
1.8 kW				
n_1 = **1400** min^{-1}				
16	90.0	1028	0.9	**80/3**
15	90.7	1036	3.2	**120/3**
15	93.0	1062	1.9	**100/3**
14	98.6	1126	1.8	**100/3**
14	102.6	1172	2.8	**120/3**
13	104.8	1197	0.8	**80/3**
12	114.4	1307	2.5	**120/3**
12	117.8	1345	1.5	**100/3**
11	124.9	1426	2.3	**120/3**
11	129.5	1479	1.3	**100/3**
10	142.9	1632	2.0	**120/3**
10	147.2	1681	1.2	**100/3**
9.0	156.0	1781	1.9	**120/3**
8.7	161.7	1846	1.1	**100/3**
8.0	175.7	2006	1.6	**120/3**
7.7	182.0	2078	1.6	**120/3**
7.1	197.1	2251	1.5	**120/3**
6.8	205.0	2340	1.4	**120/3**
6.3	222.0	2535	1.3	**120/3**
5.5	256.0	2923	1.1	**120/3**
5.0	277.3	3167	1.0	**120/3**
2.2 kW				
n_1 = **2800** min^{-1}				
1167	2.4	17	2.8	**40/2**
1037	2.7	19	2.6	**40/2**
737	3.8	27	2.0	**40/2**
636	4.4	31	3.6	**50/2**
622	4.5	32	1.8	**40/2**
549	5.1	36	3.2	**50/2**
475	5.9	42	1.4	**40/2**
444	6.3	45	2.8	**50/2**
406	6.9	49	1.3	**40/2**
378	7.4	53	2.4	**50/2**
337	8.3	59	2.2	**50/2**
329	8.5	61	1.1	**40/2**
304	9.2	66	2.1	**50/2**
289	9.7	69	1.0	**40/2**
277	10.1	72	4.2	**60/2**
269	10.4	74	1.9	**50/2**
264	10.6	76	0.9	**40/2**
248	11.3	81	3.8	**60/2**
233	12.0	86	0.8	**40/2**
226	12.4	88	3.6	**60/2**
224	12.5	89	1.6	**50/2**
196	14.3	102	3.2	**60/2**
192	14.6	104	1.5	**50/2**
181	15.5	110	3.1	**60/2**
167	16.8	120	1.3	**50/2**
154	18.2	130	1.2	**50/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
2.2 kW				
n_1 = **2800** min^{-1}				
153	18.3	130	2.4	**60/2**
142	19.7	140	2.3	**60/2**
135	20.8	148	1.1	**50/2**
127	22.1	158	2.3	**60/2**
118	23.8	170	1.0	**50/2**
111	25.3	180	2.1	**60/2**
108	25.9	185	0.9	**50/2**
100	28.0	195	2.0	**60/3**
100	28.1	200	1.7	**60/2**
100	28.1	196	4.1	**80/3**
98	28.5	199	0.9	**50/3**
97	28.9	206	3.8	**80/2**
94	29.8	212	0.8	**50/2**
89	31.6	221	1.8	**60/3**
88	31.7	221	3.8	**80/3**
88	31.8	227	3.5	**80/2**
87	32.3	230	1.5	**60/2**
86	32.4	226	0.8	**50/3**
78	35.7	249	1.5	**60/3**
78	35.7	249	3.5	**80/3**
69	40.3	281	1.4	**60/3**
69	40.3	281	3.2	**80/3**
64	44.0	307	3.0	**80/3**
62	45.1	315	1.4	**60/3**
55	50.9	355	2.6	**80/3**
55	51.0	356	1.3	**60/3**
51	55.1	385	2.5	**80/3**
51	55.2	385	1.2	**60/3**
46	60.3	421	1.0	**60/3**
43	65.7	458	2.1	**80/3**
39	72.7	507	0.9	**60/3**
38	73.6	514	3.9	**100/3**
37	76.0	530	1.8	**80/3**
36	78.6	548	0.8	**60/3**
35	78.9	551	3.6	**100/3**
34	82.2	574	1.7	**80/3**
31	90.0	628	1.5	**80/3**
30	93.0	649	3.1	**100/3**
28	98.6	688	2.9	**100/3**
27	104.8	731	1.3	**80/3**
24	114.4	799	4.1	**120/3**
24	117.2	818	1.2	**80/3**
24	117.8	822	2.4	**100/3**
22	124.9	871	3.8	**120/3**
22	129.5	904	2.2	**100/3**
21	134.3	937	1.0	**80/3**
20	142.9	997	3.3	**120/3**
19	147.2	1027	1.9	**100/3**
19	149.3	1042	0.9	**80/3**
18	156.0	1088	3.0	**120/3**
17	161.7	1128	1.8	**100/3**
16	171.2	1195	0.8	**80/3**
16	175.7	1226	2.7	**120/3**

6.8 Prestazioni motoriduttori AM - AC

6.8 *AM - AC gearmotors performances*

6.8 Leistungen der AM - AC Getriebe

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
15	182.0	1270	2.6	**120/3**
14	197.1	1376	2.4	**120/3**
14	205.0	1430	2.3	**120/3**
13	222.0	1549	2.1	**120/3**
11	256.0	1786	1.8	**120/3**
10	277.3	1935	1.7	**120/3**
n_1 = 1400 min^{-1}				
583	2.4	34	1.7	**40/2**
538	2.6	37	3.2	**50/2**
519	2.7	38	1.5	**40/2**
483	2.9	41	3.0	**50/2**
368	3.8	54	1.2	**40/2**
318	4.4	63	2.1	**50/2**
311	4.5	64	1.1	**40/2**
275	5.1	73	1.9	**50/2**
237	5.9	84	0.8	**40/2**
222	6.3	90	1.6	**50/2**
212	6.6	94	3.3	**60/2**
189	7.4	106	1.5	**50/2**
187	7.5	107	3.1	**60/2**
177	7.9	113	3.0	**60/2**
169	8.3	118	1.3	**50/2**
157	8.9	127	2.8	**60/2**
152	9.2	131	1.2	**50/2**
139	10.1	144	2.5	**60/2**
135	10.4	148	1.2	**50/2**
124	11.3	161	2.3	**60/2**
113	12.4	177	2.1	**60/2**
112	12.5	178	1.0	**50/2**
99	14.2	202	4.0	**80/2**
98	14.3	204	1.9	**60/2**
96	14.6	208	0.9	**50/2**
92	15.2	217	3.9	**80/2**
90	15.5	221	1.8	**60/2**
83	16.8	240	0.8	**50/2**
77	18.1	258	3.4	**80/2**
77	18.3	261	1.4	**60/2**
72	19.4	277	3.2	**80/2**
71	19.7	281	1.4	**60/2**
63	22.1	315	1.4	**60/2**
62	22.7	324	2.8	**80/2**
56	24.9	355	2.6	**80/2**
55	25.3	361	1.2	**60/2**
50	28.0	391	1.2	**60/3**
50	28.1	401	1.0	**60/2**
50	28.1	392	2.5	**80/3**
48	28.9	412	2.3	**80/2**
44	31.6	441	1.0	**60/3**
44	31.7	442	2.2	**80/3**
44	31.8	453	2.1	**80/2**
43	32.3	460	0.9	**60/2**

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 1400 min^{-1}				
39	35.7	498	0.8	**60/3**
39	35.7	498	1.9	**80/3**
38	36.4	508	3.9	**100/3**
35	40.3	562	1.7	**80/3**
34	40.6	567	3.5	**100/3**
32	44.0	614	1.6	**80/3**
31	45.2	631	3.1	**100/3**
28	50.9	710	1.4	**80/3**
27	52.8	737	2.7	**100/3**
25	55.1	769	1.3	**80/3**
25	56.7	791	2.5	**100/3**
25	57.1	797	4.1	**120/3**
23	62.2	868	3.8	**120/3**
22	64.5	900	2.2	**100/3**
21	65.7	917	1.1	**80/3**
19	72.6	1013	3.3	**120/3**
19	73.6	1027	1.9	**100/3**
18	76.0	1061	0.9	**80/3**
18	77.7	1085	3.0	**120/3**
18	78.9	1101	1.8	**100/3**
17	82.2	1147	2.9	**120/3**
17	82.2	1147	0.8	**80/3**
16	90.0	1256	0.8	**80/3**
15	90.7	1266	2.6	**120/3**
15	93.0	1298	1.5	**100/3**
14	98.6	1376	1.4	**100/3**
14	102.6	1432	2.3	**120/3**
12	114.4	1597	2.1	**120/3**
12	117.8	1644	1.2	**100/3**
11	124.9	1743	1.9	**120/3**
11	129.5	1807	1.1	**100/3**
9.8	142.9	1995	1.7	**120/3**
9.5	147.2	2054	1.0	**100/3**
9.0	156.0	2177	1.5	**120/3**
8.7	161.7	2257	0.9	**100/3**
8.0	175.7	2452	1.3	**120/3**
7.7	182.0	2540	1.3	**120/3**
7.1	197.1	2751	1.2	**120/3**
6.8	205.0	2860	1.2	**120/3**
6.3	222.0	3099	1.1	**120/3**
5.5	256.0	3573	0.9	**120/3**
5.0	277.3	3870	0.9	**120/3**
n_1 = 900 min^{-1}				
346	2.6	58	2.3	**50/2**
310	2.9	64	2.1	**50/2**
243	3.7	82	3.6	**60/2**
209	4.3	95	3.3	**60/2**
205	4.4	98	1.5	**50/2**
196	4.6	102	3.3	**60/2**
176	5.1	113	1.4	**50/2**
143	6.3	140	1.2	**50/2**

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 900 min^{-1}				
136	6.6	146	2.4	**60/2**
122	7.4	164	1.0	**50/2**
120	7.5	166	2.2	**60/2**
114	7.9	175	2.2	**60/2**
108	8.3	184	1.0	**50/2**
103	8.7	193	4.2	**80/2**
101	8.9	197	2.0	**60/2**
98	9.2	204	0.9	**50/2**
90	10.0	222	3.8	**80/2**
89	10.1	224	1.8	**60/2**
87	10.4	231	0.8	**50/2**
81	11.1	246	3.5	**80/2**
80	11.3	251	1.6	**60/2**
73	12.4	275	1.5	**60/2**
73	12.4	275	3.2	**80/2**
63	14.2	315	2.9	**80/2**
63	14.3	317	1.4	**60/2**
59	15.2	337	2.8	**80/2**
58	15.5	344	1.3	**60/2**
50	18.1	401	2.3	**80/2**
49	18.3	406	1.0	**60/2**
46	19.4	430	2.2	**80/2**
46	19.7	437	0.9	**60/2**
41	22.1	490	0.9	**60/2**
40	22.7	503	1.9	**80/2**
36	24.9	552	1.7	**80/2**
36	25.3	561	0.8	**60/2**
32	28.1	610	1.6	**80/3**
31	28.9	641	1.5	**80/2**
31	29.1	632	3.1	**100/3**
28	31.7	688	1.4	**80/3**
28	31.8	705	1.3	**80/2**
28	32.5	706	2.8	**100/3**
25	35.7	775	1.2	**80/3**
25	36.4	790	2.5	**100/3**
22	40.3	875	1.1	**80/3**
22	40.6	881	2.3	**100/3**
22	40.7	884	3.7	**120/3**
20	44.0	955	1.0	**80/3**
20	45.2	981	2.0	**100/3**
20	45.7	993	3.3	**120/3**
18	50.9	1104	3.0	**120/3**
18	50.9	1105	0.9	**80/3**
17	52.8	1146	1.7	**100/3**
16	55.1	1196	0.8	**80/3**
16	56.7	1231	1.6	**100/3**
16	57.1	1240	2.7	**120/3**
14	62.2	1351	2.4	**120/3**
14	64.5	1400	1.4	**100/3**
12	72.6	1576	2.1	**120/3**
12	73.6	1598	1.2	**100/3**
12	77.7	1687	2.0	**120/3**
11	78.9	1713	1.2	**100/3**

6.8 Prestazioni motoriduttori AM - AC

6.8 AM - AC gearmotors performances

6.8 Leistungen der AM - AC Getriebe

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 900 min^{-1}				
11	82.2	1784	1.8	**120/3**
10	90.7	1969	1.7	**120/3**
10	93.0	2019	1.0	**100/3**
9.1	98.6	2141	0.9	**100/3**
8.8	102.6	2228	1.5	**120/3**
7.9	114.4	2484	1.3	**120/3**
7.6	117.8	2557	0.8	**100/3**
7.2	124.9	2711	1.2	**120/3**
6.3	142.9	3103	1.1	**120/3**
5.8	156.0	3386	1.0	**120/3**
5.1	175.7	3813	0.9	**120/3**
4.9	182.0	3951	0.8	**120/3**
4.6	197.1	4280	0.8	**120/3**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
1167	2.4	23	2.1	**40/2**
1077	2.6	25	3.9	**50/2**
1037	2.7	26	1.9	**40/2**
966	2.9	28	3.7	**50/2**
737	3.8	37	1.5	**40/2**
636	4.4	43	2.6	**50/2**
622	4.5	44	1.3	**40/2**
549	5.1	50	2.4	**50/2**
475	5.9	57	1.0	**40/2**
444	6.3	61	2.0	**50/2**
424	6.6	64	4.1	**60/2**
406	6.9	67	0.9	**40/2**
378	7.4	72	1.8	**50/2**
373	7.5	73	3.8	**60/2**
354	7.9	77	3.7	**60/2**
337	8.3	81	1.6	**50/2**
329	8.5	83	0.8	**40/2**
315	8.9	87	3.4	**60/2**
304	9.2	89	1.5	**50/2**
277	10.1	98	3.1	**60/2**
269	10.4	101	1.4	**50/2**
248	11.3	110	2.8	**60/2**
226	12.4	121	2.6	**60/2**
224	12.5	122	1.2	**50/2**
196	14.3	139	2.4	**60/2**
192	14.6	142	1.1	**50/2**
181	15.5	151	2.2	**60/2**
167	16.8	163	1.0	**50/2**
155	18.1	176	4.1	**80/2**
154	18.2	177	0.9	**50/2**
153	18.3	178	1.8	**60/2**
144	19.4	189	4.0	**80/2**
142	19.7	191	1.7	**60/2**
135	20.8	202	0.8	**50/2**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
127	22.1	215	1.7	**60/2**
123	22.7	221	3.5	**80/2**
112	24.9	242	3.3	**80/2**
111	25.3	246	1.5	**60/2**
100	28.0	266	1.5	**60/3**
100	28.1	273	1.3	**60/2**
100	28.1	267	3.0	**80/3**
97	28.9	281	2.8	**80/2**
89	31.6	301	1.3	**60/3**
88	31.7	302	2.8	**80/3**
88	31.8	309	2.6	**80/2**
87	32.3	314	1.1	**60/2**
78	35.7	340	1.1	**60/3**
78	35.7	340	2.5	**80/3**
69	40.3	383	1.0	**60/3**
69	40.3	383	2.3	**80/3**
64	44.0	419	2.2	**80/3**
62	45.1	429	1.0	**60/3**
55	50.9	484	1.9	**80/3**
55	51.0	485	0.9	**60/3**
53	52.8	502	3.8	**100/3**
51	55.1	524	1.8	**80/3**
51	55.2	525	0.9	**60/3**
49	56.7	540	3.7	**100/3**
43	64.5	614	3.2	**100/3**
43	65.7	625	1.5	**80/3**
39	72.6	691	4.2	**120/3**
38	73.6	700	2.8	**100/3**
37	76.0	723	1.3	**80/3**
36	77.7	739	4.0	**120/3**
35	78.9	751	2.6	**100/3**
34	82.2	782	3.9	**120/3**
34	82.2	782	1.2	**80/3**
31	90.0	856	1.1	**80/3**
31	90.7	863	3.6	**120/3**
30	93.0	885	2.2	**100/3**
28	98.6	938	2.1	**100/3**
27	102.6	977	3.3	**120/3**
27	104.8	997	1.0	**80/3**
24	114.4	1089	3.0	**120/3**
24	117.2	1115	0.9	**80/3**
24	117.8	1121	1.8	**100/3**
22	124.9	1188	2.8	**120/3**
22	129.5	1232	1.6	**100/3**
21	134.3	1278	0.8	**80/3**
20	142.9	1360	2.4	**120/3**
19	147.2	1401	1.4	**100/3**
18	156.0	1484	2.2	**120/3**
17	161.7	1539	1.3	**100/3**
16	175.7	1671	2.0	**120/3**
15	182.0	1732	1.9	**120/3**
14	197.1	1876	1.8	**120/3**
14	205.0	1950	1.7	**120/3**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
13	222.0	2113	1.6	**120/3**
11	256.0	2436	1.4	**120/3**
10	277.3	2639	1.3	**120/3**

n_1 = 1400 min^{-1}				
583	2.4	47	1.2	**40/2**
538	2.6	51	2.3	**50/2**
519	2.7	52	1.1	**40/2**
483	2.9	56	2.2	**50/2**
378	3.7	72	3.7	**60/2**
368	3.8	74	0.9	**40/2**
326	4.3	84	3.4	**60/2**
318	4.4	86	1.6	**50/2**
311	4.5	87	0.8	**40/2**
304	4.6	89	3.4	**60/2**
275	5.1	99	1.4	**50/2**
222	6.3	122	1.2	**50/2**
212	6.6	128	2.5	**60/2**
189	7.4	144	1.1	**50/2**
187	7.5	146	2.2	**60/2**
177	7.9	154	2.2	**60/2**
169	8.3	161	1.0	**50/2**
161	8.7	169	4.3	**80/2**
157	8.9	173	2.0	**60/2**
152	9.2	179	0.9	**50/2**
140	10.0	194	3.8	**80/2**
139	10.1	196	1.8	**60/2**
135	10.4	202	0.8	**50/2**
126	11.1	216	3.5	**80/2**
124	11.3	220	1.7	**60/2**
113	12.4	241	1.6	**60/2**
113	12.4	241	3.2	**80/2**
99	14.2	276	2.9	**80/2**
98	14.3	278	1.4	**60/2**
92	15.2	296	2.8	**80/2**
90	15.5	301	1.3	**60/2**
77	18.1	352	2.5	**80/2**
77	18.3	356	1.1	**60/2**
72	19.4	377	2.4	**80/2**
71	19.7	383	1.0	**60/2**
63	22.1	430	1.0	**60/2**
62	22.7	441	2.1	**80/2**
56	24.9	484	1.9	**80/2**
55	25.3	492	0.9	**60/2**
50	28.0	533	0.9	**60/3**
50	28.1	546	0.8	**60/2**
50	28.1	535	1.8	**80/3**
48	28.9	562	1.7	**80/2**
48	29.1	554	3.6	**100/3**
44	31.6	601	0.8	**60/3**
44	31.7	603	1.6	**80/3**
44	31.8	618	1.5	**80/2**
43	32.5	619	3.2	**100/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
3 kW				
n_1 = 1400 min^{-1}				
39	35.7	679	1.4	**80/3**
38	36.4	693	2.9	**100/3**
35	40.3	767	1.3	**80/3**
34	40.6	773	2.6	**100/3**
34	40.7	775	4.3	**120/3**
32	44.0	837	1.2	**80/3**
31	45.2	860	2.3	**100/3**
31	45.7	870	3.8	**120/3**
28	50.9	968	3.4	**120/3**
28	50.9	969	1.0	**80/3**
27	52.8	1005	2.0	**100/3**
25	55.1	1049	0.9	**80/3**
25	56.7	1079	1.8	**100/3**
25	57.1	1087	3.0	**120/3**
23	62.2	1184	2.8	**120/3**
22	64.5	1228	1.6	**100/3**
21	65.7	1250	0.8	**80/3**
19	72.6	1382	2.4	**120/3**
19	73.6	1401	1.4	**100/3**
18	77.7	1479	2.2	**120/3**
18	78.9	1502	1.3	**100/3**
17	82.2	1564	2.1	**120/3**
15	90.7	1726	1.9	**120/3**
15	93.0	1770	1.1	**100/3**
14	98.6	1877	1.1	**100/3**
14	102.6	1953	1.7	**120/3**
12	114.4	2178	1.5	**120/3**
12	117.8	2242	0.9	**100/3**
11	124.9	2376	1.4	**120/3**
11	129.5	2465	0.8	**100/3**
9.8	142.9	2720	1.2	**120/3**
9.0	156.0	2968	1.1	**120/3**
8.0	175.7	3343	1.0	**120/3**
7.7	182.0	3463	1.0	**120/3**
7.1	197.1	3752	0.9	**120/3**
6.8	205.0	3901	0.8	**120/3**
6.3	222.0	4226	0.8	**120/3**
n_1 = 900 min^{-1}				
346	2.6	79	3.6	**60/2**
243	3.7	112	2.6	**60/2**
209	4.3	130	2.4	**60/2**
196	4.6	139	2.4	**60/2**
136	6.6	200	1.8	**60/2**
134	6.7	203	3.6	**80/2**
122	7.4	224	3.4	**80/2**
120	7.5	227	1.6	**60/2**
115	7.8	236	3.3	**80/2**
114	7.9	239	1.6	**60/2**
103	8.7	263	3.1	**80/2**
101	8.9	269	1.4	**60/2**
90	10.0	302	2.8	**80/2**
89	10.1	305	1.3	**60/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
3 kW				
n_1 = 900 min^{-1}				
81	11.1	336	2.5	**80/2**
80	11.3	342	1.2	**60/2**
73	12.4	375	1.1	**60/2**
73	12.4	375	2.3	**80/2**
63	14.2	429	2.1	**80/2**
63	14.3	432	1.0	**60/2**
59	15.2	460	2.0	**80/2**
58	15.5	469	1.0	**60/2**
57	15.9	481	4.0	**100/2**
51	17.6	532	3.6	**100/2**
50	18.1	547	1.7	**80/2**
46	19.4	587	1.6	**80/2**
45	19.9	602	3.2	**100/2**
41	22.2	671	2.9	**100/2**
40	22.7	686	1.4	**80/2**
39	23.1	700	4.3	**120/2**
37	24.0	727	4.1	**120/2**
37	24.2	732	2.6	**100/2**
36	24.9	753	1.2	**80/2**
33	27.0	817	3.7	**120/2**
32	28.3	856	2.3	**100/2**
31	28.9	874	1.1	**80/2**
31	28.9	874	3.4	**120/2**
31	29.1	862	2.3	**100/3**
30	29.6	895	3.4	**120/2**
30	30.3	916	2.1	**100/2**
28	31.8	962	1.0	**80/2**
28	32.5	962	2.1	**100/3**
27	33.7	1020	2.9	**120/2**
25	35.3	1068	1.8	**100/2**
25	36.4	1078	1.8	**100/3**
24	37.0	1118	2.7	**120/2**
23	38.3	1158	1.7	**100/2**
22	40.6	1202	1.7	**100/3**
22	40.7	1206	2.7	**120/3**
20	45.2	1338	1.5	**100/3**
20	45.7	1353	2.4	**120/3**
18	50.9	1506	2.2	**120/3**
17	52.8	1563	1.3	**100/3**
16	56.7	1679	1.2	**100/3**
16	57.1	1690	2.0	**120/3**
14	62.2	1842	1.8	**120/3**
14	64.5	1910	1.0	**100/3**
12	72.6	2149	1.5	**120/3**
12	73.6	2179	0.9	**100/3**
12	77.7	2301	1.4	**120/3**
11	78.9	2336	0.8	**100/3**
11	82.2	2433	1.4	**120/3**
10	90.7	2685	1.2	**120/3**
8.8	102.6	3039	1.1	**120/3**
7.9	114.4	3388	1.0	**120/3**
7.2	124.9	3697	0.9	**120/3**
6.3	142.9	4231	0.8	**120/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
4 kW				
n_1 = 2800 min^{-1}				
1167	2.4	31	1.5	**40/2**
1077	2.6	34	2.9	**50/2**
1037	2.7	35	1.4	**40/2**
966	2.9	38	2.8	**50/2**
737	3.8	49	1.1	**40/2**
651	4.3	56	4.3	**60/2**
636	4.4	57	2.0	**50/2**
622	4.5	58	1.0	**40/2**
609	4.6	60	4.2	**60/2**
549	5.1	66	1.8	**50/2**
475	5.9	76	0.8	**40/2**
444	6.3	82	1.5	**50/2**
424	6.6	86	3.1	**60/2**
378	7.4	96	1.3	**50/2**
373	7.5	97	2.8	**60/2**
354	7.9	102	2.8	**60/2**
337	8.3	108	1.2	**50/2**
315	8.9	115	2.5	**60/2**
304	9.2	119	1.1	**50/2**
277	10.1	131	2.3	**60/2**
269	10.4	135	1.1	**50/2**
248	11.3	146	2.1	**60/2**
226	12.4	161	2.0	**60/2**
226	12.4	161	4.1	**80/2**
224	12.5	162	0.9	**50/2**
197	14.2	184	3.7	**80/2**
196	14.3	185	1.8	**60/2**
192	14.6	189	0.8	**50/2**
184	15.2	197	3.6	**80/2**
181	15.5	201	1.7	**60/2**
155	18.1	235	3.1	**80/2**
153	18.3	237	1.3	**60/2**
144	19.4	251	3.0	**80/2**
142	19.7	255	1.3	**60/2**
127	22.1	286	1.3	**60/2**
123	22.7	294	2.6	**80/2**
112	24.9	323	2.4	**80/2**
111	25.3	328	1.2	**60/2**
100	28.0	355	1.1	**60/3**
100	28.1	364	0.9	**60/2**
100	28.1	357	2.3	**80/3**
97	28.9	375	2.1	**80/2**
89	31.6	401	1.0	**60/3**
88	31.7	402	2.1	**80/3**
88	31.8	412	1.9	**80/2**
87	32.3	419	0.8	**60/2**
86	32.5	412	4.2	**100/3**
78	35.7	453	0.8	**60/3**
78	35.7	453	1.9	**80/3**
77	36.4	462	3.8	**100/3**
69	40.3	511	0.8	**60/3**
69	40.3	511	1.7	**80/3**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
4 kW				
n_1 = **2800** min^{-1}				
69	40.6	515	3.5	**100/3**
64	44.0	558	1.6	**80/3**
62	45.1	572	0.8	**60/3**
62	45.2	573	3.3	**100/3**
55	50.9	645	4.2	**120/3**
55	50.9	646	1.5	**80/3**
53	52.8	670	2.9	**100/3**
51	55.1	699	1.4	**80/3**
49	56.7	719	2.8	**100/3**
49	57.1	724	3.8	**120/3**
45	62.2	789	3.6	**120/3**
43	64.5	818	2.4	**100/3**
43	65.7	834	1.2	**80/3**
39	72.6	921	3.1	**120/3**
38	73.6	934	2.1	**100/3**
37	76.0	964	1.0	**80/3**
36	77.7	986	3.0	**120/3**
35	78.9	1001	2.0	**100/3**
34	82.2	1043	2.9	**120/3**
34	82.2	1043	0.9	**80/3**
31	90.0	1142	0.8	**80/3**
31	90.7	1151	2.7	**120/3**
30	93.0	1180	1.7	**100/3**
28	98.6	1251	1.6	**100/3**
27	102.6	1302	2.4	**120/3**
24	114.4	1452	2.2	**120/3**
24	117.8	1495	1.3	**100/3**
22	124.9	1584	2.1	**120/3**
22	129.5	1643	1.2	**100/3**
20	142.9	1813	1.8	**120/3**
19	147.2	1868	1.1	**100/3**
18	156.0	1979	1.7	**120/3**
17	161.7	2052	1.0	**100/3**
16	175.7	2229	1.5	**120/3**
15	182.0	2309	1.4	**120/3**
14	197.1	2501	1.3	**120/3**
14	205.0	2600	1.3	**120/3**
13	222.0	2817	1.2	**120/3**
11	256.0	3248	1.0	**120/3**
10	277.3	3519	0.9	**120/3**
n_1 = **1400** min^{-1}				
538	2.6	67	1.8	**50/2**
538	2.6	67	3.8	**60/2**
483	2.9	75	1.6	**50/2**
378	3.7	96	2.8	**60/2**
326	4.3	111	2.6	**60/2**
318	4.4	114	1.2	**50/2**
304	4.6	119	2.5	**60/2**
275	5.1	132	1.1	**50/2**
222	6.3	163	0.9	**50/2**
212	6.6	171	1.8	**60/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
4 kW				
n_1 = **1400** min^{-1}				
209	6.7	174	3.8	**80/2**
189	7.4	192	0.8	**50/2**
189	7.4	192	3.6	**80/2**
187	7.5	194	1.7	**60/2**
179	7.8	202	3.5	**80/2**
177	7.9	205	1.7	**60/2**
161	8.7	226	3.2	**80/2**
157	8.9	231	1.5	**60/2**
140	10.0	259	2.9	**80/2**
139	10.1	262	1.4	**60/2**
126	11.1	288	2.7	**80/2**
124	11.3	293	1.3	**60/2**
113	12.4	321	1.2	**60/2**
113	12.4	321	2.4	**80/2**
99	14.2	368	2.2	**80/2**
98	14.3	371	1.0	**60/2**
92	15.2	394	2.1	**80/2**
90	15.5	402	1.0	**60/2**
77	18.1	469	1.8	**80/2**
77	18.3	474	0.8	**60/2**
72	19.4	503	1.8	**80/2**
71	19.7	511	0.8	**60/2**
63	22.1	573	0.8	**60/2**
62	22.7	588	1.5	**80/2**
56	24.9	645	1.5	**80/2**
50	28.1	713	1.4	**80/3**
48	28.9	749	1.3	**80/2**
48	29.1	738	2.7	**100/3**
44	31.7	804	1.2	**80/3**
44	31.8	824	1.1	**80/2**
43	32.5	825	2.4	**100/3**
39	35.7	906	1.1	**80/3**
38	36.4	924	2.1	**100/3**
35	40.3	1023	0.9	**80/3**
34	40.6	1030	1.9	**100/3**
34	40.7	1034	3.2	**120/3**
32	44.0	1117	0.9	**80/3**
31	45.2	1147	1.7	**100/3**
31	45.7	1160	2.8	**120/3**
28	50.9	1291	2.6	**120/3**
27	52.8	1340	1.5	**100/3**
25	56.7	1439	1.4	**100/3**
25	57.1	1449	2.3	**120/3**
23	62.2	1579	2.1	**120/3**
22	64.5	1637	1.2	**100/3**
19	72.6	1842	1.8	**120/3**
19	73.6	1868	1.1	**100/3**
18	77.7	1972	1.7	**120/3**
18	78.9	2002	1.0	**100/3**
17	82.2	2085	1.6	**120/3**
15	90.7	2301	1.4	**120/3**
15	93.0	2360	0.8	**100/3**
14	98.6	2502	0.8	**100/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
4 kW				
n_1 = **1400** min^{-1}				
14	102.6	2604	1.3	**120/3**
12	114.4	2904	1.1	**120/3**
11	124.9	3169	1.0	**120/3**
10	142.9	3627	0.9	**120/3**
9.0	156.0	3957	0.8	**120/3**
n_1 = **900** min^{-1}				
375	2.4	97	12.5	**100/2**
346	2.6	105	2.7	**60/2**
243	3.7	149	2.0	**60/2**
243	3.7	149	4.1	**80/2**
214	4.2	169	3.9	**80/2**
209	4.3	173	1.8	**60/2**
200	4.5	181	3.9	**80/2**
196	4.6	185	1.8	**60/2**
136	6.6	266	1.3	**60/2**
134	6.7	270	2.7	**80/2**
122	7.4	298	2.6	**80/2**
120	7.5	302	1.2	**60/2**
115	7.8	315	2.5	**80/2**
114	7.9	319	1.2	**60/2**
103	8.7	351	2.3	**80/2**
101	8.9	359	1.1	**60/2**
91	9.9	399	4.3	**100/2**
90	10.0	403	2.1	**80/2**
89	10.1	407	1.0	**60/2**
81	11.1	448	1.9	**80/2**
81	11.1	448	3.9	**100/2**
80	11.3	456	0.9	**60/2**
74	12.1	488	3.7	**100/2**
73	12.4	500	0.8	**60/2**
73	12.4	500	1.7	**80/2**
64	14.1	569	3.3	**100/2**
63	14.2	573	1.6	**80/2**
63	14.3	577	0.8	**60/2**
59	15.2	613	1.5	**80/2**
57	15.9	641	3.0	**100/2**
51	17.6	710	2.7	**100/2**
50	18.1	730	1.3	**80/2**
47	19.3	776	3.9	**120/2**
46	19.4	782	1.2	**80/2**
45	19.9	802	2.4	**100/2**
43	21.0	849	3.5	**120/2**
41	22.1	891	3.4	**120/2**
41	22.2	895	2.2	**100/2**
40	22.7	915	1.0	**80/2**
39	23.1	933	3.2	**120/2**
37	24.0	969	3.1	**120/2**
37	24.2	976	2.0	**100/2**
36	24.9	1004	0.9	**80/2**
33	27.0	1089	2.8	**120/2**
32	28.3	1141	1.7	**100/2**
31	28.9	1165	0.8	**80/2**

6.8 Prestazioni motoriduttori AM - AC

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 900 min^{-1}				
31	28.9	1165	2.6	**120/2**
31	29.1	1149	1.7	**100/3**
30	29.6	1194	2.5	**120/2**
30	30.3	1222	1.6	**100/2**
28	32.5	1283	1.5	**100/3**
27	33.7	1360	2.2	**120/2**
25	35.3	1423	1.4	**100/2**
25	36.4	1437	1.4	**100/3**
24	37.0	1491	2.0	**120/2**
23	38.3	1544	1.2	**100/2**
22	40.6	1603	1.2	**100/3**
22	40.7	1608	2.1	**120/3**
20	45.2	1784	1.1	**100/3**
20	45.7	1805	1.8	**120/3**
18	50.9	2008	1.6	**120/3**
17	52.8	2084	1.0	**100/3**
16	56.7	2238	0.9	**100/3**
16	57.1	2254	1.5	**120/3**
14	62.2	2456	1.3	**120/3**
14	64.5	2546	0.8	**100/3**
12	72.6	2866	1.2	**120/3**
12	77.7	3068	1.1	**120/3**
11	82.2	3244	1.0	**120/3**
10	90.7	3580	0.9	**120/3**
8.8	102.6	4051	0.8	**120/3**

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
1077	2.6	46	4.6	**60/2**
757	3.7	66	3.4	**60/2**
651	4.3	77	3.1	**60/2**
609	4.6	82	3.1	**60/2**
424	6.6	118	2.3	**60/2**
373	7.5	134	2.1	**60/2**
359	7.8	139	4.3	**80/2**
354	7.9	141	2.0	**60/2**
322	8.7	155	3.9	**80/2**
315	8.9	159	1.8	**60/2**
280	10.0	178	3.5	**80/2**
277	10.1	180	1.7	**60/2**
252	11.1	198	3.3	**80/2**
248	11.3	201	1.5	**60/2**
226	12.4	221	1.4	**60/2**
226	12.4	221	3.0	**80/2**
197	14.2	253	2.7	**80/2**
196	14.3	255	1.3	**60/2**
184	15.2	271	2.6	**80/2**
181	15.5	276	1.2	**60/2**
155	18.1	323	2.3	**80/2**
153	18.3	326	1.0	**60/2**

6.8 AM - AC gearmotors performances

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
144	19.4	346	2.2	**80/2**
142	19.7	351	0.9	**60/2**
141	19.9	355	4.3	**100/2**
127	22.1	394	0.9	**60/2**
126	22.2	396	4.0	**100/2**
123	22.7	405	1.9	**80/2**
116	24.2	431	3.8	**100/2**
112	24.9	444	1.8	**80/2**
111	25.3	451	0.8	**60/2**
99	28.3	504	3.2	**100/2**
97	28.9	515	1.5	**80/2**
96	29.1	508	3.3	**100/3**
92	30.3	540	3.0	**100/2**
88	31.8	567	1.4	**80/2**
86	32.5	567	3.0	**100/3**
83	33.7	601	4.0	**120/2**
79	35.3	629	2.6	**100/2**
77	36.4	635	2.8	**100/3**
76	37.0	659	3.7	**120/2**
73	38.3	683	2.4	**100/2**
69	40.6	708	2.6	**100/3**
69	40.7	711	3.6	**120/3**
62	45.2	789	2.4	**100/3**
61	45.7	798	3.3	**120/3**
55	50.9	888	3.0	**120/3**
53	52.8	921	2.1	**100/3**
49	56.7	989	2.0	**100/3**
49	57.1	996	2.8	**120/3**
45	62.2	1085	2.6	**120/3**
43	64.5	1125	1.8	**100/3**
39	72.6	1267	2.3	**120/3**
38	73.6	1284	1.5	**100/3**
36	77.7	1356	2.2	**120/3**
35	78.9	1376	1.4	**100/3**
34	82.2	1434	2.1	**120/3**
31	90.7	1582	2.0	**120/3**
30	93.0	1622	1.2	**100/3**
28	98.6	1720	1.2	**100/3**
27	102.6	1791	1.8	**120/3**
24	114.4	1996	1.6	**120/3**
24	117.8	2055	1.0	**100/3**
22	124.9	2178	1.5	**120/3**
22	129.5	2259	0.9	**100/3**
20	142.9	2493	1.3	**120/3**
19	147.2	2568	0.8	**100/3**
18	156.0	2721	1.2	**120/3**
16	175.7	3064	1.1	**120/3**
15	182.0	3175	1.0	**120/3**
14	197.1	3439	1.0	**120/3**
14	205.0	3576	0.9	**120/3**
13	222.0	3874	0.9	**120/3**

6.8 Leistungen der AM - AC Getriebe

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 1400 min^{-1}				
538	2.6	93	2.7	**60/2**
378	3.7	132	2.0	**60/2**
378	3.7	132	4.2	**80/2**
333	4.2	150	4.0	**80/2**
326	4.3	153	1.9	**60/2**
311	4.5	160	3.9	**80/2**
304	4.6	164	1.8	**60/2**
212	6.6	235	1.3	**60/2**
209	6.7	239	2.8	**80/2**
189	7.4	264	2.6	**80/2**
187	7.5	267	1.2	**60/2**
179	7.8	278	2.5	**80/2**
177	7.9	282	1.2	**60/2**
161	8.7	310	2.3	**80/2**
157	8.9	317	1.1	**60/2**
140	10.0	356	2.1	**80/2**
139	10.1	360	1.0	**60/2**
126	11.1	396	1.9	**80/2**
126	11.1	396	4.0	**100/2**
124	11.3	403	0.9	**60/2**
116	12.1	431	3.7	**100/2**
113	12.4	442	0.8	**60/2**
113	12.4	442	1.8	**80/2**
99	14.1	503	3.3	**100/2**
99	14.2	506	1.6	**80/2**
98	14.3	510	0.8	**60/2**
92	15.2	542	1.6	**80/2**
88	15.9	567	3.0	**100/2**
80	17.6	627	2.8	**100/2**
77	18.1	645	1.3	**80/2**
72	19.4	691	1.3	**80/2**
70	19.9	709	2.6	**100/2**
67	21.0	750	4.0	**120/2**
63	22.1	788	3.8	**120/2**
63	22.2	791	2.4	**100/2**
62	22.7	809	1.1	**80/2**
61	23.1	825	3.6	**120/2**
58	24.0	857	3.5	**120/2**
58	24.2	863	2.2	**100/2**
56	24.9	887	1.1	**80/2**
52	27.0	963	3.1	**120/2**
49	28.3	1009	1.9	**100/2**
48	28.9	1030	0.9	**80/2**
48	28.9	1030	2.9	**120/2**
48	29.1	1015	2.0	**100/3**
47	29.6	1055	2.8	**120/2**
46	30.3	1080	1.8	**100/2**
44	31.8	1133	0.8	**80/2**
43	32.5	1134	1.8	**100/3**
41	33.7	1203	2.5	**120/2**
40	35.3	1258	1.5	**100/2**
38	36.4	1270	1.6	**100/3**
38	37.0	1318	2.3	**120/2**

6.8 Prestazioni motoriduttori AM - AC

6.8 AM - AC gearmotors performances

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

5.5 kW

n_1 = 1400 min^{-1}

37	38.3	1365	1.4	**100/2**
34	40.6	1417	1.4	**100/3**
34	40.7	1421	2.3	**120/3**
31	45.2	1577	1.3	**100/3**
31	45.7	1595	2.1	**120/3**
28	50.9	1775	1.9	**120/3**
27	52.8	1842	1.1	**100/3**
25	56.7	1978	1.0	**100/3**
25	57.1	1992	1.7	**120/3**
23	62.2	2171	1.5	**120/3**
22	64.5	2251	0.9	**100/3**
19	72.6	2533	1.3	**120/3**
19	73.6	2568	0.8	**100/3**
18	77.7	2711	1.2	**120/3**
17	82.2	2867	1.2	**120/3**
15	90.7	3164	1.0	**120/3**
14	102.6	3581	0.9	**120/3**
12	114.4	3993	0.8	**120/3**
11	124.9	4357	0.8	**120/3**

n_1 = 900 min^{-1}

375	2.4	133	9.1	**100/2**
346	2.6	144	2.0	**60/2**
346	2.6	144	4.1	**80/2**
243	3.7	205	1.4	**60/2**
243	3.7	205	3.0	**80/2**
214	4.2	233	2.9	**80/2**
209	4.3	238	1.3	**60/2**
200	4.5	249	2.8	**80/2**
196	4.6	255	1.3	**60/2**
136	6.6	366	1.0	**60/2**
134	6.7	371	2.0	**80/2**
130	6.9	383	3.9	**100/2**
122	7.4	410	1.9	**80/2**
120	7.5	416	0.9	**60/2**
120	7.5	416	3.8	**100/2**
115	7.8	432	1.8	**80/2**
114	7.9	438	0.9	**60/2**
114	7.9	438	3.7	**100/2**
103	8.7	482	1.7	**80/2**
101	8.9	493	0.8	**60/2**
101	8.9	493	3.4	**100/2**
91	9.9	549	3.1	**100/2**
90	10.0	554	1.5	**80/2**
81	11.1	615	1.4	**80/2**
81	11.1	615	2.9	**100/2**
74	12.1	671	2.7	**100/2**
73	12.4	687	1.3	**80/2**
64	14.1	780	3.8	**120/2**
64	14.1	782	2.4	**100/2**
63	14.2	787	1.2	**80/2**
59	15.2	843	1.1	**80/2**
57	15.9	882	2.2	**100/2**

5.5 kW

n_1 = 900 min^{-1}

51	17.6	976	2.0	**100/2**
51	17.7	981	3.1	**120/2**
50	18.1	1004	0.9	**80/2**
47	19.3	1067	2.8	**120/2**
46	19.4	1076	0.9	**80/2**
45	19.9	1103	1.7	**100/2**
43	21.0	1167	2.6	**120/2**
41	22.1	1225	2.4	**120/2**
41	22.2	1231	1.6	**100/2**
39	23.1	1283	2.3	**120/2**
37	24.0	1333	2.3	**120/2**
37	24.2	1342	1.4	**100/2**
33	27.0	1498	2.0	**120/2**
32	28.3	1569	1.2	**100/2**
31	28.9	1602	1.9	**120/2**
31	29.1	1579	1.3	**100/3**
30	29.6	1641	1.8	**120/2**
30	30.3	1680	1.1	**100/2**
28	32.5	1764	1.1	**100/3**
27	33.7	1871	1.6	**120/2**
25	35.3	1957	1.0	**100/2**
25	36.4	1976	1.0	**100/3**
24	37.0	2050	1.5	**120/2**
23	38.3	2123	0.9	**100/2**
22	40.6	2204	0.9	**100/3**
22	40.7	2211	1.5	**120/3**
20	45.2	2453	0.8	**100/3**
20	45.7	2481	1.3	**120/3**
18	50.9	2761	1.2	**120/3**
16	57.1	3099	1.1	**120/3**
14	62.2	3377	1.0	**120/3**
12	72.6	3941	0.8	**120/3**
12	77.7	4218	0.8	**120/3**

7.5 kW

n_1 = 2800 min^{-1}

1077	2.6	63	3.4	**60/2**
757	3.7	90	2.5	**60/2**
651	4.3	104	2.3	**60/2**
609	4.6	112	2.3	**60/2**
424	6.6	160	1.7	**60/2**
418	6.7	163	3.4	**80/2**
378	7.4	180	3.2	**80/2**
373	7.5	182	1.5	**60/2**
359	7.8	190	3.1	**80/2**
354	7.9	192	1.5	**60/2**
322	8.7	211	2.9	**80/2**
315	8.9	216	1.4	**60/2**
280	10.0	243	2.6	**80/2**
277	10.1	245	1.2	**60/2**

7.5 kW

n_1 = 2800 min^{-1}

252	11.1	270	2.4	**80/2**
248	11.3	275	1.1	**60/2**
226	12.4	301	1.0	**60/2**
226	12.4	301	2.2	**80/2**
199	14.1	343	4.1	**100/2**
197	14.2	345	2.0	**80/2**
196	14.3	348	0.9	**60/2**
184	15.2	369	1.9	**80/2**
181	15.5	377	0.9	**60/2**
176	15.9	386	3.5	**100/2**
159	17.6	428	3.3	**100/2**
155	18.1	440	1.7	**80/2**
144	19.4	471	1.6	**80/2**
141	19.9	484	3.2	**100/2**
126	22.2	539	2.9	**100/2**
123	22.7	552	1.4	**80/2**
121	23.1	562	4.3	**120/2**
116	24.0	584	4.2	**120/2**
116	24.2	588	2.8	**100/2**
112	24.9	605	1.3	**80/2**
104	27.0	656	3.7	**120/2**
99	28.3	688	2.4	**100/2**
97	28.9	702	1.1	**80/2**
97	28.9	702	3.5	**120/2**
96	29.1	692	2.4	**100/3**
95	29.6	719	3.4	**120/2**
92	30.3	736	2.2	**100/2**
88	31.8	773	1.0	**80/2**
86	32.5	773	2.2	**100/3**
83	33.7	820	3.0	**120/2**
79	35.3	858	1.9	**100/2**
77	36.4	866	2.1	**100/3**
76	37.0	899	2.7	**120/2**
73	38.3	931	1.7	**100/2**
69	40.6	966	1.9	**100/3**
69	40.7	969	2.6	**120/3**
62	45.2	1075	1.7	**100/3**
61	45.7	1088	2.4	**120/3**
55	50.9	1210	2.2	**120/3**
53	52.8	1256	1.5	**100/3**
49	56.7	1349	1.5	**100/3**
49	57.1	1358	2.0	**120/3**
45	62.2	1480	1.9	**120/3**
43	64.5	1534	1.3	**100/3**
39	72.6	1727	1.7	**120/3**
38	73.6	1751	1.1	**100/3**
36	77.7	1849	1.6	**120/3**
35	78.9	1877	1.1	**100/3**
34	82.2	1955	1.6	**120/3**
31	90.7	2157	1.4	**120/3**
30	93.0	2212	0.9	**100/3**
28	98.6	2346	0.8	**100/3**

6.8 Prestazioni motoriduttori AM - AC

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 2800 min^{-1}				
27	102.6	2442	1.3	**120/3**
24	114.4	2722	1.2	**120/3**
22	124.9	2971	1.1	**120/3**
20	142.9	3400	1.0	**120/3**
18	156.0	3710	0.9	**120/3**
16	175.7	4179	0.8	**120/3**
15	182.0	4329	0.8	**120/3**
n_1 = 1400 min^{-1}				
583	2.4	117	9.3	**100/2**
538	2.6	126	2.0	**60/2**
538	2.6	126	4.2	**80/2**
378	3.7	180	1.5	**60/2**
378	3.7	180	3.1	**80/2**
333	4.2	204	2.9	**80/2**
326	4.3	209	1.4	**60/2**
311	4.5	219	2.9	**80/2**
304	4.6	224	1.3	**60/2**
212	6.6	321	1.0	**60/2**
209	6.7	326	2.0	**80/2**
203	6.9	335	4.0	**100/2**
189	7.4	360	1.9	**80/2**
187	7.5	365	0.9	**60/2**
187	7.5	365	3.9	**100/2**
179	7.8	379	1.9	**80/2**
177	7.9	384	0.9	**60/2**
177	7.9	384	3.8	**100/2**
161	8.7	423	1.7	**80/2**
157	8.9	433	0.8	**60/2**
157	8.9	433	3.5	**100/2**
141	9.9	481	3.2	**100/2**
140	10.0	486	1.5	**80/2**
126	11.1	539	1.4	**80/2**
126	11.1	539	2.9	**100/2**
116	12.1	588	2.7	**100/2**
113	12.4	603	1.3	**80/2**
99	14.1	685	2.4	**100/2**
99	14.2	690	1.2	**80/2**
92	15.2	739	1.1	**80/2**
88	15.9	773	2.2	**100/2**
80	17.6	855	2.1	**100/2**
79	17.7	860	3.5	**120/2**
77	18.1	880	1.0	**80/2**
73	19.3	936	3.2	**120/2**
72	19.4	943	0.9	**80/2**
70	19.9	967	1.9	**100/2**
67	21.0	1023	2.9	**120/2**
63	22.1	1074	2.8	**120/2**
63	22.2	1079	1.7	**100/2**
62	22.7	1103	0.8	**80/2**
61	23.1	1125	2.7	**120/2**
58	24.0	1169	2.6	**120/2**
58	24.2	1176	1.6	**100/2**

6.8 AM - AC gearmotors performances

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 1400 min^{-1}				
56	24.9	1210	0.8	**80/2**
52	27.0	1313	2.3	**120/2**
49	28.3	1375	1.4	**100/2**
48	28.9	1405	2.1	**120/2**
48	29.1	1385	1.4	**100/3**
47	29.6	1439	2.1	**120/2**
46	30.3	1473	1.3	**100/2**
43	32.5	1546	1.3	**100/3**
41	33.7	1640	1.8	**120/2**
40	35.3	1716	1.1	**100/2**
38	36.4	1732	1.1	**100/3**
38	37.0	1797	1.7	**120/2**
37	38.3	1861	1.0	**100/2**
34	40.6	1932	1.0	**100/3**
34	40.7	1938	1.7	**120/3**
31	45.2	2151	0.9	**100/3**
31	45.7	2175	1.5	**120/3**
28	50.9	2421	1.4	**120/3**
27	52.8	2512	0.8	**100/3**
25	57.1	2717	1.2	**120/3**
23	62.2	2960	1.1	**120/3**
19	72.6	3454	1.0	**120/3**
18	77.7	3697	0.9	**120/3**
17	82.2	3910	0.8	**120/3**
15	90.7	4315	0.8	**120/3**
n_1 = 900 min^{-1}				
375	2.4	181	6.7	**100/2**
346	2.6	197	3.0	**80/2**
243	3.7	280	2.2	**80/2**
214	4.2	318	2.1	**80/2**
200	4.5	340	2.1	**80/2**
184	4.9	370	3.9	**100/2**
134	6.7	507	1.5	**80/2**
130	6.9	522	2.9	**100/2**
122	7.4	559	1.4	**80/2**
120	7.5	567	2.8	**100/2**
115	7.8	590	1.3	**80/2**
114	7.9	597	2.7	**100/2**
103	8.7	658	1.2	**80/2**
101	8.9	673	2.5	**100/2**
91	9.9	748	2.3	**100/2**
90	10.0	756	1.1	**80/2**
85	10.6	801	3.7	**120/2**
81	11.1	839	1.0	**80/2**
81	11.1	839	2.1	**100/2**
78	11.5	867	3.5	**120/2**
74	12.1	915	2.0	**100/2**
73	12.4	937	0.9	**80/2**
64	14.1	1063	2.8	**120/2**
64	14.1	1066	1.7	**100/2**
63	14.2	1074	0.8	**80/2**
59	15.2	1149	0.8	**80/2**

6.8 Leistungen der AM - AC Getriebe

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
n_1 = 900 min^{-1}				
57	15.9	1202	1.6	**100/2**
51	17.6	1331	1.5	**100/2**
51	17.7	1338	2.2	**120/2**
47	19.3	1455	2.1	**120/2**
45	19.9	1505	1.3	**100/2**
43	21.0	1591	1.9	**120/2**
41	22.1	1671	1.8	**120/2**
41	22.2	1678	1.1	**100/2**
39	23.1	1749	1.7	**120/2**
37	24.0	1818	1.7	**120/2**
37	24.2	1830	1.1	**100/2**
33	27.0	2042	1.5	**120/2**
32	28.3	2140	0.9	**100/2**
31	28.9	2185	1.4	**120/2**
30	29.6	2238	1.3	**120/2**
30	30.3	2291	0.8	**100/2**
27	33.7	2551	1.2	**120/2**
25	35.3	2669	0.7	**100/2**
24	37.0	2795	1.1	**120/2**
23	38.3	2896	0.7	**100/2**

9.2 kW

n_1 = 2800 min^{-1}				
1077	2.6	78	2.7	**60/2**
757	3.7	110	2.0	**60/2**
757	3.7	110	4.2	**80/2**
667	4.2	125	4.0	**80/2**
651	4.3	128	1.9	**60/2**
622	4.5	134	3.9	**80/2**
609	4.6	137	1.8	**60/2**
424	6.6	197	1.3	**60/2**
418	6.7	200	2.8	**80/2**
378	7.4	221	2.6	**80/2**
373	7.5	224	1.2	**60/2**
359	7.8	233	2.6	**80/2**
354	7.9	235	1.2	**60/2**
322	8.7	259	2.4	**80/2**
315	8.9	265	1.1	**60/2**
280	10.0	298	2.1	**80/2**
277	10.1	301	1.0	**60/2**
252	11.1	331	1.9	**80/2**
252	11.1	331	4.0	**100/2**
248	11.3	337	0.9	**60/2**
231	12.1	361	3.7	**100/2**
226	12.4	370	0.9	**60/2**
226	12.4	370	1.8	**80/2**
199	14.1	420	3.3	**100/2**
197	14.2	423	1.6	**80/2**
196	14.3	426	0.8	**60/2**
184	15.2	453	1.6	**80/2**
176	15.9	474	2.9	**100/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
9.2 kW				
n_1 = **2800** min^{-1}				
159	17.6	525	2.7	**100/2**
155	18.1	540	1.3	**80/2**
145	19.3	574	4.2	**120/2**
144	19.4	578	1.3	**80/2**
141	19.9	593	2.6	**100/2**
133	21.0	627	3.9	**120/2**
127	22.1	659	3.7	**120/2**
126	22.2	662	2.4	**100/2**
123	22.7	677	1.1	**80/2**
121	23.1	690	3.5	**120/2**
116	24.0	717	3.4	**120/2**
116	24.2	721	2.2	**100/2**
112	24.9	742	1.1	**80/2**
104	27.0	805	3.0	**120/2**
99	28.3	844	1.9	**100/2**
97	28.9	861	0.9	**80/2**
97	28.9	861	2.8	**120/2**
96	29.1	849	2.0	**100/3**
95	29.6	882	2.8	**120/2**
92	30.3	903	1.8	**100/2**
88	31.8	948	0.8	**80/2**
86	32.5	948	1.8	**100/3**
83	33.7	1006	2.4	**120/2**
79	35.3	1052	1.5	**100/2**
77	36.4	1062	1.7	**100/3**
76	37.0	1102	2.2	**120/2**
73	38.3	1142	1.4	**100/2**
69	40.6	1185	1.5	**100/3**
69	40.7	1189	2.1	**120/3**
62	45.2	1319	1.4	**100/3**
61	45.7	1334	2.0	**120/3**
55	50.9	1485	1.8	**120/3**
53	52.8	1541	1.3	**100/3**
49	56.7	1655	1.2	**100/3**
49	57.1	1666	1.7	**120/3**
45	62.2	1816	1.6	**120/3**
43	64.5	1882	1.1	**100/3**
39	72.6	2119	1.4	**120/3**
38	73.6	2148	0.9	**100/3**
36	77.7	2268	1.3	**120/3**
35	78.9	2302	0.9	**100/3**
34	82.2	2398	1.3	**120/3**
31	90.7	2646	1.2	**120/3**
27	102.6	2995	1.1	**120/3**
24	114.4	3339	1.0	**120/3**
22	124.9	3644	0.9	**120/3**
20	142.9	4171	0.8	**120/3**
n_1 = **1400** min^{-1}				
583	2.4	143	7.6	**100/2**
538	2.6	155	1.6	**60/2**
538	2.6	155	3.4	**80/2**
378	3.7	221	1.2	**60/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
9.2 kW				
n_1 = **1400** min^{-1}				
378	3.7	221	2.5	**80/2**
333	4.2	250	2.4	**80/2**
326	4.3	256	1.1	**60/2**
311	4.5	268	2.3	**80/2**
304	4.6	274	1.1	**60/2**
212	6.6	393	0.8	**60/2**
209	6.7	399	1.6	**80/2**
203	6.9	411	3.3	**100/2**
189	7.4	441	1.6	**80/2**
187	7.5	447	3.1	**100/2**
179	7.8	465	1.5	**80/2**
177	7.9	471	3.1	**100/2**
161	8.7	519	1.4	**80/2**
157	8.9	531	2.8	**100/2**
141	9.9	590	2.6	**100/2**
140	10.0	596	1.3	**80/2**
126	11.1	662	1.2	**80/2**
126	11.1	662	2.4	**100/2**
116	12.1	721	2.2	**100/2**
113	12.4	739	1.1	**80/2**
100	14.1	839	3.6	**120/2**
99	14.1	841	2.0	**100/2**
99	14.2	847	1.0	**80/2**
92	15.2	906	0.9	**80/2**
88	15.9	948	1.8	**100/2**
80	17.6	1049	1.7	**100/2**
79	17.7	1055	2.8	**120/2**
77	18.1	1079	0.8	**80/2**
73	19.3	1148	2.6	**120/2**
72	19.4	1157	0.8	**80/2**
70	19.9	1186	1.5	**100/2**
67	21.0	1255	2.4	**120/2**
63	22.1	1318	2.3	**120/2**
63	22.2	1324	1.4	**100/2**
61	23.1	1380	2.2	**120/2**
58	24.0	1433	2.1	**120/2**
58	24.2	1443	1.3	**100/2**
52	27.0	1610	1.9	**120/2**
49	28.3	1687	1.1	**100/2**
48	28.9	1723	1.7	**120/2**
48	29.1	1698	1.2	**100/3**
47	29.6	1765	1.7	**120/2**
46	30.3	1806	1.1	**100/2**
43	32.5	1897	1.0	**100/3**
41	33.7	2011	1.5	**120/2**
40	35.3	2105	0.9	**100/2**
38	36.4	2124	0.9	**100/3**
38	37.0	2204	1.4	**120/2**
37	38.3	2283	0.8	**100/2**
34	40.6	2370	0.8	**100/3**
34	40.7	2377	1.4	**120/3**
31	45.2	2638	0.8	**100/3**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC
9.2 kW				
n_1 = **1400** min^{-1}				
31	45.7	2668	1.2	**120/3**
28	50.9	2969	1.1	**120/3**
25	57.1	3333	1.0	**120/3**
23	62.2	3631	0.9	**120/3**
19	72.6	4238	0.8	**120/3**
11 kW				
n_1 = **2800** min^{-1}				
1077	2.6	93	2.3	**60/2***
757	3.7	132	1.7	**60/2***
757	3.7	132	3.5	**80/2**
667	4.2	150	3.3	**80/2**
651	4.3	153	1.6	**60/2***
622	4.5	160	3.3	**80/2**
609	4.6	164	1.5	**60/2***
424	6.6	235	1.1	**60/2***
418	6.7	239	2.3	**80/2**
378	7.4	264	2.2	**80/2**
373	7.5	267	1.0	**60/2***
359	7.8	278	2.1	**80/2**
354	7.9	282	1.0	**60/2***
354	7.9	282	4.3	**100/2**
322	8.7	310	2.0	**80/2**
315	8.9	317	0.9	**60/2***
315	8.9	317	4.0	**100/2**
283	9.9	353	3.7	**100/2**
280	10.0	356	1.8	**80/2**
277	10.1	360	0.8	**60/2***
252	11.1	396	1.6	**80/2**
252	11.1	396	3.3	**100/2**
248	11.3	403	0.8	**60/2***
231	12.1	431	3.1	**100/2**
226	12.4	442	1.5	**80/2**
199	14.1	503	2.8	**100/2**
197	14.2	506	1.4	**80/2**
184	15.2	542	1.3	**80/2**
176	15.9	567	2.4	**100/2**
159	17.6	627	2.2	**100/2**
158	17.7	631	3.9	**120/2**
155	18.1	645	1.1	**80/2**
145	19.3	686	3.5	**120/2**
144	19.4	691	1.1	**80/2**
141	19.9	709	2.2	**100/2**
133	21.0	750	3.2	**120/2**
127	22.1	788	3.1	**120/2**
126	22.2	791	2.0	**100/2**
123	22.7	809	0.9	**80/2**
121	23.1	825	2.9	**120/2**
116	24.0	857	2.8	**120/2**
116	24.2	863	1.9	**100/2**

6.8 Prestazioni motoriduttori AM - AC

6.8 AM - AC gearmotors performances

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

11 kW

n_1 = 2800 min^{-1}				
112	24.9	887	0.9	**80/2**
104	27.0	963	2.5	**120/2**
99	28.3	1009	1.6	**100/2**
97	28.9	1030	0.8	**80/2**
97	28.9	1030	2.4	**120/2**
96	29.1	1015	1.6	**100/3**
95	29.6	1055	2.3	**120/2**
92	30.3	1080	1.5	**100/2**
86	32.5	1134	1.5	**100/3**
83	33.7	1203	2.0	**120/2**
79	35.3	1258	1.3	**100/2**
77	36.4	1270	1.4	**100/3**
76	37.0	1318	1.8	**120/2**
73	38.3	1365	1.2	**100/2**
69	40.6	1417	1.3	**100/3**
69	40.7	1421	1.8	**120/3**
62	45.2	1577	1.2	**100/3**
61	45.7	1595	1.7	**120/3**
55	50.9	1775	1.5	**120/3**
53	52.8	1842	1.0	**100/3**
49	56.7	1978	1.0	**100/3**
49	57.1	1992	1.4	**120/3**
45	62.2	2171	1.3	**120/3**
43	64.5	2251	0.9	**100/3**
39	72.6	2533	1.1	**120/3**
38	73.6	2568	0.8	**100/3**
36	77.7	2711	1.1	**120/3**
34	82.2	2867	1.1	**120/3**
31	90.7	3164	1.0	**120/3**
27	102.6	3581	0.9	**120/3**
24	114.4	3993	0.8	**120/3**
22	124.9	4357	0.8	**120/3**

n_1 = 1400 min^{-1}				
583	2.4	171	6.3	**100/2**
538	2.6	185	1.4	**60/2***
538	2.6	185	2.9	**80/2**
378	3.7	264	1.0	**60/2***
378	3.7	264	2.1	**80/2**
333	4.2	299	2.0	**80/2**
326	4.3	307	0.9	**60/2***
311	4.5	321	2.0	**80/2**
304	4.6	328	0.9	**60/2***
286	4.9	349	3.7	**100/2**
209	6.7	478	1.4	**80/2**
203	6.9	492	2.7	**100/2**
189	7.4	528	1.3	**80/2**
187	7.5	535	2.6	**100/2**
183	7.7	545	4.0	**120/2**
179	7.8	556	1.3	**80/2**
177	7.9	563	2.6	**100/2**
165	8.5	605	4.1	**120/2**
161	8.7	620	1.2	**80/2**

11 kW

n_1 = 1400 min^{-1}				
157	8.9	634	2.4	**100/2**
141	9.9	706	2.2	**100/2**
140	10.0	713	1.0	**80/2**
132	10.6	755	3.7	**120/2**
126	11.1	791	1.0	**80/2**
126	11.1	791	2.0	**100/2**
122	11.5	818	3.7	**120/2**
116	12.1	863	1.9	**100/2**
113	12.4	884	0.9	**80/2**
100	14.1	1003	3.0	**120/2**
99	14.1	1005	1.7	**100/2**
99	14.2	1012	0.8	**80/2**
92	15.2	1084	0.8	**80/2**
88	15.9	1133	1.5	**100/2**
80	17.6	1255	1.4	**100/2**
79	17.7	1261	2.4	**120/2**
73	19.3	1372	2.2	**120/2**
70	19.9	1419	1.3	**100/2**
67	21.0	1500	2.0	**120/2**
63	22.1	1575	1.9	**120/2**
63	22.2	1583	1.2	**100/2**
61	23.1	1649	1.8	**120/2**
58	24.0	1714	1.8	**120/2**
58	24.2	1725	1.1	**100/2**
52	27.0	1926	1.6	**120/2**
49	28.3	2017	1.0	**100/2**
48	28.9	2060	1.5	**120/2**
48	29.1	2031	1.0	**100/3**
47	29.6	2110	1.4	**120/2**
46	30.3	2160	0.9	**100/2**
43	32.5	2268	0.9	**100/3**
41	33.7	2405	1.2	**120/2**
40	35.3	2516	0.8	**100/2**
38	36.4	2540	0.8	**100/3**
38	37.0	2636	1.1	**120/2**
34	40.7	2842	1.2	**120/3**
31	45.7	3190	1.0	**120/3**
28	50.9	3550	0.9	**120/3**
25	57.1	3985	0.8	**120/3**
23	62.2	4342	0.8	**120/3**

n_1 = 900 min^{-1}				
375	2.4	266	4.6	**100/2**
346	2.6	288	2.0	**80/2**
333	2.7	299	4.2	**100/2**
243	3.7	410	1.5	**80/2**
243	3.7	410	3.3	**100/2**
214	4.2	466	1.4	**80/2**
200	4.5	499	1.4	**80/2**
184	4.9	543	2.7	**100/2**
172	5.2	579	3.1	**120/2**
147	6.1	679	3.4	**120/2**

11 kW

n_1 = 900 min^{-1}				
134	6.7	743	1.0	**80/2**
130	6.9	765	2.0	**100/2**
122	7.4	821	0.9	**80/2**
120	7.5	832	1.9	**100/2**
118	7.7	848	2.9	**120/2**
115	7.8	865	0.9	**80/2**
114	7.9	876	1.9	**100/2**
106	8.5	940	3.0	**120/2**
103	8.7	965	0.8	**80/2**
101	8.9	987	1.7	**100/2**
91	9.9	1098	1.6	**100/2**
90	10.0	1109	0.8	**80/2**
85	10.6	1175	2.6	**120/2**
81	11.1	1231	1.4	**100/2**
78	11.5	1272	2.4	**120/2**
74	12.1	1342	1.3	**100/2**
64	14.1	1560	1.9	**120/2**
64	14.1	1563	1.2	**100/2**
57	15.9	1763	1.1	**100/2**
51	17.6	1952	1.0	**100/2**
51	17.7	1962	1.5	**120/2**
47	19.3	2135	1.4	**120/2**
45	19.9	2207	0.9	**100/2**
43	21.0	2334	1.3	**120/2**
41	22.1	2451	1.2	**120/2**
41	22.2	2462	0.8	**100/2**
39	23.1	2566	1.2	**120/2**
37	24.0	2666	1.1	**120/2**
33	27.0	2995	1.0	**120/2**
31	28.9	3205	0.9	**120/2**
30	29.6	3283	0.9	**120/2**
27	33.7	3741	0.8	**120/2**

15 kW

n_1 = 2800 min^{-1}				
1077	2.6	126	3.5	**80/2**
757	3.7	180	2.6	**80/2**
667	4.2	204	2.4	**80/2**
622	4.5	219	2.4	**80/2**
418	6.7	326	1.7	**80/2**
406	6.9	335	3.4	**100/2**
378	7.4	360	1.6	**80/2**
373	7.5	365	3.2	**100/2**
359	7.8	379	1.6	**80/2**
354	7.9	384	3.2	**100/2**
322	8.7	423	1.4	**80/2**
315	8.9	433	2.9	**100/2**

6.8 Prestazioni motoriduttori AM - AC

6.8 AM - AC gearmotors performances

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

15 kW

n_1 = 2800 min^{-1}				
283	9.9	481	2.7	**100/2**
280	10.0	486	1.3	**80/2**
252	11.1	539	1.2	**80/2**
252	11.1	539	2.5	**100/2**
231	12.1	588	2.3	**100/2**
226	12.4	603	1.1	**80/2**
199	14.1	684	3.6	**120/2**
199	14.1	685	2.0	**100/2**
197	14.2	690	1.0	**80/2**
184	15.2	739	1.0	**80/2**
176	15.9	773	1.7	**100/2**
159	17.6	855	1.6	**100/2**
158	17.7	860	2.8	**120/2**
155	18.1	880	0.8	**80/2**
145	19.3	936	2.6	**120/2**
144	19.4	943	0.8	**80/2**
141	19.9	967	1.6	**100/2**
133	21.0	1023	2.4	**120/2**
127	22.1	1074	2.3	**120/2**
126	22.2	1079	1.5	**100/2**
121	23.1	1125	2.2	**120/2**
116	24.0	1169	2.1	**120/2**
116	24.2	1176	1.4	**100/2**
104	27.0	1313	1.9	**120/2**
99	28.3	1375	1.2	**100/2**
97	28.9	1405	1.7	**120/2**
95	29.6	1439	1.7	**120/2**
92	30.3	1473	1.1	**100/2**
83	33.7	1640	1.5	**120/2**
79	35.3	1716	0.9	**100/2**
76	37.0	1797	1.4	**120/2**
73	38.3	1861	0.9	**100/2**

n_1 = 1400 min^{-1}				
583	2.4	233	4.7	**100/2**
538	2.6	253	2.1	**80/2**
519	2.7	262	4.3	**100/2**
378	3.7	360	1.5	**80/2**
378	3.7	360	3.4	**100/2**
333	4.2	408	1.5	**80/2**
311	4.5	437	1.4	**80/2**
286	4.9	476	2.7	**100/2**
268	5.2	507	3.5	**120/2**
229	6.1	595	3.4	**120/2**
209	6.7	651	1.0	**80/2**
203	6.9	671	2.0	**100/2**
189	7.4	719	1.0	**80/2**
187	7.5	729	1.9	**100/2**
183	7.7	744	3.0	**120/2**
179	7.8	758	0.9	**80/2**
177	7.9	768	1.9	**100/2**

15 kW

n_1 = 1400 min^{-1}				
165	8.5	824	3.0	**120/2**
161	8.7	846	0.9	**80/2**
157	8.9	865	1.7	**100/2**
141	9.9	962	1.6	**100/2**
140	10.0	972	0.8	**80/2**
132	10.6	1030	2.7	**120/2**
126	11.1	1079	1.5	**100/2**
122	11.5	1115	2.7	**120/2**
116	12.1	1176	1.4	**100/2**
100	14.1	1367	2.2	**120/2**
99	14.1	1371	1.2	**100/2**
88	15.9	1546	1.1	**100/2**
80	17.6	1711	1.0	**100/2**
79	17.7	1720	1.7	**120/2**
73	19.3	1871	1.6	**120/2**
70	19.9	1934	0.9	**100/2**
67	21.0	2046	1.5	**120/2**
63	22.1	2148	1.4	**120/2**
63	22.2	2158	0.9	**100/2**
61	23.1	2249	1.3	**120/2**
58	24.0	2337	1.3	**120/2**
58	24.2	2352	0.8	**100/2**
52	27.0	2626	1.1	**120/2**
48	28.9	2809	1.1	**120/2**
47	29.6	2878	1.0	**120/2**
41	33.7	3280	0.9	**120/2**
38	37.0	3594	0.8	**120/2**

n_1 = 900 min^{-1}				
375	2,4	363	3,3	**100/2**
333	2,7	408	3,1	**100/2**
323	2,8	421	4,0	**120/2**
243	3,7	559	2,4	**100/2**
233	3,9	583	2,9	**120/2**
184	4,9	741	1,9	**100/2**
172	5,2	789	2,3	**120/2**
147	6,1	926	2,5	**120/2**
130	6,9	1043	1,4	**100/2**
120	7,5	1134	1,4	**100/2**
118	7,7	1157	2,2	**120/2**
114	7,9	1195	1,4	**100/2**
106	8,5	1282	2,2	**120/2**
101	8,9	1346	1,2	**100/2**
91	9,9	1497	1,1	**100/2**
85	10,6	1602	1,9	**120/2**
81	11,1	1678	1,0	**100/2**
78	11,5	1735	1,7	**120/2**
74	12,1	1830	1,0	**100/2**
64	14,1	2127	1,4	**120/2**
64	14,1	2132	0,9	**100/2**
57	15,9	2404	0,8	**100/2**
51	17,7	2676	1,1	**120/2**
47	19,3	2911	1,0	**120/2**

15 kW

n_1 = 900 min^{-1}				
43	21,0	3182	0,9	**120/2**
41	22,1	3342	0,9	**120/2**
39	23,1	3499	0,9	**120/2**
37	24,0	3635	0,8	**120/2**

18.5 kW

n_1 = 2800 min^{-1}				
1167	2,4	144	6,3	**100/2**
1077	2,6	156	2,8	**80/2***
757	3,7	222	2,1	**80/2***
667	4,2	252	2,0	**80/2***
622	4,5	270	2,0	**80/2***
571	4,9	294	3,7	**100/2**
418	6,7	402	1,4	**80/2***
406	6,9	414	2,7	**100/2**
378	7,4	444	1,3	**80/2***
373	7,5	450	2,6	**100/2**
366	7,7	459	3,9	**120/2**
359	7,8	468	1,3	**80/2***
354	7,9	474	2,6	**100/2**
330	8,5	508	4,0	**120/2**
322	8,7	522	1,2	**80/2***
315	8,9	533	2,4	**100/2**
283	9,9	593	2,2	**100/2**
280	10,0	599	1,0	**80/2***
264	10,6	635	3,6	**120/2**
252	11,1	665	1,0	**80/2***
252	11,1	665	2,0	**100/2**
244	11,5	688	3,5	**120/2**
231	12,1	725	1,9	**100/2**
226	12,4	743	0,9	**80/2***
199	14,1	843	2,9	**120/2**
199	14,1	845	1,7	**100/2**
197	14,2	851	0,8	**80/2***
184	15,2	911	0,8	**80/2***
176	15,9	953	1,4	**100/2**
159	17,6	1055	1,3	**100/2**
158	17,7	1061	2,3	**120/2**
145	19,3	1154	2,1	**120/2**
141	19,9	1193	1,3	**100/2**
133	21,0	1261	1,9	**120/2**
127	22,1	1325	1,8	**120/2**
126	22,2	1331	1,2	**100/2**
121	23,1	1387	1,8	**120/2**
116	24,0	1441	1,7	**120/2**
116	24,2	1451	1,1	**100/2**
104	27,0	1619	1,5	**120/2**
99	28,3	1696	1,0	**100/2**
97	28,9	1732	1,4	**120/2**
95	29,6	1775	1,4	**120/2**
92	30,3	1816	0,9	**100/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

18.5 kW

n_1 = 2800 min^{-1}				
83	33,7	2022	1,2	**120/2**
79	35,3	2116	0,8	**100/2**
76	37,0	2216	1,1	**120/2**

n_1 = 1400 min^{-1}				
583	2,4	288	3,8	**100/2**
519	2,7	324	3,5	**100/2**
378	3,7	444	2,8	**100/2**
363	3,9	462	3,7	**120/2**
286	4,9	587	2,2	**100/2**
268	5,2	626	2,9	**120/2**
229	6,1	734	2,7	**120/2**
203	6,9	827	1,6	**100/2**
187	7,5	899	1,6	**100/2**
183	7,7	917	2,4	**120/2**
177	7,9	947	1,5	**100/2**
165	8,5	1017	2,5	**120/2**
157	8,9	1067	1,4	**100/2**
141	9,9	1187	1,3	**100/2**
132	10,6	1270	2,2	**120/2**
126	11,1	1331	1,2	**100/2**
122	11,5	1375	2,2	**120/2**
116	12,1	1451	1,1	**100/2**
100	14,1	1686	1,8	**120/2**
99	14,1	1690	1,0	**100/2**
88	15,9	1906	0,9	**100/2**
80	17,6	2110	0,8	**100/2**
79	17,7	2121	1,4	**120/2**
73	19,3	2308	1,3	**120/2**
70	19,9	2386	0,8	**100/2**
67	21,0	2523	1,2	**120/2**
63	22,1	2649	1,1	**120/2**
61	23,1	2774	1,1	**120/2**
58	24,0	2882	1,0	**120/2**
52	27,0	3238	0,9	**120/2**
48	28,9	3465	0,9	**120/2**
47	29,6	3549	0,8	**120/2**

n_1 = 900 min^{-1}				
375	2,4	448	2,7	**100/2**
333	2,7	504	2,5	**100/2**
323	2,8	520	3,3	**120/2**
243	3,7	690	2,0	**100/2**
233	3,9	719	2,4	**120/2**
184	4,9	914	1,6	**100/2**
172	5,2	973	1,8	**120/2**
147	6,1	1142	2,0	**120/2**
130	6,9	1287	1,2	**100/2**
120	7,5	1399	1,1	**100/2**
118	7,7	1427	1,8	**120/2**
114	7,9	1473	1,1	**100/2**
106	8,5	1582	1,8	**120/2**
101	8,9	1660	1,0	**100/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

18.5 kW

n_1 = 900 min^{-1}				
91	9,9	1846	0,9	**100/2**
85	10,6	1975	1,5	**120/2**
81	11,1	2070	0,8	**100/2**
78	11,5	2139	1,4	**120/2**
74	12,1	2257	0,8	**100/2**
64	14,1	2623	1,1	**120/2**
51	17,7	3300	0,9	**120/2**
47	19,3	3590	0,8	**120/2**
43	21,0	3925	0,8	**120/2**

22 kW

n_1 = 2800 min^{-1}				
1167	2,4	171	5,3	**100/2**
1037	2,7	192	5,0	**100/2**
757	3,7	264	3,9	**100/2**
571	4,9	349	3,1	**100/2**
537	5,2	372	3,9	**120/2**
457	6,1	437	3,7	**120/2**
406	6,9	492	2,3	**100/2**
373	7,5	535	2,2	**100/2**
366	7,7	545	3,3	**120/2**
354	7,9	563	2,2	**100/2**
330	8,5	605	3,4	**120/2**
315	8,9	634	2,0	**100/2**
283	9,9	706	1,8	**100/2**
264	10,6	755	3,0	**120/2**
252	11,1	791	1,7	**100/2**
244	11,5	818	3,0	**120/2**
231	12,1	863	1,6	**100/2**
199	14,1	1003	2,4	**120/2**
199	14,1	1005	1,4	**100/2**
176	15,9	1133	1,2	**100/2**
159	17,6	1255	1,1	**100/2**
158	17,7	1261	1,9	**120/2**
145	19,3	1372	1,8	**120/2**
141	19,9	1419	1,1	**100/2**
133	21,0	1500	1,6	**120/2**
127	22,1	1575	1,5	**120/2**
126	22,2	1583	1,0	**100/2**
121	23,1	1649	1,5	**120/2**
116	24,0	1714	1,4	**120/2**
116	24,2	1725	0,9	**100/2**
104	27,0	1926	1,3	**120/2**
99	28,3	2017	0,8	**100/2**
97	28,9	2060	1,2	**120/2**
95	29,6	2110	1,2	**120/2**
92	30,3	2160	0,8	**100/2**
83	33,7	2405	1,0	**120/2**
76	37,0	2636	0,9	**120/2**

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

22 kW

n_1 = 1400 min^{-1}				
583	2,4	342	3,2	**100/2**
519	2,7	385	3,0	**100/2**
503	2,8	397	4,3	**120/2**
378	3,7	528	2,3	**100/2**
363	3,9	550	3,1	**120/2**
286	4,9	699	1,8	**100/2**
268	5,2	744	2,4	**120/2**
229	6,1	873	2,3	**120/2**
203	6,9	984	1,4	**100/2**
187	7,5	1069	1,3	**100/2**
183	7,7	1091	2,0	**120/2**
177	7,9	1126	1,3	**100/2**
165	8,5	1209	2,1	**120/2**
157	8,9	1269	1,2	**100/2**
141	9,9	1411	1,1	**100/2**
132	10,6	1510	1,9	**120/2**
126	11,1	1583	1,0	**100/2**
122	11,5	1636	1,8	**120/2**
116	12,1	1725	0,9	**100/2**
100	14,1	2005	1,5	**120/2**
99	14,1	2010	0,8	**100/2**
88	15,9	2267	0,8	**100/2**
79	17,7	2523	1,2	**120/2**
73	19,3	2744	1,1	**120/2**
67	21,0	3000	1,0	**120/2**
63	22,1	3151	1,0	**120/2**
61	23,1	3299	0,9	**120/2**
58	24,0	3428	0,9	**120/2**
52	27,0	3851	0,8	**120/2**

n_1 = 900 min^{-1}				
375	2,4	532	2,3	**100/2**
333	2,7	599	2,1	**100/2**
323	2,8	618	2,8	**120/2**
243	3,7	821	1,7	**100/2**
233	3,9	855	2,0	**120/2**
184	4,9	1087	1,3	**100/2**
172	5,2	1157	1,6	**120/2**
147	6,1	1358	1,7	**120/2**
130	6,9	1530	1,0	**100/2**
120	7,5	1663	0,9	**100/2**
118	7,7	1697	1,5	**120/2**
114	7,9	1752	0,9	**100/2**
106	8,5	1881	1,5	**120/2**
101	8,9	1974	0,8	**100/2**
91	9,9	2196	0,8	**100/2**
85	10,6	2349	1,3	**120/2**
78	11,5	2544	1,2	**120/2**
64	14,1	3119	1,0	**120/2**
51	17,7	3924	0,8	**120/2**

6.8 Prestazioni motoriduttori AM - AC

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

30 kW

n_1 = 2800 min^{-1}				
1167	2,4	233	3,9	**100/2***
1037	2,7	262	3,6	**100/2***
757	3,7	360	2,9	**100/2***
726	3,9	375	3,7	**120/2**
571	4,9	476	2,3	**100/2***
537	5,2	507	2,9	**120/2**
457	6,1	595	2,7	**120/2**
406	6,9	671	1,7	**100/2***
373	7,5	729	1,6	**100/2***
366	7,7	744	2,4	**120/2**
354	7,9	768	1,6	**100/2***
330	8,5	824	2,5	**120/2**
315	8,9	865	1,5	**100/2***
283	9,9	962	1,3	**100/2***
264	10,6	1030	2,2	**120/2**
252	11,1	1079	1,2	**100/2***
244	11,5	1115	2,2	**120/2**
231	12,1	1176	1,1	**100/2***
199	14,1	1367	1,8	**120/2**
199	14,1	1371	1,0	**100/2***
176	15,9	1546	0,9	**100/2***
159	17,6	1711	0,8	**100/2***
158	17,7	1720	1,4	**120/2**
145	19,3	1871	1,3	**120/2**
141	19,9	1934	0,8	**100/2***
133	21,0	2046	1,2	**120/2**
127	22,1	2148	1,1	**120/2**
121	23,1	2249	1,1	**120/2**
116	24,0	2337	1,0	**120/2**
104	27,0	2626	0,9	**120/2**
97	28,9	2809	0,9	**120/2**
95	29,6	2878	0,8	**120/2**

n_1 = 1400 min^{-1}				
583	2,4	467	2,3	**100/2***
519	2,7	525	2,2	**100/2***
503	2,8	542	3,1	**120/2**
378	3,7	719	1,7	**100/2***
363	3,9	750	2,3	**120/2**
286	4,9	953	1,4	**100/2***
268	5,2	1014	1,8	**120/2**
229	6,1	1191	1,7	**120/2**
203	6,9	1341	1,0	**100/2***
187	7,5	1458	1,0	**100/2***
183	7,7	1487	1,5	**120/2**
177	7,9	1536	0,9	**100/2***
165	8,5	1649	1,5	**120/2**
157	8,9	1730	0,9	**100/2***
141	9,9	1925	0,8	**100/2***
132	10,6	2059	1,4	**120/2**
122	11,5	2230	1,3	**120/2**
100	14,1	2734	1,1	**120/2**
79	17,7	3440	0,9	**120/2**
73	19,3	3742	0,8	**120/2**

6.8 AM - AC gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

30 kW

n_1 = 900 min^{-1}				
323	2,8	842	2,0	**120/2**
233	3,9	1166	1,5	**120/2**
172	5,2	1578	1,1	**120/2**
147	6,1	1852	1,2	**120/2**
118	7,7	2313	1,1	**120/2**
106	8,5	2565	1,1	**120/2**
85	10,6	3203	0,9	**120/2**
78	11,5	3469	0,9	**120/2**

37 kW

n_1 = 2800 min^{-1}				
1167	2,4	288	3,2	**100/2***
1037	2,7	324	3,0	**100/2***
1005	2,8	334	4,1	**120/2***
757	3,7	444	2,3	**100/2***
726	3,9	462	3,0	**120/2***
571	4,9	587	1,8	**100/2***
537	5,2	626	2,3	**120/2***
457	6,1	734	2,2	**120/2***
406	6,9	827	1,4	**100/2***
373	7,5	899	1,3	**100/2***
366	7,7	917	1,9	**120/2***
354	7,9	947	1,3	**100/2***
330	8,5	1017	2,0	**120/2***
315	8,9	1067	1,2	**100/2***
283	9,9	1187	1,1	**100/2***
264	10,6	1270	1,8	**120/2***
252	11,1	1331	1,0	**100/2***
244	11,5	1375	1,8	**120/2***
231	12,1	1451	0,9	**100/2***
199	14,1	1686	1,4	**120/2***
199	14,1	1690	0,8	**100/2***
158	17,7	2121	1,1	**120/2***
145	19,3	2308	1,1	**120/2***
133	21,0	2523	1,0	**120/2***
127	22,1	2649	0,9	**120/2***
121	23,1	2774	0,9	**120/2***
116	24,0	2882	0,8	**120/2***
104	27,0	3238	0,8	**120/2***

n_1 = 1400 min^{-1}				
503	2,8	668	2,5	**120/2***
363	3,9	925	1,8	**120/2***
268	5,2	1251	1,4	**120/2***
229	6,1	1469	1,4	**120/2***
183	7,7	1834	1,2	**120/2***
165	8,5	2033	1,2	**120/2***
132	10,6	2540	1,1	**120/2***
122	11,5	2751	1,1	**120/2***
100	14,1	3372	0,9	**120/2***

6.8 Leistungen der AM - AC Getriebe

n_2 min^{-1}	ir	T2 Nm	FS'	AM AC

45 kW

n_1 = 2800 min^{-1}				
1005	2,8	406	3,4	**120/2***
726	3,9	562	2,5	**120/2***
537	5,2	761	1,9	**120/2***
457	6,1	893	1,8	**120/2***
366	7,7	1115	1,6	**120/2***
330	8,5	1237	1,6	**120/2***
264	10,6	1544	1,5	**120/2***
244	11,5	1673	1,5	**120/2***
199	14,1	2051	1,2	**120/2***
158	17,7	2580	0,9	**120/2***
145	19,3	2807	0,9	**120/2***
133	21,0	3069	0,8	**120/2***
127	22,1	3222	0,8	**120/2***

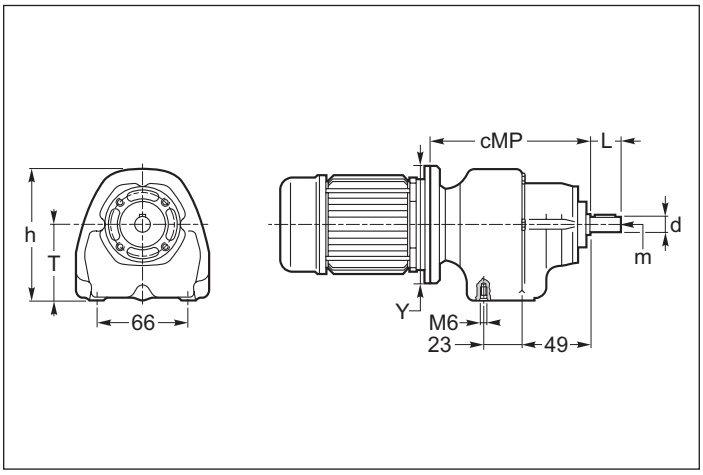
n_1 = 1400 min^{-1}				
503	2,8	812	2,1	**120/2***
363	3,9	1125	1,5	**120/2***
268	5,2	1522	1,2	**120/2***
229	6,1	1786	1,1	**120/2***
183	7,7	2231	1,0	**120/2***
165	8,5	2473	1,0	**120/2***
132	10,6	3089	0,9	**120/2***
122	11,5	3345	0,9	**120/2***

N.B.
Tutte le potenze indicate si riferiscono alla potenza meccanica dei riduttori.
Per i riduttori contrassegnati con **(*)** è opportuno effettuare la verifica della potenza limite termico secondo le indicazioni riportate nel par. 1.7

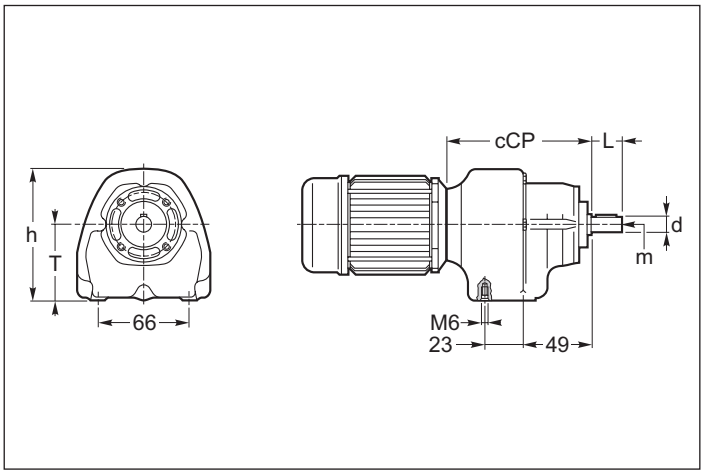
NOTE.
The power indicated is based on the mechanical capacities of the gearboxes. For the gearboxes marked with (*) it is also necessary to obey the therminal capacity like shown on chapter 1.7.

HINWEIS.
Die Leistungsangaben beziehen sich auf die mecanische Belasbarkeit der Getriebe. Bei den mit (*) gekennzeichneten Getrieben ist außerdem die thermische Leistungsgrenze zu beachten (s. Kap 1.7).

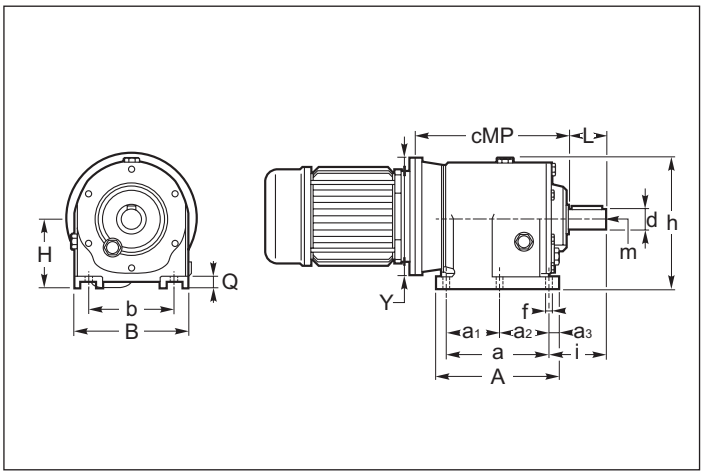
AM 25



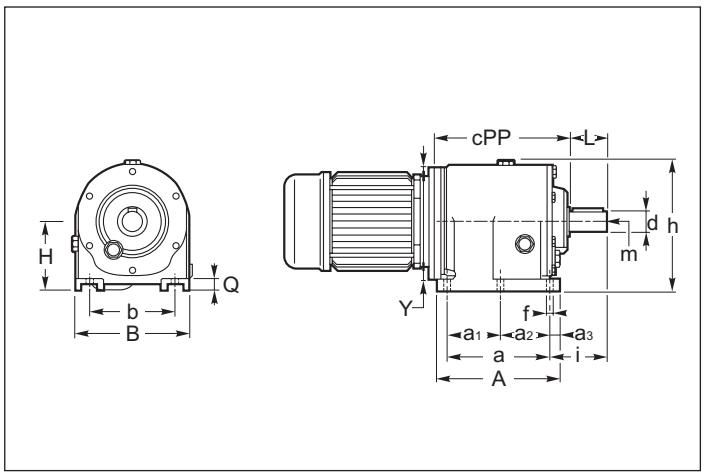
AC 25



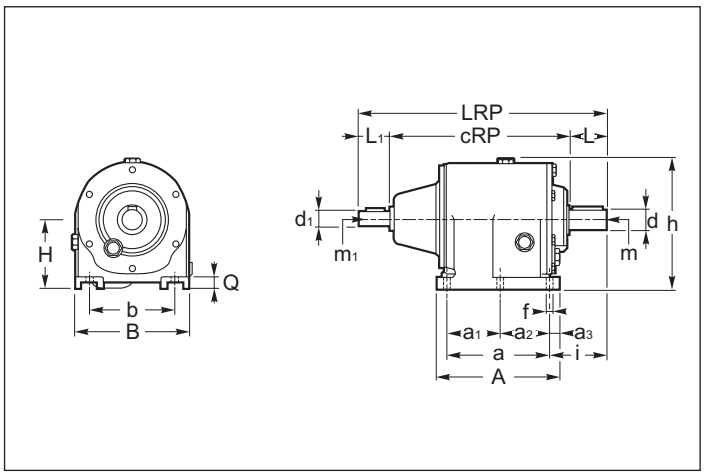
AMP 25 - 120



ACP 25 - 100



ARP 32 - 120



6.9 Dimensioni — *6.9 Dimensions* — 6.9 Abmessungen

AM AC AR	a	a_1	a_2	a_3	A	b	B	cRP	d h6	d_1 j6	f	h	H	i	L	L_1	LRP	m	m_1	Q
25	71	—	—	9.5	90	90	111	—	11 (14)	—	6.5	103	63	47 (50)	22 (25)	—	—	M5	—	8
32	87	37	50	10	107	110	135	144	16 (19) (20)	16	9	153. 5	85	48 (58) (58)	30 (40) (40)	40	214 (224) (224)	M6 (M6) (M6)	M6	9
40	85	—	—	10	105	110	135	166	20 (19) (25)	16	9	155	80	58 (58) (68)	40 (40) (50)	40	246 (246) (256)	M6 (M6) (M8)	M6	12
50	130	—	—	12.5	155	110	145	227	25 (24) (30)	16	9	170	90	75 (75) (85)	50 (50) (60)	40	317 (317) (327)	M8 (M8) (M10)	M6	15
60	165	—	—	15	195	135	185	269	30 (28) (35)	19	14	210	115	90 (90) (100)	60 (60) (70)	40	369 (359) (379)	M10 (M10) (M10)	M6	20
80	205	—	—	20	245	170	230	310	40 (38)	24	20	265	140	115 (115)	80 (80)	50	440 (440)	M10 (M10)	M8	25
100	260	—	—	21	306	215	290	395	50 (48)	28	20	322	180	140 (140)	100 (100)	60	555 (555)	M12 (M12)	M8	35
120	310	—	—	27.5	365	250	350	460	60	38	23	415	225	160	120	80	660	M12	M10	45

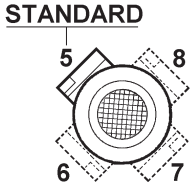
	IEC	25			32			40			50			60			80			100			120		
		Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP	Y	cMP	cCP
AMP../2 ACP../2 AM 25/2 AC 25/2	**B5**	120	116	—	120	146.5	113.5	140	148.5	110	140	198	159	160	235	191	200	291	234	300	402	—	300	443	—
		140	116	—	140	146.5	—	160	148.5	—	160	198	—	200	250	—	250	303	—	350	411	—	350	452	—
					160	146.5	—	200	168.5	—	200	218	—	250	260	—	300	322	—	400	416	—	400	457	—
					200	156.5	—	250	178.5	—	250	228	—	300	284	—	350	352	—				450	466	—
	B14	80•	116	93.5	90•	146.5	—	120	168.5	—	120	218	—	200	284	—									
		90	116	—	105•	146.5	—	140	168.5	110	140	218	159	160	260	—									
					120	156.5	113.5	160	178.5	—	160	228	—												
AMP../3 ACP../3 AM 25/3 AC 23/3	**B5**	120	116	—	120	146.5	113.5	140	153.5	127	140	198	159	160	235	191	200	291	234	200	450	—	200	392	—
		140	116	—	140	146.5	—	160	157.5	—	160	198	—	200	250	—	250	301	—	250	450	290	250	410	—
					160	146.5	—				200	218	—	250	260	—				300	470	—	300	421	—
					200	156.5	—																		
	B14	80•	116	93.5	90•	146.5	—				120	218	—	160	260	—									
		90	116	—	105•	146.5	—				140	218	159												
					120	156.5	113.5																		

N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par. 6.3).
Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

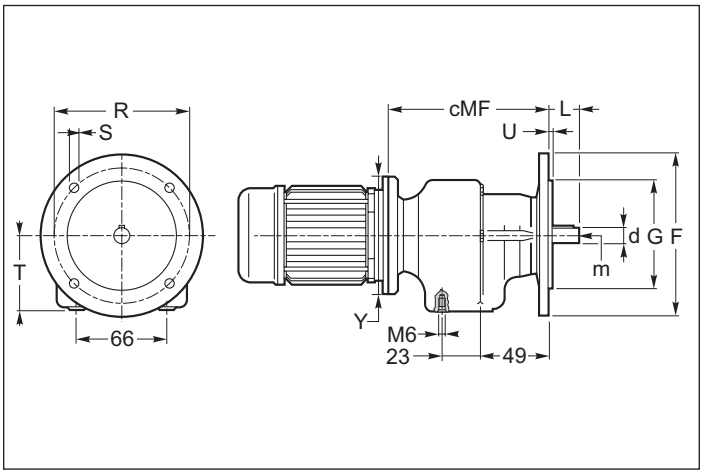
Note.
The standard configuration for the holes is 45° to the axles (like an x: see par. 6.3).

For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please choose the terminal board position refering to the following sketch (in which n° 5 is the standard position):

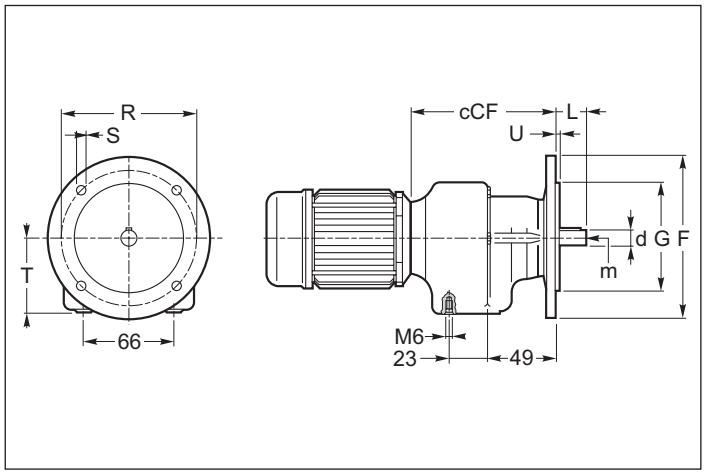
HINWEIS.
In der Standardkonfiguration sind die 4 Flanschbohrungen im 45°-Winkel zu den Achsen angeordnet (wie ein x: siehe Kapitel 6.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeordnet (wie ein +). Es sollte deshalb der Platzbedarf des Motorklem- menkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos.5 ist Standardposition):



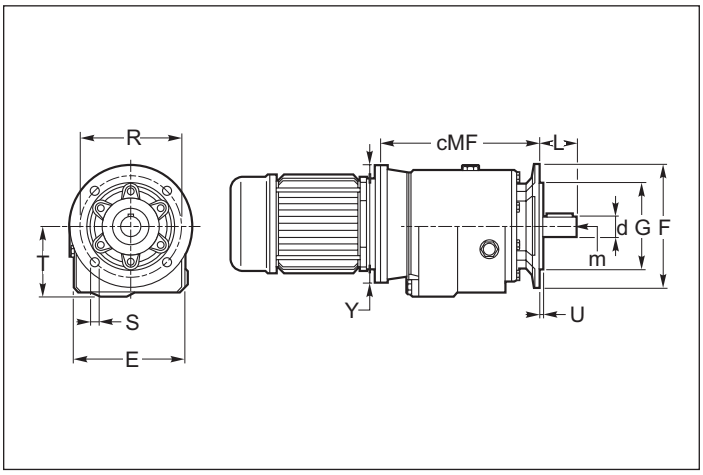
AMF 25



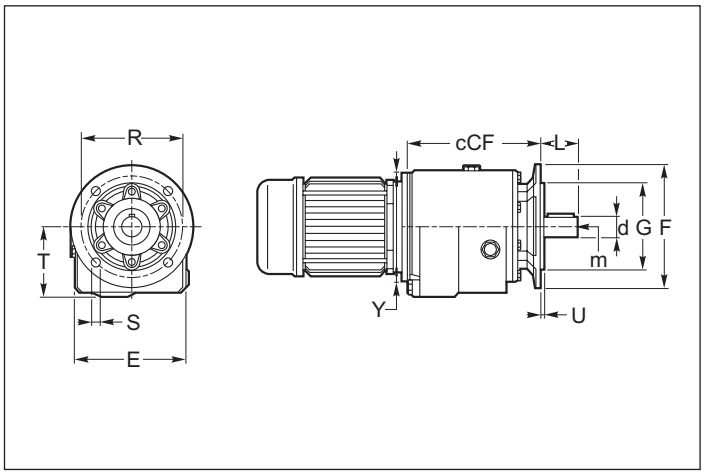
ACF 25



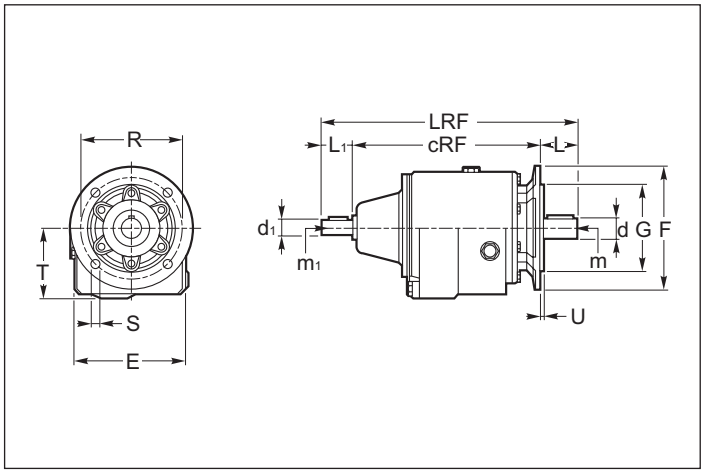
AMF 32 - 120



ACF 32 - 100



ARF 32 - 120



6.9 Dimensioni — *6.9 Dimensions* — 6.9 Abmessungen

AMF ACF ARF	cRF	d h6	d_1 j6	E	L	L_1	LRF	m	m_1	T
25	—	11 (14)	—	96	22 (25)	—	—	M5	—	55
32	144	16 (19) (20)	16	124	30 (40) (40)	40	214 (224) (224)	M6 (M6) (M6)	M6	75
40	188	20 (19) (25)	16	141	40 (40) (50)	40	268 (268) (278)	M6 (M6) (M8)	M6	78
50	235	25 (24) (30)	16	145	50 (50) (60)	40	325 (325) (335)	M8 (M8) (M10)	M6	87.5
60	280	30 (28) (35)	19	185	60 (50) (70)	40	380 (370) (390)	M10 (M8) (M10)	M6	114
80	317	40 (38)	24	230	80 (80)	50	447 (447)	M10 (M10)	M8	139
100	395	50 (48)	28	290	100 (100)	60	555 (555)	M12 (M12)	M8	178
120	491	60	38	350	120	80	691	M12	M10	225

	AMF - ACF - ARF																							
	25		32				40				50				60			80		100		120	
	F1	F2	F1	F2	F3	F4	F1	F2	F3	F4	F1	F2	F3	F4	F1	F2	F3	F1	F2	F1	F2	F1	F2
F	105	120	120	140	160	200	120	160	140	200	120	160	200	250	160	200	250	250	300	300	350	350	450
G (g6)	70	80	80	95	110	130	80	110	95	130	80	110	130	180	110	130	180	180	230	230	250	250	350
R	85	100	100	115	130	165	100	130	115	165	100	130	165	215	130	165	215	215	265	265	300	300	400
S	7	7	9	9	10	13	9	10	9	13	9	10	13	15	10	13	15	15	15	15	19	19	19 (8 fori)
U	3	3	3	3.5	3.5	3.5	3	3.5	3.5	3.5	3	3.5	3.5	4	3	3.5	3.5	4	4	4	5	5	5

	IEC	25			32			40			50			60			80			100			120		
		Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF	Y	cMF	cCF
AMF../2 ACF../2 AMF 25/2 ACF 25/2	**B5**	120	116	—	120	146.5	113.5	140	171	132	140	206	167	160	246	202	200	298	241	300	402	—	300	423	—
		140	116	—	140	146.5	—	160	171	—	160	206	—	200	261	—	250	310	—	350	411	—	350	432	—
					160	146.5	—	200	191	—	200	226	—	250	271	—	300	329	—	400	416	—	400	437	—
					200	156.5	—	250	201	—	250	236	—	300	295	—	350	359	—				450	446	—
	B14	80•	116	93.5	90•	146.5	—	120	191	—	120	226	—	200	295	—									
		90	116	—	105•	146.5	—	140	191	132	140	226	167	160	271	—									
					120	156.5	113.5	160	201	—	160	236	—												
AMF../3 ACF../3 AMF 25/3 ACF 25/3	**B5**	120	116	—	120	146.5	113.5	140	175.5	149	140	206	167	160	246	202	200	298	241	200	440	—	200	372	—
		140	116	—	140	146.5	—	160	179.5	—	160	206	—	200	261	—	250	308	241	250	450	290	250	390	—
					160	146.5	—				200	226	—	250	271	—				300	470	—	300	401	—
					200	156.5	—																		
	B14	80•	116	93.5	90•	146.5	—				120	226	—	160	271	—									
		90	116	—	105•	146.5	—				140	226	167												
					120	156.5	113.5																		

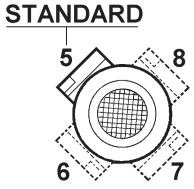
N.B.
La configurazione standard della flangia attacco motore prevede 4 fori a 45° (esempio x: vedi par. 6.3).

Per le flange contrassegnate con il simbolo (•) i fori per il fissaggio al motore sono disposti in croce (esempio +). Pertanto è opportuno valutare l'ingombro della morsettiera del motore che verrà installato in quanto essa verrà a trovarsi orientata a 45° rispetto agli assi. Per la scelta della posizione della morsettiera rispetto agli assi fare riferimento allo schema seguente (in cui la posizione 5 è quella standard):

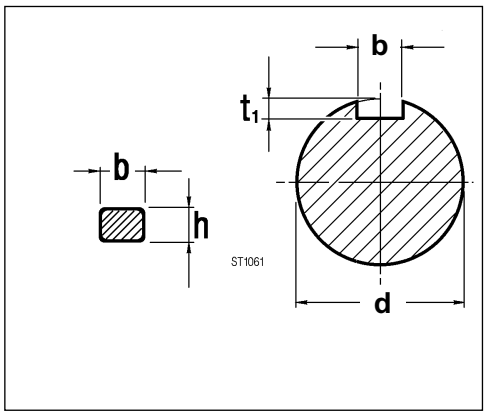
NOTE:
The standard configuration for the holes is 45° to the axles (like an x: see par. 6.3).

For the B14 flanges marked with (•) the holes to fit the motor are on the axles (like a +). Therefore we suggest to check the dimensions of the terminal board of the motor as it will be at 45° to the axles. Please choose the terminal board position refering to the following sketch (in which n° 5 is the standard position):

HINWEIS.
In der Standardkonfiguration sind die 4 Flanschbohrungen im 45°-Winkel zu den Achsen angeordnet (wie ein x: siehe Kapitel 6.3).
Bei B14-Flanschen, die mit (•) gekennzeichnet sind, sind die Bohrungen auf den Achsen angeordnet (wie ein +). Es sollte deshalb der Platzbedarf des Motorklemmenkastens beachtet werden, da er sich in 45°-Position zu den Achsen befinden wird. Die lage des Klemmenkastens des Motors wählen Sie bitte anhand der folgenden Skizze (Pos.5 ist Standardposition):



6.10 Linguette — *6.10 Keys* — 6.10 Federn



Albero entrata
Input shaft
Antriebswelle

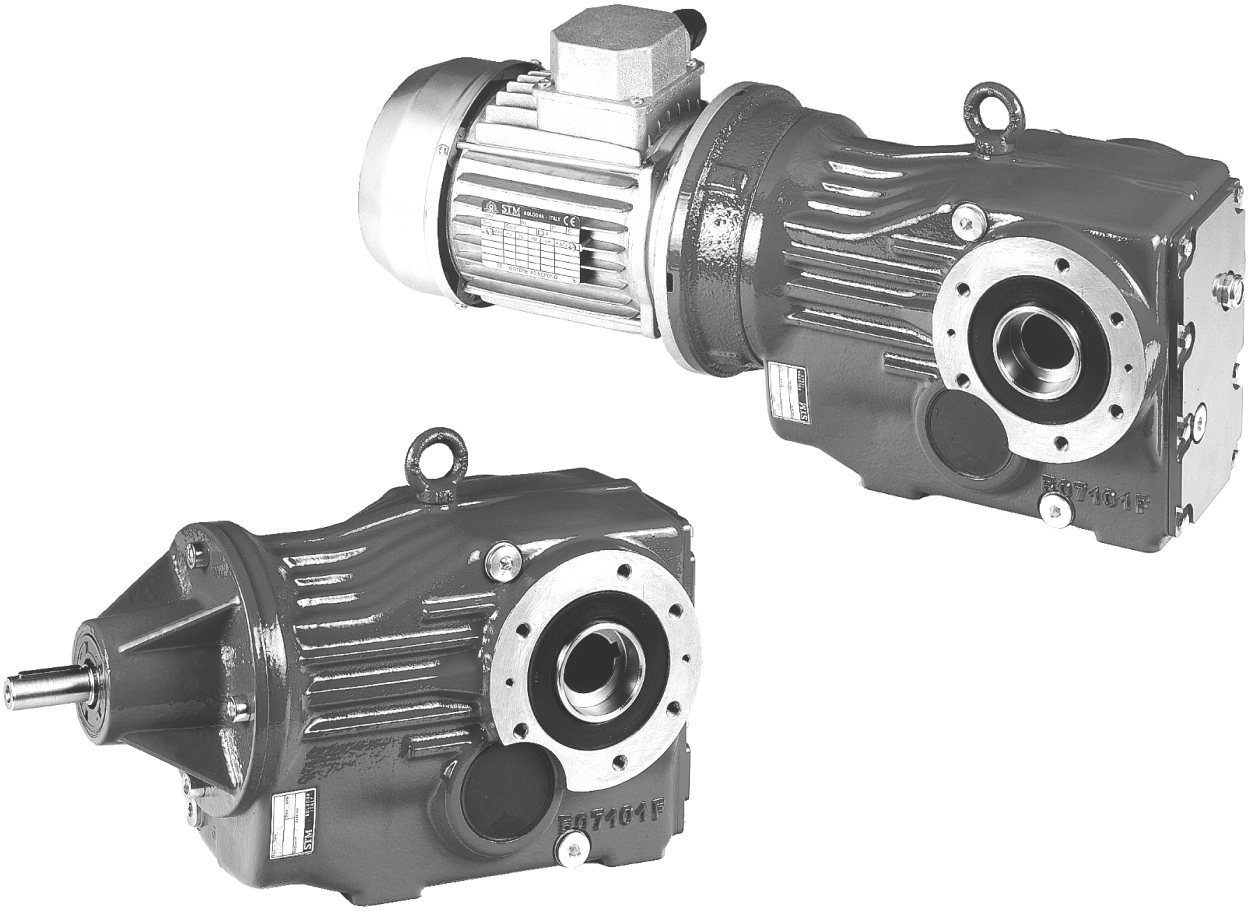
Albero uscita
Output shaft
Abtriebswelle

d_1	b x h	t_1	
16	5 x 5	3.0	+ 0.1 0
19	6 x 6	3.5	
24	8 x 7	4.0	+ 0.2 0
28	8 x 7	4.0	

d	b x h	t_1	
11	4 x 4	2.5	
14	5 x 5	3.0	
16	5 x 5	3.0	+ 0.1 0
19	6 x 6	3.5	
20	6 x 6	3.5	
24	8 x 7	4.0	
25	8 x 7	4.0	
28	8 x 7	4.0	
30	8 x 7	4.0	
35	10 x 8	5.0	+ 0.2 0
38	10 x 8	5.0	
40	12 x 8	5.0	
48	14 x 9	5.5	
50	14 x 9	5.5	
60	18 x 11	7.0	

7.0 RIDUTTORI - MOTORIDUTTORI ORTOGONALI
HELICAL BEVELGEARBOXES AND GEARED MOTORS
KEGELRADGETRIEBE - KEGELRADGETRIEBEMOTOREN

OM
OR, OC



7.1 Caratteristiche tecniche

La progettazione di questi riduttori è stata impostata su una struttura monolitica particolarmente rigida che permette l'applica zione di elevati carichi.
I riduttori – motoriduttori ortogonali sono sempre a 3 stadi.
Carcasse e flange sono realizzate in ghisa meccanica G20 UNI 5007 ad eccezione dei tipi grandezza 63 e 71 realizzati in alluminio SG-AlSi UNI 1706.
La lavorazione di tutte le carcasse avviene su moderni centri di lavoro a controllo numerico che permette di ottenere la massima precisione costruttiva.
L'albero di entrata è realizzato in acciaio 39NiCrMo3 UNI EN 10083 bonificato; quello in uscita in acciaio C40 UNI 5332. Tutti gli ingranaggi sono realizzati in acciaio 18NiCrMo5 UNI 7846 cementati, temprati e rettificati per migliorarne il rendimento e la silenziosità anche sotto carico.

7.1 Technical characteristics

The design of this series of gearboxes has been set up on a very rigid monolithic structure enabling the application of heavy loads.
Helical bevel gearboxes and motorgearboxes are supplied with three stages.
Housings and flanges are manufactured in engineering cast iron G20 UNI 5007, except for size 63 and 71, made of aluminium SG-AlSi UNI 1706.
All the housings working takes place in numerical control working centres, that ensure the maximum constructive accuracy.
The input shaft is made spring tempered steel 39NiCrMo3 UNI EN 10083; the output shaft is made of steel C40 UNI 5332. All gears are made of steel 18NiCrMo5 UNI 7846, previously casehardened, hardened and rectified to improve efficiency and quietness even under load.

7.1 Technische Eigenschaften

Der Entwicklung dieser Getriebeserie wurde eine monolithische Gehäusestruktur zugru- nde gelegt.
Deren kompakte Bauweise sowie die besonders hohe Stabilität ermöglichen auch höchste Belastungen.
Mit Ausnahme der Modelle 63 und 71, bei denen aufgrund der kleinen Baugröße Aluminium SG AlSi91 UNI 1706 verwendet wird, sind alle Gehäuse und Flansche aus Maschinenguß G20 UNI 5007.
Die Bearbeitung der Gehäuse erfolgt auf modernsten, numerisch gesteuerten Fertigungsmaschinen, wodurch eine hohe Fertigungsgenauigkeit und –qualität erzielt wird.
Die Antriebswelle besteht aus einsatzgehärtetem und vergütetem 39NiCrMo3 Stahl UNI EN 10083, die Abtriebswelle aus C40 Stahl UNI 5332. Alle Zahnräder sind aus 18NiCrMo5 Stahl UNI 7846, gehärtet, einsatzgehärtet und geschliffen.
Dies ermöglicht einen hohen Wirkungsgrad sowie einen geräuscharmen Lauf auch unter Last. Alle Kegelradgetriebe und–Getriebemotoren besitzen drei Untersetzungsstufen.

7.2 Designazione

7.2 Designation

7.2 Bezeichnung

	Versione *Version* Ausführung	Grand. *Size* Größe	Tipo *Type* Typ	* 1	* 2	* 3	*4	*5	ir	IEC	kW	n° Poli *Poles* Polig	
													Esempio / *Example* Beispiel
OM	**P**	**63**	**—**						Vedi tabelle prestazioni	80 (B5) 80 (B14)			**OMP 71 C 1:37.0 PAM 80 B5**
OM	**P**	**71**	**F1**	**—**	**—**	* Diametro foro opzionale	**—**		*See performance tables*		0.55 0.55	2 4	80 (B5) 80 (B14) .... **OMP 90 1: 92.3 kW 0,55/4/80/B5**
OR	**P**	**90**	**F2**	**S**	**C**	*Optional hollow shaft diameter*	**S**	**O**	Siehe Leistungs-tabellen				**ORP 63 P SC 1:27.4**
OC	**F**	**112**	**P**			Optionaler Hohlwellen durchmesser		**A**			2.2	2 4	100 (B5) .... **OCP 112 C 1:57.1 KW 2.2/4/100/B5**

Specifiche:

- **[*1] Lato flangia uscita**:
  Nessuna indicazione = flangia uscita con montaggio destro (flange dal lato come indicato nelle figure del catalogo);
  S = flange uscita con montaggio sinistro (flange dal lato opposto alle figure indicate a catalogo).

Specification:

- ***[*1] Mounting position output side:***
  No indication (standard) = output flange on right side (like indicated in the figures);
  S = *output flange on left side (flanges on the opposite side like indicated in figures).*

Spezifikationen:]

- **[*1] Montageseite Abtriebsflansch:**
  Keine Angabe (Standard) = Abtriebsflansch rechts (wie in den Abbildungen dargestellt)
  S = Abtriebsflansch links (gegenüber der Position in den Katalogabbildungen).

7.2 Designazione

- **[*2] Albero uscita**:
  Nessuna indicazione = albero forato;
  C = albero forato con calettatore.
- **[*3] Diametro albero**:
  Nessuna indicazione = diametro foro standard dell'albero forato o forato con calettatore;
  *** diametro foro opzionale** = diametro foro opzionale dell'albero forato o forato con calettatore.

7.2 Designations

- ***[*2] Output shaft**:*
  No indication = shaft with keyway;
  ***C =** hollow shaft with shrink disk.*
- ***[*3] Shaft diameter**:*
  (for keyway and shrink disc connection)
  No indication = standard diameter
  **** optional diameters:** see table.*

7.2 Bezeichnungen

- **[*2] Abtriebswelle:**
  Keine Angabe = Hohlwelle mit Paßfedernut
  C = Hohlwelle mit Schrumpfscheibe.
- **[*3] Durchmesser Abtriebswelle**:
  (gültig für Paßfeder-und Schrumpfscheiben- Verbindung):
  Keine Angabe = Standarddurchmesser *
  Optionale Durchmesser: = s. Tabelle

Tab. 7.1

[*3]	Grandezza / *Size* / Größe			
	63	**71**	**90**	**112**
Standard	∅ 30	∅ 35	∅ 40	∅ 50
Optional	∅ 25	∅ 30	∅ 42	∅ 55
Optional	∅ 28	∅ 32	∅ 45	—
Optional	—	—	∅ 48	—

- **[*4] Posizione calettatore (valido solamente per soluzione con calettatore):**
  Nessuna indicazione = lato destro come indicato in figura 7.12 (standard);
  S = lato sinistro, montaggio dalla parte opposta alla figura 7.12 (opzionale).

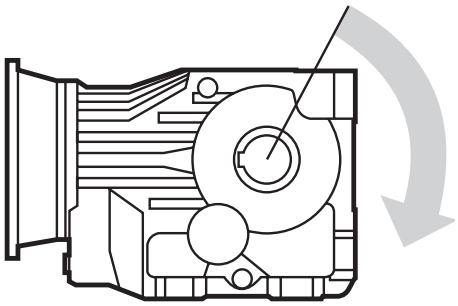
- ***[*4] Mounting position of shrink disc:***
  No indication (standard) = on right side, as showed in figure 7.12;
  ***S** = on left side, on the opposite like indicated in figure 7.12.*

- **[*4] Montageposition Schrumpfscheibe:**
  Keine Angabe (Standard) = rechts (wie dargestellt in der Abbildung 7.12);
  S =links (gegenüber der Position in der Abbildung 7.12).

- **[*5] Senso di rotazione (valido solo se richiesto dispositivo antiretro):**
  O = ORARIO (il riduttore può ruotare solo in senso orario visto dal lato destro come in figura);
  A = ANTIORARIO.

- ***[*5] Rotation sense (only necessary for solution with backstop device):***
  ***O** = CLOCKWISE (looking at the gearbox from the perspective shown below).*
  ***A** = ANTICLOCKWISE.*

- **[*5] Drehrichtung (Nur bei Aus führungen mit Rücklaufsperre)**
  O = im Uhrzeigersinn (bei Betrachtung des Getriebes aus der unten dargestellten Perspektive)
  A = Gegen den Uhrzeigersinn.



Altre specifiche:

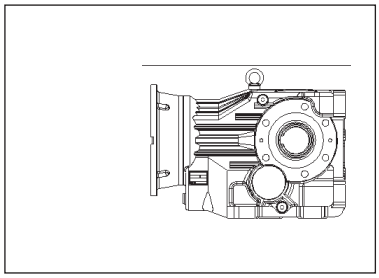
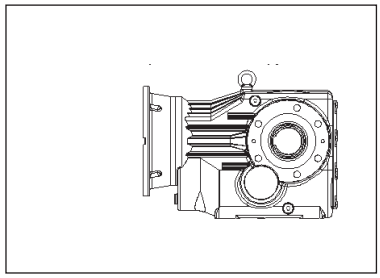
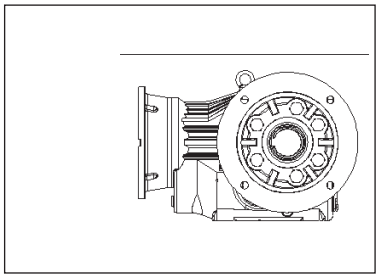
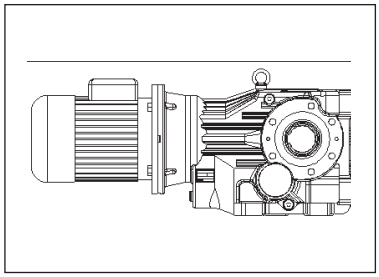
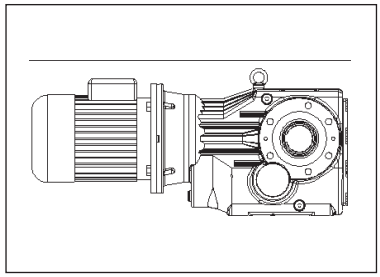
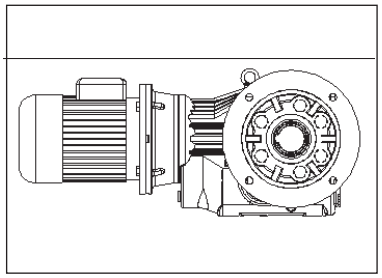
- **[B3l, B6, B8, V6, V5, B5l, B5, B5ll, B5lll, V1,V1l]** Posizioni di montaggio con indicazione dei tappi di livello, carico e scarico; se non specificato si considera standard la posizione **B3** (vedi par. 7.5).
- **[T] Braccio di reazione.**
  Braccio di reazione (vedi par. 7.10).
- **[2, 3, 4]** Posizione della morsettiera del motore se diversa da quella standard (1).

Further specification:

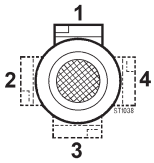
- ***[B3l, B6, B8, V6, V5, B5l, B5, B5ll, B5lll, V1, V1l]** Mounting position with indication of breatherm level and drain plugs; if not specified, standard position is **B3** (see par. 7.5).*
- ***[T] Torque arm***
  (see pa. 7.10).
- ***[2, 3, 4]** Position of the motor terminal box if different from the standard one (1).*

Weitere Spezifikationen:

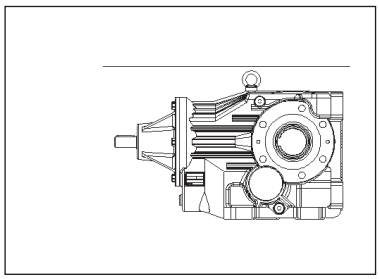
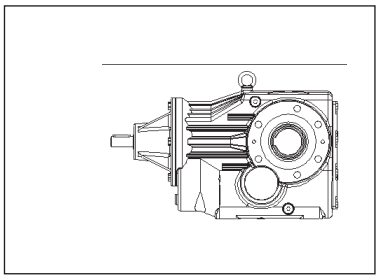
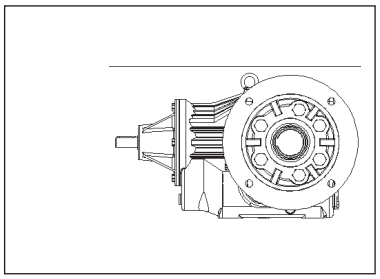
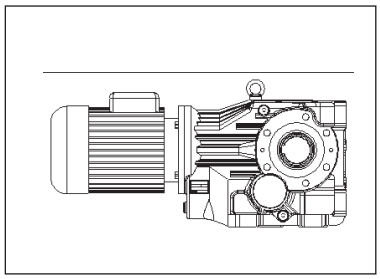
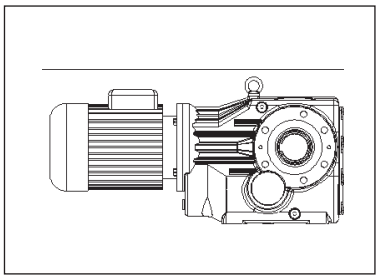
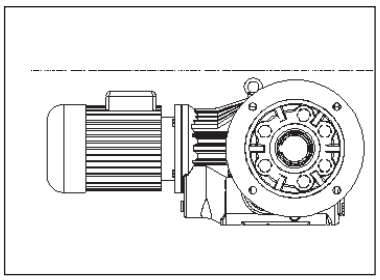
- *Montageposition* **[B3l, B6, B8, V6, V5, B5l, B5, B5ll, B5lll, V1, V1l]** mit Angabe von . Entlüftung, Schaugläsern und Ablaßschraube. Wenn nicht näher spezifiziert, wird die Standardposition **B3** zugrunde gelegt (s. Abschnitt 7.5).
- **[T] Drehmomentstütze**
  (s. Abschnitt 7.10)
- Montageposition Klemmenkasten **[2, 3, 4],** wenn abweichend von Standardposition [1] (für Motorgetriebe).

	O.P	O.F	O.P...P-O.P...F. O.F...P-O.F...F.
OM. (IEC) **63 — 112**			
OM. (kW) **63 — 112**			

1− STANDARD



Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

OR. **63 — 112**			
OC. **63 — 112**			

7.4 Lubrificazione

Si consiglia l'uso di oli a base sintetica. Vedere a tale proposito le indicazioni riportate nel capitolo 1.6.
La viscosità ISO consigliata è 320 cSt.

Le quantità di lubrificante riportate nella Tab. 7.2 sono indicative.
In fase di installazione immettere l'esatta quantità di lubrificante riferendosi alla spia di livello (dove prevista).
In fase di ordine specificare sempre la posizione di montaggio desiderata. Se omessa, il riduttore verrà fornito con i tappi predisposti per la posizione **B3.**

7.4 Lubrication

It is recommended to use synthetic based oil. See instructions in *chapter 1, paragraph 1.6.*
Recommended ISO VG viscosity is 320 cSt.

The lubricant quantities listed in table 7.2 are for reference only.
During mounting the exact quantity of oil must be filled in. Take reference on level plug (where available).
*Please specify on order the requested mounting position. Otherwise, the gearbox will be supplied with plug combination for position **B3.***

7.4 Schmierung

Wir empfehlen den Einsatz von synthetischem Öl (siehe Abschnitt 1.6). Die empfohlene ISO-Viskosität beträgt 320.

Die in Tabelle 7.2 angegeben Schmiermittelmengen sind Richtwerte.
Bei der Montage die exakte Schmiermittelmenge anhand des Ölschauglases (wo vorhanden) einfüllen.
Bei Auftragserteilung bitte immer die gewünschte Montageposition angeben. Andernfalls wird das Getriebe mit einer Schraubenanordnung für Position **B3** geliefert.

Tab. 7.2

Quantità di lubrificante / *Lubricant Quantity* / Schmiermittelmenge (kg)													
OR OM - OC	Posizioni di montaggio /*Mounting Positions* / Montagepositionen												* n°. tappi olio * *No.of plugs* Anzahl Betriebschraube
	B3	**B5I**	**B3I**	**B5II**	**B5**	**B6**	**B8**	**B5III**	**V6**	**V1**	**V5**	**V1I**	
63	1.000		1.060		1.100		1.200		1.200				1
71	1.350		1.850		1.550		1.250		1.700				7
90	2.400		3.300		2.300		2.400		2.700				7
112	4.900		6.700		5.000		4.100		5.500				7

Il riduttori nelle grandezze 63 sono forniti comprensivi di lubrificazione ad olio. Dalla grandezza 71 alla 112 sono predisposti per la lubrificazione ad olio ma sono privi di lubrificante, il quale potrà essere fornito a richiesta.
Il tappo di sfiato è allegato solo nei riduttori che hanno più di un tappo olio.
* Eventuali forniture con predisposizioni tappi diverse da quella indicata in tabella dovranno essere concordate.

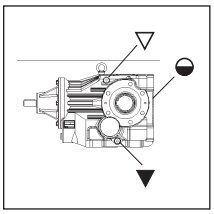
The gearboxes sizes 63 are suppied with oil. From size 71 to 112 they are oil lubricated but are supplied without lubricant which can be delivered upon request.
The drain plug is only supplied in the gearbox with more than one oil plug.
** Supplies with oil plugs different from those listed in the table are to be agreed upon.*

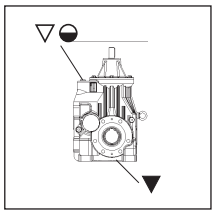
Getriebe der Baugröße 63 werden mit Ölfüllung geliefert.
Getriebe ab Baugröße 71 sind für eine Ölschmierung vorgesehen, werden jedoch ohne Ölfüllung geliefert. Auch diese sind auf Wunsch mit Ölfüllung erhältlich.
Eine Entlüftungsschraube gibt es nur bei Getrieben mit mehr als einer Ölschraube.
* Lieferungen mit Betriebsschrauben, die von denen in der Tabelle abweichen, müssen mit uns vereinbart werden.

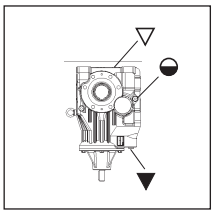
7.5 Posizioni di montaggio

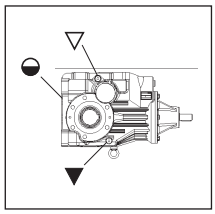
7.5 Mounting positions

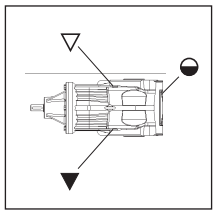
7.5 Montagepositionen

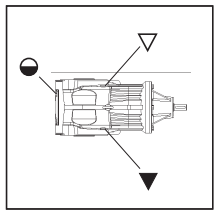

B3

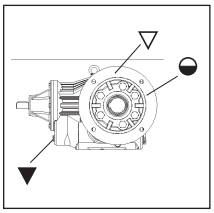

B3I

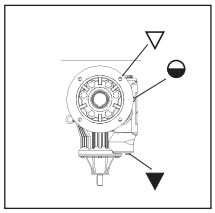

B6

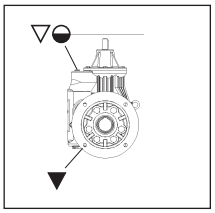

B8

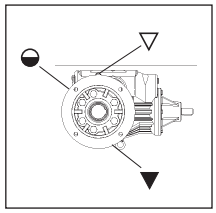

V6

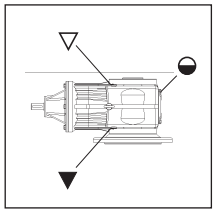

V5

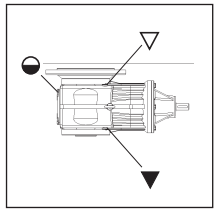

B5I


B5


B5II


B5III


V1


V1I

▽ Carico / *Breather plug* / Einfüll-u. Entlüftungsschraube
◒ Livello / *Level plug* / Schauglas
▼ Scarico / *Drain plug* / Ablaßschraube

7.6 Carichi radiali e assiali

Quando la trasmissione del moto avviene tramite meccanismi che generano carichi radiali sull'estremità dell'albero, è necessario verificare che i valori risultanti non eccedono quelli indicati nelle tabelle.

Nella Tab. 7.3 sono riportati i valori dei carichi radiali ammissibili per l'albero veloce (Fr_1). Come carico assiale ammissibile contemporaneo si ha:

$$Fa_1 = 0.2 \times Fr_1$$

In Tab. 7.4 sono riportati i valori dei carichi radiali ammissibili per l'albero lento (Fr_2) . Come carico assiale ammissibile contemporaneo si ha:

$$Fa_2 = 0.2 \times Fr_2$$

7.6 Axial and overhung load

Should transmission movement determine radial loads on the angular shaft end, it is necessary to make sure that resulting values do not exceed the ones indicated in the tables.

In Table 7.3 permissible radial load for input shaft are listed (Fr_1). Contemporary permissible axial load is given by the following formula:

$$Fa_1 = 0.2 \times Fr_1$$

In Table 7.4 permissible radial loads for output shaft a*re listed (Fr_2).*
Permissible axial load is given by the following formula:

$$Fa_2 = 0.2 \times Fr_2$$

7.6 Radiale und axiale Belastungen

Wird das Wellenende auch durch Radialkräfte belastet, so muß sichergestellt werden, daß die resultierenden Werte die in der Tabelle angegebenen nicht überschreiten.

In Tabelle 7.3 sind die Werte der zulässigen Radialbelastungen für die Antriebswelle (Fr_1) angegeben. Die Axialbelastung beträgt dann:

$$Fa_1 = 0.2 \times Fr_1$$

In Tabelle 7.4 sind die Werte der zulässigen Radialbelastungen für die Abtriebswelle (Fr_2) angegeben.
Als zulässige Axialbelastung gilt:

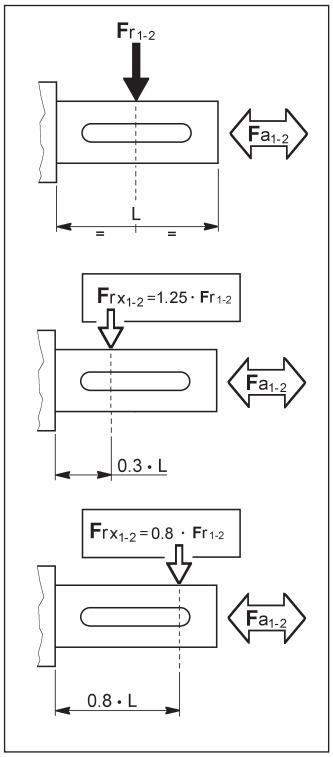
$$Fa_2 = 0.2 \times Fr_2$$

Tab. 7.3

n_1 [min^{-1}]	Fr_1 [N] OR .			
	63	**71**	**90**	**112**
2800	320	430	520	600
1400	400	550	700	800
900	450	600	800	920
500	500	850	1100	1300

Tab. 7.4

n_2 [min^{-1}]	Fr_2 [N] OM . - OR . - OC .			
	63	**71**	**90**	**112**
400	1500	2900	9000	11000
320	1750	3000	10000	11500
260	1950	3300	10600	12000
200	2050	3600	11400	12500
160	2250	3700	12000	13200
125	2400	4050	12500	13300
90	2750	4400	13500	15000
60	2900	4800	13500	16600
40	3300	5300	13500	17500
25	4000	6500	13500	17500
16	4500	6500	13500	17500
10	5300	6500	13500	17500
5	6400	6500	13500	17500



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero lento standard (vedi fig. 7.16) e sono riferiti ai riduttori operanti con fattore di servizio 1.
Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 500 min^{-1} e Fr_2 a 5 min^{-1} rappresentano i carichi massimi consentiti. Per i carichi non agenti sulla mezzeria dell'albero lento o veloce si ha:

a 0.3 della sporgenza:
$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$
a 0.8 dalla sporgenza:
$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

The radial loads shown in the tables are applied on the middle of standard shaft extensions (see fig. 7.16). Base of these values is a service factor 1.
Values for speeds that are not listed can be obtained through interpolation but it must be considered that Fr_1 at 500 min^{-1} and Fr_2 at 5 min^{-1} represent the maximum allowable loads.
For radial loads which are not applied on the middle of the shafts, the following values can be calculated:

at 0.3 from extension:
$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$
at 0.8 from extension:
$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

Bei den in der Tabelle angegeben Radialbelastungen wird eine Kraftein- wirkung auf die Mitte der Standardwelle (s. A. 7.16) angenommen; außerdem wird ein Betriebsfaktor 1 zugrunde gelegt. Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation ermittelt werden. Hierbei ist jedoch zu berücksichtigen, daß Fr_1 bei 500 min^{-1} und für Fr_{2max} bei 5 min^{-1} die maximal zulässigen Belastungen repräsentieren.
Ist die Einwirkung der Radialkraft nicht in der Mitte der Welle, so können die zulässigen Radiallasten folgendermaßen ermittelt werden:
0.3 vom Wellenabsatz entfernt:
$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$
0.8 vom Wellenabsatz entfernt:
$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

7.7 Prestazioni riduttori OR — *7.7 OR gearboxes performances* — 7.7 Leistungen der OR-Getriebe

OR 63

Kg 10.5

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7.9	354.9	140	6.0	87	177.4	170	3.6	87	114.1	190	2.6	87	63.4	200	1.5	87	
10.3	273.1	150	4.9	87	136.5	185	3.0	87	87.8	200	2.1	87	48.8	215	1.3	87	
11.4	244.7	155	4.5	87	122.3	190	2.8	87	78.6	205	1.9	87	43.7	220	1.2	87	
13.3	211.3	175	4.4	87	105.6	220	2.8	87	67.9	235	1.9	87	37.7	245	1.1	87	
14.8	189.3	180	4.1	87	94.6	220	2.5	87	60.8	240	1.7	87	33.8	250	1.0	87	
17.12	163.6	185	3.6	87	81.8	220	2.2	87	52.6	245	1.5	87	29.2	255	0.9	87	112 B5
19.5	143.8	190	3.3	87	71.9	230	2.0	87	46.2	245	1.4	87	25.7	255	0.8	87	112 B14
23.7	118.2	220	3.1	87	59.1	240	1.7	87	38.0	260	1.2	87	21.1	270	0.7	87	
27.4	102.2	225	2.8	87	51.1	240	1.5	87	32.8	260	1.0	87	18.2	270	0.6	87	100 B5 100 B14
31.2	89.8	230	2.5	87	44.9	240	1.3	87	28.9	260	0.9	87	16.0	270	0.5	87	
35.7	78.5	230	2.2	87	39.2	250	1.2	87	25.2	260	0.8	87	14.0	270	0.5	87	90 B5 90 B14
44.5	63.0	230	1.7	87	31.5	250	0.9	87	20.2	260	0.6	87	11.2	270	0.4	87	
52.2	53.6	230	1.5	87	26.8	250	0.8	87	17.2	260	0.5	87	9.6	270	0.3	87	80 B5
68.8	40.7	230	1.1	87	20.3	250	0.6	87	13.1	260	0.4	87	7.3	270	0.2	87	80 B14
79.3	35.3	230	1.0	87	17.7	250	0.5	87	11.4	260	0.4	87	6.3	270	0.2	87	
90.6	30.9	200	0.7	87	15.4	230	0.4	87	9.9	250	0.3	87	5.5	265	0.2	87	71 B5
103.8	27.0	200	0.6	87	13.5	235	0.4	87	8.7	250	0.3	87	4.8	265	0.2	87	63 B5
129.3	21.7	200	0.5	87	10.8	240	0.3	87	7.0	260	0.2	87	3.9	270	0.1	87	
151.9	18.4	205	0.5	87	9.2	245	0.3	87	5.9	260	0.2	87	3.3	280	0.1	87	
200.1	14.0	210	0.4	87	7.0	250	0.2	87	4.5	260	0.1	87	2.5	280	0.1	87	
243.3	11.5	230	0.3	87	5.8	250	0.2	87	3.7	270	0.1	87	2.1	290	0.1	87	
280.4	10.0	230	0.3	87	5.0	250	0.1	87	3.2	280	0.1	87	1.8	290	0.1	87	
346.4	8.1	230	0.2	87	4.0	250	0.1	87	2.6	280	0.1	87	1.4	290	0.1	87	

OR 71

Kg 18.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
6.8	409.1	220	11	87	204.5	270	6.6	87	131.5	294	4.6	87	73.1	295	2.6	87	
8.4	334.0	250	10	87	167.0	300	6.0	87	107.3	311	4.0	87	59.6	312	2.2	87	
9.9	282.9	260	8.8	87	141.4	320	5.4	87	90.9	350	3.8	87	50.5	349	2.1	87	
11.4	246.7	280	8.3	87	123.3	340	5.0	87	79.3	380	3.6	87	44.0	435	2.3	87	
13.9	201.4	320	7.7	87	100.7	400	4.8	87	64.7	440	3.4	87	36.0	490	2.1	87	
16.4	170.6	330	6.7	87	85.3	400	4.1	87	54.8	440	2.9	87	30.5	500	1.8	87	
18.7	149.9	330	5.9	87	75.0	410	3.7	87	48.2	460	2.7	87	26.8	560	1.8	87	
22.9	122.4	350	5.1	87	61.2	430	3.2	87	39.3	490	2.3	87	21.9	585	1.5	87	
27.0	103.7	375	4.7	87	51.8	460	2.9	87	33.3	525	2.1	87	18.5	597	1.3	87	
30.5	91.8	375	4.1	87	45.9	460	2.5	87	29.5	525	1.9	87	16.4	597	1.2	87	
37.0	75.7	375	3.4	87	37.8	460	2.1	87	24.3	525	1.5	87	13.5	597	1.0	87	112 B5
42.5	65.9	375	3.0	87	33.0	460	1.8	87	21.2	525	1.3	87	11.8	597	0.8	87	112 B14
49.2	56.9	375	2.6	87	28.4	460	1.6	87	18.3	525	1.2	87	10.2	599	0.7	87	
53.2	52.6	375	2.4	87	26.3	460	1.4	87	16.9	525	1.1	87	9.4	602	0.7	87	100 B5 100 B14
57.8	48.5	375	2.2	87	24.2	460	1.3	87	15.6	525	1.0	87	8.7	604	0.6	87	
75.9	36.9	375	1.7	87	18.4	460	1.0	87	11.9	525	0.7	87	6.6	610	0.5	87	90 B5 90 B14
87.1	32.1	375	1.4	87	16.1	460	0.9	87	10.3	525	0.6	87	5.7	612	0.4	87	
98.4	28.5	375	1.3	87	14.2	460	0.8	87	9.2	525	0.6	87	5.1	614	0.4	87	80 B5
107.6	26.0	375	1.2	87	13.0	460	0.7	87	8.4	525	0.5	87	4.6	598	0.3	87	80 B14
123.5	22.7	375	1.0	87	11.3	460	0.6	87	7.3	525	0.5	87	4.0	608	0.3	87	
143.1	19.6	375	0.9	87	9.8	460	0.5	87	6.3	525	0.4	87	3.5	618	0.3	87	71 B5
154.8	18.1	375	0.8	87	9.0	460	0.5	87	5.8	525	0.4	87	3.2	621	0.2	87	63 B5
168.0	16.7	375	0.7	87	8.3	460	0.5	87	5.4	525	0.3	87	3.0	622	0.2	87	
179.6	15.6	375	0.7	87	7.8	460	0.4	87	5.0	513	0.3	87	2.8	555	0.2	87	
193.6	14.5	375	0.6	87	7.2	460	0.4	87	4.6	516	0.3	87	2.6	558	0.2	87	
209.4	13.4	375	0.6	87	6.7	460	0.4	87	4.3	522	0.3	87	2.4	567	0.2	87	
220.8	12.7	375	0.6	87	6.3	460	0.3	87	4.1	525	0.3	87	2.3	625	0.2	87	
253.4	11.0	375	0.5	87	5.5	460	0.3	87	3.6	525	0.2	87	2.0	625	0.1	87	
286.0	9.8	375	0.4	87	4.9	460	0.3	87	3.1	525	0.2	87	1.7	625	0.1	87	
298.8	9.4	375	0.4	87	4.7	460	0.3	87	3.0	525	0.2	87	1.7	590	0.1	87	
342.9	8.2	375	0.4	87	4.1	460	0.2	87	2.6	525	0.2	87	1.5	607	0.1	87	
387.0	7.2	375	0.3	87	3.6	460	0.2	87	2.3	525	0.1	87	1.3	618	0.1	87	

OR 90

Kg 44.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7.2	389.0	325	15	87	194.5	430	10	87	125.0	457	6.8	87	69.5	545	4.5	87	
9.0	310.8	350	13	87	155.4	450	8.4	87	99.9	490	5.9	87	55.5	586	3.9	87	
10.1	276.6	357	12	87	138.3	500	8.3	87	88.9	550	5.9	87	49.4	600	3.6	87	
11.4	245.1	400	12	87	122.5	520	7.6	87	78.8	560	5.3	87	43.8	613	3.2	87	
13.0	216.0	406	11	87	108.0	540	7.0	87	69.4	570	4.7	87	38.6	613	2.8	87	
14.0	200.6	528	13	87	100.3	590	7.1	87	64.5	740	5.7	87	35.8	850	3.6	87	
15.7	178.5	570	12	87	89.3	720	7.7	87	57.4	780	5.4	87	31.9	950	3.6	87	
17.7	158.2	570	11	87	79.1	750	7.1	87	50.9	820	5.0	87	28.3	950	3.2	87	
20.1	139.4	610	10	87	69.7	790	6.6	87	44.8	870	4.7	87	24.9	950	2.8	87	
22.9	122.1	640	9.4	87	61.0	820	6.0	87	39.2	900	4.2	87	21.8	950	2.5	87	
25.6	109.4	700	9.2	87	54.7	900	5.9	87	35.2	980	4.1	87	19.5	1122	2.6	87	
28.8	97.4	740	8.6	87	48.7	910	5.3	87	31.3	1040	3.9	87	17.4	1122	2.3	87	132 B5
32.5	86.3	740	7.6	87	43.1	910	4.7	87	27.7	1040	3.5	87	15.4	1122	2.1	87	132 B14
36.8	76.0	740	6.7	87	38.0	910	4.1	87	24.4	1040	3.0	87	13.6	1122	1.8	87	
42.1	66.6	740	5.9	87	33.3	910	3.6	87	21.4	1040	2.7	87	11.9	1122	1.6	87	112 B5 112 B14
45.1	62.1	740	5.5	87	31.0	910	3.4	87	20.0	1040	2.5	87	11.1	1122	1.5	87	
52.2	53.6	740	4.8	87	26.8	910	2.9	87	17.2	1040	2.1	87	9.6	1122	1.3	87	100 B5 100 B14
59.5	47.1	740	4.2	87	23.5	910	2.6	87	15.1	1040	1.9	87	8.4	1122	1.1	87	
73.1	38.3	740	3.4	87	19.2	910	2.1	87	12.3	1040	1.5	87	6.8	1122	0.9	87	90 B5
80.5	34.8	740	3.1	87	17.4	910	1.9	87	11.2	1040	1.4	87	6.2	1122	0.8	87	80 B5
92.3	30.3	740	2.7	87	15.2	910	1.7	87	9.8	1040	1.2	87	5.4	1122	0.7	87	
94.4	29.7	740	2.6	87	14.8	910	1.6	87	9.5	1040	1.2	87	5.3	1122	0.7	87	71 B5
106.5	26.3	740	2.3	87	13.2	910	1.4	87	8.5	1040	1.1	87	4.7	1122	0.6	87	
122.3	22.9	740	2.0	87	11.4	910	1.2	87	7.4	1040	0.9	87	4.1	1122	0.5	87	
131.1	21.4	740	1.9	87	10.7	910	1.2	87	6.9	1040	0.9	87	3.8	1122	0.5	87	
151.9	18.4	740	1.6	87	9.2	910	1.0	87	5.9	1040	0.7	87	3.3	1122	0.4	87	
165.2	16.9	740	1.5	87	8.5	910	0.9	87	5.4	1040	0.7	87	3.0	1122	0.4	87	
212.6	13.2	740	1.2	87	6.6	910	0.7	87	4.2	1040	0.5	87	2.4	1122	0.3	87	
234.1	12.0	740	1.1	87	6.0	910	0.7	87	3.8	1040	0.5	87	2.1	1122	0.3	87	
268.3	10.4	740	0.9	87	5.2	910	0.6	87	3.4	1040	0.4	87	1.9	1122	0.3	87	
294.9	9.5	740	0.8	87	4.7	910	0.5	87	3.1	1040	0.4	87	1.7	1122	0.2	87	
309.6	9.0	740	0.8	87	4.5	910	0.5	87	2.9	1040	0.4	87	1.6	1122	0.2	87	
338.1	8.3	740	0.7	87	4.1	910	0.5	87	2.7	1040	0.3	87	1.5	1122	0.2	87	
390.0	7.2	740	0.6	87	3.6	910	0.4	87	2.3	1040	0.3	87	1.3	1122	0.2	87	

7.7 Prestazioni riduttori OR — *7.7 OR gearboxes performances* — 7.7 Leistungen der OR-Getriebe

OR 112

Kg 68.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
7.6	366.8	540	24	87	183.4	670	15	87	117.9	760	11	87	65.5	800	6.3	87	
8.9	315.6	580	22	87	157.8	715	14	87	101.4	810	9.8	87	56.3	850	5.7	87	
11.7	238.7	690	20	87	119.3	850	12	87	76.7	970	8.9	87	42.6	1000	5.1	87	
13.1	214.1	720	18	87	107.1	890	11	87	68.8	1000	8.2	87	38.2	1050	4.8	87	
16.1	174.3	940	20	87	87.2	1160	12	87	56.0	1300	8.7	87	31.1	1400	5.2	87	
17.9	156.4	1000	19	87	78.2	1230	12	87	50.3	1400	8.4	87	27.9	1450	4.8	87	
20.9	134.2	1040	17	87	67.1	1280	10	87	43.1	1460	7.5	87	24.0	1500	4.3	87	
22.2	126.1	1350	20	87	63.1	1750	13	87	40.5	1850	9.0	87	22.5	1900	5.1	87	
23.6	118.8	1100	16	87	59.4	1350	9.6	87	38.2	1540	7.0	87	21.2	1500	3.8	87	
25.5	109.7	1130	15	87	54.8	1400	9.2	87	35.3	1600	6.7	87	19.6	1600	3.7	87	
29.1	96.1	1170	13	87	48.0	1450	8.3	87	30.9	1650	6.1	87	17.2	1650	3.4	87	
29.3	95.4	1420	16	87	47.7	1750	10	87	30.7	1900	7.0	87	17.0	1900	3.9	87	
32.7	85.6	1450	15	87	42.8	1750	8.9	87	27.5	1900	6.2	87	15.3	1900	3.5	87	
38.1	73.4	1450	13	87	36.7	1750	7.7	87	23.6	1900	5.4	87	13.1	1900	3.0	87	160 B5
43.1	65.0	1450	11	87	32.5	1750	6.8	87	20.9	1900	4.7	87	11.6	1900	2.6	87	132 B5
46.6	60.0	1450	10	87	30.0	1750	6.3	87	19.3	1900	4.4	87	10.7	1900	2.4	87	112 B5
53.2	52.6	1450	9.1	87	26.3	1750	5.5	87	16.9	1900	3.8	87	9.4	1900	2.1	87	
57.1	49.0	1450	8.5	87	24.5	1750	5.1	87	15.8	1900	3.6	87	8.8	1900	2.0	87	100 B5
64.6	43.4	1450	7.5	87	21.7	1750	4.5	87	13.9	1900	3.2	87	7.7	1900	1.8	87	
76.8	36.4	1450	6.3	87	18.2	1750	3.8	87	11.7	1900	2.7	87	6.5	1900	1.5	87	90 B5
85.2	32.9	1450	5.7	87	16.4	1750	3.4	87	10.6	1900	2.4	87	5.9	1900	1.3	87	80 B5
93.7	29.9	1450	5.2	87	14.9	1750	3.1	87	9.6	1900	2.2	87	5.3	1900	1.2	87	
102.5	27.3	1450	4.7	87	13.7	1750	2.9	87	8.8	1900	2.0	87	4.9	1900	1.1	87	
110.9	25.2	1450	4.4	87	12.6	1750	2.6	87	8.1	1900	1.8	87	4.5	1900	1.0	87	
125.2	22.4	1450	3.9	87	11.2	1750	2.3	87	7.2	1900	1.6	87	4.0	1900	0.9	87	
135.6	20.6	1450	3.6	87	10.3	1750	2.2	87	6.6	1900	1.5	87	3.7	1900	0.8	87	
154.8	18.1	1450	3.1	87	9.0	1750	1.9	87	5.8	1900	1.3	87	3.2	1900	0.7	87	
166.0	16.9	1450	2.9	87	8.4	1750	1.8	87	5.4	1900	1.2	87	3.0	1900	0.7	87	
194.9	14.4	1450	2.5	87	7.2	1750	1.5	87	4.6	1750	1.0	87	2.6	1750	0.5	87	
223.5	12.5	1450	2.2	87	6.3	1750	1.3	87	4.0	1900	0.9	87	2.2	1900	0.5	87	
247.9	11.3	1450	2.0	87	5.6	1750	1.2	87	3.6	1900	0.8	87	2.0	1900	0.5	87	
281.3	10.3	1450	1.8	87	5.1	1750	1.1	87	3.3	1900	0.8	87	1.8	1900	0.4	87	
298.1	9.4	1450	1.6	87	4.7	1750	1.0	87	3.0	1900	0.7	87	1.7	1900	0.4	87	
342.9	8.2	1450	1.4	87	4.1	1750	0.9	87	2.6	1750	0.5	87	1.5	1750	0.3	87	
375.3	7.5	1450	1.3	87	3.7	1750	0.8	87	2.4	1750	0.5	87	1.3	1750	0.3	87	

N.B. Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come indicato nel par. 1.7). Per maggiori informazioni contattare l'ufficio tecnico STM.

NOTE. Please pay attention to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. par. 1.7). For details please contact our technical department).
For details please contact our technical department.

HINWEIS. Sind in den Tabellen Nennleistungen eingerahmt, so ist die thermische Leistungsgrenze der Getriebe zu beachten (s. Kapitel 1.7).
Für weitere Informationen wenden Sie sich bitte and unser technisches Büro.

N.B.
I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

NOTE.
Listed weights are for reference only and can vary according to the gearbox version.

HINWEIS.
Die angegeben Gewichtsmaße sind Richtwerte und können je nach Getriebeversion variieren.

Nella tab. 7.5 sono riportate le grandezze motore accoppiabili (IEC) unitamente alle dimensioni albero/flangia motore standard.

In table 7.5 the possible shaft/flange dimensions IEC standard are listed.

IIn Tabelle 7.5 sind die verfügbaren IEC-Standardmotoreingänge mit den Wellen-u. Flanschabmessungen aufgelistet.

Tab. 7.5

	IEC	Possibili accoppiamenti con motori IEC - *Possible couplings with IEC motors* Mögliche Verbindungen mit IEC-Motoren ir Tutti / *All* / Alle	
OM 63	63	**11/140** (B5)	
	71	**14/160** (B5)	
	80	**19/200** (B5**) - 19/120** (B14)	19/160 - 19/140
	90	**24/200** (B5) **- 24/140** (B14)	24/160 - 24/120
	100	**28/250** (B5) **- 28/160** (B14)	
OM 71	63	**11/140** (B5)	
	71	**14/160** (B5)	14/200 - 14/140 - 14/120
	80	**19/200** (B5) **- 19/120** (B14)	19/160 - 19/140
	90	**24/200** (B5) **- 24/140** (B14)	24/160 - 24/120
	100	**28/250** (B5) **- 28/160** (B14**)**	
	112	**28/250** (B5**) - 28/160** (B14)	

	IEC	Possibili accoppiamenti con motori IEC - *Possible couplings with IEC motors* Mögliche Verbindungen mit IEC-Motoren ir Tutti / *All* / Alle	
OM 90	71	**14/160** (B5**)**	
	80	**19/200** (B5)	
	90	**24/200** (B5)	24/300 - 24/250
	100	**28/250** (B5) - **28/160** (B14)	28/200 **-** 28/300
	112	**28/250** (B5) - **28/160** (B14)	28/200 - 28/300
	132	**38/300** (B5) **- 38/200** (B14)	38/250
OM 112	80	**19/200** (B5)	
	90	**24/200** (B5)	
	100	**28/250** (B5)	28/350 - 28/300
	112	**28/250** (B5)	28/350 - 28/300
	132	**38/300** (B5)	38/350 - 38/250
	160	**42/350** (B5)	42/300 - 42/250

Legenda:

19/200 (B5) 19/160

19/200 : combinazioni albero/flangia standard
(B5) : forma costruttiva motore IEC
19/160 : combinazione albero/flangia a richiesta

Key:

19/200 *(B5)* *19/160*

19/200 *: standard shaft/flange combination*
(B5) : IEC motor constructive shape
19/160 : shaft/flange combinations upon request

Legende:

19/200 (B5) 19/160

19/200 : Standardkombinationen Welle/Flansch
(B5) : Konstruktionsform IEC-Motor
19/160 : Sonderkombinationen Welle/Flansch

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.09 kW

n_1 = 900 min^{-1}				
38	23.7	19.8	13.1	O63
33	27.4	22.9	11.3	O63
29	31.2	26.1	10.0	O63
25	35.7	29.9	8.7	O63
20	44.4	37.2	7.0	O63
17	52.2	43.7	5.9	O63
13	68.8	57.6	4.5	O63
11	79.3	66.3	3.9	O63
10	90.6	75.8	3.3	O63
8.7	103.8	86.8	2.9	O63
7.0	129.3	108	2.4	O63
5.9	151.9	127	2.0	O63
5.8	154.8	129	4.1	O71
5.4	168.0	141	3.7	O71
5.0	179.6	150	3.4	O71
4.6	193.6	162	3.2	O71
4.5	200.1	167	1.6	O63
4.3	209.4	175	3.0	O71
4.1	220.8	185	2.8	O71
3.7	243.3	204	1.3	O63
3.6	253.4	212	2.5	O71
3.2	280.4	235	1.2	O63
3.1	286.0	239	2.2	O71
3.0	298.8	250	2.1	O71
2.6	342.9	287	1.8	O71
2.6	346.4	290	1.0	O63
2.3	387.0	324	1.6	O71

0.13 kW

n_1 = 1400 min^{-1}				
59	23.7	18.4	13.0	O63
51	27.4	21.3	11.3	O63
45	31.2	24.2	9.9	O63
39	35.7	27.7	9.0	O63
31	44.4	34.5	7.2	O63
27	52.2	40.6	6.2	O63
20	68.8	53.4	4.7	O63
18	79.3	61.6	4.1	O63
15	90.6	70.4	3.3	O63
13.5	103.8	80.6	2.9	O63
10.8	129.3	100	2.4	O63
9.8	143.1	111	4.1	O71
9.2	151.9	118	2.1	O63
9.0	154.8	120	3.8	O71
8.3	168.0	130	3.5	O71
7.8	179.6	140	3.3	O71
7.2	193.6	150	3.1	O71
7.0	200.1	155	1.6	O63
6.7	209.4	163	2.8	O71
6.3	220.8	172	2.7	O71
5.8	243.3	189	1.3	O63
5.5	253.4	197	2.3	O71

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.13 kW

n_1 = 1400 min^{-1}				
5.0	280.4	218	1.1	O63
4.9	286.0	222	2.1	O71
4.7	298.8	232	2.0	O71
4.1	342.9	266	1.7	O71
4.0	346.4	269	0.9	O63
3.6	387.0	301	1.5	O71

n_1 = 900 min^{-1}				
53	17.1	20.7	11.8	O63
46	19.5	23.5	10.4	O63
38	23.7	28.6	9.1	O63
33	27.4	33.1	7.9	O63
29	31.2	37.7	6.9	O63
25	35.7	43.1	6.0	O63
20	44.4	53.7	4.8	O63
17	52.2	63.1	4.1	O63
13	68.8	83.1	3.1	O63
11.4	79.3	95.8	2.7	O63
9.9	90.6	110	2.3	O63
8.7	103.8	125	2.0	O63
8.4	107.6	130	4.0	O71
7.3	123.5	149	3.5	O71
7.0	129.3	156	1.7	O63
6.3	143.1	173	3.0	O71
5.9	151.9	184	1.4	O63
5.8	154.8	187	2.8	O71
5.4	168.0	203	2.6	O71
5.0	179.6	217	2.4	O71
4.6	193.6	234	2.2	O71
4.5	200.1	242	1.1	O63
4.3	209.4	253	2.1	O71
4.1	220.8	267	2.0	O71
3.7	243.3	294	0.9	O63
3.6	253.4	306	1.7	O71
3.2	280.4	339	0.8	O63
3.1	286.0	346	1.5	O71
3.0	298.8	361	1.5	O71
2.6	342.9	414	1.3	O71
2.3	387.0	468	1.1	O71

0.18 kW

n_1 = 2800 min^{-1}				
78	35.7	19.2	12.0	O63
63	44.4	23.9	9.6	O63
54	52.2	28.1	8.2	O63
41	68.8	37.0	6.2	O63
35	79.3	42.6	5.4	O63
31	90.6	48.7	4.1	O63
27	103.8	55.8	3.6	O63
22	129.3	69.5	2.9	O63
18	151.9	81.7	2.5	O63
16	179.6	96.6	3.9	O71

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.18 kW

n_1 = 2800 min^{-1}				
14	193.6	104	3.6	O71
14	200.1	108	2.0	O63
13	209.4	113	3.3	O71
13	220.8	119	3.2	O71
12	243.3	131	1.8	O63
11	253.4	136	2.8	O71
10	280.4	151	1.5	O63
10	286.0	154	2.4	O71
9.4	298.8	161	2.3	O71
8.2	342.9	184	2.0	O71
8.1	346.4	186	1.2	O63
7.2	387.0	208	1.8	O71

n_1 = 1400 min^{-1}				
82	17.1	18.4	11.9	O63
72	19.5	20.9	11.0	O63
59	23.7	25.5	9.4	O63
51	27.4	29.5	8.1	O63
45	31.2	33.5	7.2	O63
39	35.7	38.4	6.5	O63
31	44.4	47.8	5.2	O63
27	52.2	56.2	4.4	O63
20	68.8	74.0	3.4	O63
18	79.3	85.3	2.9	O63
15	90.6	97.5	2.4	O63
13	103.8	112	2.1	O63
13	107.6	116	4.0	O71
11	123.5	133	3.5	O71
11	129.3	139	1.7	O63
10	143.1	154	3.0	O71
9.2	151.9	163	1.5	O63
9.0	154.8	166	2.8	O71
8.3	168.0	181	2.5	O71
7.8	179.6	193	2.4	O71
7.2	193.6	208	2.2	O71
7.0	200.1	215	1.2	O63
6.7	209.4	225	2.0	O71
6.3	220.8	238	1.9	O71
5.8	243.3	262	1.0	O63
5.5	253.4	273	1.7	O71
5.0	280.4	302	0.8	O63
4.9	286.0	308	1.5	O71
4.7	298.8	321	1.4	O71
4.1	342.9	369	1.2	O71
3.6	387.0	416	1.1	O71

n_1 = 900 min^{-1}				
88	10.3	17.2	11.7	O63
79	11.4	19.1	10.7	O63
68	13.3	22.2	10.6	O63
61	14.8	24.8	9.7	O63
53	17.1	28.6	8.6	O63
46	19.5	32.6	7.5	O63
38	23.7	39.6	6.6	O63
33	27.4	45.8	5.7	O63

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.18 kW

n_1 = 900 min^{-1}				
29	31.2	52.1	5.0	**O63**
25	35.7	59.7	4.4	**O63**
20	44.4	74.4	3.5	**O63**
17	52.2	87.4	3.0	**O63**
13	68.8	115	2.3	**O63**
12	75.9	127	4.1	**O71**
11	79.3	133	2.0	**O63**
10	87.1	146	3.6	**O71**
10	90.6	152	1.6	**O63**
9.2	98.4	165	3.2	**O71**
8.7	103.8	174	1.4	**O63**
8.4	107.6	180	2.9	**O71**
7.3	123.5	207	2.5	**O71**
7.0	129.3	216	1.2	**O63**
6.3	143.1	239	2.2	**O71**
5.9	151.9	254	4.1	**O90**
5.9	151.9	254	1.0	**O63**
5.8	154.8	259	2.0	**O71**
5.4	165.2	276	3.8	**O90**
5.4	168.0	281	1.9	**O71**
5.0	179.6	300	1.7	**O71**
4.6	193.6	324	1.6	**O71**
4.5	200.1	335	0.8	**O63**
4.3	209.4	350	1.5	**O71**
4.2	212.6	356	2.9	**O90**
4.1	220.8	370	1.4	**O71**
3.8	234.1	392	2.7	**O90**
3.6	253.4	424	1.2	**O71**
3.4	268.3	449	2.3	**O90**
3.1	286.0	479	1.1	**O71**
3.1	294.9	493	2.1	**O90**
3.0	298.8	500	1.1	**O71**
2.9	309.6	518	2.0	**O90**
2.7	338.1	566	1.8	**O90**
2.6	342.9	574	0.9	**O71**
2.3	387.0	647	0.8	**O71**
2.3	390.0	653	1.6	**O90**

0.25 kW

n_1 = 2800 min^{-1}				
118	23.7	17.7	12.4	**O63**
102	27.4	20.5	11.0	**O63**
90	31.2	23.3	9.9	**O63**
78	35.7	26.7	8.6	**O63**
63	44.4	33.2	6.9	**O63**
54	52.2	39.0	5.9	**O63**
41	68.8	51.4	4.5	**O63**
35	79.3	59.2	3.9	**O63**
31	90.6	67.7	3.0	**O63**
27	103.8	77.5	2.6	**O63**
23	123.5	92.2	4.1	**O71**
22	129.3	96.5	2.1	**O63**

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.25 kW

n_1 = 2800 min^{-1}				
20	143.1	107	3.5	**O71**
18	151.9	113	1.8	**O63**
18	154.8	116	3.2	**O71**
17	168.0	125	3.0	**O71**
16	179.6	134	2.8	**O71**
14	193.6	145	2.6	**O71**
14	200.1	149	1.4	**O63**
13	209.4	156	2.4	**O71**
13	220.8	165	2.3	**O71**
12	243.3	182	1.3	**O63**
11	253.4	189	2.0	**O71**
10	280.4	209	1.1	**O63**
10	286.0	214	1.8	**O71**
9.4	298.8	223	1.7	**O71**
8.2	342.9	256	1.5	**O71**
8.1	346.4	259	0.9	**O63**
7.2	387.0	289	1.3	**O71**

n_1 = 1400 min^{-1}				
137	10.3	15.3	12.1	**O63**
122	11.4	17.1	11.1	**O63**
106	13.3	19.8	11.1	**O63**
95	14.8	22.1	10.0	**O63**
82	17.1	25.6	8.6	**O63**
72	19.5	29.1	7.9	**O63**
59	23.7	35.4	6.8	**O63**
51	27.4	40.9	5.9	**O63**
45	31.2	46.6	5.2	**O63**
39	35.7	53.3	4.7	**O63**
31	44.4	66.4	3.8	**O63**
27	52.2	78.0	3.2	**O63**
20	68.8	103	2.4	**O63**
18	75.9	113	4.1	**O71**
18	79.3	118	2.1	**O63**
16	87.1	130	3.5	**O71**
15	90.6	135	1.7	**O63**
14	98.4	147	3.1	**O71**
13	103.8	155	1.5	**O63**
13	107.6	161	2.9	**O71**
11	123.5	184	2.5	**O71**
11	129.3	193	1.2	**O63**
10	143.1	214	2.2	**O71**
9.2	151.9	227	4.0	**O90**
9.2	151.9	227	1.1	**O63**
9.0	154.8	231	2.0	**O71**
8.5	165.2	247	3.7	**O90**
8.3	168.0	251	1.8	**O71**
7.8	179.6	268	1.7	**O71**
7.2	193.6	289	1.6	**O71**
7.0	200.1	299	0.8	**O63**
6.7	209.4	313	1.5	**O71**
6.6	212.6	318	2.9	**O90**
6.3	220.8	330	1.4	**O71**
6.0	234.1	350	2.6	**O90**
5.5	253.4	379	1.2	**O71**

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.25 kW

n_1 = 1400 min^{-1}				
5.2	268.3	401	2.3	**O90**
4.9	286.0	427	1.1	**O71**
4.7	294.9	441	2.1	**O90**
4.7	298.8	446	1.0	**O71**
4.5	309.6	462	2.0	**O90**
4.1	338.1	505	1.8	**O90**
4.1	342.9	512	0.9	**O71**
3.6	387.0	578	0.8	**O71**
3.6	390.0	583	1.6	**O90**

n_1 = 900 min^{-1}				
114	7.9	18.3	10.4	**O63**
88	10.3	23.8	8.4	**O63**
79	11.4	26.6	7.7	**O63**
68	13.3	30.8	7.6	**O63**
61	14.8	34.4	7.0	**O63**
53	17.1	39.8	6.2	**O63**
46	19.5	45.2	5.4	**O63**
38	23.7	55.0	4.7	**O63**
33	27.4	63.7	4.1	**O63**
29	31.2	72.4	3.6	**O63**
25	35.7	82.9	3.1	**O63**
20	44.4	103	2.5	**O63**
17	52.2	121	2.1	**O63**
17	53.2	124	4.2	**O71**
16	57.8	134	3.9	**O71**
13	68.8	160	1.6	**O63**
12	75.9	176	3.0	**O71**
11	79.3	184	1.4	**O63**
10	87.1	203	2.6	**O71**
10	90.6	211	1.2	**O63**
9.2	98.4	229	2.3	**O71**
8.7	103.8	241	1.0	**O63**
8.5	106.5	247	4.2	**O90**
8.4	107.6	250	2.1	**O71**
7.4	122.3	284	3.7	**O90**
7.3	123.5	287	1.8	**O71**
7.0	129.3	300	0.9	**O63**
6.9	131.1	305	3.4	**O90**
6.3	143.1	333	1.6	**O71**
5.9	151.9	353	2.9	**O90**
5.8	154.8	360	1.5	**O71**
5.4	165.2	384	2.7	**O90**
5.4	168.0	390	1.3	**O71**
5.0	179.6	417	1.2	**O71**
4.6	193.6	450	1.1	**O71**
4.3	209.4	487	1.1	**O71**
4.2	212.6	494	2.1	**O90**
4.1	220.8	513	1.0	**O71**
3.8	234.1	544	1.9	**O90**
3.6	253.4	589	0.9	**O71**
3.4	268.3	624	1.7	**O90**
3.1	286.0	665	0.8	**O71**
3.1	294.9	685	1.5	**O90**
3.0	298.8	694	0.8	**O71**

7.8 Prestazioni motoriduttori OM - OC

7.8 OM - OC Gearmotors performances

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

0.25 kW

n_1 = 900 min^{-1}				
2.9	309.6	719	1.4	**O90**
2.7	338.1	786	1.3	**O90**
2.3	390.0	906	1.1	**O90**

0.37 kW

n_1 = 2800 min^{-1}				
245	11.4	12.7	12.3	**O63**
211	13.3	14.7	11.9	**O63**
189	14.8	16.4	11.0	**O63**
164	17.1	18.9	9.8	**O63**
144	19.5	21.5	8.8	**O63**
118	23.7	26.2	8.4	**O63**
102	27.4	30.3	7.4	**O63**
90	31.2	34.5	6.7	**O63**
78	35.7	39.4	5.8	**O63**
63	44.4	49.1	4.7	**O63**
54	52.2	57.8	4.0	**O63**
41	68.8	76.1	3.0	**O63**
35	79.3	87.7	2.6	**O63**
32	87.1	96.3	3.9	**O71**
31	90.6	100	2.0	**O63**
28	98.4	109	3.4	**O71**
27	103.8	115	1.7	**O63**
26	107.6	119	3.2	**O71**
23	123.5	136	2.7	**O71**
22	129.3	143	1.4	**O63**
20	143.1	158	2.4	**O71**
18	151.9	168	1.2	**O63**
18	154.8	171	2.2	**O71**
17	165.2	183	4.1	**O90**
17	168.0	186	2.0	**O71**
16	179.6	199	1.9	**O71**
14	193.6	214	1.8	**O71**
14	200.1	221	0.9	**O63**
13	209.4	231	1.6	**O71**
13	212.6	235	3.1	**O90**
13	220.8	244	1.5	**O71**
12	234.1	259	2.9	**O90**
12	243.3	269	0.9	**O63**
11	253.4	280	1.3	**O71**
10	268.3	297	2.5	**O90**
10	286.0	316	1.2	**O71**
9.5	294.9	326	2.3	**O90**
9.4	298.8	330	1.1	**O71**
9.0	309.6	342	2.2	**O90**
8.3	338.1	374	2.0	**O90**
8.2	342.9	379	1.0	**O71**
7.2	387.0	428	0.9	**O71**
7.2	390.0	431	1.7	**O90**

0.37 kW

n_1 = 1400 min^{-1}				
177	7.9	17.4	9.7	**O63**
137	10.3	22.7	8.2	**O63**
122	11.4	25.3	7.5	**O63**
106	13.3	29.3	7.5	**O63**
95	14.8	32.7	6.7	**O63**
82	17.1	37.8	5.8	**O63**
72	19.5	43.0	5.3	**O63**
59	23.7	52.4	4.6	**O63**
51	27.4	60.6	4.0	**O63**
45	31.2	68.9	3.5	**O63**
39	35.7	78.9	3.2	**O63**
31	44.4	98.3	2.5	**O63**
28	49.2	109	4.2	**O71**
27	52.2	116	2.2	**O63**
26	53.2	118	3.9	**O71**
24	57.8	128	3.6	**O71**
20	68.8	152	1.6	**O63**
18	75.9	168	2.7	**O71**
18	79.3	175	1.4	**O63**
16	87.1	193	2.4	**O71**
15	90.6	200	1.1	**O63**
14	98.4	217	2.1	**O71**
13	103.8	229	1.0	**O63**
13	106.5	235	3.9	**O90**
13	107.6	238	1.9	**O71**
11	122.3	270	3.4	**O90**
11	123.5	273	1.7	**O71**
11	129.3	286	0.8	**O63**
11	131.1	290	3.1	**O90**
10	143.1	316	1.5	**O71**
9.2	151.9	336	2.7	**O90**
9.0	154.8	342	1.3	**O71**
8.5	165.2	365	2.5	**O90**
8.3	168.0	371	1.2	**O71**
7.8	179.6	397	1.2	**O71**
7.2	193.6	428	1.1	**O71**
6.7	209.4	463	1.0	**O71**
6.6	212.6	470	1.9	**O90**
6.3	220.8	488	0.9	**O71**
6.0	234.1	518	1.8	**O90**
5.5	253.4	560	0.8	**O71**
5.2	268.3	593	1.5	**O90**
4.7	294.9	652	1.4	**O90**
4.5	309.6	684	1.3	**O90**
4.1	338.1	747	1.2	**O90**
3.6	390.0	862	1.1	**O90**

n_1 = 900 min^{-1}				
131	6.8	23.5	12.5	**O71**
114	7.9	27.1	7.0	**O63**
88	10.3	35.3	5.7	**O63**
79	11.4	39.4	5.2	**O63**
68	13.3	45.6	5.2	**O63**
61	14.8	50.9	4.7	**O63**

0.37 kW

53	17.1	58.9	4.2	**O63**
46	19.5	67.0	3.7	**O63**
38	23.7	81.4	3.2	**O63**
33	27.4	94.2	2.8	**O63**
29	31.2	107	2.4	**O63**
25	35.7	123	2.1	**O63**
24	37.0	127	4.1	**O71**
21	42.5	146	3.6	**O71**
20	44.4	153	1.7	**O63**
18	49.2	169	3.1	**O71**
17	52.2	180	1.4	**O63**
17	53.2	183	2.9	**O71**
16	57.8	199	2.6	**O71**
13	68.8	237	1.1	**O63**
12	73.1	251	4.1	**O90**
12	75.9	261	2.0	**O71**
11	79.3	273	1.0	**O63**
11	80.5	277	3.8	**O90**
10	87.1	300	1.8	**O71**
10	90.6	3122	0.8	**O63**
10	92.3	317	3.3	**O90**
10	94.4	325	3.2	**O90**
9.2	98.4	338	1.6	**O71**
8.5	106.5	366	2.8	**O90**
8.4	107.6	370	1.4	**O71**
7.4	122.3	421	2.5	**O90**
7.3	123.5	425	1.2	**O71**
7.2	125.2	431	4.4	**O112**
6.9	131.1	451	2.3	**O90**
6.6	135.6	467	4.1	**O112**
6.3	143.1	492	1.1	**O71**
5.9	151.9	522	2.0	**O90**
5.8	154.8	532	1.0	**O71**
5.8	154.8	533	3.6	**O112**
5.4	165.2	568	1.8	**O90**
5.4	166.0	571	3.3	**O112**
5.4	168.0	578	0.9	**O71**
5.0	179.6	618	0.8	**O71**
4.6	193.6	666	0.8	**O71**
4.6	194.9	670	2.6	**O112**
4.2	212.6	731	1.4	**O90**
4.0	223.5	769	2.5	**O112**
3.8	234.1	805	1.3	**O90**
3.6	247.9	852	2.2	**O112**
3.4	268.3	923	1.1	**O90**
3.3	272.4	937	2.0	**O112**
3.1	294.9	1014	1.0	**O90**
3.0	298.1	1025	1.9	**O112**
2.9	309.6	1065	1.0	**O90**
2.7	338.1	1163	0.9	**O90**
2.6	342.9	1179	1.5	**O112**
2.4	375.3	1291	1.4	**O112**
2.3	390.0	1341	0.8	**O90**

7.8 Prestazioni motoriduttori OM - OC

7.8 OM - OC Gearmotors performances

7.8 Leistungen der OM - OC Getriebemotoren

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
355	7.9	13.0	10.8	**O63**
273	10.3	16.8	8.9	**O63**
245	11.4	18.8	8.2	**O63**
211	13.3	21.8	8.0	**O63**
189	14.8	24.3	7.4	**O63**
164	17.1	28.1	6.6	**O63**
144	19.5	32.0	5.9	**O63**
118	23.7	38.9	5.7	**O63**
102	27.4	45.0	5.0	**O63**
90	31.2	51.2	4.5	**O63**
78	35.7	58.6	3.9	**O63**
63	44.4	73.0	3.1	**O63**
54	52.2	85.8	2.7	**O63**
48	57.8	94.9	4.0	**O71**
41	68.8	113	2.0	**O63**
37	75.9	125	3.0	**O71**
35	79.3	130	1.8	**O63**
32	87.1	143	2.6	**O71**
31	90.6	149	1.3	**O63**
28	98.4	162	2.3	**O71**
27	103.8	171	1.2	**O63**
26	106.5	175	4.2	**O90**
26	107.6	177	2.1	**O71**
23	122.3	201	3.7	**O90**
23	123.5	203	1.8	**O71**
22	129.3	212	0.9	**O63**
21	131.1	216	3.4	**O90**
20	143.1	235	1.6	**O71**
18	151.9	250	3.0	**O90**
18	151.9	250	0.8	**O63**
18	154.8	254	1.5	**O71**
17	165.2	271	2.7	**O90**
17	168.0	276	1.4	**O71**
16	179.6	295	1.3	**O71**
14	193.6	318	1.2	**O71**
13	209.4	344	1.1	**O71**
13	212.6	349	2.1	**O90**
13	220.8	363	1.0	**O71**
12	234.1	385	1.9	**O90**
11	253.4	416	0.9	**O71**
10	268.3	441	1.7	**O90**
10	286.0	470	0.8	**O71**
9.5	294.9	485	1.5	**O90**
9.4	298.8	491	0.8	**O71**
9.0	309.6	509	1.5	**O90**
8.3	338.1	556	1.3	**O90**
7.2	390.0	641	1.2	**O90**
n_1 = 1400 min^{-1}				
205	6.8	22.5	12.0	**O71**
177	7.9	25.9	6.6	**O63**
137	10.3	33.7	5.5	**O63**
122	11.4	37.6	5.1	**O63**
106	13.3	43.6	5.1	**O63**
95	14.8	48.6	4.5	**O63**

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
82	17.1	56.3	3.9	**O63**
72	19.5	64.0	3.6	**O63**
59	23.7	77.8	3.1	**O63**
51	27.4	90.1	2.7	**O63**
45	31.2	102	2.3	**O63**
39	35.7	117	2.1	**O63**
38	37.0	122	3.8	**O71**
33	42.5	140	3.3	**O71**
31	44.4	146	1.7	**O63**
28	49.2	162	2.8	**O71**
27	52.2	172	1.5	**O63**
26	53.2	175	2.6	**O71**
24	57.8	190	2.4	**O71**
20	68.8	226	1.1	**O63**
19	73.1	240	3.8	**O90**
18	75.9	250	1.8	**O71**
18	79.3	261	1.0	**O63**
17	80.5	265	3.4	**O90**
16	87.1	286	1.6	**O71**
15	90.6	298	0.8	**O63**
15	92.3	303	3.0	**O90**
15	94.4	310	2.9	**O90**
14	98.4	323	1.4	**O71**
13	106.5	350	2.6	**O90**
13	107.6	354	1.3	**O71**
11	122.3	402	2.3	**O90**
11	123.5	406	1.1	**O71**
11	125.2	412	4.3	**O112**
11	131.1	431	2.1	**O90**
10	135.6	446	3.9	**O112**
10	143.1	470	1.0	**O71**
9.2	151.9	499	1.8	**O90**
9.0	154.8	509	0.9	**O71**
9.0	154.8	509	3.4	**O112**
8.5	165.2	543	1.7	**O90**
8.4	166.0	546	3.2	**O112**
8.3	168.0	552	0.8	**O71**
7.8	179.6	590	0.8	**O71**
7.2	194.9	641	2.7	**O112**
6.6	212.6	699	1.3	**O90**
6.3	223.5	734	2.4	**O112**
6.0	234.1	769	1.2	**O90**
5.6	247.9	815	2.1	**O112**
5.2	268.3	882	1.0	**O90**
5.1	272.4	895	2.0	**O112**
4.7	294.9	969	0.9	**O90**
4.7	298.1	980	1.8	**O112**
4.5	309.6	1017	0.9	**O90**
4.1	338.1	1111	0.8	**O90**
4.1	342.9	1127	1.6	**O112**
3.7	375.3	1233	1.4	**O112**

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 900 min^{-1}				
131	6.8	35.0	8.4	**O71**
114	7.9	40.3	4.7	**O63**
88	10.3	52.4	3.8	**O63**
79	11.4	58.5	3.5	**O63**
68	13.3	67.8	3.5	**O63**
61	14.8	75.6	3.2	**O63**
53	17.1	87.5	2.8	**O63**
46	19.5	100	2.5	**O63**
39	22.9	117	4.2	**O71**
38	23.7	121	2.1	**O63**
33	27.0	138	3.8	**O71**
33	27.4	140	1.9	**O63**
30	30.5	156	3.4	**O71**
29	31.2	159	1.6	**O63**
25	35.7	182	1.4	**O63**
24	37.0	189	2.8	**O71**
21	42.5	217	2.4	**O71**
20	44.4	227	1.1	**O63**
18	49.2	252	2.1	**O71**
17	52.2	267	3.9	**O90**
17	52.2	267	1.0	**O63**
17	53.2	272	1.9	**O71**
16	57.8	295	1.8	**O71**
15	59.5	304	3.4	**O90**
12	73.1	374	2.8	**O90**
12	75.9	388	1.4	**O71**
11	80.5	411	2.5	**O90**
10	87.1	446	1.2	**O71**
10	92.3	472	2.2	**O90**
10	93.7	479	4.0	**O112**
10	94.4	483	2.2	**O90**
9.2	98.4	503	1.0	**O71**
8.8	102.5	524	3.6	**O112**
8.5	106.5	544	1.9	**O90**
8.4	107.6	550	1.0	**O71**
8.1	110.9	567	3.4	**O112**
7.4	122.3	625	1.7	**O90**
7.3	123.5	631	0.8	**O71**
7.2	125.2	640	3.0	**O112**
6.9	131.1	670	1.6	**O90**
6.6	135.6	693	2.7	**O112**
5.9	151.9	777	1.3	**O90**
5.8	154.8	792	2.4	**O112**
5.4	165.2	845	1.2	**O90**
5.4	166.0	849	2.2	**O112**
4.6	194.9	996	1.8	**O112**
4.2	212.6	1087	1.0	**O90**
4.0	223.5	1143	1.7	**O112**
3.8	234.1	1197	0.9	**O90**
3.6	247.9	1267	1.5	**O112**
3.4	268.3	1372	0.8	**O90**
3.3	272.4	1393	1.4	**O112**
3.0	298.1	1524	1.2	**O112**
2.6	342.9	1753	1.0	**O112**
2.4	375.3	1919	0.9	**O112**

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
0.75 kW				
n_1 = 2800 min^{-1}				
355	7.9	17.7	7.9	**O63**
273	10.3	23.0	6.5	**O63**
245	11.4	25.6	6.0	**O63**
211	13.3	29.7	5.9	**O63**
189	14.8	33.1	5.4	**O63**
164	17.1	38.4	4.8	**O63**
144	19.5	43.6	4.4	**O63**
118	23.7	53.1	4.1	**O63**
102	27.4	61.4	3.7	**O63**
90	31.2	69.8	3.3	**O63**
78	35.7	80.0	2.9	**O63**
66	42.5	95.1	3.9	**O71**
63	44.4	100	2.3	**O63**
57	49.2	110	3.4	**O71**
54	52.2	117	2.0	**O63**
53	53.2	119	3.1	**O71**
48	57.8	129	2.9	**O71**
41	68.8	154	1.5	**O63**
37	75.9	170	2.2	**O71**
35	79.3	178	1.3	**O63**
35	80.5	180	4.1	**O90**
32	87.1	195	1.9	**O71**
31	90.6	203	1.0	**O63**
30	92.3	207	3.6	**O90**
30	94.4	211	3.5	**O90**
28	98.4	220	1.7	**O71**
27	103.8	233	0.9	**O63**
26	106.5	239	3.1	**O90**
26	107.6	241	1.6	**O71**
23	122.3	274	2.7	**O90**
23	123.5	277	1.4	**O71**
21	131.1	294	2.5	**O90**
20	143.1	321	1.2	**O71**
18	151.9	340	2.2	**O90**
18	154.8	347	1.1	**O71**
18	154.8	347	4.2	**O112**
17	165.2	370	2.0	**O90**
17	166.0	372	3.9	**O112**
17	168.0	376	1.0	**O71**
16	179.6	402	0.9	**O71**
14	193.6	434	0.9	**O71**
14	194.9	437	3.3	**O112**
13	209.4	469	0.8	**O71**
13	212.6	476	1.6	**O90**
13	220.8	495	0.8	**O71**
13	223.5	501	2.9	**O112**
12	234.1	525	1.4	**O90**
11	247.9	555	2.6	**O112**
10	268.3	601	1.2	**O90**
10	272.4	610	2.4	**O112**
9.5	294.9	661	1.1	**O90**
9.4	298.1	668	2.2	**O112**
9.0	309.6	694	1.1	**O90**

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
0.75 kW				
n_1 = 2800 min^{-1}				
8.3	338.1	758	1.0	**O90**
8.2	342.9	768	1.9	**O112**
7.5	375.3	841	1.7	**O112**
7.2	390.0	874	0.8	**O90**
n_1 = 1400 min^{-1}				
205	6.8	30.7	8.8	**O71**
177	7.9	35.4	4.8	**O63**
137	10.3	46.0	4.0	**O63**
122	11.4	51.3	3.7	**O63**
106	13.3	59.4	3.7	**O63**
95	14.8	66.3	3.3	**O63**
82	17.1	76.7	2.9	**O63**
72	19.5	87.3	2.6	**O63**
61	22.9	103	4.2	**O71**
59	23.7	106	2.3	**O63**
52	27.0	121	3.8	**O71**
51	27.4	123	2.0	**O63**
46	30.5	137	3.4	**O71**
45	31.2	140	1.7	**O63**
39	35.7	160	1.6	**O63**
38	37.0	166	2.8	**O71**
33	42.5	190	2.4	**O71**
31	44.4	199	1.3	**O63**
28	49.2	221	2.1	**O71**
27	52.2	234	3.9	**O90**
27	52.2	234	1.1	**O63**
26	53.2	239	1.9	**O71**
24	57.8	259	1.8	**O71**
24	59.5	266	3.4	**O90**
20	68.8	308	0.8	**O63**
19	73.1	328	2.8	**O90**
18	75.9	340	1.4	**O71**
17	80.5	361	2.5	**O90**
16	87.1	391	1.2	**O71**
15	92.3	414	2.2	**O90**
15	93.7	420	4.2	**O112**
15	94.4	423	2.2	**O90**
14	98.4	441	1.0	**O71**
14	102.5	459	3.8	**O112**
13	106.5	477	1.9	**O90**
13	107.6	482	1.0	**O71**
13	110.9	497	3.5	**O112**
11	122.3	548	1.7	**O90**
11	123.5	553	0.8	**O71**
11	125.2	561	3.1	**O112**
11	131.1	588	1.5	**O90**
10	135.6	608	2.9	**O112**
9.2	151.9	681	1.3	**O90**
9.0	154.8	694	2.5	**O112**
8.5	165.2	740	1.2	**O90**
8.4	166.0	744	2.4	**O112**
7.2	194.9	873	2.0	**O112**
6.6	212.6	953	1.0	**O90**

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
0.75 kW				
n_1 = 1400 min^{-1}				
6.3	223.5	1002	1.7	**O112**
6.0	234.1	1049	0.9	**O90**
5.6	247.9	1111	1.6	**O112**
5.2	268.3	1203	0.8	**O90**
5.1	272.4	1221	1.4	**O112**
4.7	298.1	1336	1.3	**O112**
4.1	342.9	1537	1.1	**O112**
3.7	375.3	1682	1.0	**O112**
n_1 = 900 min^{-1}				
131	6.8	47.7	6.2	**O71**
114	7.9	55.0	3.5	**O63**
88	10.3	71.5	2.8	**O63**
79	11.4	79.8	2.6	**O63**
68	13.3	92.4	2.5	**O63**
61	14.8	103	2.3	**O63**
55	16.4	114	3.8	**O71**
53	17.1	119	2.1	**O63**
48	18.7	130	3.5	**O71**
46	19.5	136	1.8	**O63**
39	22.9	159	3.1	**O71**
38	23.7	165	1.6	**O63**
33	27.0	188	2.8	**O71**
33	27.4	191	1.4	**O63**
30	30.5	213	2.5	**O71**
29	31.2	217	1.2	**O63**
25	35.7	249	1.0	**O63**
24	36.8	257	4.1	**O90**
24	37.0	258	2.0	**O71**
21	42.1	293	3.5	**O90**
21	42.5	296	1.8	**O71**
20	44.4	310	0.8	**O63**
20	45.1	314	3.3	**O90**
18	49.2	343	1.5	**O71**
17	52.2	364	2.9	**O90**
17	53.2	371	1.4	**O71**
16	57.8	403	1.3	**O71**
15	59.5	415	2.5	**O90**
12	73.1	510	2.0	**O90**
12	75.9	529	1.0	**O71**
12	76.8	536	3.5	**O112**
11	80.5	561	1.9	**O90**
11	85.2	594	3.2	**O112**
10	87.1	608	0.9	**O71**
10	92.3	643	1.6	**O90**
10	93.7	653	2.9	**O112**
10	94.4	658	1.6	**O90**
9.2	98.4	686	0.8	**O71**
8.8	102.5	715	2.7	**O112**
8.5	106.5	742	1.4	**O90**
8.1	110.9	773	2.5	**O112**
7.4	122.3	853	1.2	**O90**
7.2	125.2	873	2.2	**O112**
6.9	131.1	914	1.1	**O90**
6.6	135.6	946	2.0	**O112**

7.8 Prestazioni motoriduttori OM - OC

7.8 *OM - OC Gearmotors performances*

7.8 Leistungen der OM - OC Getriebemotoren

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 900 min^{-1}				
5.9	151.9	1059	1.0	**O90**
5.8	154.8	1079	1.8	**O112**
5.4	165.2	1152	0.9	**O90**
5.4	166.0	1158	1.6	**O112**
4.6	194.9	1359	1.3	**O112**
4.0	223.5	1558	1.2	**O112**
3.6	247.9	1728	1.1	**O112**
3.3	272.4	1899	1.0	**O112**
3.0	298.1	2078	0.9	**O112**

0.95 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
205	6.8	38.9	6.9	**O71**
177	7.9	44.8	3.8	**O63**
137	10.3	58.2	3.2	**O63**
122	11.4	65.0	2.9	**O63**
106	13.3	75.2	2.9	**O63**
95	14.8	84.0	2.6	**O63**
85	16.4	93.2	4.3	**O71**
82	17.1	97.2	2.3	**O63**
75	18.7	106	3.9	**O71**
72	19.5	111	2.1	**O63**
61	22.9	130	3.3	**O71**
59	23.7	134	1.8	**O63**
52	27.0	153	3.0	**O71**
51	27.4	156	1.5	**O63**
46	30.5	173	2.7	**O71**
45	31.2	177	1.4	**O63**
39	35.7	203	1.2	**O63**
38	36.8	209	4.4	**O90**
38	37.0	210	2.2	**O71**
33	42.1	239	3.8	**O90**
33	42.5	241	1.9	**O71**
31	44.4	252	1.0	**O63**
31	45.1	256	3.6	**O90**
28	49.2	279	1.6	**O71**
27	52.2	297	3.1	**O90**
27	52.2	297	0.8	**O63**
26	53.2	302	1.5	**O71**
24	57.8	328	1.4	**O71**
24	59.5	338	2.7	**O90**
19	73.1	415	2.2	**O90**
18	75.9	431	1.1	**O71**
18	76.8	436	4.0	**O112**
17	80.5	457	2.0	**O90**
16	85.2	484	3.6	**O112**
16	87.1	495	0.9	**O71**
15	92.3	524	1.7	**O90**
15	93.7	532	3.3	**O112**
15	94.4	536	1.7	**O90**
14	98.4	558	0.8	**O71**
14	102.5	582	3.0	**O112**

0.95 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
13	106.5	604	1.5	**O90**
13	107.6	611	0.8	**O71**
13	110.9	630	2.8	**O112**
11	122.3	694	1.3	**O90**
11	125.2	711	2.5	**O112**
11	131.1	744	1.2	**O90**
10	135.6	770	2.3	**O112**
9.2	151.9	862	1.1	**O90**
9.0	154.8	879	2.0	**O112**
8.5	165.2	938	1.0	**O90**
8.4	166.0	943	1.9	**O112**
7.2	194.9	1106	1.6	**O112**
6.6	212.6	1207	0.8	**O90**
6.3	223.5	1269	1.4	**O112**
5.6	247.9	1407	1.2	**O112**
5.1	272.4	1546	1.1	**O112**
4.7	298.1	1692	1.0	**O112**
4.1	342.9	1946	0.9	**O112**
3.7	375.3	2130	0.8	**O112**

1.1 kW

n_1 = 2800 min^{-1}				
409	6.8	22.5	9.8	**O71**
355	7.9	25.9	5.4	**O63**
273	10.3	33.7	4.5	**O63**
245	11.4	37.6	4.1	**O63**
211	13.3	43.6	4.0	**O63**
189	14.8	48.6	3.7	**O63**
164	17.1	56.3	3.3	**O63**
144	19.5	64.0	3.0	**O63**
118	23.7	77.8	2.8	**O63**
104	27.0	88.8	4.2	**O71**
102	27.4	90.1	2.5	**O63**
92	30.5	100	3.7	**O71**
90	31.2	102	2.2	**O63**
78	35.7	117	2.0	**O63**
76	37.0	122	3.1	**O71**
66	42.5	140	2.7	**O71**
63	44.4	146	1.6	**O63**
57	49.2	162	2.3	**O71**
54	52.2	172	4.3	**O90**
54	52.2	172	1.3	**O63**
53	53.2	175	2.1	**O71**
48	57.8	190	2.0	**O71**
47	59.5	195	3.8	**O90**
41	68.8	226	1.0	**O63**
38	73.1	240	3.1	**O90**
37	75.9	250	1.5	**O71**
35	79.3	261	0.9	**O63**
35	80.5	265	2.8	**O90**
32	87.1	286	1.3	**O71**
30	92.3	303	2.4	**O90**

1.1 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
30	94.4	310	2.4	**O90**
28	98.4	323	1.2	**O71**
27	102.5	337	4.3	**O112**
26	106.5	350	2.1	**O90**
26	107.6	354	1.1	**O71**
25	110.9	364	4.0	**O112**
23	122.3	402	1.8	**O90**
23	123.5	406	0.9	**O71**
22	125.2	412	3.5	**O112**
21	131.1	431	1.7	**O90**
21	135.6	446	3.3	**O112**
20	143.1	470	0.8	**O71**
18	151.9	499	1.5	**O90**
18	154.8	509	2.8	**O112**
17	165.2	543	1.4	**O90**
17	166.0	546	2.7	**O112**
14	194.9	641	2.3	**O112**
13	212.6	699	1.1	**O90**
13	223.5	734	2.0	**O112**
12	234.1	769	1.0	**O90**
11	247.9	815	1.8	**O112**
10	268.3	882	0.8	**O90**
10	272.4	895	1.6	**O112**
9.5	294.9	969	0.8	**O90**
9.4	298.1	980	1.5	**O112**
8.2	342.9	1127	1.3	**O112**
7.5	375.3	1233	1.2	**O112**

n_1 = 1400 min^{-1}				
205	6.8	45.0	6.0	**O71**
177	7.9	51.9	3.3	**O63**
167	8.4	55.1	5.4	**O71**
137	10.3	67.4	2.7	**O63**
122	11.4	75.2	2.5	**O63**
106	13.3	87.1	2.5	**O63**
95	14.8	97.2	2.3	**O63**
85	16.4	108	3.7	**O71**
82	17.1	113	2.0	**O63**
75	18.7	123	3.3	**O71**
72	19.5	128	1.8	**O63**
61	22.9	150	2.9	**O71**
59	23.7	156	1.5	**O63**
52	27.0	178	2.6	**O71**
51	27.4	180	1.3	**O63**
46	30.5	200	2.3	**O71**
45	31.2	205	1.2	**O63**
43	32.5	213	4.3	**O90**
39	35.7	235	1.1	**O63**
38	36.8	242	3.8	**O90**
38	37.0	243	1.9	**O71**
33	42.1	276	3.3	**O90**
33	42.5	279	1.6	**O71**
31	44.4	292	0.9	**O63**
31	45.1	296	3.1	**O90**
28	49.2	323	1.4	**O71**

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

1.1 kW

n_1 = 1400 min^{-1}				
27	52.2	343	2.7	**O90**
26	53.2	350	1.3	**O71**
24	57.8	380	1.2	**O71**
24	59.5	391	2.3	**O90**
22	64.6	424	4.1	**O112**
19	73.1	480	1.9	**O90**
18	75.9	499	0.9	**O71**
18	76.8	505	3.5	**O112**
17	80.5	529	1.7	**O90**
16	85.2	560	3.1	**O112**
16	87.1	573	0.8	**O71**
15	92.3	607	1.5	**O90**
15	93.7	616	2.8	**O112**
15	94.4	620	1.5	**O90**
14	102.5	674	2.6	**O112**
13	106.5	700	1.3	**O90**
13	110.9	729	2.4	**O112**
11	122.3	804	1.1	**O90**
11	125.2	823	2.1	**O112**
11	131.1	862	1.1	**O90**
10	135.6	892	2.0	**O112**
9.2	151.9	998	0.9	**O90**
9.0	154.8	1018	1.7	**O112**
8.5	165.2	1086	0.8	**O90**
8.4	166.0	1091	1.6	**O112**
7.2	194.9	1281	1.4	**O112**
6.3	223.5	1469	1.2	**O112**
5.6	247.9	1629	1.1	**O112**
5.1	272.4	1791	1.0	**O112**
4.7	298.1	1960	0.9	**O112**
4.1	342.9	2254	0.8	**O112**

n_1 = 900 min^{-1}				
131	6.8	70.0	4.2	**O71**
114	7.9	80.7	2.4	**O63**
107	8.4	85.7	3.6	**O71**
91	9.9	101	3.5	**O71**
88	10.3	105	1.9	**O63**
79	11.4	116	3.3	**O71**
79	11.4	117	1.8	**O63**
68	13.3	136	1.7	**O63**
65	13.9	142	3.1	**O71**
61	14.8	151	1.6	**O63**
55	16.4	168	2.6	**O71**
53	17.1	175	1.4	**O63**
48	18.7	191	2.4	**O71**
46	19.5	199	1.2	**O63**
45	20.1	205	4.2	**O90**
39	22.9	234	2.1	**O71**
39	22.9	235	3.8	**O90**
38	23.7	242	1.1	**O63**
35	25.6	262	3.7	**O90**
33	27.0	276	1.9	**O71**
33	27.4	280	0.9	**O63**
31	28.8	294	3.5	**O90**

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

1.1 kW

n_1 = 900 min^{-1}				
30	30.5	312	1.7	**O71**
29	31.2	319	0.8	**O63**
28	32.5	332	3.1	**O90**
24	36.8	376	2.8	**O90**
24	37.0	378	1.4	**O71**
21	42.1	430	2.4	**O90**
21	42.5	434	1.2	**O71**
21	43.1	440	4.3	**O112**
20	45.1	461	2.3	**O90**
19	46.6	477	4.0	**O112**
18	49.2	503	1.0	**O71**
17	52.2	534	1.9	**O90**
17	53.2	544	1.0	**O71**
17	53.2	544	3.5	**O112**
16	57.1	584	3.3	**O112**
16	57.8	591	0.9	**O71**
15	59.5	608	1.7	**O90**
14	64.6	660	2.9	**O112**
12	73.1	747	1.4	**O90**
12	76.8	786	2.4	**O112**
11	80.5	823	1.3	**O90**
11	85.2	871	2.2	**O112**
10	92.3	943	1.1	**O90**
10	93.7	958	2.0	**O112**
10	94.4	965	1.1	**O90**
8.8	102.5	1048	1.8	**O112**
8.5	106.5	1088	1.0	**O90**
8.1	110.9	1134	1.7	**O112**
7.4	122.3	1251	0.8	**O90**
7.2	125.2	1280	1.5	**O112**
6.9	131.1	1341	0.8	**O90**
6.6	135.6	1387	1.4	**O112**
5.8	154.8	1583	1.2	**O112**
5.4	166.0	1698	1.1	**O112**
4.6	194.9	1993	0.9	**O112**
4.0	223.5	2285	0.8	**O112**

1.5 kW

n_1 = 2800 min^{-1}				
409	6.8	30.7	7.2	**O71**
355	7.9	35.4	4.0	**O63**
334	8.4	37.6	6.7	**O71**
273	10.3	46.0	3.3	**O63**
245	11.4	51.3	3.0	**O63**
211	13.3	59.4	2.9	**O63**
189	14.8	66.3	2.7	**O63**
164	17.1	76.7	2.4	**O63**
150	18.7	83.7	3.9	**O71**
144	19.5	87.3	2.2	**O63**
122	22.9	103	3.4	**O71**
118	23.7	106	2.1	**O63**

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

1.5 kW

n_1 = 2800 min^{-1}				
104	27.0	121	3.1	**O71**
102	27.4	123	1.8	**O63**
92	30.5	137	2.7	**O71**
90	31.2	140	1.6	**O63**
78	35.7	160	1.4	**O63**
76	37.0	166	2.3	**O71**
67	42.1	189	3.9	**O90**
66	42.5	190	2.0	**O71**
63	44.4	199	1.2	**O63**
62	45.1	202	3.7	**O90**
57	49.2	221	1.7	**O71**
54	52.2	234	3.2	**O90**
54	52.2	234	1.0	**O63**
53	53.2	239	1.6	**O71**
48	57.8	259	1.4	**O71**
47	59.5	266	2.8	**O90**
38	73.1	328	2.3	**O90**
37	75.9	340	1.1	**O71**
36	76.8	344	4.2	**O112**
35	80.5	361	2.1	**O90**
33	85.2	382	3.8	**O112**
32	87.1	391	1.0	**O71**
30	92.3	414	1.8	**O90**
30	93.7	420	3.5	**O112**
30	94.4	423	1.7	**O90**
28	98.4	441	0.9	**O71**
27	102.5	459	3.2	**O112**
26	106.5	477	1.6	**O90**
26	107.6	482	0.8	**O71**
25	110.9	497	2.9	**O112**
23	122.3	548	1.3	**O90**
22	125.2	561	2.6	**O112**
21	131.1	588	1.3	**O90**
21	135.6	608	2.4	**O112**
18	151.9	681	1.1	**O90**
18	154.8	694	2.1	**O112**
17	165.2	740	1.0	**O90**
17	166.0	744	1.9	**O112**
14	194.9	873	1.7	**O112**
13	212.6	953	0.8	**O90**
13	223.5	1002	1.4	**O112**
11	247.9	1111	1.3	**O112**
10	272.4	1221	1.2	**O112**
9.4	298.1	1336	1.1	**O112**
8.2	342.9	1537	0.9	**O112**
7.5	375.3	1682	0.9	**O112**

n_1 = 1400 min^{-1}				
205	6.8	61.3	4.4	**O71**
177	7.9	70.7	2.4	**O63**
167	8.4	75.2	4.0	**O71**
141	9.9	88.7	3.6	**O71**
137	10.3	91.9	2.0	**O63**
123	11.4	102	3.3	**O71**

7.8 Prestazioni motoriduttori OM - OC

7.8 *OM - OC Gearmotors performances*

7.8 Leistungen der OM - OC Getriebemotoren

1.5 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
122	11.4	103	1.9	O63
106	13.3	119	1.9	O63
101	13.9	125	3.2	O71
95	14.8	133	1.7	O63
85	16.4	147	2.7	O71
82	17.1	153	1.4	O63
75	18.7	167	2.4	O71
72	19.5	175	1.3	O63
70	20.1	180	4.4	O90
61	22.9	205	2.1	O71
61	22.9	206	4.0	O90
59	23.7	212	1.1	O63
55	25.6	229	3.9	O90
52	27.0	242	1.9	O71
51	27.4	246	1.0	O63
49	28.8	258	3.5	O90
46	30.5	273	1.7	O71
45	31.2	279	0.9	O63
43	32.5	291	3.1	O90
39	35.7	320	0.8	O63
38	36.8	330	2.8	O90
38	37.0	332	1.4	O71
33	42.1	377	2.4	O90
33	42.5	381	1.2	O71
31	45.1	404	2.3	O90
30	46.6	418	4.2	O112
28	49.2	441	1.0	O71
27	52.2	468	1.9	O90
26	53.2	477	1.0	O71
26	53.2	477	3.7	O112
25	57.1	512	3.4	O112
24	57.8	518	0.9	O71
24	59.5	533	1.7	O90
22	64.6	579	3.0	O112
19	73.1	655	1.4	O90
18	76.8	689	2.5	O112
17	80.5	721	1.3	O90
16	85.2	764	2.3	O112
15	92.3	827	1.1	O90
15	93.7	840	2.1	O112
15	94.4	846	1.1	O90
14	102.5	919	1.9	O112
13	106.5	954	1.0	O90
13	110.9	994	1.8	O112
11	122.3	1096	0.8	O90
11	125.2	1123	1.6	O112
11	131.1	1175	0.8	O90
10	135.6	1216	1.4	O112
9.0	154.8	1388	1.3	O112
8.4	166.0	1488	1.2	O112
7.2	194.9	1747	1.0	O112
6.3	223.5	2003	0.9	O112
5.6	247.9	2222	0.8	O112

1.5 kW

n_1 = 900 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
131	6.8	95.4	3.1	O71
114	7.9	110	1.7	O63
107	8.4	117	2.7	O71
100	9.0	126	3.9	O90
91	9.9	138	2.5	O71
89	10.1	141	3.9	O90
88	10.3	143	1.4	O63
79	11.4	158	2.4	O71
79	11.4	159	3.5	O90
79	11.4	160	1.3	O63
69	13.0	181	3.2	O90
68	13.3	185	1.3	O63
65	13.9	194	2.3	O71
64	14.0	195	3.8	O90
61	14.8	206	1.2	O63
57	15.7	219	3.6	O90
55	16.4	229	1.9	O71
53	17.1	239	1.0	O63
51	17.7	247	3.3	O90
48	18.7	260	1.8	O71
46	19.5	271	0.9	O63
45	20.1	280	3.1	O90
39	22.9	319	1.5	O71
39	22.9	320	2.8	O90
38	23.7	330	0.8	O63
35	25.6	357	2.7	O90
33	27.0	377	1.4	O71
31	28.8	401	2.6	O90
30	30.5	425	1.2	O71
28	32.5	453	2.3	O90
28	32.7	456	4.2	O112
24	36.8	513	2.0	O90
24	37.0	516	1.0	O71
24	38.1	532	3.6	O112
21	42.1	586	1.8	O90
21	42.5	592	0.9	O71
21	43.1	600	3.2	O112
20	45.1	629	1.7	O90
19	46.6	650	2.9	O112
18	49.2	686	0.8	O71
17	52.2	728	1.4	O90
17	53.2	742	2.6	O112
16	57.1	796	2.4	O112
15	59.5	829	1.3	O90
14	64.6	900	2.1	O112
12	73.1	1019	1.0	O90
12	76.8	1071	1.8	O112
11	80.5	1122	0.9	O90
11	85.2	1188	1.6	O112
10	92.3	1287	0.8	O90
10	93.7	1306	1.5	O112
10	94.4	1316	0.8	O90
8.8	102.5	1429	1.3	O112
8.1	110.9	1546	1.2	O112
7.2	125.2	1746	1.1	O112

1.5 kW

n_1 = 900 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
6.6	135.6	1891	1.0	O112
5.8	154.8	2159	0.9	O112
5.4	166.0	2315	0.8	O112

1.8 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
205	6.8	73.6	3.7	O71
177	7.9	84.9	2.0	O63
167	8.4	90.2	3.3	O71
141	9.9	106	3.0	O71
137	10.3	110	1.7	O63
123	11.4	122	2.8	O71
122	11.4	123	1.5	O63
108	13.0	139	3.9	O90
106	13.3	143	1.5	O63
101	13.9	150	2.7	O71
100	14.0	150	3.9	O90
95	14.8	159	1.4	O63
89	15.7	169	4.3	O90
85	16.4	177	2.3	O71
82	17.1	184	1.2	O63
79	17.7	190	3.9	O90
75	18.7	201	2.0	O71
72	19.5	209	1.1	O63
70	20.1	216	3.7	O90
61	22.9	246	1.7	O71
61	22.9	247	3.3	O90
59	23.7	255	0.9	O63
55	25.6	275	3.3	O90
52	27.0	290	1.6	O71
51	27.4	295	0.8	O63
49	28.8	309	2.9	O90
46	30.5	328	1.4	O71
43	32.5	349	2.6	O90
38	36.8	396	2.3	O90
38	37.0	398	1.2	O71
33	42.1	452	2.0	O90
33	42.5	457	1.0	O71
33	43.1	463	3.8	O112
31	45.1	485	1.9	O90
30	46.6	502	3.5	O112
28	49.2	529	0.9	O71
27	52.2	562	1.6	O90
26	53.2	572	0.8	O71
26	53.2	573	3.1	O112
25	57.1	614	2.8	O112
24	59.5	640	1.4	O90
22	64.6	694	2.5	O112
19	73.1	786	1.2	O90
18	76.8	827	2.1	O112
17	80.5	866	1.1	O90
16	85.2	917	1.9	O112

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
1.8 kW				
n_1 = 1400 min^{-1}				
15	92.3	992	0.9	**O90**
15	93.7	1008	1.7	**O112**
15	94.4	1015	0.9	**O90**
14	102.5	1103	1.6	**O112**
13	106.5	1145	0.8	**O90**
13	110.9	1193	1.5	**O112**
11	125.2	1347	1.3	**O112**
10	135.6	1459	1.2	**O112**
9.0	154.8	1665	1.1	**O112**
8.4	166.0	1786	1.0	**O112**
7.2	194.9	2096	0.8	**O112**
2.2 kW				
n_1 = 2800 min^{-1}				
409	6.8	45.0	4.9	**O71**
355	7.9	51.9	2.7	**O63**
334	8.4	55.1	4.5	**O71**
311	9.0	59.2	5.9	**O90**
283	9.9	65.1	4.0	**O71**
273	10.3	67.4	2.2	**O63**
247	11.4	74.6	3.8	**O71**
245	11.4	75.2	2.1	**O63**
211	13.3	87.1	2.0	**O63**
201	13.9	91.4	3.5	**O71**
189	14.8	97.2	1.9	**O63**
171	16.4	108	3.1	**O71**
164	17.1	113	1.6	**O63**
150	18.7	123	2.7	**O71**
144	19.5	128	1.5	**O63**
122	22.9	150	2.3	**O71**
122	22.9	151	4.2	**O90**
118	23.7	156	1.4	**O63**
109	25.6	168	4.2	**O90**
104	27.0	178	2.1	**O71**
102	27.4	180	1.2	**O63**
97	28.8	189	3.9	**O90**
92	30.5	200	1.9	**O71**
90	31.2	205	1.1	**O63**
86	32.5	213	3.5	**O90**
78	35.7	235	1.0	**O63**
76	36.8	242	3.1	**O90**
76	37.0	243	1.5	**O71**
67	42.1	276	2.7	**O90**
66	42.5	279	1.3	**O71**
63	44.4	292	0.8	**O63**
62	45.1	296	2.5	**O90**
57	49.2	323	1.2	**O71**
54	52.2	343	2.2	**O90**
53	53.2	350	1.1	**O71**
53	53.2	350	4.1	**O112**
49	57.1	375	3.9	**O112**
48	57.8	380	1.0	**O71**

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
2.2 kW				
n_1 = 2800 min^{-1}				
47	59.5	391	1.9	**O90**
43	64.6	424	3.4	**O112**
38	73.1	480	1.5	**O90**
37	75.9	499	0.8	**O71**
36	76.8	505	2.9	**O112**
35	80.5	529	1.4	**O90**
33	85.2	560	2.6	**O112**
30	92.3	607	1.2	**O90**
30	93.7	616	2.4	**O112**
30	94.4	620	1.2	**O90**
27	102.5	674	2.2	**O112**
26	106.5	700	1.1	**O90**
25	110.9	729	2.0	**O112**
23	122.3	804	0.9	**O90**
22	125.2	823	1.8	**O112**
21	131.1	862	0.9	**O90**
21	135.6	892	1.6	**O112**
18	154.8	1018	1.4	**O112**
17	166.0	1091	1.3	**O112**
14	194.9	1281	1.1	**O112**
13	223.5	1469	1.0	**O112**
11	247.9	1629	0.9	**O112**
10	272.4	1791	0.8	**O112**
n_1 = 1400 min^{-1}				
205	6.8	90.0	3.0	**O71**
195	7.2	94.6	4.5	**O90**
177	7.9	104	1.6	**O63**
167	8.4	110	2.7	**O71**
155	9.0	118	3.8	**O90**
141	9.9	130	2.5	**O71**
138	10.1	133	3.8	**O90**
137	10.3	135	1.4	**O63**
123	11.4	149	2.3	**O71**
123	11.4	150	3.5	**O90**
122	11.4	150	1.3	**O63**
108	13.0	170	3.2	**O90**
106	13.3	174	1.3	**O63**
101	13.9	183	2.2	**O71**
100	14.0	183	3.2	**O90**
95	14.8	194	1.1	**O63**
89	15.7	206	3.5	**O90**
85	16.4	216	1.9	**O71**
82	17.1	225	1.0	**O63**
79	17.7	233	3.2	**O90**
75	18.7	245	1.7	**O71**
72	19.5	256	0.9	**O63**
70	20.1	264	3.0	**O90**
61	22.9	301	1.4	**O71**
61	22.9	302	2.7	**O90**
59	23.7	311	0.8	**O63**
55	25.6	336	2.7	**O90**
52	27.0	355	1.3	**O71**
49	28.8	378	2.4	**O90**
46	30.5	401	1.1	**O71**

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
2.2 kW				
n_1 = 1400 min^{-1}				
43	32.5	427	2.1	**O90**
43	32.7	430	4.1	**O112**
38	36.8	484	1.9	**O90**
38	37.0	486	0.9	**O71**
37	38.1	501	3.5	**O112**
33	42.1	553	1.6	**O90**
33	42.5	558	0.8	**O71**
33	43.1	566	3.1	**O112**
31	45.1	593	1.5	**O90**
30	46.6	613	2.9	**O112**
27	52.2	687	1.3	**O90**
26	53.2	700	2.5	**O112**
25	57.1	751	2.3	**O112**
24	59.5	782	1.2	**O90**
22	64.6	849	2.1	**O112**
19	73.1	961	0.9	**O90**
18	76.8	1010	1.7	**O112**
17	80.5	1058	0.9	**O90**
16	85.2	1120	1.6	**O112**
15	92.3	1213	0.8	**O90**
15	93.7	1231	1.4	**O112**
14	102.5	1348	1.3	**O112**
13	110.9	1458	1.2	**O112**
11	125.2	1646	1.1	**O112**
10	135.6	1783	1.0	**O112**
9.0	154.8	2036	0.9	**O112**
8.4	166.0	2183	0.8	**O112**
n_1 = 900 min^{-1}				
131	6.8	140	2.1	**O71**
125	7.2	147	3.1	**O90**
114	7.9	161	1.2	**O63**
107	8.4	171	1.8	**O71**
100	9.0	184	2.7	**O90**
91	9.9	202	1.7	**O71**
89	10.1	207	2.7	**O90**
88	10.3	210	1.0	**O63**
79	11.4	232	1.6	**O71**
79	11.4	234	2.4	**O90**
79	11.4	234	0.9	**O63**
77	11.7	240	4.0	**O112**
69	13.0	265	2.2	**O90**
69	13.1	267	3.7	**O112**
68	13.3	271	0.9	**O63**
65	13.9	284	1.5	**O71**
64	14.0	285	2.6	**O90**
61	14.8	303	0.8	**O63**
57	15.7	321	2.4	**O90**
55	16.4	336	1.3	**O71**
51	17.7	362	2.3	**O90**
50	17.9	366	3.8	**O112**
48	18.7	382	1.2	**O71**
45	20.1	411	2.1	**O90**
43	20.9	427	3.4	**O112**
39	22.9	468	1.0	**O71**

7.8 Prestazioni motoriduttori OM - OC

7.8 OM - OC Gearmotors performances

7.8 Leistungen der OM - OC Getriebemotoren

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 900 min^{-1}				
39	22.9	469	1.9	**O90**
38	23.6	482	3.2	**O112**
35	25.5	522	3.1	**O112**
35	25.6	523	1.9	**O90**
33	27.0	552	1.0	**O71**
31	28.8	588	1.8	**O90**
31	29.3	600	3.2	**O112**
30	30.5	624	0.8	**O71**
28	32.5	664	1.6	**O90**
28	32.7	669	2.8	**O112**
24	36.8	753	1.4	**O90**
24	38.1	780	2.4	**O112**
21	42.1	860	1.2	**O90**
21	43.1	881	2.2	**O112**
20	45.1	922	1.1	**O90**
19	46.6	954	2.0	**O112**
17	52.2	1068	1.0	**O90**
17	53.2	1089	1.7	**O112**
16	57.1	1168	1.6	**O112**
15	59.5	1216	0.9	**O90**
14	64.6	1320	1.4	**O112**
12	76.8	1572	1.2	**O112**
11	85.2	1743	1.1	**O112**
10	93.7	1916	1.0	**O112**
8.8	102.5	2097	0.9	**O112**
8.1	110.9	2268	0.8	**O112**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
409	6.8	61.3	3.6	**O71**
355	7.9	70.7	2.0	**O63***
334	8.4	75.2	3.3	**O71**
283	9.9	88.7	2.9	**O71**
277	10.1	90.7	3.9	**O90**
273	10.3	91.9	1.6	**O63***
247	11.4	102	2.8	**O71**
245	11.4	102	3.9	**O90**
245	11.4	103	1.5	**O63***
216	13.0	116	3.5	**O90**
211	13.3	119	1.5	**O63***
201	13.9	125	2.6	**O71**
189	14.8	133	1.4	**O63***
171	16.4	147	2.2	**O71**
164	17.1	153	1.2	**O63***
158	17.7	159	3.6	**O90**
150	18.7	167	2.0	**O71**
144	19.5	175	1.1	**O63***
139	20.1	180	3.4	**O90**
122	22.9	205	1.7	**O71**
122	22.9	206	3.1	**O90**
118	23.7	212	1.0	**O63***
109	25.6	229	3.1	**O90**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
104	27.0	242	1.5	**O71**
102	27.4	246	0.9	**O63***
97	28.8	258	2.9	**O90**
92	30.5	273	1.4	**O71**
90	31.2	279	0.8	**O63***
86	32.5	291	2.5	**O90**
76	36.8	330	2.2	**O90**
76	37.0	332	1.1	**O71**
67	42.1	377	2.0	**O90**
66	42.5	381	1.0	**O71**
65	43.1	386	3.8	**O112**
62	45.1	404	1.8	**O90**
60	46.6	418	3.5	**O112**
57	49.2	441	0.9	**O71**
54	52.2	468	1.6	**O90**
53	53.2	477	0.8	**O71**
53	53.2	477	3.0	**O112**
49	57.1	512	2.8	**O112**
47	59.5	533	1.4	**O90**
43	64.6	579	2.5	**O112**
38	73.1	655	1.1	**O90**
36	76.8	689	2.1	**O112**
35	80.5	721	1.0	**O90**
33	85.2	764	1.9	**O112**
30	92.3	827	0.9	**O90**
30	93.7	840	1.7	**O112**
30	94.4	846	0.9	**O90**
27	102.5	919	1.6	**O112**
26	106.5	954	0.8	**O90**
25	110.9	994	1.5	**O112**
22	125.2	1123	1.3	**O112**
21	135.6	1216	1.2	**O112**
18	154.8	1388	1.0	**O112**
17	166.0	1488	1.0	**O112**
14	194.9	1747	0.8	**O112**
n_1 = 1400 min^{-1}				
205	6.8	123	2.2	**O71**
195	7.2	129	3.3	**O90**
177	7.9	141	1.2	**O63***
167	8.4	150	2.0	**O71**
155	9.0	161	2.8	**O90**
141	9.9	177	1.8	**O71**
138	10.1	181	2.8	**O90**
137	10.3	184	1.0	**O63***
123	11.4	203	1.7	**O71**
123	11.4	205	2.5	**O90**
122	11.4	205	0.9	**O63***
119	11.7	210	4.0	**O112**
108	13.0	232	2.3	**O90**
107	13.1	234	3.8	**O112**
106	13.3	238	0.9	**O63***
101	13.9	249	1.6	**O71**
100	14.0	250	2.4	**O90**

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
95	14.8	265	0.8	**O63***
89	15.7	281	2.6	**O90**
85	16.4	294	1.4	**O71**
79	17.7	317	2.4	**O90**
78	17.9	321	3.8	**O112**
75	18.7	335	1.2	**O71**
70	20.1	360	2.2	**O90**
67	20.9	374	3.4	**O112**
61	22.9	410	1.0	**O71**
61	22.9	411	2.0	**O90**
59	23.6	422	3.2	**O112**
55	25.5	458	3.1	**O112**
55	25.6	459	2.0	**O90**
52	27.0	484	1.0	**O71**
49	28.8	516	1.8	**O90**
48	29.3	526	3.3	**O112**
46	30.5	547	0.8	**O71**
43	32.5	582	1.6	**O90**
43	32.7	586	3.0	**O112**
38	36.8	660	1.4	**O90**
37	38.1	684	2.6	**O112**
33	42.1	754	1.2	**O90**
33	43.1	772	2.3	**O112**
31	45.1	808	1.1	**O90**
30	46.6	836	2.1	**O112**
27	52.2	936	1.0	**O90**
26	53.2	954	1.8	**O112**
25	57.1	1024	1.7	**O112**
24	59.5	1066	0.9	**O90**
22	64.6	1157	1.5	**O112**
18	76.8	1378	1.3	**O112**
16	85.2	1528	1.1	**O112**
15	93.7	1679	1.0	**O112**
14	102.5	1838	1.0	**O112**
13	110.9	1988	0.9	**O112**
11	125.2	2245	0.8	**O112**
n_1 = 900 min^{-1}				
125	7.2	201	2.3	**O90**
118	7.6	213	3.6	**O112**
101	8.9	247	3.3	**O112**
100	9.0	251	2.0	**O90**
89	10.1	282	1.9	**O90**
79	11.4	319	1.8	**O90**
77	11.7	327	3.0	**O112**
69	13.0	361	1.6	**O90**
69	13.1	365	2.7	**O112**
64	14.0	389	1.9	**O90**
57	15.7	437	1.8	**O90**
56	16.1	448	2.9	**O112**
51	17.7	494	1.7	**O90**
50	17.9	499	2.8	**O112**
45	20.1	560	1.6	**O90**
43	20.9	582	2.5	**O112**

7.8 Prestazioni motoriduttori OM - OC

7.8 OM - OC Gearmotors performances

7.8 Leistungen der OM - OC Getriebemotoren

3 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 900 min^{-1}				
41	22.2	619	3.0	**O112**
39	22.9	640	1.4	**O90**
38	23.6	657	2.3	**O112**
35	25.5	712	2.2	**O112**
35	25.6	714	1.4	**O90**
31	28.8	802	1.3	**O90**
31	29.3	818	2.3	**O112**
28	32.5	905	1.1	**O90**
28	32.7	912	2.1	**O112**
24	36.8	1027	1.0	**O90**
24	38.1	1063	1.8	**O112**
21	42.1	1173	0.9	**O90**
21	43.1	1201	1.6	**O112**
20	45.1	1258	0.8	**O90**
19	46.6	1301	1.5	**O112**
17	53.2	1485	1.3	**O112**
16	57.1	1592	1.2	**O112**
14	64.6	1800	1.1	**O112**
12	76.8	2143	0.9	**O112**
11	85.2	2377	0.8	**O112**

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
409	6.8	81.8	2.7	**O71***
389	7.2	86.0	3.8	**O90**
355	7.9	94.3	1.5	**O63***
334	8.4	100	2.5	**O71***
311	9.0	108	3.3	**O90**
283	9.9	118	2.2	**O71***
277	10.1	121	3.0	**O90**
273	10.3	123	1.2	**O63***
247	11.4	136	2.1	**O71***
245	11.4	137	2.9	**O90**
245	11.4	137	1.1	**O63***
216	13.0	155	2.6	**O90**
211	13.3	158	1.1	**O63***
201	13.9	166	1.9	**O71***
201	14.0	167	3.2	**O90**
189	14.8	177	1.0	**O63***
179	15.7	187	3.0	**O90**
171	16.4	196	1.7	**O71***
164	17.1	205	0.9	**O63**
158	17.7	212	2.7	**O90**
150	18.7	223	1.5	**O71***
144	19.5	233	0.8	**O63***
139	20.1	240	2.5	**O90**
122	22.9	273	1.3	**O71***
122	22.9	274	2.3	**O90**
119	23.6	282	3.9	**O112**
118	23.7	283	0.8	**O63***
110	25.5	305	3.7	**O112**

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
109	25.6	306	2.3	**O90**
104	27.0	323	1.2	**O71***
97	28.8	344	2.2	**O90**
95	29.3	351	4.0	**O112**
92	30.5	365	1.0	**O71***
86	32.5	388	1.9	**O90**
86	32.7	391	3.7	**O112**
76	36.8	440	1.7	**O90**
76	37.0	442	0.8	**O71***
73	38.1	456	3.2	**O112**
67	42.1	503	1.5	**O90**
65	43.1	515	2.8	**O112**
62	45.1	539	1.4	**O90**
60	46.6	557	2.6	**O112**
54	52.2	624	1.2	**O90**
53	53.2	636	2.3	**O112**
49	57.1	682	2.1	**O112**
47	59.5	711	1.0	**O90**
43	64.6	771	1.9	**O112**
38	73.1	874	0.8	**O90**
36	76.8	918	1.6	**O112**
35	80.5	962	0.8	**O90**
33	85.2	1019	1.4	**O112**
30	93.7	1119	1.3	**O112**
27	102.5	1225	1.2	**O112**
25	110.9	1325	1.1	**O112**
22	125.2	1497	1.0	**O112**
21	135.6	1621	0.9	**O112**
18	154.8	1850	0.8	**O112**
n_1 = 1400 min^{-1}				
205	6.8	164	1.7	**O71***
195	7.2	172	2.5	**O90**
183	7.6	182	3.7	**O112**
177	7.9	189	0.9	**O63***
167	8.4	200	1.5	**O71***
158	8.9	212	3.4	**O112**
155	9.0	215	2.1	**O90**
141	9.9	237	1.4	**O71***
138	10.1	242	2.1	**O90**
137	10.3	245	0.8	**O63***
123	11.4	271	1.3	**O71***
123	11.4	273	1.9	**O90**
119	11.7	280	3.0	**O112**
108	13.0	310	1.7	**O90**
107	13.1	313	2.8	**O112**
101	13.9	332	1.2	**O71***
100	14.0	334	1.8	**O90**
89	15.7	375	1.9	**O90**
87	16.1	384	3.0	**O112**
85	16.4	392	1.0	**O71**
79	17.7	423	1.8	**O90**
78	17.9	428	2.9	**O112**
75	18.7	446	0.9	**O71***

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
70	20.1	480	1.6	**O90**
67	20.9	499	2.6	**O112**
63	22.2	531	3.3	**O112**
61	22.9	547	0.8	**O71***
61	22.9	548	1.5	**O90**
59	23.6	563	2.4	**O112**
55	25.5	610	2.3	**O112**
55	25.6	612	1.5	**O90**
49	28.8	687	1.3	**O90**
48	29.3	701	2.5	**O112**
43	32.5	776	1.2	**O90**
43	32.7	782	2.2	**O112**
38	36.8	880	1.0	**O90**
37	38.1	912	1.9	**O112**
33	42.1	1005	0.9	**O90**
33	43.1	1029	1.7	**O112**
31	45.1	1078	0.8	**O90**
30	46.6	1115	1.6	**O112**
26	53.2	1273	1.4	**O112**
25	57.1	1365	1.3	**O112**
22	64.6	1543	1.1	**O112**
18	76.8	1837	1.0	**O112**
16	85.2	2037	0.9	**O112**
15	93.7	2239	0.8	**O112**
n_1 = 900 min^{-1}				
125	7.2	268	1.7	**O90**
118	7.6	284	2.7	**O112**
101	8.9	330	2.5	**O112**
100	9.0	335	1.5	**O90**
89	10.1	376	1.5	**O90**
79	11.4	425	1.3	**O90**
77	11.7	436	2.2	**O112**
69	13.0	482	1.2	**O90**
69	13.1	486	2.1	**O112**
64	14.0	519	1.4	**O90**
57	15.7	583	1.3	**O90**
56	16.1	597	2.2	**O112**
51	17.7	658	1.2	**O90**
50	17.9	666	2.1	**O112**
45	20.1	747	1.2	**O90**
43	20.9	776	1.9	**O112**
41	22.2	825	2.2	**O112**
39	22.9	853	1.1	**O90**
38	23.6	876	1.8	**O112**
35	25.5	949	1.7	**O112**
35	25.6	952	1.0	**O90**
31	28.8	1069	1.0	**O90**
31	29.3	1091	1.7	**O112**
28	32.5	1207	0.9	**O90**
28	32.7	1216	1.6	**O112**
24	36.8	1369	0.8	**O90**
24	38.1	1418	1.3	**O112**
21	43.1	1601	1.2	**O112**
19	46.6	1734	1.1	**O112**

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

4 kW

n_1 = 900 min^{-1}				
17	53.2	1980	1.0	**O112**
16	57.1	2123	0.9	**O112**
14	64.6	2400	0.8	**O112**

5.5 kW

n_1 = 2800 min^{-1}				
389	7.2	118	2.7	**O90***
367	7.6	125	4.3	**O112**
316	8.9	146	4.0	**O112**
311	9.0	148	2.4	**O90***
277	10.1	166	2.1	**O90***
245	11.4	188	2.1	**O90***
239	11.7	193	3.6	**O112**
216	13.0	213	1.9	**O90***
214	13.1	215	3.4	**O112**
201	14.0	229	2.3	**O90***
179	15.7	258	2.2	**O90***
174	16.1	264	3.6	**O112**
158	17.7	291	2.0	**O90***
156	17.9	294	3.4	**O112**
139	20.1	330	1.8	**O90***
134	20.9	343	3.0	**O112**
126	22.2	365	3.7	**O112**
122	22.9	377	1.7	**O90***
119	23.6	387	2.8	**O112**
110	25.5	419	2.7	**O112**
109	25.6	421	1.7	**O90***
97	28.8	473	1.6	**O90***
95	29.3	482	2.9	**O112**
86	32.5	533	1.4	**O90***
86	32.7	538	2.7	**O112**
76	36.8	605	1.2	**O90***
73	38.1	627	2.3	**O112**
67	42.1	691	1.1	**O90***
65	43.1	708	2.0	**O112**
62	45.1	741	1.0	**O90***
60	46.6	766	1.9	**O112**
54	52.2	858	0.9	**O90***
53	53.2	875	1.7	**O112**
49	57.1	938	1.5	**O112**
47	59.5	977	0.8	**O90***
43	64.6	1061	1.4	**O112**
36	76.8	1263	1.1	**O112**
33	85.2	1401	1.0	**O112**
30	93.7	1539	0.9	**O112**
27	102.5	1685	0.9	**O112**
25	110.9	1822	0.8	**O112**

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

5.5 kW

n_1 = 1400 min^{-1}				
195	7.2	237	1.8	**O90***
183	7.6	251	2.7	**O112**
158	8.9	292	2.5	**O112**
155	9.0	296	1.5	**O90***
138	10.1	333	1.5	**O90***
123	11.4	375	1.4	**O90***
119	11.7	386	2.2	**O112**
108	13.0	426	1.3	**O90***
107	13.1	430	2.1	**O112**
100	14.0	459	1.3	**O90***
89	15.7	515	1.4	**O90***
87	16.1	528	2.2	**O112**
79	17.7	582	1.3	**O90***
78	17.9	588	2.1	**O112**
70	20.1	660	1.2	**O90***
67	20.9	686	1.9	**O112**
63	22.2	730	2.4	**O112**
61	22.9	754	1.1	**O90***
59	23.6	775	1.7	**O112**
55	25.5	839	1.7	**O112**
55	25.6	841	1.1	**O90***
49	28.8	945	1.0	**O90***
48	29.3	965	1.8	**O112**
43	32.5	1067	0.9	**O90***
43	32.7	1075	1.6	**O112**
38	36.8	1210	0.8	**O90***
37	38.1	1253	1.4	**O112**
33	43.1	1415	1.2	**O112**
30	46.6	1533	1.1	**O112**
26	53.2	1750	1.0	**O112**
25	57.1	1876	0.9	**O112**
22	64.6	2122	0.8	**O112**

n_1 = 900 min^{-1}				
125	7.2	368	1.2	**O90***
118	7.6	390	1.9	**O112**
101	8.9	454	1.8	**O112**
100	9.0	461	1.1	**O90***
89	10.1	518	1.1	**O90***
79	11.4	584	1.0	**O90***
77	11.7	600	1.6	**O112**
69	13.0	663	0.9	**O90***
69	13.1	668	1.5	**O112**
64	14.0	713	1.0	**O90***
57	15.7	802	1.0	**O90***
56	16.1	821	1.6	**O112**
51	17.7	905	0.9	**O90***
50	17.9	915	1.5	**O112**
45	20.1	1027	0.8	**O90***
43	20.9	1067	1.4	**O112**
41	22.2	1135	1.6	**O112**
39	22.9	1173	0.8	**O90***
38	23.6	1205	1.3	**O112**
35	25.5	1305	1.2	**O112**

7.8 Leistungen der OM - OC Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC

5.5 kW

n_1 = 900 min^{-1}				
31	29.3	1500	1.3	**O112**
28	32.7	1672	1.1	**O112**
24	38.1	1950	1.0	**O112**
21	43.1	2202	0.9	**O112**
19	46.6	2385	0.8	**O112**

7.5 kW

n_1 = 2800 min^{-1}				
389	7.2	161	2.0	**O90***
367	7.6	171	3.2	**O112***
316	8.9	199	2.9	**O112***
311	9.0	202	1.7	**O90***
277	10.1	227	1.6	**O90***
245	11.4	256	1.6	**O90***
239	11.7	263	2.6	**O112***
216	13.0	290	1.4	**O90***
214	13.1	293	2.5	**O112***
201	14.0	313	1.7	**O90***
179	15.7	351	1.6	**O90***
174	16.1	360	2.6	**O112***
158	17.7	397	1.4	**O90***
156	17.9	401	2.5	**O112***
139	20.1	450	1.4	**O90***
134	20.9	468	2.2	**O112***
126	22.2	497	2.7	**O112***
122	22.9	514	1.2	**O90***
119	23.6	528	2.1	**O112***
110	25.5	572	2.0	**O112***
109	25.6	574	1.2	**O90***
97	28.8	644	1.1	**O90***
95	29.3	658	2.2	**O112***
86	32.5	727	1.0	**O90***
86	32.7	733	2.0	**O112***
76	36.8	825	0.9	**O90***
73	38.1	855	1.7	**O112***
67	42.1	943	0.8	**O90***
65	43.1	965	1.5	**O112***
60	46.6	1045	1.4	**O112***
53	53.2	1193	1.2	**O112***
49	57.1	1279	1.1	**O112***
43	64.6	1446	1.0	**O112***
36	76.8	1722	0.8	**O112***
33	85.2	1910	0.8	**O112***

n_1 = 1400 min^{-1}				
195	7.2	323	1.3	**O90***
183	7.6	342	2.0	**O112***
158	8.9	398	1.8	**O112***
155	9.0	404	1.1	**O90***
138	10.1	454	1.1	**O90***
123	11.4	512	1.0	**O90***

7.8 Prestazioni motoriduttori OM - OC

7.8 OM - OC Gearmotors performances

7.8 Leistungen der OM - OC Getriebemotoren

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 1400 min^{-1}				
119	11.7	526	1.6	**O112***
108	13.0	581	0.9	**O90***
107	13.1	586	1.5	**O112***
100	14.0	625	0.9	**O90***
89	15.7	703	1.0	**O90***
87	16.1	720	1.6	**O112***
79	17.7	793	0.9	**O90***
78	17.9	802	1.5	**O112***
70	20.1	900	0.9	**O90***
67	20.9	935	1.4	**O112***
63	22.2	995	1.8	**O112***
61	22.9	1028	0.8	**O90***
59	23.6	1056	1.3	**O112***
55	25.5	1144	1.2	**O112***
55	25.6	1147	0.8	**O90***
48	29.3	1315	1.3	**O112***
43	32.7	1466	1.2	**O112***
37	38.1	1709	1.0	**O112***
33	43.1	1930	0.9	**O112***
30	46.6	2090	0.8	**O112***
n_1 = 900 min^{-1}				
118	7.6	532	1.4	**O112***
101	8.9	619	1.3	**O112***
77	11.7	818	1.2	**O112***
69	13.1	912	1.1	**O112***
56	16.1	1120	1.2	**O112***
50	17.9	1248	1.1	**O112***
43	20.9	1455	1.0	**O112***
41	22.2	1548	1.2	**O112***
38	23.6	1643	0.9	**O112***
35	25.5	1780	0.9	**O112***
31	29.3	2046	0.9	**O112***
28	32.7	2280	0.8	**O112***

9.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
389	7.2	198	1.6	**O90***
367	7.6	210	2.6	**O112***
316	8.9	244	2.4	**O112***
311	9.0	248	1.4	**O90***
277	10.1	278	1.3	**O90***
245	11.4	314	1.3	**O90***
239	11.7	322	2.1	**O112***
216	13.0	356	1.1	**O90***
214	13.1	359	2.0	**O112***
201	14.0	384	1.4	**O90***
179	15.7	431	1.3	**O90***
174	16.1	441	2.1	**O112***
158	17.7	486	1.2	**O90***
156	17.9	492	2.0	**O112***

9.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
139	20.1	552	1.1	**O90***
134	20.9	574	1.8	**O112***
126	22.2	610	2.2	**O112***
122	22.9	630	1.0	**O90***
119	23.6	648	1.7	**O112***
110	25.5	702	1.6	**O112***
109	25.6	703	1.0	**O90***
97	28.8	791	0.9	**O90***
95	29.3	807	1.8	**O112***
86	32.5	892	0.8	**O90***
86	32.7	899	1.6	**O112***
73	38.1	1048	1.4	**O112***
65	43.1	1184	1.2	**O112***
60	46.6	1282	1.1	**O112***
53	53.2	1464	1.0	**O112***
49	57.1	1569	0.9	**O112***
43	64.6	1774	0.8	**O112***
n_1 = 1400 min^{-1}				
195	7.2	396	1.1	**O90***
183	7.6	420	1.6	**O112***
158	8.9	488	1.5	**O112***
155	9.0	495	0.9	**O90***
138	10.1	557	0.9	**O90***
123	11.4	628	0.8	**O90***
119	11.7	645	1.3	**O112***
108	13.0	713	0.8	**O90***
107	13.1	719	1.2	**O112***
100	14.0	767	0.8	**O90***
89	15.7	862	0.8	**O90***
87	16.1	883	1.3	**O112***
79	17.7	973	0.8	**O90***
78	17.9	984	1.2	**O112***
67	20.9	1147	1.1	**O112***
63	22.2	1220	1.4	**O112***
59	23.6	1296	1.0	**O112***
55	25.5	1403	1.0	**O112***
48	29.3	1613	1.1	**O112***
43	32.7	1798	1.0	**O112***
37	38.1	2097	0.8	**O112***

11 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
389	7.2	237	1.4	**O90***
367	7.6	251	2.2	**O112***
316	8.9	292	2.0	**O112***
311	9.0	296	1.2	**O90***
277	10.1	333	1.1	**O90***
245	11.4	375	1.1	**O90***
239	11.7	386	1.8	**O112***
216	13.0	426	1.0	**O90***

11 kW

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
n_1 = 2800 min^{-1}				
214	13.1	430	1.7	**O112***
201	14.0	459	1.2	**O90***
179	15.7	515	1.1	**O90***
174	16.1	528	1.8	**O112***
158	17.7	582	1.0	**O90***
156	17.9	588	1.7	**O112***
139	20.1	660	0.9	**O90***
134	20.9	686	1.5	**O112***
126	22.2	730	1.9	**O112***
122	22.9	754	0.8	**O90***
119	23.6	775	1.4	**O112***
110	25.5	839	1.3	**O112***
109	25.6	841	0.8	**O90***
97	28.8	945	0.8	**O90***
95	29.3	965	1.5	**O112***
86	32.7	1075	1.3	**O112***
73	38.1	1253	1.2	**O112***
65	43.1	1415	1.0	**O112***
60	46.6	1533	0.9	**O112***
53	53.2	1750	0.8	**O112***
49	57.1	1876	0.8	**O112***
n_1 = 1400 min^{-1}				
195	7.2	473	0.9	**O90***
183	7.6	502	1.3	**O112***
158	8.9	583	1.2	**O112***
155	9.0	592	0.8	**O90***
138	10.1	665	0.8	**O90***
119	11.7	771	1.1	**O112***
107	13.1	859	1.0	**O112***
87	16.1	1056	1.1	**O112***
78	17.9	1177	1.0	**O112***
67	20.9	1372	0.9	**O112***
63	22.2	1459	1.2	**O112***
59	23.6	1549	0.9	**O112***
55	25.5	1678	0.8	**O112***
48	29.3	1929	0.9	**O112***
43	32.7	2150	0.8	**O112***
n_1 = 900 min^{-1}				
118	7.6	781	1.0	**O112***
101	8.9	907	0.9	**O112***
77	11.7	1200	0.8	**O112***
56	16.1	1642	0.8	**O112***
50	17.9	1830	0.8	**O112***
41	22.2	2270	0.8	**O112***

7.8 Prestazioni motoriduttori OM - OC

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
15 kW				
n_1 = 2800 min^{-1}				
367	7.6	342	1.6	**O112***
316	8.9	398	1.5	**O112***
239	11.7	526	1.3	**O112***
214	13.1	586	1.2	**O112***
174	16.1	720	1.3	**O112***
156	17.9	802	1.2	**O112***
134	20.9	935	1.1	**O112***
126	22.2	995	1.4	**O112***
119	23.6	1056	1.0	**O112***
110	25.5	1144	1.0	**O112***
95	29.3	1315	1.1	**O112***
86	32.7	1466	1.0	**O112***
73	38.1	1709	0.8	**O112***
65	43.1	1930	0.8	**O112***
n_1 = 1400 min^{-1}				
183	7.6	684	1.0	**O112***
158	8.9	795	0.9	**O112***
119	11.7	1052	0.8	**O112***
107	13.1	1172	0.8	**O112***
87	16.1	1440	0.8	**O112***
78	17.9	1605	0.8	**O112***
63	22.2	1990	0.9	**O112***

N.B.
Tutte le potenze indicate si riferiscono alla potenza meccanica dei riduttori.
Per i riduttori contrassegnati con **(*)** è opportuno effettuare la verifica della potenza limite termico secondo le indicazioni riportate nel par. 1.7.

7.8 OM - OC Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	OM OC
18.5 kW				
n_1 = 2800 min^{-1}				
367	7.6	422	1.3	**O112***
316	8.9	490	1.2	**O112***
239	11.7	648	1.1	**O112***
214	13.1	723	1.0	**O112***
174	16.1	888	1.1	**O112***
156	17.9	989	1.0	**O112***
134	20.9	1154	0.9	**O112***
126	22.2	1227	1.1	**O112***
119	23.6	1303	0.8	**O112***
110	25.5	1411	0.8	**O112***
95	29.3	1622	0.9	**O112***
86	32.7	1808	0.8	**O112***

NOTE
The indicated power is based on the mechanical capacities of the gearboxes.
For the gearboxes marked with (*) it is aslo necessary to obey the therminal capacity like shown on chapter 1.7.

7.8 Leistungen der OM - OC Getriebemotoren

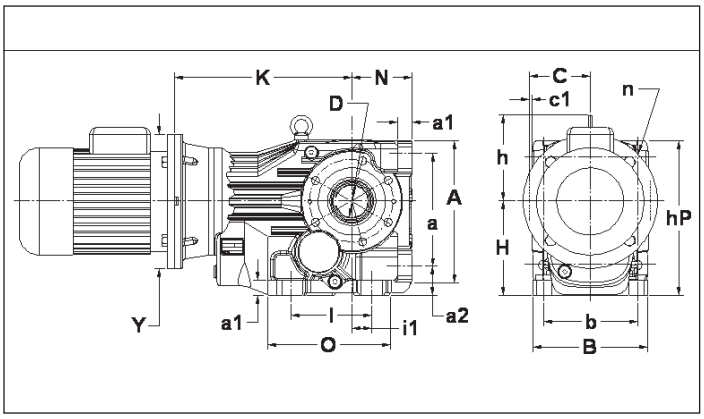
HINWEIS.
Die Leistungsangaben beziehen sich auf die mecanische Belasbarkeit der Getriebe.
Bei den mit (*) gekennzeichneten Getrieben ist außerdem die thermische Leistungsgrenze zu beachten (S. kAP. 1.7).

7.9 Dimensioni

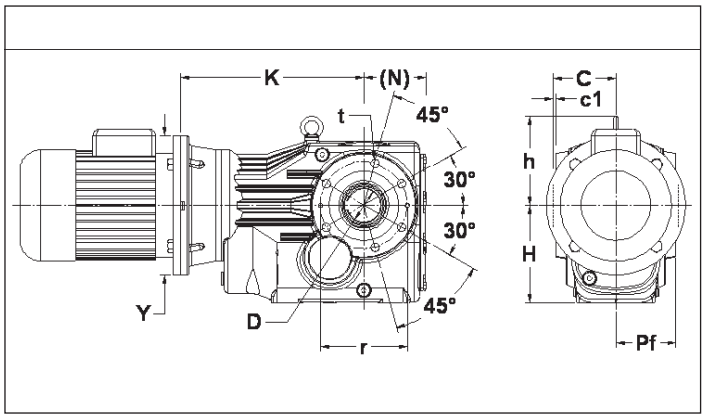
7.9 Dimensions

7.9 Abmessungen

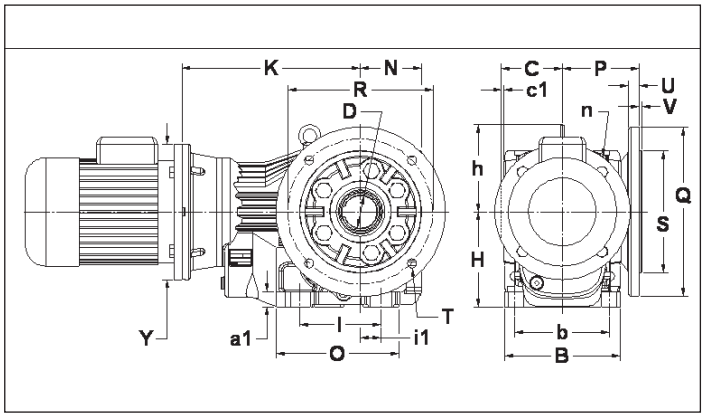
OMP



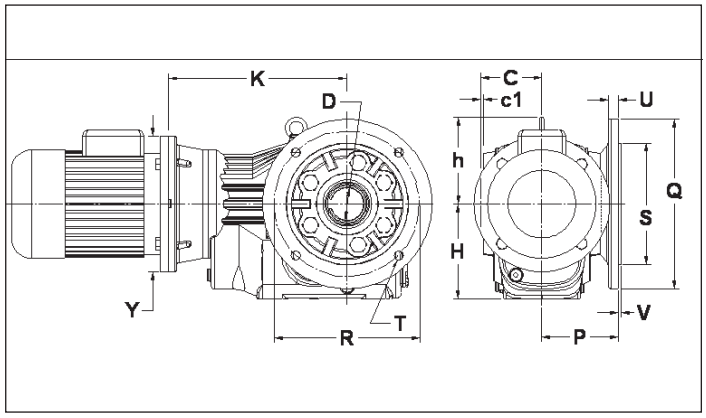
OMF



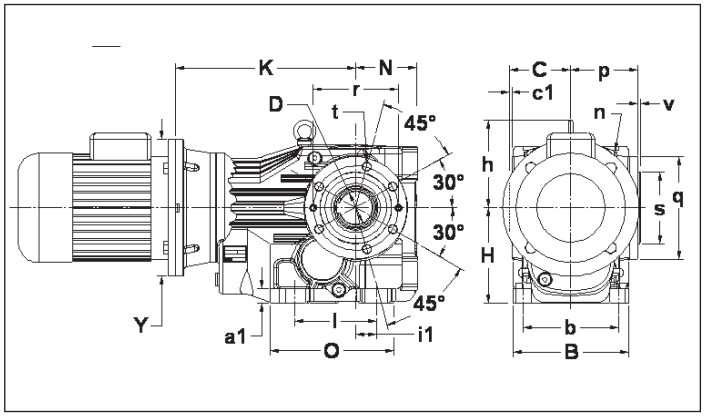
OMP F1 - F2



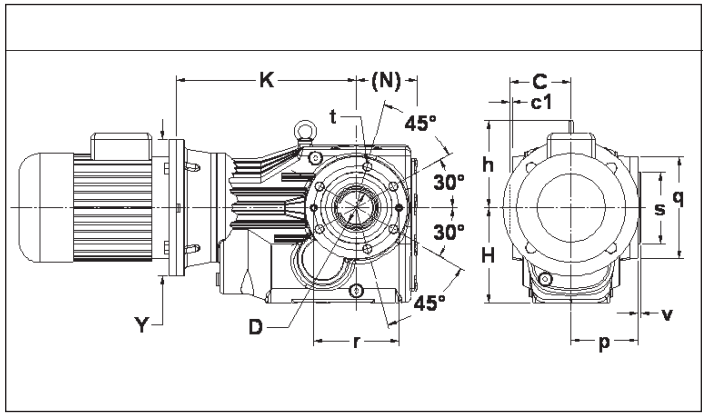
OMF F1 - F2



OMP P



OMF P



Tab. 7.6

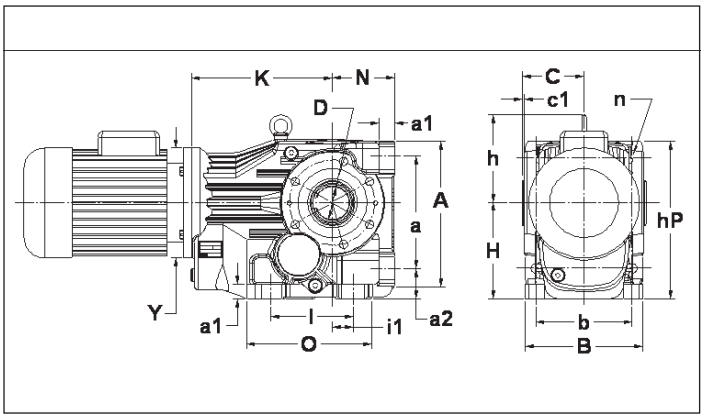
OM OC OR	a	A	a1	a2	b	B	C	c1	d j6	D H7	E	h	hP	H	i1	l	m	M	n
63	115	150	14	32	100	120	60	2,5	16	30 (25) (28)	40	100	170	100	28	110	M6	210	11
71	130	170	18	37	120	142	75	3	16	35 (30) (32)	40	108	183	112	35	130	M6	286	11
90	160	212	22	45	140	170	90	3.5	19	40 (42) (45) (48)	40	129	232	140	30	120	M6	323	14
112	200	264	25	55	165	200	105	4	24	50 (55)	50	151	294	180	40	150	M8	378	17.5

OM OC OR	N	O	p	P	Pf	q	r	s g6	t	v		Q	R	S g6	T	U	V
63	63	147	69	84	57.5	105	90	80	N°6 M6x12	3	**F1**	160	130	110	N°4 ϕ 9	10	3.5
											F2	-	-	-	-	-	-
71	71	165	83	100	72	120	100	80	N°6 M8x15	3	**F1**	200	165	130	N°4 ϕ 11	12	3.5
											F2	160	130	110	N°4 ϕ 9x5	10	3.5
90	90	182	98.5	113	86.5	150	125	105	N°6 M12x18	3.5	**F1**	250	215	180	N°4 ϕ 13.5	15	4
											F2	-	-	-	-	-	-
112	112	215	115	142	101	175	150	125	N°6 M14x23	3.5	**F1**	300	265	230	N°4 ϕ 13.5	16	4
											F2	-	-	-	-	-	-

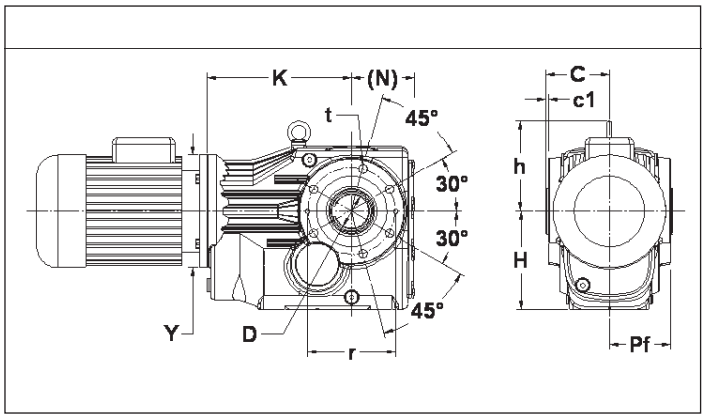
Tab. 7.7

	IEC	63			71			90			112		
		Y	K (OM.)	K (OC.)	Y	K (OM.)	K (OC.)	Y	K (OM.)	K (OC.)	Y	K (OM.)	K (OC.)
OM. OC.	**B5**	140	193	154 (Y=140)	140	217	178 (Y=140)	160	249	205 (Y=160)	200	304	252 (Y=200)
		160	193		160	217		200	264		250	319	
		200	213		200	237		250	274		300	340	
		250	223		250	247		300	300		350	370	
	B14	120	213	-	120	237	-	200	300	-	-	-	-
		140	213	-	140	237	-	160	274	-	-	-	-
		160	223	-	160	247	-	-	-	-	-	-	-

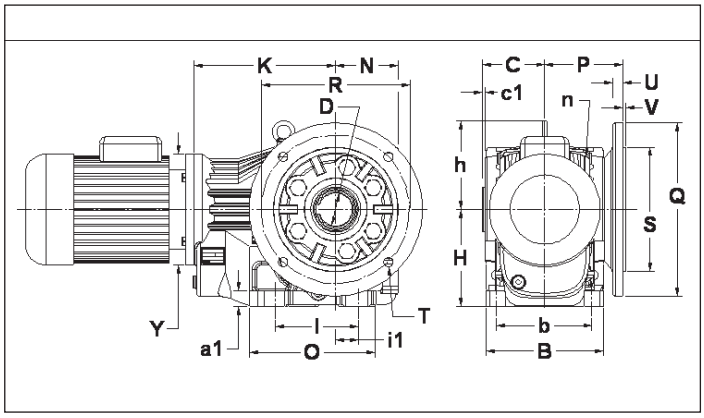
OCP



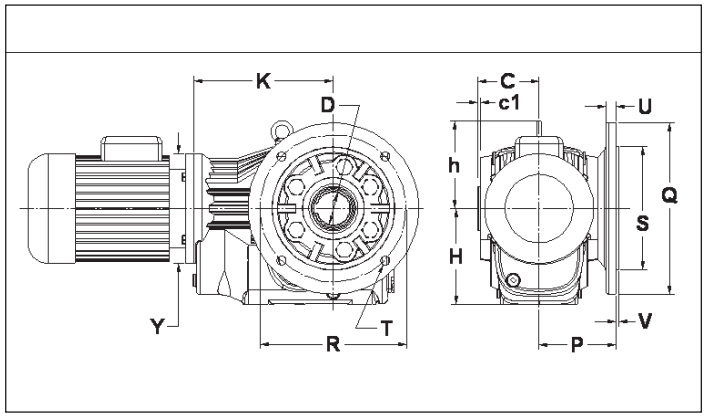
OCF



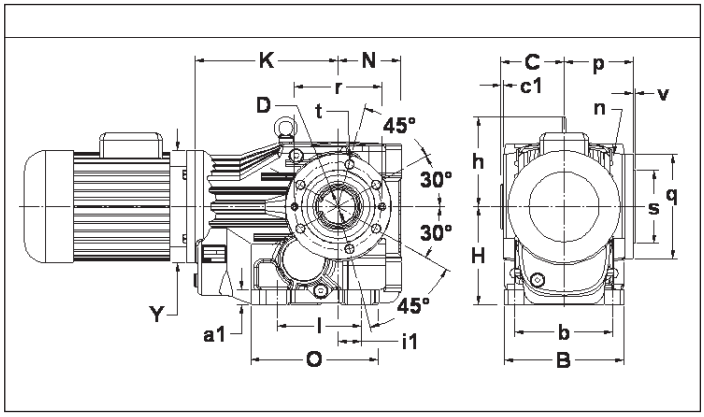
OCP F1 - F2



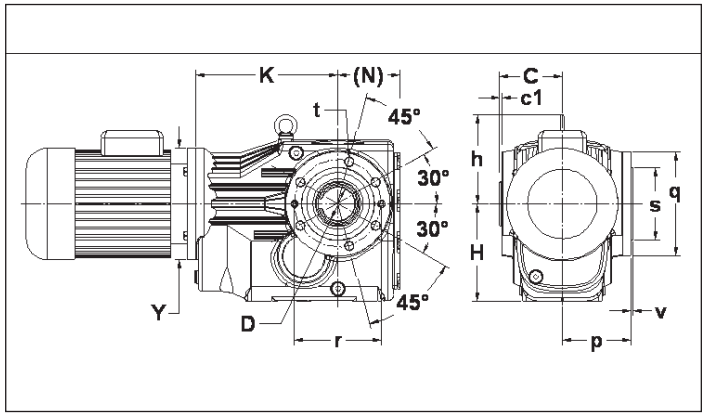
OCF F1 - F2



OCP P



OCF P



Tab. 7.6

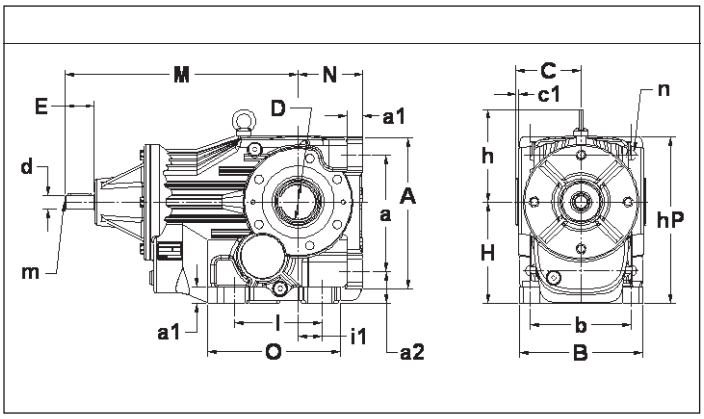
OM OC OR	a	A	a1	a2	b	B	C	c1	d j6	D H7	E	h	hP	H	i1	l	m	M	n
63	115	150	14	32	100	120	60	2,5	16	30 (25) (28)	40	100	170	100	28	110	M6	210	11
71	130	170	18	37	120	142	75	3	16	35 (30) (32)	40	108	183	112	35	130	M6	286	11
90	160	212	22	45	140	170	90	3.5	19	40 (42) (45) (48)	40	129	232	140	30	120	M6	323	14
112	200	264	25	55	165	200	105	4	24	50 (55)	50	151	294	180	40	150	M8	378	17.5

OM OC OR	N	O	p	P	Pf	q	r	s g6	t	v		Q	R	S g6	T	U	V
63	63	147	69	84	57.5	105	90	80	N°6 M6x12	3	**F1**	160	130	110	N°4 ϕ 9	10	3.5
											F2	-	-	-	-	-	-
71	71	165	83	100	72	120	100	80	N°6 M8x15	3	**F1**	200	165	130	N°4 ϕ 11	12	3.5
											F2	160	130	110	N°4 ϕ 9x5	10	3.5
90	90	182	98.5	113	86.5	150	125	105	N°6 M12x18	3.5	**F1**	250	215	180	N°4 ϕ 13.5	15	4
											F2	-	-	-	-	-	-
112	112	215	115	142	101	175	150	125	N°6 M14x23	3.5	**F1**	300	265	230	N°4 ϕ 13.5	16	4
											F2	-	-	-	-	-	-

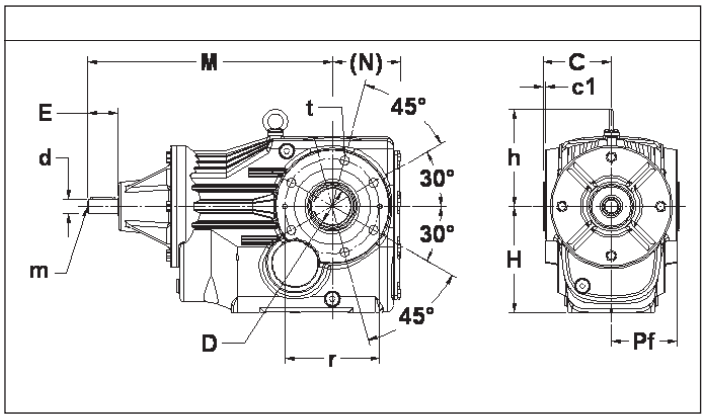
Tab. 7.7

	IEC	63			71			90			112		
		Y	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)
OM. OC.	**B5**	140	193	154 (Y=140)	140	217	178 (Y=140)	160	249	205 (Y=160)	200	304	252 (Y=200)
		160	193		160	217		200	264		250	319	
		200	213		200	237		250	274		300	340	
		250	223		250	247		300	300		350	370	
	B14	120	213	-	120	237	-	200	300	-	-	-	-
		140	213	-	140	237	-	160	274	-	-	-	-
		160	223	-	160	247	-	-	-	-	-	-	-

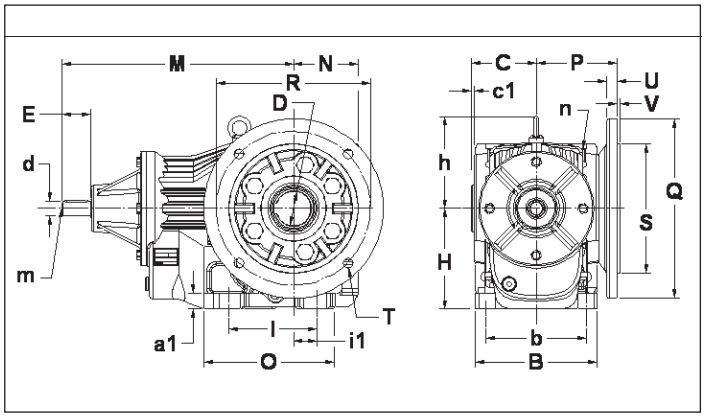
ORP



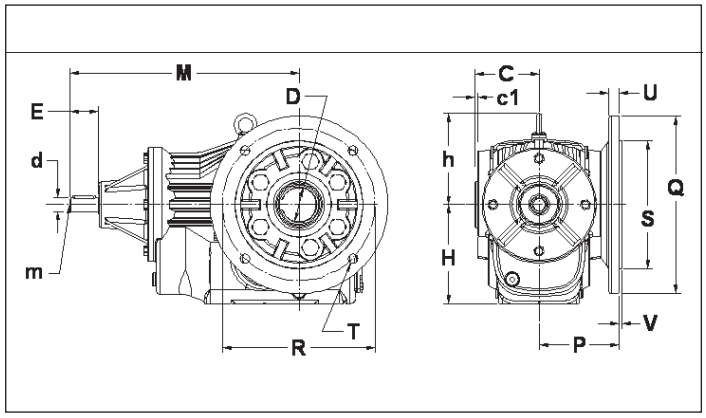
ORF



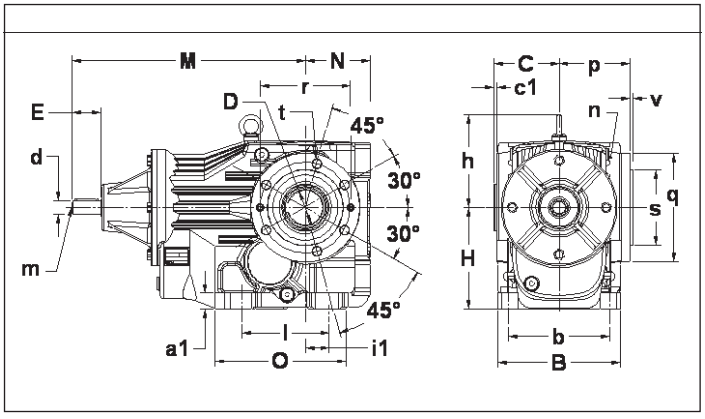
ORP F1 - F2



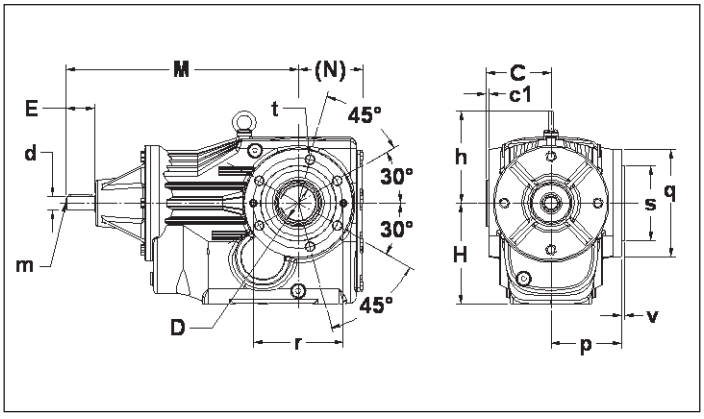
ORF F1 - F2



ORP P



ORF P



Tab. 7.6

OM OC OR	a	A	a1	a2	b	B	C	c1	d j6	D H7	E	h	hP	H	i1	l	m	M	n
63	115	150	14	32	100	120	60	2,5	16	30 (25) (28)	40	100	170	100	28	110	M6	210	11
71	130	170	18	37	120	142	75	3	16	35 (30) (32)	40	108	183	112	35	130	M6	286	11
90	160	212	22	45	140	170	90	3.5	19	40 (42) (45) (48)	40	129	232	140	30	120	M6	323	14
112	200	264	25	55	165	200	105	4	24	50 (55)	50	151	294	180	40	150	M8	378	17.5

OM OC OR	N	O	p	P	Pf	q	r	s g6	t	v		Q	R	S g6	T	U	V
63	63	147	69	84	57.5	105	90	80	N°6 M6x12	3	**F1**	160	130	110	N°4 ϕ 9	10	3.5
											F2	-	-	-	-	-	-
71	71	165	83	100	72	120	100	80	N°6 M8x15	3	**F1**	200	165	130	N°4 ϕ 11	12	3.5
											F2	160	130	110	N°4 ϕ 9x5	10	3.5
90	90	182	98.5	113	86.5	150	125	105	N°6 M12x18	3.5	**F1**	250	215	180	N°4 ϕ 13.5	15	4
											F2	-	-	-	-	-	-
112	112	215	115	142	101	175	150	125	N°6 M14x23	3.5	**F1**	300	265	230	N°4 ϕ 13.5	16	4
											F2	-	-	-	-	-	-

Tab. 7.7

OM. OC.	IEC	63			71			90			112		
		Y	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)	**Y**	**K** (OM.)	**K** (OC.)
	B5	140	193	154 (Y=140)	140	217	178 (Y=140)	160	249	205 (Y=160)	200	304	252 (Y=200)
		160	193		160	217		200	264		250	319	
		200	213		200	237		250	274		300	340	
		250	223		250	247		300	300		350	370	
	B14	120	213	-	120	237	-	200	300	-	-	-	-
		140	213	-	140	237	-	160	274	-	-	-	-
		160	223	-	160	247	-	-	-	-	-	-	-

PARTICOLARE CORPO IN VERSIONE FLANGIATA

Per un fissaggio del riduttore si possono utilizzare anche I 4 fori **"t1"** nel piano inferiore del corpo flangiato con interasse **X** *e* ***Z.***

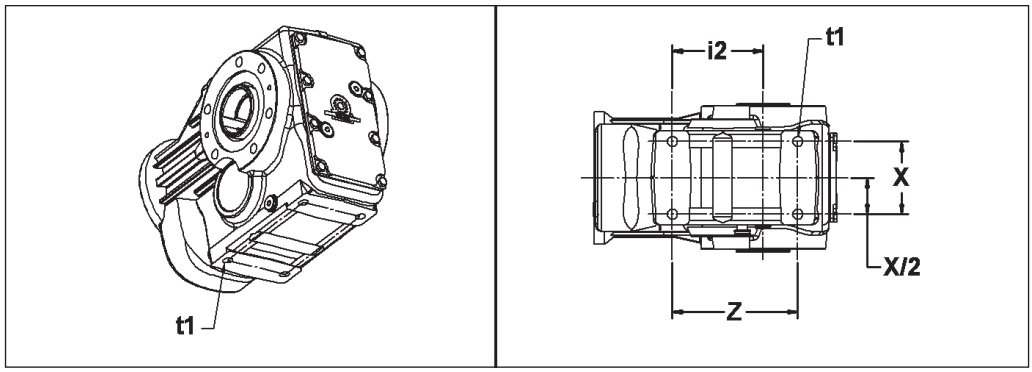
DETAIL OF THE FLANGED GEARCASE

*For the gearbox fixing also the 4 threads **"t1"** in the lower part of the flanged gearcase with dimensions **X** and **Z** can be used*

DETAIL DES GEHÄUSES MIT ABTRIEBSFLANSCH

Auch die vier Gewinde **"t1"**, welche sich im unteren Teil des Gehäuses befinden (mit den Maßen **X** und **Z**), können zur Montage des Getriebes verwendet werden.

Fig. 7.8



Tab. 7.9

OM OC OR	t1	X	Z	X/2	i2
63	N°4 M10 x 15	60	117	30	82
71	N°4 M10 x 15	70	140	35	100
90	N°4 M12 x 20	88	152	44	110
112	N°4 M16 x 24	102	170	51	122

PARTICOLARE DEI FORI "t" NELLA FLANGIA P

Per il fissaggio al riduttore con i fori **"t"** considerare la lunghezza delle viti adeguate, e che la quota **"yt"** non è filettata (vedi disegno).

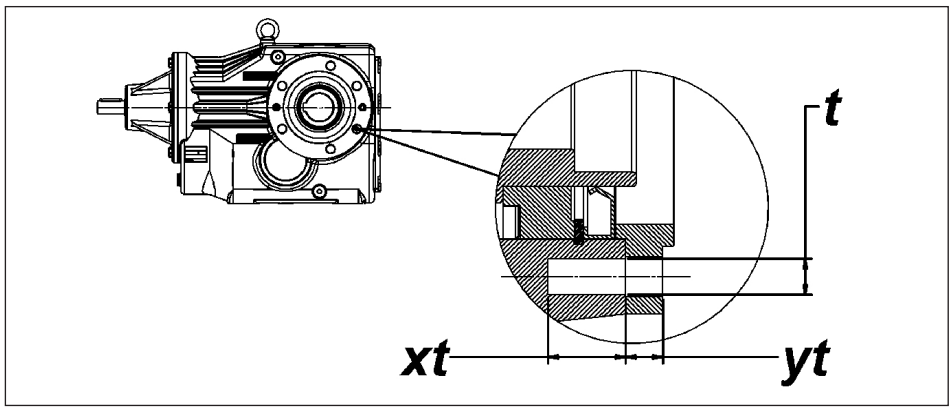
DETAIL "t" OF THE FLANGE P HOLES

*When P-flange is used please consider that the threads are in gearcase and that Distance **"yt"** does not have a thread (see drawing).*

DETAIL "t" OF THE FLANGE P HOLES

Bei Verwendung des P-Flansches ist zu beachten, daß sich die Gewinde im Getriebegehäuse befinden und daß Maß **"yt"** kein Gewinde besitzt. Details siehe Zeichnung.

Fig. 7.10



Tab. 7.11

OM - OC - OR	t	xt	yt
63	N°6 M6	12	11,5
71	N°6 M8	15	11
90	N°6 M12	18	12
112	N°6 M14	23	14

N.B.
xt = profondità della parte filettata, utile per il fissaggio delle viti

NOTE.
***xt** = thread length.*

HINWEIS.
xt = Gewindetiefe

ALBERO LENTO CAVO E ALBERO CALETTATORE

Per l'utilizzazione corretta del riduttore e del calettatore eseguire il dimensionamento dell'albero lento standard e dell'albero lento per calettatore come indicato nelle seguenti figure. Per le prescrizioni di montaggio dell' albero sul calettatore vedere le indicazioni riportate nel capitolo 1, paragrafo 1.11.

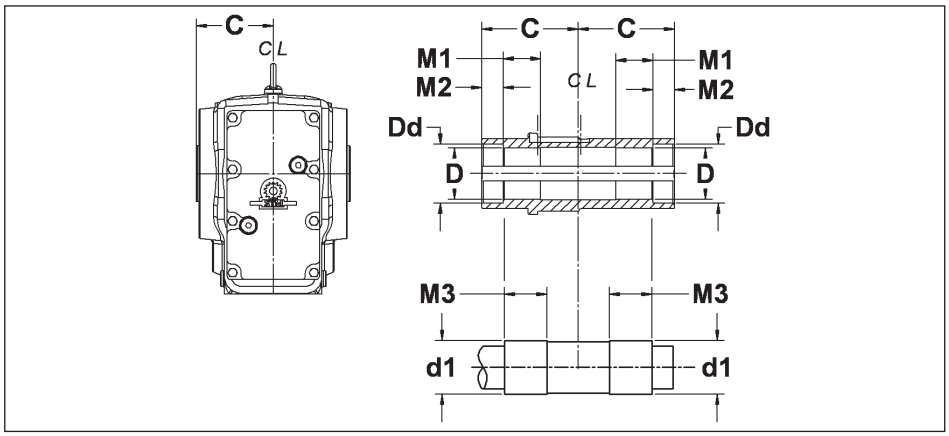
OUTPUT SHAFT AND OUTPUT SHAFT SHRINK DISC

Below there are listed the internal dimensions of the output shaft with keyway and with shrink disc.
To guarantee best performance we recommend for the shafts of the clients the dimensions also shown below. For mounting the shaft with shrink disc, please see information in chapter 1, paragraph 1.11.

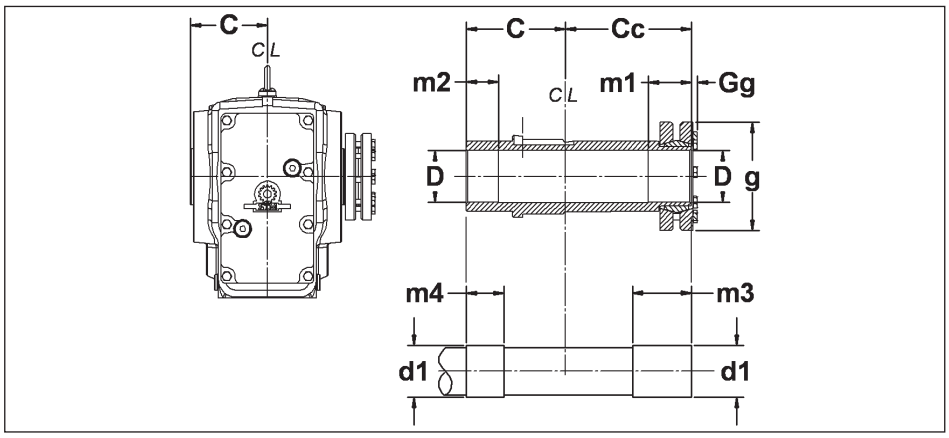
ABTRIEBSWELLEN

Unten sind die Abmessungen der Abtriebs*hohlwellen* in Paßfederu. Schrumpfscheibenausführung aufgeführt.
Für eine bestmögliche Leistung empfehlen wir für die Wellen der Kunden die ebenfalls aufgeführten Abmessungen.
Hinweise zur Montage der Wellen mit Schrumpfscheibe s. Paragraph 1.11.

Fig.. 7.12



Albero lento cavo
Output shaft with keyway
Abtriebswelle mit passfedernut



Albero con calettatore
Output shaft with shrink disc
Abtriebswelle mit schrumpfscheibe

Tab. 7.13

OM OC OR	C	Albero lento cavo *Output shaft with keyway* Abtriebswelle mit passfedernut						Albero calettatore *Output shaft with shrink disc* Abtriebswelle mit schrumpfscheibe								
		D H7	d1 h6	M1	M2	M3	Dd	Cc	D H7	d1 h6	m1	m2	m3	m4	g	Gg
63	60	30 (25) (28)	30 25 28	15	15	20	38	85	30	30	40	25	45	30	72	4
71	75	35 (30) (32)	35 30 32	30	15	35	43	100	35	35	40	25	45	30	80	4
90	90	40 (42) (45) (48)	40 42 45 48	35	20	40	55	120	40	40	50	30	55	35	90	6
112	105	50 (55)	50 55	35	25	45	61	140	50	50	55	40	60	45	110	1

7.10 Accessori

BRACCIO DI REAZIONE [T]

Per il fissaggio del riduttore mediante tirante, viene fornito in allegato l'apposito braccio di reazione con boccola VKL di cui è possibile il montaggio nelle due posizione "A" o "B".

7.10 Accessories

TORQUE ARM [T]

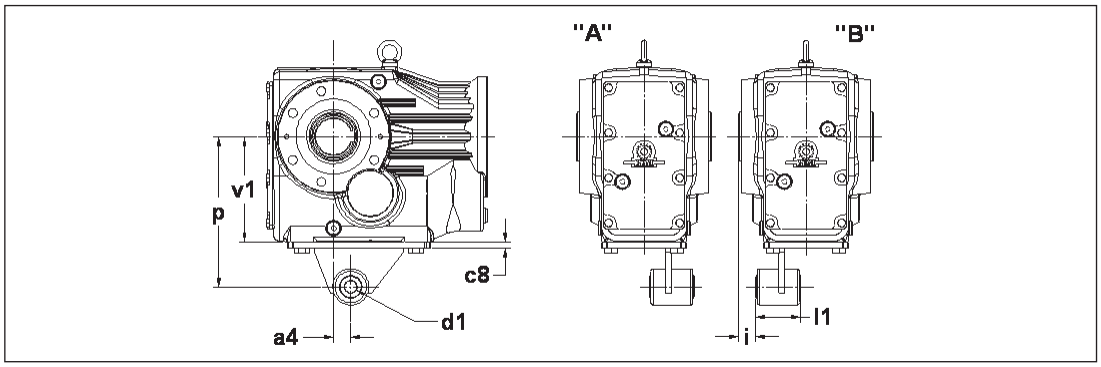
If the gearbox shall be shaft mounted as an extra part there is also available a torque arm with VKL bushing, position "A" or "B".

7.10 Zubehör

DREHMOMENTSTÜTZE [T]

Soll das Getriebe pendelnd gelagert werden, so ist als Zubehörteil auch eine Drehmomentstütze mit VKL-Lagerbuchse erhältlich, Montageposition "A" oder "B".

Fig. 7.14



Tab. 7.15

OM - OC - OR	a4	c8	i	p	v1	d1	l1	viti
63	23.5	6	20	140	100	10 ± 0.1	36	N° 4TE M10x30 + N° 4 DADI
71	30	6	20	160	112	10 ± 0.1	36	N° 4TE M10x25
90	45	8	25	200	140	16 ± 0.1	60	N° 4TE M12x25
112	52.5	10	25	250	180	16 ± 0.1	60	N° 4TE M16x30

ALBERO LENTO SPORGENTE

Tutti i riduttori sono forniti con albero lento cavo. A richiesta, possono essere forniti kit di montaggio per alberi sporgenti comprensivi di linguette, rondelle e viti di fissaggio. Le dimensioni delle linguette sono conformi alle norme UNI 6604-69.

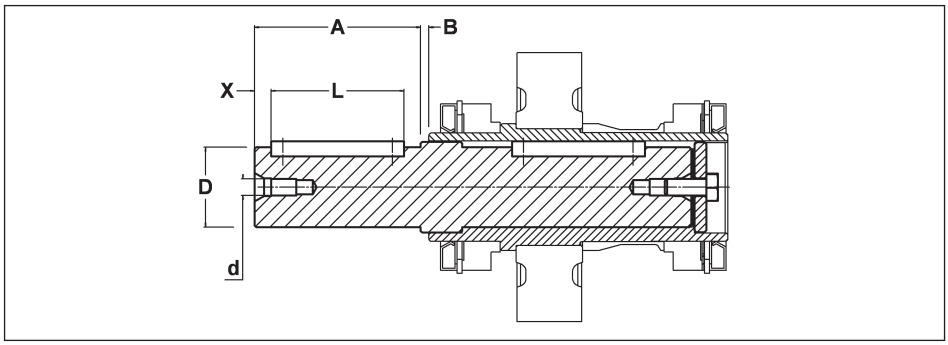
SINGLE OUTPUT SHAFTS

All gearboxes are supplied with hollow output shaft. On request there are available also assembly kits including output shafts, keys, washers and assembly screws. The dimensions of the keys are conform with UNI 6604-69.

EINSEITIGE ABTRIEBSWELLEN

Alle Getriebe werden mit Abtriebshohlwelle geliefert. Auf Anfrage sind auch Montagekits inklusive Abtriebswellen, Paßfedern, Unterlegscheiben und Montageschrauben erhältlich. Die Abmessungen der Paßfedern sind konform mit der UNI 6604-69.

Fig. 7.16



Albero lento sporgente
Single output shaft
Einseitige Abtriebswelle

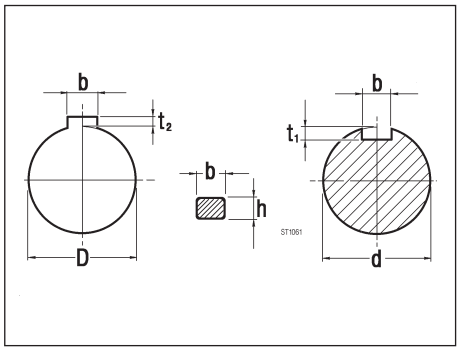
Tab. 7.17

OM - OC - OR	A	B	D g6	d	L	X
63	60	1	30	M10	50	5
71	70	0	35	M10	60	5
90	80	1	40	M10	70	5
112	100	1	50	M12	90	5

7.11 Linguette

7.11 Keys

7.11 Paßfedern



Albero entrata
Input shaft
Antriebswelle

Tab. 7.18

d	bxh	t1	
16	5x5	3	0/ +0.1
19	6x6	3.5	0/ +0.1
24	8x7	4	0/ +0.2

Albero uscita
Output shaft
Abtriebswelle

D	bxh	t2	
25	8x7	3.3	0/ +0.2
28	8x7	3.3	0/ +0.2
30	8x7	3.3	0/ +0.2
32	10x8	3.3	0/ +0.2
35	10x8	3.3	0/ +0.2
40	12x8	3.3	0/ +0.2
42	12x8	3.3	0/ +0.2
45	14x9	3.8	0/ +0.2
48	14x9	3.8	0/ +0.2
50	14x9	3.8	0/ +0.2
55	16x10	4.3	0/ +0.2

8.0 RIDUTTORI - MOTORIDUTTORI PARALLELI - PENDOLARI
SHAFT GEARBOXES - SHAFT MOUNTED GEARBOXES AND GEARED MOTORS
FLACH-UND AUFSTECKGETRIEBE UND-GETRIEBEMOTOREN

PM
PR, PC

8.1 Caratteristiche tecniche

La progettazione di questi riduttori è stata impostata su una struttura monolitica particolarmente rigida che permette l'applicazione di elevati carichi.
I riduttori – motoriduttori paralleli o pendolari possono essere a 2 o 3 stadi.
Carcasse e flange sono realizzate in ghisa meccanica G20 UNI 5007 ad eccezione dei tipi grandezza 63 e 71 realizzati in alluminio SG-AlSi UNI 1706.
La lavorazione di tutte le carcasse avviene su moderni centri di lavoro a controllo numerico che permette di ottenere la massima precisione costruttiva.
L'albero di entrata è realizzato in acciaio 39NiCrMo3 UNI EN 10083 bonificato; quello in uscita in acciaio C40 UNI 5332. Tutti gli ingranaggi sono realizzati in acciaio 18NiCrMo5 UNI 7846 cementati, temprati e rettificati per migliorarne il rendimento e la silenziosità anche sotto carico.

8.1 Technical characteristics

The design of this series of gearboxes has been set up on a very rigid monolithic structure enabling the application of heavy loads.
Parallel shaft gearboxes or shaft mounted gearboxes and motorgearboxes have 2 or 3 stages.
Housings and flanges are manufactured in engineering cast iron G20 UNI 5007, except for size 63 and 71, made of aluminium SG-AlSi UNI 1706.
All the housings working takes place in numerical control working centres, that ensure the maximum constructive accuracy.
The input shaft is made of casehardened and hardened steel 39NiCrMo3 UNI EN 10083; the output shaft is made of steel C40 UNI 5332. All gears are made of steel 18NiCrMo5 UNI 7846, previously casehardened, hardened and rectified to improve efficiency and quietness even under load.

8.1 Technische Eigenschaften

Der Entwicklung dieser Getriebeserie wurde eine monolithische Gehäusestruktur zugrunde gelegt.
Deren kompakte Bauweise sowie die besonders hohe Stabilität ermöglichen auch höchste Belastungen.
Mit Ausnahme der Modelle 63 und 71, bei denen aufgrund der kleinen Baugröße Aluminium SG AlSi91 UNI 1706 verwendet wird, sind alle Gehäuse und Flansche aus Maschinenguß G20 UNI 5007.
Die Bearbeitung der Gehäuse erfolgt auf modernsten, numerisch gesteuerten Fertigungsmaschinen, wodurch eine hohe Fertigungsgenauigkeit und –qualität erzielt wird.
Die Antriebswelle besteht aus einsavtzgehärtetem und vergütetem 39NiCrMo3 Stahl UNI EN 10083, die Abtriebswelle aus C40 Stahl UNI 5332. Alle Zahnräder sind aus 18NiCrMo5 Stahl UNI 7846, gehärtet, einsatzgehärtet und geschliffen. Dies ermöglicht einen hohen Wirkungsgrad sowie einen geräuscharmen Lauf auch unter Last. Alle Kegelradgetriebe und –Getriebemotoren besitzen drei Untersetzungsstufen.

8.2 Designazione

8.2 Designation

8.2 Bezeichnung

	Versione *Version* Ausführung	Grand. *Size* Größe	Tipo *Type* Typ	*1	* 2	*3	*4	ir	IEC	kW	n° Poli *Poles* Polig		Esempio / *Example* / Beispiel
PM	**P**	**63**	**—**	**—**	**—**	**—**	**—**	Vedi tabelle prestazioni *See performance tables* Siehe Leistungs-tabellen	80 (B5) 80 (B14)				**PMP 63 1: 24.1 PAM 80 B5** **PMF 63 1: 24.1 PAM 80 B5**
		71	**F1**		Diametro foro opzionale					0.55	2 4	80 (B5) 80 (B14)	**PMP 71 - 1:14.0 - kW 0.55/4/80 B5** **PMF 71 - 1:14.0 - kW 0.55/4/80 B5**
			F2				**O**						
PR		**90**		**C**	*Optional hollow shaft diameter*	**S**							**PRP 90 P 1: 125.0** **PRF 90 P 1: 125.0**
	F		**P**				**A**						
PC		**112**			Optionaler Hohlwellen durchmesser					5.5	2 4	132 (B5)	**PCP 112 - 1:44.7 - kW 5.5/4/ 132 B5** **PCF 112 - 1:44.7 - kW 5.5/4/132 B5**

P = **Riduttori e motoriduttori paralleli / *Parallel shaft gearboxes and motorgearboxes* / Flachgetriebe und -Flachgetriebemotoren.**
F = **Riduttori e motoriduttori pendolari / *Shaft mounted gearboxes and motorgearboxes* / Aufsteckgetriebe und Aufsteckgetriebemotoren.**

8.2 Designazione

Specifiche:

- **[*1] Albero uscita:**
  Nessuna indicazione = albero forato;
  C = albero forato con calettatore.
- **[*2] Diametro albero**:
  Nessuna indicazione = diametro foro standard dell'albero forato o forato con calettatore;
  *** diametro foro opzionale:** vedi tabella seguente

8.2 Designations

Specification:

- ***[*1] Output shaft:***
  No indication = shaft with keyway;
  ***C** = hollow shaft with shrink disk.*
- ***[*2] Shaft diameter**:*
  (for keyway and shrink disc connection)
  No indication = standard diameter
  **** optional diameters:** see table.*

8.2 Bezeichnungen

Spezifikationen:

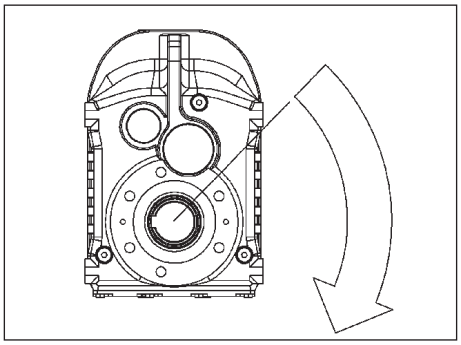
- **[*1] Abtriebswelle:**
  Keine Angabe = Hohlwelle mit Paßfedernut
  C = Hohlwelle mit Schrumpfscheibe.
- **[*2] Durchmesser Abtriebswelle**:
  (gültig für Paßfeder-und Schrumpfscheiben- Verbindung):
  Keine Angabe = Standarddurchmesser
  *** Optionale Durchmesser:** s. Tabelle

Tab. 8.1

[*2]	Grandezza / *Size* / Größe			
	63	**71**	**90**	**112**
Standard	∅ 30	∅ 35	∅ 40	∅ 50
Optional	∅ 25	∅ 30	∅ 42	∅ 55
Optional	∅ 28	∅ 32	∅ 45	—
Optional	—	—	∅ 48	—

- **[*3] Posizione calettatore (valido solamente per soluzione con calettatore):**
  Nessuna indicazione = lato destro come indicato in figura 8.10 (standard);
  S = lato sinistro, montaggio dalla parte opposta alla figura 8.10 (opzionale).
- **[*4] Senso di rotazione (valido solo se richiesto dispositivo antiretro):**
  O = ORARIO (il riduttore può ruotare solo in senso orario visto dal lato destro come in figura);
  A = ANTIORARIO.

- ***[*3] Mounting position of shrink disc:***
  No indication (standard) = on right side, as showed in figure 8.10;
  ***S** = on left side, on the opposite like indicated in figure 8.10.*
- ***[*4] Rotation sense (only necessary for solution with backstop device):***
  ***O** = CLOCKWISE (looking at the gearbox from the perspective shown below).*
  ***A** = ANTICLOCKWISE.*



- **[*3] Montageposition Schrumpfscheibe:**
  Keine Angabe (Standard) = rechts (wie dargestellt in der Abbildung 8.10);
  S =links (gegenüber der Position in der Abbildung 8.10).
- **[*4] Drehrichtung (Nur bei Aus führungen mit Rücklaufsperre)**
  O = im Uhrzeigersinn (bei Betrachtung des Getriebes aus der unten dargestellten Perspektive)
  A = Gegen den Uhrzeigersinn.

Altre specifiche:

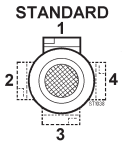
- **[B6/H1, B6II/H2, B3I/H3, V5, V6]** Posizioni di montaggio con indicazione dei tappi di livello, carico e scarico; se non specificato si considera standard la posizione **B3/H4** (vedi par. 8.5).
- **[T]** Dispositivo antivibrante (solamente per versione PENDOLARE :vedi par. 8.10).
- **[2 o 3 o 4]** Posizione della morsettiera del motore se diversa da quella standard (1).

Further specification:

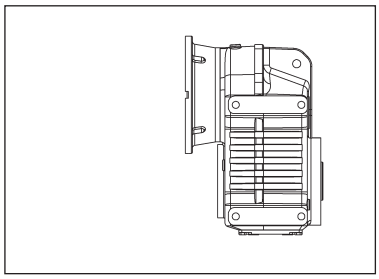
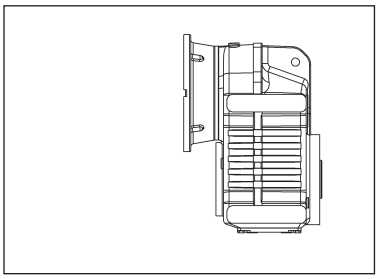
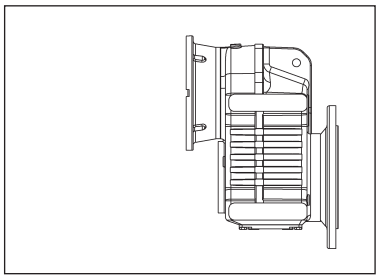
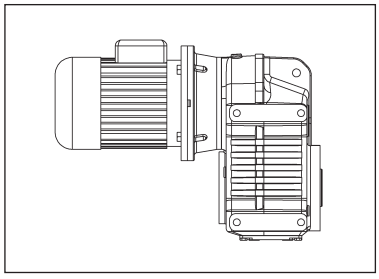
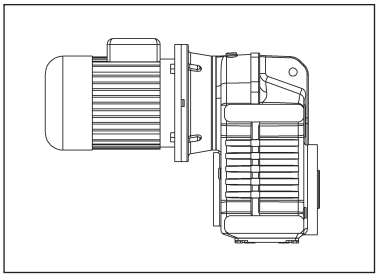
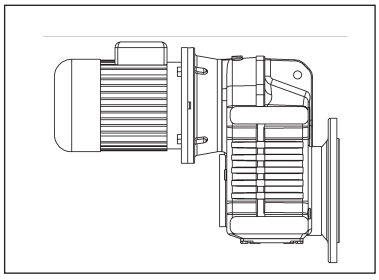
- ***[B6/H1, B6II/H2, B3I/H3, V5, V6]** Mounting position with indication of breather, level and drain plugs; if not specified, standard position is **B3/H4** (see par. 8.5).*
- ***[T]** Rubber buffer (only for shaft mounted version see par. 8.10).*
- ***[2 o 3 o 4]** Position of the motor terminal box if different from the standard one [1] (for gearmotors)*

Weitere Spezifikationen:

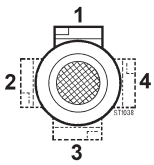
- Montageposition **[B6/H1, B6II/H2, B3I/H3, V5, V6]** mit Angabe von Entlüftung, Schaugläsern und Ablaßschraube. Wenn nicht näher spezifiziert, wird die Standardposition **B3/H4** zugrunde gelegt (s. Abschnitt 8.5).
- **[T]** Gummihülse (nur bei Aufsteckausführung: s. par. 8.10).
- Montageposition Klemmenkasten **[2, 3, 4]**, wenn abweichend von Standardposition [1] (für Motorgetriebe).



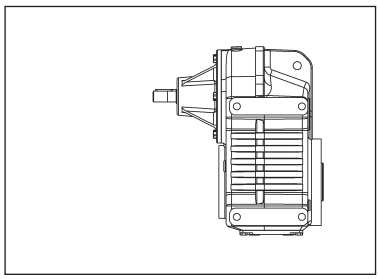
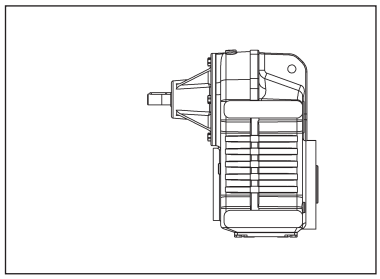
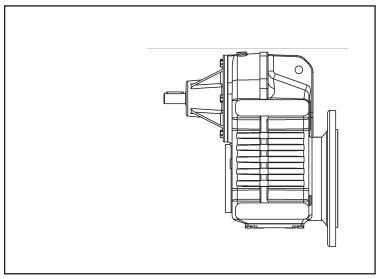
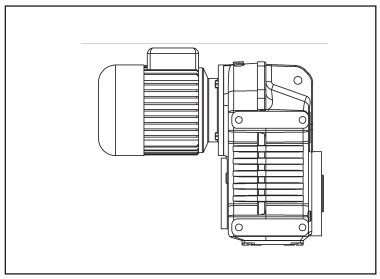
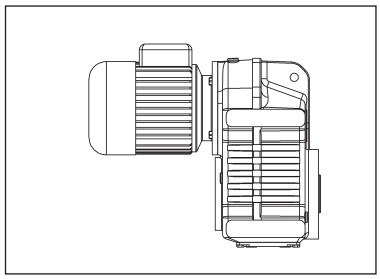
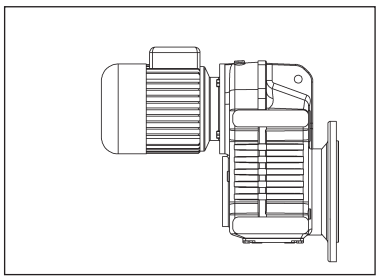
Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

	P.P	P.F	P.P P - P. P F P.F P - P. F F
PM. (IEC) **63 — 112**			
PM. (kW) **63 — 112**			

1− STANDARD



Posizione morsettiera
Terminal board position
Lage des Klemmenkastens

PR. **63 — 112**			
PC. **63 — 112**			

8.4 Lubrificazione

Si consiglia l'uso di oli a base sintetica. Vedere a tale proposito le indicazioni riportate nel capitolo 1.6.
La viscosità ISO consigliata è 320 cSt.

Le quantità di lubrificante riportate nella Tab. 8.2 sono indicative.
In fase di installazione immettere l'esatta quantità di lubrificante riferendosi alla spia di livello (dove prevista).
In fase di ordine specificare sempre la posizione di montaggio desiderata. Se omessa, il riduttore verrà fornito con i tappi predisposti per la posizione **B3** / **H4.**

8.4 Lubrication

It is recommended to use synthetic based oil. See instructions in *chapter 1, paragraph 1.6.*
Recommended ISO VG viscosity is 320 cSt.

The lubricant quantities listed in table 8.2 are for reference only.
During mounting the exact quantity of oil must be filled in. Take reference on level plug (where available).
Please specify on order the requested mounting position. Otherwise, the gearbox will be supplied with plug combination for position **B3** / **H4.**.

8.4 Schmierung

Wir empfehlen den Einsatz von synthetischem Öl (siehe Abschnitt 1.6).
Die empfohlene ISO-Viskosität beträgt 320.

Die in Tabelle 8.2 angegeben Schmiermittelmengen sind Richtwerte.
Bei der Montage die exakte Schmiermittelmenge anhand des Ölschauglases (wo vorhanden) einfüllen.
Bei Auftragserteilung bitte immer die gewünschte Montageposition angeben. Andernfalls wird das Getriebe mit einer Schraubenanordnung für Position **B3** / **H4** geliefert.

Tab. 8.2

Quantità di lubrificante / *Lubricant Quantity* / Schmiermittelmenge (kg)							
P. P. P. F.	Posizioni di montaggio /*Mounting Positions* / Montagepositionen						* n°. tappi olio * *No.of plugs* Anzahl Betriebschraube
	B6 H1	**B6II H2**	**B3I H3**	**B3 H4**	**V5 H5**	**V6 H6**	
63	1.250	0.900	0.900		1.300	1.150	1
71	2.100	1.750	1.600		2.300	2.000	6
90	3.300	2.800	2.650		3.700	3.700	6
112	7.300	7.100	6.000		8.000	7.000	6

Il riduttori nelle grandezze 63 sono forniti comprensivi di lubrificazione ad olio. Dalla grandezza 71 alla 112 sono predisposti per la lubrificazione ad olio ma sono privi di lubrificante, il quale potrà essere fornito a richiesta.
Il tappo di sfiato è allegato solo nei riduttori che hanno più di un tappo olio.
* Eventuali forniture con predisposizioni tappi diverse da quella indicata in tabella dovranno essere concordate.

The gearboxes sizes 63 are suppied with oil. From size 71 to 112 they are oil lubricated but are supplied without lubricant which can be delivered upon request.
The drain plug is only supplied in the gearbox with more than one oil plug.
** Supplies with oil plugs different from those listed in the table are to be agreed upon.*

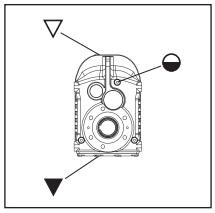
Getriebe der Baugröße 63 werden mit Ölfüllung geliefert.
Getriebe ab Baugröße 71 sind für eine Ölschmierung vorgesehen, werden jedoch ohne Ölfüllung geliefert. Auch diese sind auf Wunsch mit Ölfüllung erhältlich.
Eine Entlüftungsschraube gibt es nur bei Getrieben mit mehr als einer Ölschraube.
* Lieferungen mit Betriebsschrauben, die von denen in der Tabelle abweichen, müssen mit uns vereinbart werden.

8.5 Posizioni di montaggio

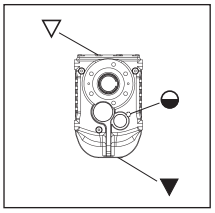
8.5 Mounting positions

8.5 Montagepositionen

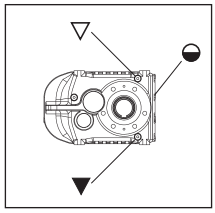
P.P.



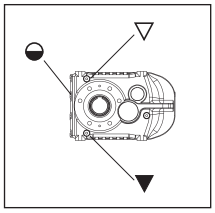
B6



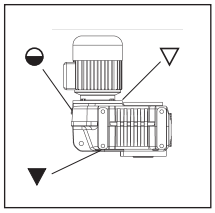
B6II



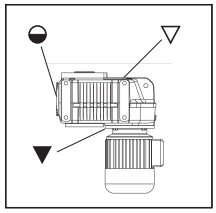
B3I



B3

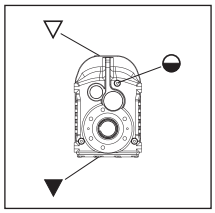


V5

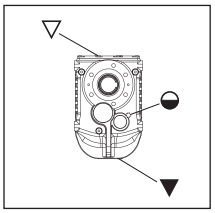


V6

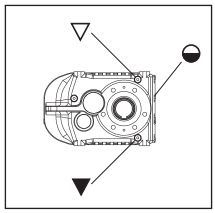
P.F.



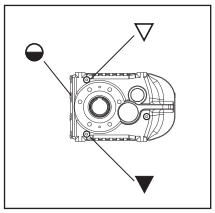
H1



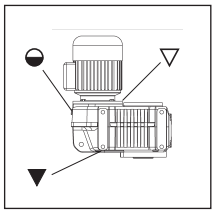
H2



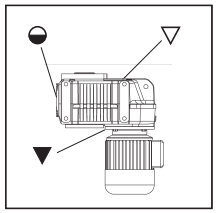
H3



H4



H5



H6

▽ Carico / *Breather plug* / Einfüll-u. Entlüftungsschraube
◒ Livello / *Level plug* / Schauglas
▼ Scarico / *Drain plug* / Ablaßschraube

8.6 Carichi radiali e assiali

Quando la trasmissione del moto avviene tramite meccanismi che generano carichi radiali sull'estremità dell'albero, è necessario verificare che i valori risultanti non eccedono quelli indicati nelle tabelle.
Nella Tab. 8.3 sono riportati i valori dei carichi radiali ammissibili per l'albero veloce (Fr_1). Come carico assiale ammissibile contemporaneo si ha:

$$Fa_1 = 0.2 \times Fr_1$$

In Tab. 8.4 sono riportati i valori dei carichi radiali ammissibili per l'albero lento (Fr_2) .
Come carico assiale ammissibile contemporaneo si ha:

$$Fa_2 = 0.2 \times Fr_2$$

8.6 Axial and overhung load

Should transmission movement determine radial loads on the angular shaft end, it is necessary to make sure that resulting values do not exceed the ones indicated in the tables.
In Table 8.3 permissible radial load for input shaft are listed (Fr_1). Contemporary permissible axial load is given by the following formula:

$$Fa_1 = 0.2 \times Fr_1$$

In Table 8.4 permissible radial loads for output shaft a*re listed (Fr_2).*
Permissible axial load is given by the following formula:

$$Fa_2 = 0.2 \times Fr_2$$

8.6 Radiale und axiale Belastungen

Wird das Wellenende auch durch Radialkräfte belastet, so muß sichergestellt werden, daß die resultierenden Werte die in der Tabelle angegebenen nicht überschreiten.
In Tabelle 8.3 sind die Werte der zulässigen Radialbelastungen für die Antriebswelle (Fr_1) angegeben. Die Axialbelastung beträgt dann:

$$Fa_1 = 0.2 \times Fr_1$$

In Tabelle 8.4 sind die Werte der zulässigen Radialbelastungen für die Abtriebswelle (Fr_2) angegeben.
Als zulässige Axialbelastung gilt:

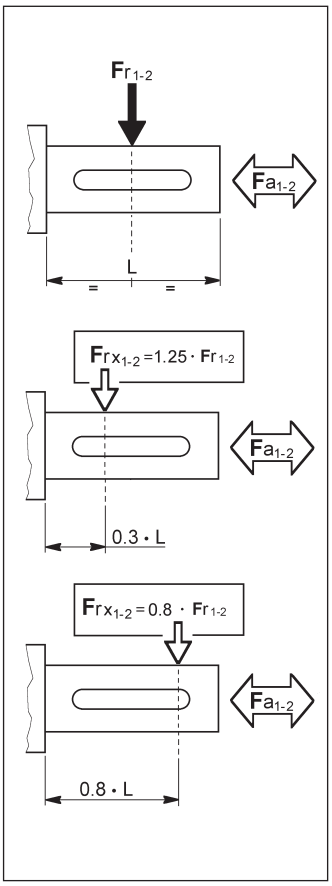
$$Fa_2 = 0.2 \times Fr_2$$

Tab. 8.3

n_1 [min^{-1}]	Fr_1 [N] PR.							
	63/2	**63/3**	**71/2**	**71/3**	**90/2**	**90/3**	**112/2**	**112/3**
2800	200	550	600	600	600	1300	800	1400
1400	400	700	900	800	700	1500	1400	1800
900	400	800	1100	1000	800	1600	1500	2100
500	400	950	1300	1200	900	1800	1800	2600

Tab. 8.4

n_2 [min^{-1}]	Fr_2 [N] PM. - PR. - PC.			
	63	**71**	**90**	**112**
1100	—	3000	6500	—
950	1400	3050	7000	7600
775	1450	3100	7200	7900
625	1500	3230	7600	8300
500	1580	3340	7900	8800
400	1660	3450	8300	9200
320	1720	3550	8900	9800
260	1750	3600	9000	10400
200	1800	4100	9000	10800
160	1950	4300	9000	11400
125	2200	4600	9000	12000
90	2400	4900	9000	13000
60	2600	5000	9300	13800
40	2800	5000	10000	15300
25	3100	6000	11200	16500
16	3800	6600	11500	17000
10	4500	6600	11500	17400



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero lento standard (vedi fig. 8.14) e sono riferiti ai riduttori operanti con fattore di servizio 1. Valori intermedi relativi a velocità non riportate possono essere ottenuti per interpolazione considerando però che Fr_1 a 500 min^{-1} e Fr_2 a 5 min^{-1} rappresentano i carichi massimi consentiti.
Per i carichi non agenti sulla mezzeria dell'albero lento o veloce si ha:

a 0.3 della sporgenza:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

a 0.8 dalla sporgenza:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

The radial loads shown in the tables are applied on the middle of standard shaft extensions (see fig.8.14). Base of these values is a service factor 1.
Values for speeds that are not listed can be obtained through interpolation but it must be considered that Fr_1 at 500 min^{-1} and Fr_2 at 5 min^{-1} represent the maximum allowable loads.
For radial loads which are not applied on the middle of the shafts, the following values can be calculated:

at 0.3 from extension:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

at 0.8 from extension:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

Bei den in der Tabelle angegeben Radialbelastungen wird eine Krafteinwirkung auf die Mitte der Standardwelle (s. A.8.14) angenommen; außerdem wird ein Betriebsfaktor 1 zugrunde gelegt. Zwischenwerte für nicht aufgeführte Drehzahlen können durch Interpolation ermittelt werden.
Hierbei ist jedoch zu berücksichtigen, daß Fr_1 bei 500 min^{-1} und für Fr_{2max} bei 5 min^{-1} die maximal zulässigen Belastungen repräsentieren.
Ist die Einwirkung der Radialkraft nicht in der Mitte der Welle, so können die zulässigen Radiallasten folgendermaßen ermittelt werden:
0.3 vom Wellenabsatz entfernt:

$$F_{rx} = 1.25 \times F_{r1\text{-}2}$$

0.8 vom Wellenabsatz entfernt:

$$F_{rx} = 0.8 \times F_{r1\text{-}2}$$

PR 63/2

Kg 9.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
3.0	935.6	77	7.9	95	467.8	80	4.1	95	300.7	85	2.8	95	167.1	88	1.6	95	
3.9	719.9	90	7.1	95	360.0	110	4.4	95	231.4	115	2.9	95	128.6	120	1.7	95	
4.3	645.0	95	6.8	95	322.5	130	4.6	95	207.3	135	3.1	95	115.2	140	1.8	95	
5.0	557.0	110	6.8	95	278.5	140	4.3	95	179.0	150	3.0	95	99.5	155	1.7	95	
5.6	499.0	125	6.9	95	249.5	160	4.4	95	160.4	170	3.0	95	89.1	180	1.8	95	
6.2	452.2	130	6.5	95	226.1	160	4.0	95	145.3	175	2.8	95	80.7	180	1.6	95	112 B5 112 B14
6.5	431.2	135	6.4	95	215.6	170	4.0	95	138.6	185	2.8	95	77.0	195	1.7	95	
7.4	379.1	140	5.9	95	189.6	180	3.8	95	121.9	190	2.6	95	67.7	200	1.5	95	100 B5 100 B14
8.0	347.9	150	5.8	95	174.0	200	3.8	95	111.8	215	2.7	95	62.1	230	1.6	95	
9.0	311.7	165	5.7	95	155.9	210	3.6	95	100.2	230	2.5	95	55.7	250	1.5	95	90 B5 90 B14
10.4	269.4	180	5.3	95	134.7	220	3.3	95	86.6	240	2.3	95	48.1	255	1.4	95	
11.8	236.9	190	5.0	95	118.4	235	3.1	95	76.1	255	2.1	95	42.3	255	1.2	95	80 B5 80 B14
13.5	206.9	205	4.7	95	103.4	250	2.9	95	66.5	255	1.9	95	36.9	255	1.0	95	
14.4	194.8	190	4.1	95	97.4	220	2.4	95	62.5	230	1.6	95	34.8	240	0.9	95	71 B5
16.9	166.1	230	4.2	95	83.0	250	2.3	95	53.4	255	1.5	95	29.7	255	0.8	95	63 B5
19.8	141.3	230	3.6	95	70.7	250	1.9	95	45.4	255	1.3	95	25.2	255	0.7	95	
20.5	136.6	210	3.2	95	68.3	230	1.7	95	43.9	240	1.2	95	24.4	250	0.7	95	
24.1	116.2	210	2.7	95	58.1	230	1.5	95	37.3	245	1.0	95	20.7	250	0.6	95	
26.1	107.3	220	2.6	95	53.6	240	1.4	95	34.5	250	1.0	95	19.2	255	0.5	95	
31.7	88.2	220	2.1	95	44.1	240	1.2	95	28.4	250	0.8	95	15.8	250	0.4	95	
36.6	76.6	225	1.9	95	38.3	250	1.1	95	24.6	250	0.7	95	13.7	250	0.4	95	

PR 63/3

Kg 9.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
43.4	64.6	220	1.6	93	32.3	250	0.9	93	20.7	250	0.6	93	11.5	250	0.3	93	
47.0	59.6	200	1.3	93	29.8	250	0.8	93	19.2	255	0.6	93	10.6	255	0.3	93	
53.3	52.5	220	1.3	93	26.3	250	0.7	93	16.9	255	0.5	93	9.4	255	0.3	93	
57.2	48.9	230	1.3	93	24.5	250	0.7	93	15.7	255	0.5	93	8.7	255	0.3	93	
61.8	45.3	230	1.2	93	22.7	250	0.6	93	14.6	255	0.4	93	8.1	255	0.2	93	
69.6	40.2	240	1.1	93	20.1	250	0.6	93	12.9	250	0.4	93	7.2	250	0.2	93	
75.4	37.1	240	1.0	93	18.6	250	0.5	93	11.9	255	0.3	93	6.6	255	0.2	93	80 B5 80 B14
81.4	34.4	240	0.9	93	17.2	250	0.5	93	11.1	255	0.3	93	6.1	255	0.2	93	
88.4	31.7	240	0.9	93	15.8	250	0.4	93	10.2	250	0.3	93	5.7	250	0.2	93	71 B5
98.9	28.3	240	0.8	93	14.2	250	0.4	93	9.1	250	0.3	93	5.1	250	0.1	93	63 B5
114.4	24.5	240	0.7	93	12.2	250	0.3	93	7.9	255	0.2	93	4.4	260	0.1	93	
135.4	20.7	240	0.6	93	10.3	250	0.3	93	6.6	255	0.2	93	3.7	260	0.1	93	
149.1	18.8	240	0.5	93	9.4	250	0.3	93	6.0	255	0.2	93	3.4	260	0.1	93	
164.7	17.0	240	0.5	93	8.5	250	0.2	93	5.5	250	0.2	93	3.0	260	0.1	93	
181.3	15.4	240	0.4	93	7.7	250	0.2	93	5.0	250	0.1	93	2.8	260	0.1	93	
216.9	12.9	240	0.3	93	6.5	250	0.2	93	4.2	255	0.1	93	2.3	260	0.1	93	

PR 71/2

Kg 14.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.6	1078.5	120	14.3	95	539.3	130	7.7	95	346.7	130	5.0	95	192.6	130	2.8	95	112 B5 112 B14 100 B5 100 B14 90 B5 90 B14 80 B5 80 B14 71 B5
3.2	880.4	140	13.6	95	440.2	150	7.3	95	283.0	150	4.7	95	157.2	150	2.6	95	
3.8	745.8	160	13.2	95	372.9	175	7.2	95	239.7	180	4.8	95	133.2	180	2.6	95	
4.3	650.3	180	12.9	95	325.2	200	7.2	95	209.0	210	4.8	95	116.1	210	2.7	95	
5.3	530.9	180	10.5	95	265.4	210	6.1	95	170.6	230	4.3	95	94.8	230	2.4	95	
6.2	449.7	230	11.4	95	224.8	260	6.4	95	144.5	300	4.8	95	80.3	300	2.7	95	
7.1	395.3	270	11.8	95	197.6	300	6.5	95	127.1	330	4.6	95	70.6	330	2.6	95	
8.7	322.7	280	10.0	95	161.3	310	5.5	95	103.7	350	4.0	95	57.6	350	2.2	95	
10.2	273.3	370	11.1	95	136.7	420	6.3	95	87.9	470	4.6	95	48.8	470	2.5	95	
11.6	242.0	380	10.1	95	121.0	430	5.7	95	77.8	480	4.1	95	43.2	480	2.3	95	
12.3	228.2	280	7.0	95	114.1	300	3.8	95	73.3	310	2.5	95	40.7	310	1.4	95	
14.0	199.5	400	8.8	95	99.8	450	4.9	95	64.1	480	3.4	95	35.6	480	1.9	95	
16.1	173.9	420	8.0	95	86.9	460	4.4	95	55.9	480	3.0	95	31.0	480	1.6	95	
17.3	161.7	420	7.5	95	80.9	460	4.1	95	52.0	480	2.8	95	28.9	480	1.5	95	
18.7	150.0	420	6.9	95	75.0	460	3.8	95	48.2	480	2.6	95	26.8	480	1.4	95	
20.2	138.7	420	6.4	95	69.3	460	3.5	95	44.6	480	2.4	95	24.8	480	1.3	95	
21.9	127.8	420	5.9	95	63.9	460	3.2	95	41.1	480	2.2	95	22.8	480	1.2	95	
25.3	110.9	360	4.4	95	55.4	410	2.5	95	35.6	410	1.6	95	19.8	410	0.9	95	
28.8	97.2	410	4.4	95	48.6	460	2.5	95	31.2	460	1.6	95	17.4	460	0.9	95	
33.1	84.7	370	3.5	95	42.4	410	1.9	95	27.2	410	1.2	95	15.1	410	0.7	95	
37.3	75.1	365	3.0	95	37.5	410	1.7	95	24.1	410	1.1	95	13.4	420	0.6	95	
44.7	62.6	400	2.8	95	31.3	460	1.6	95	20.1	460	1.0	95	11.2	480	0.6	95	
50.5	55.5	400	2.4	95	27.7	460	1.4	95	17.8	460	0.9	95	9.9	480	0.5	95	

PR 71/3

Kg 14.0

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
39.5	70.8	420	3.3	93	35.4	460	1.8	93	22.8	470	1.2	93	12.6	480	0.7	93	90 B5 90 B14 80 B5 80 B14 71 B5 63 B5
53.5	52.3	420	2.5	93	26.2	460	1.4	93	16.8	460	0.9	93	9.3	480	0.5	93	
60.8	46.0	420	2.2	93	23.0	460	1.2	93	14.8	460	0.8	93	8.2	480	0.4	93	
64.2	43.6	420	2.1	93	21.8	460	1.1	93	14.0	470	0.7	93	7.8	480	0.4	93	
75.4	37.2	420	1.8	93	18.6	460	1.0	93	11.9	470	0.6	93	6.6	480	0.4	93	
86.8	32.3	420	1.5	93	16.1	460	0.8	93	10.4	470	0.5	93	5.8	480	0.3	93	
91.5	30.6	420	1.4	93	15.3	460	0.8	93	9.8	470	0.5	93	5.5	480	0.3	93	
99.3	28.2	420	1.3	93	14.1	460	0.7	93	9.1	470	0.5	93	5.0	480	0.3	93	
107.5	26.0	420	1.2	93	13.0	460	0.7	93	8.4	470	0.4	93	4.6	480	0.3	93	
123.8	22.6	420	1.1	93	11.3	460	0.6	93	7.3	480	0.4	93	4.0	520	0.2	93	
134.3	20.9	420	1.0	93	10.4	460	0.5	93	6.7	490	0.4	93	3.7	520	0.2	93	
154.8	18.1	420	0.9	93	9.0	460	0.5	93	5.8	500	0.3	93	3.2	520	0.2	93	
163.2	17.2	420	0.8	93	8.6	460	0.4	93	5.5	470	0.3	93	3.1	480	0.2	93	
191.6	14.6	450	0.7	93	7.3	490	0.4	93	4.7	520	0.3	93	2.6	540	0.2	93	
220.8	12.7	450	0.6	93	6.3	500	0.4	93	4.1	520	0.2	93	2.3	540	0.1	93	

PR 90/2

Kg 30

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	
2.7	1025.6	270	30.5	95	512.8	330	18.7	95	329.7	330	12.0	95	183.2	330	6.7	95	
4.2	662.1	390	28.5	95	331.0	480	17.5	95	212.8	480	11.3	95	118.2	480	6.3	95	
5.3	528.9	430	25.1	95	264.5	530	15.4	95	170.0	530	9.9	95	94.5	530	5.5	95	
5.9	470.7	450	23.3	95	235.3	560	14.5	95	151.3	560	9.3	95	84.1	560	5.2	95	
6.7	417.1	480	22.1	95	208.6	600	13.8	95	134.1	600	8.9	95	74.5	600	4.9	95	
7.8	361.0	520	20.7	95	180.5	650	12.9	95	116.0	700	9.0	95	64.5	720	5.1	95	
8.7	321.8	460	16.3	95	160.9	560	9.9	95	103.4	560	6.4	95	57.5	560	3.5	95	
9.3	300.2	460	15.2	95	150.1	560	9.3	95	96.5	560	6.0	95	53.6	560	3.3	95	132 B5 132 B14
9.7	288.4	660	21.0	95	144.2	820	13.0	95	92.7	880	9.0	95	51.5	900	5.1	95	
10.9	256.7	700	19.8	95	128.3	860	12.2	95	82.5	920	8.4	95	45.8	920	4.6	95	112 B5
12.3	227.4	740	18.6	95	113.7	910	11.4	95	73.1	920	7.4	95	40.6	940	4.2	95	100 B5
14.0	200.5	740	16.4	95	100.2	910	10.1	95	64.4	920	6.5	95	35.8	940	3.7	95	
16.0	175.5	740	14.3	95	87.7	910	8.8	95	56.4	920	5.7	95	31.3	940	3.2	95	
17.1	163.7	740	13.4	95	81.8	910	8.2	95	52.6	920	5.3	95	29.2	940	3.0	95	90 B5
19.8	141.3	740	11.5	95	70.7	910	7.1	95	45.4	920	4.6	95	25.2	940	2.6	95	
21.4	130.7	740	10.7	95	65.4	910	6.6	95	42.0	920	4.3	95	23.3	940	2.4	95	
25.0	112.2	740	9.1	95	56.1	910	5.6	95	36.1	920	3.7	95	20.0	940	2.1	95	
27.7	101.0	740	8.2	95	50.5	910	5.1	95	32.5	920	3.3	95	18.0	940	1.9	95	
30.5	91.7	740	7.5	95	45.9	910	4.6	95	29.5	920	3.0	95	16.4	940	1.7	95	
35.0	80.0	700	6.2	95	40.0	850	3.7	95	25.7	890	2.5	95	14.3	920	1.4	95	
40.4	69.3	585	4.5	95	34.7	720	2.8	95	22.3	760	1.9	95	12.4	820	1.1	95	
44.1	63.5	700	4.9	95	31.8	860	3.0	95	20.4	950	2.1	95	11.3	1000	1.4	95	
50.9	55.0	700	4.2	95	27.5	860	2.6	95	17.7	950	1.9	95	9.8	1000	1.1	95	

PR 90/3

Kg 30

ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD	
38.7	72.3	700	5.7	93	36.2	910	3.7	93	23.2	945	2.5	93	12.9	945	1.4	93	
43.7	64.0	750	5.4	93	32.0	910	3.3	93	20.6	945	2.2	93	11.4	945	1.2	93	
48.8	57.4	750	4.8	93	28.7	910	2.9	93	18.4	945	2.0	93	10.2	945	1.1	93	
55.2	50.7	720	4.1	93	25.4	910	2.6	93	16.3	945	1.7	93	9.1	945	1.0	93	
62.3	44.9	750	3.8	93	22.5	910	2.3	93	14.4	945	1.5	93	8.0	945	0.9	93	
70.6	39.7	800	3.6	93	19.8	910	2.0	93	12.8	945	1.4	93	7.1	945	0.8	93	
76.3	36.7	800	3.3	93	18.3	910	1.9	93	11.8	945	1.3	93	6.6	945	0.7	93	100 B5 100 B14
82.8	33.8	800	3.0	93	16.9	910	1.7	93	10.9	945	1.2	93	6.0	945	0.6	93	
93.3	30.0	800	2.7	93	15.0	910	1.5	93	9.6	945	1.0	93	5.4	945	0.6	93	90 B5
100.6	27.8	800	2.5	93	13.9	910	1.4	93	8.9	945	1.0	93	5.0	945	0.5	93	
108.9	25.7	910	2.6	93	12.9	910	1.3	93	8.3	945	0.9	93	4.6	945	0.5	93	80 B5
125.0	22.4	910	2.3	93	11.2	910	1.1	93	7.2	945	0.8	93	4.0	945	0.4	93	71 B5
141.0	19.9	910	2.0	93	9.9	910	1.0	93	6.4	945	0.7	93	3.5	945	0.4	93	
155.2	18.0	910	1.8	93	9.0	910	0.9	93	5.8	945	0.6	93	3.2	945	0.3	93	
178.1	15.7	910	1.6	93	7.9	910	0.8	93	5.1	945	0.5	93	2.8	945	0.3	93	
201.0	13.9	910	1.4	93	7.0	910	0.7	93	4.5	945	0.5	93	2.5	945	0.3	93	
224.4	12.5	910	1.3	93	6.2	910	0.6	93	4.0	945	0.4	93	2.2	945	0.2	93	
253.2	11.1	910	1.1	93	5.5	910	0.6	93	3.6	945	0.4	93	2.0	945	0.2	93	

PR 112/2

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ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
2.9	967.0	480	51.2	95	483.5	600	32.0	95	310.8	650	22.3	95	172.7	650	12.4	95	
3.4	831.9	520	47.7	95	416.0	640	29.3	95	267.4	690	20.3	95	148.6	700	11.5	95	
4.0	706.4	610	47.5	95	353.2	750	29.2	95	227.0	850	21.3	95	126.1	900	12.5	95	
4.6	607.7	660	44.2	95	303.8	820	27.5	95	195.3	920	19.8	95	108.5	960	11.5	95	
6.1	459.6	770	39.0	95	229.8	950	24.1	95	147.7	970	15.8	95	82.1	970	8.8	95	
6.8	412.4	810	36.8	95	206.2	990	22.5	95	132.5	1000	14.6	95	73.6	1000	8.1	95	
7.9	353.7	850	33.1	95	176.8	1050	20.5	95	113.7	1100	13.8	95	63.2	1100	7.7	95	
8.9	313.2	890	30.7	95	156.6	1100	19.0	95	100.7	1100	12.2	95	55.9	1100	6.8	95	
9.7	289.2	900	28.7	95	144.6	1100	17.5	95	93.0	1100	11.3	95	51.6	1100	6.3	95	
11.1	253.3	950	26.5	95	126.7	1100	15.4	95	81.4	1100	9.9	95	45.2	1100	5.5	95	160 B5
12.4	225.7	1150	28.6	95	112.8	1420	17.7	95	72.5	1600	12.8	95	40.3	1700	7.6	95	132 B5
14.5	193.6	1250	26.7	95	96.8	1550	16.5	95	62.2	1700	11.7	95	34.6	1850	7.0	95	112 B5
16.3	171.4	1320	24.9	95	85.7	1630	15.4	95	55.1	1800	10.9	95	30.6	1850	6.2	95	100 B5
17.7	158.3	1380	24.1	95	79.1	1700	14.8	95	50.9	1800	10.1	95	28.3	1850	5.8	95	
20.2	138.6	1440	22.0	95	69.3	1750	13.4	95	44.6	1850	9.1	95	24.8	1850	5.0	95	
21.7	129.3	1460	20.8	95	64.6	1750	12.5	95	41.6	1850	8.5	95	23.1	1850	4.7	95	
25.4	110.1	1460	17.7	95	55.1	1620	9.8	95	35.4	1720	6.7	95	19.7	1830	4.0	95	
29.1	96.1	1460	15.5	95	48.0	1750	9.3	95	30.9	1850	6.3	95	17.2	1850	3.5	95	
32.3	86.6	1460	13.9	95	43.3	1750	8.4	95	27.8	1850	5.7	95	15.5	1850	3.2	95	
38.9	72.0	1460	11.6	95	36.0	1750	6.9	95	23.1	1850	4.7	95	12.9	1850	2.6	95	
40.7	68.8	1460	11.1	95	34.4	1750	6.6	95	22.1	1800	4.4	95	12.3	1850	2.5	95	
44.7	62.6	1460	10.1	95	31.3	1750	6.0	95	20.1	1800	4.0	95	11.2	1900	2.3	95	
48.9	57.2	1460	9.2	95	28.6	1750	5.5	95	18.4	1850	3.7	95	10.2	1900	2.1	95	

PR 112/3

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ir	n_1 = 2800 min^{-1}				n_1 = 1400 min^{-1}				n_1 = 900 min^{-1}				n_1 = 500 min^{-1}				IEC
	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	n_2 min^{-1}	T_{2M} Nm	P kW	RD %	
51.2	54.7	1350	8.3	93	27.4	1700	5.2	93	17.6	1860	3.7	93	9.8	1860	2.0	93	
58.5	47.9	1400	7.5	93	23.9	1750	4.7	93	15.4	1860	3.2	93	8.6	1860	1.8	93	
62.7	44.7	1420	7.1	93	22.3	1750	4.4	93	14.4	1860	3.0	93	8.0	1860	1.7	93	
67.4	41.6	1440	6.7	93	20.8	1750	4.1	93	13.4	1860	2.8	93	7.4	1860	1.6	93	
72.6	38.6	1500	6.5	93	19.3	1750	3.8	93	12.4	1860	2.6	93	6.9	1860	1.4	93	
78.5	35.7	1500	6.0	93	17.8	1750	3.5	93	11.5	1860	2.4	93	6.4	1860	1.3	93	
87.3	32.1	1500	5.4	93	16.0	1750	3.2	93	10.3	1860	2.2	93	5.7	1860	1.2	93	112 B5
93.6	29.9	1500	5.1	93	15.0	1750	2.9	93	9.6	1860	2.0	93	5.3	1860	1.1	93	100 B5
108.4	25.8	1500	4.4	93	12.9	1750	2.5	93	8.3	1860	1.7	93	4.6	1860	1.0	93	
117.2	23.9	1500	4.0	93	11.9	1750	2.4	93	7.7	1860	1.6	93	4.3	1860	0.9	93	90 B5
128.3	21.8	1500	3.7	93	10.9	1750	2.2	93	7.0	1860	1.5	93	3.9	1860	0.8	93	80 B5
148.0	18.9	1500	3.2	93	9.5	1750	1.9	93	6.1	1860	1.3	93	3.4	1860	0.7	93	
167.0	16.8	1500	2.8	93	8.4	1750	1.7	93	5.4	1860	1.1	93	3.0	1860	0.6	93	
191.5	14.6	1500	2.5	93	7.3	1750	1.4	93	4.7	1860	1.0	93	2.6	1860	0.5	93	
220.9	12.7	1500	2.1	93	6.3	1750	1.2	93	4.1	1860	0.9	93	2.3	1860	0.5	93	
241.0	11.6	1500	2.0	93	5.8	1750	1.1	93	3.7	1900	0.8	93	2.1	1900	0.4	93	
278.1	10.1	1500	1.7	93	5.0	1750	1.0	93	3.2	1900	0.7	93	1.8	1900	0.4	93	

N.B.
Per i riduttori evidenziati dal doppio bordo nella colonna delle potenze è necessario verificare lo scambio termico del riduttore (come indicato nel par. 1.7). Per maggiori informazioni contattare

NOTE.
Pay attention please to the frame around the input power value: for this gearboxes it's important to check the thermal capacity (comp. par. 1.7). For details please contact our technical office.

HINWEIS.
Sind in den Tabellen Nennleistungen eingerahmt, so ist die thermische Leistungsgrenze der Getriebe zu beachten (s. par.1.7).

N.B.
I pesi riportati sono indicativi e possono variare in funzione della versione del riduttore.

NOTE.
Listed weights are for reference only and can vary according to the gearbox version.

HINWEIS.
Die angegeben Gewichtsmaße sind Richtwerte und können je nach Getriebeversion variieren.

Nella tab. 8.5 sono riportate le grandezze motore accoppiabili (IEC) unitamente alle dimensioni albero/flangia motore standard.

In table 8.5 the possible shaft/flange dimensions IEC standard are listed

In Tabelle 8.5 sind die verfügbaren IEC-Standardmotoreingänge mit den Wellen-u. Flanschabmessungen aufgelistet.

Tab. 8.5

	Possibili accoppiamenti con motori IEC - *Possible couplings with IEC motors* - Mögliche Verbindungen mit IEC-Motoren		
	IEC	ir	
		Tutti / *All* / Alle	
PMP 63/2 PMF 63/2	63	**11/140** (B5)	
	71	**14/160** (B5)	
	80	**19/200** (B5) **- 19/120** (B14**)**	19/160 - 19/140
	90	**24/200** (B5) **- 24/140** (B14)	24/160 - 24/120
	100 112	**28/250** (B5) **- 28/160** (B14)	
PMP 63/3 PMF 63/3	63	**11/140** (B5)	
	71	**14/160** (B5)	
	80	**19/200** (B5) **- 19/120** (B14)	19/160 - 19/140
PMP 71/2 PMF 71/2	71	**14/160** (B5)	14/200 -14/140 - 14/120
	80	**19/200** (B5) **- 19/120** (B14)	19/160 - 19/140
	90	**24/200** (B5) **- 24/140** (B14)	24/160 - 24/120
	100 112	**28/250** (B5) **- 28/160** (B14)	
PMP 71/3 PMF 71/3	63	**11/140** (B5)	
	71	**14/160** (B5)	14/200 -14/140 - 14/120
	80	**19/200** (B5) **- 19/120** (B14)	19/160 - 19/140
	90	**24/200** (B5) **- 24/140** (B14)	24/160 - 24/120

	Possibili accoppiamenti con motori IEC - *Possible couplings with IEC motors* - Mögliche Verbindungen mit IEC-Motoren		
	IEC	ir	
		Tutti / *All* / Alle	
PMP 90/2 PMF 90/2	90	**24/200** (B5)	24/300 - 24/250
	100 112	**28/250** (B5)	28/200 - 28/300
	132	**38/300** (B5) **- 38/200** (B14)	38/250
PMP 90/3 PMF 90/3	71	**14/160** (B5)	
	80	**19/200** (B5)	
	90	**24/200** (B5)	
	100	**28/250** (B5) - **28/160** (B14)	
PMP 112/2 PMF 112/2	100 112	**28/250** (B5)	28/350 - 28/300
	132	**38/300** (B5)	38/350 - 38/250
	160	**42/350** (B5)	42/300 - 42/250
PMP 112/3 PMF 112/3	80	**19/200** (B5)	
	90	**24/200** (B5)	
	100 112	**28/250** (B5)	

Legenda:

19/200 (B5) 19/160

19/200 : combinazione albero/flangia standard
(B5) : forma costruttiva motore IEC
19/160 : combinazioni albero/flangia a richiesta

Key:

19/200 *(B5)* *19/160*

19/200 *: standard shaft/flange combination*
(B5) : IEC motor constructive shape
19/160 : shaft/flange combinations upon request

Legende:

19/200 (B5) 19/160

19/200 : Standardkombinationen Welle/Flansch
(B5) : Konstruktionsform IEC-Motor
19/160 : Sonderkombinationen Welle/Flansch

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 *PMP - PCP - PMF - PCF Gearmotors performances*

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

0.09 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 900 min^{-1}				
23	39.5	35.1	13.4	**71/3**
21	43.4	38.5	6.5	**63/3**
19	47.0	41.7	6.1	**63/3**
17	53.3	47.4	5.4	**63/3**
16	57.2	50.8	5.0	**63/3**
15	61.8	54.9	4.6	**63/3**
13	69.6	61.8	4.0	**63/3**
12	75.4	67.0	3.8	**63/3**
11	81.4	72.3	3.5	**63/3**
10	88.4	78.5	3.2	**63/3**
9.1	98.9	87.9	2.8	**63/3**
7.9	114.4	102	2.5	**63/3**
6.7	134.3	119	4.1	**71/3**
6.6	135.4	120	2.1	**63/3**
6.0	149.1	132	1.9	**63/3**
5.8	154.8	137	3.6	**71/3**
5.5	163.2	145	3.2	**71/3**
5.5	164.7	146	1.7	**63/3**
5.0	181.3	161	1.6	**63/3**
4.7	191.6	170	3.1	**71/3**
4.2	216.9	193	1.3	**63/3**
4.1	220.8	196	2.7	**71/3**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
35	39.5	32.6	14.1	**71/3**
32	43.4	35.8	7.0	**63/3**
30	47.0	38.7	6.5	**63/3**
26	53.3	43.9	5.7	**63/3**
24	57.2	47.1	5.3	**63/3**
23	61.8	50.8	4.9	**63/3**
20	69.6	57.2	4.4	**63/3**
19	75.4	62.0	4.0	**63/3**
17	81.4	66.8	3.7	**63/3**
16	88.4	72.5	3.4	**63/3**
14	98.9	81.1	3.1	**63/3**
12	114.4	93.8	2.7	**63/3**
10	135.4	111	2.3	**63/3**
9.5	149.1	122	2.0	**63/3**
9.1	154.8	127	3.6	**71/3**
8.6	163.2	134	3.4	**71/3**
8.6	164.7	135	1.9	**63/3**
7.8	181.3	148	1.7	**63/3**
7.3	191.6	157	3.1	**71/3**
6.5	216.9	177	1.4	**63/3**
6.4	220.8	181	2.8	**71/3**
n_1 = 900 min^{-1}				
23	39.5	50.7	9.3	**71/3**
21	43.4	55.6	4.5	**63/3**
19	47.0	60.3	4.2	**63/3**

0.13 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 900 min^{-1}				
17	53.3	68.4	3.7	**63/3**
16	57.2	73.4	3.5	**63/3**
15	61.8	79.3	3.2	**63/3**
13	69.6	89.3	2.8	**63/3**
12	75.4	96.7	2.6	**63/3**
11	81.4	104	2.4	**63/3**
10	86.8	111	4.2	**71/3**
10	88.4	113	2.2	**63/3**
10	91.5	117	4.0	**71/3**
9.1	98.9	127	2.0	**63/3**
9.1	99.3	127	3.7	**71/3**
8.4	107.5	138	3.4	**71/3**
7.9	114.4	147	1.7	**63/3**
7.3	123.8	159	3.0	**71/3**
6.7	134.3	172	2.8	**71/3**
6.6	135.4	174	1.5	**63/3**
6.0	149.1	191	1.3	**63/3**
5.8	154.8	199	2.5	**71/3**
5.5	163.2	209	2.2	**71/3**
5.5	164.7	211	1.2	**63/3**
5.0	181.3	233	1.1	**63/3**
4.7	191.6	246	2.1	**71/3**
4.2	216.9	278	0.9	**63/3**
4.1	220.8	283	1.8	**71/3**

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
64.6	43.4	25	8.9	**63/3**
59.6	47.0	27	7.5	**63/3**
52.5	53.3	30	7.2	**63/3**
48.9	57.2	33	7.0	**63/3**
45.4	61.8	35	6.5	**63/3**
40.3	69.6	40	6.0	**63/3**
37.2	75.4	43	5.6	**63/3**
34.5	81.4	46	5.2	**63/3**
31.8	88.4	50	4.8	**63/3**
28.4	98.9	56	4.3	**63/3**
24.5	114.4	65	3.7	**63/3**
20.8	135.4	77	3.1	**63/3**
18.9	149.1	85	2.8	**63/3**
17.1	164.7	94	2.6	**63/3**
15.5	181.3	103	2.3	**63/3**
14.6	191.6	109	4.1	**71/3**
13.0	216.9	123	1.9	**63/3**
12.7	220.8	126	3.6	**71/3**
n_1 = 1400 min^{-1}				
35	39.5	45.1	10.2	**71/3**
32	43.4	49.5	5.0	**63/3**
30	47.0	53.6	4.7	**63/3**
26	53.3	60.9	4.1	**63/3**

0.18 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
24	57.2	65.3	3.8	**63/3**
23	61.8	70.4	3.6	**63/3**
20	69.6	79.3	3.2	**63/3**
19	75.4	85.8	2.9	**63/3**
17	81.4	92.5	2.7	**63/3**
16	88.4	100	2.5	**63/3**
14	98.9	112	2.2	**63/3**
14	99.3	113	4.1	**71/3**
13	107.5	123	3.7	**71/3**
12	114.4	130	1.9	**63/3**
11	123.8	141	3.3	**71/3**
10	134.3	153	3.0	**71/3**
10	135.4	154	1.6	**63/3**
9.5	149.1	169	1.5	**63/3**
9.1	154.8	176	2.6	**71/3**
8.6	163.2	186	2.5	**71/3**
8.6	164.7	186	1.3	**63/3**
7.8	181.3	205	1.2	**63/3**
7.3	191.6	218	2.2	**71/3**
6.5	216.9	245	1.0	**63/3**
6.4	220.8	251	2.0	**71/3**
n_1 = 900 min^{-1}				
231	3.9	7.1	16.3	**63/2**
207	4.3	7.9	17.1	**63/2**
179	5.0	9.1	16.4	**63/2**
160	5.6	10.2	16.7	**63/2**
145	6.2	11.2	15.6	**63/2**
139	6.5	11.8	15.7	**63/2**
122	7.4	13.4	14.2	**63/2**
112	8.0	14.6	14.7	**63/2**
100	9.0	16.3	14.1	**63/2**
87	10.4	18.9	12.7	**63/2**
76	11.8	21.5	11.9	**63/2**
66	13.5	24.6	10.4	**63/2**
63	14.4	26.1	8.8	**63/2**
53	16.9	30.6	8.3	**63/2**
45	19.8	36.0	7.1	**63/2**
44	20.5	37.2	6.5	**63/2**
37	24.1	42.8	5.7	**63/2**
34	26.1	47.4	5.3	**63/2**
28	31.7	57.6	4.3	**63/2**
25	36.6	66.4	3.8	**63/2**
21	43.4	77.0	3.2	**63/3**
19	47.0	83.4	3.1	**63/3**
17	53.3	95	2.7	**63/3**
16	57.2	102	2.5	**63/3**
15	61.8	110	2.3	**63/3**
14	64.2	114	4.1	**71/3**
13	69.6	124	2.0	**63/3**
12	75.4	134	3.5	**71/3**
12	75.4	134	1.9	**63/3**
11	81.4	145	1.8	**63/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
0.18 kW				
n_1 = 900 min^{-1}				
10	86.8	154	3.0	**71/3**
10	88.4	157	1.6	**63/3**
9.8	91.5	163	2.9	**71/3**
9.1	98.9	176	1.4	**63/3**
9.1	99.3	176	2.7	**71/3**
8.4	107.5	191	2.5	**71/3**
7.9	114.4	203	1.3	**63/3**
7.3	123.8	220	2.2	**71/3**
7.2	125.0	222	4.3	**90/3**
6.7	134.3	239	2.1	**71/3**
6.6	135.4	241	1.1	**63/3**
6.4	141.0	250	3.8	**90/3**
6.0	149.1	265	1.0	**63/3**
5.8	154.8	275	1.8	**71/3**
5.8	155.2	276	3.4	**90/3**
5.5	163.2	290	1.6	**71/3**
5.5	164.7	292	0.9	**63/3**
5.1	178.1	316	3.0	**90/3**
5.0	181.3	322	0.8	**63/3**
4.7	191.6	340	1.5	**71/3**
4.5	201.0	357	2.6	**90/3**
4.1	220.8	392	1.3	**71/3**
4.0	224.4	399	2.4	**90/3**
3.6	253.2	450	2.1	**90/3**
0.25 kW				
n_1 = 2800 min^{-1}				
65	43.4	34.4	6.4	**63/3**
60	47.0	37.2	5.4	**63/3**
53	53.3	42.3	5.2	**63/3**
49	57.2	45.4	5.1	**63/3**
45	61.8	48.9	4.7	**63/3**
40	69.6	55.1	4.4	**63/3**
37	75.4	59.7	4.0	**63/3**
34	81.4	64.4	3.7	**63/3**
32	88.4	69.9	3.4	**63/3**
28	98.9	78.2	3.1	**63/3**
25	114.4	90.4	2.7	**63/3**
23	123.8	98.2	4.3	**71/3**
21	134.3	106	3.9	**71/3**
21	135.4	107	2.2	**63/3**
19	149.1	118	2.0	**63/3**
18	154.8	123	3.4	**71/3**
17	163.2	129	3.2	**71/3**
17	164.7	130	1.8	**63/3**
16	181.3	143	1.7	**63/3**
15	191.6	152	3.0	**71/3**
13	216.9	171	1.4	**63/3**
13	220.8	175	2.6	**71/3**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
0.25 kW				
n_1 = 1400 min^{-}				
135	10.4	16.8	13.1	**63/2**
118	11.8	19.2	12.3	**63/2**
103	13.5	21.9	11.4	**63/2**
97	14.4	23.3	9.4	**63/2**
83	16.9	27.3	9.2	**63/2**
71	19.8	32.1	7.8	**63/2**
68	20.5	33.2	6.9	**63/2**
58	24.1	38.2	6.0	**63/2**
54	26.1	42.3	5.7	**63/2**
44	31.7	51.4	4.7	**63/2**
38	36.6	59.3	4.2	**63/2**
32	43.4	68.8	3.6	**63/3**
30	47.0	74.5	3.4	**63/3**
26	53.3	84.5	3.0	**63/3**
24	57.2	90.7	2.8	**63/3**
23	61.8	97.8	2.6	**63/3**
20	69.6	110	2.3	**63/3**
19	75.4	119	2.1	**63/3**
19	75.4	120	3.8	**71/3**
17	81.4	128	1.9	**63/3**
16	86.8	138	3.3	**71/3**
16	88.4	139	1.8	**63/3**
15	91.5	145	3.2	**71/3**
14	98.9	156	1.6	**63/3**
14	99.3	157	2.9	**71/3**
13	107.5	171	2.7	**71/3**
12	114.4	180	1.4	**63/3**
11	123.8	196	2.3	**71/3**
10	134.3	213	2.2	**71/3**
10	135.4	213	1.2	**63/3**
10	141.0	223	4.1	**90/3**
9.5	149.1	235	1.1	**63/3**
9.1	154.8	245	1.9	**71/3**
9.0	155.2	246	3.7	**90/3**
8.6	163.2	258	1.8	**71/3**
8.6	164.7	259	1.0	**63/3**
7.9	178.1	282	3.2	**90/3**
7.8	181.3	285	0.9	**63/3**
7.3	191.6	303	1.6	**71/3**
7.0	201.0	318	2.9	**90/3**
6.4	220.8	349	1.4	**71/3**
6.3	224.4	354	2.6	**90/3**
5.6	253.2	400	2.3	**90/3**
n_1 = 900 min^{-1}				
301	3.0	7.5	11.3	**63/2**
231	3.9	9.8	11.7	**63/2**
207	4.3	10.9	12.3	**63/2**
179	5.0	12.7	11.8	**63/2**
160	5.6	14.1	12.0	**63/2**
145	6.2	15.6	11.2	**63/2**
139	6.5	16.4	11.3	**63/2**
122	7.4	18.6	10.2	**63/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
0.25 kW				
n_1 = 900 min^{-1}				
112	8.0	20.3	10.6	**63/2**
100	9.0	22.6	10.2	**63/2**
87	10.4	26.2	9.2	**63/2**
76	11.8	29.8	8.6	**63/2**
66	13.5	34.1	7.5	**63/2**
63	14.4	36.2	6.3	**63/2**
53	16.9	42.5	6.0	**63/2**
45	19.8	49.9	5.1	**63/2**
44	20.5	51.7	4.6	**63/2**
37	24.1	59.4	4.1	**63/2**
34	26.1	65.8	3.8	**63/2**
28	31.7	80.0	3.1	**63/2**
25	36.6	92.2	2.7	**63/2**
21	43.4	107	2.3	**63/3**
20	44.7	113	4.1	**71/2**
19	47.0	116	2.2	**63/3**
18	50.5	127	3.6	**71/2**
17	53.3	132	1.9	**63/3**
17	53.5	132	3.5	**71/3**
16	57.2	141	1.8	**63/3**
15	60.8	150	3.1	**71/3**
15	61.8	152	1.7	**63/3**
14	64.2	158	3.0	**71/3**
13	69.6	172	1.5	**63/3**
12	75.4	186	2.5	**71/3**
12	75.4	186	1.4	**63/3**
11	81.4	201	1.3	**63/3**
10	86.8	214	2.2	**71/3**
10	88.4	218	1.1	**63/3**
10	91.5	226	2.1	**71/3**
10	93.3	230	4.1	**90/3**
9.1	98.9	244	1.0	**63/3**
9.1	99.3	245	1.9	**71/3**
8.9	100.6	248	3.8	**90/3**
8.4	107.5	265	1.8	**71/3**
8.3	108.9	269	3.5	**90/3**
7.9	114.4	282	0.9	**63/3**
7.3	123.8	305	1.6	**71/3**
7.2	125.0	308	3.1	**90/3**
6.7	134.3	331	1.5	**71/3**
6.6	135.4	334	0.8	**63/3**
6.4	141.0	348	2.7	**90/3**
5.8	154.8	382	1.3	**71/3**
5.8	155.2	383	2.5	**90/3**
5.5	163.2	403	1.2	**71/3**
5.1	178.1	439	2.2	**90/3**
4.7	191.6	473	1.1	**71/3**
4.5	201.0	496	1.9	**90/3**
4.1	220.8	545	1.0	**71/3**
4.0	224.4	554	1.7	**90/3**
3.6	253.2	625	1.5	**P90/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 PMP - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

0.37 kW

n_1 = 2800 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
207	13.5	16.2	12.6	**63/2**
195	14.4	17.2	11.0	**63/2**
166	16.9	20.2	11.4	**63/2**
141	19.8	23.8	9.7	**63/2**
137	20.5	24.6	8.5	**63/2**
116	24.1	28.3	7.4	**63/2**
107	26.1	31.3	7.0	**63/2**
88	31.7	38.0	5.8	**63/2**
77	36.6	43.8	5.1	**63/2**
65	43.4	50.9	4.3	**63/3**
60	47.0	55.1	3.6	**63/3**
53	53.3	62.6	3.5	**63/3**
49	57.2	67.1	3.4	**63/3**
45	61.8	72.4	3.2	**63/3**
40	69.6	81.6	2.9	**63/3**
37	75.4	88.3	2.7	**63/3**
34	81.4	95.3	2.5	**63/3**
32	88.4	103	2.3	**63/3**
31	91.5	107	3.9	**71/3**
28	98.9	116	2.1	**63/3**
28	99.3	116	3.6	**71/3**
26	107.5	126	3.3	**71/3**
25	114.4	134	1.8	**63/3**
23	123.8	145	2.9	**71/3**
21	134.3	158	2.7	**71/3**
21	135.4	158	1.5	**63/3**
19	149.1	174	1.4	**63/3**
18	154.8	182	2.3	**71/3**
17	163.2	192	2.2	**71/3**
17	164.7	192	1.2	**63/3**
16	181.3	212	1.1	**63/3**
15	191.6	225	2.0	**71/3**
14	201.0	235	3.9	**90/3**
13	216.9	253	0.9	**63/3**
13	220.8	259	1.7	**71/3**
13	224.4	263	3.5	**90/3**
11	253.2	296	3.1	**90/3**

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
468	3.0	7.2	11.1	**63/2**
360	3.9	9.3	11.8	**63/2**
322	4.3	10.4	12.5	**63/2**
278	5.0	12.1	11.6	**63/2**
249	5.6	13.5	11.9	**63/2**
226	6.2	14.8	10.8	**63/2**
216	6.5	15.6	10.9	**63/2**
190	7.4	17.7	10.2	**63/2**
174	8.0	19.3	10.4	**63/2**
156	9.0	21.5	9.8	**63/2**
135	10.4	24.9	8.8	**63/2**
118	11.8	28.3	8.3	**63/2**
103	13.5	32.5	7.7	**63/2**
97	14.4	34.5	6.4	**63/2**
83	16.9	40.4	6.2	**63/2**
71	19.8	47.5	5.3	**63/2**

0.37 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
68	20.5	49.2	4.7	**63/2**
58	24.1	56.6	4.1	**63/2**
54	26.1	62.6	3.8	**63/2**
44	31.7	76.1	3.2	**63/2**
38	36.6	87.7	2.9	**63/2**
32	43.4	102	2.5	**63/3**
30	47.0	110	2.3	**63/3**
28	50.5	121	3.8	**71/2**
26	53.3	125	2.0	**63/3**
26	53.5	126	3.7	**71/3**
24	57.2	134	1.9	**63/3**
23	60.8	143	3.2	**71/3**
23	61.8	145	1.7	**63/3**
22	64.2	151	3.1	**71/3**
20	69.6	163	1.5	**63/3**
19	75.4	176	1.4	**63/3**
19	75.4	177	2.6	**71/3**
17	81.4	190	1.3	**63/3**
16	86.8	204	2.3	**71/3**
16	88.4	206	1.2	**63/3**
15	91.5	215	2.1	**71/3**
15	93.3	219	4.2	**90/3**
14	98.9	231	1.1	**63/3**
14	99.3	233	2.0	**71/3**
14	100.6	236	3.9	**90/3**
13	107.5	252	1.8	**71/3**
13	108.9	256	3.6	**90/3**
12	114.4	267	0.9	**63/3**
11	123.8	290	1.6	**71/3**
11	125.0	293	3.1	**90/3**
10	134.3	315	1.5	**71/3**
10	135.4	316	0.8	**63/3**
10	141.0	331	2.8	**90/3**
9.1	154.8	363	1.3	**71/3**
9.0	155.2	364	2.5	**90/3**
8.6	163.2	382	1.2	**71/3**
7.9	178.1	417	2.2	**90/3**
7.3	191.6	448	1.1	**71/3**
7.0	201.0	470	1.9	**90/3**
6.4	220.8	516	1.0	**71/3**
6.3	224.4	524	1.7	**90/3**
5.6	253.2	591	1.5	**90/3**

n_1 = 900 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
301	3.0	11.2	7.6	**63/2**
231	3.9	14.5	7.9	**63/2**
207	4.3	16.2	8.3	**63/2**
179	5.0	18.8	8.0	**63/2**
160	5.6	20.9	8.1	**63/2**
145	6.2	23.1	7.6	**63/2**
139	6.5	24.2	7.6	**63/2**
122	7.4	27.5	6.9	**63/2**
112	8.0	30.0	7.2	**63/2**
100	9.0	33.5	6.9	**63/2**
87	10.4	38.8	6.2	**63/2**
76	11.8	44.1	5.8	**63/2**

0.37 kW

n_1 = 900 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
66	13.5	50.5	5.1	**63/2**
63	14.4	53.6	4.3	**63/2**
53	16.9	62.9	4.1	**63/2**
45	19.8	73.9	3.5	**63/2**
44	20.5	76.5	3.1	**63/2**
37	24.1	88.0	2.8	**63/2**
34	26.1	97.3	2.6	**63/2**
28	31.7	118	2.1	**63/2**
27	33.1	123	3.3	**71/2**
25	36.6	136	1.8	**63/2**
24	37.3	139	2.9	**71/2**
23	39.5	144	3.3	**71/3**
21	43.4	158	1.6	**63/3**
20	44.7	167	2.8	**71/2**
19	47.0	172	1.5	**63/3**
18	50.5	188	2.4	**71/2**
17	53.3	195	1.3	**63/3**
17	53.5	195	2.4	**71/3**
16	57.2	209	1.2	**63/3**
15	60.8	222	2.1	**71/3**
15	61.8	226	1.1	**63/3**
14	62.3	228	4.2	**90/3**
14	64.2	234	2.0	**71/3**
13	69.6	254	1.0	**63/3**
13	70.6	258	3.7	**90/3**
12	75.4	275	1.7	**71/3**
12	75.4	275	0.9	**63/3**
12	76.3	279	3.4	**90/3**
11	81.4	297	0.9	**63/3**
11	82.8	302	3.1	**90/3**
10	86.8	317	1.5	**71/3**
10	88.4	323	0.8	**63/3**
10	91.5	334	1.4	**71/3**
10	93.3	341	2.8	**90/3**
9.1	99.3	362	1.3	**71/3**
8.9	100.6	367	2.6	**90/3**
8.4	107.5	393	1.2	**71/3**
8.3	108.9	398	2.4	**90/3**
7.7	117.2	428	4.3	**112/3**
7.3	123.8	452	1.1	**71/3**
7.2	125.0	456	2.1	**90/3**
7.0	128.3	468	4.0	**112/3**
6.7	134.3	490	1.0	**71/3**
6.4	141.0	515	1.8	**90/3**
6.1	148.0	540	3.4	**112/3**
5.8	154.8	565	0.9	**71/3**
5.8	155.2	567	1.7	**90/3**
5.5	163.2	596	0.8	**71/3**
5.4	167.0	610	3.0	**112/3**
5.1	178.1	650	1.5	**90/3**
4.7	191.5	699	2.7	**112/3**
4.5	201.0	734	1.3	**90/3**
4.1	220.9	807	2.3	**112/3**
4.0	224.4	819	1.2	**90/3**
3.7	241.0	880	2.2	**112/3**
3.6	253.2	925	1.0	**90/3**
3.2	278.1	1015	1.9	**112/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 PMP - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

0.55 kW

n_1 = 2800 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
645	4.3	7.7	12.3	**63/2**
557	5.0	9.0	12.3	**63/2**
499	5.6	10.0	12.5	**63/2**
452	6.2	11.0	11.8	**63/2**
431	6.5	11.6	11.7	**63/2**
379	7.4	13.2	10.6	**63/2**
348	8.0	14.3	10.5	**63/2**
312	9.0	16.0	10.3	**63/2**
269	10.4	18.5	9.7	**63/2**
237	11.8	21.1	9.0	**63/2**
207	13.5	24.1	8.5	**63/2**
195	14.4	25.6	7.4	**63/2**
166	16.9	30.0	7.7	**63/2**
141	19.8	35.3	6.5	**63/2**
137	20.5	36.5	5.7	**63/2**
116	24.1	42.0	5.0	**63/2**
107	26.1	46.5	4.7	**63/2**
88	31.7	56.6	3.9	**63/2**
77	36.6	65.2	3.5	**63/2**
65	43.4	75.7	2.9	**63/3**
60	47.0	81.9	2.4	**63/3**
53	53.3	93.0	2.4	**63/3**
49	57.2	100	2.3	**63/3**
46	60.8	106	4.0	**71/3**
45	61.8	108	2.1	**63/3**
44	64.2	112	3.8	**71/3**
40	69.6	121	2.0	**63/3**
37	75.4	131	1.8	**63/3**
37	75.4	131	3.2	**71/3**
34	81.4	142	1.7	**63/3**
32	86.8	151	2.8	**71/3**
32	88.4	154	1.6	**63/3**
31	91.5	160	2.6	**71/3**
28	98.9	172	1.4	**63/3**
28	99.3	173	2.4	**71/3**
26	107.5	188	2.2	**71/3**
25	114.4	199	1.2	**63/3**
23	123.8	216	1.9	**71/3**
22	125.0	218	4.2	**90/3**
21	134.3	234	1.8	**71/3**
21	135.4	235	1.0	**63/3**
20	141.0	246	3.7	**90/3**
19	149.1	259	0.9	**63/3**
18	154.8	270	1.6	**71/3**
18	155.2	270	3.4	**90/3**
17	163.2	285	1.5	**71/3**
17	164.7	286	0.8	**63/3**
16	178.1	310	2.9	**90/3**
16	181.3	315	0.8	**63/3**
15	191.6	334	1.3	**71/3**
14	201.0	350	2.6	**90/3**
13	220.8	385	1.2	**71/3**
13	224.4	391	2.3	**90/3**
11	253.2	441	2.1	**90/3**

0.55 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
539	2.6	9.3	14.0	**71/2**
468	3.0	10.7	7.5	**63/2**
360	3.9	13.9	7.9	**63/2**
322	4.3	15.5	8.4	**63/2**
278	5.0	17.9	7.8	**63/2**
249	5.6	20.0	8.0	**63/2**
226	6.2	22.1	7.2	**63/2**
216	6.5	23.1	7.3	**63/2**
190	7.4	26.3	6.8	**63/2**
174	8.0	28.7	7.0	**63/2**
156	9.0	32.0	6.6	**63/2**
135	10.4	37.0	5.9	**63/2**
118	11.8	42.1	5.6	**63/2**
103	13.5	48.2	5.2	**63/2**
97	14.4	51.2	4.3	**63/2**
83	16.9	60.1	4.2	**63/2**
71	19.8	70.6	3.5	**63/2**
68	20.5	73.1	3.1	**63/2**
58	24.1	84.1	2.7	**63/2**
54	26.1	93.0	2.6	**63/2**
44	31.7	113	2.1	**63/2**
42	33.1	118	3.5	**71/2**
38	36.6	130	1.9	**63/2**
38	37.3	133	3.1	**71/2**
35	39.5	138	3.3	**71/3**
32	43.4	151	1.7	**63/3**
31	44.7	159	2.9	**71/2**
30	47.0	164	1.5	**63/3**
28	50.5	180	2.6	**71/2**
26	53.3	186	1.3	**63/3**
26	53.5	187	2.5	**71/3**
24	57.2	199	1.3	**63/3**
23	60.8	212	2.2	**71/3**
23	61.8	215	1.2	**63/3**
22	62.3	217	4.2	**90/3**
22	64.2	224	2.1	**71/3**
20	69.6	242	1.0	**63/3**
20	70.6	246	3.7	**90/3**
19	75.4	262	1.0	**63/3**
19	75.4	263	1.7	**71/3**
18	76.3	266	3.4	**90/3**
17	81.4	283	0.9	**63/3**
17	82.8	289	3.1	**90/3**
16	86.8	303	1.5	**71/3**
16	88.4	307	0.8	**63/3**
15	91.5	319	1.4	**71/3**
15	93.3	325	2.8	**90/3**
14	99.3	346	1.3	**71/3**
14	100.6	351	2.6	**90/3**
13	107.5	375	1.2	**71/3**
13	108.9	380	2.4	**90/3**
12	117.2	407	4.3	**112/3**
11	123.8	432	1.1	**71/3**
11	125.0	436	2.1	**90/3**
11	128.3	446	3.9	**112/3**

0.55 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
539	2.6	9.3	14.0	**71/2**
468	3.0	10.7	7.5	**63/2**
360	3.9	13.9	7.9	**63/2**
322	4.3	15.5	8.4	**63/2**
278	5.0	17.9	7.8	**63/2**
249	5.6	20.0	8.0	**63/2**
226	6.2	22.1	7.2	**63/2**
216	6.5	23.1	7.3	**63/2**
190	7.4	26.3	6.8	**63/2**
174	8.0	28.7	7.0	**63/2**
156	9.0	32.0	6.6	**63/2**
135	10.4	37.0	5.9	**63/2**
118	11.8	42.1	5.6	**63/2**
103	13.5	48.2	5.2	**63/2**
97	14.4	51.2	4.3	**63/2**

n_1 = 900 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
301	3.0	16.6	5.1	**63/2**
231	3.9	21.6	5.3	**63/2**
207	4.3	24.1	5.6	**63/2**
179	5.0	27.9	5.4	**63/2**
160	5.6	31.1	5.5	**63/2**
145	6.2	34.3	5.1	**63/2**
139	6.5	36.0	5.1	**63/2**
122	7.4	40.9	4.6	**63/2**
112	8.0	44.6	4.8	**63/2**
100	9.0	49.8	4.6	**63/2**
87	10.4	57.6	4.2	**63/2**
76	11.8	65.5	3.9	**63/2**
66	13.5	75.0	3.4	**63/2**
63	14.4	79.7	2.9	**63/2**
53	16.9	93.5	2.7	**63/2**
45	19.8	110	2.3	**63/2**
44	20.5	114	2.1	**63/2**
41	21.9	121	4.0	**71/2**
37	24.1	131	1.9	**63/2**
36	25.3	140	2.9	**71/2**
34	26.1	145	1.7	**63/2**
31	28.8	160	2.9	**71/2**
28	31.7	176	1.4	**63/2**
27	33.1	183	2.2	**71/2**
25	36.6	203	1.2	**63/2**
24	37.3	207	2.0	**71/2**
23	39.5	215	2.2	**71/3**
21	43.4	235	1.1	**63/3**
21	43.7	237	4.0	**90/3**
20	44.7	248	1.9	**71/2**
19	47.0	255	1.0	**63/3**
18	48.8	265	3.6	**90/3**
18	50.5	280	1.6	**71/2**
17	53.3	289	0.9	**63/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 PMP - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

0.55 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 900 min^{-1}				
17	53.5	290	1.6	**71/3**
16	55.2	300	3.2	**90/3**
16	57.2	311	0.8	**63/3**
15	60.8	330	1.4	**71/3**
15	61.8	335	0.8	**63/3**
14	62.3	338	2.8	**90/3**
14	64.2	348	1.3	**71/3**
13	70.6	383	2.5	**90/3**
12	75.4	409	1.1	**71/3**
12	76.3	414	2.3	**90/3**
11	82.8	450	2.1	**90/3**
10	86.8	471	1.0	**71/3**
10	87.3	474	3.9	**112/3**
10	91.5	497	0.9	**71/3**
10	93.3	506	1.9	**90/3**
10	93.6	508	3.7	**112/3**
9.1	99.3	539	0.9	**71/3**
8.9	100.6	546	1.7	**90/3**
8.4	107.5	584	0.8	**71/3**
8.3	108.4	588	3.2	**112/3**
8.3	108.9	591	1.6	**90/3**
7.7	117.2	636	2.9	**112/3**
7.2	125.0	678	1.4	**90/3**
7.0	128.3	696	2.7	**112/3**
6.4	141.0	765	1.2	**90/3**
6.1	148.0	803	2.3	**112/3**
5.8	155.2	842	1.1	**90/3**
5.4	167.0	907	2.1	**112/3**
5.1	178.1	967	1.0	**90/3**
4.7	191.5	1039	1.8	**112/3**
4.5	201.0	1091	0.9	**90/3**
4.1	220.9	1199	1.6	**112/3**
4.0	224.4	1218	0.8	**90/3**
3.7	241.0	1308	1.5	**112/3**
3.2	278.1	1509	1.3	**112/3**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
936	3.0	7.3	10.6	**63/2**
720	3.9	9.5	9.5	**63/2**
645	4.3	10.5	9.0	**63/2**
557	5.0	12.2	9.0	**63/2**
499	5.6	13.6	9.2	**63/2**
452	6.2	15.0	8.6	**63/2**
431	6.5	15.8	8.6	**63/2**
379	7.4	17.9	7.8	**63/2**
348	8.0	19.6	7.7	**63/2**
312	9.0	21.8	7.6	**63/2**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
269	10.4	25.3	7.1	**63/2**
237	11.8	28.7	6.6	**63/2**
207	13.5	32.9	6.2	**63/2**
195	14.4	34.9	5.4	**63/2**
166	16.9	41.0	5.6	**63/2**
141	19.8	48.2	4.8	**63/2**
137	20.5	49.8	4.2	**63/2**
116	24.1	57.3	3.7	**63/2**
107	26.1	63.4	3.5	**63/2**
88	31.7	77.1	2.9	**63/2**
77	36.6	88.9	2.5	**63/2**
75	37.3	90.7	4.0	**71/2**
65	43.4	103	2.1	**63/3**
63	44.7	109	3.7	**71/2**
60	47.0	112	1.8	**63/3**
55	50.5	123	3.3	**71/2**
53	53.3	127	1.7	**63/3**
52	53.5	127	3.3	**71/3**
49	57.2	136	1.7	**63/3**
46	60.8	145	2.9	**71/3**
45	61.8	147	1.6	**63/3**
44	64.2	153	2.8	**71/3**
40	69.6	165	1.5	**63/3**
37	75.4	179	1.3	**63/3**
37	75.4	179	2.3	**71/3**
34	81.4	193	1.2	**63/3**
34	82.8	197	4.1	**90/3**
32	86.8	206	2.0	**71/3**
32	88.4	210	1.1	**63/3**
31	91.5	218	1.9	**71/3**
30	93.3	222	3.6	**90/3**
28	98.9	235	1.0	**63/3**
28	99.3	236	1.8	**71/3**
28	100.6	239	3.3	**90/3**
26	107.5	256	1.6	**71/3**
26	108.9	259	3.5	**90/3**
25	114.4	271	0.9	**63/3**
23	123.8	295	1.4	**71/3**
22	125.0	297	3.1	**90/3**
21	134.3	319	1.3	**71/3**
20	141.0	335	2.7	**90/3**
18	154.8	368	1.1	**71/3**
18	155.2	369	2.5	**90/3**
17	163.2	388	1.1	**71/3**
17	167.0	397	3.8	**112/3**
16	178.1	423	2.2	**90/3**
15	191.5	456	3.3	**112/3**
15	191.6	456	1.0	**71/3**
14	201.0	477	1.9	**90/3**
13	220.8	525	0.9	**71/3**
13	220.9	526	2.9	**112/3**
13	224.4	533	1.7	**90/3**
12	241.0	573	2.6	**112/3**
11	253.2	601	1.5	**90/3**

0.75 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
539	2.6	12.6	10.3	**71/2**
468	3.0	14.5	5.5	**63/2**
360	3.9	18.9	5.8	**63/2**
322	4.3	21.1	6.2	**63/2**
278	5.0	24.4	5.7	**63/2**
249	5.6	27.3	5.9	**63/2**
226	6.2	30.1	5.3	**63/2**
216	6.5	31.6	5.4	**63/2**
190	7.4	35.9	5.0	**63/2**
174	8.0	39.1	5.1	**63/2**
156	9.0	43.7	4.8	**63/2**
135	10.4	50.5	4.4	**63/2**
118	11.8	57.5	4.1	**63/2**
103	13.5	65.8	3.8	**63/2**
97	14.4	69.9	3.1	**63/2**
83	16.9	81.9	3.1	**63/2**
71	19.8	96.3	2.6	**63/2**
68	20.5	100	2.3	**63/2**
64	21.9	106	4.3	**71/2**
58	24.1	115	2.0	**63/2**
55	25.3	123	3.3	**71/2**
54	26.1	127	1.9	**63/2**
49	28.8	140	3.3	**71/2**
44	31.7	154	1.6	**63/2**
42	33.1	161	2.6	**71/2**
38	36.6	178	1.4	**63/2**
38	37.3	181	2.3	**71/2**
35	39.5	188	2.4	**71/3**
32	43.4	206	1.2	**63/3**
31	44.7	217	2.1	**71/2**
30	47.0	223	1.1	**63/3**
29	48.8	232	3.9	**90/3**
28	50.5	245	1.9	**71/2**
26	53.3	254	1.0	**63/3**
26	53.5	254	1.8	**71/3**
25	55.2	263	3.5	**90/3**
24	57.2	272	0.9	**63/3**
23	60.8	289	1.6	**71/3**
23	61.8	293	0.9	**63/3**
22	62.3	297	3.1	**90/3**
22	64.2	305	1.5	**71/3**
20	69.6	330	0.8	**63/3**
20	70.6	336	2.7	**90/3**
19	75.4	359	1.3	**71/3**
18	76.3	363	2.5	**90/3**
17	82.8	394	2.3	**90/3**
16	86.8	413	1.1	**71/3**
16	87.3	415	4.2	**112/3**
15	91.5	435	1.1	**71/3**
15	93.3	444	2.1	**90/3**
15	93.6	444	3.9	**112/3**
14	99.3	472	1.0	**71/3**
14	100.6	479	1.9	**90/3**
13	107.5	512	0.9	**71/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

0.75 kW

n_1 = 1400 min^{-1}				
13	108.4	514	3.4	**112/3**
13	108.9	518	1.8	**90/3**
12	117.2	556	3.2	**112/3**
11	123.8	589	0.8	**71/3**
11	125.0	594	1.5	**90/3**
11	128.3	608	2.9	**112/3**
10	141.0	670	1.4	**90/3**
10	148.0	701	2.5	**112/3**
9.0	155.2	737	1.2	**90/3**
8.4	167.0	790	2.2	**112/3**
7.9	178.1	845	1.1	**90/3**
7.4	191.5	905	1.9	**112/3**
7.0	201.0	953	1.0	**90/3**
6.4	220.9	1044	1.7	**112/3**
6.3	224.4	1063	0.9	**90/3**
5.9	241.0	1138	1.5	**112/3**
5.6	253.2	1199	0.8	**90/3**
5.1	278.1	1312	1.3	**112/3**

n_1 = 900 min^{-1}				
301	3.0	22.6	3.8	**63/2**
231	3.9	29.4	3.9	**63/2**
207	4.3	32.8	4.1	**63/2**
179	5.0	38.0	3.9	**63/2**
160	5.6	42.4	4.0	**63/2**
145	6.2	46.8	3.7	**63/2**
139	6.5	49.1	3.8	**63/2**
122	7.4	55.8	3.4	**63/2**
112	8.0	60.8	3.5	**63/2**
100	9.0	67.9	3.4	**63/2**
87	10.4	78.6	3.1	**63/2**
76	11.8	89.4	2.9	**63/2**
73	12.3	92.8	3.3	**71/2**
66	13.5	102	2.5	**63/2**
63	14.4	109	2.1	**63/2**
56	16.1	122	3.9	**71/2**
53	16.9	127	2.0	**63/2**
52	17.3	131	3.7	**71/2**
48	18.7	141	3.4	**71/2**
45	19.8	150	1.7	**63/2**
45	20.2	153	3.1	**71/2**
44	20.5	155	1.5	**63/2**
41	21.9	166	2.9	**71/2**
37	24.1	178	1.4	**63/2**
36	25.3	191	2.1	**71/2**
34	26.1	197	1.3	**63/2**
31	28.8	218	2.1	**71/2**
29	30.5	231	4.0	**90/2**
28	31.7	240	1.0	**63/2**
27	33.1	250	1.6	**71/2**
26	35.0	265	3.4	**90/2**
25	36.6	277	0.9	**63/2**
24	37.3	282	1.5	**71/2**
23	38.7	287	3.3	**90/3**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

0.75 kW

n_1 = 900 min^{-}				
23	39.5	293	1.6	**71/3**
22	40.4	305	2.5	**90/2**
21	43.7	324	2.9	**90/3**
20	44.1	333	2.8	**90/2**
20	44.7	338	1.4	**71/2**
18	48.8	361	2.6	**90/3**
18	50.5	382	1.2	**71/2**
18	50.9	385	2.5	**90/2**
17	53.5	396	1.2	**71/3**
16	55.2	408	2.3	**90/3**
15	58.5	433	4.3	**112/3**
15	60.8	450	1.0	**71/3**
14	62.3	461	2.0	**90/3**
14	62.7	464	4.0	**112/3**
14	64.2	475	1.0	**71/3**
13	67.4	498	3.7	**112/3**
13	70.6	522	1.8	**90/3**
12	72.6	537	3.5	**112/3**
12	75.4	558	0.8	**71/3**
12	76.3	565	1.7	**90/3**
11	78.5	581	3.2	**112/3**
11	82.8	613	1.5	**90/3**
10	87.3	646	2.9	**112/3**
10	93.3	690	1.4	**90/3**
10	93.6	693	2.7	**112/3**
8.9	100.6	744	1.3	**90/3**
8.3	108.4	802	2.3	**112/3**
8.3	108.9	806	1.2	**90/3**
7.7	117.2	867	2.1	**112/3**
7.2	125.0	925	1.0	**90/3**
7.0	128.3	949	2.0	**112/3**
6.4	141.0	1044	0.9	**90/3**
6.1	148.0	1095	1.7	**112/3**
5.8	155.2	1149	0.8	**90/3**
5.4	167.0	1236	1.5	**112/3**
4.7	191.5	1417	1.3	**112/3**
4.1	220.9	1635	1.1	**112/3**
3.7	241.0	1784	1.1	**112/3**
3.2	278.1	2058	0.9	**112/3**

0.95 kW

n_1 = 1400 min^{-1}				
539	2.6	16.0	8.1	**71/2**
468	3.0	18.4	4.3	**63/2**
360	3.9	23.9	4.6	**63/2**
322	4.3	26.7	4.9	**63/2**
278	5.0	30.9	4.5	**63/2**
249	5.6	34.5	4.6	**63/2**
226	6.2	38.1	4.2	**63/2**
216	6.5	40.0	4.3	**63/2**
190	7.4	45.5	4.0	**63/2**
174	8.0	49.5	4.0	**63/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

0.95 kW

n_1 = 1400 min^{-1}				
156	9.0	55.3	3.8	**63/2**
135	10.4	64.0	3.4	**63/2**
118	11.8	72.8	3.2	**63/2**
103	13.5	83.3	3.0	**63/2**
97	14.4	88.5	2.5	**63/2**
83	16.9	104	2.4	**63/2**
81	17.3	107	4.3	**71/2**
75	18.7	115	4.0	**71/2**
71	19.8	122	2.0	**63/2**
69	20.2	124	3.7	**71/2**
68	20.5	126	1.8	**63/2**
64	21.9	135	3.4	**71/2**
58	24.1	145	1.6	**63/2**
55	25.3	155	2.6	**71/2**
54	26.1	161	1.5	**63/2**
49	28.8	177	2.6	**71/2**
44	31.7	195	1.2	**63/2**
42	33.1	204	2.0	**71/2**
38	36.6	225	1.1	**63/2**
38	37.3	230	1.8	**71/2**
36	38.7	233	3.9	**90/3**
35	39.5	238	1.9	**71/3**
32	43.4	261	1.0	**63/3**
32	43.7	264	3.5	**90/3**
31	44.7	275	1.7	**71/2**
30	47.0	283	0.9	**63/3**
29	48.8	294	3.1	**90/3**
28	50.5	311	1.5	**71/2**
26	53.3	321	0.8	**63/3**
26	53.5	322	1.4	**71/3**
25	55.2	333	2.7	**90/3**
23	60.8	367	1.3	**71/3**
22	62.3	376	2.4	**90/3**
22	64.2	387	1.2	**71/3**
21	67.4	406	4.3	**112/3**
20	70.6	425	2.1	**90/3**
19	72.6	438	4.0	**112/3**
19	75.4	454	1.0	**71/3**
18	76.3	460	2.0	**90/3**
18	78.5	473	3.7	**112/3**
17	82.8	499	1.8	**90/3**
16	86.8	523	0.9	**71/3**
16	87.3	525	3.3	**112/3**
15	91.5	551	0.8	**71/3**
15	93.3	562	1.6	**90/3**
15	93.6	563	3.1	**112/3**
14	99.3	598	0.8	**71/3**
14	100.6	606	1.5	**90/3**
13	108.4	651	2.7	**112/3**
13	108.9	656	1.4	**90/3**
12	117.2	704	2.5	**112/3**
11	125.0	753	1.2	**90/3**
11	128.3	770	2.3	**112/3**
10	141.0	849	1.1	**90/3**
10	148.0	887	2.0	**112/3**
9.0	155.2	933	1.0	**90/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

0.95 kW

n_1 = 1400 min^{-1}				
8.4	167.0	1001	1.7	**112/3**
7.9	178.1	1070	0.9	**90/3**
7.4	191.5	1147	1.5	**112/3**
7.0	201.0	1207	0.8	**90/3**
6.4	220.9	1322	1.3	**112/3**
5.9	241.0	1441	1.2	**112/3**
5.1	278.1	1662	1.1	**112/3**

1.1 kW

n_1 = 2800 min^{-1}				
1079	2.6	9.3	13.0	**71/2**
936	3.0	10.7	7.2	**63/2**
720	3.9	13.9	6.5	**63/2**
645	4.3	15.5	6.1	**63/2**
557	5.0	17.9	6.1	**63/2**
499	5.6	20.0	6.3	**63/2**
452	6.2	22.1	5.9	**63/2**
431	6.5	23.1	5.8	**63/2**
379	7.4	26.3	5.3	**63/2**
348	8.0	28.7	5.2	**63/2**
312	9.0	32.0	5.2	**63/2**
269	10.4	37.0	4.9	**63/2**
237	11.8	42.1	4.5	**63/2**
207	13.5	48.2	4.2	**63/2**
195	14.4	51.2	3.7	**63/2**
166	16.9	60.1	3.8	**63/2**
141	19.8	70.6	3.3	**63/2**
137	20.5	73.1	2.9	**63/2**
116	24.1	84.1	2.5	**63/2**
111	25.3	90.0	4.0	**71/2**
107	26.1	93.0	2.4	**63/2**
97	28.8	103	4.0	**71/2**
88	31.7	113	1.9	**63/2**
85	33.1	118	3.1	**71/2**
77	36.6	130	1.7	**63/2**
75	37.3	133	2.7	**71/2**
71	39.5	138	3.0	**71/3**
65	43.4	151	1.5	**63/3**
63	44.7	159	2.5	**71/2**
60	47.0	164	1.2	**63/3**
55	50.5	180	2.2	**71/2**
53	53.3	186	1.2	**63/3**
52	53.5	187	2.3	**71/3**
51	55.2	193	3.7	**90/3**
49	57.2	200	1.2	**63/3**
46	60.8	212	2.0	**71/3**
45	61.8	215	1.1	**63/3**
45	62.3	217	3.4	**90/3**
44	64.2	224	1.9	**71/3**
40	69.6	243	1.0	**63/3**
40	70.6	246	3.2	**90/3**
37	75.4	263	0.9	**63/3**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

1.1 kW

n_1 = 2800 min^{-1}				
37	75.4	263	1.6	**71/3**
37	76.3	266	3.0	**90/3**
34	81.4	283	0.8	**63/3**
34	82.8	289	2.8	**90/3**
32	86.8	303	1.4	**71/3**
32	88.4	308	0.8	**63/3**
31	91.5	319	1.3	**71/3**
30	93.3	325	2.5	**90/3**
28	98.9	344	0.7	**63/3**
28	99.3	346	1.2	**71/3**
28	100.6	351	2.3	**90/3**
26	107.5	375	1.1	**71/3**
26	108.4	378	4.0	**112/3**
26	108.9	380	2.4	**90/3**
25	114.4	398	0.6	**63/3**
24	117.2	409	3.7	**112/3**
23	123.8	432	1.0	**71/3**
22	125.0	436	2.1	**90/3**
22	128.3	448	3.4	**112/3**
21	134.3	469	0.9	**71/3**
21	135.4	471	0.5	**63/3**
20	141.0	492	1.9	**90/3**
19	148.0	516	2.9	**112/3**
19	149.1	518	0.5	**63/3**
18	154.8	540	0.8	**71/3**
18	155.2	541	1.7	**90/3**
17	164.7	572	0.4	**63/3**
17	167.0	583	2.6	**112/3**
16	178.1	621	1.5	**90/3**
16	181.3	630	0.4	**63/3**
15	191.5	668	2.2	**112/3**
14	201.0	700	1.3	**90/3**
13	216.9	753	0.3	**63/3**
13	220.9	771	1.9	**112/3**
13	224.4	781	1.2	**90/3**
12	241.0	841	1.8	**112/3**
11	253.2	881	1.0	**90/3**
10	278.1	970	1.5	**112/3**

n_1 = 1400 min^{-1}				
539	2.6	18.5	7.0	**71/2**
468	3.0	21.3	3.7	**63/2**
360	3.9	27.7	4.0	**63/2**
322	4.3	30.9	4.2	**63/2**
278	5.0	35.8	3.9	**63/2**
249	5.6	40.0	4.0	**63/2**
226	6.2	44.1	3.6	**63/2**
216	6.5	46.3	3.7	**63/2**
190	7.4	52.6	3.4	**63/2**
174	8.0	57.4	3.5	**63/2**
156	9.0	64.0	3.3	**63/2**
135	10.4	74.1	3.0	**63/2**
118	11.8	84.3	2.8	**63/2**
114	12.3	87.5	3.4	**71/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

1.1 kW

n_1 = 1400 min^{-1}				
103	13.5	96.5	2.6	**63/2**
97	14.4	102	2.1	**63/2**
87	16.1	115	4.0	**71/2**
83	16.9	120	2.1	**63/2**
81	17.3	123	3.7	**71/2**
75	18.7	133	3.5	**71/2**
71	19.8	141	1.8	**63/2**
69	20.2	144	3.2	**71/2**
68	20.5	146	1.6	**63/2**
64	21.9	156	2.9	**71/2**
58	24.1	168	1.4	**63/2**
55	25.3	180	2.3	**71/2**
54	26.1	186	1.3	**63/2**
49	28.8	205	2.2	**71/2**
46	30.5	218	4.2	**90/2**
44	31.7	226	1.1	**63/2**
42	33.1	236	1.7	**71/2**
40	35.0	249	3.4	**90/2**
38	36.6	261	1.0	**63/2**
38	37.3	266	1.5	**71/2**
36	38.7	270	3.4	**90/3**
35	39.5	276	1.7	**71/3**
35	40.4	288	2.5	**90/2**
32	43.7	305	3.0	**90/3**
32	44.1	314	2.7	**90/2**
31	44.7	319	1.4	**71/2**
29	48.8	340	2.7	**90/3**
28	50.5	360	1.3	**71/2**
28	50.9	363	2.4	**90/2**
26	53.5	373	1.2	**71/3**
25	55.2	385	2.4	**90/3**
24	58.5	408	4.3	**112/3**
23	60.8	425	1.1	**71/3**
22	62.3	435	2.1	**90/3**
22	62.7	437	4.0	**112/3**
22	64.2	448	1.0	**71/3**
21	67.4	470	3.7	**112/3**
20	70.6	492	1.8	**90/3**
19	72.6	507	3.5	**112/3**
19	75.4	526	0.9	**71/3**
18	76.3	533	1.7	**90/3**
18	78.5	547	3.2	**112/3**
17	82.8	578	1.6	**90/3**
16	86.8	605	0.8	**71/3**
16	87.3	608	2.9	**112/3**
15	93.3	651	1.4	**90/3**
15	93.6	652	2.7	**112/3**
14	100.6	702	1.3	**90/3**
13	108.4	754	2.3	**112/3**
13	108.9	760	1.2	**90/3**
12	117.2	815	2.1	**112/3**
11	125.0	871	1.0	**90/3**
11	128.3	891	2.0	**112/3**
10	141.0	983	0.9	**90/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
1.1 kW				
n_1 = 1400 min^{-1}				
10	148.0	1028	1.7	**112/3**
9.0	155.2	1081	0.8	**90/3**
8.4	167.0	1159	1.5	**112/3**
7.4	191.5	1328	1.3	**112/3**
6.4	220.9	1531	1.1	**112/3**
5.9	241.0	1669	1.0	**112/3**
5.1	278.1	1924	0.9	**112/3**
n_1 = 900 min^{-1}				
347	2.6	28.8	4.5	**71/2**
301	3.0	33.2	2.6	**63/2**
283	3.2	35.3	4.3	**71/2**
240	3.8	41.6	4.3	**71/2**
231	3.9	43.1	2.7	**63/2**
207	4.3	48.1	2.8	**63/2**
179	5.0	55.7	2.7	**63/2**
171	5.3	58.5	3.9	**71/2**
160	5.6	62.2	2.7	**63/2**
145	6.2	68.7	2.5	**63/2**
145	6.2	69.0	4.3	**71/2**
139	6.5	72.0	2.6	**63/2**
127	7.1	78.5	4.2	**71/2**
122	7.4	81.9	2.3	**63/2**
112	8.0	89.2	2.4	**63/2**
104	8.7	96.2	3.6	**71/2**
100	9.0	100	2.3	**63/2**
88	10.2	114	4.1	**71/2**
87	10.4	115	2.1	**63/2**
78	11.6	128	3.7	**71/2**
76	11.8	131	1.9	**63/2**
73	12.3	136	2.3	**71/2**
66	13.5	150	1.7	**63/2**
64	14.0	156	3.1	**71/2**
63	14.4	159	1.4	**63/2**
56	16.1	179	2.7	**71/2**
53	16.9	187	1.4	**63/2**
52	17.3	192	2.5	**71/2**
48	18.7	207	2.3	**71/2**
45	19.8	220	4.2	**90/2**
45	19.8	220	1.2	**63/2**
45	20.2	224	2.1	**71/2**
44	20.5	227	1.1	**63/2**
42	21.4	238	3.9	**90/2**
41	21.9	243	2.0	**71/2**
37	24.1	262	0.9	**63/2**
36	25.0	277	3.3	**90/2**
36	25.3	280	1.5	**71/2**
34	26.1	289	0.9	**63/2**
32	27.7	307	3.0	**90/2**
31	28.8	319	1.4	**71/2**
29	30.5	339	2.7	**90/2**
27	33.1	367	1.1	**71/2**
26	35.0	388	2.3	**90/2**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
1.1 kW				
n_1 = 900 min^{-1}				
24	37.3	414	1.0	**71/2**
23	38.7	420	2.2	**90/3**
23	39.5	429	1.1	**71/3**
22	40.4	448	1.7	**90/2**
21	43.7	475	2.0	**90/3**
20	44.1	489	1.9	**90/2**
20	44.7	496	0.9	**71/2**
18	48.8	530	1.8	**90/3**
18	50.5	560	0.8	**71/2**
18	50.9	564	1.7	**90/2**
18	51.2	556	3.3	**112/3**
17	53.5	581	0.8	**71/3**
16	55.2	599	1.6	**90/3**
15	58.5	635	2.9	**112/3**
14	62.3	677	1.4	**90/3**
14	62.7	681	2.7	**112/3**
13	67.4	731	2.5	**112/3**
13	70.6	766	1.2	**90/3**
12	72.6	788	2.4	**112/3**
12	76.3	828	1.1	**90/3**
11	78.5	852	2.2	**112/3**
11	82.8	899	1.1	**90/3**
10	87.3	948	2.0	**112/3**
10	93.3	1013	0.9	**90/3**
10	93.6	1016	1.8	**112/3**
8.9	100.6	1092	0.9	**90/3**
8.3	108.4	1177	1.6	**112/3**
8.3	108.9	1182	0.8	**90/3**
7.7	117.2	1272	1.5	**112/3**
7.0	128.3	1392	1.3	**112/3**
6.1	148.0	1606	1.2	**112/3**
5.4	167.0	1813	1.0	**112/3**
4.7	191.5	2079	0.9	**112/3**
4.1	220.9	2398	0.8	**112/3**
1.5 kW				
n_1 = 2800 min^{-1}				
1079	2.6	12.6	9.5	**71/2**
936	3.0	14.5	5.3	**63/2**
720	3.9	18.9	4.8	**63/2**
645	4.3	21.1	4.5	**63/2**
557	5.0	24.4	4.5	**63/2**
499	5.6	27.3	4.6	**63/2**
452	6.2	30.1	4.3	**63/2**
431	6.5	31.6	4.3	**63/2**
379	7.4	35.9	3.9	**63/2**
348	8.0	39.1	3.8	**63/2**
312	9.0	43.7	3.8	**63/2**
269	10.4	50.5	3.6	**63/2**
237	11.8	57.5	3.3	**63/2**
207	13.5	65.8	3.1	**63/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
1.5 kW				
n_1 = 2800 min^{-1}				
195	14.4	69.9	2.7	**63/2**
166	16.9	81.9	2.8	**63/2**
141	19.8	96.3	2.4	**63/2**
139	20.2	98.1	4.3	**71/2**
137	20.5	100	2.1	**63/2**
128	21.9	106	3.9	**71/2**
116	24.1	115	1.8	**63/2**
111	25.3	123	2.9	**71/2**
107	26.1	127	1.7	**63/2**
97	28.8	140	2.9	**71/2**
88	31.7	154	1.4	**63/2**
85	33.1	161	2.3	**71/2**
80	35.0	170	4.1	**90/2**
77	36.6	178	1.3	**63/2**
75	37.3	181	2.0	**71/2**
72	38.7	184	3.8	**90/3**
71	39.5	188	2.2	**71/3**
69	40.4	196	3.0	**90/2**
64	43.7	208	3.6	**90/3**
64	44.1	214	3.3	**90/2**
63	44.7	217	1.8	**71/2**
57	48.8	232	3.2	**90/3**
55	50.5	245	1.6	**71/2**
55	50.9	247	2.8	**90/2**
52	53.5	254	1.7	**71/3**
51	55.2	263	2.7	**90/3**
46	60.8	289	1.5	**71/3**
45	62.3	297	2.5	**90/3**
44	64.2	305	1.4	**71/3**
40	70.6	336	2.4	**90/3**
37	75.4	359	1.2	**71/3**
37	76.3	363	2.2	**90/3**
36	78.5	374	4.0	**112/3**
34	82.8	394	2.0	**90/3**
32	86.8	413	1.0	**71/3**
32	87.3	415	3.6	**112/3**
31	91.5	435	1.0	**71/3**
30	93.3	444	1.8	**90/3**
30	93.6	445	3.4	**112/3**
28	99.3	472	0.9	**71/3**
28	100.6	479	1.7	**90/3**
26	107.5	512	0.8	**71/3**
26	108.4	516	2.9	**112/3**
26	108.9	518	1.8	**90/3**
24	117.2	558	2.7	**112/3**
22	125.0	594	1.5	**90/3**
22	128.3	610	2.5	**112/3**
20	141.0	670	1.4	**90/3**
19	148.0	704	2.1	**112/3**
18	155.2	738	1.2	**90/3**
17	167.0	795	1.9	**112/3**
16	178.1	846	1.1	**90/3**
15	191.5	911	1.6	**112/3**
14	201.0	955	1.0	**90/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

1.5 kW

n_1 = 2800 min^{-1}				
13	220.9	1051	1.4	**112/3**
13	224.4	1065	0.9	**90/3**
12	241.0	1147	1.3	**112/3**
11	253.2	1202	0.8	**90/3**
10	278.1	1323	1.1	**112/3**

n_1 = 1400 min^{-1}				
539	2.6	25.2	5.2	**71/2**
468	3.0	29.1	2.7	**63/2**
360	3.9	37.8	2.9	**63/2**
322	4.3	42.2	3.1	**63/2**
278	5.0	48.9	2.9	**63/2**
265	5.3	51.3	4.1	**71/2**
249	5.6	54.5	2.9	**63/2**
226	6.2	60.2	2.7	**63/2**
216	6.5	63.1	2.7	**63/2**
190	7.4	71.8	2.5	**63/2**
174	8.0	78.2	2.6	**63/2**
161	8.7	84.3	3.7	**71/2**
156	9.0	87.3	2.4	**63/2**
137	10.2	100	4.2	**71/2**
135	10.4	101	2.2	**63/2**
121	11.6	112	3.8	**71/2**
118	11.8	115	2.0	**63/2**
114	12.3	119	2.5	**71/2**
103	13.5	132	1.9	**63/2**
100	14.0	136	3.3	**71/2**
97	14.4	140	1.6	**63/2**
87	16.1	157	2.9	**71/2**
83	16.9	164	1.5	**63/2**
81	17.3	168	2.7	**71/2**
75	18.7	181	2.5	**71/2**
71	19.8	193	1.3	**63/2**
69	20.2	196	2.3	**71/2**
68	20.5	199	1.2	**63/2**
64	21.9	213	2.2	**71/2**
58	24.1	229	1.0	**63/2**
56	25.0	243	3.8	**90/2**
55	25.3	245	1.7	**71/2**
54	26.1	254	0.9	**63/2**
50	27.7	270	3.4	**90/2**
49	28.8	280	1.6	**71/2**
46	30.5	297	3.1	**90/2**
44	31.7	308	0.8	**63/2**
42	33.1	321	1.3	**71/2**
40	35.0	340	2.5	**90/2**
38	37.3	363	1.1	**71/2**
36	38.7	368	2.5	**90/3**
35	39.5	376	1.2	**71/3**
35	40.4	393	1.8	**90/2**
32	43.7	416	2.2	**90/3**
32	44.1	429	2.0	**90/2**
31	44.7	435	1.1	**71/2**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

1.5 kW

n_1 = 1400 min^{-1}				
29	48.8	464	2.0	**90/3**
28	50.5	491	0.9	**71/2**
28	50.9	494	1.7	**90/2**
27	51.2	487	3.5	**112/3**
26	53.5	509	0.9	**71/3**
25	55.2	525	1.7	**90/3**
24	58.5	556	3.1	**112/3**
23	60.8	579	0.8	**71/3**
22	62.3	593	1.5	**90/3**
22	62.7	597	2.9	**112/3**
22	64.2	611	0.8	**71/3**
21	67.4	641	2.7	**112/3**
20	70.6	671	1.4	**90/3**
19	72.6	691	2.5	**112/3**
18	76.3	726	1.3	**90/3**
18	78.5	747	2.3	**112/3**
17	82.8	788	1.2	**90/3**
16	87.3	829	2.1	**112/3**
15	93.3	888	1.0	**90/3**
15	93.6	889	2.0	**112/3**
14	100.6	957	1.0	**90/3**
13	108.4	1029	1.7	**112/3**
13	108.9	1036	0.9	**90/3**
12	117.2	1111	1.6	**112/3**
11	125.0	1188	0.8	**90/3**
11	128.3	1215	1.4	**112/3**
10	148.0	1401	1.2	**112/3**
8.4	167.0	1580	1.1	**112/3**
7.4	191.5	1811	1.0	**112/3**
6.4	220.9	2087	0.8	**112/3**
5.9	241.0	2276	0.8	**112/3**

n_1 = 900 min^{-1}				
347	2.6	39.3	3.3	**71/2**
301	3.0	45.3	1.9	**63/2**
283	3.2	48.1	3.1	**71/2**
240	3.8	56.8	3.2	**71/2**
231	3.9	58.8	2.0	**63/2**
209	4.3	65.1	3.2	**71/2**
207	4.3	65.6	2.1	**63/2**
179	5.0	76.0	2.0	**63/2**
171	5.3	79.8	2.9	**71/2**
160	5.6	84.8	2.0	**63/2**
145	6.2	93.6	1.9	**63/2**
145	6.2	94.1	3.2	**71/2**
139	6.5	98.2	1.9	**63/2**
127	7.1	107	3.1	**71/2**
122	7.4	112	1.7	**63/2**
112	8.0	122	1.8	**63/2**
104	8.7	131	2.7	**71/2**
100	9.0	136	1.7	**63/2**
88	10.2	155	3.0	**71/2**
87	10.4	157	1.5	**63/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

1.5 kW

n_1 = 900 min^{-1}				
78	11.6	175	2.7	**71/2**
76	11.8	179	1.4	**63/2**
73	12.3	186	1.7	**71/2**
66	13.5	205	1.2	**63/2**
64	14.0	212	2.3	**71/2**
63	14.4	217	1.1	**63/2**
56	16.0	241	3.8	**90/2**
56	16.1	244	2.0	**71/2**
53	16.9	255	1.0	**63/2**
53	17.1	259	3.6	**90/2**
52	17.3	262	1.8	**71/2**
48	18.7	282	1.7	**71/2**
45	19.8	300	3.1	**90/2**
45	19.8	300	0.9	**63/2**
45	20.2	305	1.6	**71/2**
44	20.5	310	0.8	**63/2**
42	21.4	324	2.8	**90/2**
41	21.9	331	1.4	**71/2**
36	25.0	377	2.4	**90/2**
36	25.3	382	1.1	**71/2**
32	27.7	419	2.2	**90/2**
31	28.8	436	1.1	**71/2**
31	29.1	441	4.2	**112/2**
29	30.5	462	2.0	**90/2**
28	32.3	489	3.8	**112/2**
27	33.1	500	0.8	**71/2**
26	35.0	529	1.7	**90/2**
23	38.7	573	51.6	**90/3**
23	38.9	588	3.1	**112/2**
22	40.4	611	1.2	**90/2**
22	40.7	615	2.9	**112/2**
21	43.7	647	1.5	**90/3**
20	44.1	667	1.4	**90/2**
20	44.7	676	2.7	**112/2**
18	48.8	722	1.3	**90/3**
18	48.9	740	2.5	**112/2**
18	50.9	769	1.2	**90/2**
18	51.2	758	2.5	**112/3**
16	55.2	817	1.2	**90/3**
15	58.5	866	2.1	**112/3**
14	62.3	923	1.0	**90/3**
14	62.7	928	2.0	**112/3**
13	67.4	997	1.9	**112/3**
13	70.6	1044	0.9	**90/3**
12	72.6	1075	1.7	**112/3**
12	76.3	1130	0.8	**90/3**
11	78.5	1162	1.6	**112/3**
11	82.8	1226	0.8	**90/3**
10	87.3	1292	1.4	**112/3**
10	93.6	1385	1.3	**112/3**
8.3	108.4	1605	1.2	**112/3**
7.7	117.2	1735	1.1	**112/3**
7.0	128.3	1899	1.0	**112/3**
6.1	148.0	2191	0.8	**112/3**
5.4	167.0	2472	0.8	**112/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 PMP - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

1.8 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
539	2.6	30.3	4.3	**71/2**
468	3.0	34.9	2.3	**63/2**
440	3.2	37.1	4.0	**71/2**
373	3.8	43.8	4.0	**71/2**
360	3.9	45.4	2.4	**63/2**
325	4.3	50.2	4.0	**71/2**
322	4.3	50.6	2.6	**63/2**
278	5.0	58.6	2.4	**63/2**
265	5.3	61.5	3.4	**71/2**
249	5.6	65.5	2.4	**63/2**
226	6.2	72.2	2.2	**63/2**
225	6.2	72.6	3.6	**71/2**
216	6.5	75.7	2.2	**63/2**
198	7.1	82.6	3.6	**71/2**
190	7.4	86.1	2.1	**63/2**
174	8.0	93.9	2.1	**63/2**
161	8.7	101	3.1	**71/2**
156	9.0	105	2.0	**63/2**
137	10.2	119	3.5	**71/2**
135	10.4	121	1.8	**63/2**
121	11.6	135	3.2	**71/2**
118	11.8	138	1.7	**63/2**
114	12.3	143	2.1	**71/2**
103	13.5	158	1.6	**63/2**
100	14.0	164	2.7	**71/2**
97	14.4	168	1.3	**63/2**
87	16.1	188	2.4	**71/2**
83	16.9	197	1.3	**63/2**
81	17.3	202	2.3	**71/2**
75	18.7	218	2.1	**71/2**
71	19.8	231	3.9	**90/2**
71	19.8	231	1.1	**63/2**
69	20.2	235	2.0	**71/2**
68	20.5	239	1.0	**63/2**
65	21.4	250	3.6	**90/2**
64	21.9	256	1.8	**71/2**
58	24.1	275	0.8	**63/2**
56	25.0	291	3.1	**90/2**
55	25.3	295	1.4	**71/2**
54	26.1	304	0.8	**63/2**
50	27.7	323	2.8	**90/2**
49	28.8	336	1.4	**71/2**
46	30.5	356	2.6	**90/2**
42	33.1	386	1.1	**71/2**
40	35.0	408	2.1	**90/2**
38	37.3	435	0.9	**71/2**
36	38.7	442	2.1	**90/3**
35	39.5	451	1.0	**71/3**
35	40.4	471	1.5	**90/2**
32	43.7	499	1.8	**90/3**
32	44.1	514	1.7	**90/2**
31	44.7	522	0.9	**71/2**
29	48.8	557	1.6	**90/3**
28	50.5	589	0.8	**71/2**

1.8 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
28	50.9	593	1.4	**90/2**
27	51.2	585	2.9	**112/3**
26	53.5	611	0.8	**71/3**
25	55.2	630	1.4	**90/3**
24	58.5	668	2.6	**112/3**
22	62.3	712	1.3	**90/3**
22	62.7	716	2.4	**112/3**
21	67.4	769	2.3	**112/3**
20	70.6	806	1.1	**90/3**
19	72.6	829	2.1	**112/3**
18	76.3	871	1.0	**90/3**
18	78.5	896	2.0	**112/3**
17	82.8	946	1.0	**90/3**
16	87.3	995	1.8	**112/3**
15	93.3	1065	0.9	**90/3**
15	93.6	1066	1.6	**112/3**
14	100.6	1148	0.8	**90/3**
13	108.4	1234	1.4	**112/3**
12	117.2	1333	1.3	**112/3**
11	128.3	1459	1.2	**112/3**
10	148.0	1681	1.0	**112/3**
8.4	167.0	1897	0.9	**112/3**
7.4	191.5	2173	0.8	**112/3**

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
936	3.0	21.3	3.6	**63/2**
720	3.9	27.7	3.2	**63/2**
645	4.3	30.9	3.1	**63/2**
557	5.0	35.8	3.1	**63/2**
499	5.6	40.0	3.1	**63/2**
452	6.2	44.1	2.9	**63/2**
431	6.5	46.3	2.9	**63/2**
379	7.4	52.6	2.7	**63/2**
348	8.0	57.4	2.6	**63/2**
312	9.0	64.0	2.6	**63/2**
269	10.4	74.1	2.4	**63/2**
237	11.8	84.3	2.3	**63/2**
228	12.3	87.5	3.2	**71/2**
207	13.5	96.5	2.1	**63/2**
200	14.0	100	4.0	**71/2**
195	14.4	102	1.9	**63/2**
174	16.1	115	3.7	**71/2**
166	16.9	120	1.9	**63/2**
162	17.3	123	3.4	**71/2**
150	18.7	133	3.2	**71/2**
141	19.8	141	1.6	**63/2**
139	20.2	144	2.9	**71/2**
137	20.5	146	1.4	**63/2**
128	21.9	156	2.7	**71/2**

2.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
116	24.1	168	1.2	**63/2**
112	25.0	178	4.2	**90/2**
111	25.3	180	2.0	**71/2**
107	26.1	186	1.2	**63/2**
101	27.7	198	3.7	**90/2**
97	28.8	205	2.0	**71/2**
92	30.5	218	3.4	**90/2**
88	31.7	226	1.0	**63/2**
85	33.1	236	1.6	**71/2**
80	35.0	249	2.8	**90/2**
77	36.6	261	0.9	**63/2**
75	37.3	266	1.4	**71/2**
72	38.7	270	2.6	**90/3**
71	39.5	276	1.5	**71/3**
69	40.4	288	2.0	**90/2**
64	43.7	305	2.5	**90/3**
64	44.1	314	2.2	**90/2**
63	44.7	319	1.3	**71/2**
57	48.8	340	2.2	**90/3**
55	50.5	360	1.1	**71/2**
55	50.9	363	1.9	**90/2**
55	51.2	357	3.8	**112/3**
52	53.5	373	1.1	**71/3**
51	55.2	385	1.9	**90/3**
48	58.5	408	3.4	**112/3**
46	60.8	425	1.0	**71/3**
45	62.3	435	1.7	**90/3**
45	62.7	437	3.2	**112/3**
44	64.2	448	0.9	**71/3**
42	67.4	470	3.1	**112/3**
40	70.6	492	1.6	**90/3**
39	72.6	507	3.0	**112/3**
37	75.4	526	0.8	**71/3**
37	76.3	533	1.5	**90/3**
36	78.5	548	2.7	**112/3**
34	82.8	578	1.4	**90/3**
32	87.3	609	2.5	**112/3**
30	93.3	651	1.2	**90/3**
30	93.6	653	2.3	**112/3**
28	100.6	702	1.1	**90/3**
26	108.4	756	2.0	**112/3**
26	108.9	760	1.2	**90/3**
24	117.2	818	1.8	**112/3**
22	125.0	872	1.0	**90/3**
22	128.3	895	1.7	**112/3**
20	141.0	984	0.9	**90/3**
19	148.0	1033	1.5	**112/3**
18	155.2	1083	0.8	**90/3**
17	167.0	1166	1.3	**112/3**
15	191.5	1336	1.1	**112/3**
13	220.9	1542	1.0	**112/3**
12	241.0	1682	0.9	**112/3**
10	278.1	1940	0.8	**112/3**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

2.2 kW

n_1 = 1400 min^{-1}				
539	2.6	37.0	3.5	**71/2**
468	3.0	42.7	1.9	**63/2**
440	3.2	45.3	3.3	**71/2**
373	3.8	53.5	3.3	**71/2**
360	3.9	55.4	2.0	**63/2**
325	4.3	61.4	3.3	**71/2**
322	4.3	61.9	2.1	**63/2**
278	5.0	71.7	2.0	**63/2**
265	5.3	75.2	2.8	**71/2**
249	5.6	80.0	2.0	**63/2**
226	6.2	88.3	1.8	**63/2**
225	6.2	88.8	2.9	**71/2**
216	6.5	92.6	1.8	**63/2**
198	7.1	101	3.0	**71/2**
190	7.4	105	1.7	**63/2**
174	8.0	115	1.7	**63/2**
161	8.7	124	2.5	**71/2**
156	9.0	128	1.6	**63/2**
137	10.2	146	2.9	**71/2**
135	10.4	148	1.5	**63/2**
121	11.6	165	2.6	**71/2**
118	11.8	169	1.4	**63/2**
114	12.3	175	1.7	**71/2**
103	13.5	193	1.3	**63/2**
100	14.0	200	2.2	**71/2**
97	14.4	205	1.1	**63/2**
88	16.0	227	4.0	**90/2**
87	16.1	230	2.0	**71/2**
83	16.9	240	1.0	**63/2**
82	17.1	244	3.7	**90/2**
81	17.3	247	1.9	**71/2**
75	18.7	266	1.7	**71/2**
71	19.8	282	3.2	**90/2**
71	19.8	283	0.9	**63/2**
69	20.2	288	1.6	**71/2**
68	20.5	292	0.8	**63/2**
65	21.4	305	3.0	**90/2**
64	21.9	312	1.5	**71/2**
56	25.0	356	2.6	**90/2**
55	25.3	360	1.1	**71/2**
50	27.7	395	2.3	**90/2**
49	28.8	411	1.1	**71/2**
46	30.5	435	2.1	**90/2**
43	32.3	461	3.8	**112/2**
42	33.1	471	0.9	**71/2**
40	35.0	499	1.7	**90/2**
38	37.3	532	0.8	**71/2**
36	38.7	540	1.7	**90/3**
36	38.9	554	3.2	**112/2**
35	40.4	576	1.3	**90/2**
34	40.7	580	3.0	**112/2**
32	43.7	610	1.5	**90/3**
32	44.1	629	1.4	**90/2**
31	44.7	638	2.7	**112/2**
29	48.8	681	1.3	**90/3**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

2.2 kW

n_1 = 1400 min^{-1}				
29	48.9	698	2.5	**112/2**
28	50.9	725	1.2	**90/2**
27	51.2	714	2.4	**112/3**
25	55.2	770	1.2	**90/3**
24	58.5	816	2.1	**112/3**
22	62.3	870	1.0	**90/3**
22	62.7	875	2.0	**112/3**
21	67.4	940	1.9	**112/3**
20	70.6	985	0.9	**90/3**
19	72.6	1013	1.7	**112/3**
18	76.3	1065	0.9	**90/3**
18	78.5	1096	1.6	**112/3**
17	82.8	1156	0.8	**90/3**
16	87.3	1218	1.4	**112/3**
15	93.6	1306	1.3	**112/3**
13	108.4	1513	1.2	**112/3**
12	117.2	1636	1.1	**112/3**
11	128.3	1790	1.0	**112/3**
9.5	148.0	2065	0.8	**112/3**
8.4	167.0	2331	0.8	**112/3**

n_1 = 900 min^{-1}				
347	2.6	57.6	2.3	**71/2**
301	3.0	66.4	1.3	**63/2**
283	3.2	70.5	2.1	**71/2**
240	3.8	83.3	2.2	**71/2**
231	3.9	86.3	1.3	**63/2**
209	4.3	95.5	2.2	**71/2**
207	4.3	96.3	1.4	**63/2**
179	5.0	111	1.3	**63/2**
171	5.3	117	2.0	**71/2**
160	5.6	124	1.4	**63/2**
145	6.2	137	1.3	**63/2**
145	6.2	138	2.2	**71/2**
139	6.5	144	1.3	**63/2**
134	6.7	149	4.0	**90/2**
127	7.1	157	2.1	**71/2**
122	7.4	164	1.2	**63/2**
116	7.8	172	4.1	**90/2**
112	8.0	178	1.2	**63/2**
104	8.7	192	1.8	**71/2**
103	8.7	193	2.9	**90/2**
100	9.0	199	1.2	**63/2**
96	9.3	207	2.7	**90/2**
93	9.7	215	4.1	**90/2**
88	10.2	227	2.1	**71/2**
87	10.4	231	1.0	**63/2**
83	10.9	242	3.8	**90/2**
78	11.6	257	1.9	**71/2**
76	11.8	262	1.0	**63/2**
73	12.3	272	1.1	**71/2**
73	12.3	273	3.4	**90/2**
66	13.5	300	0.8	**63/2**
64	14.0	310	3.0	**90/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

2.2 kW

n_1 = 900 min^{-1}				
64	14.0	311	1.5	**71/2**
56	16.0	354	2.6	**90/2**
56	16.1	357	1.3	**71/2**
53	17.1	379	2.4	**90/2**
52	17.3	384	1.3	**71/2**
48	18.7	414	1.2	**71/2**
45	19.8	439	2.1	**90/2**
45	20.2	448	1.1	**71/2**
45	20.2	448	4.1	**112/2**
42	21.4	475	1.9	**90/2**
42	21.7	480	3.9	**112/2**
41	21.9	486	1.0	**71/2**
36	25.0	554	1.7	**90/2**
35	25.4	564	3.1	**112/2**
32	27.7	615	1.5	**90/2**
31	29.1	646	2.9	**112/2**
29	30.5	677	1.4	**90/2**
28	32.3	717	2.6	**112/2**
26	35.0	776	1.1	**90/2**
23	38.7	841	1.1	**90/3**
23	38.9	862	2.1	**112/2**
22	40.4	895	0.8	**90/2**
22	40.7	902	2.0	**112/2**
21	43.7	949	1.0	**90/3**
20	44.1	978	1.0	**90/2**
20	44.7	992	1.8	**112/2**
18	48.8	1059	0.9	**90/3**
18	48.9	1086	1.7	**112/2**
18	50.9	1128	0.8	**90/2**
18	51.2	1111	1.7	**112/3**
16	55.2	1198	0.8	**90/3**
15	58.5	1269	1.5	**112/3**
14	62.7	1361	1.4	**112/3**
13	67.4	1462	1.3	**112/3**
12	72.6	1576	1.2	**112/3**
11	78.5	1704	1.1	**112/3**
10	87.3	1895	1.0	**112/3**
10	93.6	2032	0.9	**112/3**
8.3	108.4	2353	0.8	**112/3**

3 kW

n_1 = 2800 min^{-1}				
1079	2.6	25.2	4.8	**71/2**
936	3.0	29.1	2.6	**63/2**
880	3.2	30.9	4.5	**71/2**
746	3.8	36.5	4.4	**71/2**
720	3.9	37.8	2.4	**63/2**
650	4.3	41.9	4.3	**71/2**
645	4.3	42.2	2.3	**63/2**
557	5.0	48.9	2.3	**63/2**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 PMP - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

3 kW

n_1 = 2800 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
531	5.3	51.3	3.5	**71/2**
499	5.6	54.5	2.3	**63/2**
452	6.2	60.2	2.2	**63/2**
450	6.2	60.5	3.8	**71/2**
431	6.5	63.1	2.1	**63/2**
395	7.1	68.9	3.9	**71/2**
379	7.4	71.8	2.0	**63/2**
348	8.0	78.2	1.9	**63/2**
323	8.7	84.3	3.3	**71/2**
312	9.0	87.3	1.9	**63/2**
273	10.2	100	3.7	**71/2**
269	10.4	101	1.8	**63/2**
242	11.6	112	3.4	**71/2**
237	11.8	115	1.7	**63/2**
228	12.3	119	2.3	**71/2**
207	13.5	132	1.6	**63/2**
200	14.0	136	2.9	**71/2**
195	14.4	140	1.4	**63/2**
174	16.1	157	2.7	**71/2**
166	16.9	164	1.4	**63/2**
162	17.3	168	2.5	**71/2**
150	18.7	181	2.3	**71/2**
141	19.8	193	3.8	**90/2**
141	19.8	193	1.2	**63/2**
139	20.2	196	2.1	**71/2**
137	20.5	199	1.1	**63/2**
131	21.4	208	3.6	**90/2**
128	21.9	213	2.0	**71/2**
116	24.1	229	0.9	**63/2**
112	25.0	243	3.0	**90/2**
111	25.3	245	1.5	**71/2**
107	26.1	254	0.9	**63/2**
101	27.7	270	2.7	**90/2**
97	28.8	280	1.5	**71/2**
92	30.5	297	2.5	**90/2**
85	33.1	321	1.2	**71/2**
80	35.0	340	2.1	**90/2**
75	37.3	363	1.0	**71/2**
72	38.7	368	1.9	**90/3**
72	38.9	378	3.9	**112/2**
69	40.4	393	1.5	**90/2**
69	40.7	396	3.7	**112/2**
64	43.7	416	1.8	**90/3**
64	44.1	429	1.6	**90/2**
63	44.7	435	0.9	**71/2**
63	44.7	435	3.4	**112/2**
57	48.8	464	1.6	**90/3**
57	48.9	476	3.1	**112/2**
55	50.5	491	0.8	**71/2**
55	50.9	494	1.4	**90/2**
55	51.2	487	2.8	**112/3**
51	55.2	525	1.4	**90/3**
48	58.5	556	2.5	**112/3**

3 kW

n_1 = 2800 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
45	62.3	593	1.3	**90/3**
45	62.7	597	2.4	**112/3**
42	67.4	641	2.2	**112/3**
40	70.6	671	1.2	**90/3**
39	72.6	691	2.2	**112/3**
37	76.3	726	1.1	**90/3**
36	78.5	747	2.0	**112/3**
34	82.8	788	1.0	**90/3**
32	87.3	831	1.8	**112/3**
30	93.3	888	0.9	**90/3**
30	93.6	891	1.7	**112/3**
28	100.6	957	0.8	**90/3**
26	108.4	1031	1.5	**112/3**
26	108.9	1036	0.9	**90/3**
24	117.2	1115	1.3	**112/3**
22	125.0	1189	0.8	**90/3**

n_1 = 1400 min^{-1}

539	2.6	50.5	2.6	**71/2**
468	3.0	58.2	1.4	**63/2**
440	3.2	61.8	2.4	**71/2**
373	3.8	73.0	2.4	**71/2**
360	3.9	75.6	1.5	**63/2**
325	4.3	83.7	2.4	**71/2**
322	4.3	84.4	1.5	**63/2**
278	5.0	97.7	1.4	**63/2**
265	5.3	103	2.0	**71/2**
249	5.6	109	1.5	**63/2**
226	6.2	120	1.3	**63/2**
225	6.2	121	2.1	**71/2**
216	6.5	126	1.3	**63/2**
198	7.1	138	2.2	**71/2**
190	7.4	144	1.3	**63/2**
174	8.0	156	1.3	**63/2**
161	8.7	169	1.8	**71/2**
161	8.7	169	3.3	**90/2**
156	9.0	175	1.2	**63/2**
150	9.3	181	3.1	**90/2**
137	10.2	199	2.1	**71/2**
135	10.4	202	1.1	**63/2**
128	10.9	212	4.1	**90/2**
121	11.6	225	1.9	**71/2**
118	11.8	230	1.0	**63/2**
114	12.3	239	1.3	**71/2**
114	12.3	239	3.8	**90/2**
103	13.5	263	1.0	**63/2**
100	14.0	272	3.4	**90/2**
100	14.0	273	1.6	**71/2**
97	14.4	279	0.8	**63/2**
88	16.0	310	2.9	**90/2**
87	16.1	313	1.5	**71/2**
83	16.9	328	0.8	**63/2**
82	17.1	333	2.7	**90/2**
81	17.3	337	1.4	**71/2**

3 kW

n_1 = 1400 min^{-1}

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
75	18.7	363	1.3	**71/2**
71	19.8	385	2.4	**90/2**
69	20.2	392	1.2	**71/2**
65	21.4	416	2.2	**90/2**
65	21.7	421	4.2	**112/2**
64	21.9	426	1.1	**71/2**
56	25.0	485	1.9	**90/2**
55	25.3	491	0.8	**71/2**
55	25.4	494	3.3	**112/2**
50	27.7	539	1.7	**90/2**
49	28.8	560	0.8	**71/2**
48	29.1	567	3.1	**112/2**
46	30.5	594	1.5	**90/2**
43	32.3	629	2.8	**112/2**
40	35.0	680	1.2	**90/2**
36	38.7	737	1.2	**90/3**
36	38.9	756	2.3	**112/2**
35	40.4	785	0.9	**90/2**
34	40.7	791	2.2	**112/2**
32	43.7	832	1.1	**90/3**
32	44.1	857	1.0	**90/2**
31	44.7	869	2.0	**112/2**
29	48.8	928	1.0	**90/3**
29	48.9	952	1.8	**112/2**
28	50.9	989	0.9	**90/2**
27	51.2	974	1.7	**112/3**
25	55.2	1050	0.9	**90/3**
24	58.5	1113	1.6	**112/3**
22	62.3	1186	0.8	**90/3**
22	62.7	1193	1.5	**112/3**
21	67.4	1282	1.4	**112/3**
19	72.6	1382	1.3	**112/3**
18	78.5	1494	1.2	**112/3**
16	87.3	1661	1.1	**112/3**
15	93.6	1781	1.0	**112/3**
13	108.4	2063	0.8	**112/3**
12	117.2	2230	0.8	**112/3**

n_1 = 900 min^{-1}

330	2.7	82.6	4.0	**90/2**
213	4.2	128	3.8	**90/2**
170	5.3	160	3.3	**90/2**
151	5.9	180	3.1	**90/2**
134	6.7	203	3.0	**90/2**
116	7.8	235	3.0	**90/2**
103	8.7	263	2.1	**90/2**
96	9.3	282	2.0	**90/2**
93	9.7	293	3.8	**112/2**
93	9.7	294	3.0	**90/2**
83	10.9	330	2.8	**90/2**
81	11.1	334	3.3	**112/2**
73	12.3	372	2.5	**90/2**
64	14.0	422	2.2	**90/2**
62	14.5	437	3.9	**112/2**
56	16.0	482	1.9	**90/2**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

3 kW

n_1 = 900 min^{-1}				
55	16.3	494	3.6	**112/2**
53	17.1	517	1.8	**90/2**
51	17.7	535	3.4	**112/2**
45	19.8	599	1.5	**90/2**
45	20.2	611	3.0	**112/2**
42	21.4	648	1.4	**90/2**
42	21.7	655	2.8	**112/2**
36	25.0	755	1.2	**90/2**
35	25.4	769	2.2	**112/2**
32	27.7	839	1.1	**90/2**
31	29.1	882	2.1	**112/2**
29	30.5	923	1.0	**90/2**
28	32.3	978	1.9	**112/2**
26	35.0	1058	0.8	**90/2**
23	38.9	1176	1.6	**112/2**
22	40.7	1231	1.5	**112/2**
20	44.7	1352	1.3	**112/2**
18	48.9	1480	1.2	**112/2**

4 kW

n_1 = 2800 min^{-1}				
1079	2.6	33.6	3.6	**71/2**
936	3.0	38.8	2.0	**63/2**
880	3.2	41.2	3.4	**71/2**
746	3.8	48.7	3.3	**71/2**
720	3.9	50.4	1.8	**63/2**
650	4.3	55.8	3.2	**71/2**
645	4.3	56.3	1.7	**63/2**
557	5.0	65.2	1.7	**63/2**
531	5.3	68.4	2.6	**71/2**
499	5.6	72.7	1.7	**63/2**
452	6.2	80.3	1.6	**63/2**
450	6.2	80.7	2.9	**71/2**
431	6.5	84.2	1.6	**63/2**
395	7.1	91.8	2.9	**71/2**
379	7.4	95.7	1.5	**63/2**
348	8.0	104	1.4	**63/2**
323	8.7	112	2.5	**71/2**
322	8.7	113	4.1	**90/2**
312	9.0	116	1.4	**63/2**
300	9.3	121	3.8	**90/2**
273	10.2	133	2.8	**71/2**
269	10.4	135	1.3	**63/2**
242	11.6	150	2.5	**71/2**
237	11.8	153	1.2	**63/2**
228	12.3	159	1.8	**71/2**
207	13.5	175	1.2	**63/2**
200	14.0	181	4.1	**90/2**
200	14.0	182	2.2	**71/2**
195	14.4	186	1.0	**63/2**
175	16.0	207	3.6	**90/2**
174	16.1	209	2.0	**71/2**
166	16.9	219	1.1	**63/2**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

4 kW

n_1 = 2800 min^{-1}				
164	17.1	222	3.3	**90/2**
162	17.3	224	1.9	**71/2**
150	18.7	242	1.7	**71/2**
141	19.8	257	2.9	**90/2**
141	19.8	257	0.9	**63/2**
139	20.2	262	1.6	**71/2**
137	20.5	266	0.8	**63/2**
131	21.4	278	2.7	**90/2**
128	21.9	284	1.5	**71/2**
112	25.0	324	2.3	**90/2**
111	25.3	327	1.1	**71/2**
101	27.7	359	2.1	**90/2**
97	28.8	373	1.1	**71/2**
96	29.1	378	3.9	**112/2**
92	30.5	396	1.9	**90/2**
87	32.3	419	3.5	**112/2**
85	33.1	428	0.9	**71/2**
80	35.0	454	1.5	**90/2**
75	37.3	484	0.8	**71/2**
72	38.7	491	1.4	**90/3**
72	38.9	504	2.9	**112/2**
69	40.4	523	1.1	**90/2**
69	40.7	527	2.8	**112/2**
64	43.7	555	1.4	**90/3**
64	44.1	571	1.2	**90/2**
63	44.7	580	2.5	**112/2**
57	48.8	619	1.2	**90/3**
57	48.9	634	2.3	**112/2**
55	50.9	659	1.1	**90/2**
55	51.2	649	2.1	**112/3**
51	55.2	700	1.0	**90/3**
48	58.5	742	1.9	**112/3**
45	62.3	791	0.9	**90/3**
45	62.7	795	1.8	**112/3**
42	67.4	855	1.7	**112/3**
40	70.6	895	0.9	**90/3**
39	72.6	921	1.6	**112/3**
37	76.3	968	0.8	**90/3**
36	78.5	996	1.5	**112/3**
34	82.8	1051	0.8	**90/3**
32	87.3	1107	1.4	**112/3**
30	93.6	1187	1.3	**112/3**
26	108.4	1375	1.1	**112/3**
24	117.2	1487	1.0	**112/3**
22	128.3	1628	0.9	**112/3**
19	148.0	1878	0.8	**112/3**

n_1 = 1400 min^{-1}				
539	2.6	67.3	1.9	**71/2**
468	3.0	77.6	1.0	**63/2**
440	3.2	82.4	1.8	**71/2**
373	3.8	97.3	1.8	**71/2**
360	3.9	101	1.1	**63/2**
325	4.3	112	1.8	**71/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

4 kW

n_1 = 1400 min^{-1}				
322	4.3	113	1.2	**63/2**
278	5.0	130	1.1	**63/2**
265	5.3	137	1.5	**71/2**
264	5.3	137	3.9	**90/2**
249	5.6	145	1.1	**63/2**
235	5.9	154	3.6	**90/2**
226	6.2	161	1.0	**63/2**
225	6.2	161	1.6	**71/2**
216	6.5	168	1.0	**63/2**
209	6.7	174	3.4	**90/2**
198	7.1	184	1.6	**71/2**
190	7.4	191	0.9	**63/2**
181	7.8	201	3.2	**90/2**
174	8.0	209	1.0	**63/2**
161	8.7	225	1.4	**71/2**
161	8.7	226	2.5	**90/2**
156	9.0	233	0.9	**63/2**
150	9.3	242	2.3	**90/2**
144	9.7	252	3.3	**90/2**
137	10.2	266	1.6	**71/2**
135	10.4	269	0.8	**63/2**
128	10.9	283	3.0	**90/2**
127	11.1	287	3.8	**112/2**
121	11.6	300	1.4	**71/2**
118	11.8	306	0.8	**63/2**
114	12.3	318	0.9	**71/2**
114	12.3	319	2.9	**90/2**
100	14.0	362	2.5	**90/2**
100	14.0	364	1.2	**71/2**
97	14.5	375	4.1	**112/2**
88	16.0	414	2.2	**90/2**
87	16.1	417	1.1	**71/2**
86	16.3	423	3.8	**112/2**
82	17.1	443	2.1	**90/2**
81	17.3	449	1.0	**71/2**
79	17.7	459	3.7	**112/2**
75	18.7	484	1.0	**71/2**
71	19.8	514	1.8	**90/2**
69	20.2	523	0.9	**71/2**
69	20.2	524	3.3	**112/2**
65	21.4	555	1.6	**90/2**
65	21.7	561	3.1	**112/2**
64	21.9	568	0.8	**71/2**
56	25.0	647	1.4	**90/2**
55	25.4	659	2.5	**112/2**
50	27.7	719	1.3	**90/2**
48	29.1	756	2.3	**112/2**
46	30.5	791	1.1	**90/2**
43	32.3	838	2.1	**112/2**
40	35.0	907	0.9	**90/2**
36	38.7	983	0.9	**90/3**
36	38.9	1008	1.7	**112/2**
34	40.7	1055	1.7	**112/2**
32	43.7	1110	0.8	**90/3**
32	44.1	1143	0.8	**90/2**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 *PMP* - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

4 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
31	44.7	1159	1.5	**112/2**
29	48.9	1269	1.4	**112/2**
27	51.2	1299	1.3	**112/3**
24	58.5	1484	1.2	**112/3**
22	62.7	1591	1.1	**112/3**
21	67.4	1709	1.0	**112/3**
19	72.6	1843	0.9	**112/3**
18	78.5	1992	0.9	**112/3**
n_1 = 900 min^{-1}				
330	2.7	110	3.0	**90/2**
213	4.2	171	2.8	**90/2**
170	5.3	213	2.5	**90/2**
151	5.9	240	2.3	**90/2**
148	6.1	246	3.9	**112/2**
134	6.7	271	2.2	**90/2**
133	6.8	274	3.7	**112/2**
116	7.8	313	2.2	**90/2**
114	7.9	319	3.4	**112/2**
103	8.7	351	1.6	**90/2**
101	8.9	360	3.1	**112/2**
96	9.3	376	1.5	**90/2**
93	9.7	390	2.8	**112/2**
93	9.7	391	2.2	**90/2**
83	10.9	440	2.1	**90/2**
81	11.1	446	2.5	**112/2**
73	12.3	496	1.9	**90/2**
73	12.4	500	3.2	**112/2**
64	14.0	563	1.6	**90/2**
62	14.5	583	2.9	**112/2**
56	16.0	643	1.4	**90/2**
55	16.3	659	2.7	**112/2**
53	17.1	690	1.3	**90/2**
51	17.7	713	2.5	**112/2**
45	19.8	799	1.2	**90/2**
45	20.2	814	2.3	**112/2**
42	21.4	864	1.1	**90/2**
42	21.7	873	2.1	**112/2**
36	25.0	1006	0.9	**90/2**
35	25.4	1025	1.7	**112/2**
32	27.7	1118	0.8	**90/2**
31	29.1	1175	1.6	**112/2**
28	32.3	1304	1.4	**112/2**
23	38.9	1568	1.2	**112/2**
22	40.7	1641	1.1	**112/2**
20	44.7	1803	1.0	**112/2**
18	48.9	1974	0.9	**112/2**

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
1026	2.7	48.7	5.5	**90/2**
662	4.2	75.4	5.2	**90/2**
529	5.3	94.3	4.6	**90/2**
471	5.9	106	4.2	**90/2**
417	6.7	120	4.0	**90/2**
361	7.8	138	3.8	**90/2**
322	8.7	155	3.0	**90/2**
300	9.3	166	2.8	**90/2**
288	9.7	173	3.8	**90/2**
257	10.9	194	3.6	**90/2**
227	12.3	219	3.4	**90/2**
200	14.0	249	3.0	**90/2**
175	16.0	284	2.6	**90/2**
164	17.1	305	2.4	**90/2**
141	19.8	353	2.1	**90/2**
139	20.2	360	4.0	**112/2**
131	21.4	382	1.9	**90/2**
129	21.7	386	3.8	**112/2**
112	25.0	445	1.7	**90/2**
110	25.4	453	3.2	**112/2**
101	27.7	494	1.5	**90/2**
96	29.1	519	2.8	**112/2**
92	30.5	544	1.4	**90/2**
87	32.3	576	2.5	**112/2**
80	35.0	624	1.1	**90/2**
72	38.9	693	2.1	**112/2**
69	40.4	720	0.8	**90/2**
69	40.7	725	2.0	**112/2**
64	44.1	786	0.9	**90/2**
63	44.7	797	1.8	**112/2**
57	48.9	872	1.7	**112/2**
55	50.9	907	0.8	**90/2**
n_1 = 1400 min^{-1}				
513	2.7	97.3	3.4	**90/2**
331	4.2	151	3.2	**90/2**
264	5.3	189	2.8	**90/2**
235	5.9	212	2.6	**90/2**
209	6.7	239	2.5	**90/2**
206	6.8	242	4.1	**112/2**
181	7.8	276	2.4	**90/2**
177	7.9	282	3.7	**112/2**
161	8.7	310	1.8	**90/2**
157	8.9	319	3.5	**112/2**
150	9.3	332	1.7	**90/2**
145	9.7	345	3.2	**112/2**
144	9.7	346	2.4	**90/2**
128	10.9	389	2.2	**90/2**
127	11.1	394	2.8	**112/2**
114	12.3	439	2.1	**90/2**
113	12.4	442	3.2	**112/2**
100	14.0	498	1.8	**90/2**
97	14.5	516	3.0	**112/2**
88	16.0	569	1.6	**90/2**
86	16.3	582	2.8	**112/2**

5.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
82	17.1	610	1.5	**90/2**
79	17.7	631	2.7	**112/2**
71	19.8	706	1.3	**90/2**
69	20.2	720	2.4	**112/2**
65	21.4	763	1.2	**90/2**
65	21.7	772	2.3	**112/2**
56	25.0	890	1.0	**90/2**
55	25.4	906	1.8	**112/2**
50	27.7	988	0.9	**90/2**
48	29.1	1039	1.7	**112/2**
46	30.5	1088	0.8	**90/2**
43	32.3	1152	1.5	**112/2**
36	38.9	1386	1.3	**112/2**
34	40.7	1450	1.2	**112/2**
31	44.7	1594	1.1	**112/2**
29	48.9	1745	1.0	**112/2**
n_1 = 900 min^{-1}				
330	2.7	151	2.2	**90/2**
311	2.9	161	4.0	**112/2**
267	3.4	187	3.7	**112/2**
227	4.0	220	3.9	**112/2**
213	4.2	234	2.0	**90/2**
195	4.6	255	3.6	**112/2**
170	5.3	293	1.8	**90/2**
151	5.9	330	1.7	**90/2**
148	6.1	338	2.9	**112/2**
134	6.7	372	1.6	**90/2**
133	6.8	376	2.7	**112/2**
116	7.8	430	1.6	**90/2**
114	7.9	439	2.5	**112/2**
103	8.7	482	1.2	**90/2**
101	8.9	496	2.2	**112/2**
96	9.3	517	1.1	**90/2**
93	9.7	537	2.0	**112/2**
93	9.7	538	1.6	**90/2**
83	10.9	605	1.5	**90/2**
81	11.1	613	1.8	**112/2**
73	12.3	683	1.3	**90/2**
73	12.4	688	2.3	**112/2**
64	14.0	774	1.2	**90/2**
62	14.5	802	2.1	**112/2**
56	16.0	885	1.0	**90/2**
55	16.3	906	2.0	**112/2**
53	17.1	948	1.0	**90/2**
51	17.7	981	1.8	**112/2**
45	19.8	1098	0.8	**90/2**
45	20.2	1120	1.7	**112/2**
42	21.4	1188	0.8	**90/2**
42	21.7	1201	1.5	**112/2**
35	25.4	1409	1.2	**112/2**
31	29.1	1616	1.1	**112/2**
28	32.3	1792	1.0	**112/2**
23	38.9	2156	0.9	**112/2**
22	40.7	2256	0.8	**112/2**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

8.8 *PMP* - PCP - PMF - PCF Gearmotors performances

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
1026	2,7	66.3	4.1	**90/2**
662	4.2	103	3.8	**90/2**
529	5.3	129	3.3	**90/2**
471	5.9	145	3.1	**90/2**
417	6.7	163	2.9	**90/2**
361	7.8	188	2.8	**90/2**
322	8.7	211	2.2	**90/2**
313	8.9	217	4.1	**112/2**
300	9.3	227	2.0	**90/2**
289	9.7	235	3.8	**112/2**
288	9.7	236	2.8	**90/2**
257	10.9	265	2.6	**90/2**
253	11.1	269	3.5	**112/2**
227	12.3	299	2.5	**P90/2**
226	12.4	302	3.8	**112/2**
200	14.0	339	2.2	**90/2**
194	14.5	352	3.6	**112/2**
175	16.0	388	1.9	**90/2**
171	16.3	397	3.3	**112/2**
164	17.1	416	1.8	**90/2**
158	17.7	430	3.2	**112/2**
141	19.8	481	1.5	**90/2**
139	20.2	491	2.9	**112/2**
131	21.4	521	1.4	**90/2**
129	21.7	526	2.8	**112/2**
112	25.0	607	1.2	**90/2**
110	25.4	618	2.4	**112/2**
101	27.7	674	1.1	**90/2**
96	29.1	708	2.1	**112/2**
92	30.5	742	1.0	**90/2**
87	32.3	786	1.9	**112/2**
80	35.0	851	0.8	**90/2**
72	38.9	945	1.5	**112/2**
69	40.7	989	1.5	**112/2**
63	44.7	1087	1.3	**112/2**
57	48.9	1190	1.2	**112/2**
n_1 = 1400 min^{-1}				
513	2.7	133	2.5	**90/2**
484	2.9	141	4.3	**112/2**
416	3.4	164	3.9	**112/2**
353	4.0	193	3.9	**112/2**
331	4.2	206	2.3	**90/2**
304	4.6	224	3.7	**112/2**
264	5.3	257	2.1	**90/2**
235	5.9	289	1.9	**90/2**
230	6.1	296	3.2	**112/2**
209	6.7	326	1.8	**90/2**
206	6.8	330	3.0	**112/2**
181	7.8	377	1.7	**90/2**
177	7.9	385	2.7	**112/2**
161	8.7	423	1.3	**90/2**
157	8.9	434	2.5	**112/2**
150	9.3	453	1.2	**90/2**
145	9.7	471	2.3	**112/2**
144	9.7	472	1.7	**90/2**

7.5 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 1400 min^{-1}				
128	10.9	530	1.6	**90/2**
127	11.1	537	2.0	**112/2**
114	12.3	598	1.5	**90/2**
113	12.4	603	2.4	**112/2**
100	14.0	679	1.3	**90/2**
97	14.5	703	2.2	**112/2**
88	16.0	775	1.2	**90/2**
86	16.3	794	2.1	**112/2**
82	17.1	831	1.1	**90/2**
79	17.7	860	2.0	**112/2**
71	19.8	963	0.9	**90/2**
69	20.2	982	1.8	**112/2**
65	21.4	1041	0.9	**90/2**
65	21.7	1053	1.7	**112/2**
56	25.0	1213	0.8	**90/2**
55	25.4	1236	1.3	**112/2**
48	29.1	1417	1.2	**112/2**
43	32.3	1571	1.1	**112/2**
36	38.9	1890	0.9	**112/2**
n_1 = 900 min^{-1}				
311	2.9	219	3.0	**112/2**
267	3.4	254	2.7	**112/2**
227	4.0	300	2.8	**112/2**
195	4.6	348	2.6	**112/2**
148	6.1	461	2.1	**112/2**
133	6.8	513	1.9	**112/2**
114	7.9	599	1.8	**112/2**
101	8.9	676	1.6	**112/2**
93	9.7	732	1.5	**112/2**
81	11.1	836	1.3	**112/2**
73	12.4	938	1.7	**112/2**
62	14.5	1094	1.6	**112/2**
55	16.3	1235	1.5	**112/2**
51	17.7	1338	1.3	**112/2**
45	20.2	1527	1.2	**112/2**
42	21.7	1637	1.1	**112/2**
35	25.4	1922	0.9	**112/2**
31	29.1	2204	0.8	**112/2**
28	32.3	2444	0.8	**112/2**

9.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
1026	2.7	81.4	3.3	**90/2**
662	4.2	126	3.1	**90/2**
529	5.3	158	2.7	**90/2**
471	5.9	177	2.5	**90/2**
460	6.1	182	4.2	**112/2**
417	6.7	200	2.4	**90/2**
412	6.8	202	4.0	**112/2**
361	7.8	231	2.2	**90/2**

9.2 kW

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
n_1 = 2800 min^{-1}				
354	7.9	236	3.6	**112/2**
322	8.7	259	1.8	**90/2**
313	8.9	266	3.3	**112/2**
300	9.3	278	1.7	**90/2**
289	9.7	289	3.1	**112/2**
288	9.7	289	2.3	**90/2**
257	10.9	325	2.2	**90/2**
253	11.1	329	2.9	**112/2**
227	12.3	367	2.0	**90/2**
226	12.4	370	3.1	**112/2**
200	14.0	416	1.8	**90/2**
194	14.5	431	2.9	**112/2**
175	16.0	476	1.6	**90/2**
171	16.3	487	2.7	**112/2**
164	17.1	510	1.5	**90/2**
158	17.7	527	2.6	**112/2**
141	19.8	591	1.3	**90/2**
139	20.2	602	2.4	**112/2**
131	21.4	639	1.2	**90/2**
129	21.7	646	2.3	**112/2**
112	25.0	744	1.0	**90/2**
110	25.4	758	1.9	**112/2**
101	27.7	827	0.9	**90/2**
96	29.1	869	1.7	**112/2**
92	30.5	910	0.8	**90/2**
87	32.3	964	1.5	**112/2**
72	38.9	1159	1.3	**112/2**
69	40.7	1213	1.2	**112/2**
63	44.7	1333	1.1	**112/2**
57	48.9	1459	1.0	**112/2**
n_1 = 1400 min^{-1}				
513	2.7	163	2.0	**90/2**
484	2.9	173	3.5	**112/2**
416	3.4	201	3.2	**112/2**
353	4.0	236	3.2	**112/2**
331	4.2	252	1.9	**90/2**
304	4.6	275	3.0	**112/2**
264	5.3	316	1.7	**90/2**
235	5.9	355	1.6	**90/2**
230	6.1	363	2.6	**112/2**
209	6.7	400	1.5	**90/2**
206	6.8	405	2.4	**112/2**
181	7.8	462	1.4	**90/2**
177	7.9	472	2.2	**112/2**
161	8.7	519	1.1	**90/2**
157	8.9	533	2.1	**112/2**
150	9.3	556	1.0	**90/2**
145	9.7	577	1.9	**112/2**
144	9.7	579	1.4	**90/2**
128	10.9	650	1.3	**90/2**
127	11.1	659	1.7	**112/2**
114	12.3	734	1.2	**90/2**
113	12.4	740	1.9	**112/2**

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

9.2 kW

n_1 = 1400 min^{-1}				
100	14.0	833	1.1	**90/2**
97	14,5	862	1,8	**112/2**
88	16,0	951	1,0	**90/2**
86	16,3	974	1,7	**112/2**
82	17,1	1020	0,9	**90/2**
79	17,7	1055	1,6	**112/2**
71	19,8	1181	0,8	**90/2**
69	20,2	1204	1,5	**112/2**
65	21,7	1291	1,4	**112/2**
55	25,4	1516	1,1	**112/2**
48	29,1	1738	1,0	**112/2**
43	32,3	1927	0,9	**112/2**
36	38,9	2318	0,8	**112/2**

11 kW

n_1 = 2800 min^{-1}				
1026	2.7	97.3	2.8	**90/2**
662	4.2	151	2.6	**90/2**
608	4.6	164	4.0	**112/2**
529	5.3	189	2.3	**90/2**
471	5.9	212	2.1	**90/2**
460	6.1	217	3.5	**112/2**
417	6.7	239	2.0	**90/2**
412	6.8	242	3.3	**112/2**
361	7.8	276	1.9	**90/2**
354	7.9	282	3.0	**112/2**
322	8.7	310	1.5	**90/2**
313	8.9	319	2.8	**112/2**
300	9.3	332	1.4	**90/2**
289	9.7	345	2.6	**112/2**
288	9.7	346	1.9	**90/2**
257	10.9	389	1.8	**90/2**
253	11.1	394	2.4	**112/2**
227	12.3	439	1.7	**90/2**
226	12.4	442	2.6	**112/2**
200	14.0	498	1.5	**90/2**
194	14.5	516	2.4	**112/2**
175	16.0	569	1.3	**90/2**
171	16.3	582	2.3	**112/2**
164	17.1	610	1.2	**90/2**
158	17.7	631	2.2	**112/2**
141	19.8	706	1.0	**90/2**
139	20.2	720	2.0	**112/2**
131	21.4	763	1.0	**90/2**
129	21.7	772	1.9	**112/2**
112	25.0	890	0.8	**90/2**
110	25.4	906	1.6	**112/2**
96	29.1	1039	1.4	**112/2**
87	32.3	1152	1.3	**112/2**
72	38.9	1386	1.1	**112/2**
69	40.7	1450	1.0	**112/2**

8.8 PMP - PCP - PMF - PCF Gearmotors performances

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

11 kW

n_1 = 2800 min^{-1}				
63	44.7	1594	0.9	**112/2**
57	48.9	1745	0.8	**112/2**

n_1 = 1400 min^{-1}				
513	2.7	195	1.7	**90/2**
484	2.9	206	2.9	**112/2**
416	3.4	240	2.7	**112/2**
353	4.0	283	2.7	**112/2**
331	4.2	301	1.6	**90/2**
304	4.6	328	2.5	**112/2**
264	5.3	377	1.4	**90/2**
235	5.9	424	1.3	**90/2**
230	6.1	434	2.2	**112/2**
209	6.7	479	1.3	**90/2**
206	6.8	484	2.0	**112/2**
181	7.8	553	1.2	**90/2**
177	7.9	564	1.9	**112/2**
161	8.7	620	0.9	**90/2**
157	8.9	637	1.7	**112/2**
150	9.3	665	0.8	**90/2**
145	9.7	690	1.6	**112/2**
144	9.7	692	1.2	**90/2**
128	10.9	778	1.1	**90/2**
127	11.1	788	1.4	**112/2**
114	12.3	878	1.0	**90/2**
113	12.4	884	1.6	**112/2**
100	14.0	996	0.9	**90/2**
97	14.5	1031	1.5	**112/2**
88	16.0	1137	0.8	**90/2**
86	16.3	1164	1.4	**112/2**
79	17.7	1261	1.3	**112/2**
69	20.2	1440	1.2	**112/2**
65	21.7	1544	1.1	**112/2**
55	25.4	1812	0.9	**112/2**
48	29.1	2078	0.8	**112/2**
43	32.3	2305	0.8	**112/2**

n_1 = 900 min^{-1}				
311	2.9	321	2.0	**112/2**
267	3.4	373	1.8	**112/2**
227	4.0	440	1.9	**112/2**
195	4.6	511	1.8	**112/2**
148	6.1	676	1.4	**112/2**
133	6.8	753	1.3	**112/2**
114	7.9	878	1.3	**112/2**
101	8.9	991	1.1	**112/2**
93	9.7	1074	1.0	**112/2**
81	11.1	1226	0.9	**112/2**
73	12.4	1376	1.2	**112/2**
62	14.5	1604	1.1	**112/2**
55	16.3	1811	1.0	**112/2**
51	17.7	1962	0.9	**112/2**
45	20.2	2239	0.8	**112/2**

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF

11 kW

n_1 = 900 min^{-1}				
42	21,7	2401	0,8	**P112/2**

15 kW

n_1 = 2800 min^{-1}				
967	2.9	141	3.4	**112/2**
832	3.4	164	3.2	**112/2**
706	4.0	193	3.2	**112/2**
608	4.6	224	2.9	**112/2**
460	6.1	296	2.6	**112/2**
412	6.8	330	2.5	**112/2**
354	7.9	385	2.2	**112/2**
313	8.9	434	2.0	**112/2**
289	9.7	471	1.9	**112/2**
253	11.1	537	1.8	**112/2**
226	12.4	603	1.9	**112/2**
194	14.5	703	1.8	**112/2**
171	16.3	794	1.7	**112/2**
158	17.7	860	1.6	**112/2**
139	20.2	982	1.5	**112/2**
129	21.7	1053	1.4	**112/2**
110	25.4	1236	1.2	**112/2**
96	29.1	1417	1.0	**112/2**
87	32.3	1571	0.9	**112/2**
72	38.9	1890	0.8	**112/2**

n_1 = 1400 min^{-1}				
484	2.9	281	2.1	**112/2**
416	3.4	327	2.0	**112/2**
353	4.0	385	1.9	**112/2**
304	4.6	448	1.8	**112/2**
230	6.1	592	1.6	**112/2**
206	6.8	660	1.5	**112/2**
177	7.9	770	1.4	**112/2**
157	8.9	869	1.3	**112/2**
145	9.7	941	1.2	**112/2**
127	11.1	1074	1.0	**112/2**
113	12.4	1206	1.2	**112/2**
97	14.5	1406	1.1	**112/2**
86	16.3	1588	1.0	**112/2**
79	17.7	1720	1.0	**112/2**
69	20.2	1963	0.9	**112/2**
65	21.7	2105	0.8	**112/2**

18.5 kW

n_1 = 2800 min^{-1}				
967	2.9	174	2.8	**112/2***
832	3.4	202	2.6	**112/2***
706	4.0	238	2.6	**112/2***

8.8 Prestazioni motoriduttori PMP - PCP - PMF - PCF

n_2 min^{-1}	ir	T2 Nm	FS'	PMP-PCP PMF-PCF
18.5 kW				
n_1 = **2800** min^{-1}				
608	4.6	276	2.4	**112/2***
460	6.1	365	2.1	**112/2***
412	6.8	407	2.0	**112/2***
354	7.9	475	1.8	**112/2***
313	8.9	536	1.7	**112/2***
289	9.7	580	1.6	**112/2***
253	11.1	663	1.4	**112/2***
226	12.4	744	1.5	**112/2***
194	14.5	867	1.4	**112/2***
171	16.3	979	1.3	**112/2***
158	17.7	1061	1.3	**112/2***
139	20.2	1211	1.2	**112/2***
129	21.7	1298	1.1	**112/2***
110	25.4	1524	1.0	**112/2***
96	29.1	1747	0.8	**112/2***
87	32.3	1938	0.8	**112/2***

N.B.
Tutte le potenze indicate si riferiscono alla potenza meccanica dei riduttori.
Per i riduttori contrassegnati con **(*)** è opportuno effettuare la verifica della potenza limite termico secondo le indicazioni riportate nel par. 1.7.

8.8 PMP - PCP - PMF - PCF Gearmotors performances

NOTE.
The indicated power is based on the mechanical capacities of the gearboxes.
For the gearboxes marked with (*) it is aslo necessary to obey the therminal capacity like shown on chapter 1.7.

8.8 Leistungen der PMP - PCP - PMF - PCF Getriebemotoren

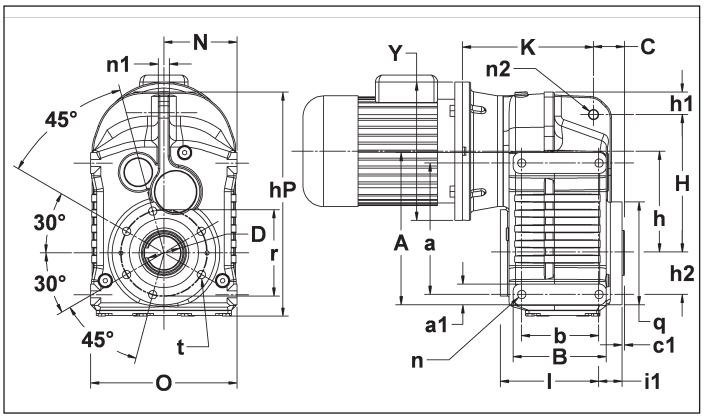
HINWEIS.
Die Leistungsangaben beziehen sich auf die mecanische Belasbarkeit der Getriebe.
Bei den mit (*) gekennzeichneten Getrieben ist außerdem die thermische Leistungsgrenze zu beachten (s. Kap. 1.7).

8.9 Dimensioni

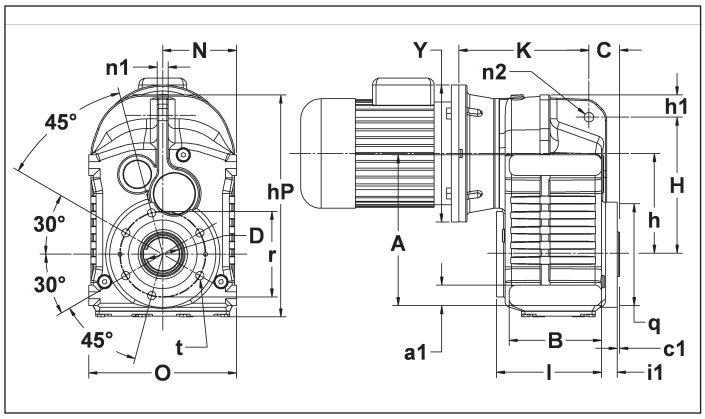
8.9 Dimensions

8.9 Abmessungen

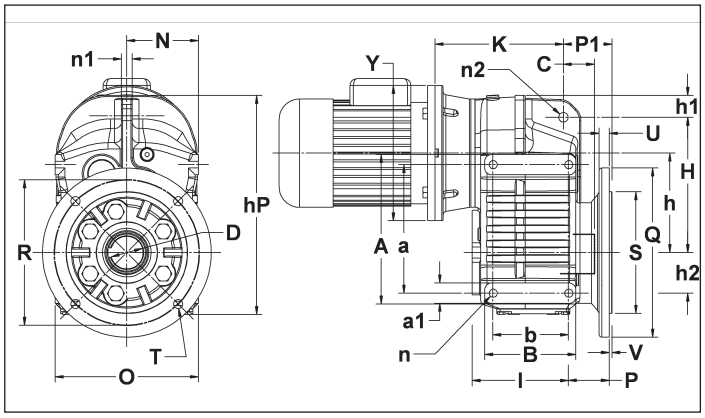
PMP



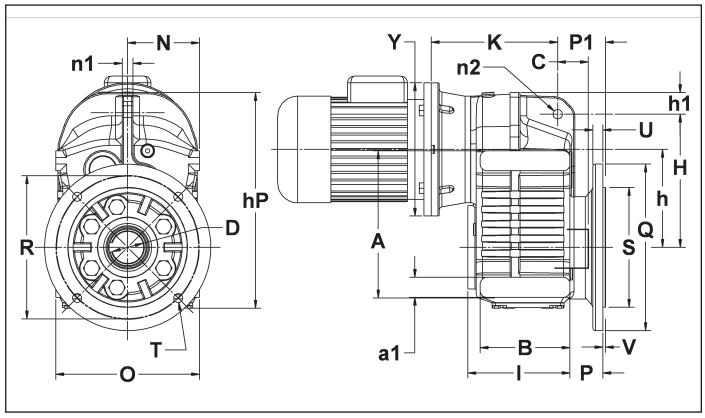
PMF



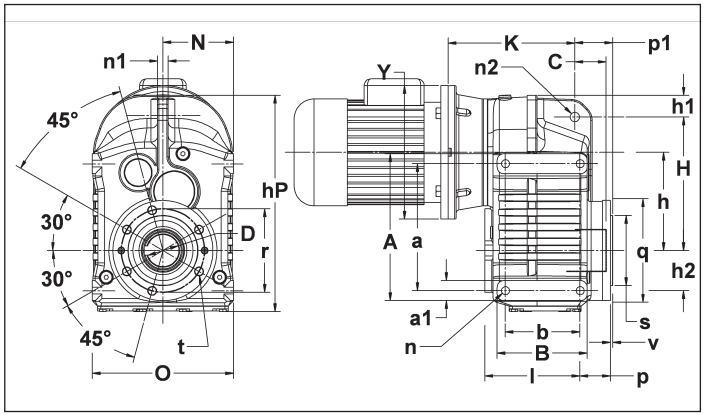
PMP F1 - F2



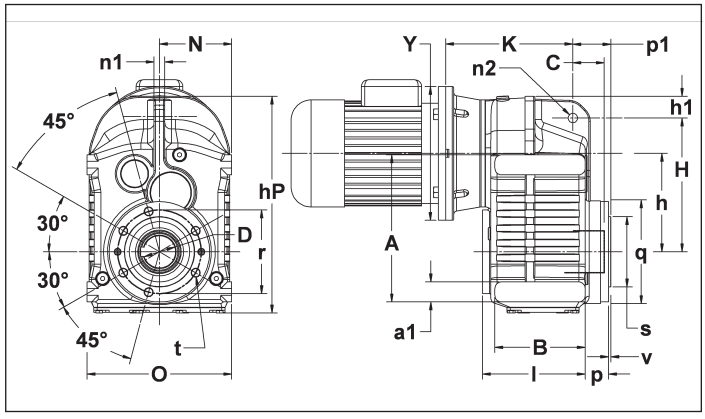
PMF F1 - F2



PMP P



PMF P



Tab. 8.6

P.P P.F	a	A	a1	b	B	C	c1	d j6	d1 h6	D H7	E	h	hP	H	h1	h2	l	l1	m	M	n	N
63	115	135	20	77	95	31.5	2,5	16	30 25 28	30 (25) (28)	40	103.5	240	152	23.5	31	P.F 105.5 P.P 96.5	P.F 11 P.P 20	M6	188.5 2 stadi 176.5 3stadi	N° 8 M8 x 12	P.F 84.5 P.P 82.5
71	145	170	25	93	120	35	3	16	35 30 32	35 (30) (32)	40	117	268	165	26	43	P.F 131.5 P.P 119	P.F 15 P.P 28	M6	203.5 2 stadi 222 3stadi	N° 8 M10 x 15	P.F 92 P.P 90
90	190	220	30	112	135	45	3.5	19	40 42 45 48	40 (42) (45) (48)	40	147	324	200	33	60	P.F 153.5 P.P 143	P.F 23 P.P 33.5	M6	227 2 stadi 249 3stadi	N° 8 M12 x 17	P.F 109 P.P 106
112	240	280	40	140	166	50	4	24	50 (55)	50 (55)	50	184	400	255	35.5	70	P.F 218 P.P 205	P.F 19.5 P.P 32.5	M8	273.5 2 stadi 289 3stadi	N° 8 M16 x 23	P.F 138 P.P 135

P.P P.F	n1	n2	O	p	p1	P	P1	q	r	s	t	v		Q	R	S g6	T	U	V
63	12	14	P.F 169 P.P 165	P.F 22.5 P.P 31.5	43.5	P.F 37.5 P.P 46.5	59	105	90	80	N°6 M6x12	3	**F1** **F2**	160 -	130 -	110 -	N°4 ϕ 9 -	10 -	3.5 -
71	12	14	P.F 184 P.P 180	P.F 26 P.P 39	46	P.F 43 P.P 56	63.5	120	100	80	N°6 M8x14	3	**F1** **F2**	200 160	165 130	130 110	N°4 ϕ 11 N°4 ϕ 9x5	12 10	3.5 3.5
90	16	14	P.F 218 P.P 212	P.F 35 P.P 45.5	57	P.F 49.5 P.P 60.5	72	150	125	105	N°6 M12x18	3.5	**F1** **F2**	250 —	215 —	180 —	N°4 ϕ 13.5 —	15 —	4 —
112	20	22	P.F 276 P.P 270	P.F 33.5 P.P 46.5	63	P.F 60.5 P.P 73.5	91	175	150	125	N°6 M14x21	3.5	**F1** **F2**	300 —	265 —	230 —	N°4 ϕ 13.5 —	16 —	4 —

Tab. 8.7

	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 2 stadi	**B5**	140	120 140*	81 (Y=140)	160	159	114 (Y=140)	200	205	131 (Y=160)	250	255	163 (Y=200)
		160	120 140*		200	159		250	205		300	255	
		200	140		250	169		300	205		350	255	
		250	150		—	—		—	—		—	—	
	B14	120	140	—	120	159	—	200	205	—	—	—	—
		140	140	—	140	159	—	—	—	—	—	—	—
		160	150	—	160	169	—	—	—	—	—	—	—

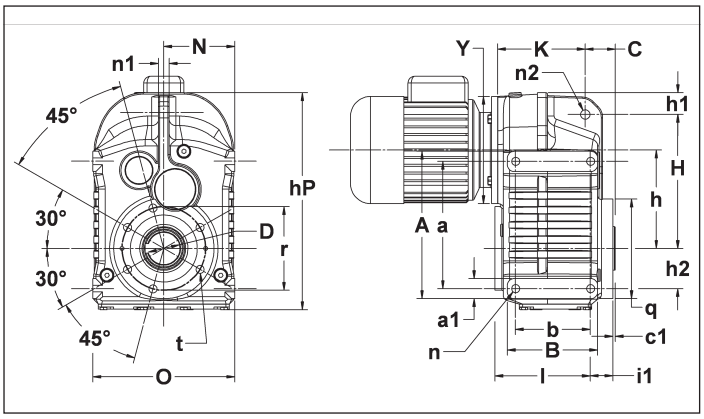
	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 3 stadi	**B5**	140	125	98 (Y=140)	140	153	114 (Y=140)	160	175	131 (Y=160)	200	215	163 (Y=200)
		160	129		160	153 173*		200	190		250	230	
		200	153		200	173		250	200		—	—	
	B14	120	153	—	120	173	—	160	200	—	—	—	—
		—	—	—	140	173	—	—	—	—	—	—	—

* Con calettatore in posizione standard.

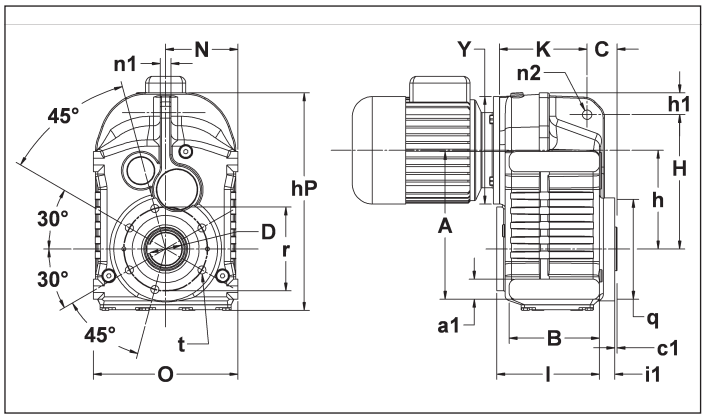
* *With shrink disc in standard positions.*

* Mit Schrumpfscheibe in Standardposition.

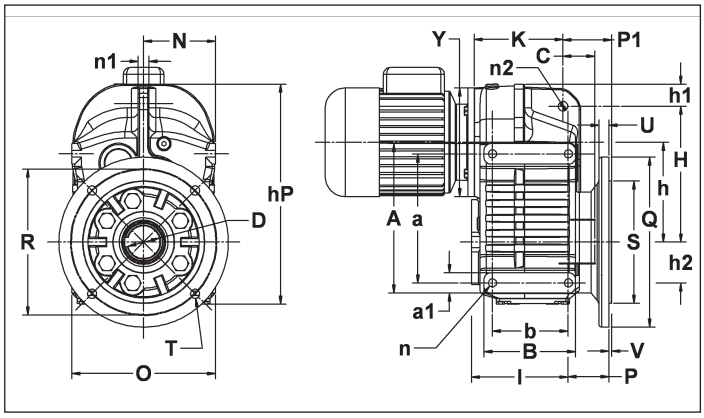
PCP



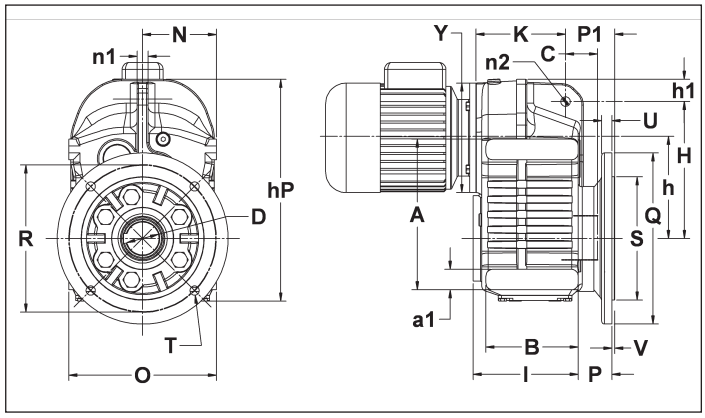
PCF



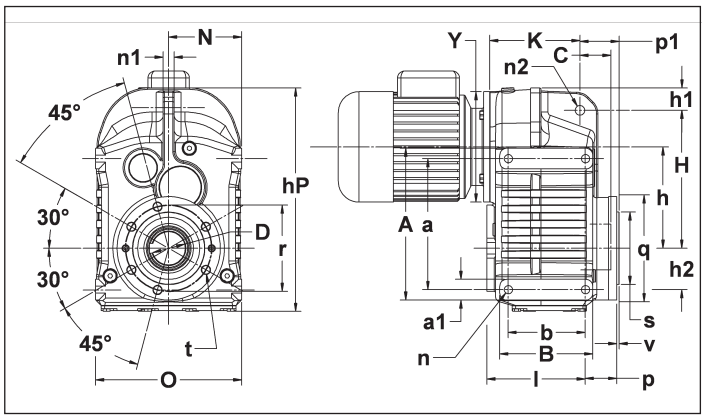
PCP F1 - F2



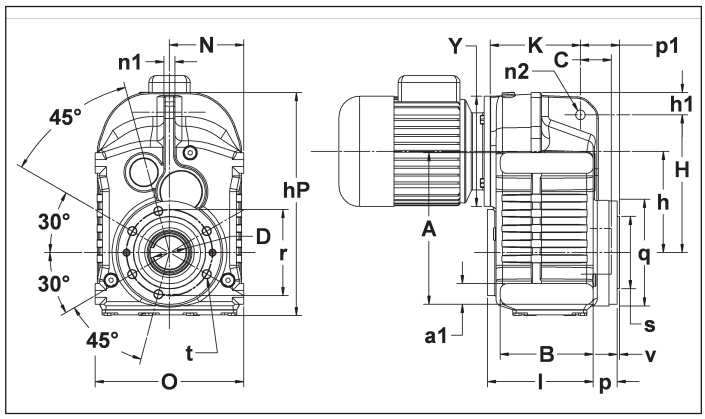
PCF F1 - F2



PCP P



PCF P



Tab. 8.6

P.P P.F	a	A	a1	b	B	C	c1	d j6	d1 h6	D H7	E	h	hP	H	h1	h2	l	l1	m	M	n	N
63	115	135	20	77	95	31.5	2,5	16	30 25 28	30 (25) (28)	40	103.5	240	152	23.5	31	P.F 105.5 P.P 96.5	P.F 11 P.P 20	M6	188.5 2 stadi 176.5 3stadi	N° 8 M8 x 12	P.F 84.5 P.P 82.5
71	145	170	25	93	120	35	3	16	35 30 32	35 (30) (32)	40	117	268	165	26	43	P.F 131.5 P.P 119	P.F 15 P.P 28	M6	203.5 2 stadi 222 3stadi	N° 8 M10 x 15	P.F 92 P.P 90
90	190	220	30	112	135	45	3.5	19	40 42 45 48	40 (42) (45) (48)	40	147	324	200	33	60	P.F 153.5 P.P 143	P.F 23 P.P 33.5	M6	227 2 stadi 249 3stadi	N° 8 M12 x 17	P.F 109 P.P 106
112	240	280	40	140	166	50	4	24	50 (55)	50 (55)	50	184	400	255	35.5	70	P.F 218 P.P 205	P.F 19.5 P.P 32.5	M8	273.5 2 stadi 289 3stadi	N° 8 M16 x 23	P.F 138 P.P 135

P.P P.F	n1	n2	O	p	p1	P	P1	q	r	s	t	v		Q	R	S g6	T	U	V
63	12	14	P.F 169 P.P 165	P.F 22.5 P.P 31.5	43.5	P.F 37.5 P.P 46.5	59	105	90	80	N°6 M6x12	3	**F1** **F2**	160 -	130 -	110 -	N°4 ϕ 9 -	10 -	3.5 -
71	12	14	P.F 184 P.P 180	P.F 26 P.P 39	46	P.F 43 P.P 56	63.5	120	100	80	N°6 M8x14	3	**F1** **F2**	200 160	165 130	130 110	N°4 ϕ 11 N°4 ϕ 9x5	12 10	3.5 3.5
90	16	14	P.F 218 P.P 212	P.F 35 P.P 45.5	57	P.F 49.5 P.P 60.5	72	150	125	105	N°6 M12x18	3.5	**F1** **F2**	250 —	215 —	180 —	N°4 ϕ 13.5 —	15 —	4 —
112	20	22	P.F 276 P.P 270	P.F 33.5 P.P 46.5	63	P.F 60.5 P.P 73.5	91	175	150	125	N°6 M14x21	3.5	**F1** **F2**	300 —	265 —	230 —	N°4 ϕ 13.5 —	16 —	4 —

Tab. 8.7

	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 2 stadi	**B5**	140	120 140*	81 (Y=140)	160	159	114 (Y=140)	200	205	131 (Y=160)	250	255	163 (Y=200)
		160	120 140*		200	159		250	205		300	255	
		200	140		250	169		300	205		350	255	
		250	150		—	—		—	—		—	—	
	B14	120	140	—	120	159	—	200	205	—	—	—	—
		140	140	—	140	159	—	—	—	—	—	—	—
		160	150	—	160	169	—	—	—	—	—	—	—

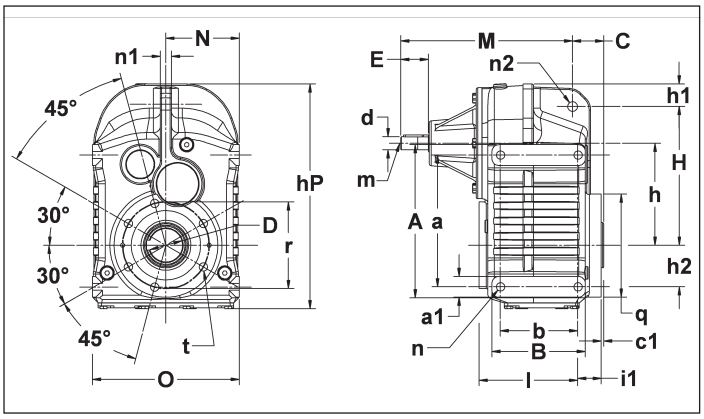
	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 3 stadi	**B5**	140	125	98 (Y=140)	140	153	114 (Y=140)	160	175	131 (Y=160)	200	215	163 (Y=200)
		160	129		160	153 173*		200	190		250	230	
		200	153		200	173		250	200		—	—	
	B14	120	153	—	120	173	—	160	200	—	—	—	—
		—	—	—	140	173	—	—	—	—	—	—	—

* Con calettatore in posizione standard.

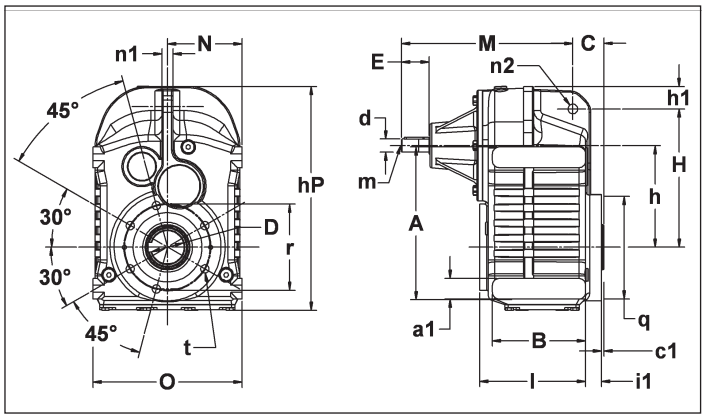
* With shrink disc in standard positions.

* Mit Schrumpfscheibe in Standardposition.

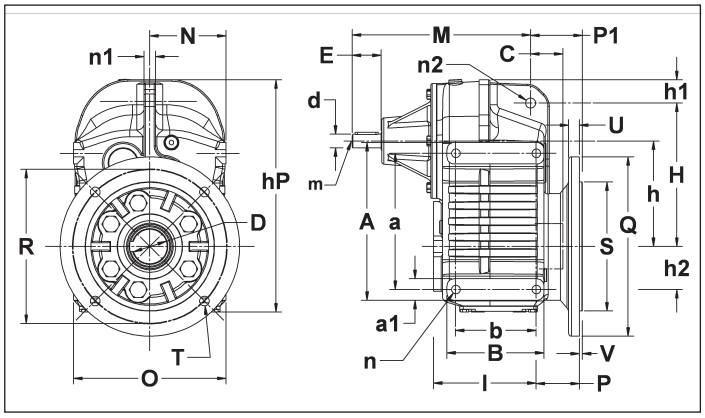
PRP



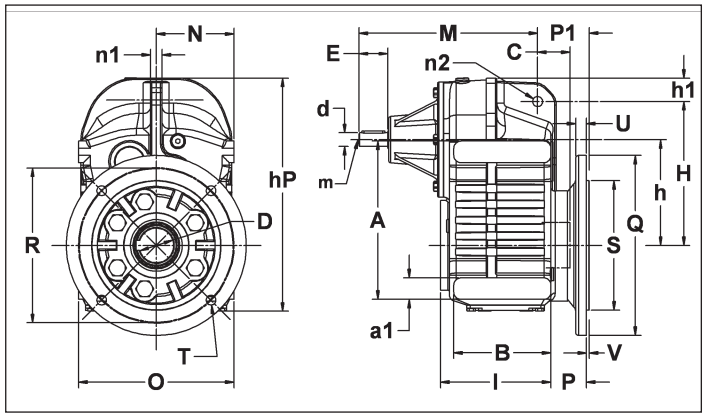
PRF



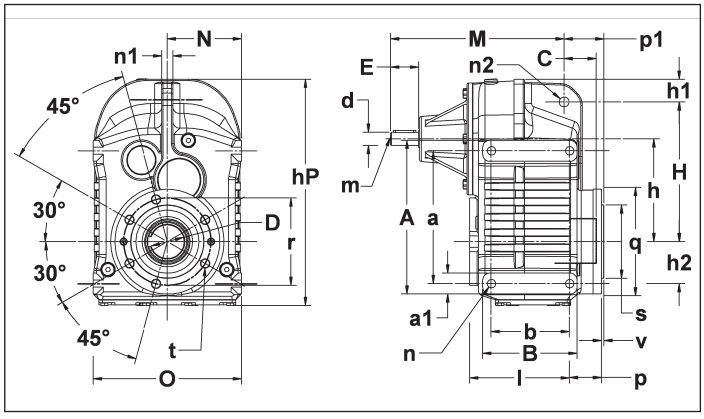
PRP F1 - F2



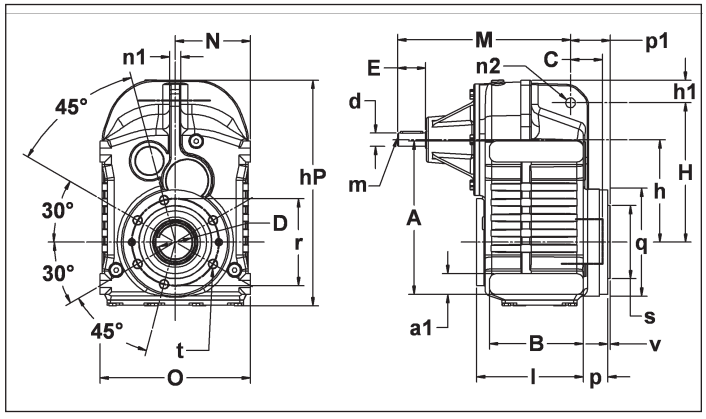
PRF F1 - F2



PRP P



PRF P



Tab. 8.6

P.P P.F	a	A	a1	b	B	C	c1	d j6	d1 h6	D H7	E	h	hP	H	h1	h2	l	l1	m	M	n	N
63	115	135	20	77	95	31.5	2,5	16	30 25 28	30 (25) (28)	40	103.5	240	152	23.5	31	P.F 105.5 P.P 96.5	P.F 11 P.P 20	M6	188.5 2 stadi 176.5 3stadi	N° 8 M8 x 12	P.F 84.5 P.P 82.5
71	145	170	25	93	120	35	3	16	35 30 32	35 (30) (32)	40	117	268	165	26	43	P.F 131.5 P.P 119	P.F 15 P.P 28	M6	203.5 2 stadi 222 3stadi	N° 8 M10 x 15	P.F 92 P.P 90
90	190	220	30	112	135	45	3.5	19	40 42 45 48	40 (42) (45) (48)	40	147	324	200	33	60	P.F 153.5 P.P 143	P.F 23 P.P 33.5	M6	227 2 stadi 249 3stadi	N° 8 M12 x 17	P.F 109 P.P 106
112	240	280	40	140	166	50	4	24	50 (55)	50 (55)	50	184	400	255	35.5	70	P.F 218 P.P 205	P.F 19.5 P.P 32.5	M8	273.5 2 stadi 289 3stadi	N° 8 M16 x 23	P.F 138 P.P 135

P.P P.F	n1	n2	O	p	p1	P	P1	q	r	s	t	v		Q	R	S g6	T	U	V
63	12	14	P.F 169 P.P 165	P.F 22.5 P.P 31.5	43.5	P.F 37.5 P.P 46.5	59	105	90	80	N°6 M6x12	3	**F1** **F2**	160 -	130 -	110 -	N°4 ϕ 9 -	10 -	3.5 -
71	12	14	P.F 184 P.P 180	P.F 26 P.P 39	46	P.F 43 P.P 56	63.5	120	100	80	N°6 M8x14	3	**F1** **F2**	200 160	165 130	130 110	N°4 ϕ 11 N°4 ϕ 9x5	12 10	3.5 3.5
90	16	14	P.F 218 P.P 212	P.F 35 P.P 45.5	57	P.F 49.5 P.P 60.5	72	150	125	105	N°6 M12x18	3.5	**F1** **F2**	250 —	215 —	180 —	N°4 ϕ 13.5 —	15 —	4 —
112	20	22	P.F 276 P.P 270	P.F 33.5 P.P 46.5	63	P.F 60.5 P.P 73.5	91	175	150	125	N°6 M14x21	3.5	**F1** **F2**	300 —	265 —	230 —	N°4 ϕ 13.5 —	16 —	4 —

Tab. 8.7

	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 2 stadi	**B5**	140	120 140*	81 (Y=140)	160	159	114 (Y=140)	200	205	131 (Y=160)	250	255	163 (Y=200)
		160	120 140*		200	159		250	205		300	255	
		200	140		250	169		300	205		350	255	
		250	150		—	—		—	—		—	—	
	B14	120	140	—	120	159	—	200	205	—	—	—	—
		140	140	—	140	159	—	—	—	—	—	—	—
		160	150	—	160	169	—	—	—	—	—	—	—

	IEC	63			71			90			112		
		Y	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)	**Y**	**K** (PM.)	**K** (PC.)
PM. PC. 3 stadi	**B5**	140	125	98 (Y=140)	140	153	114 (Y=140)	160	175	131 (Y=160)	200	215	163 (Y=200)
		160	129		160	153 173*		200	190		250	230	
		200	153		200	173		250	200		—	—	
	B14	120	153	—	120	173	—	160	200	—	—	—	—
		—	—	—	140	173	—	—	—	—	—	—	—

* Con calettatore in posizione standard.

* With shrink disc in standard positions.

* Mit Schrumpfscheibe in Standardposition.

PARTICOLARE DEI FORI "t" NELLA FLANGIA P

Per il fissaggio al riduttore con i fori **"t"** considerare la lunghezza delle viti adeguate, e che la quota **"yt"** non è filettata (vedi disegno).

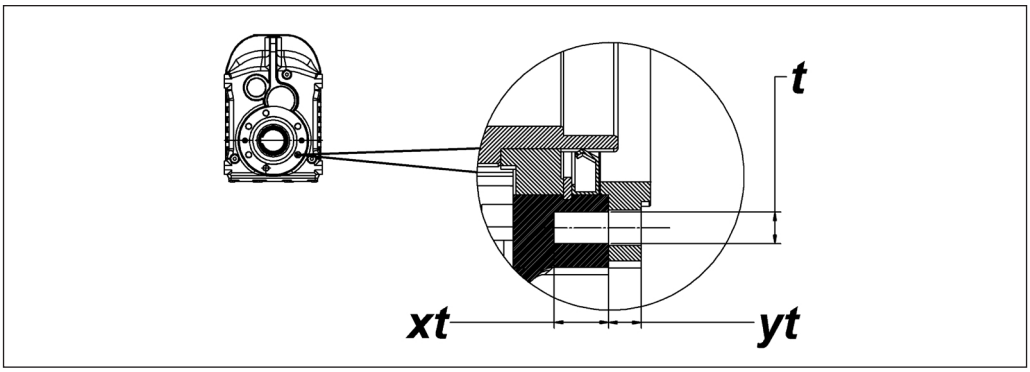
DETAIL "t" OF THE FLANGE P HOLES

*When P-flange is used please consider that the threads are in gearcase and that Distance **"yt"** does not have a thread (see drawing).*

DETAIL "t" BEI VERWENDUNG DES P-FLANSCHES

Bei Verwendung des P-Flansches ist zu beachten, daß sich die Gewinde im Getriebegehäuse befinden und daß Maß **"yt"** kein Gewinde besitzt. Details siehe Zeichnung.

Fig. 8.8



Tab. 8.9

P.P - P.F	t	xt	yt
63	N°6 M6	12	11,5
71	N°6 M8	14	11
90	N°6 M12	18	12
112	N°6 M14	21	14

N.B.
xt = profondità della parte filettata, utile per il fissaggio delle viti.

NOTE.
***xt** = thread length.*

HINWEIS.
xt = Gewindetiefe.

ALBERO LENTO CAVO E ALBERO CALATTATORE

Per l'utilizzazione corretta del riduttore e del calettatore eseguire il dimensionamento dell'albero lento standard e dell'albero lento per calettatore come indicato nelle seguenti figure. Per le prescrizioni di montaggio dell' albero sul calettatore vedere le indicazioni riportate nel capitolo 1, paragrafo 1.11.

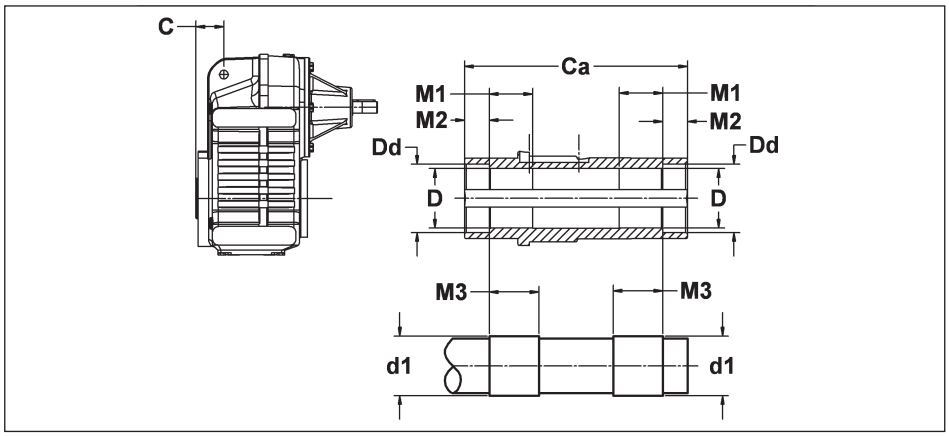
OUTPUT SHAFT AND OUTPUT SHAFT SHRINK DISC

Below there are listed the internal dimensions of the output shaft with keyway and with shrink disc.
To guarantee best performance we recommend for the shafts of the clients the dimensions also shown below. For mounting the shaft with shrink disc, please see information in chapter 1, paragraph 1.11.

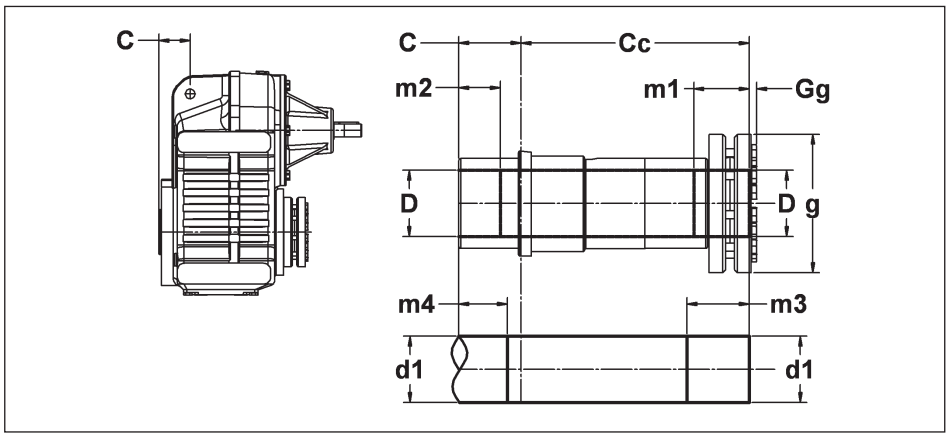
ABTRIEBSWELLEN

Unten sind die Abmessungen der Abtriebshohlwellen in Paßfeder- u. Schrumpfscheibenausführung aufgeführt.
Für eine bestmögliche Leistung empfehlen wir für die Wellen der Kunden die ebenfalls aufgeführten Abmessungen.
Hinweise zur Montage der Wellen mit Schrumpfscheibe s. Paragraph 1.11.

Fig. 8.10



Albero lento cavo
Output shaft with keyway
Abtriebswelle mit passfedernut



Albero calettatore
Output shaft with shrink disc
Abtriebswelle mit schrumpfscheibe

Tab. 8.11

P.P - P.F	C	Albero lento cavo *Output shaft with keyway* Abtriebswelle mit passfedernut							Albero calettatore *Output shaft with shrink disc* Abtriebswelle mit schrumpfscheibe								
		Ca	D H7	d1 h6	M1	M2	M3	Dd	Cc	D H7	d1 h6	m1	m2	m3	m4	g	Gg
63	31.5	120	30 (28) (25)	30 28 25	15	15	20	38	145	30	30	40	25	45	30	72	4
71	32	150	35 (30) (32)	35 30 32	30	15	35	43	175	35	35	40	25	45	30	80	4
90	45	180	40 (42) (45) (48)	40 42 45 48	35	20	40	55	205	40	40	50	30	55	35	90	6
112	50	210	50 (55)	50 55	35	25	45	61	245	50	50	55	40	60	45	110	1

8.10 Accessori

ANTIVIBRANTE VKL

Per riduttori e motoriduttori pendolari.

8.10 Accessories

RUBBER BUFFER VKL

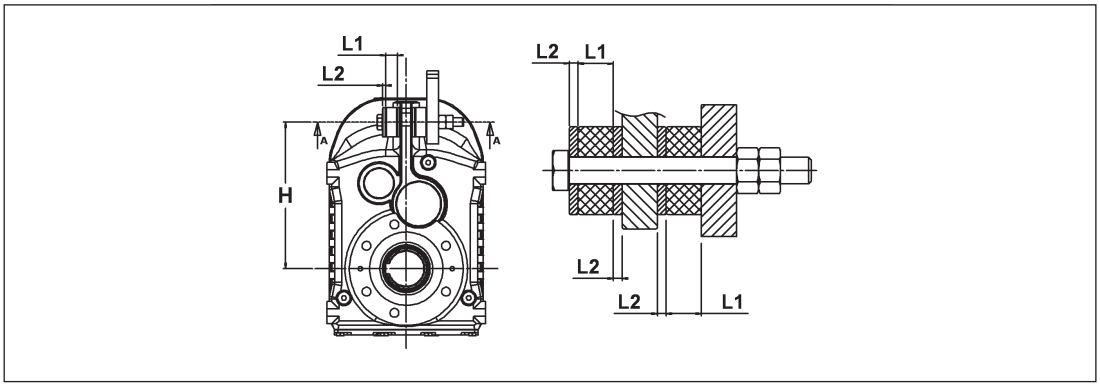
For shaft mounted gearboxes and geared motors.

8.10 Zubehör

GUMMIHÜLSE VKL

Für aufsteckgetriebe und aufsteckgetriebemotoren.

Fig. 8.12



Tab. 8.13

P.P - P.F	D1	D2	D3	L1	L2	H
63	12.5	40	40	16	4	152
71	12.5	40	40	16	4	165
90	12.5	40	40	16	4	200
112	21	60	60	20	10	255

ALBERO LENTO SPORGENTE

Tutti i riduttori sono forniti con albero lento cavo. A richiesta, possono essere forniti kit di montaggio per alberi sporgenti comprensivi di linguette, rondelle e viti di fissaggio. Le dimensioni delle linguette sono conformi alle norme UNI 6604-69.

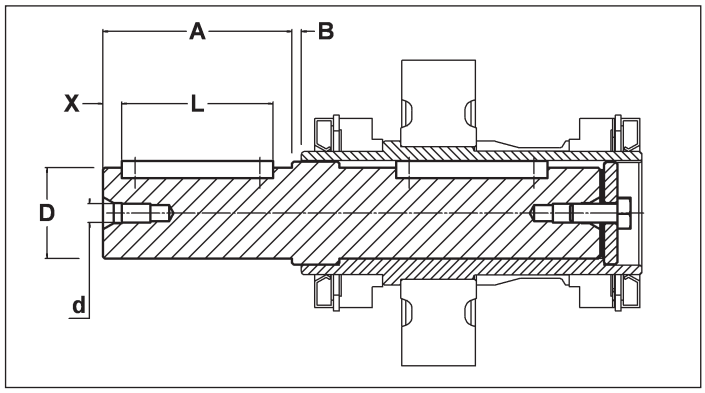
SINGLE OUTPUT SHAFTS

All gearboxes are supplied with hollow output shaft. On request there are available also assembly kits including output shafts, keys, washers and assembly screws. The dimensions of the keys are conform with UNI 6604-69.

EINSEITIGE ABTRIEBSWELLEN

Alle Getriebe werden mit Abtriebshohlwelle geliefert. Auf Anfrage sind auch Montagekits inklusive Abtriebswellen, Paßfedern, Unterlegscheiben und Montageschrauben erhältlich. Die Abmessungen der Paßfedern sind konform mit der UNI 6604-69.

Fig. 8.14



Albero lento sporgente
Single output shaft
Einseitige Abtriebswelle

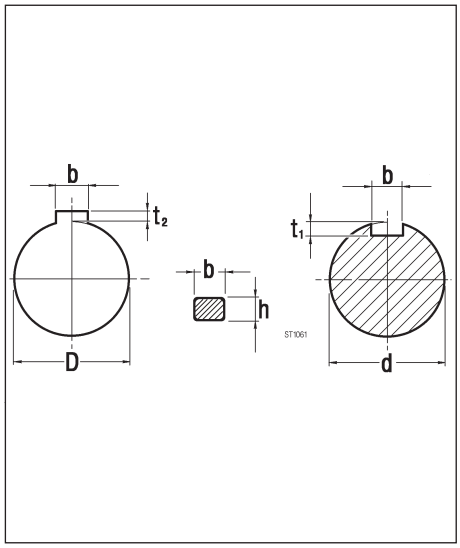
Tab. 8.15

P.P - P.F	A	B	D g6	d	L	X
63	60	1	30	M10	50	5
71	70	0	35	M10	60	5
90	80	1	40	M10	70	5
112	100	1	50	M12	90	5

8.11 Linguette

8.11 Keys

8.11 Paßfedern



Albero entrata
Input shaft
Antriebswelle

Tab. 8.16

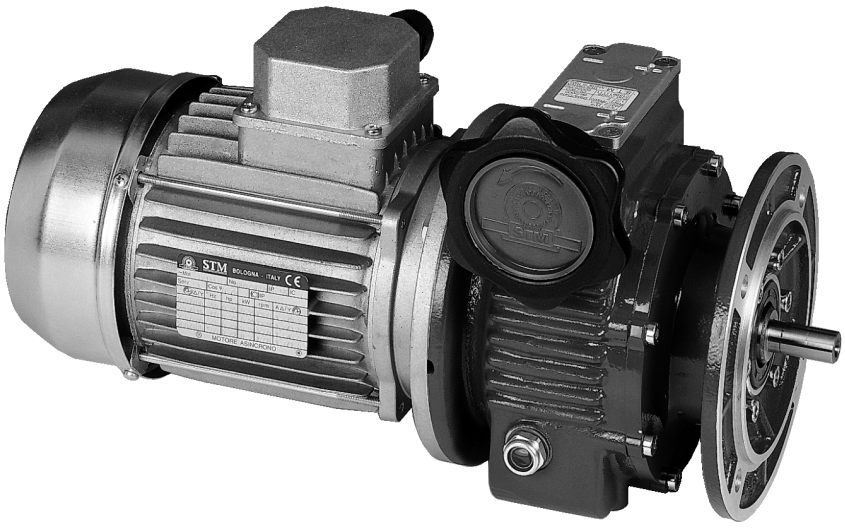
d	bxh	t1	
16	5x5	3	0/ +0.1
19	6x6	3.5	0/ +0.1
24	8x7	4	0/ +0.2

Albero uscita
Output shaft
Abtriebswelle

D	bxh	t2	
25	8x7	3.3	0/ +0.2
28	8x7	3.3	0/ +0.2
30	8x7	3.3	0/ +0.2
32	10x8	3.3	0/ +0.2
35	10x8	3.3	0/ +0.2
40	12x8	3.3	0/ +0.2
42	12x8	3.3	0/ +0.2
45	14x9	3.8	0/ +0.2
48	14x9	3.8	0/ +0.2
50	14x9	3.8	0/ +0.2
55	16x10	4.3	0/ +0.2

9.0 VARIATORI MECCANICI
MECHANICAL VARIATORS
MECHANISCHEN VERSTELLGETRIEBE

VM



9.1 Caratteristiche tecniche

I variatori meccanici STM sono riduttori epicicoidali a bagno d'olio, in cui è possibile variare con continuità la velocità in uscita, mediante volantino di manovra .
Il cuore del variatore è costituito da un gruppo di satelliti, di forma biconica, che trasmette la coppia tra le piste interna ed esterna per attrito e la cui posizione radiale è variabile dall'esterno, permettendo così di modificare, con gradualità, il rapporto di trasmissione.
I variatori meccanici STM sono stati progettati per offrire modularità nell'assemblaggio dei componenti:
carcassa con flangia attacco motore integrale in forma B5, flangia uscita riportata con la possibilità di scelta tra diametri di fissaggio differenti, piedi riportati sulla carcassa standard, volantino di comando posizionabile su entrambi i lati.
Particolare cura è posta nella scelta dei materiali, delle tolleranze di lavorazione, dei componenti commerciali, nell'assemblaggio dei componenti e nella scelta del lubrificante, per conseguire stabilità di prestazioni, alti rendimenti e lunghe durate.
Carcasse, flange e piedi vengono prodotti in alluminio SG-AlSi UNI 1706 per le taglie a bassa potenza (V63, 71, 80) e in ghisa meccanica G20 ISO 185 per quelle ad alta potenza (V90). I satelliti, le piste interne ed esterne, vengono realizzate con acciaio per cuscinetti 100Cr6 temprato, gli alberi uscita in acciaio 16CrNi4 UNI 7846 cementato e temprato.

Caratteristiche di funzionamento

– Campo di regolazione continuo con rapporto di trasmissione rispetto alla velocità di entrata tra 1: 1.4 e 1: 7.5.
– Funzionamento silenzioso ed esente da vibrazioni.
– Possibili entrambi i sensi di rotazione, con movimento entrata e uscita concorde.
– Costanza di velocità al n° di giri max: ± 0.5%
– - Costanza di velocità al n° di giri min: ±1%
- Rendimento elevato pari a circa 84% alla velocità max.

9.1 Technical characteristics

S.T.M. mechanical variators are oil lubricated planetary gearboxes, with possibility to change continuously the output speed with a manoeuvring hand-wheel.
The variator's heart is made of biconical shaped satellites, that transfer for friction the torque between the inside and the outside track, and whose radial position is variable outside, enabling to modify the transmission ratio.
S.T.M. mechanical variators have been designed to offer modularity in the components storing:
B5 housing with integral motor flange, modular output flange with possibility to choose different fixing parameters, modular feet assembled on with standard housing, possibility of control hand-wheel in both sizes.
Particular attention is drawn to the choice of materials, to the working tolerances, to the commercial components, to the components assembly and to the oil choice, to reach performance stability, high efficiency and long duration.
Housings, flanges and feet are manufactured in aluminium SG-Alsi UNI 1706 for low power sizes (V63, 71, 80) and in mechanical cast iron G20 ISO 185 for high power ones (V90). The satellites, the inside and outside tracks are made of hardened iron for bearings 100Cr6, the output shafts of cemented and hardened iron 16CrNi4 UNI 7846.

Operating characteristics

– *Continuous regulation field with transmission ratio between 1:1.4 and 1:7.5 with respect to the input speed.*
– *Silent functioning and free from vibrations.*
– *Available both directions of rotation, with simultaneous input and output movement.*
– *Speed uniformity: ± 0.5 % at maximum speed.*
– *Speed uniformity: ± 1 % at minimum speed.*
– *High efficiency: 84% at maximum speed.*

9.1 Technische Eigenschaften

Die mechanischen Verstellgetriebe aus dem Hause STM sind Planetenuntersetzungsgetriebe mit Ölbad, bei denen die Abtriebsgeschwindigkeit mit einem Handrad kontinuierlich verändert werden kann.
Das Verstellgetriebe besteht im wesentlichen aus einer Planetenradgruppe mit doppelkegeliger Form, die das Drehmoment zwischen der inneren und der äußeren Lauffläche mittels Reibung überträgt, und deren radiale Position von außen verändert werden kann. Hierdurch wird das Untersetzungsverhältnis stufenlos variiert. Bei der Entwicklung der mechanischen Verstellgetriebe des Hauses STM stand die Modularbauweise im Vordergrund:
Gehäuse mit integriertem Flansch für Motor B5, Abtriebsflansche verschiedener Durchmesser, Modularstützen für die Standardgehäuse sowie ein auf beiden Seiten positionierbares Steuerhandrad.
Bei der Materialauswahl, den Verarbeitungstoleranzen, der Auswahl der Zukaufteile, bei der Montage und der Wahl des Schmiermittels ist höchste Sorgfalt oberstes Prinzip, um konstante Leistungen, hohe Wirkungsgrade und eine lange Lebensdauer zu gewährleisten.
Gehäuse, Flansche und Stützen der Versionen mit niedriger Leistung (V63, 71, 80) werden aus Aluminium SG-AlSi UNI 1706 gefertigt, für Ausführungen mit höheren Leistungen (V90) aus Maschinenguß G200 ISO 185. Die Planetenräder sowie die inneren und äußeren Läufflächen bestehen aus gehärtetem Lagerstahl 100Cr6, die Abtriebswellen aus einsatzgehärtetem Stahl 16CrNi4 UNI 7846.

Betriebseigenschaften

– Stufenloser Einstellbereich mit Untersetzungs-verhältnissen gegenüber von 1:1.4 bis 1:7.5.
– Ruhiger und schwingungsfreier Lauf.
– Beide Drehrichtungen möglich, die Antriebsentspricht der Abtriebsdrehrichtung.
– Gleichlaufschwankung bei Maximaldrehzahl: ± 0.5%.
– Gleichlaufschwankung bei Minimaldrehzahl: ± 1%
– Hoher Wirkungsgrad entsprechend ca. 84% bei max. Drehzahl.

9.2 Designazione

9.2 Designation

9.2 Bezeichnung

	Versione *Version* Ausführung	Grandezza *Size* Größe	kW	n° poli poles polig	
VM	**F** **F1, F2, F3, F4** **C** **P** **P/F1, P/F2, P/F3, P/F4** **P/C**	**63** **71** **80** **90**	... 0.55, 0.75, ...	2, 4, 6	80 (B5) ....

Esempio / *Example* / Beispiel

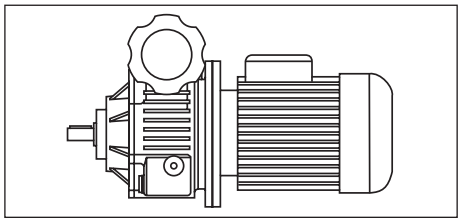
VM F1 63

VM F1 63 kW 0.18/4/63 (B5)

9.3 Versioni

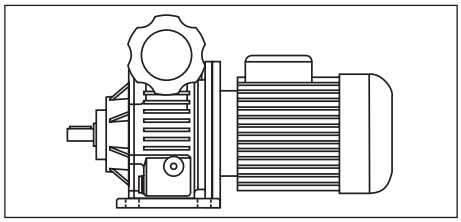
Motovariatori :
Il motore è applicato direttamente.
La forma del motore è B5 per tutte le grandezze.

Variatore con supporto uscita
Variator with output support
Verstellgetriebe mit Halterung für Abtriebsflansch



F

Variatore con piedi riportati
Variator with modular feet
Verstellgetriebe mit eingesetzten Stützen



P

Le versioni VMC e VMP/C sono predisposte per il montaggio su riduttore o altro dispositivo a valle che tenga in guida l'albero lento del variatore, in quanto non sopportano né carichi radiali, né carichi assiali.

9.4 Lubrificazione

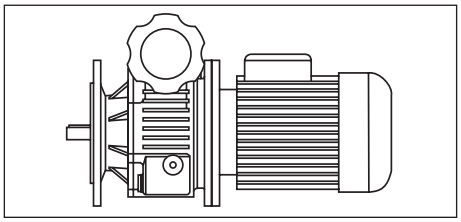
I variatori meccanici vengono forniti pieni di lubrificante AGIP Transmission Fluid VE a base minerale (110 cSt). Il principio di funzionamento di questi variatori è quello di trasmettere la coppia attraverso ruote di frizione: ciò comporta la scelta di un particolare tipo di lubrificante, capace di migliorare il rendimento e la durata dei componenti.
La tabella 1.8 è utile per la scelta dei lubrificanti da adottare nei variatori.
Il cinematismo che compone il variatore è esclusivamente metallico e necessita di una lubrificazione costante. La lubrificazione del variatore avviene per sbattimento o proiezione dell'olio.
Per il piazzamento del variatore sulla macchina da comandare, eseguire le seguenti verifiche:

1) Indivuata la posizione di montaggio, predisporre i tappi di carico, scarico, sfiato e livello.

9.3 Versions

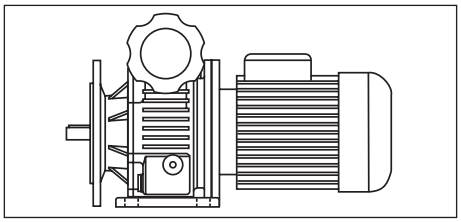
Motor variator:
The motor is directly coupled to variator.
Motor mounting position used for all sizes is B5.

Variatore con flangia riportata
Variator with modular flange
Verstellgetriebe mit Modularflansch



F1, F2, F3, F4

Variatore con piedi e flangia riportati
Variator with modular feet and flange
Verstellgetriebe mit eingesetzten Stützen und Modularflansch



P/F1, P/F2, P/F3, P/F4

Versions VMC and VMP/C are set for mounting on a gearbox or other outside device able to support variator's output shaft, because they don't supply any radial or axial loads on output shaft.

9.4 Lubrication

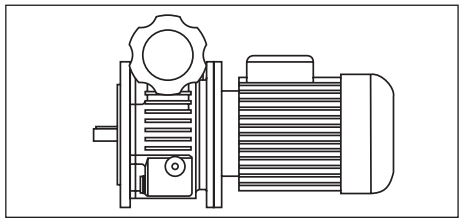
Mechanical variators are supplied ready-filled with AGIP mineral based oil, type Transmission Fuild VE, 110 cSt viscosity.
The operation principle of these variators consists of torque transmission by friction wheel; that means choosing a particular kind of oil, able to increase the dynamic efficiency and guarantee longer components' duration. Tab. 1.8 is useful for variator lubricant selection. All moving parts of variator are made of metal, and require a constant lubrication.
This is achieved by oil splash or jet.
During installing on the driven machine, make the following checks:

1) Once the mounting position has been established, arrange the filler plug, drain plug, breather and level plugs.

9.3 Ausführungen

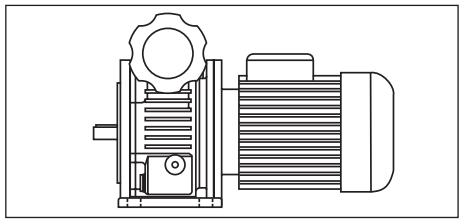
Verstellgetriebemotor:
Der Motor ist direkt gekuppelt.
Für alle Baugrößen wird die Bauform B5 verwendet.

Variatore con flangia corta
Variator with short flange
Verstellgetriebe mit kurzem Flansch



C

Variatore con piedi e flangia corta riportati
Variator with modular feet and short flange
Verstellgetriebe mit eingesetzten Stützen und kurzem Flansch



P/C

Die Verstellgetriebe der Serien VMC bzw. VMP/C sind zur Montage auf weiteren Getrieben oder solchen Anwendungen konzipiert, welche die Abtriebswelle führen. Sie sind deshalb nicht zur Aufnahme von Axial- oder Radiallasten ausgelegt.

9.4 Schmierung

Die mechanischen Verstellgetriebe sind bei der Lieferung mit dem Schmiermittel auf Mineralölbasis AGIP TRANSMISSION FLUID VE gefüllt (110 cSt). Das Betriebsprinzip dieser Verstellgetriebe besteht in der Übertragung des Drehmoments über Kupplungsräder. Daher ist eine besondere Wahl des Schmiermittels erforderlich, der den Wirkungsgrad sowie die Lebensdauer der Bestandteile erhöht.
Die Tabelle 1.8. dient der Auswahl des Schmiermittels für die Verstellgetriebe.
Alle beweglichen Teile des Verstellgetriebes bestehen ausschließlich aus Metall und erfordern daher eine ständige Schmierung.
Die Schmierung des Verstellgetriebes erfolgt durch Tauchbad bzw. Verwirbelung.
Bei der Installation des Verstellgetriebes an der anzutreibenden Maschine sind folgende Überprüfungen auszuführen:
1) Nach der Festlegung der Montageposition werden die Füll-, Ablaß-, Entlüftungs- und Füllstandsstopfen entsprechend der Darstellung im Abschnitt 9.5 hinsichtlich der Montageposition angebracht.

9.4 Lubrificazione

2) Assicurarsi che l'olio sia visibile fino a metà livello a variatore fermo, se ciò non avviene, rabboccare l'olio fino a riportarlo al giusto livello.
La sostituzione dell'olio deve avvenire dopo le prime 100 ore di funzionamento e succesivamente ogni 1000 ore, assicurandosi in ogni caso che l'olio sia sempre visibile fino a metà dei tappi di livello.

9.4 Lubrication

2) Make sure the oil is visible up to half way up the level indicator plug when the variator is at a stand still. If this is not the case, top up with oil until this level is reached.
The oil must be changed after the first 100 hours of duty and after that every 1000 hours. Always check variator is filled to half way up the level plug after changing the oil.

9.4 Schmierung

2) Sicherstellen, daß das Öl bei stehendem Verstellgetriebe bis zur Hälfte des Füllstandstopfens sichtbar ist. Sollte dies nicht der Fall sein, so ist Öl nachfüllen, bis der erforderliche Stand erreicht ist.
Nach den ersten 100 Betriebsstunden und darauffolgend nach jeweils 1000 Stunden sollte ein Ölwechsel durchgeführt werden. Jedesmal sollte sichergestellt werden, daß das Öl bis zur Hälfte der Füllstandsstopfen sichtbar ist.

Tab. 9.1

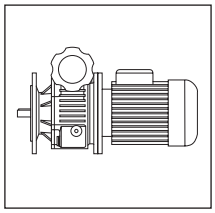
Quantità di olio / *Oil Quantity* / Ölmenge (kg)				
VM	Posizioni di montaggio /*Mounting Positions* / Montagepositionen			**Tipo di lubrificante *Lubricant type* Schmiermitteltyp**
	B3 - B5	**V1 - V5**	**V3 - V6**	
63	0.110	0.200	0.200	**AGIP TRANSMISSION FLUID V.E.**
71	0.180	0.400	0.300	
80	0.300	0.800	0.600	
90	0.650	1.400	0.900	

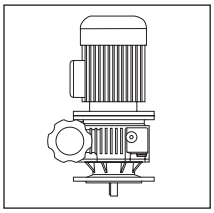
9.5 Posizioni di montaggio

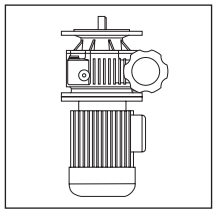
9.5 Mounting positions

9.5 Montagepositionen

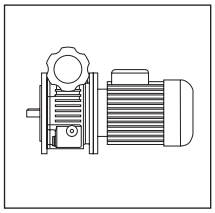
F, F1, F2, F3, F4

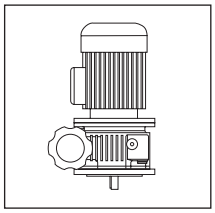

B5

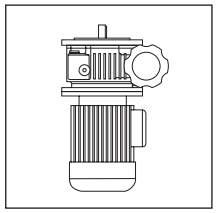

V1


V3

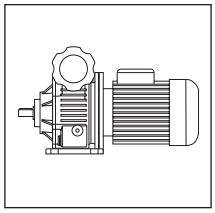
C

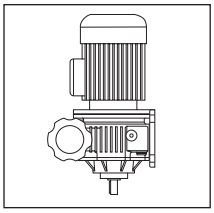

B5

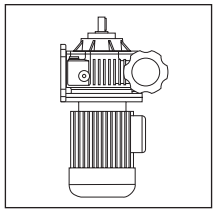

V1


V3

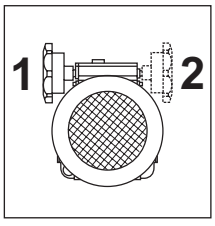
P, P/F1, P/F2, P/F3, P/F4, P/C


B3

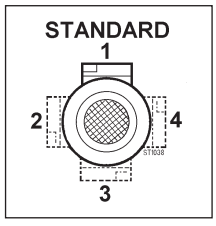

V5


V6

Posizione volantino
Hand-wheel position
Position Handrad



Posizione morsettiera
Terminal board position
Position Klemmenbrett



9.6 Carichi radiali

I valori riportati, rappresentano i massimi carichi radiali **Fr** (N) scelti nella condizione peggiore tra durata minima soddisfacente dei cuscinetti e verifica di resistenza flesso-torsionale dell'estremità d'albero.
I valori dei carichi radiali sono stati calcolati considerando l'applicazione del carico alla mezzeria dell'albero.
Contemporaneamente al carico radiale Fr, può agire un carico assiale :

Fa = 0.2 x Fr.

Carichi riferiti a giri che non compaiano in tabella, si possono ottenere per interpolazione.

9.6 Radial loads

*The shown values represent the maximum radial loads **Fr** (N) selected in the worst condition between minimum satisfactory bearing life, and check of flexo-torque resistance of shaft end.*
The radial load values have been calculated considering they are applied to the middle of the output shaft.
Axial load Fa:

Fa = 0.2 x Fr.

can simultaneously work with the radial load Fr.
Loads referred to speeds not included in the table can be obtained by interpolation.

9.6 Radiale Belastungen

Die nachstehend aufgeführten Werte stellen die maximalen radialen Belastungen **Fr (**N) dar, ausgewählt unter härtesten Bedingungen hinsichtlich zufriedenstellender Mindestlebensdauer der Lager und der Biege-und Verdrehfestigkeit des Wellenendes.
Den Werten der radialen Belastungen wurde ein Angriffspunkt der Radiallast auf der Wellenmitte zugrundegelegt.
Gleichzeitig mit der radialen Belastung Fr kann eine axiale Last wirken:

Fa = 0.2 x Fr.

Belastungen hinsichtlich der Drehmomente, die nicht in der Tabelle aufgeführt werden, können durch Interpolation ermittelt werden.

	Fr [N]	
	Albero lento / *Output shaft* / Abtriebswelle	
	n_2 = 190 min^{-1}	n_2 = 1000 min^{-1}
63	750	450
71	1100	800
80	1650	950
90	2000	1150

Nota: Le versioni VMC e VMP/C non sopportano carichi radiali sull'albero lento.

Note: Versions VMC and VMP/C don't supply radial or axial loads on output shaft.

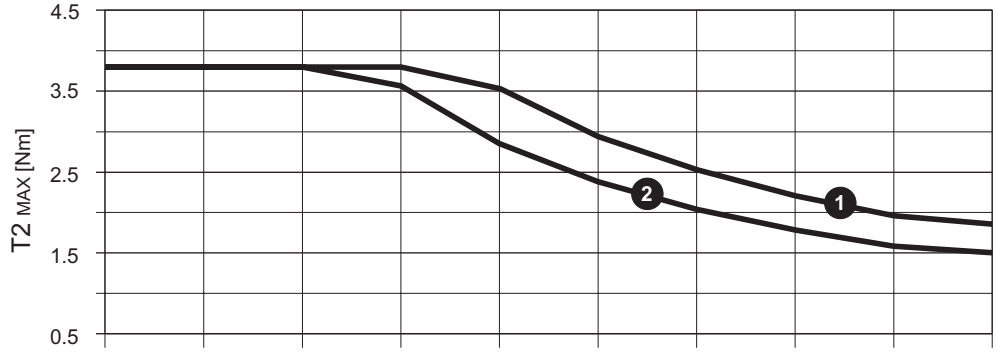
Hinweis: Die Verstellgetriebe der Serien VMC bzw. VMP/C sind nicht zur Aufnahme von Axial-oder Radiallasten ausgelegt.

9.7 Prestazioni — *9.7 Performances* — 9.7 Leistungen

V63

Kg 3.5

Escluso motore
Without motor
Ohne Motor

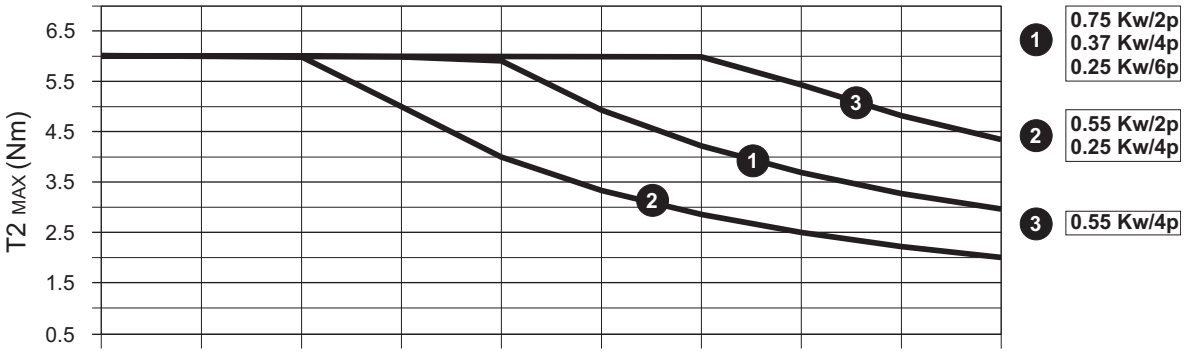


n1 = 2800	380	400	600	800	1000	1200	1400	1600	1800	2000	n_2 [min^{-1}]
n1 = 1400	190	200	300	400	500	600	700	800	900	950	
n1 = 900	125	132	198	264	330	396	462	528	594	620	

V71

Kg 5.5

Escluso motore
Without motor
Ohne Motor

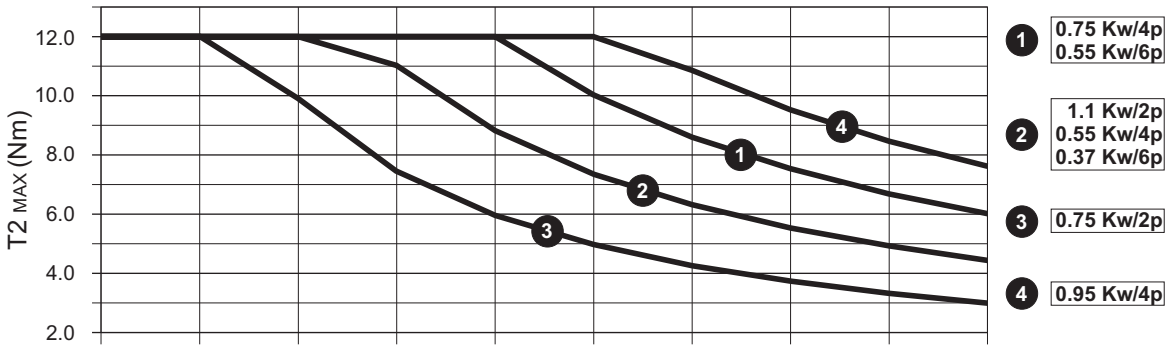


n1 = 2800	380	400	600	800	1000	1200	1400	1600	1800	2000	n_2 [min^{-1}]
n1 = 1400	190	200	300	400	500	600	700	800	900	1000	
n1 = 900	125	132	198	264	330	396	462	528	594	660	

V80

Kg 10

Escluso motore
Without motor
Ohne Motor

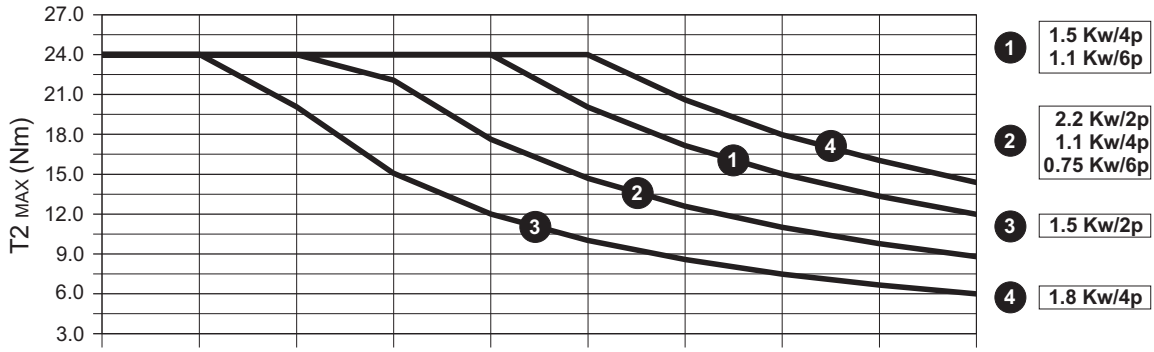


n1 = 2800	380	400	600	800	1000	1200	1400	1600	1800	2000	n_2 [min^{-1}]
n1 = 1400	190	200	300	400	500	600	700	800	900	1000	
n1 = 900	125	132	198	264	330	396	462	528	594	660	

V90

Kg 24

Escluso motore
Without motor
Ohne Motor



n1 = 2800	380	400	600	800	1000	1200	1400	1600	1800	2000	n_2 [min^{-1}]
n1 = 1400	190	200	300	400	500	600	700	800	900	1000	
n1 = 900	125	132	198	264	330	396	462	528	594	660	

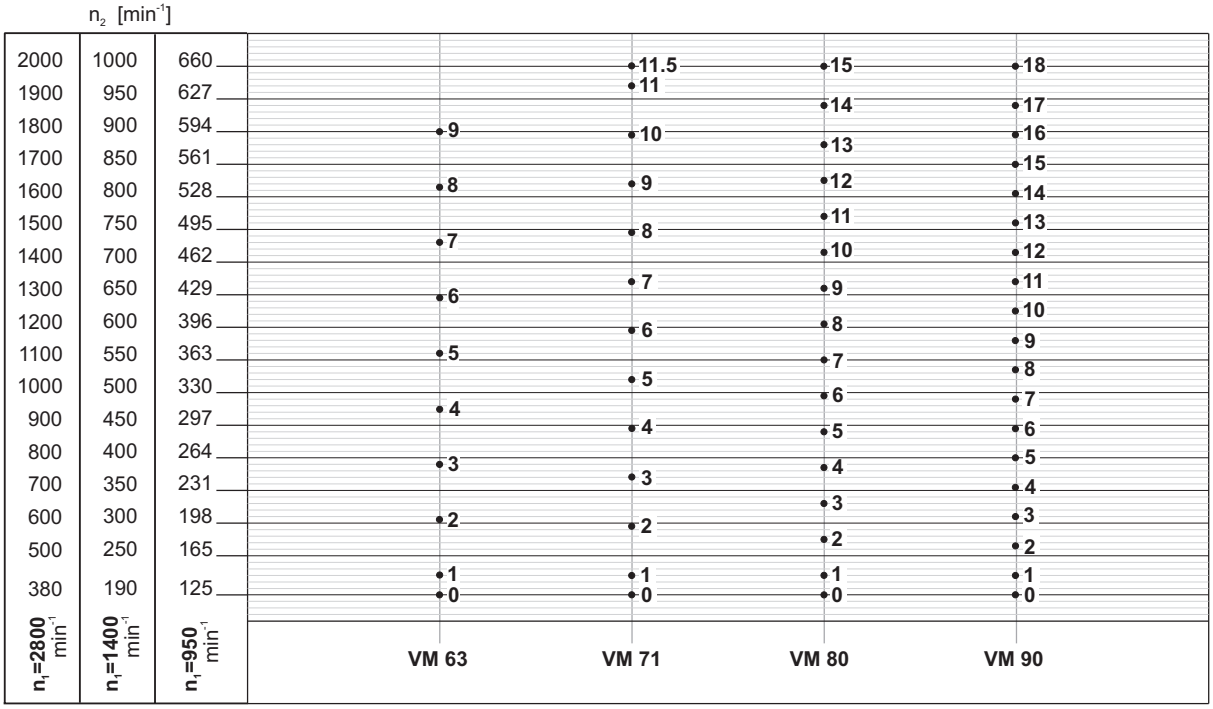
9.7 Prestazioni — *9.7 Performances* — 9.7 Leistungen

P_1 [kW]	n_1 min^{-1}	n_2 max	n_2 min	T_2 [Nm] max	T_2 [Nm] min	VM
0.15	880	620	125	1.9	3.8	**VM 63**
0.22	1350	950	190	1.9	3.8	**VM 63**
0.25	2750	2000	380	1.0	3.8	**VM 63**
	1400	1000	190	2.0	6.0	**VM 71**
	900	660	125	3.0	6.0	**VM 71**
0.37	2770	2000	380	1.5	3.8	**VM 63**
	1400	1000	190	3.0	6.0	**VM 71**
	910	660	125	4.5	12.0	**VM 80**
0.55	2820	2000	380	2.2	6.0	**VM 71**
	1400	1000	190	4.4	6.0	**VM 71**
	1410	1000	190	4.4	12.0	**VM 80**
	910	660	125	6.7	12.0	**VM 80**
0.75	2820	2000	380	3.0	6.0	**VM 71**
	2830	2000	380	3.0	12.0	**VM 80**
	1410	1000	190	6.0	12.0	**VM 80**
	920	660	125	9.0	24.0	**VM 90**
0.95	1410	1000	190	7.6	12.0	**VM 80**
1.1	2830	2000	380	4.4	12.0	**VM 80**
	1410	1000	190	9.0	24.0	**VM 90**
	920	660	125	13.4	24.0	**VM 90**
1.5	2840	2000	380	6.0	24.0	**VM 90**
	1420	1000	190	12.0	24.0	**VM 90**
1.8	1420	1000	190	14.4	24.0	**VM 90**
2.2	2850	2000	380	9.0	24.0	**VM 90**

Numero di giri del volantino di comando riferiti al numero di giri in uscita (n_2).

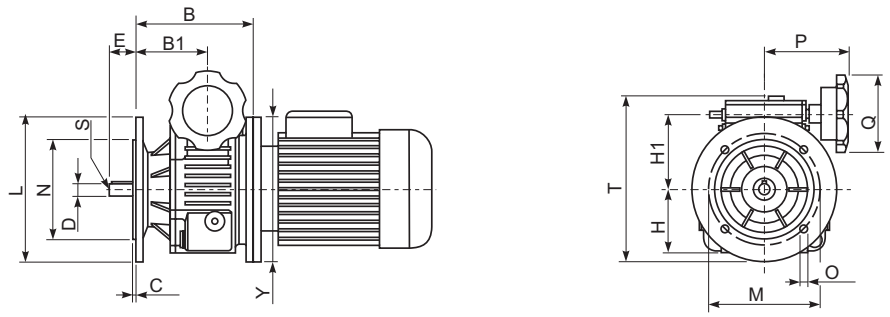
Number of revolution of the hand-wheel control referred to the output speed (n_2).

Anzahl der Umdrehungen des Steuerhandrades bezogen auf die Abtriebsdrehzahl (n_2).



9.8 Dimensioni — *9.8 Dimensions* — 9.8 Abmessungen

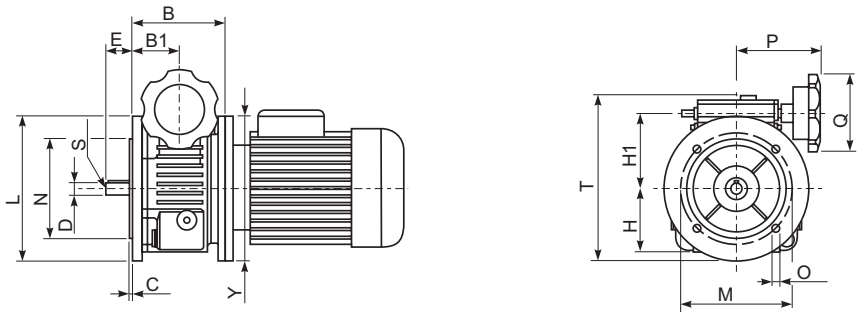
F1, F2, F3, F4



VM		C	L	M	N (g6)	O	T	B	B1	D	E	H	H1	P	Q	S	Y
63	F1	3.5	140	115	95	9	165	112	65.5	11 (14)	22 (30)	57	75	100	90	M4 (M5)	140
	F2	3.5	160	130	110	10	175										
	F3	3	120	100	80	9	155										
	F4	3.5	200	165	130	13	195										
71	F1	3.5	160	130	110	10	189	131.5	80.5	14 (19)	30 (40)	70	87.5	100	90	M5 (M6)	160
	F2	3.5	200	165	130	13	209										
	F3	3	120	100	80	9	169										
	F4	3.5	140	115	95	9	179										
80	F1	3.5	200	165	130	13	232	152.5	95	19 (24)	40 (50)	89	107	110	90	M6 (M8)	200
	F2	3.5	160	130	110	10	212										
	F3	4	250	215	180	15	257										
90	F1	3.5	200	165	130	13	252	172.5	105.5	24 (28)	50 (60)	105	126	118	90	M8 (M10)	200
	F2	3.5	250	215	180	15	277										
	F3	3	160	130	110	10	232										

N.B. F1 è la flangia standard. — *NOTE. F1 is standard flange.* — HINWEIS. F1 ist Standard Flansch.

C



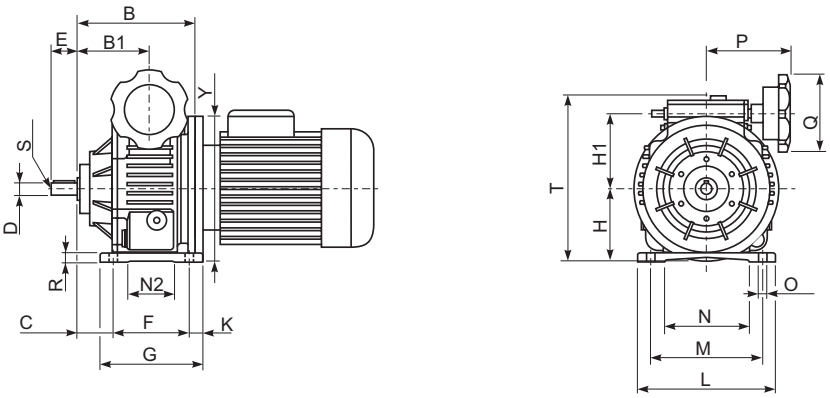
VM	B	B1	C	D	E	H	H1	L	M	N	O	P	Q	S	T	Y
63	88	41.5	3	11 (14)	22 (30)	57	75	140	115	95	M6	100	90	—	165	140
71	103.5	52.5	3.5	14 (19)	30 (40)	70	87.5	160	130	110	M8	100	90	—	189	160
80	118.5	61	3.5	19 (24)	40 (50)	89	107	200	165	130	M10	110	90	—	232	200
90	135.5	68.5	3.5	24 (28)	50 (60)	105	126	200	165	130	M10	118	90	—	252	200

9.8 Dimensioni

9.8 Dimensions

9.8 Abmessungen

P



VM	B	B1	C	D	E	F	G	H	H1	K	L	M	N	N2	O	P	Q	R	S	T	Y
63	112	65.5	22	11 (14)	22 (30)	86	110	71	75	10	140	$110\ ^{0}_{+8}$	90	70	10	100	90	8	M4 (M5)	162	140
71	131.5	80.5	36.5	14 (19)	30 (40)	90	115	81	87.5	12.5	155	$120\ ^{0}_{+14}$	100	50	10	100	90	10	M5 (M6)	190	160
80	152.5	95	42.5	19 (24)	40 (50)	110	135	102	107	12.5	200	$150\ ^{0}_{+20}$	120	60	11	110	90	12	M6 (M8)	234	200
90	172.5	105.5	55.5	24 (28)	50 (60)	115	140	125	126	12.5	235	$200\ ^{0}_{+10}$	130	60	11	118	90	16	M8 (M10)	277	200

9.9 Accessori

I nostri motovariatori possono essere forniti con diversi tipi di indicatori di velocità a seconda del grado di precisione voluto dallo strumento e dall'esigenza dell'applicazione

INDICATORE GRAVITAZIONALE
Questo strumento è montato direttamente sul volantino di comando del motovariatore e indica su di una scala da 0 - 2000 la posizione di regolazione del variatore
Abbiamo due tipi di indicatori gravitazionali:
– Quando il volantino di comando è in posizione 1(vedi par. 9.5) l'indicatore ha una scala di lettura ANTIORARIA.
– Quando il volantino di comando è in posizione 2 (vedi par. 9.5) l'indicatore ha una scala di lettura ORARIA.

TARATURA DELL'INDICATORE GRAVITAZIONALE
Portare il motovariatore alla minima velocità, togliere l'indicatore dal volantino di comando e portare le due lancette dello stesso, in posizione 0, quindi rimontarlo.

9.9 Accessories

Our motor variators can be supplied with different types of speed indicators, according to the precision required to the instrument and to the application need.

GRAVITATIONAL INDICATOR
This instrument is directly installed on the hand-wheel control of the variator and it shows the regulation position of the variator on a scale from 0 to 2000.
Two types of gravitational indicators are available:
– *when the control hand-wheel is in position 1 (see chapter 9.5), the indicator has an anticlockwise scale;*
– *when the control hand-wheel is in position 2 (see chapter 9.5), the indicator has a clockwise scale.*

CALIBRATION OF THE GRAVITATIO- NAL INDICATOR
Set the motor variator to minimum speed, take the indicator off the hand-wheel and set its two pointers to 0 position; than reassemble it.

9.9 Zubehör

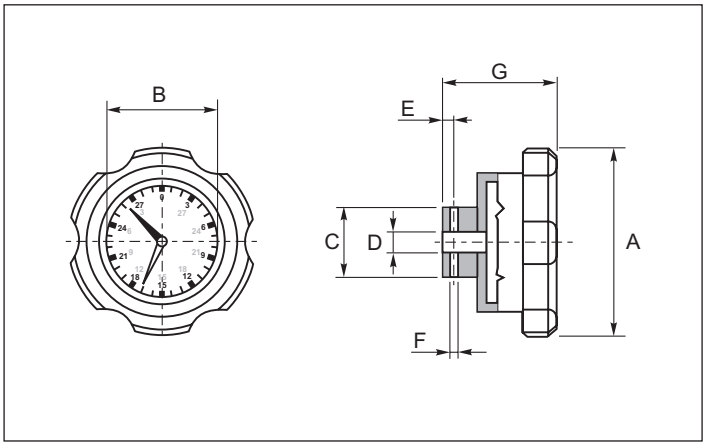
Unsere Verstellgetriebemotoren können mit verschiedenen Drehzahlanzeigen geliefert werden. Die Auswahl hängt vom Präzisionsgrad, der vom Instrument erwartet wird, sowie von den Anwendungsanforderungen ab.

ANZEIGER AUF SCHWERKRAFTBASIS
Dieses Instrument wird direkt auf dem Steuerhandrad des Verstellgetriebes montiert und zeigt auf einer Skala zwischen 0 und 2000 die Einstellposition des Verstellgetriebes an.
Es können zwei Ausführungen geliefert werden:
– befindet sich das Steuerhandrad auf Stellung 1 (s. Abschn. 9.5), wird die Skala des Anzeigers im GEGENUHRZEIGERSINN abgelesen.
– steht das Steuerhandrad auf Position 2 (s. bschn. 9.5), wird die Skala des Anzeigers im UHRZEIGERSINN abgelesen.

EICHUNG DER ANZEIGE

Den Verstellgetriebemotor auf die Mindestdrehzahl herunterfahren, den Anzeiger vom Steuerhandrad abnehmen und die beiden Zeiger auf Position 0 stellen. Nachfolgend den Anzeiger wieder montieren.

Grandezza Size Baugröße	A	B	C	D	E	F	G
03 - 05	90	57	22	8	6	3	47
10 - 20	90	57	22	10	6	4	47



PREDISPOSIZIONE CON SENSORE INDUTTIVO PER LA RILEVAZIONE DI VELOCITA'

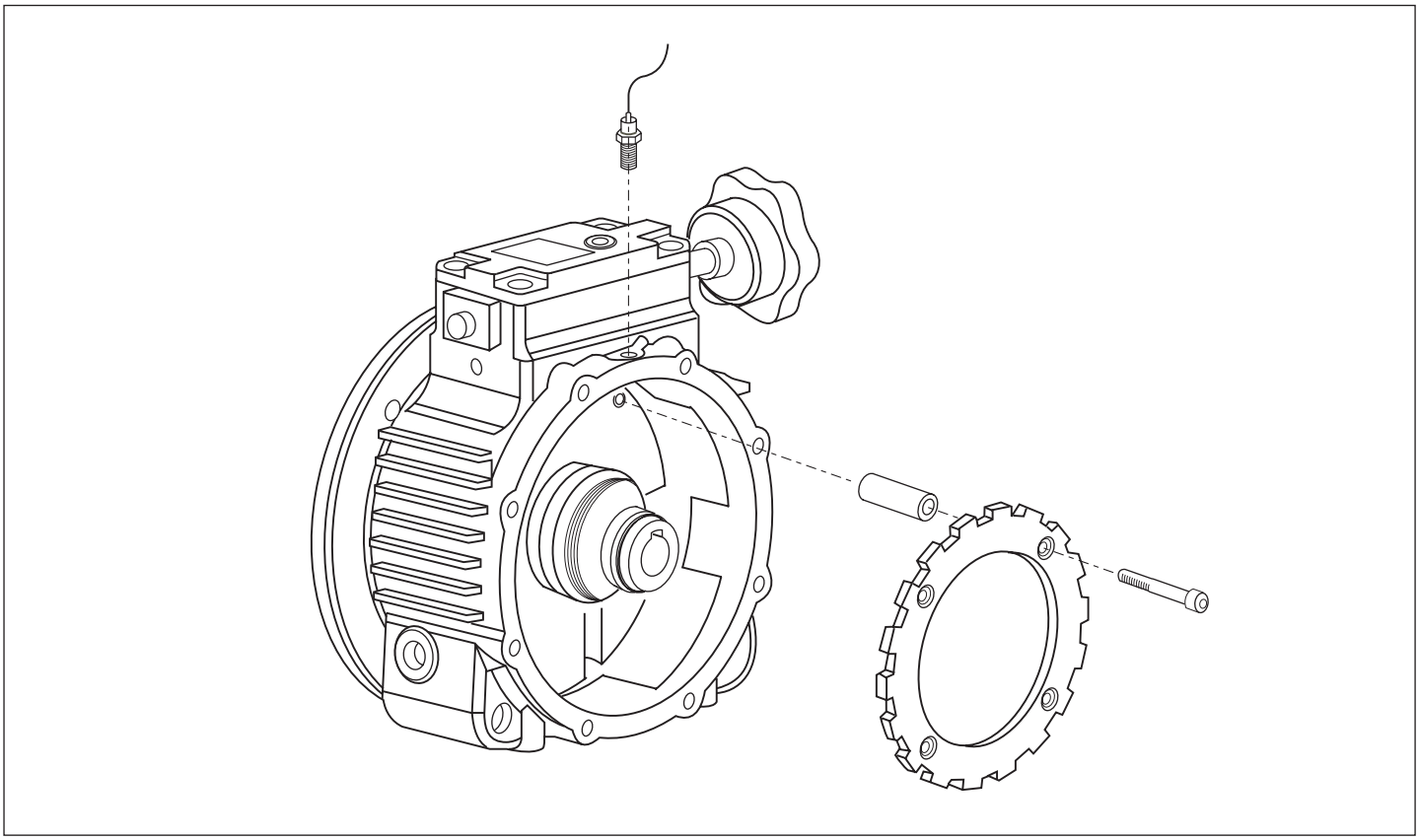
Per avere l'indicazione esatta del numero di giri dell'albero uscita, i variatori meccanici STM possono essere forniti con un sensore di prossimità induttivo, posto direttamente sulla carcassa, in grado di trasmettere gli impulsi direttamente ad un contagiri analogico o digitale.
Il sensore può essere, a richiesta, a norme NAMUR non amplificato con tensione nominale di 9 Volt oppure amplificato in corrente continua con tensione nominale di 30 Volt.

SETTING WITH INDUCTIVE SENSOR FOR THE SPEED DETECTION

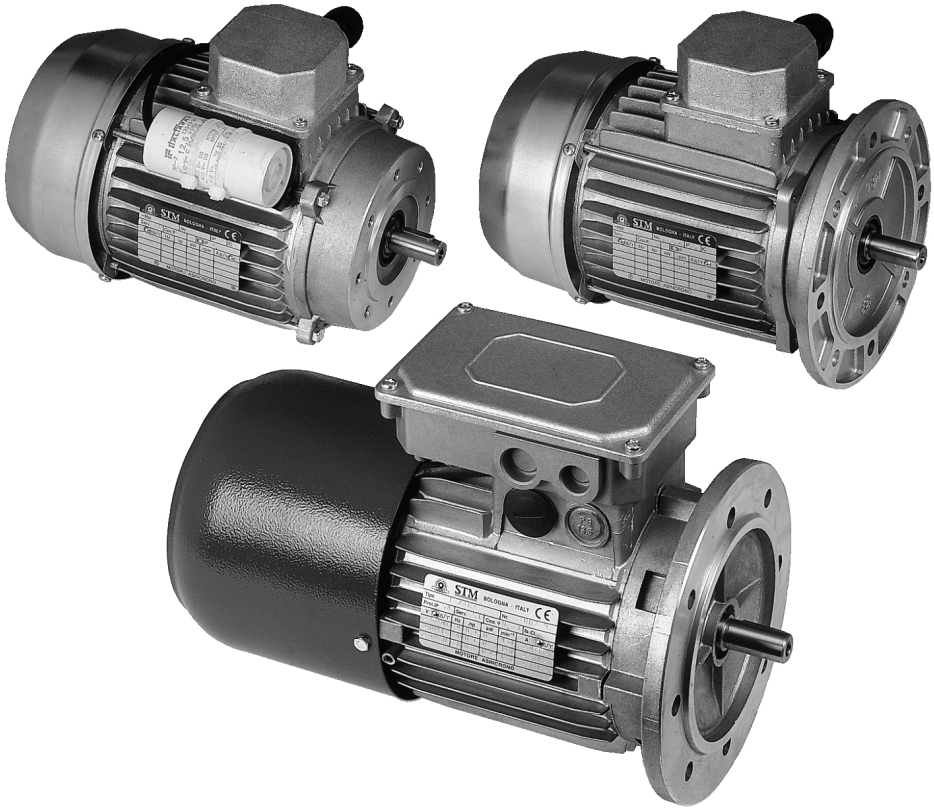
To have the exact information about the output shaft revolutions number, STM mechanical variators can be supplied with proximity inductive sensor, directly placed on the housing and able to directly transfer the impulses to an analogical or digital revolution counter.
Upon request, the sensor can be standard NAMUR, not amplified one with nominal voltage equal to 9 Volt, or continuous current amplified one with nominal voltage equal to 30 Volt.

INDUKTIONSSENSOR

Für eine exakte Angabe der Drehzahl der Abtriebswelle können die mechanischen Verstellgetriebe aus dem Hause STM mit einem Induktionssensor ausgerüstet werden. Dieser befindet sich auf dem Gehäuse und ist in der Lage, die Impulse direkt an einen Analog- oder Digitaldrehzahlmesser zu übertragen.
Der Sensor kann auf Anfrage auch entsprechend der Normen NAMUR ohne Verstärkung mit Nennspannung von 9 Volt, oder mit Verstärkung mit Gleichstrom mit Nennspannung von 30 Volt geliefert werden.



10.0 MOTORI ELETTRICI
ELECTRIC MOTORS
ELEKTROMOTOREN



Simbologia

Grand.	Denominazione	Unità di mis.
P_N	Potenzanominale	kW,HP
n	Velocità nominale	min^{-1}
η	Rendimento	%
cosφ	Fattore di potenza	—
I_{sp}	Corrente di spunto	A
I_N	Corrente nominale	A
M_{sp}	Coppia di spunto	Nm
M_{MAX}	Coppia massima	Nm
M_N	Coppia nominale	Nm
C	Capacità condens.	μF
U	Tensione	V
J	Momento d'inerzia	Kgm^2

(nel caso di motore autofrenante, al valore J riportato nelle tabelle, dovrà essere sommato quello del freno a c.c. o a c.a.)

Symbols

Size	*Nomenclature*	*Unit of meas.*
P_N	*Nominal power*	*kW,HP*
n	*Nominal speed*	min^{-1}
η	*Efficiency*	***%***
cosφ	*Power factor*	—
I_{sp}	*Starting current*	*A*
I_N	*Nominal current*	*A*
M_{sp}	*Starting torque*	*Nm*
M_{MAX}	*Max torque*	*Nm*
M_N	*Nominal torque*	*Nm*
C	*Capacitor capacity*	μF
U	*Tension*	*V*
J	*Moment of inertia*	Kgm^2

(In case of brake motors add to J value reported in the tables, the d.c. or a.c. brake value)

Kurzbezeichnungen

Größe	Bezeichnung	Maßeinheit
P_N	Nennleistung	kW,HP
n	Nenndrehzahl	min^{-1}
η	Wirkungsgrad	%
cosφ	Leistungsfaktor	—
I_{sp}	Anlaufstrom	A
I_N	Nennstrom	A
M_{sp}	Anlaufmoment	Nm
M_{MAX}	Maximalmoment	Nm
M_N	Nennmoment	Nm
C	Kondensatorkapazität	μF
U	Spannung	V
J	Trägheitsmoment	Kgm^2

(beim Bremsmotor muß zum J-Wert der jeweilige Wert der Gs oder Ws-Bremse dazugezählt werden).

10.1 Caratteristiche generali

Tipi e versioni

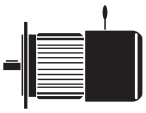
I motori a corrente alternata sono previsti nelle seguenti versioni:

TN Trifase standard / *Standard Threephase Motor* / Standard - Drehstrommotor

DN Trifase, polarità doppia / *Threephase, double speed* / Polumschaltbare Drehstrommotor

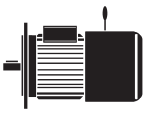
MN Monofase standard / *Standard Single phase motor* / Standard - Einphasenmotor

XN Monofase con alta coppia di spunto / *Single phase motor with high starting torque* / Einphasenmotor mit hohem Anlaufmoment



TF Trifase autofrenante standard / *Standard Threephase brake motor* / Standard - Drehstrom - Bremsmotor

DF Trifase autofrenante, polarità doppia / *Threephase brake motor, double speed* / Polumschaltbarer Drehstrom - Bremsmotor



MF Monofase autofrenante standard / *Standard single phase brake motor* / Einphasen - Bremsmotor

XF Monofase autofrenante con alta coppia di spunto / *Single phase brake motor with high starting torque* / Einphasen - Bremsmotor mit hohem Anlaufmoment

L'intera gamma attuale di motori, dalla grandezza 56 alla 132, utilizza carcasse e coperchi in alluminio pressofuso, ventole esterne bidirezionali costruite in materiale plastico e calotte copriventola in lamiera d'acciaio.
Tutte le caratteristiche dimensionali e costruttive dei motori STM sono conformi alle norme IEC, UNEL, CEI.

10.1 General characteristics

Types and versions

A.c. motors are supplied in the following versions:

In the whole range, from size 56 to 132, housings and covers are made of die-cast aluminium, the external bidirectional fans are made of plastic material and the fan covers in steel sheets.
The dimensional and constructive characteristics of STM motors conform to IEC,UNEL,CEI specifications.

10.1 Allgemeine Merkmale

Typen und Versionen

Die Wechselstrommotoren gibt es in folgenden Versionen:

Alle Modelle der derzeitigen Motorenpalette, von Baugrösse 56 bis 132, haben Gehäuse und Deckel aus Aluminium-Druckguß, die externen, bidirektionalen Ventilatoren Kunststoff und die Lüfterhauben aus Stahlblech. Maße und Konstruktionsmerkmale der STM-Motoren entsprechen den Anforderungen der IEC, UNEL und CEI-Normen.

10.2 Designazione

10.2 Designation

10.2 Bezeichnung

Tipo *Type* Typ	Grand. *Size* Größe	Potenza Power Leistung	N. poli *N. poles* Polzahl	Tensione *Voltage* Spannung	Frequenza *Frequency* Frequenz	Protezione *Protection* Schutzart	Isolamento *Insulation* Isolation	Forma costruttiva *Mounting positions* Bauform
TN	**63**	**0.18**	**4**	**230/400**	**50**	**IP55**	**CL F**	**B5**
TN DN MN XN TF DF MF XF	56 200	Kw (HP)	2 4 6 8 2/4 4/6 4/8	230-400V standard trifase *threephase* Drehstrom 230V standard monofase *singlephase*Einphasen	50 Hz standard 60 Hz a richiesta *on request* auf Anfrage	IP55 *standard* IP44 IP54 IP65 a richiesta *on request* auf Anfrage	CL F *standard* CL H a richiesta *on request* auf Anfrage	B5 B14 B3 pos.1 standard B3L pos.2 B3L pos. 3 B3/B5 B3/B14 a rich. /*on req.*/auf Anfrage

FLANGE RIDOTTE E MAGGIORATE DISPONIBILI
SPECIAL FLANGES AVAILABLE
LIEFERBARE SONDERFLANSCHE

Tipo motore *Motor type* Motortyp	Tipo flangia / *Flange type* / Flanschtyp		
	B14 ridotta *Reduced* Reduziert	**B14** maggiorata *Oversize* Übermaß	**B5** ridotta *Reduced* Reduziert
63	56 B14	71 - 80 B14	—
71	63 B14	80 - 90 B14	63 B5
80	71 B14	90 - 100 B14	71 B5
90	80 B14	100 B14	71 B5
100	90 B14	132 B14	90 B5
112	90 B14	—	90 B5
132	—	—	112 B5

ALTRE SPECIFICHE
OTHER SPECIFICATIONS
WEITERE SPEZIFIKATIONEN

tutti/*all*/alle	Albero bisporgente Double extended output shaft Beidseitig Abtriebswelle
XN XF	Condensatore di avviamento *Starting Capacitor* Anlaufkondensator
TF DF	Freno c.a. (standard per trifase) *A.C. brake (standard on threephase)* Ws-Bremse (Standard für Drehstrommotor)
TF MF DF	Freno c.c. (standard per monofase) *D.C. brake (standard on single phase)* Gs-Bremse (Standard für Einphasenmotor)
TF MF DF	Scheda frenatura rapida (per freno c.c.) *Fast braking card (on D.C. brake)* Schnellbrems-Karte (für Gs-Bremse)
TF MF DF	Leva di sblocco *Hand release* **L** Manuelle Entsperrung
tutti/*all*/alle	Tropicalizzazione *Tropicalization* Tropenschutz
	Albero ridotto *Reduced shaft* Kleinwelle
	Flangia ridotta *Special Flanges* Sonderflansche

10.3 Caratteristiche meccaniche

Forma costruttiva

Tutti i motori sono previsti nelle seguenti forme costruttive:

Fig. 10.1

10.3 Mechanical characteristics

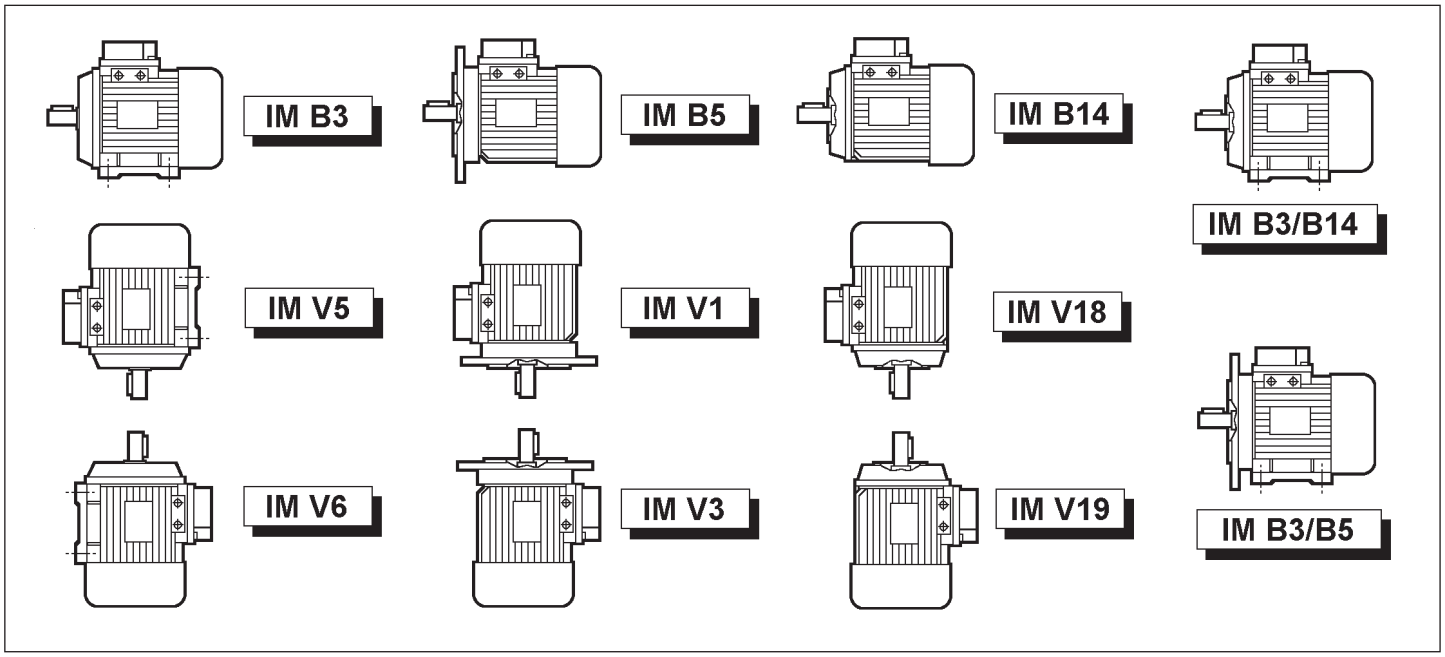
Construction form

Standard all motors are supplied in the following types:

10.3 Mechanische Merkmale

Bauform

Standard alle Motoren sind in folgenden Bauformen erhältlich:



Protezioni

La protezione standard è la IP55; a richiesta i motori possono essere forniti con un grado di protezione IP54 e IP65.

Protection

Standard protection supplied is IP55. IP54 and IP65 protections are also available upon request.

Schutzarten

Die Standard Schutzart ist IP55. Auf Anfrage sind die Motoren jedoch auch IP54 und IP65 lieferbar.

Scatola morsettiera

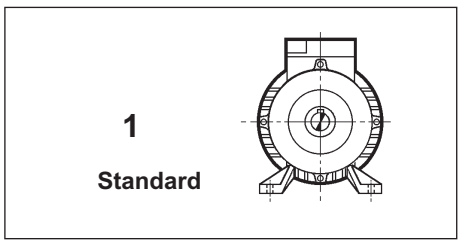
Nelle forme costruttive con piede la scatola morsettiera può essere orientata in tre posizioni. Essa è posta normalmente in alto (1); a richiesta può essere collocata a destra (3) o, tramite esecuzione speciale, a sinistra (2).
Nei motori a polarità singola o doppia contiene 6 morsetti (a richiesta 12).

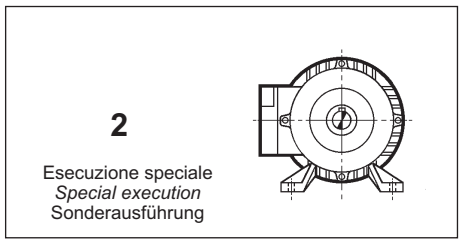
Terminal box

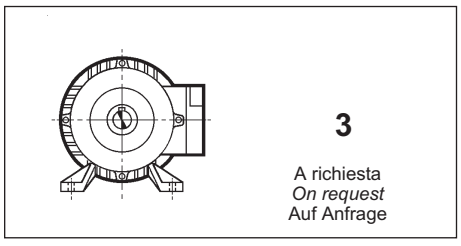
In the foot mounted types, the terminal box can be located in three different positions. On the standard type it is located on the top (1), upon request it can be located on the right (3) or on the left hand side (2). Standard and double speed motors are equipped with a six terminals board (12 upon request).

Klemmenkasten

In der Bauform mit Fuß gibt es für den Klemmenkasten drei Montagemöglichkeiten. Normalerweise befindet er sich oben (1). Er kann aber auf Anfrage auch rechts (3) oder in Sonderausführung links (2) plaziert werden. Bei ein-oder doppelpoligen Motoren enthält das Klemmbrett 6 Klemmen (auf Anfrage 12).







Carichi radiali

La tabella sottostante riporta i massimi carichi radiali (N) ammissibili sulla mezzeria della sporgenza dell'albero. motore .

Radial loads

The table underneath lists the maximum radial loads (N) allowable on the centerline of the shaft extension.

Radialbelastungen

In der nachstehenden Tabelle sind die maximal zulässigen Radialbelastungen (N) auf die Mitte des Abtriebswelle angegeben.

min^{-1}	Grandezza motore / *Motor size* / Motorbaugröße							
	56	**63**	**71**	**80**	**90**	**100**	**112**	**132**
3000	240	270	330	430	490	670	960	1370
1500	300	350	410	540	610	850	1210	1730
1000	350	400	470	610	700	970	1390	1980
750	—	400	470	610	770	1070	1390	1980

10.4 Caratteristiche elettriche motori trifase

Potenza

I valori di potenza riportati nelle tabelle di selezione sono calcolati per servizio continuo (S1)con temperatura ambiente max di 40 °C, altitudine inferiore a 1000 msl, alimentazione a tensione nominale, frequenza a 50Hz e valgono anche nel caso in cui la tensione nominale subisca delle variazioni contenute fra +5% e - 5%.
Per condizioni operative e ambientali diverse, interpellare il ns. Servizio Clienti.

Tensione e frequenza

I valori di tabella sono relativi a tensione nominale 230 - 400 V e 50 Hz.
E' ammessa tolleranza di tensione ± 5%.
Se un motore normale viene impiegato a 60 Hz, indicativamente occorre considerare le seguenti variazioni:

10.4 Electrical characteristics threephase motors

Power

Motor ratings listed in our selection tables are calculated for continuous duty (S1) in an ambient temperature of max 40°C, altitude below 1000 mt asl, normal voltage and 50Hz frequency.These values remain constant also in case of tension variations between + 5% and - 5%.
For operating conditions different from the above, it is advisable to contact our Customer Service.

Frequency and tension

Values given in the table are relevant to nominal tension 230 - 400 V and 50 Hz.
It is allowable a tension tolerance of ± 5%.
Should a standard motor be used at 60Hz, the following variations have to be considered:

10.4 Elektrische Merkmale Drehstrommotoren

Leistung

Die in den Tabellen angegebenen Leistungen sind für Dauerbetrieb (S1), Umgebungstemperaturen von max. 40°C, Höhenlage unter 1000 m ü.M., Nennstromversorgung und Frequenz von 50 Hz berechnet. Sie gelten auch bei Nennspannung mit kleinen Schwankungen zwischen +5% und -5%. Bei anderen Arbeitsoder Umgebungsbedingungen wenden Sie sich bitte an unseren Kundendienst.

Spannung und Frequenz

Die Tabellenwerte beziehen sich auf eine Nennspannung von 230 - 400 V und 50 Hz Spannungstoleranzen von ± 5% sind zulässig. Wird ein normaler Motor bei 60 Hz betrieben, müssen folgende Abweichungen berücksichtigt werden:

P_N	C°	cosφ	M_N	M_{MAX}/M_N	M_{sp}/M_N	n
=	=	=	– 17%	– 15%	– 30%	+ 20%

Classe di isolamento

Gli avvolgimenti, realizzati con filo a doppio smalto al massimo della tolleranza e sottoposti ad impregnazione sotto vuoto, sono isolati in **classe F** garantendo in tal modo un margine termico massimo di 155 °C, conforme alle prescrizioni delle principali normative. Per particolari applicazioni è possibile fornire (a richiesta) l'isolamento in classe H e motori sottoposti a trattamenti speciali per renderli atti a funzionare in ambienti umidi e corrosivi.

Insulation class

Windings are made of copper wire with double thickness enamelling and are subjected to vacuum impregnation.
They are also ***class F*** *insulated granting a maximum thermal margin of 155 °C according to the main specifications.*
For particular applications it is possible to supply (upon request)class H insulated motors.
Specially treated motors suitable to operate in humid and corrosive ambients are also available upon request.

Isolationsklasse

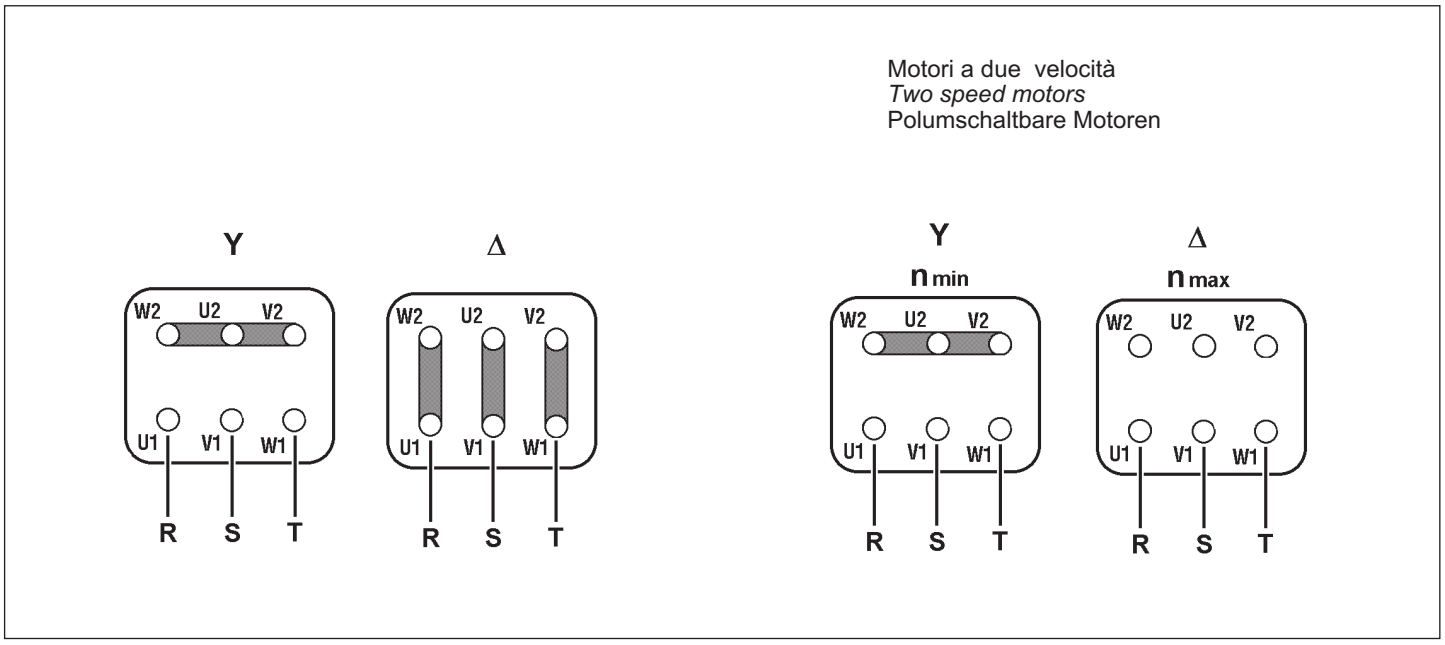
Die Wicklungen sind mit einer doppelten Lackschieht versehen und vakuumimprägniert. Sie sind nach **Klasse F** isoliert und garantieren somit einen den einschlägigen Normen entsprechenden maximalen Temperaturgrenzwert von 155°C.
Für besondere Anforderungen können die Motoren auf Anfrage mit einer Isolierung nach Klasse H und speziellen Schutzbehandlungen für feuchte und korrosive Arbeitsumgebungen geliefert werden.

Schemi di collegamento motori trifase

Threephase motor wiring diagram

Schaltungsplan für Drehstrommotoren

Fig. 10.2



10.5 Caratteristiche elettriche motori monofase

Generalità

I motori monofase STM sono dotati di un condensatore di marcia sempre inserito e collegato in serie all'avvolgimento sussidiario di avviamento.
I dati tecnici riportati nelle tabelle sono riferiti a condizioni di esercizio continuo a corrente alternata 230 V - 50 Hz.
Le dimensioni sono identiche a quelle dei motori trifase, fatta eccezione per l'ingombro del condensatore.
Il condensatore viene montato su apposito supporto che permette di isolarlo dal corpo motore limitando la trasmissione di temperatura e vibrazioni al condensatore stesso.

Alta coppia di spunto (XN-XF)

Nelle applicazioni dove è richiesta una coppia di spunto elevata, i motori monofase potranno essere dotati (a richiesta) di un condensatore ausiliario, inserito solo nella fase di avviamento, che permette una coppia di spunto del 200%. Ad avviamento avvenuto, il condensatore ausiliario viene disinserito tramite un relé elettronico.

Classe di isolamento e protezione

Come i motori trifase, anche i monofase sono realizzati con isolamento corrispondente alla classe F e protezione IP 55.

Senso di rotazione

I motori vengono forniti con senso di rotazione antiorario guardando l'albero.
Gli schemi sotto riportati indicano i collegamenti da effettuare per ottenere un determinato senso di rotazione dell'albero del motore monofase (osservato di fronte).

Avvolgimento simmetrico

A richiesta, i motori elettrici monofase possono essere forniti con un avvolgimento simmetrico per consentire il funzionamento in entrambi i sensi di marcia senza necessità di arresto del motore.
Lo schema sottoriportato indica il collegamento necessario per ottenere il senso di rotazione desiderato.

Schemi di collegamento motori monofase

10.5 Electrical characteristics single phase motors

General

STM single phase motors are equipped with a run capacitor permanently turned on and connected to the auxiliary winding for starting.
Technical data reported in the tables are referred to continuous duty conditions at alternating current 230V - 50 Hz.
Overall dimensions are identical to the threephase motors, except for the capacitor. The capacitors is assembled on to an appropriate support that enables to isolate it from the housing limiting the trasmission of temperature and vibrations to the capacitor itself.

High starting torque (XN-XF)

In those applications where a high starting torque is required, single phase motors can be equipped (upon request) with an auxiliary capacitor which is connected only in the starting phase and allows a starting torque of 200%. Once the motor has been started, the auxiliary capacitor is disconnected by means of an electronic relay.

Insulation class and protection

Single phase motors are supplied with insulation class F and IP55 protection as well as the threephase ones.

Direction of rotation

Motors are supplied with anticlockwise rotation looking at the shaft. The diagrams underneath indicate the connections to be effected in order to obtain a determinated direction of the rotation on the single phase motor shaft (seen from the front).

Symmetrical winding

Upon request single phase electric motors can be supplied with a symmetrical winding in order to allow them to operate in both directions of rotation without stopping the motor.
The diagram indicates the connection necessary to obtain the required direction of rotation.

Single phase motor wiring diagram

10.5 Elektrische Merkmale Einphasenmotoren

Allgemeines

Die STM-Einphasenmotoren sind mit einem ständig aktivierten, in Serie zur Hilfs-Anlaufwicklung geschalteten Kondensator ausgestattet.
Die technischen Daten in der Tabelle beziehen sich auf Dauerbetrieb mit Ws-Versorgung von 220 V - 50 Hz.
Die Abmessungen stimmen, mit Ausnahme der Außenmasse der Kondensatoren, genau mit denen der Drehstrommotoren überein.
Der Kondensator ist auf ein Speziallager montiert, das ihn vom Motorkörper und somit von Wärme-und Schwingungsübertragungen isoliert.

Hohes Anlaufmoment (XN-XF)

Bei Anwendungen, wo eine hohes Anlaufmoment erforderlich ist, können die Einphasenmotoren auf Anfrage mit einem nur in der Anlaßphase aktivierten Hilfskondensator ausgerüstet werden, der ein 200%- iges Anlaufmoment ermöglicht.
Nach dem Start wird dieser Hilfskondensator mit einem elektronischen Relais abgeschaltet.

Isolationsklasse und Schutzart

Auch die Einphasenmotoren sind wie die Drehstrommotoren in der Isolationsklasse F und in der Schutzart IP55 hergestellt.

Drehrichtung

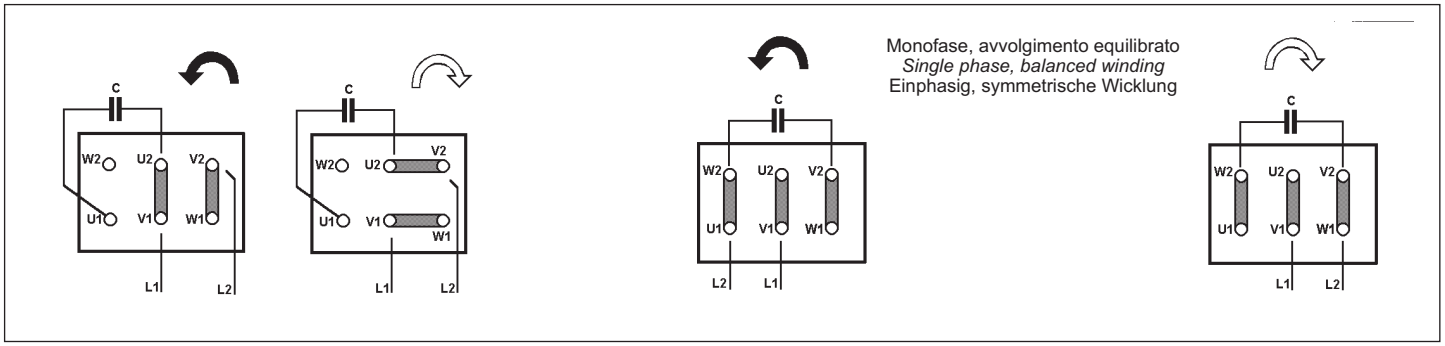
Die Drehrichtung der Motoren ist, von der Welle aus betrachtet, gegen den Uhrzeigersinn. Die nachstehenden Anschlußpläne gelten für bestimmte Drehrichtungen der Welle des Einphasenmotors (von vorne betrachtet).

Symmetrische Wicklung

Auf Anfrage können die Einphasen- Elektromotoren mit einer symmetrischen Wicklung für den Betrieb in beide Laufrichtungen, ohne Anhalten des Motors, ausgerüstet werden.
Nachstehend das Anschlußschema für die gewünschte Drehrichtung.

Schaltplan für Einphasenmotoren

Fig. 10.3



10.6 Motori autofrenanti

Generalità

I motori autofrenanti nascono dalla applicazione, su un motore a corrente alternata, di un freno elettromagnetico a disco ad azione negativa che interviene, quindi, in mancanza di corrente causando l'arresto del motore e quant'altro da esso comandato.
Il motore autofrenante garantisce quindi una grande precisione d'arresto in caso di interruzione volontaria della corrente.
La pressione di frenatura è esercitata con rapidità da una o più molle al cessare dell'azione dell'elettromagnete.
Le principali caratteristiche si possono così riassumere:
Esecuzione possibile su motori trifase e monofase.
Possibilità di avere l'albero bisporgente.
Possibilità di alimentazione separata del freno. Questa soluzione è adottata sui motori a doppia polarità e quando si utilizzi un inverter.
Frenatura ugualmente efficace nei due sensi di rotazione senza spostamento assiale dell'albero.
Semplice regolazione del traferro a freno montato.
Possibilità di regolazione della coppia frenante.

Nel motore autofrenante trifase standard è prevista l'applicazione di freni alimentati a c.a.; su richiesta possono essere forniti freni in c.c.
I motori monofase autofrenanti sono sempre dotati di un freno a c.c.

Protezione e isolamento

Il motore autofrenante viene realizzato con isolamento in classe F e protezione IP54 (IP55 a richiesta).

Leva di sblocco

A richiesta può essere fornita la leva di sblocco manuale meccanico (fig. 10.4).

10.6 Brake motors

General

Brake motors are made with the application of an electromagnetic disc-brake onto an a.c. motor which operates in case of lack of current causing the blocking of the motor and of the other devices connected to it.
The brake motor grants a high stop precision in case of voluntary interruption of current.
Braking pressure is effected in a very fast way from one or more springs once the electromagnet stops its action.
The principal characteristics can be summed up as follows:
Execution available on threephase and single phase motors.
Double extended shaft.
Possibility of brake separate feeding. This solution is advisable on two speed motors and when an inverter is used.
Braking action effective in both directions of rotation without axial movement of the shaft.
Simple adjustment of the air gap once the brake is assembled.
Possibility of braking torque setting.

The standard three-phase brake motor is supplied with AC brakes, upon request DC brakes are also available.
The single-phase brake motors are always equipped with a DC bracke.

Protection and insulation

Brake motors are supplied with insulation class F and IP54 protection (IP55 on request).

Hand release

Upon request, mechanical hand brake release can be supplied (fig. 10.4).

10.6 Bremsmotoren

Allgemeines

Die Bremsmotoren entstehen durch die Ausrüstung eines Wechselstrommotors mit einer elektromagnetischen Scheibenbremse, die bei Stromausfall den Motor und die damit angetriebenen Geräte anhält.
Der Bremsmotor garantiert eine hohe Stoppgenauigkeit bei gesteuerter Stromunterbrechung.
Der Bremsdruck wird bei Deaktivierung des Elektromagneten sofort durch eine oder mehrere Federn erzeugt.
Die Hauptmerkmale sind:
Möglichkeit zur Montage auf alle Drehstromund Einphasenmotoren .
Auf Wunsch mit doppelter Abtriebswelle.
Auf Wunsch mit separater Bremsstromversorgung. Diese Lösung empfiehlt sich bei Motoren mit doppelter Polung und bei Benutzung eines Inverters.
Gleiche Bremsleistung in beide Drehrichtungen, ohne Axialverschiebung der Welle
Einfache Luftspaltregelung bei montierter Bremse.
Regelbares Bremsmoment.

Bei den dreiphasigen Drehstrom-Bremsmotoren in Standardversion ist der Einbau von Ws -Bremsen vargesehen. Auf Anfrage kann der Motor auch mit Gs-Bremsen geliefert werden.

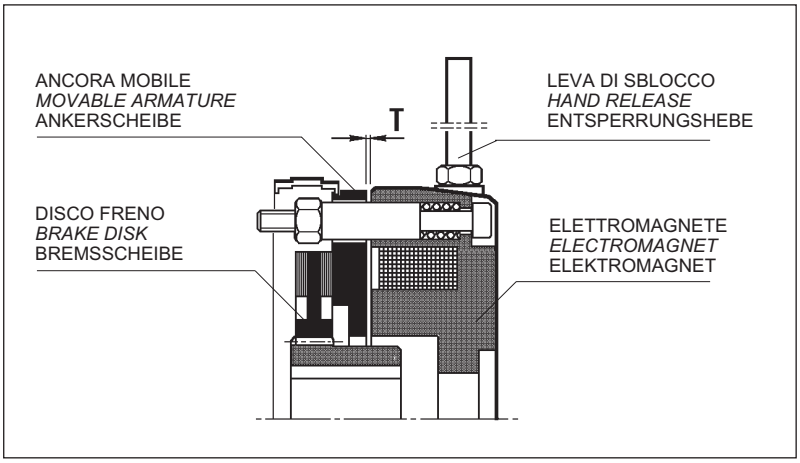
Schutzart und Isolation

Der Bremsmotor wird in der Isolationsklasse F und der Schutzart IP54 gefertigt (IP55 au anfrage).

Entsperrhebel

Auf Anfrage ist ein Hebel für die manuelle Entsperrung der Bremse lieferbar (Abb. 10.4).

Fig. 10.4



10.7 Freno a C.A.

Caratteristiche tecniche del freno a c.a.

10.7 A.C. Brake

A.C. brake technical characteristics

10.7 Ws - Bremse

Technische Merkmale der Ws-Bremse

Motore *Motor* Motor	**M**min* Nm	**M**max Nm	I_N (400V) A	**J** Kgm^2	**T** mm	**T**n mm	g_{min} mm	TEMPI DI INTERVENTO FRENO *BRAKE INTERVENTION TIME* BREMSAKTIVIERUNGSZEIT		**Kg**
								Ta ms	Tc ms	
63	2	5	0.06	$6x10^{-4}$	0.2	0.5	1	20	4	1.25
71	4	10	0.06	$11x10^{-4}$	0.2	0.5	1	40	4	1.9
80	7	20	0.10	$16x10^{-4}$	0.3	0.6	1	60	6	3
90	14	40	0.16	$35x10^{-4}$	0.3	0.6	1	90	8	5.6
100	26	70	0.22	$88x10^{-4}$	0.35	0.7	1	120	16	9.7
112	35	100	0.65	$103x10^{-4}$	0.35	0.7	1	140	16	10.3
132	53	150	0.90	$225xx10^{-4}$	0.40	0.8	1	180	16	14.7

* N.B.
La coppia minima indicata è riferita alla configurazione standard con le viti A (par. 10.9) completamente allentate.
Per ottenere dei valori inferiori è necessario sostituire le molle.
Tutti i motori autofrenanti sono forniti di serie con la coppia del freno tarata ad un valore pari al 70% circa della coppia massima.

Mmin = Coppia frenante min
Mmax = Coppia frenante max
J = Momento d'inerzia bussola
T = Valore minimo regolazione traferro
Tn = Valore max traferro prima della nuova regolazione
g_{min} = Spessore minimo residuo ferodo
Ta = Tempo di apertura freno
Tc = Tempo di chiusura freno
I_N = Corrente assorbita a 400V

** NOTE.*
The listed minimum torque refers to the standard configuration with screws A (chapter 10.9) completely loose.
Springs must be replaced in order to have lower values.
All brake motors in the standard version are supplied with a brake torque set to a value equal to approx. 70% of the maximum torque.

Mmin = Min braking torque
Mmax = Max braking torque
J = Moment of inertia of magnet
T = Min. value of air gap setting
Tn = Max value of air gap before new setting adjustement
g_{min} = *Min thickness of brake lining*
Ta = Brake opening time
Tc = Brake closing time
I_N = *Absorbed current at 400V*

* HINWEIS.
Das angegebene Mindestdrehmoment bezieht sich auf die Standard-Konfiguration bei völlig gelösten Schrauben A (Kapitel 10.9).
Um niedrigere Werte zu erhalten, müssen die Federn ausgetauscht werden.
Alle Bremsmotoren sind serienmäßig mit einem Bremsmoment ausgestattet, das auf einen Wert von ca. 70% des Höchstdrehmomentes geeicht ist.

Mmin = Min. Bremsmoment
Mmax = Max. Bremsmoment
J = Trägheitsmoment der Buchse
T = Min. Luftspaltwert
Tn = Max. Luftspaltwert vor Neueinstellung
g_{min} = Mindeststärke Bremsbelag
Ta = Öffnungszeit der Bremse
Tc = Schließzeit der Bremse
I_N = Nennstrom der Bremse bei 400V

Il freno a c.a. è fornito di serie con i seguenti valori di alimentazione:

Motore	Alimentazione motore (V)	Alimentazione freno (V)
Trifase standard	230/400	230/400
Trifase doppia polarità	230	230/400
	400	

A richiesta è possibile fornire il freno con alimentazione separata. Questa soluzione è consigliata per motori a due velocità o in caso di alimentazione tramite inverter.
Numero max. di interventi: 20 al minuto.

A.C. brake is supplied with following feeding values:

Motor	*Motor feeding (V)*	*Brake feeding (V)*
Threephase standard	230/400	230/400
Threephase double polarity	230	230/400
	400	

Upon request it is possible to supply brakes with separate feeding. This solution is advisable on two speed motors or in those cases where feeding is obtained by means of an inverter.
Maximum number of starts: 20 per minute.

Die Ws-Bremse wird serienmäßig mit folgenden Versorgungsspannungen:

Motor	Motorspannung (V)	Bremsspannung (V)
Drehstrom standard	230/400	230/400
Drehstrom Polumschalt.Mot.	230	230/400
	400	

Auf Anfrage ist eine separate Bremsversorgung erhältlich. Diese Lösung empfiehlt sich bei Polumschaltbaren-Motoren oder bei invertergesteuerten Motoren.
Maximale Schaltungsanzahl: 20 pro Minute.

10.8 Freno a C.C.

10.8 D.C. Brake

10.8 Gs - Bremse

Caratteristiche tecniche del freno a c.c.

D.C. brake technical characteristics

Technische Merkmale der Gs-Bremse

Motore *Motor* Motor	**M**min* Nm	**M**max Nm	**J** Kgm^2	**T** mm	**T**n mm	g_{min} mm	TEMPI DI INTERVENTO FRENO *BRAKE INTERVENTION TIME* BREMSAKTIVIERUNGSZEIT				**Kg**
							Ta_1 ms	Ta_2 ms	**FAST** Tc_1 ms	**STANDARD** Tc_2 ms	
56	1.5	3	$1.2x10^{-4}$	0.20	0.35	1	—	—	12	30	1.1
63	2	5	$6x10^{-4}$	0.20	0.50	1	100	10	20	30	1.5
71	4	10	$11x10^{-4}$	0.20	0.50	1	120	10	25	60	2.2
80	7	20	$16x10^{-4}$	0.30	0.60	1	150	10	40	100	3.1
90	14	40	$35x10^{-4}$	0.30	0.60	1	220	15	50	120	4.9
100	26	70	$88x10^{-4}$	0.35	0.70	1	300	30	80	—	8.3
112	35	100	$103x10^{-4}$	0.35	0.70	1	200	20	80	—	9.5
132	53	150	$225x10^{-4}$	0.40	0.80	1	200	20	100	—	12.3

* N.B.
La coppia minima indicata è riferita alla configurazione standard con le viti A (par. 10.4) completamente allentate.
Per ottenere dei valori inferiori è necessario sostituire le molle.

Tutti i motori autofrenanti sono forniti di serie con la coppia del freno tarata ad un valore pari al 70% circa della coppia massima.

Mmin = Coppia frenante min
Mmax = Coppia frenante max
J = Momento d'inerzia bussola
T = Valore minimo regolazione traferro
Tn = Valore max traferro prima della nuova regolazione
g_{min} = Spessore minimo residuo ferodo
Ta_1 = Tempo di apertura freno AC
Ta_2 = Tempo di apertura freno DC
Tc_1 = Tempo di chiusura con dispositivo fast. **(a richiesta)**
Tc_2 = Tempo di chiusura standard

** NOTE.*
The listed minimum torque refers to the standard configuration with screws A (chapter 10.4) completely loose.
Springs must be replaced in order to have lower values.

All brake motors in the standard version are supplied with a brake torque set to a valued equal to approx. 70% of the maximum torque.

Mmin = Min braking torque
Mmax = Max braking torque
J = Moment of inertia of magnet
T = Min. value of air gap setting
Tn = Max value of air gap before new setting adjustement
g_{min} = *Min thickness of brake lining*
Ta_1 = *Brake opening time AC*
Ta_2 = *Brake opening time DC*
Tc_1 = *Brake closing time with fast device* ***(upon request)***
Tc_2 = *Standard brake closing time*

* HINWEIS.
Das angegebene Mindestdrehmoment bezieht sich auf die Standard-Konfiguration bei völlig gelösten Schrauben A (Kapitel 10.4).
Um niedrigere Werte zu erhalten, müssen die Federn ausgetauscht werden.

Alle Bremsmotoren sind serienmäßig mit einem Bremsmoment ausgestattet, das auf einen Wert von ca. 75% des Höchstdrehmomentes geeicht ist.

Mmin = Min. Bremsmoment
Mmax = Max. Bremsmoment
J = Trägheitsmoment der Buchse
T = Min. Luftspaltwert
Tn = Max. Luftspaltwert vor Neueinstellung
g_{min} = Mindeststärke Bremsbelag
Ta_1 = Öffnungszeit der Bremse AC
Ta_2 = Öffnungszeit der Bremse DC
Tc_1 = Schliesszeit der Bremse mit Fastvorrichtung **(auf Anfrage)**
Tc_2 = Standard-Schließzeit der Bremse

Il freno a c.c. è fornito di serie con i seguenti valori di alimentazione:

Motore	Alimentazione motore (V)	Alimentazione freno (V)
Trifase standard	230/400	98
Trifase doppia polarità	230	98
	400	190
Monofase	230	98

D.C. brake is supplied with following feeding values:

Motor	*Motor feeding (V)*	Brake feeding (V)
Threephase standard	230/400	98
Threephase double polarity	230	98
	400	190
Single phase	230	98

Die Gs-Bremse wird serienmäßig mit folgenden Versorgungsspannungen:

Motor	Motorspannung (V)	Bremsspannung (V)
Drehstrom standard	230/400	98
Drehstrom Polumschalt. Mot.	230	98
	400	190
Einphasen	230	98

A richiesta è possibile fornire il freno con alimentazione separata.
Numero max. interventi: 20 al minuto.

Upon request it is possible to supply separate feeded brakes.
Maximum number of starts: 20 per minute.

Auf Anfrage ist eine separate Bremsenversorgung erhältlich.
Maximale Schaltungsanzahl: 20 pro Minute.

N.B. Quando si utilizzano motori autofrenanti a doppia polarità o motori comandati da inverter, si consiglia di adottare l'alimentazione separata del freno.

NOTE. *When two speed brake motors or motors operated through inverter are used, it is advisable to adopt brakes with separate feeding.*

HINWEIS. Bei Bremsmotoren (Polumschaltbar oder mit invertersteuerung) empfiehlt sich eine separate Bremsversorgung.

10.8 Freno a C.C.

Raddrizzatori di corrente

Tutti i raddrizzatori utilizzati nei nostri motori sono conformi alla Direttiva Bassa Tensione (LVD) 73/23/CEE e successive modifiche.
I tipi da noi utilizzati sono i seguenti:
SKB 2/12 per le gr. 56-63-71
NBR 500-1 (colore blu) per le gr. 80 e 90 (fig. 10.5);
SBR 440-1 (colore rosso) per le gr. 100, 112 e 132 (fig. 10.6).

10.8 D.C. Brake

Current rectifiers

All the current rectifiers used with our motors comply with the Low Voltage Directives EEC/73/23 and following changes.
The types we use are the following:
SKB 2/12 for sizes 56-63-71
NBR 500-1 (blue color) for sizes 80 and 90 (fig. 10.5);
SBR 440-1 (red colour) for sizes 100, 112 and 132 (fig. 10.6).

10.8 Gs - Bremse

Gleichrichter

Alle in unseren Motoren verwendeten Gleichrichter entsprechen der Richtlinie bezüglich der Niedrig-Spannung (LVD) 73/23/CEE und deren nachfolgenden Änderungen.
Wir verwenden die folgenden Typen:
SKB 2/12 für die Baugrößen 56-63-71
NBR 500-1 (Farbe blau) für die Baugrößen 80 und 90 (Abb. 10.5);
SBR 440-1 (Farbe rot) für die Baugrößen 100, 112 und 132 (Abb. 10.6)

Fig. 10.5

Tempi di intervento con raddrizzatori tipo NBR
Time of intervention with rectifiers NBR
Ansprechzeit mit Gleichrichtern vom Typ NBR

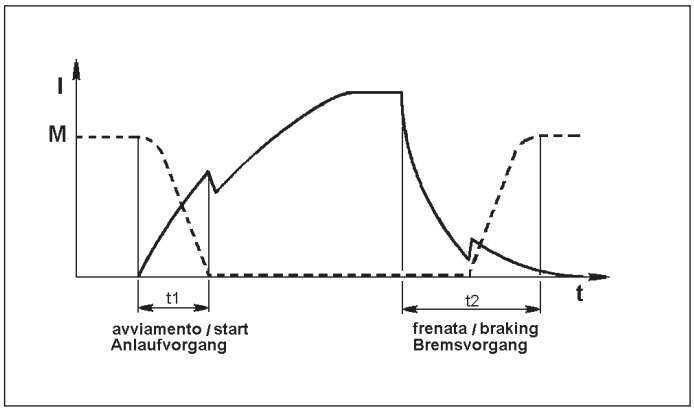
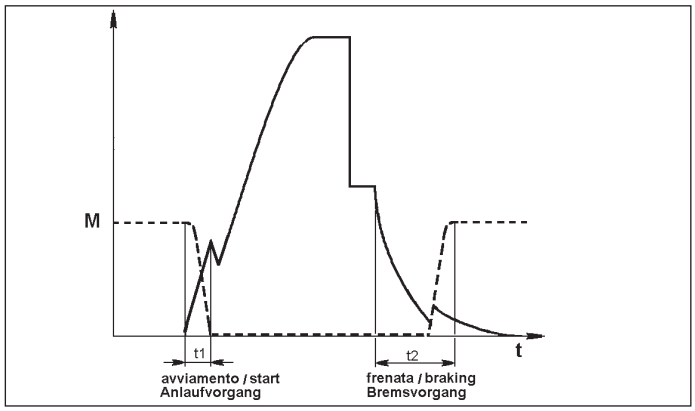


Fig. 10.6

Tempi di intervento con raddrizzatori tipo SBR
Time of intervention with rectifiers SBR
Ansprechzeit mit Gleichrichtern vom Typ SBR



Nei motori standard ad una polarità alimentando il motore si ha la conseguente alimentazione del raddrizzatore in quanto esso è collegato alla morsettiera.
Quando si utilizzano motori autofrenanti a doppia polarità o motori comandati da inverters, si consiglia di adottare l'alimentazione separata del freno effettuando i collegamenti come indicato nelle fig.10.7 e fig. 10.8 per i tipi NBR 500-1 e SBR 440-1.

In the standard single-pole y motors, the rectifier is powered through the motor as the rectifier is connected to the terminal board.
If two-pole brake motors or motors controlled by inverters are used, we suggest to power the brake separately as shown in fig. 10.7 and 10.8 for type NBR 500-1 and SBR 440-1.

Bei den einpoligen Standard-Motoren wird mit der Motorspeisung gleichzeitig der Gleichrichter gespeist, da dieser an die Klemmleiste angeschlossen ist.
Werden zweipolige Bremsmotoren oder durch Frequenzumrichter gesteuerte Motoren verwendet, so empfiehlt sich eine separate Speisung der Bremse. Dabei werden die Anschlüsse wie in den Abbildungen 10.7 und 10.8 für die Typen NBR 500-1 und SBR 440-1.

Fig. 10.7 Frenata normale / *Standard braking* / Normaler Bremsvorgang

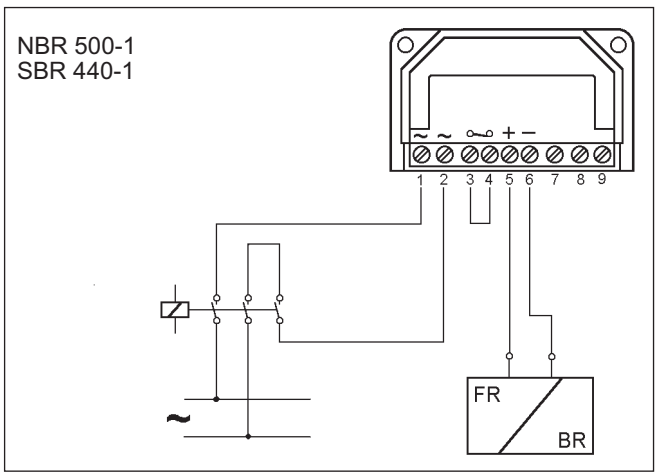
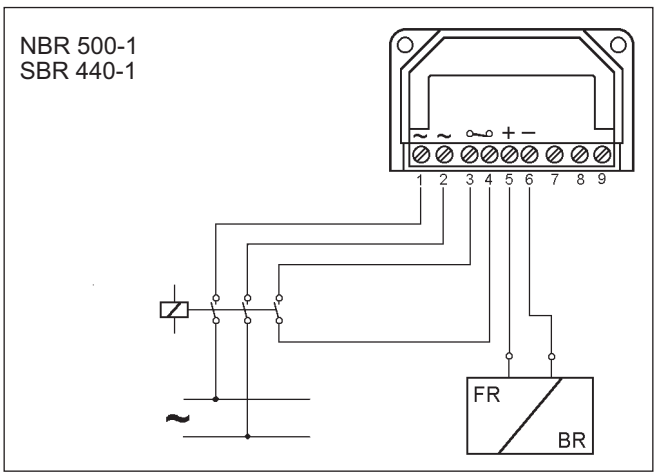


Fig. 10.8 Frenata rapida / *Fast braking* / Schneller Bremsvorgang



10 .9 Verifiche e regolazioni

Tutti i motori vengono collaudati e la taratura dei freni viene effettuata ad un valore pari al 70% circa della coppia massima in base a una tensione di alimentazione di 400 Volt.
Nel caso in cui, si avvertano vibrazioni nel freno é opportuno effettuare i seguenti controlli e relativi interventi per riportare il sistema alle normali condizioni operative:
1) Verificare la tensione di alimentazione.
Se essa è inferiore a 400 Volt provvedere a riportarla al valore nominale oppure intervenire riducendo la pressione delle molle agendo come indicato al punto 3).
2) Verifica del traferro.
Con uno spessimetro misurare il traferro T (distanza fra l'elettromagnete e l'àncora mobile) controllando che il valore rilevato rientri nel campo indicato in tabella.
Se questa condizione non fosse verificata, sarà necessario effettuare la regolazione allentando i dadi B e agendo sulle viti C fino a che il traferro non avrà raggiunto il valore prestabilito.
Ad operazione conclusa stringere nuovamente i dadi B.
Questo controllo e l' eventuale intervento dovranno essere effettuati periodicamente ad intervalli stabiliti in base all' utilizzo del freno.
Nel caso in cui sia montata la leva di sblocco è necessario verificare che un eccessivo valore del traferro comporti l'annullamento della coppia frenante dovuto alla ripresa del gioco della leva stessa. Nelle tabelle è riportato il valore max del gioco della leva (X).
3) Regolazione della coppia frenante.
La coppia frenante è proporzionale alla compressione delle molle E ed è possibile variarla agendo sulle viti A in successione e in modo uniforme; a tale proposito si consiglia di effettuare una rotazione di 1/2 giro a ciascuna vite di regolazione e riprovare il funzionamento del freno.
Il grafico di fig. 10.9 indica (in valori percentuali) le coppie frenanti ottenibili in base ai giri di avvitamento dei grani.

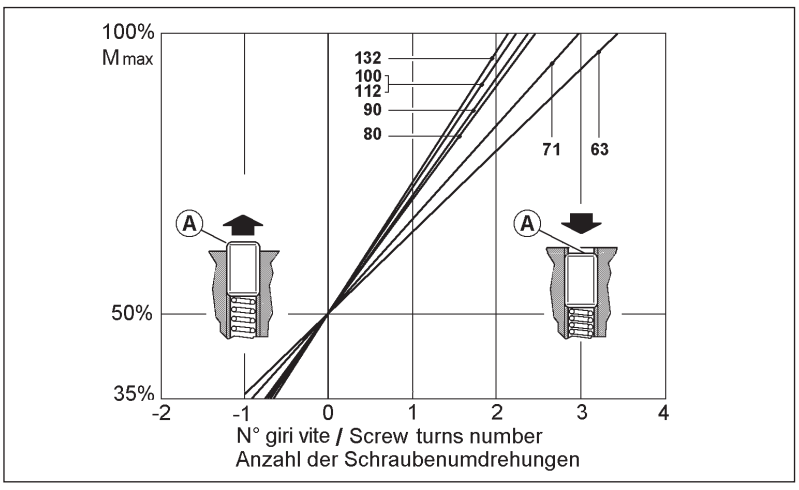
10.9 Checks and adjustments

All motors are tested and brakes are set to a value equal to 70% of the maximum torque based on a 400 V supply voltage.
Should vibrations be noticed in the brake, it is advisable to check as indicated below and carry out the relative operations to bring the system back to normal working conditions:
1) Check the supply tension.
Should it be lower than 400 Volts, bring it back to the nominal value or reduce the pressure of the springs by regulating as indicated at point 3).
2) Checking the magnetic gap.
Using a feeler gauge, measure the T magnetic gap (distance between the electromagnet and the mobile keeper) checking that the measured value falls within the range indicated in the chart.
Should this condition not occur, an adjustment must be made by unloosening screw nuts B and by regulating screws C until the magnetic gap has reached the preset value.
When this operation is finished, tighten screw nuts B.
This check and the relative adjustment, if performed, must be carried out periodically at intervals set according to how much the brake is used.
If the release lever has been assembled, it is necessary to check if the high value of the magnetic gap has determined the no intervention of the breaking torque due to the clearance of the lever itself.
The maximum value of the lever clearance (X) is shown in the table.
3) Adjusting the braking torque.
The braking torque is proportional to the compression of springs E and it is possible to change it by regulating screws A in sequence and in a uniform manner; on this matter, it is advisable to rotate each screw by 1/2 turn and retry the brake functioning.
The fig. 10.9 show the braking torques (in % values) referred to the number of screw turns.

10.9 Kontrollen und Einstellungen

Alle Motoren werden zugelassen und die Eichung der Bremsen wird bei einem Wert von 70 % des Höchstdrehmomentes bei einer Versorgungsspannung von 400 Volt ausgeführt.
Sollten in der Bremse Vibrationen festgestellt werden, so sollten die folgenden Kontrollen und die entsprechenden Instandsetzungsarbeiten durchgeführt werden, um das System wieder auf die normalen Betriebsbedingungen zurückzuführen:
1) Die Versorgungsspannung überprüfen.
Sollte diese unter 400 Volt liegen, so sollte sie auf den Nominalwert zurückgeführt werden. Andernfalls kann die Spannung der Federn reduziert werden, indem wie unter Punkt 3 beschrieben vorgegangen wird.
2) Den Luftspalt überprüfen.
Mit einem Dickenmesser den Luftspalt T (Distanz zwischen Elektromagnet und Ankerscheibe) abmessen und dabei überprüfen, ob der festgestellte Wert innerhalb des in der Tabelle angegebenen Bereiches liegt.
Sollte dies nicht der Fall sein, muß die Einstellung neu ausgeführt werden. Dazu die Schraubenmuttern B lösen und die Schrauben C drehen, bis der Luftspalt den vorgeschriebenen Wert erreicht.
Ist dies geschehen, so müssen die Schraubenmuttern B wieder angezogen werden.
Diese Kontrolle und die eventuell erforderliche Neueinstellung sollten regelmäßig in Intervallen, die den Einsatzzeiten der Bremse entsprechen, ausgeführt werden.
Sollte eine Handlüftung installiert sein, so sollte überprüft werden, ob ein übermäßiger Wert des Luftspaltes nicht zu einer Annullierung des Bremsmomentes führt, die auf den Ausgleich des Spiels des Hebels selbst zurückzuführen ist. In der Tabelle ist der Höchstwert des zulässigen Spiels des Hebels (X) aufgeführt.
3) Einstellung des Bremsmoments.
Das Bremsmoment ist proportional zur Druckspannung der Federn E und es kann durch aufeinanderfolgendes und gleichmäßiges Einwirken auf die Schrauben A variiert werden. Diesbezüglich ist es empfehlenswert, jeweils eine halbe Drehung auf jeder Einstellungsschraube auszuführen und dann den Betrieb der Bremse erneut zu überprüfen. Die Grafik in der Abbildung 10.9 gibt (in Prozentwerten) die möglichen Bremsmomente je nach den Verschraubungsumdrehungen der Stifte an.

Fig. 10.9



10.9 Verifiche e regolazioni

Se alimentando il fre no l'elettromagnete non riesc e a richiamare l'àncora mobile e a tenerla attratta s enza vibrazioni è necessario ridurre la pressione delle molle allentando (in modo uniforme) le viti A. Questa regolazione dovrà essere effettuata prevedendo una tensione di alimentazione inferiore del 10 - 15% alla nominale.

4) Sostituzione elettromagnete.
Nel caso in cui si rendesse necessario questo intervento, togliere il copriventola e la ventola, scollegare dalla morsettiera i cavi di alimentazione dell'elettromagnete, allentare i dadi B e svitare le viti C.

10.9 Checks and adjustments

If, by feeding the brake, the electromagnet is unable to call back the mobile keeper and to keep it attracted without any vibrations, the pressure of the springs must be reduced by loosening screws A (in a uniform manner). The adjustment shall be carried out considering a supply voltage 10 - 15% lower than the voltage rating.

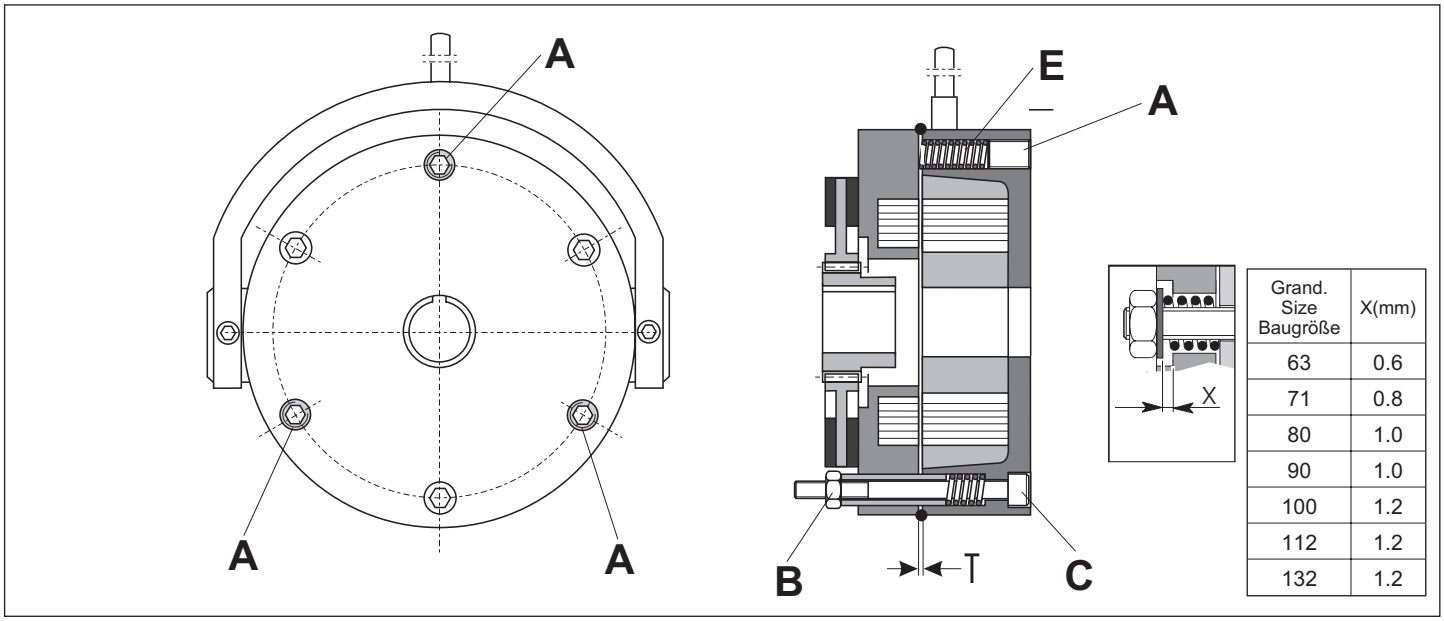
4) Replacing the electromagnet.
Should this regulation be necessary, remove the fan cover and the fan, disconnect the feed wires of the electromagnet from the terminal board, unloosen screw nuts B and unscrew screws C.

10.9 Kontrollen und Einstellungen

Sollte während der Speisung der Bremse der Elektromagnet nicht in der Lage sein, die Ankerscheibe anzuziehen und diese ohne Vibrationen in dieser Position zu halten, sollte die Druckspannung der Federn reduziert werden, indem die Schrauben A gleichmäßig gelöst werden. Diese Einstellung sollte ausgeführt werden, indem eine Versorungsspannung, die um 10-15% unter der nominalen Versorgungsspannung liegt, angelegt wird.
4) Austausch des Elektromagnets
Sollte es sich als erforderlich erweisen, den Elektromagneten auszutauschen, so sollten die Lüfterhaube und der Lüfter entfernt, die Versorgungskabel des Elektromagneten von der Klemmenleiste abgenommen, die Schraubenmuttern B gelöst und die Schrauben C abgeschraubt werden.

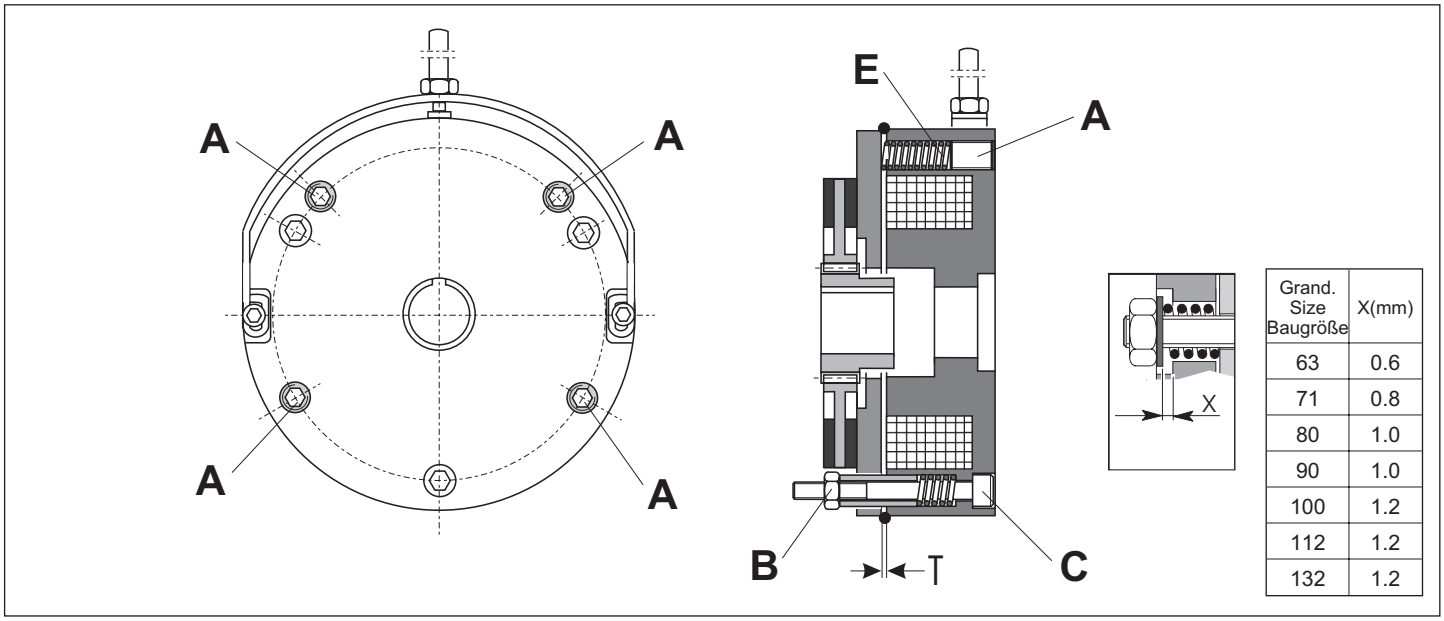
Fig. 10.10

Freno a C.A. *A.C. brake* Ws-Bremse.



Grand. Size Baugröße	X(mm)
63	0.6
71	0.8
80	1.0
90	1.0
100	1.2
112	1.2
132	1.2

Freno a C.C. *C.C. brake* Gs-Bremse.



Grand. Size Baugröße	X(mm)
63	0.6
71	0.8
80	1.0
90	1.0
100	1.2
112	1.2
132	1.2

10.10 Servoventilazione

I motori elettrici STM possono essere dotati, a richiesta, di un sistema di ventilazione aggiuntivo alimentato in modo autonomo e inserito all'interno della calotta copriventola.
Nelle tabelle seguenti sono indicate le relative variazioni dimensionali riferite ai motori normali e autofrenanti.

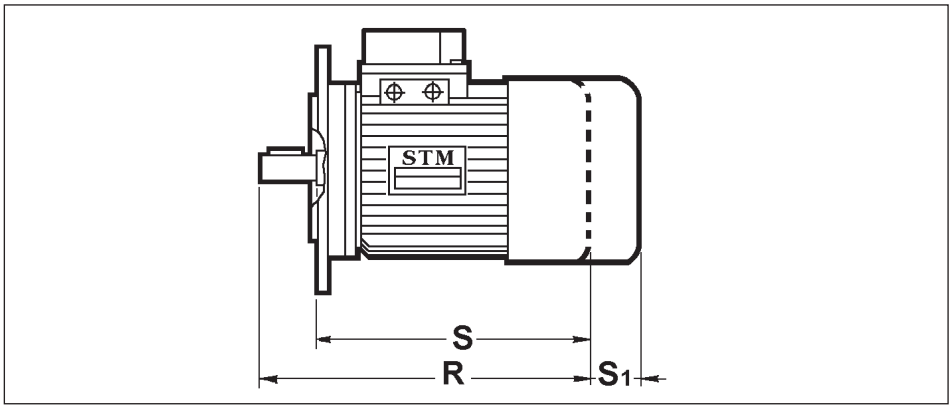
10.10 Power cooling

Upon request, STM motors can be supplied with an additional ventilation system which is fed separately and installed inside the fan cover.
Following tables show the size changes relating to the standard and brake motors.

10.10 Servobelüftung

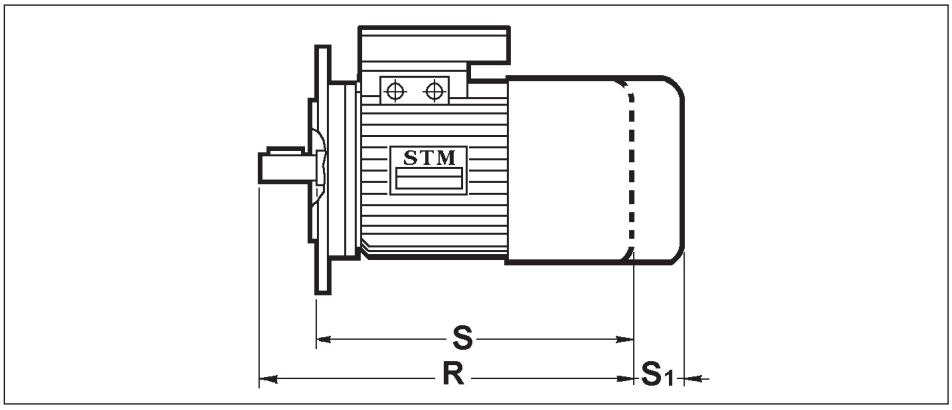
Die Elektromotoren STM können auf Anfrage mit einem zusätzlichen Lüftungssystem ausgestattet werden, welches autonom gespeist wird und im Inneren der Lüfte- rhaube untergebracht ist.
In den folgenden Tabellen sind die entsprechenden Abmessungsveränderungen bezüglich der Standard-Motoren und der Bremsmotoren angegeben.

Fig. 10.11



Motore normale / *Standard motor* / Standard-Motor

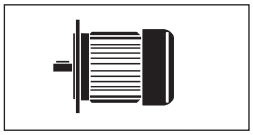
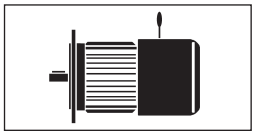
TN-DN-MN	S1
56	22
63	33
71	22
80	26
90	21
100	29
112	22
132	33
160	0



Motore autofrenante / *Brake motor* / Bremsmotor

TF-DF-MF	S1
56	0
63	38
71	25
80	25
90	30
100	30
112	0
132	0
160	0

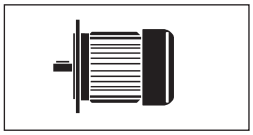
10.11 Dati tecnici — *10.11 Technical data* — 10.11 Technische Daten

TN		**Motori trifase standard** ***Standard Threephase motors*** **Standard- Drehstrommotoren**
TF		**Motori trifase autofrenanti** ***Threephase brake motors*** **Drehstrom- Bremsmotoren**

2 poli/*pole*/polig 3000 min^{-1}

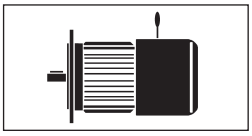
Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	η %	cosφ	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm^2	Kg **(TN)**	Kg **(TF)**
56 A	0.09	0.12	2730	59	0.71	0.45	2.8	0.32	2	2.2	0.00011	2.9	4.0
56 B	0.13	0.18	2730	60	0.73	0.50	3	0.45	2	2.3	0.00012	3	4.1
63 A	0.18	0.25	2740	64	0.76	0.60	3.5	0.63	2	2.2	0.00016	3.7	5.1
63 B	0.25	0.33	2750	65	0.78	0.85	3.5	0.85	2.1	2.3	0.00019	4.6	6.0
63 C	0.37	0.50	2770	68	0.80	1	3.8	1.30	2	2.4	0.00029	4.7	6.1
71 A	0.37	0.50	2800	70	0.81	1.1	4.3	1.29	2.2	2.5	0.00036	5.5	6.9
71 B	0.55	0.75	2820	73	0.81	1.4	4.5	1.85	2.2	2.5	0.00047	6.5	7.9
71 C	0.75	1	2820	78	0.82	1.7	4.5	2.58	2.2	2.6	0.00057	7.2	8.6
80 A	0.75	1	2830	77	0.83	1.8	4.8	2.58	2.3	2.7	0.00085	8.7	10.6
80 B	1.1	1.5	2830	79	0.84	2.5	5	3.78	2.3	2.7	0.00105	10.8	12.7
90 S	1.5	2	2840	79	0.83	3.6	5.5	5.1	2.5	2.8	0.00145	12.9	16.0
90 L	2.2	3	2850	81	0.87	4.8	5.6	7.5	2.5	3	0.00191	14.8	17.9
100 A	3	4	2870	83	0.88	6.4	5.8	10	2.4	3	0.00299	22	27.6
100 B	4	5.5	2880	84	0.88	8.5	6.2	13.4	2.5	3.2	0.00407	27	32.6
112 A2	4	5.5	2880	84	0.88	9.3	6.8	13.4	2.5	3.2	0.00520	29	38.7
132 SA	5.5	7.5	2860	85	0.88	11.5	6.5	18.3	2.4	3	0.01080	44	61
132 SB	7.5	10	2870	85	0.88	16.5	6.8	25	2.4	3.2	0.01300	50	76
132 MC	9.2	12.5	2880	85	0.88	19	6.8	30.6	2.4	3.2	0.01639	59	82
132 MD	11	15	2880	85	0.88	20	6.7	36.5	2.4	3.2	0.01873	65	82
160 MA	11	15	2920	88	0.87	21	7	36	2	2.2	0.03300	115	—
160 MB	15	20	2920	89	0.87	28	7	49	2	2.2	0.045	125	—
160 L	18.5	25	2920	89	0.87	34	7	61	2.	2.2	0.056	145	—
180 M	22	30	2940	89	0.89	40	7	72	2	2.2	0.073	173	—
200 LA	30	40	2940	90	0.89	54	7	98	2	2.2	0.120	232	—
200 LB	37	50	2950	91	0.89	66	7	120	2	2.2	0.150	250	—
225 M2K	45	60	2940	93	0.91	76.6	7.2	146	2.5	3.2	0.150	275	—
250 M2K	55	75	2945	93.5	0.91	93.1	7.5	178	2.3	3.3	0.210	340	—
280 S2K	75	100	2955	93	0.91	127	7.5	242	2	2.9	0.470	485	—
280 M2K	90	125	2955	93	0.91	153	6.9	291	1.7	2.9	0.520	515	—
315 S2	110	150	2960	94	0.92	183	7.2	355	2.1	3.4	0.850	720	—
315 M2K	132	175	2960	94.5	0.92	219	7.5	426	2.3	3.4	1.020	770	—
315 LA2	160	215	2970	94.5	0.92	265	7.2	514	1.8	2.8	1.420	970	—
315 LB2	200	270	2975	95	0.94	322	7.2	642	1.8	2.8	1.780	1110	—

TN



Motori trifase standard
Standard Threephase motors
Standard- Drehstrommotoren

TF

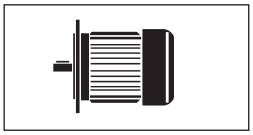


Motori trifase autofrenanti
Threephase brake motors
Drehstrom- Bremsmotoren

4 poli/*pole*/polig 1500 min^{-1}

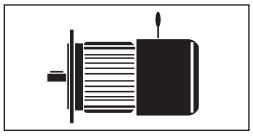
Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	η %	cosφ	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm²	Kg **(TN)**	Kg **(TF)**
56B	0.09	0.12	1340	56	0.65	0.40	2.3	0.65	1.8	2	0.00018	2.9	4.0
63 A	0.13	0.18	1360	60	0.68	0.60	2.4	0.93	2	2.2	0.00025	3.7	5.1
63 B	0.18	0.25	1380	62	0.69	0.70	2.6	1.29	2.2	2.3	0.00029	4.5	5.9
71 A	0.25	0.33	1400	63	0.71	0.90	3	1.7	2.2	2.3	0.00074	5.4	6.8
71 B	0.37	0.50	1400	68	0.71	1.2	3.2	2.52	2.3	2.6	0.00096	6.4	7.8
71 C	0.55	0.75	1400	72	0.75	1.5	3.9	3.75	2.4	2.5	0.00117	7	8.4
80 A	0.55	0.75	1410	74	0.78	1.6	3.9	3.80	2.4	2.6	0.00191	8.5	10.4
80 B	0.75	1	1410	74	0.78	2.1	4	5	2.2	2.4	0.00254	10.5	12.4
80C	0.95	1.3	1410	74	0.78	2.8	4	6.56	2.3	2.6	0.00285	11.5	13.4
90 S	1.1	1.5	1410	74	0.78	3	4.3	7.5	2.2	2.4	0.00242	12.5	15.6
90 L	1.5	2	1420	78	0.80	3.8	4.6	10	2.3	2.6	0.00321	14	17.1
90 LB	1.8	2.5	1420	78	0.80	4.6	4.7	12.1	2.3	2.6	0.00400	16	19.1
100 A	2.2	3	1430	80	0.82	5.4	4.8	15	2.2	2.5	0.00520	20	25.6
100 B	3	4	1430	81	0.82	7	5	20	2.3	2.6	0.00668	24	29.6
112 A	4	5.5	1430	83	0.83	9	5.2	27	2.4	2.7	0.01052	29	38.7
132 SA	5.5	7.5	1430	83	0.83	12	6	37	2.5	2.8	0.01940	42	61
132 MB	7.5	10	1430	83	0.83	16	6.1	50	2.5	2.8	0.02688	53	76
132 MC	9.2	12.5	1430	85	0.85	18	6.1	61.8	2.5	2.8	0.03059	58	82
132 MD	11	15	1430	85	0.85	22	6	75	2	2.5	0.03632	49	81
160 M	11	15	1450	89	0.86	21	7	73	2.0	2.3	0.06200	122	—
160 L	15	20	1450	89	0.86	29	7	99	2.2	2.3	0.08300	142	—
180 M	18.5	25	1470	91	0.86	34	7	120	2.0	2.2	0.12700	174	—
180 L	22	30	1470	92	0.86	41	7	143	2.0	2.2	0.15300	192	—
200 L	30	40	1470	92	0.87	54	7	195	2.0	2.2	0.24900	253	—
225 S4K	37	50	1465	92.2	0.85	67.9	6.7	241	2.6	2.6	0.27	260	—
225 M4K	45	60	1465	92.5	0.85	82.3	6.9	293	2.5	2.5	0.32	280	—
250 M4K	55	75	1470	93.3	0.85	99.8	6.8	357	2.4	2.4	0.50	350	—
280 S4K	75	100	1480	94	0.86	134	7.2	484	2.1	2.3	1.00	495	—
280 M4K	90	125	1485	94.3	0.88	156	7.2	578	2.3	2.3	1.20	545	—
315 S4	110	150	1485	95.4	0.88	189	6.8	707	2.3	2.8	2.19	790	—
315 M4	132	175	1485	95.9	0.89	222	7	848	2.4	2.8	2.70	885	—
315 LA4	160	215	1485	96	0.88	273	6.8	1028	1.9	2.2	3.57	1110	—
315 LB4	200	270	1485	96	0.90	333	6.8	1285	1.9	2.0	3.97	1150	—

TN



Motori trifase standard
Standard Threephase motors
Standard- Drehstrommotoren

TF



Motori trifase autofrenanti
Threephase brake motors
Drehstrom- Bremsmotoren

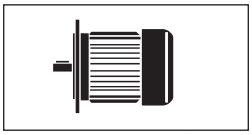
6 poli /*pole*/polig 1000 min^{-1}

Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	η %	cosφ	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm^2	Kg **(TN)**	Kg (TF)
63 A	0.09	0.12	850	52	0.60	0.5	2.2	1	1.8	2	0.00029	3.8	5.2
63 B	0.13	0.16	870	54	0.60	0.6	2.3	1.3	1.8	2	0.00034	4.6	6.0
71 A	0.18	0.25	880	56	0.62	0.8	2.5	1.95	1.8	2	0.00074	5.5	6.9
71 B	0.25	0.33	900	60	0.65	1	2.9	2.65	1.9	2.2	0.00096	6.5	7.9
80 A	0.37	0.50	910	62	0.66	1.27	3.2	3.88	1.9	2.2	0.00191	8.5	10.4
80 B	0.55	0.75	910	66	0.70	1.8	3.5	5.77	2	2.3	0.00254	10.5	12.4
90 S	0.75	1	920	68	0.70	2.4	3.5	7.79	1.8	2	0.00242	12.5	15.6
90 L	1.1	1.5	920	70	0.70	3.4	3.5	11.4	1.8	2	0.00398	14	17.1
100 A	1.5	2	940	75	0.72	4.2	4	15.2	1.8	2	0.00519	24	29.6
112 A	2.2	3	940	80	0.77	5.7	5	22.4	1.9	2.4	0.00620	34	43.7
132 SA	3	4	940	82	0.78	7.6	5.4	30.5	2	2.5	0.01940	44	61
132 MB	4	5.5	940	82	0.80	9	5.3	40.5	2	2.5	0.02688	55	72
132 MC	5.5	7.5	940	82	0.80	12.7	5.3	57	2	2.5	0.03430	60	77
160 M	7.5	10	960	87	0.77	16.5	6.5	75	2.0	2.3	0.093	110	—
160 L	11	15	960	88	0.79	23	6.5	110	2.0	2.3	0.127	130	—
180 L	15	20	970	90	0.81	30	6.5	148	1.8	2.0	0.198	1892	—
200 LA	18.5	25	970	90	0.83	36	6.5	182	1.8	2.0	0.292	220	—
200 LB	22	30	970	90	0.83	43	6.5	217	1.8	2.0	0.324	246	—
225 M6K	30	40	975	90	0.84	57.1	6	294	2.1	2.4	0.460	270	—
250 M6K	37	50	980	91	0.84	69.6	6.3	360	2.3	2.5	0.650	335	—
280 S6K	45	60	980	92.5	0.83	84.6	6.5	438	2.2	2.3	1.200	440	—
280 M6K	55	75	980	92.5	0.85	101	6.1	536	2.2	2.3	1.300	460	—
315 S6	75	100	985	94.7	0.85	134	6.3	727	2.2	2.4	3.040	745	—
315 M6	90	125	985	94.7	0.84	162	6.3	872	2	2.2	3.360	780	—
315 LA6	110	150	985	95	0.90	185	6.7	1066	1.6	2.4	4.540	960	—
315 LB6	132	175	985	95.2	0.91	219	7	1279	1.7	2.4	5.130	1010	—

8 poli /*pole*/polig 750 min^{-1}

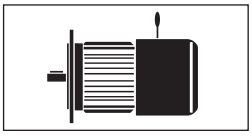
Tipo *Type* Typ	**kW**	**HP**	n_n rpm	η %	cosφ	I_N (230V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	C µF	J Kgm^2	Kg **(MN)**	Kg (MF)
63 B	0.07	0.10	660	42	0.56	0.6	2	1	1.8	2	0.00029	4.5	5.9	
71 B	0.12	0.16	670	46	0.60	0.8	2	1.72	1.8	2	0.00096	6.5	7.9	
80 A	0.18	0.25	690	50	0.60	0.9	2.5	2.5	1.8	2	0.00191	8.4	10.3	
80 B	0.25	0.33	700	50	0.60	1	2.5	3.4	1.8	2	0.00254	10.4	12.3	
90 S	0.37	0.5	700	58	0.60	1.6	3	5	2	2.2	0.00242	12.3	15.4	
90 L	0.55	0.75	700	62	0.62	2.2	3.2	7.5	2	2.2	0.00320	13.8	16.9	
100 A	0.75	1	700	70	0.64	2.6	3.5	10.4	2	2.4	0.00519	23	28.6	
100 B	1.1	1.5	700	72	0.64	3.6	3.5	15.2	2	2.4	0.00668	30	35.6	
112 A	1.5	2	700	74	0.66	4.7	4	20.7	2.1	2.4	0.01220	33	42.7	
132 SA	2.2	3	700	75	0.65	7	4.1	30	2.2	2.4	0.01940	44	–	
132 MB	3	4	700	77	0.65	9	4.3	41	2.2	2.4	0.03430	55	–	

DN



Motori trifase a doppia polarità
Threephase two speed motors
Polumschaltbare - Drehstrommotoren

DF



Motori trifase autofrenanti a doppia polarità
Threephase two speed brake motors
Polumschaltbare - Bremsmotoren

2/4 poli/*pole*/polig 3000/1500 min^{-1}

Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm^2	Kg **(DN)**	Kg **(DF)**
63 A	0.18/0.12	0.25/0.16	2750/1350	0.75/0.5	3/2.5	0.65/0.85	1.3/1.3	1.4/1.5	0.00025	3.7	5.1
63 B	0.22/0.15	0.30/0.20	2760/1360	0.83/0.6	3/2.5	0.76/1	1.3/1.3	1.4/1.5	0.00029	4.5	5.9
71 A	0.30/0.20	0.40/0.28	2780/1400	1.2/1	3/3	1/1.4	1.5/1.3	1.6/1.8	0.00074	5.4	6.8
71 B	0.44/0.30	0.60/0.40	2780/1400	1.6/1.3	3/3	1.5/2	1.5/1.4	1.6/1.8	0.00096	6.4	7.8
80 A	0.60/0.45	0.8/0.6	2780/1400	2/1.6	3.5/3.5	2/3	1.5/1.3	1.8/1.8	0.00191	8.4	10.3
80 B	0.8/0.6	1.1/0.8	2800/1400	2.5/1.9	3.5/3.5	2.7/4	1.6/1.3	1.8/1.8	0.00254	10.5	12.4
90 S	1.4/1	1.9/1.35	2830/1420	3.5/2.8	4/3.5	4.7/6.7	1.8/1.5	2/1.8	0.00242	12.5	15.6
90 L	1.8/1.2	2.5/1.7	2830/1420	4.5/3.1	5/4.5	6/8	2.1/2	2.2/2	0.00321	14	17.1
90 LL	2.2/1.5	3/2	2830/1420	5.5/3.7	5/4.5	7.5/10	2.1/2	2.4/2.2	0.00398	16	19.1
100 A	2.5/1.8	3.4/2.5	2830/1420	6.2/4.5	5/4.5	8.3/12	2.3/1.9	2.6/2	0.00519	20	25.6
100 B	3.3/2.5	4.5/3.5	2850/1430	8.1/6.9	6/5	11/16.7	2.4/2.2	2.8/2.4	0.00668	24	29.6
112 A	4.5/3.3	6/4.5	2850/1430	9.8/7	6/5	15/22	2.4/2.3	3/2.4	0.01223	34	43.7
132 M	5.5/4	7.5/5.5	2910/1450	13/9.5	6.5/5.5	18.5/26.5	2.4/2.3	3/2.5	0.01080	44	60
132 S	7.5/6.2	10/8.5	2910/1450	16.5/13.5	7/6	25/42	2.5/2.8	3/2.5	0.01639	59	75

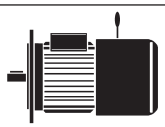
4/6 poli/*pole*/polig 1500/1000 min^{-1}

Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm^2	Kg **(DN)**	Kg **(DF)**
71 B	0.30/0.22	0.40/0.30	1380/890	1/0.9	3.5/2	2/2.3	1.3/1.3	2/1.8	0.00057	6.5	7.9
80 A	0.37/0.26	0.50/0.35	1410/900	1.4/1.2	3.5/2.5	2.5/2.7	1.3/1.4	1.9/2.1	0.00191	8.5	10.4
80 B	0.55/0.45	0.75/0.60	1420/920	2/1.8	3.5/2.5	3.7/4.6	1.5/1.8	2.1/2.3	0.00254	10.5	12.4
90 S	0.75/0.5	1/0.7	1420/920	2.4/2.1	4/2.5	5/5.2	1.4/1.3	2.1/2	0.00242	12.5	15.6
90 L	1.1/0.75	1.5/1	1470/900	3.9/3.7	4.2/2.5	7.3/7.9	1.4/1.4	2.1/2.1	0.00321	14	17.1
100 A	1.3/0.9	1.8/1.2	1430/920	4/3.8	4.5/3	8.6/9.3	1.4/1.4	2.1/2.2	0.00519	21	26.6
100 B	1.5/1.1	2/1.5	1430/930	5.4/4.8	4.5/3	10/11.2	1.4/1.5	2.2/2.3	0.00668	24	29.6
112 A	2.2/1.5	3/2	1430/930	6/5.8	4.5/3.5	14.7/15.4	1.4/1.3	1.7/1.6	0.01052	34	43.7
132 S	2.5/1.8	3.5/2.5	1420/930	6.5/6	5.5/4.8	17/18.8	1.6/1.5	1.8/1.6	0.01080	44	60
132 M	4/3	5.5/4	1440/930	8.5/6.9	6.5/5.5	27/31.4	1.8/1.7	2/1.9	0.01639	59	75

4/8 poli/*pole*/polig 1500/750 min^{-1}

Tipo *Type* Typ	P_N kW	P_N HP	n_n rpm	I_N (400V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	J Kgm^2	Kg **(DN)**	Kg **(DF)**
63 B	0.09/0.04	0.12/0.06	1360/660	0.6/0.55	3.5/2	0.6/0.57	1.3/1.3	1.9/1.8	0.00029	4.6	6.0
71 B	0.15/0.09	0.20/0.12	1390/690	0.7/0.65	3.5/2	1/1.2	1.3/1.3	1.9/1.8	0.00096	6.5	7.9
80 A	0.29/0.18	0.40/0.25	1410/700	1.3/1.1	3.5/2.5	1.9/2.4	1.5/1.8	2/1.8	0.00191	8.5	10.4
80 B	0.37/0.22	0.5/0.30	1420/700	1.8/1.7	3.5/2.5	2.4/3	1.5/1.8	2/1.8	0.00254	10.5	12.4
90 S	0.6/0.26	0.8/0.35	1430/700	1.9/1.8	4/2.5	4/3.5	1.4/1.3	2/1.8	0.00242	12.5	15.6
90 L	1/0.5	1.3/0.7	1430/700	2.6/2.5	4.5/2.5	6.8/6.8	1.4/1.4	2/1.8	0.00321	14	17.1
100 B	1.5/0.75	2/1	1430/700	3.8/3.6	4.5/3	10/10	1.4/1.5	2/1.8	0.00668	24	29.6
112 A	2.2/1.3	3/1.8	1410/700	4.7/4.3	4.5/3.4	15.2/17.7	1.6/1.5	1.9/1.9	0.01223	34	44
132S	3.1/1.7	4.2/2.3	1420/710	7/5.9	4.7/3.8	21.2/23.3	1.8/1.8	2/2.1	0.01080	44	60
132 M	5/2.8	6.8/3.8	1440/720	13/8.2	5.2/4.3	33.7/3.7	1.8/1.8	2.2/2.3	0.01639	59	75

10.11 Dati tecnici — *10.11 Technical data* — 10.11 Technische Daten

MN		**Motori monofase standard** ***Standard single phase motors*** **Standard Einphasenmotoren**
MF		**Motori monofase autofrenanti standard** ***Standard single phase brake motors*** **Standard Einphasenbremsmotoren**

2 poli/*pole*/polig 3000 min^{-1}

Tipo *Type* Typ	kW	HP	n_n rpm	η %	cosφ	I_N (230V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	C µF	J Kgm^2	Kg **(MN)**	Kg **(MF)**
56 A	0.09	0.12	2740	54	0.90	0.85	2.4	0.28	0.58	1.4	6.3	0.00011	3	4.1
63 B	0.18	0.25	2750	54	0.92	1.5	2.5	0.62	0.62	1.6	8	0.00025	4.7	6.2
63 C	0.25	0.33	2750	56	0.94	2.2	2.5	0.85	0.66	1.6	10	0.00034	4.8	6.3
71 B	0.37	0.5	2780	60	0.94	3.2	3	1.28	0.70	1.8	12.5	0.00047	6.7	8.2
71 C	0.55	0.75	2800	64	0.96	4	3.5	1.9	0.70	1.8	16	0.00057	7.4	8.9
80 B	0.75	1	2820	70	0.96	5.5	3.5	2.5	0.74	1.8	20	0.00105	11	13.2
90 S	1.1	1.5	2830	70	0.98	8.5	3.6	3.8	0.76	1.9	30	0.00172	13.2	16.3
90 L	1.5	2	2830	74	0.98	11.5	3.6	5.1	0.76	1.9	35	0.00191	15.1	18.2
100 A	2.2	3	2830	76	0.98	16.8	4	7.4	0.70	1.9	60	0.00299	23	28.3

4 poli/*pole*/polig 1500 min^{-1}

Tipo *Type* Typ	kW	HP	n_n rpm	η %	cosφ	I_N (230V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	C µF	J Kgm^2	Kg **(MN)**	Kg (MF)
56 B	0.09	0.12	1340	54	0.90	0.95	1.6	0.65	0.70	1.4	6.3	0.00018	3.1	4.2
63 B	0.12	0.16	1370	58	0.90	1.2	2.5	0.84	0.74	1.6	8	0.00025	4.6	6.1
63 C	0.18	0.25	1370	58	0.92	1.6	2.5	1.3	0.78	1.6	10	0.00034	4.8	6.3
71 B	0.25	0.33	1380	58	0.94	2.3	2.5	1.8	0.78	1.6	14	0.00096	6.6	8.1
71 C	0.37	0.5	1380	58	0.94	3	2.8	2.5	0.82	1.6	16	0.00117	7.2	8.7
80 B	0.55	0.75	1400	62	0.94	4.2	3	3.7	0.80	1.8	20	0.00254	10.8	13
80C	0.75	1	1400	66	0.94	5.6	3	5.1	0.80	1.8	25	0.00285	11.8	14
80 D	0.88	1.2	1400	66	0.94	7	3	6	0.80	1.8	30	0.00316	12.3	14.5
90 S	1.1	1.5	1410	68	0.96	8.5	3.2	7.5	0.82	1.8	30	0.00320	12.9	16.0
90 L	1.5	2	1410	68	0.96	12	3.2	10.2	0.82	1.8	35	0.00398	14.5	17.6
100 A	1.8	2.5	1420	70	0.96	13.5	3.2	12.1	0.76	1.8	50	0.00520	21	26.5
100 B	2.2	3	1420	70	0.96	16.8	3.2	14.8	0.76	1.8	60	0.00668	25	30.5

6 poli/*pole*/polig 1000 min^{-1}

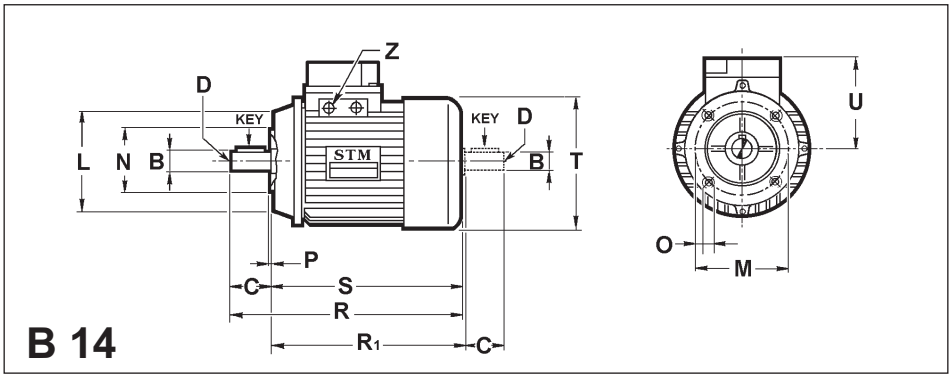
Tipo *Type* Typ	kW	HP	n_n rpm	η %	cosφ	I_N (230V) A	$\frac{I_{sp}}{I_N}$	M_N Nm	$\frac{M_{sp}}{M_N}$	$\frac{M_{MAX}}{M_N}$	C µF	J Kgm^2	Kg **(MN)**	Kg (MF)
71 B	0.18	0.25	900	52	0.92	2	2.5	1.9	0.70	1.4	10	0.00096	6.6	8.1
80 A	0.37	0.5	920	58	0.94	3.5	2.7	3.8	0.72	1.5	16	0.00254	8.8	11
90 S	0.55	0.75	920	62	0.96	4.6	3	5.7	0.76	1.6	25	0.00242	12.9	16.0
90L	0.75	1	930	65	0.96	6.1	3	7.8	0.76	1.6	30	0.00321	14.5	17.6
100 A	1.1	1.5	930	66	0.96	9	3.2	11.3	0.70	1.8	40	0.00662	21	26.5
100 B	1.5	2	930	66	0.96	13.5	3.2	15.4	0.70	1.8	50	0.00812	25	30.5

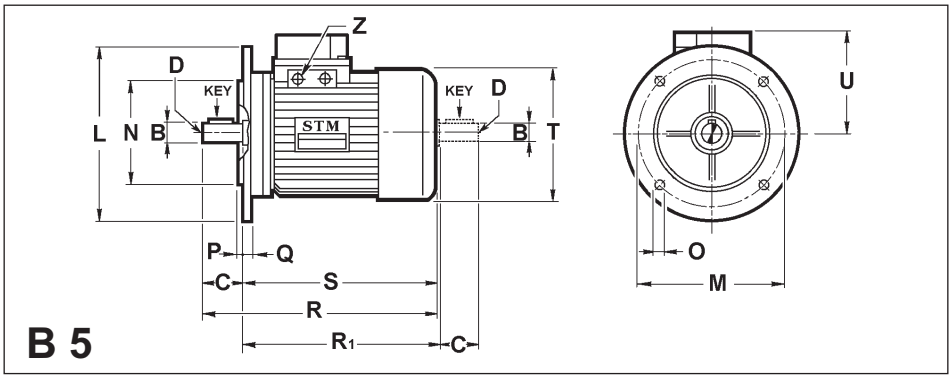
Motori standard | ***Standard motors*** | **Standard Motoren**

TN

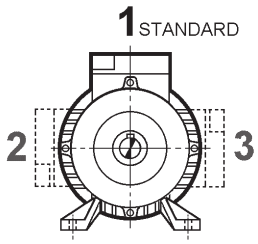
DN

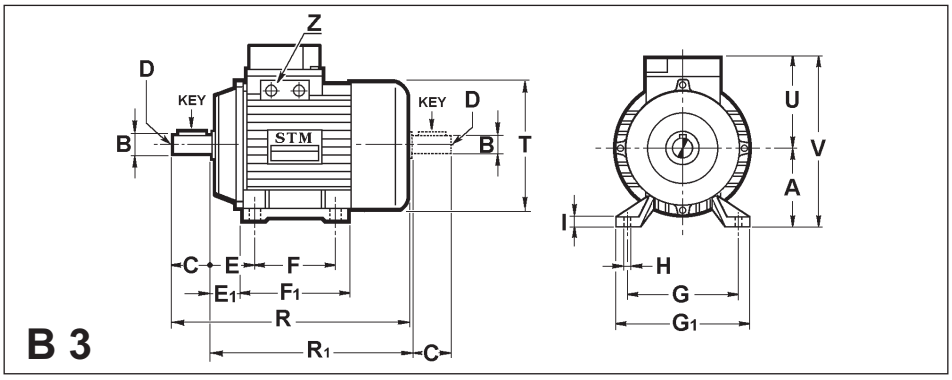
MN





Esecuzione speciale
Special execution
Sonderausführung





10.12 Dimensioni — *10.12 Dimensions* — 10.12 Abmessungen

	B3										B14					
	A	E	E1	F	F1	G	G1	H	I	V	L	M	N	O	P	S
56	56	36	26	71	90	90	108	6	9	149	80	65	50	M5	2.5	167
63	63	40	28	80	105	100	120	7	10	161	90	75	60	M5	2.5	192
71	71	45	36	90	108	112	136	7	11	178	105	85	70	M6	2.5	220
80	80	50	38	100	125	125	154	9.5	11	204	120	100	80	M6	3	235
90S	90	56	41	100	130	140	174	9.5	13	217	140	115	95	M8	3	250
90L	90	56	41	125	155	140	174	9.5	13	217	140	115	95	M8	3	275
100	100	63	46	140	175	160	192	12	14	238	160	130	110	M8	3.5	310
112	112	70	53	140	180	190	234	12	14	262	160	130	110	M8	3.5	330
132S	132	89	60	140	180	216	256	12	16	310	200	165	130	M10	4	370
132M	132	89	60	178	218	216	256	12	16	310	200	165	130	M10	4	410
160 M	160	108	83	210	260	254	310	15	22	400						
160 L	160	108	72	254	320	254	330	15	22	400						
180 M	180	121	80	241	315	279	355	19	24	450						
180 L	180	121	80	279	353	279	355	19	24	450						
200 L	200	133	91	305	400	318	395	19	27	500						
225 S	225	149	61	286	450	356	435	19	30	550						
225 M	225	149	101	311	450	356	435	19	30	550						
250 M	250	168	108	349	460	406	490	24	33	610						
280 S	280	190	106	368	525	457	550	24	38	670						
280 M	280	190	106	419	576	457	550	24	38	670						
315 S	315	216	112	406	615	508	640	28	48	865						
315 M	315	216	112	457	665	508	640	28	48	865						
315 L	315	216	97	508	745	508	640	28	48	865						

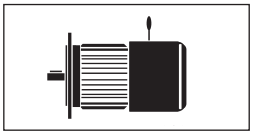
	B3 - B5 - B14													B5						
	B		C		D	R		R1		T	U	Z	Key		L	M	N	O	P	Q	S
	2 p	4/6/8 p	2 p	4/6/8 p		2 p	4/6/8 p	2 p	4/6/8 p				2 p	4/6/8 p							
56	9 j6	9 j6	20	20	M4	187	187	171	171	110	93	PG11	3x3x15	3x3x15	120	100	80	7	3	8	167
63	11 j6	11 j6	23	23	M4	215	215	193	193	123	98	PG11	4x4x15	4x4x15	140	115	95	9	3	9	192
71	14 j6	14 j6	30	30	M5	250	250	218	218	138	107	PG13.5	5x5x20	5x5x20	160	130	110	9	3.5	9	220
80	19 j6	19 j6	40	40	M6	275	275	237	237	156	124	PG16	6x6x30	6x6x30	200	165	130	11	3.5	10	235
90S	24 j6	24 j6	50	50	M8	300	300	256	256	176	127	PG16	8x7x40	8x7x40	200	165	130	11	3.5	10	250
90L	24 j6	24 j6	50	50	M8	325	325	281	281	176	127	PG16	8x7x40	8x7x40	200	165	130	11	3.5	10	275
100	28 j6	28 j6	60	60	M10	370	370	309	309	192	138	PG16	8x7x40	8x7x40	250	215	180	14	4	14	310
112	28 j6	28 j6	60	60	M10	390	390	331	331	216	150	PG16	8x7x40	8x7x40	250	215	180	14	4	14	330
132S	38 k6	38 k6	80	80	M12	450	450	376	376	257	178	PG21	10x8x70	10x8x70	300	265	230	14	4	20	370
132M	38 k6	38 k6	80	80	M12	490	490	411	411	257	178	PG21	10x8x70	10x8x70	300	265	230	14	4	20	408
160 M	42 k6	42 k6	110	110	M16	600	600	495	495	310	340	PG21	12x8	12x8	350	300	250	19	5	16	490
160 L	42 k6	42 k6	110	110	M16	640	640	540	540	310	340	PG21	12x8	12x8	350	300	250	19	5	16	535
180 M	48 k6	48 k6	110	110	M16	670	670	570	570	360	270	PG29	14x8	14x9	350	300	250	19	5	18	560
180 L	48 k6	48 k6	110	110	M16	710	710	610	610	360	270	PG29	14x8	14x9	350	300	250	19	5	18	600
200 L	55 k6	55 k6	110	110	M20	775	775	675	675	400	300	PG36	16x10	16x10	400	350	300	19	5	18	665
225 S	—	60 k6	—	140	M20	—	820	690	690	450	325	PG36	—	18x11	450	400	350	19 •	5	20	680
225 M	55 k6	60 k6	110	140	M20	815	845	715	715	450	325	PG36	16x10	18x11	450	400	350	19 •	5	20	705
250 M	60 k6	65 k6	140	140	M20	930	930	800	800	495	360	PG36	18x11	18x11	550	500	450	19 •	5	22	790
280 S	65 k6	75 k6	140	140	M20	1000	1000	880	880	555	390	PG42	18x11	20x12	550	500	450	19 •	5	22	860
280 M	65 k6	75 k6	140	140	M20	1050	1050	930	930	555	390	PG42	18x11	20x12	550	500	450	19 •	5	22	910
315 S	65 k6	80 k6	140	170	M20	1155	1185	1040	1040	630	550	PG48	18x11	22x14	660	600	550	24 •	6	25	1015
315 M	65 k6	80 k6	140	170	M20	1210	1240	1095	1095	630	550	PG48	18x11	22x14	660	600	550	24 •	6	25	1070
315 L	65 k6	80 k6	140	170	M20	1210	1240	1095	1095	630	550	PG48	18x11	22x14	660	600	550	24 •	6	25	1070

10.12 Dimensioni motori autofrenanti

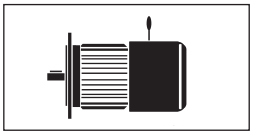
10.12 Dimensions brake motors

10.12 Abmessungen Bremsmotoren

TF



DF



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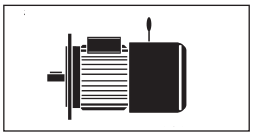
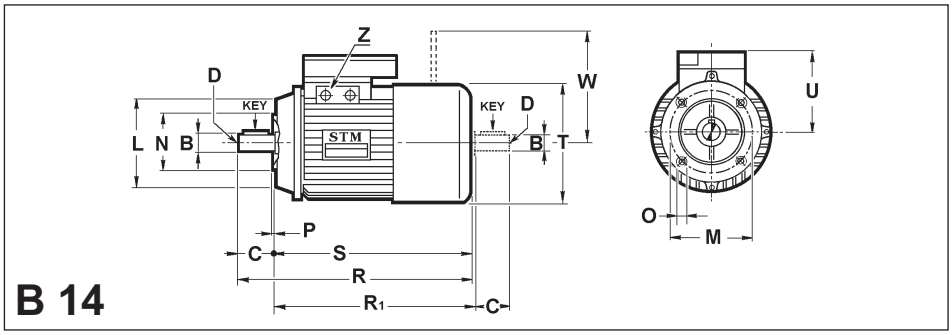
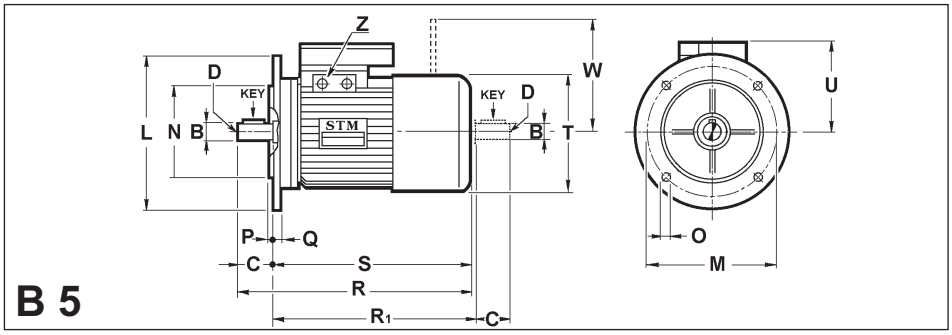
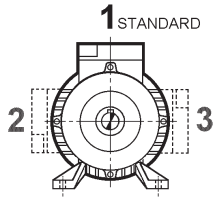
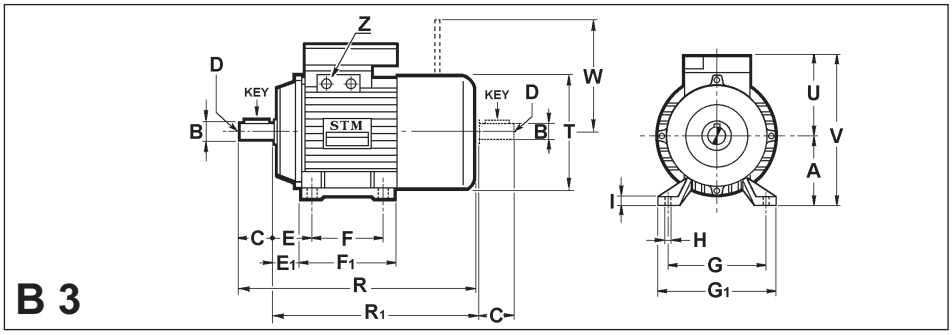






Esecuzione speciale
Special execution
Sonderausführung



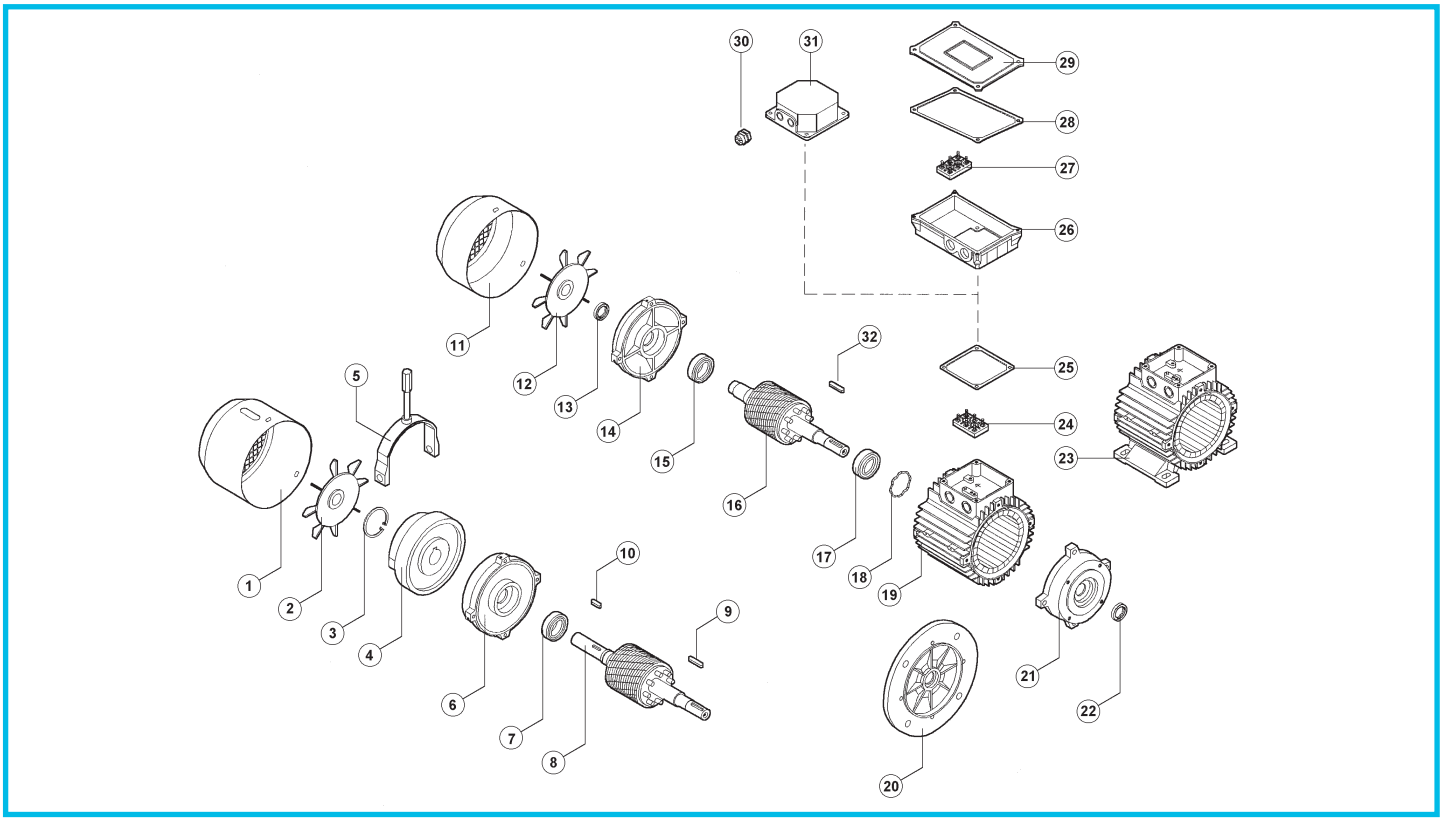


	B3										B14					
	A	E	E1	F	F1	G	G1	H	I	V	L	M	N	O	P	S
56	56	36	26	71	90	90	108	6	9	156	80	65	50	M5	2.5	208
63	63	40	28	80	105	100	120	7	10	168	90	75	60	M5	2.5	235
71	71	45	36	90	108	112	136	7	11	185	105	85	70	M6	2.5	270
80	80	50	38	100	125	125	154	9.5	11	206	120	100	80	M6	3	295
90 S	90	56	41	100	130	140	174	9.5	13	223	140	115	95	M8	3	315
90 L	90	56	41	125	155	140	174	9.5	13	223	140	115	95	M8	3	340
100	100	63	46	140	175	160	192	12	14	242	160	130	110	M8	3.5	381
112	112	70	53	140	180	190	234	12	14	265	160	130	110	M8	3.5	420
132 S	132	89	60	140	180	216	256	12	16	310	200	165	130	M10	4	372
132 M	132	89	60	178	218	216	256	12	16	310	200	165	130	M10	4	510

	B3 - B5 -B14											B5						
	B	C	D	R	R1	T	U	Z	Key	W (c.a.)	W (c.c.)	L	M	N	O	P	Q	S
56	9	20	M4	228	221	110	100	PG11	3x3x15	–	–	120	100	80	7	3	8	208
63	11	23	M4	258	241	123	105	PG11	4x4x15	116	96	140	115	95	9	3	9	235
71	14	30	M5	300	275	138	114	PG13.5	5x5x20	116	96	160	130	110	9	3.5	9	270
80	19	40	M6	335	303	156	126	PG16	6x6x30	124	103	200	165	130	11	3.5	10	295
90 S	24	50	M8	365	319	176	133	PG16	8x7x40	134	129	200	165	130	11	3.5	10	315
90 L	24	50	M8	390	344	176	133	PG16	8x7x40	134	129	200	165	130	11	3.5	10	340
100	28	60	M10	441	383	192	142	PG16	8x7x40	160	160	250	215	180	14	4	14	381
112	28	60	M10	480	420	216	153	PG16	8x7x40	198	199	250	215	180	14	4	14	420
132 S	38	80	M12	552	477	257	178	PG 21	10x8x70	217	266	300	265	230	14	4	20	472
132 M	38	80	M12	590	515	257	178	PG 21	10x8x70	217	266	300	265	230	14	4	20	510

10.13 Lista ricambi — *10.13 Dimensions* — 10.13 Abmessungen

Fig. 10.12



1	Copriventola	*Fan cover*	Lüfterhaube
2	Ventola	*Fan*	Lüfter
3	Seeger	*Circlip*	Seeger
4	Freno	*Brake*	Bremse
5	Leva di sblocco	*Hand release*	Handlüftung
6	Scudo posteriore	*Non drive end shield*	Hinteres Lagerschild
7	Cuscinetto	*Bearing*	Lager
8	Rotore	*Rotor*	Rotor
9	Linguetta	*Key*	Keil
10	Linguetta	*Key*	Keil
11	Copriventola	*Fan cover*	Lüfterhaube
12	Ventola	*Fan*	Lüfter
13	Anello di tenuta	*Oilseal*	Dichtring
14	Scudo posteriore	*Non drive end shield*	Hinteres Lagerschild
15	Cuscinetto	*Bearing*	Lager
16	Rotore	*Rotor*	Rotor
17	Cuscinetto	*Bearing*	Lager
18	Molla di precarico	*Pre load spring*	Vorspannfedern
19	Cassa B5-B14	*B5/B14 housing*	Gehäuse B5-B14
20	Flangia B5	*B5 Flange*	Flansch B5
21	Scudo anteriore (B14)	*Drive end shield (B14)*	Vorderes Lagerschild (B14)
22	Anello di tenuta	*Oilseal*	Dichtring
23	Cassa con piedi	*Foot casing*	Gehäuse mit Fuß
24	Morsettiera	*Terminal board*	Klemmbrett
25	Guarnizione	*Gasket*	Dichtung
26	Scatola morsettiera	*Terminal box*	Klemmenkasten
27	Morsettiera	*Terminal board*	Klemmbrett
28	Guarnizione	*Gasket*	Dichtung
29	Coperchio morsettiera	*Terminal box cover*	Klemmenkastendeckel
30	Pressacavo	*Cable gland*	Kabelverschraubung
31	Scatola morsettiera	*Terminal box*	Klemmenkasten
32	Linguetta	*Key*	Keil

Potenza richiesta / *Required power* / Benötigte Leistung

$$P = \frac{m \cdot g \cdot v}{6 \cdot 10^4}$$ Sollevamento / *Lifting* / Heben

$$P = \frac{M \cdot n}{9550}$$ Rotazione / *Rotation* / Drehung

$$P = \frac{F \cdot v}{6 \cdot 10^4}$$ Traslazione / *Linear mouvement* / Linearbewegung

$$M = \frac{9550 \cdot P}{n}$$ Coppia / *Torque* / Drehmoment

$$F = 1000 \cdot \frac{M}{r}$$ Forza / *Force* / Kraft

$$v = \frac{2r \cdot \pi \cdot n}{1000}$$ Velocità lineare / *Linear speed* / Lineargeschwindigkeit

Momento d'inerzia ***Moment of inertia*** **Trägheitsmoment**

$J = 98.p.l.D^4$ Cilindro pieno / *Solid cylinder* / Vollzylinder
$J = 98.p.l.(D^4-d^4)$ Cilindro cavo / *Hollow cylinder* / Hohlzylinder

Conversione di una massa in movimento lineare in un momento d'inerzia riferito all'albero del motore

Conversion of a mass having a linear movement into a moment of inertia related to the motor shaft.

Umwandlung einer Masse mit Linearbewegung in ein Trägheitsmoment, das auf die Motorwelle bezogen ist.

$$J = 91.2 \cdot m \cdot \frac{v^2}{n^2}$$

Conversione di diversi momenti d'inerzia di massa a velocità diverse in un momento d'inerzia riferito all'albero motore.

Conversion of various mass moments of inertia having different speeds into a moment of inertia related to the motor shaft.

Umwandlung von verschiedenen Trägheitsmomenten mit unterschiedlichen Geschwindigkeiten in ein Trägheitsmoment, das auf die Motorwelle bezogen ist.

$$J_a = \frac{J_2 \cdot n_2^{\,2} + J_3 \cdot n_3^{\,2} \ldots}{n_1^{\,2}}$$

P	= Potenza motore	*Rated power*	Motorleistung	[kW]
m	= Massa	*Mass*	Masse	[kg]
v	= Velocità lineare	*Linear speed*	Lineargeschwindigeit	[m/min]
F	= Forza	*Force*	Kraft	[N]
n	= Velocità di rotaz.	*Rotation speed*	Drehzahl	[min^{-1}]
g	= 9.81	*9.81*	9.81	[m/sec]
M	= Coppia del motore	*Motor torque*	Motor-Drehmoment	[Nm]
r	= Raggio	*Radius*	Radius	[mm]
J	= Inerzia	*Moment of inertia*	Trägheitsmoment	[kgm^2]
l	= Lunghezza	*Length*	Länge	[mm]
d	= Diametro interno	*Inner diameter*	Innendurchmesser	[mm]
D	= Diametro esterno	*Outer diameter*	Außendurchmesser	[mm]
p	= Peso specifico	*Specific weight*	Spezifisches Gewicht	[kg/dm^3]

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