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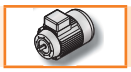
6		**MOTORI ELETTRICI**		***ELECTRIC MOTORS***	**ELEKTROMOTOREN**	91

1.0 **Generalita'**

TRAMEC si presenta oggi sul mercato con la nuova gamma di riduttori a vite senza fine con le seguenti serie:

1.0 ***General information***

TRAMEC has introduced on the market a new range of wom gearboxes available in series:

1.0 **Allgemeines**

TRAMEC hat auf dem Markt eine neue Auswahl an Schneckengetrieben in Serie herausgebracht:

Serie SFK, BFK

Riduttori a vite senza fine con forma rotonda, realizzati in alluminio pressofuso, che consente ingombri e pesi inferiori. Svariate possibilità di versioni sono facilmente ottenebili anche grazie ai suoi particolari di collegamento (piedi e flange) che sono separati.

SFK, BFK Series

Worm gearboxes with round shape, made cast aluminum, are light in weight and require reduced space. The coupling parts (feet and flanges) are separated and therefore offer the possibility to obtain countless versions.

Serie SFK, BFK

Schneckengetriebe in rundem Gehäuse aus Aluminiumguss, weisen ein geringes Gewicht auf und benötigen wenig Platz. Die Anbauteile (Fuesse und Flansche) sind modular aufgebaut, wodurch viele unterschiedliche Versionen möglich sind.

Serie SCFK, BCFK

Riduttore combinato a doppia vite senza fine caratterizzato da elevate riduzioni di velocità.

SCFK, BCFK *Series*

Worm gearbox with cylindrical pre-stage Combined worm gearbox with double worm shaft, it offers high speed reductions.

Serie SCFK, BCFK

Kombinierte Doppelschneckengetriebe ermöglichen eine hohe Anzahl an Untersetzungsmöglichkeiten.

1.1 Unità di misura / *1.1 Measurement units* / 1.1 Masseinhaiten

Simbolo *Symbol* Symbol	Unita' di misura *Measurement unit* Maßeinheit	Definizione	*Definition*	Beschreibung
FS'		Fattore di servizio riduttore	*Gearbox service factor*	Betriebsfaktor des Getriebes
FS		Fattore di servizio dell'applicazione	*Application service factor*	Betriebsfaktor der Anwendung
i_1		Rapporto di riduzione del 1° riduttore	*Ratio of 1st gearbox*	Untersetzungsverhältnis des 1. Getriebes
i_2		Rapporto di riduzione del 2° riduttore	*Ratio of 2nd gearbox*	Untersetzungsverhältnis des 2. Getriebes
i_n		Rapporto di riduzione	*Reduction ratio*	Untersetzungsverhältnis
IEC		Grandezza motore	*Motor size*	Motorgröße
M_{2S}	[Nm]	Coppia di slittamento	*Slipping torque*	Rutschmoment
n_1	[min^{-1}]	Giri in entrata	*Input rpm*	Antriebsdrehzahl
n_2	[min^{-1}]	Giri in uscita	*Output rpm*	Abtriebsdrehzahl
P	[kW]	Potenza riduttore	*Gearbox capacity*	Getriebeleistung
P'	[kW]	Potenza richiesta in entrata	*Power required at input*	Am Antrieb erforderliche Leistung
P_1	[kW]	Potenza motoriduttore	*Gear motor power*	Getriebemotor Leistung
P_2	[kW]	Potenza in uscita	*Output power*	Abtriebsleistung
P_{tc}	[Nm]	Potenza termica corretta	*Corrected thermal power*	verbesserte thermische Leistung
P_{to}	[kW]	Potenza termica nominale	*Thermal power*	Thermische Nennleistung
F_{r1}	[N]	Carico radiale albero entrata	*Input shaft radial load*	Radiallast an Antriebswelle
F_{r2}	[N]	Carico radiale albero uscita	*Output shaft radial load*	Radiallast an Abtriebswelle
F_{a1}	[N]	Carico assiale albero entrata	*Input shaft axial load*	Axiallast an Abtriebswelle
F_{a2}	[N]	Carico assiale albero uscita	*Output shaft axial load*	Axiallast an Antriebswelle
Rd		Rendimento dinamico	*Dynamic efficiency*	dynamischer Wirkungsgrad
Rs		Rendimento statico	*Static efficiency*	statischer Wirkungsgrad
Ta	[Nm]	Temperatura ambiente	*Ambient temperature*	Umgebungstemperatur
T_{2M}	[Nm]	Momento torcente riduttore	*Gearbox torque*	Getriebe Drehmoment
T_2	[Nm]	Momento torcente motoriduttore	*Gear motor torque*	Getriebemotor Drehmoment
T_C	[Nm]	Momento torcente da utilizzare per la scelta del riduttore	*Torque to be used for the selection of the gearbox*	Drehmoment, das zur Wahl des Getriebe zu benutzen ist
T_2'	[Nm]	Momento torcente richiesto	*Required Torque*	benötigtes Drehmoment

1.2 Potenza / *1.2 Power* / 1.2 Leistung

P = Potenza massima applicabile in entrata con vite ad albero maschio riferita alla velocità n_1 con un fattore di servizio FS = 1 e a un servizio continuo S1.

P_1 = Potenza motore consigliata riferita alla velocità n_1 con il fattore di servizio FS riportato in tabella a pag. 4 e a servizio continuo S1.

E' possibile determinare la potenza necessaria in entrata P' in base alla coppia T_2' richiesta all'applicazione secondo la seguente formula:

P = max. power applicable at input with male worm shaft, referred to n_1 speed, service factor FS=1, on S1 continuous

P_1 = recommended motor power, referred to n_1 speed, service factor FS as reported in the table on page 4, on S1 continuous duty.

The power necessary at input on the basis of T_2 torque required by the application can be calculated with the following formula:

P = am Antrieb max. anwendbare Leistung, mit Schneckenwellenzapfen bez. n_1 Antriebsdrehzahl, Betriebsfaktor FS=1 und S1 Dauerbetrieb.

P_1 = empfohlene Motorleistung bez. n_1 Drehzahl, FS Betriebsfaktor (wie es in der Tabelle auf Seite 4 angegeben wird) und S1 Dauerbetrieb.

Die am Antrieb erforderliche Leistung P' (auf Grund des von der Anwendung verlangten T_2 Drehmoments) kann wie folgt kalkuliert werden:

$$P' = \frac{T_2' \cdot n_2}{9550 \cdot Rd} \quad [kW]$$

1.3 Rapporto di riduzione / *1.3 Reduction Ratio* / 1.3 Untersetzungsverhältnis

i_n = È il rapporto di riduzione della velocità, definito come:

i_n= speed reduction ratio, defined as follows:

i_n = Drehzahluntersetzungsverhältnis, wird wie folgt definiert:

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

1.4 Momento torcente / *1.4 Torque* / 1.4 Drehmoment

T_{2M} = È la massima coppia trasmissibile in uscita del riduttore con carico uniforme riferito alla velocità n_1 con un fattore di servizio FS =1 e a servizio continuo S1.
T_2 = È la coppia in uscita del motoriduttore riferita alla velocità n_1 alla potenza P_1, con il fattore di servizio FS riportato in tabella e a servizio continuo S1.

T_{2M} = max. torque transmissible at gearbox output with uniform load, referred to n_1 speed, service factor FS = 1, on S1 continuous duty.
T_2 = output torque transmissible to the geared motor, referred to n_1 speed, P_1 power , FS service factor as reported in the table, on S1 continuous duty.

T_{2M} = am Getriebeabtrieb max. übertragbaren Drehmoment, bei gleichmäßiger Last bez. n_1 Drehzahl, Betriebsfaktor FS = 1 und S1 Dauerbetrieb.
T_2 = übertragbares Abtriebsdrehmoment, bezogen auf die Antriebsdrehzahl n_1, die Leistung P_1 und dem in der Tabelle angegebenen Betriebsfaktor FS bei Dauerbetrieb S1.

$$T_{2M} = \frac{9550 \cdot P_1 \cdot Rd}{n_2} \quad [Nm]$$

1.5 Fattore di servizio FS

È il valore che tiene in considerazione le varie condizioni di funzionamento:

- tipologia di applicazione ovvero natura del carico (A-B-C)
- durata di funzionamento (ore giornaliere h/d)
- numero di avviamenti/ora

Il coefficiente così trovato (FS) dovrà essere uguale o inferiore al fattore di servizio del riduttore da adottare FS' dato dal rapporto tra la coppia T_{2M} indicata a catalogo e la coppia T_2' richiesta dall'applicazione.

1.5 FS Service factor

Value which takes the different operating conditions into consideration:

- *type of application or type of load (A-B-C)*
- *length of operation (hours per day h/d)*
- *number of start-ups/hour*

This coefficient (FS) will have to be equal or lower than the FS of selected gearbox FS' given by the ratio between T_{2M} torque mentioned in the catalogue and the T_2' torque required by the application.

1.5 Betriebsfaktor FS

Wert, der die verschiedenen Betriebsbedingungen in Betracht zieht:

- Art der Anwendung oder Art der Last (A-B-C)
- Betriebsdauer (Stunden pro Tag)
- Anzahl der Starts pro Stunde

Der so berechnete Koeffizient (FS) muss kleiner oder gleich dem Betriebsfaktor FS' des Getriebes sein, welcher sich aus dem Verhältnis zwischen dem im Katalog angegebenen maximalen Drehmoment T_{2M} und dem von der Anwendung benötigten Drehmoment T_2' ergibt.

$$FS' = \frac{T_{2M}}{T_2'} > FS$$

I valori di FS indicati in tabella sono relativi all'azionamento del 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 occorre considerare un numero di avviamenti doppio di quello effettivamente richiesto.

FS values reported in the table refer to employment of an electric motor; should a combustion motor be used, consider a multiplication factor of 1.3 for a multicylinder motor, of 1.5 for a single-cylinder one. If an electric brake motor is used, consider a number of start-ups which is twice as much the number actually required.

Die in der Tabelle angegebenen FS Werte beziehen sich auf die Anwendung eines Elektromotors. falls ein Verbrennungsmotor verwendet wird, sollte ein Multiplikationsfaktor von 1.3 für Mehrzylindermotor oder von 1.5 für Einzylindermotor in Betracht gezogen werden. Falls es sich um einen Elektro-Bremsmotor handelt, dann ist die Anzahl der Starts doppelt zu zählen.

Classe di carico *Load class* Lastklasse	h/gg *h/d* St./Tag	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 Las**	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/gg *h/d* St./Tag	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
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*	Filter mit Steinen/Kies							
	Viti per espulsione acqua	*Dewatering screws*	Abwasserschnecken							
	Flocculatori	*Flocculator*	Flockvorrichtungen							
	Filtri a vuoto	*Vacuum filters*	Vakuumfilter							
	Elevatori a tazze	*Bucket elevators*	Becherwerke							
	Gru	*Cranes*	Kräne							

Classe di carico *Load class* Lastklasse	h/gg *h/d* St./Tag	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 urti forti ***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*	Kugelmühle							

1.6 Rendimento

Rd - È il rendimento dinamico, definito come rapporto tra la potenza in uscita P_2 e quella in entrata P_1. Questo dipende principalmente dalla velocità di strisciamento, dal tipo di lubrificante e dall' angolo d'elica; durante la fase di rodaggio il suo valore risulta essere sensibilmente inferiore rispetto a quello riportato nelle tabelle delle prestazioni.

Rs - È il rendimento statico che si ha al momento dell' avviamento del riduttore e varia in base al rapporto di riduzione.
Risulta importante, per una corretta valutazione del riduttore da impiegare, nelle applicazioni in cui non si raggiungono mai le condizioni di regime come nei funzionamenti intermittenti.

Analogalmente al caso dinamico, anche il rendimento statico tende ad aumentare durante la fase di rodaggio e tiene conto della resistenza al moto sviluppata nell' ingranamento vite /corona, nei paraoli e nei cuscinetti.

1.6 Efficiency

***Rd** - dynamic efficiency, defined as the ratio between P_2 output power and P_1 input power. It mainly depends on the slipping speed, the type of lubricant and the lead angle. During the running-in period its value is sensibly inferior compared to that reported in the table of performance.*

***Rs** - static efficiency at gearbox start-up; it changes depending on the reduction ratio.*
Rs value is important for selecting the right gearbox for applications where a steady state is never achieved, as for intermittent duty applications.

Same as dynamic efficiency, static efficiency too tends to grow during the running-in period; it is influenced by the resistance to motion developed in the mesh worm shaft / wheel, in the oil seals and in the bearings.

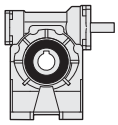
1.6 Wirkungsgrad

Rd - dynamischer Wirkungsgrad, ist das Verhältnis zwischen P_2 Abtriebsleistung und P_1 Antriebsleistung. Der Wert Rd wird durch die Gleit, Art des Schmiermittels und den Steigu beeinflußt. Während der Einlaufszeit ist dieser Wert erheblich niedriger als der in der Leistungstabelle angegebenen Wert.

Rs - statischer Wirkungsgrad bei Getriebestillstand.

Der Wert Rs ist wichtig für Anwendungen ohne stetigem Betrieb, z.B. im Aussetzbetrieb.

Der statische Wirkungsgrad neigt zur Steigerung während der Einlaufszeit.
Er wird durch den Bewegungswiderstand, resultierend aus der Haftreibung der Schnecke und des Zahnrades, der Dichtungen und der Lager beeinflusst.



SFK BFK	Rs										
	7.5	10	15	20	25	30	40	50	65	80	100
30	0.76	0.70	0.62	0.54	0.48	0.46	0.38	0.33	0.31	0.29	0.21
40	0.77	0.71	0.63	0.57	0.50	0.48	0.42	0.35	0.32	0.31	0.23
50	0.77	0.71	0.64	0.59	0.52	0.50	0.44	0.37	0.35	0.32	0.23
63	0.78	0.72	0.65	0.60	0.54	0.51	0.45	0.39	0.37	0.35	0.23
75	0.78	0.73	0.66	0.61	0.55	0.52	0.46	0.40	0.38	0.36	0.24

Stabilito il rapporto di riduzione necessario all'applicazione, dove è possibile, è consigliabile utilizzare i diversi tipi di riduttori che offrono, a parità di rapporto, un migliore rendimento dinamico.

Once the reduction ratio required by the application has been established, it is advisable to select a type of gearbox which, ratio being equal, offers better dynamic efficiency.

Nachdem das für die Anwendung erforderliche Untersetzungsverhältnis festgelegt ist, wählen Sie bei gleichem Untersetzungsverhältnis einen Getriebetyp, der einen besseren dynamischen Wirkungsgrad aufweist.

1.7 Irreversibilità

Nelle applicazioni dove è necessario evitare la trasmissione del moto retrogrado o sostenere il carico, in assenza di alimentazione elettrica, è consigliabile adottare freni esterni.
Nei riduttori a vite senza fine emerge questa caratteristica naturale, denominata grado di irreversibilità, che cresce con l'aumentare del rapporto di riduzione in quanto strettamente legata al relativo rendimento.

Per ottenere alti gradi di irreversibilità occorre quindi adottare i rapporti di riduzione più elevati, senza dimenticare che, il rendimento, tende a crescere durante le prime 500 ore di funzionamento per poi stabilizzarsi sui valori riportati a catalogo.

1.7 Irreversibility

The use of external brakes is advised in case of applications where backwards motion must be hindered and the load must be held should the feed be cut off.

Some worm gearboxes feature natural irreversibility. The higher the ratio, the higher is the irreversibility, since it is strictly dependent on the relative efficiency.

In order to achieve high irreversibility it is therefore necessary to select higher efficiency reduction ratios not to forget that the efficiency is growing during the first 500 hours life until it stabilizes to the values mentioned in the catalogue.

1.7 Selbsthemmung

Aussenbremsen sind bei Anwendungen zu benutzen, bei denen die Rückbewegung der Last nicht gewünscht ist und auch im Falle eines fehlenden Antriebsmomentes der Stillstand des Getriebes gefordert ist.
Einige Schneckengetriebe sind selbsthemmend. Je höher die Untersetzung ist, desto höher ist die Selbsthemmung, da diese stark vom jeweiligen Wirkungsgrad abhängig ist. Um eine höhere Selbsthemmung zu erreichen, wählen Sie bitte höhere Untersetzungsverhältnisse.
Bitte beachten Sie, dass der Wirkungsgrad der Getriebe in den ersten 500 Betriebsstunden ansteigt und sich erst anschließend auf die im Katalog angegebenen Werte stabilisiert.

Irreversibilità statica

Condizione di impedimento alla rotazione comandata dall'albero lento senza escludere possibili ritorni lenti nel caso in cui il carico sia sottoposto a vibrazioni.

Rs < 0.45 si ha irreversibilità
Rs = 0.45 ÷ 0.55 irreversibilità incerta
Rs > 0.55 si ha reversibilità

Static irreversibility

Static irreversibility occurs when the rotation controlled by the output shaft is hindered; possible slow returns cannot be excluded should the load be subject to vibrations.

***Rs < 0.45** provides irreversibility*
***Rs = 0.45 ÷ 0.55** irreversibility is uncertain*
***Rs > 0.55** reversibility is possible*

Statische Selbsthemmung

Statische Selbsthemmung liegt vor, wenn ein durch die Last auf die Abtriebswelle wirkendes Drehmoment keine Drehung erzeugt. Langsamer Rücklauf ist möglich, falls die Last Schwingungen ausgesetzt ist.

Rs < 0.45 es liegt Selbsthemmung vor
Rs = 0.45 ÷ 0.55 ungewisse Selbsthemmung
Rs > 0.55 es liegt Reversibilität vor

Irreversibilità dinamica

Condizione di arresto e quindi di sostegno del carico nel momento in cui cessa l'azione di comando. La condizione è più difficile da ottenere in quanto viene influenzata dal rendimento dinamico, dalla velocità di rotazione, da eventuali vibrazioni che il carico può generare e dalla direzione del movimento rispetto al carico.

Quest'ultima condizione è molto evidente nei sollevamenti:
un carico in salita, cessando l'azione di comando, deve arrestarsi e quindi assumere velocità zero (rendimento statico) prima di invertire il moto e cadere per gravità.
Un carico in discesa tende invece a proseguire nel suo moto ostacolato, nella caduta, dal solo rendimento dinamico.

Rd < 0.45 si ha irreversibilità
Rd = 0.45 ÷ 0.55 irreversibilità incerta
Rd > 0.55 si ha reversibilità

Dynamic irreversibility

Dynamic irreversibility is characterized by stillstand and hold of the load when the drive stops.
It is more difficult to achieve this condition because it is influenced by dynamic efficiency, speed of rotation and possible vibrations generated by the motion direction with regard to the load.

This last condition is much more evident during the lifting : if the drive stops during the lifting of the load this has to come to a speed equals to zero (static irreversibility) before the reversal of motion rotation and its drop for gravity.

On the contrary the load during its descent gets its motion obstructed by its dynamic efficiency.

***Rd < 0.45** provides irreversibility*
***Rd = 0.45 ÷ 0.55** irreversibility is uncertain*
***Rd > 0.55** reversibility is possible*

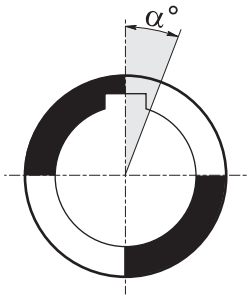
Dynamische Selbsthemmung

Dynamische Selbsthemmung ist durch den Stillstand und das Halten der Abtriebswelle trotz Vibrationen der Anwendung charakterisiert.
Diese Bedingung ist schwieriger zu erreichen, da sie vom dynamischen Wirkungsgrad, der Drehzahl und von der Last verursachten möglichen Vibrationen abhängig ist

Dieser letzte Fall kommt bei Hubanwendungen stark zu tragen. Wenn der Antrieb während dem Hub stoppt, muss die Last eine Geschwindigkeit von annähernd O erreichen (statische Irreversibilität), bevor die Rotation sich umkehrt und die Last durch die Gravitation nach unten fährt.
Dem entgegengesetzt bekommt die Last durch die Abwärtsbewegung Ihre dynamische Effizienz.

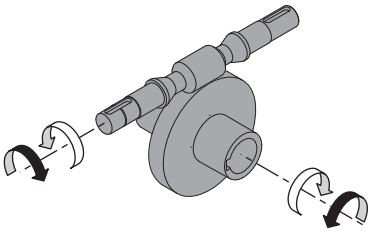
Rd < 0.45 es liegt Selbsthemmung vor
Rd = 0.45 ÷ 0.55 ungewisse Selbsthemmung
Rd > 0.55 es liegt Reversibilität vor

1.8 Gioco angolare *1.8 Backlash* 1.8 Winkelspiel

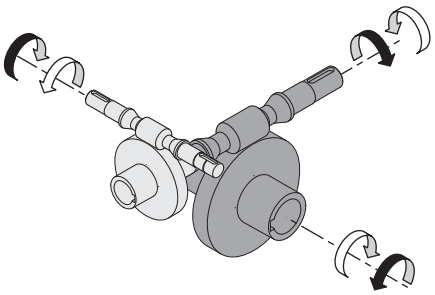


SFK, SRK, BFK, BRK										
i_n	30		40		50		63		75	
	min	max	min	max	min	max	min	max	min	max
7.5	10’	16’	9’	13.5’	7.5’	10.5’	7’	10’	7’	10’
10	10’	16’	9’	13.5’	7’	10.5’	7’	10’	7’	10’
15	10’	16’	9’	13.5’	7.5’	10.5’	7’	10’	7’	10’
20	9’	14.5’	7.5’	12’	6.5’	9.5’	6.5’	8.5’	6.5’	8.5’
25	9’	14.5’	7.5’	12’	6’	9.5’	6’	8.5’	6’	8.5’
30	9’	14.5’	7.5’	12’	6’	8.5’	6’	8.5’	6’	8.5’
40	9’	14.5’	7.5’	12’	6’	9.5’	6’	8.5’	6’	8.5’
50	8.5’	14’	7.5’	12’	6’	9.5’	6’	8.5’	6’	8.5’
65	8.5’	14’	7.5’	12’	6’	9’	6’	8’	6’	8’
80	8’	13.5’	7’	11.5’	6’	9’	5.5’	7.5’	5.5’	7.5’
100	8’	13’	7’	11’	6’	9’	5.5’	7.5’	5.5’	7.5’

1.9 Senso di rotazione *1.9 Direction of rotation* 1.9 Drehrichtung



SFK
BFK



SCFK
BCFK

1.10 Carichi radiali

Ogni tipo di organo di trasmissione che viene collegato o sull'albero in entrata o in quello di uscita determina carichi radiali rispettivamente Fr_1 e Fr_2.
I valori riportati in tabella in funzione delle varie velocità in entrata e in uscita (consultabili nelle sezioni dedicate) sono da considerarsi applicabili come forza agente a metà della sporgenza; per un posizionamento a 1/3 della lunghezza occorre aumentare i valori di tabella del 25% mentre per un posizionamento a 2/3 della lunghezza occorre diminuire gli stessi valori del 25%.
I valori dei carichi assiali applicabili in entrata Fa_1 e in uscita Fa_2 sono indicati nelle tabelle.
Negli alberi bisporgenti, ogni estremità può sopportare un carico radiale pari ai 3/5 dei valori riportati in tabella purchè agiscano nello stesso senso e siano di pari intensità.

1.10 Radial load

Any transmission device coupled to either the input or the output shaft generates radial loads, Fr_1 and Fr_2 respectively.

The load values reported in the table, depending on input and output speed, available in sections, are to be considered as acting at the half-way point of the projection; if the load is applied at 1/3 of the projection, increase the values in the table by 25%; if the load is applied at 2/3, reduce the values by 25%.

Axial loads applicable at input Fa_1 and at output Fa_2 are reported in the tables.

With regard to double projecting shafts, each end can sustain a radial load which equals 3/5 of the values listed in the table, on condition that they act in the same direction and have the same intensity.

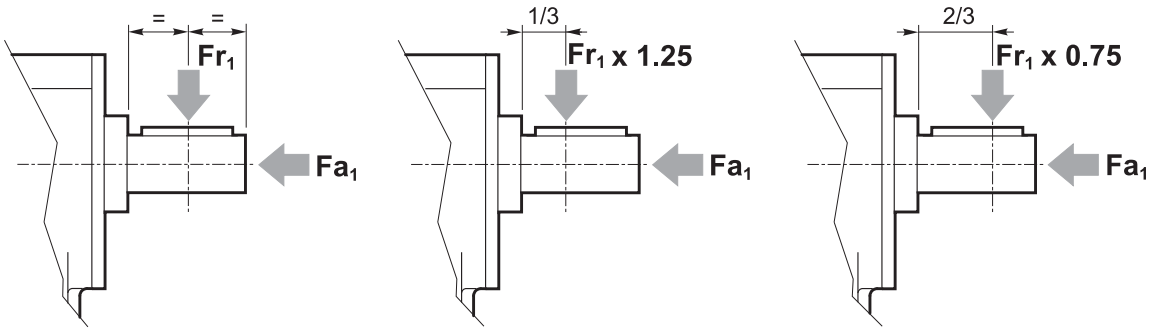
1.10 Radial load

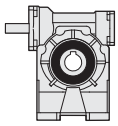
Antriebsorgane, die mit der Antriebs- oder Abtriebswelle verbunden werden, bewirken Radialbelastungen (Fr_1 und Fr_2 beziehungsweise).
Die in der Tabelle nach Antriebs-und Abtriebsdrehzahl angegebenen Werte beziehen sich auf Belastungen, die in der Mitte der herausragenden Welle wirken; falls die Belastung auf 1/3 der Länge wirkt, sollten die in der Tabelle angegebenen Werte um 25% erhöht werden; falls sie auf 2/3 der Länge wirkt, sollten die Werte der Tabelle um 25% reduziert werden.
Die Werte der anwendbaren Axialbelastungen (Fa_1 am Antrieb und Fa_2 am Abtrieb) werden in den Tabellen angegeben.
Bei doppelseitig herausragenden Wellen darf die Radialbelastung auf jedes Ende 3/5 der nachstehenden Werte betragen, unter der Bedingung dass Stärke und Richtung gleich sind.

Carichi radiali Fr_1 e assiali Fa_1 sull'albero entrata [N]

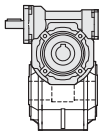
Fr_1 radial loads and Fa_1 axial loads on the input shaft *[N]*

Fr_1 Radialbelastungen und Fa_1 Axialbelastungen auf die Antriebswelle [N]





n_1 [min^{-1}]	30		40		50		63		75	
	Fr_1	Fa_1	Fr_1	Fa_1	Fr_1	Fa_1	Fr_1	Fa_1	Fr_1	Fa_1
1400	100	20	220	44	400	80	480	96	750	150

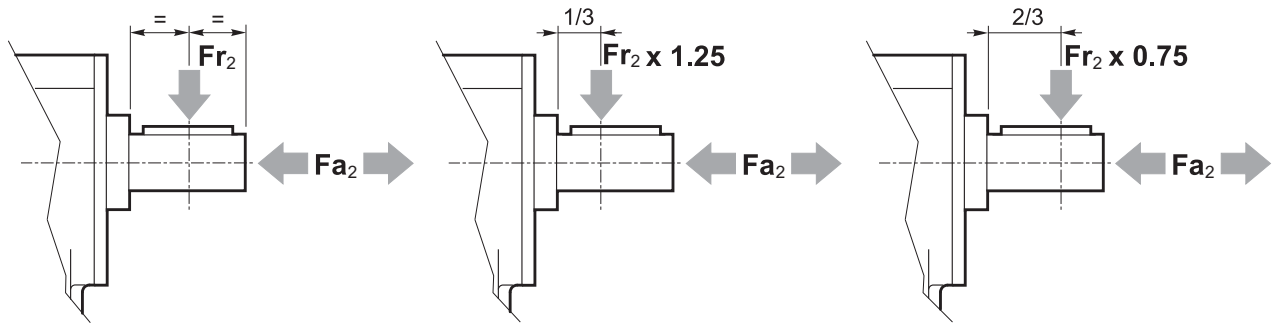


n_1 [min^{-1}]	30/30 30/40 30/50 30/63		40/63 40/75		50/75	
	Fr_1	Fa_1	Fr_1	Fa_1	Fr_1	Fa_1
1400	100	20	220	44	400	80

Carichi radiali Fr_2 e assiali Fa_2 sull'albero uscita [N]

Fr_2 radial loads and Fa_2 axial loads on the output shaft *[N]*

Fr_2 Radialbelastungen und Fa_2 Axialbelastungen auf die Abtriebswelle [N]



CUSCINETTI RADIALI A SFERE / *RADIAL BALL BEARINGS* / SCHRÄGKUGELLAGER												
n_1 [min^{-1}]	i_n	n_2 [min^{-1}]	30		40		50		63		75	
			30/30		30/40		30/50		30/63 40/63		40/75 50/75	
			Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
1400	7.5	187	750	150	1000	200	1300	260	1500	300	2000	400
	10	140	800	160	1100	220	1450	290	1700	340	2250	450
	15	93	850	170	1200	240	1600	320	1900	380	2500	500
	20	70	900	180	1300	260	1750	350	2100	420	2750	550
	25	56	950	190	1400	280	1900	380	2300	460	3000	600
	30	47	1000	200	1500	300	2050	410	2500	500	3250	650
	40	35	1050	210	1600	320	2200	440	2700	540	3500	700
	50	28	1100	220	1700	340	2350	470	2900	580	3750	750
	60	23	1150	230	1800	360	2500	500	3100	620	4000	800
	65	22	1200	240	1900	380	2650	530	3300	660	4250	850
	80	18	1250	250	2000	400	2800	560	3500	700	4500	900
	100	14	1300	260	2100	420	2950	590	3700	740	4750	950
	120	12	1350	270	2200	440	3100	620	3900	780	5000	1000
	150	9.3	1400	280	2300	460	3250	650	4100	820	5250	1050
	160	8.8	1450	290	2400	480	3400	680	4300	860	5500	1100
	≥ 200	≤ 7.0	1500	300	2500	500	3550	710	4500	900	5750	1150

Versioni rinforzate

A richiesta vengono fornite versioni rinforzate con cuscinetti a rulli conici sulla corona in grado di sopportare carichi superiori rispetto a quelli ammessi nelle versioni normali con cuscinetti radiali a sfere.
Essendo tali valori calcolati in funzione della durata dei cuscinetti, occorre valutare attentamente il tipo di versione più idoneo in modo da evitare problemi di tipo strutturale. In particolare, il carico assiale deve agire in modo da comprimere la flangia uscita.
I carichi assiali e radiali riportati in tabella non possono agire contemporaneamente nei loro valori massimi.

Nel caso di eventuale concorrenza delle due forze, queste devono essere limitate in rapporto al tipo di carico prevalente:

1. condizione di prevalenza del carico radiale:

Fr_2 = come a tabella
Fa_2 = Fr_2 · 0.37

Reinforced versions

The versions reinforced with tapered roller bearings on the worm wheel are available on request. They can bear higher loads compared to standard versions with radial ball bearings.
These values are calculated in relation of the life of bearings therefore it is necessary to select the most suitable version in order to avoid any structural problem.
In particular the axial load must compress the output flange.

The axial and radial loads shown in the table do not have to act simultaneously according to the max. values.

In case of concurrency of both forces these have to be reduced with regard to the prevailing type of load:

1. prevalence of radial load:

Fr_2 *= as per table*
Fa_2 = Fr_2 · 0.37

Versionen mit Kegelrollenrager

Auf Wunsch können Versionen mit Kegelrollenlager auf dem Schneckenrad geliefert werden. Sie erlauben höhere Lasten in Vergleich zu den Standardprodukten mit Schrägkugellagern.
Diese Werte sind entsprechend der Lebensdauer der Lager berechnet. Daher ist es erforderlich, die am besten passende Ausführung zu wählen, um Probleme zu vermeiden. Bei Verwendung eines Abtriebsflansches muß die Axilkraft diesen auf das Getriebegehäuse pressen.
Die in der Tabelle angegebenen Maximalwerte der Axial - und Radialbelastung sollten nicht gleichzeitig auftreten.

Falls Axial-und Radialbelastungen auftreten, sollte jene Belastungsrichtung zur Auswahl herangezogen werden, die vom Anteil überwiegt:

1. Radialbelastungen überwiegen:

Fr_2 = siehe Tabelle
Fa_2 = Fr_2 · 0.37

2. condizione di prevalenza del carico assiale:

$Fa_2' = Fa_2 \cdot 0.6$
$Fr_2' = Fa_2 \cdot 0.4$

2. prevalence of axial load:

$Fa_2' = Fa_2 \cdot 0.6$
$Fr_2' = Fa_2 \cdot 0.4$

2. Axialbelastungen überwiegen

$Fa_2' = Fa_2 \cdot 0.6$
$Fr_2' = Fa_2 \cdot 0.4$

CUSCINETTI A RULLI CONICI / *TAPERED ROLLER BEARINGS* / KEGELROLLENLAGER											
n_1 [min^{-1}]	n_2 [min^{-1}]	30		40		50		63		75	
		30/30		30/40		30/50		30/63 40/63		40/75 50/75	
		Solo serie S-SC / *Only S-SC series* / Nur S-SC Serien									
		Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
1400	187	900	1200	1900	2400	4500	5500	4500	5500	5300	6500
	140	1000	1300	2000	2500	5000	6000	5000	6000	5500	6700
	93	1100	1400	2100	2600	5800	7000	5800	7000	5700	6900
	70	1250	1650	2300	2800	6000	7200	6100	7300	6400	7600
	56	1450	1900	2500	3000	6200	7500	6500	7700	7400	9400
	47	1700	2200	2800	3300	6500	7800	6800	8000	8000	10000
	35	1800	2300	3000	3500	6600	8000	7000	8200	8500	10500
	28	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	23	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	22	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	18	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	14	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	12	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	9.3	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	8.8	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
	≤ 7.0	1900	2400	3200	3700	6800	8200	7100	8400	9000	11000
Cuscinetto ***Bearing*** **Lager**		**32005** 25x47x15		**32006** 30x55x17		**32008** 40x68x19		**32008** 40x68x19		**32010** 50x80x20	

1.11 Potenza termica

Nelle tabelle riportate nelle sezioni relative ad ogni tipologia di riduttore sono indicati i valori della potenza termica nominale P_{t0} [kW]. Tale valore rappresenta la potenza massima applicabile all'entrata del riduttore, in servizio continuo a temperatura massima ambiente di 30°C, così che la temperatura dell'olio non oltrepassi il valore di 95°C.

Il valore di P_{to} non deve essere preso in considerazione se il funzionamento è continuo per un massimo di 1.5 ore seguito da pause di durata sufficiente (circa 1 - 2 ore) a ristabilire nel riduttore la temperatura ambiente.
I valori di P_{to} devono essere corretti tramite i seguenti coefficienti, così da considerare le reali condizioni di funzionamento, ottenendo i valori di potenza termica corretta P_{tc}.

1.11 Thermal power

The sections dedicated to each type of gearbox contain tables reporting the values of P_{t0} rated thermal power (kW). Listed values represent the max. power applicable at gearbox input, on continuous duty and at an ambient temperature of max. 30°C, so that oil temperature does not exceed 95°C.

P_{t0} value is not to be taken into account *if duty is continuous for max. 1.5 hours and followed by breaks which are long enough to bring the gearbox back to ambient temperature (roughly 1 - 2 hours).*
In order to take the actual operating conditions into account, P_{t0} values have to be corrected with the following coefficients, thus obtaining the values of P_{tc} corrected thermal power.

1.11 Thermische Leistung

Für jeden Getriebetyp werden in den technischen Daten die Nennwerte der thermischen Leistung P_{t0} angegeben [kW]. Diese Werte entsprechen der max. übertragbaren Antriebsleistung des Getriebes in Dauerbetrieb mit einer max. von 30°C, sodass die Öltemperatur unter 95°C bleibt.

Der P_{t0} ist nicht kritisch, falls der Dauerbetrieb max. 1,5 Stunden dauert und von Unterbrechungen gefolgt wird, die lang genug sind, dass Getriebe auf Umgebungstemperatur abkühlen zu lassen (ungefähr 1 - 2 Stunden).
Die P_{t0} Werte sollen durch die folgenden Koeffizienten verbessert werden, damit die reellen Betriebsbedingungen wirklich in Betracht.gezogen werden.
Mit der folgenden Formel erhält man die Werte der korrigierten termischen Leistung P_{tc}.

$$P_{tc} = P_{t0} \cdot ft \cdot fv \cdot fu \quad [kW]$$

Dove:
ft = coefficiente di temperatura
fv = coefficiente di ventilazione
fu = coefficiente di utilizzo

Where:
ft = temperature coefficient
fv =ventilation coefficient
fu = utilization coefficient

Dabei ist:
ft = Temperaturkoeffizient
fv = Luftkühlungskoeffizient
fu = Anwendungskoeffizient

I coefficienti di correzione sono ricavabili dalle seguenti tabelle:

Corrective coefficients are shown in the following tables:

Die Verbesserungskoeffizienten sind aus der nachstehenden Tabelle zu entnehmen:

Ta (°C)	0	5	10	15	20	25	30	35	40	45	50
ft	1.46	1.38	1.31	1.23	1.15	1.1	1.0	0.92	0.85	0.77	0.69

Ta = Temperatura ambiente (°C)

fv = 1.45 con ventilazione forzata efficace con ventola dedicata
fv = 1.25 con ventilazione forzata secondaria ad altri dispositivi (pulegge, ventole, motore, ecc.)
fv = 1 refrigerazione naturale (situazione standard)
fv = 0.5 in ambiente chiuso e ristretto (carter)

Ta = ambient temperature (°C)

fv = 1.45 for forced ventilation with specific fan
fv = 1.25 for forced ventilation secondary to other devices (pulleys, fans, motor, etc.)
fv = 1 for natural cooling (standard situation)
fv = 0.5 in a close and narrow environment (case)

Ta = Umgebungstemperatur (°C)

fv = 1.45 bei Drucklüftung mit spezifischem Lüfterrad
fv = 1.25 bei Drucklüftung nebensächlich anderen Vorrichtungen (Scheiben, Lüfterräder, Motor, usw.)
fv = 1 natürliche Belüftung (Standard)

fv = 0.5 in engem und geschlossenem Raum (gehäuse)

Dt (min)	10	20	30	40	50	60
fu	1.6	1.35	1.2	1.1	1.05	1

Dt = minuti di funzionamento in un'ora

Dt = minutes of operation per hour

Dt = Betriebsminuten pro Stunde

1.12 Selezione

Scelta del riduttore

A) n_1 = 1400, 2800, 900, 500 min-^{1}
Si sceglierà nelle tabelle delle prestazioni dei riduttori un gruppo che in corrispondenza di un rapporto prossimo a quello calcolato ammetta una potenza:

1.12 Selection

Selecting a gearbox

A) n_1 = 1400, 2800, 900, 500 min-^{1}
Consult the gearbox unit efficiency table; select a group whose ratio is close to the calculated ratio and which permits power:

1.12 Wahl

Wahl des Getriebes

A) n_1 = 1400, 2800, 900, 500 min-^{1}
Aus der Leistungstabellen ist eine Gruppe von Getrieben zu wählen, deren Untersetzungsverhältnis nahe zu dem berechneten Wert ist und die die folgende Leistung erlaubt:

$$P \geq P' \cdot FS'$$

Scelta del motoriduttore

B) FS =1
Si cercherà nelle tabelle delle prestazioni dei motoriduttori un gruppo la cui potenza P1 corrisponda alla P' calcolata.

C) FS ≠1
La scelta dovrà essere effettuata come al punto **A)** verificando che la grandezza del motore da installare sia compatibile con quelle ammesse dal riduttore (IEC); ovviamente la potenza installata dovrà corrispondere al valore P' richiesto.

Determinato il riduttore idoneo è necessario verificare che anche gli eventuali carichi aggiuntivi (radiali ed assiali) agenti sugli alberi in uscita e/o entrata rientrino nei valori ammissibili dati a catalogo.
In determinate condizioni applicative può diventare necessario verificare che la potenza assorbita dal riduttore non superi quella del limite termico riportata a catalogo, secondo quanto riportato al punto 1.10 relativamente alla potenza termica.

Selecting a gearmotor

B) FS =1
Consult the gear motor efficiency table and select a group having power P1 corresponding to calculated P'.

C) FS ≠1
Follow the instructions at point **A)***, checking that the size of the motor to be installed is compatible with the gearbox unit (IEC); obviously, installed power must correspond to the required P' value.*

After having selected the proper gearbox, it is necessary to check out that possible additional loads (radial or axial) on the input and /or output shafts fall within the values reported in the catalogue.
Depending on the application, it might be necessary to check that the power absorbed by the gearbox does not exceed the thermal power limit reported in the catalogue as per paragraph 1.10.

Wahl des Getriebemotors

B) FS =1
Wählen Sie aus der Leistungstabelle der motoren eine Gruppe, deren Leistung P1 der berechneten Leistung P' entspricht.

C) FS ≠1
Folgen Sie den Weisungen unter **A)**. Es ist zu prüfen, ob die Größe des zu installierenden Motor mit dem Getriebe kompatibel ist (IEC); die installierte Leistung Leistung sollte dem erforderlichen P' Wert entsprechen.

Nachdem das geeignete Getriebe gewählt worden ist, muss sichergestellt werden, dass zusätzliche Radial-oder Axialbelastungen auf die Antriebs-oder Abtriebswelle unter denen im Katalog gegebenen Werten liegen.
Abhängig von der Art der Anwendung ist es manchmal zu prüfen, dass die vom Getriebe absorbierte Leistung unter dem Wert der thermischen Leistung liegt, wie im Katalog im Abschnitt 1.10 beschrieben.

1.13 Lubrificazione

Tutti i riduttori sono forniti completi di lubrificante sintetico a base PAG con indice di viscosità ISO VG320.

I cuscinetti dell'albero veloce vengono sempre lubrificati con grasso a base sintetica; altri cuscinetti vengono lubrificati solo se la posizione di montaggio non ne garantisce la corretta lubrificazione.

Una scelta oculata del tipo di lubrificante, in funzione delle condizioni operative e ambientali, consente ai riduttori di raggiungere le prestazioni ottimali.

Le prestazioni dei riduttori indicate nelle tabelle dei dati tecnici sono state calcolate considerando l'impiego di olio sintetico.

VISCOSITA'
E'uno dei parametri più importanti da considerare nella scelta di un olio ed è influenzabile da diversi parametri quali velocità, temperatura. Riportiamo sinteticamente le valutazioni generali per la scelta della giusta viscosità:

Viscosità alta
Usare per basse velocità di rotazione e/o temperature alte.
(Una viscosità troppo bassa in queste condizioni operative causa una usura precoce).

Viscosità bassa
Usare per alte velocità di rotazione e/o temperature basse.
(Una viscosità troppo elevata provoca diminuzione del rendimento e surriscaldamento).

ADDITIVI
In tutti gli oli minerali sono contenuti degli additivi antiusura, EP (più o meno energici), antiossidanti ed antischiuma. E' opportuno assicurarsi che essi siano blandi e non agressivi nei confronti delle guarnizioni.

BASE DELL'OLIO
Può essere minerale o sintetica.
L' olio sintetico, compensa il costo più elevato con una serie di vantaggi:

a) minor coefficiente d'attrito (quindi migliore rendimento)

b) migliore stabilità nel tempo (possibile lubrificazione a vita)

c) migliore indice di viscosità (migliore la adattabilità alle varie temperature).

L' olio a base minerale come vantaggi ha il minore costo e un migliore comportamento in rodaggio.

1.13 Lubrication

All worm gearboxes are supplied with synthetic lubricant, PAG base, viscosity index ISO VG 320.

The bearings mounted on the input shaft are supplied with grease, synthetic base; the other bearings are lubricated only if the mounting position does not assure a correct lubrication.

Choose the lubricant according to operating and ambient conditions in order to ensure high gear unit performance.

Performance data, as shown in the specifications tables, refer to utilization of synthetic oil.

VISCOSITY
It is one of the most important parameters to be considered when selecting an oil; it depends on various factors such as speed and temperature. Following are general guidelines for choosing the correct viscosity:

High viscosity
To be used for low rotation speed and/or high temperatures.
(Under these operating conditions a low viscosity causes premature wear).

Low viscosity
To be used for high rotation speed and/or low temperatures.
(High viscosity reduces efficiency and causes overheating).

ADDITIVES
All mineral oils contain additives to protect against wear, EP (more or less strong), anti-oxidizing and anti-frothing. It is advisable to make sure that the action of such additives is bland and not too aggressive on the seals.

OIL BASE
May be mineral or synthetic.
Synthetic oil compensates for the higher cost with a series of advantages:

a) lower friction coefficient (consequently improved efficiency)

b) better stability over time (possible life lubrication)

c) better viscosity index (more adaptable to various temperatures).

Mineral-base oils offer the advantages of costing less and performing better during the running-in period.

1.13 Schmierung

Alle Schneckenradgetriebe, werden mit synthetischem Schmiermittel auf PAG Basis und Viskosität Index ISO VG 320 geliefert.
Die Kugellager auf der Eingangswelle werden immer mit synthetischem Fett geliefert. Falls durch die Einbaulage keine korrekte Schmierung der restlichen Kugellager gewährleistet ist, werden auch diese mit Fett versehen.
Das Untersetzungsgetriebe wird optimal arbeiten, wenn das richtige Schmiermittel je nach Betriebs- und Umgebungsbedingungen sorgfältig ausgewählt wird.

Die Daten über die Getriebeleistung in den Tabellen „Technische Daten", beziehen sich auf Schmierung mit synthetischem Öl.

VISKOSITÄT
Die Viskosität ist eins der wichtigsten Merkmale, die bei der Auswahl des richtigen Öls zu beachten sind; sie wird von verschiedenen Parametern wie Geschwindigkeit und Temperatur beeinflus st. Im folgenden fassen wir die wichtigsten allgemeinen Hinweise für die Wahl der richtigen Viskosität zusammen:

Hohe Viskosität
Geeignet für niedrige Drehzahlen bzw. hohe Temperaturen. (Eine zu geringe Viskosität verursacht unter diesen Betriebsbedingungen frühzeitigen Verschleiß).

Geringe Viskosität
Geeignet für hohe Drehzahlen bzw niedrige Temperaturen.
(Eine zu geringe Viskosität führt in diesem Fall zu einer Verringerung des Wirkungsgrades und zur Überhitzung).

ZUSÄTZE
Alle Mineralöle enthalten Antiverschleißzusätze, EP (mehr oder weniger stark), Oxydationsschutzmittel und Wirkstoffe zur Schaumverhinderung. Es sollte sichergestellt werden, daß diese Zusätze schwach sind und die Dichtungen nicht angreifen.

ÖLGRUNDLAGE
Es kann sich dabei um Mineralöl oder synthetisches Öl handeln.
Synthetisches Öl ist zwar teurer, bietet jedoch eine Reihe von Vorteilen:

a) geringerer Reibungskoeffizient (demnach besserer Wirkungsgrad)

b) bessere Stabilität über lange Zeit (lebenslange Schmierung möglich)

c) besserer Viskositätsindex (paßt sich besser an verschiedene Temperaturen an).

Die Vorteile von Mineralöl sind die geringeren Kosten und das bessere Einfahrverhalten.

ISO VG			OLIO MINERALE / *MINERAL OIL* MINERALÖL			OLIO SINTETICO / *SYNTHETIC OIL* SYNTETISCHES ÖL			
			460	320	220	460	320	220	150
Temperatura ambiente *Amb.Temp. Tc (°C)* Umgebungstemperatur			5° a 45°	0° a 40°	-5° a 100°	-15° a 100°	-15 a 90°	-25° a 80°	-30° a 70°
FORNITORE / *MANUFACTURER* / HERSTELLER	MINERALE / *MINERAL* / MINERAL		MINERALE / *MINERAL* / MINERAL						
		SHELL	Omala S2 G 460	Omala S2 G 320	Omala S2 G 220				
		BP	Energol GRXP 460	Energol GRXP 320	Energol GRXP 220				
		TEXACO	Meropa 460	Meropa 320	Meropa 220				
		CASTROL	Alpha SP 460	Alpha SP 320	Alpha SP 220				
		KLUBER	Lamora 460	Lamora 320	Lamora 220				
		MOBIL	Mobilgear 634	Mobilgear 632	Mobilgear 630				
	PAG		Tecnologia PAG (polialcoliglicoli) / *PAG Tecnology (polyalkyleneglycol)* / PAG (Polyalkylglikole)						
		SHELL				Omala S4 WE 460	Omala S4 WE 320	Omala S4 WE 220	Omala S4 WE 150
		BP				Energol SGXP460	Energol SGXP320	Energol SGXP220	Enersyn SG 150
		TEXACO				Synlube CLP 460	Synlube CLP 320	Synlube CLP 220	
		AGIP					Agip Blasia S 320	Agip Blasia S 220	Agip Blasia S 150
	PAO		Tecnologia PAO (polialcoliolifini) / *PAO Tecnology (polialphaolefin)* / PAO (Polyalphaolefine)						
		SHELL				Omala S4 GX 460	Omala S4 GX 320	Omala S4 GX 220	Omala S4 GX 150
		CASTROL				Alpha Synt 460	Alpha Synt 320	Alpha Synt 220	Alpha Synt 150
		KLUBER				Synteso D460 EP	Synteso D320 EP	Synteso D220 EP	Synteso D150 EP
		MOBIL				SHC 634	SHC 632	SHC 630	SHC 629

1.14 Installazione

Fissare il riduttore in modo tale da evitare qualsiasi vibrazione e curare l'allineamento del riduttore con il motore e l'utenza utilizzando, quando è possibile, giunti di accoppiamento.
Assicurarsi che gli organi da montare sui riduttori abbiano le tolleranze ISO h6 per gli alberi e ISO H7 per i fori.
Per tutte le altre avvertenze consultare il manuale di "uso e manutenzione" scaricabile dal sito www.tramec.it

1.14 Installation

Mount the gearbox in such a way that any vibrations are prevented. Check carefully the allignment gearbox / motor / machine and use couplings whenever possible. Check that devices to be mounted on the gearbox feature ISO h6 tolerance for the shafts and ISO H7 for the holes.
For all other instructions check the "Use and Maintenance Manual" which can be downloaded from our web site www.tramec.it

1.14 Installation

Das Getriebe ist so zu installieren, dass allerart Schwingungen vorbeugt wird. Besonders auf die Fluchtung von Getriebe, Motor und Maschine ist zu achten - falls möglich sollten Kupplungen eingesetzt werden. Die auf dem Getriebe montierten Elemente sollen die folgende Toleranz aufweisen: ISO h6 für die Wellen und ISO h7 für die Bohrungen.
Für weitere Informationen laden Sie sich bitte unsere
„Instructions manual" auf unserer Webseite „www.tlsriduttori.it/products/" herunter.

1.15 Manutenzione

Tutti i riduttori a vite senza fine sono lubrificati a vita con olio sintetico tipo SHELL TIVELA OIL S 320.
Non necessitano quindi di particolari manutenzioni se non il mantenimento della pulizia esterna, evitando l'uso di solventi per non danneggiare guarnizioni o anelli di tenuta, ed il rispetto di tutte le indicazioni e della eventuale sostituzione dell'olio negli intervalli programmati e riportati nel manuale di "uso e manutenzione" scaricabile dal sito www.tramec.it.

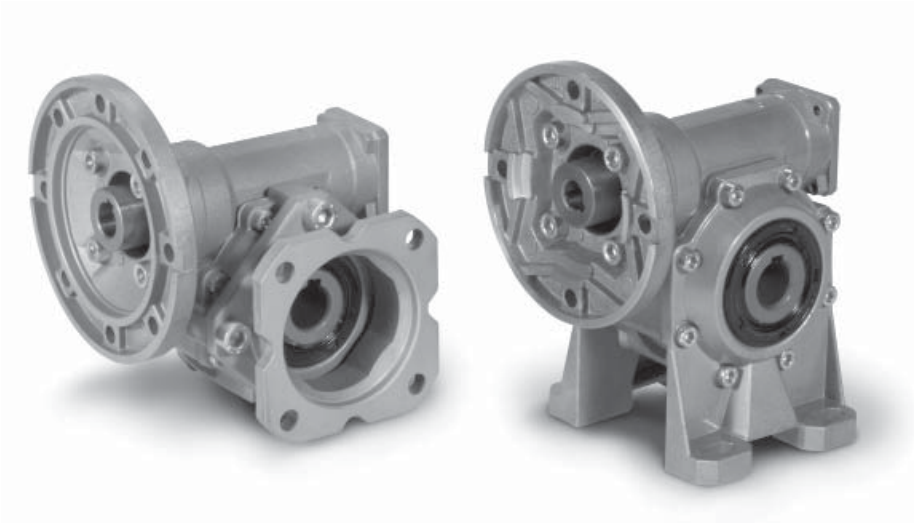
1.15 Maintenance

All worm gearboxes are lubricated for life with synthetic oil SHELL TIVELA OIL S 320.
For this reason they do not require any particular maintenance, except for external cleaning (avoid the use of solvents which might damage gaskets and oil seals) and observance of the schedules for oil change as reported in the "Use and Maintenance Manual" which can be downloaded from our web site www.tramec.it.

1.15 Wartung

Alle Schneckengetriebe sind mit synthetischem Öl „SHELL TIVELA OIL S 320" „lebenslang" geschmiert, deshalb benötigen sie keine Wartung ausser äüßerlicher Reinigung. Bitte befolgen Sie die Zeitabstände für Ölwechsel, wie es in der "Instructions manual" auf unserer Webseite www.tlsriduttori.it/products/ angegeben wird. Bei der Aussenreinigung benutzen Sie bitte keine Lösemittel, weil diese die Dichtungen beschädigen.

2 RIDUTTORI A VITE SENZA FINE SFK-SRK / *SFK-SRK WORM GEARBOXES* / SCHNECKENGETRIEBE SFK-SRK



01/2012

2.1 Caratteristiche

I riduttori della serie a vite senza fine SFK - SRK si presentano estremamente leggeri grazie alla forma compatta e la carcassa realizzata in alluminio pressofuso. La serie presenta una svariata possibilità di versioni, con e senza piedi e con numerosi accessori che la rendono più versatile nell'impiego delle più svariate tipologie di applicazioni.
La vite senza fine è in acciaio legato cementato-temprato ed è rettificata. La corona ha mozzo in ghisa con riporto di fusione in bronzo.

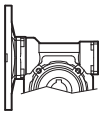
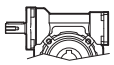
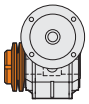
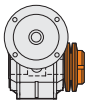
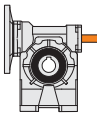
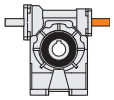
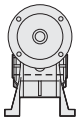
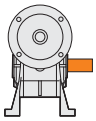
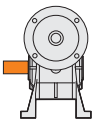
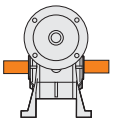
2.1 Characteristics

The SFK - SRK worm gearboxes are extremely light thanks to the compact shape of the housing made of cast aluminum. This series features a wide range of versions, with and without feet, with numerous accessories which make it extremely versatile for utilization in various applications.
The worm shaft is ground and is made of hardened-casehardened compound steel.
The worm wheel features a cast iron hub with bronze casting.

2.1 Merkmale

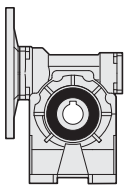
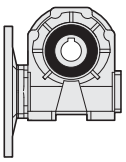
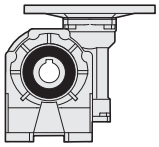
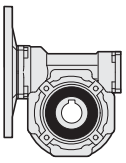
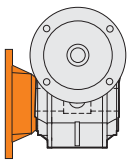
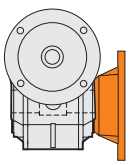
Die Schneckengetriebe der SFK - SRK Serie sind äußerst leicht dank der kompakten Form des Gehauses aus Aluminiumguss. Die Serie bietet verschiedene Versionen mit und ohne Füße sowie zahlreiche Zubehörteile an, was zur vielseitigen Anwendbarkeit der Getriebe in vielerlei Applikationen dient.
Die Schneckenwelle ist aus legierten gehärteten Einsatzstahl und ist geschliffen. Der Zahnkranz verfügt über eine Nabe aus Gusseisen mit Schmelzeneinsatz aus Bronze.

2.2 Designazione / *2.2 Designation* / 2.2 Bezeichnung

Riduttore *Gearbox* Getriebe	Grandezza *Size* Größe	Versione *Version* Ausführung	Rapporto rid. *Ratio* Untersetzung	Predispos.att. mot. *Motor coupling* Motoranschluss	Posizione di mont. *Mounting position* Einbaulage	Limitatore di coppia. *Torque limiter* Drehmoment-begrenzer	Seconda entrata *Additional input* Zusatzantrieb	Albero uscita *Output shaft* Abtriebswelle	Braccio di reazione *Torque arm* Drehmomentstütze
SFK	**50**	**FS**	**10**	**80 B14**	**B3**	**LD**	**SeA**	**H**	**BR2**
 **SFK**  **SRK**	30 40 50 63 75	A B V P F...S F...D	7.5 10 15 20 25 30 40 50 65 80 100	56 ÷ 112 B5 56 ÷ 112 B14	B3 B6 B7 B8 V5 V6	 LS  LD	  SeA	 H  SD  SS  DD	 BR1  BR2

Versioni / ***Versions*** / **Ausführungen**

SFK..A_ SRK..A_ | SFK..B_ SRK..B_ | SFK..V_ SRK..V_ | SFK..P_ SRK..P_ | SFK..F_S SRK..F_S | SFK..F_D SRK..F_D

Specificare sempre in fase di ordinazione la versione.

Specify the version when ordering.

Bei der Bestellung immer die Bauform angeben.

2.3 Lubrificazione

Riduttori a vite senza fine SFK - SRK sono forniti tutti e sempre completi di lubrificante sintetico a base PAG con classe di viscosità ISO 320.
Nei corpi in alluminio 30, 40, 50, 63, 75 è presente un solo tappo di riempimento olio.

2.3 Lubrication

SFK - SRK worm gearboxes are supplied with PAG synthetic lubricant featuring an ISO 320 viscosity class.
Aluminium housings size 30, 40, 50, 63 and 75 have one filling plug only.

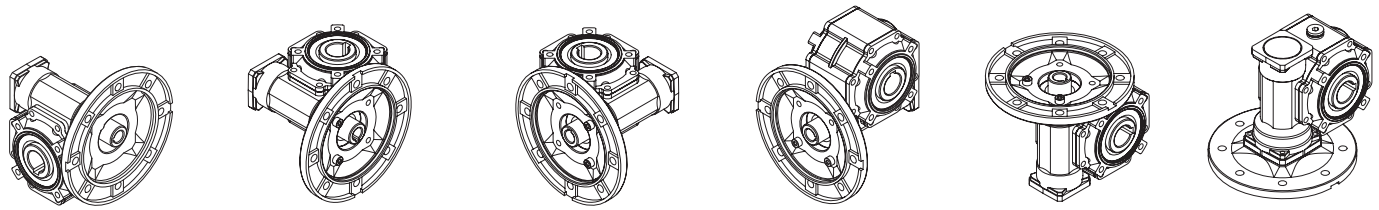
2.3 Schmierung

SFK - SRK Schneckengetriebe werden mit PAG synthetischen Schmierstoff Viskositätsklasse ISO 320 geliefert.
Gehäuse aus Alumiunium Größe 30, 40, 50, 63 und 75 verfügen nur über eine Einfüllschraube.

Quantità di lubrificante (litri) / *Lubricant quantity (liters)* / Schmiermittelmenge (Liter)

SFK SRK	B3	B6-B7	B8	V5-V6
30	0.015			
40	0.040			
50	0.080			
63	0.160			
75	0.260			

Posizioni di montaggio / *Mounting positions* / Bezeichnung

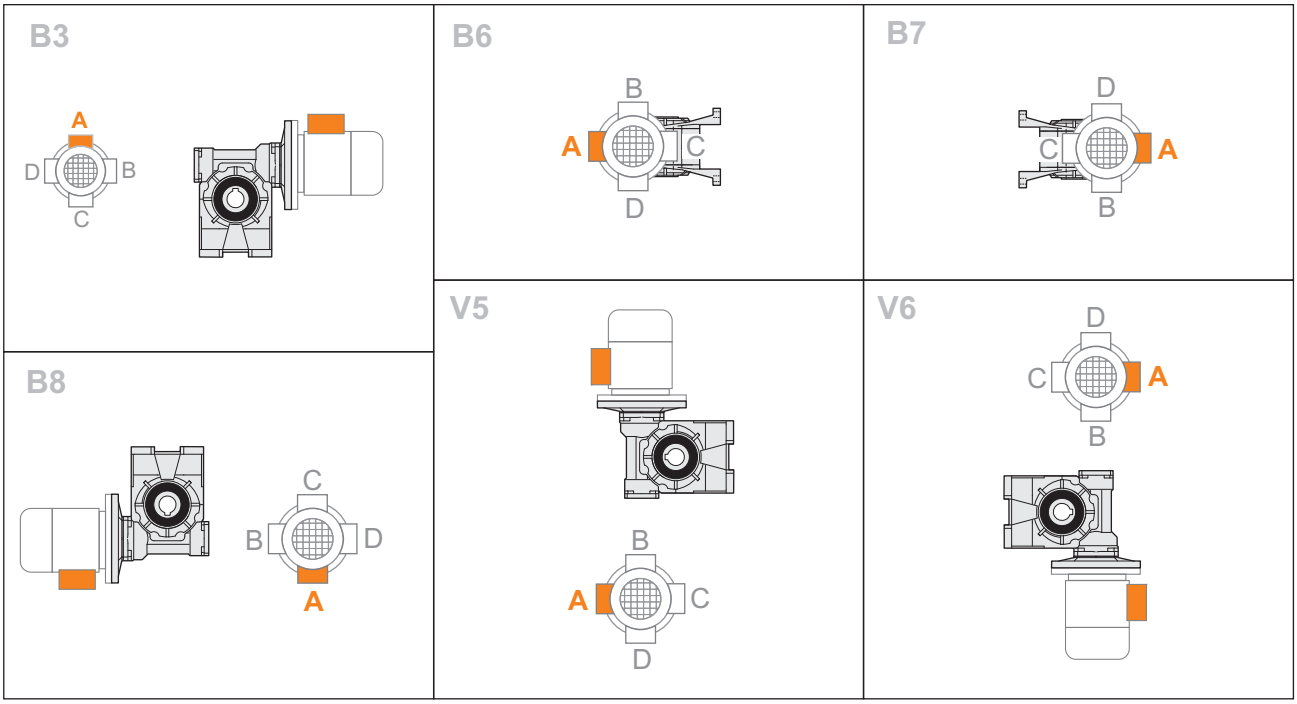


B3 B6 B7 B8 V5 V6

2.4 Posizione morsettiera

2.4 Terminal board position

2.4 Lage des Klemmkasten



2.5 **Dati tecnici** *2.5 Technical data* 2.5 **Technische Daten**

	n_1 = 2800		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	373	8	0.37	2.0	63 56		16	0.72	0.86	—
	10	280	11	0.37	1.5			16	0.56	0.84	—
	15	187	15	0.37	1.1			17	0.41	0.81	—
	20	140	13	0.25	1.2			15	0.29	0.76	—
	25	112	16	0.25	1.0			16	0.25	0.74	—
	30	93	13	0.18	1.0			13	0.18	0.71	—
Kg	40	70	16	0.18	1.0			16	0.18	0.65	—
	50	56	14	0.13	1.1			15	0.14	0.62	—
1.2	65	43	17	0.13	1.0	56		17	0.13	0.57	—
	80	35	13	0.09	1.0			13	0.09	0.54	—
	100	28	16	0.09	0.8			12	0.07	0.52	—

	n_1 = 1400		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	187	9	0.22	2.2	63 56		21	0.49	0.84	0.40
	10	140	12	0.22	1.8			22	0.40	0.82	0.40
	15	93	17	0.22	1.3			22	0.28	0.77	0.30
	20	70	18	0.18	1.1			19	0.19	0.72	0.20
	25	56	15	0.13	1.1			21	0.18	0.69	0.20
	30	47	18	0.13	1.4			20	0.15	0.66	0.20
Kg	40	35	14	0.09	1.4			21	0.13	0.59	0.20
	50	28	17	0.09	1.1			19	0.10	0.55	0.20
1.2	65	22	14	0.06	1.3	56		20	0.09	0.51	0.10
	80	18	16	0.06	1.1			17	0.06	0.48	0.10
	100	14	18	0.06	0.8			14	0.05	0.45	0.10

	n_1 = 900		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	120	9	0.13	2.9	63 56		25	0.38	0.82	—
	10	90	11	0.13	2.3			25	0.30	0.80	—
	15	60	15	0.13	1.6			25	0.21	0.75	—
	20	45	19	0.13	1.2			22	0.15	0.69	—
	25	36	23	0.13	1.1			24	0.14	0.66	—
	30	30	18	0.09	1.2			21	0.10	0.63	—
Kg	40	23	21	0.09	1.1			24	0.10	0.55	—
	50	18	16	0.06	1.3			21	0.08	0.52	—
1.2	65	14	20	0.06	1.1	56		22	0.07	0.48	—
	80	11	11	0.03	1.7			19	0.05	0.44	—
	100	9	13	0.03	1.1			15	0.03	0.42	—

	n_1 = 500		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	67	—	—	—	63 56		31	0.27	0.80	—
	10	50	—	—	—			31	0.21	0.77	—
	15	33	—	—	—			31	0.15	0.72	—
	20	25	—	—	—			26	0.10	0.66	—
	25	20	—	—	—			27	0.09	0.62	—
	30	17	—	—	—			25	0.07	0.59	—
Kg	40	13	—	—	—			28	0.07	0.51	—
	50	10	—	—	—			25	0.06	0.48	—
1.2	65	8	—	—	—	56		25	0.05	0.43	—
	80	6	—	—	—			20	0.03	0.40	—
	100	5	—	—	—			16	0.02	0.38	—

2.5 Dati tecnici

2.5 Technical data

2.5 Technische Daten

40	n_1 = 2800		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	17	**0.75**	1.8	71 / 63		**30**	1.3	0.87	—
	10	280	22	**0.75**	1.4			**31**	1.1	0.86	—
	15	187	32	**0.75**	1.0			**32**	0.76	0.82	—
	20	140	30	**0.55**	1.0			**31**	0.57	0.80	—
	25	112	24	**0.37**	1.1			**27**	0.41	0.76	—
	30	93	28	**0.37**	1.3			**35**	0.47	0.73	—
Kg 2.0	**40**	70	24	**0.25**	1.4			**33**	0.35	0.70	—
	50	56	28	**0.25**	1.1	63 / 56		**30**	0.27	0.65	—
	65	43	24	**0.18**	1.2			**28**	0.21	0.61	—
	80	35	21	**0.13**	1.3			**26**	0.16	0.58	—
	100	28	24	**0.13**	1.0			**25**	0.13	0.55	—

40	n_1 = 1400		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	24	**0.55**	1.7	71 / 63		**40**	0.92	0.85	0.80
	10	140	31	**0.55**	1.3			**41**	0.73	0.83	0.70
	15	93	30	**0.37**	1.4			**42**	0.52	0.79	0.50
	20	70	38	**0.37**	1.0			**40**	0.39	0.76	0.50
	25	56	31	**0.25**	1.1			**35**	0.29	0.72	0.40
	30	47	35	**0.25**	1.3			**41**	0.29	0.68	0.40
Kg 2.0	**40**	35	38	**0.22**	1.1			**38**	0.22	0.64	0.30
	50	28	36	**0.18**	1.0	63 / 56		**38**	0.19	0.59	0.30
	65	22	31	**0.13**	1.1			**35**	0.15	0.54	0.20
	80	18	31	**0.11**	1.1			**33**	0.12	0.52	0.20
	100	14	30	**0.09**	0.9			**28**	0.08	0.49	0.20

40	n_1 = 900		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	25	**0.37**	2.0	71 / 63		**48**	0.72	0.83	—
	10	90	32	**0.37**	1.5			**48**	0.56	0.81	—
	15	60	45	**0.37**	1.1			**49**	0.40	0.76	—
	20	45	39	**0.25**	1.2			**46**	0.29	0.74	—
	25	36	33	**0.18**	1.3			**42**	0.23	0.69	—
	30	30	37	**0.18**	1.3			**48**	0.23	0.65	—
Kg 2.0	**40**	23	33	**0.13**	1.3			**42**	0.16	0.61	—
	50	18	38	**0.13**	1.1	63 / 56		**42**	0.14	0.55	—
	65	14	32	**0.09**	1.2			**39**	0.11	0.51	—
	80	11	37	**0.09**	1.0			**37**	0.09	0.48	—
	100	9	29	**0.06**	1.0			**30**	0.06	0.45	—

40	n_1 = 500		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	10	**0.09**	5.5	71 / 63		**58**	0.50	0.81	—
	10	50	14	**0.09**	4.4			**59**	0.39	0.79	—
	15	33	19	**0.09**	3.1			**59**	0.28	0.73	—
	20	25	24	**0.09**	2.3			**55**	0.20	0.70	—
	25	20	28	**0.09**	1.7			**48**	0.15	0.65	—
	30	17	31	**0.09**	1.8			**58**	0.17	0.61	—
Kg 2.0	**40**	13	39	**0.09**	1.3			**52**	0.12	0.57	—
	50	10	44	**0.09**	1.2	63 / 56		**51**	0.11	0.51	—
	65	8	52	**0.09**	0.9			**45**	0.08	0.46	—
	80	6	61*	**0.09**	0.7*			**42**	0.06	0.44	—
	100	5	71*	**0.09**	0.4*			**32**	0.04	0.41	—

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

2.5 **Dati tecnici** *2.5 **Technical data*** 2.5 **Technische Daten**

50	n_1 = 2800		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	34	**1.5**	1.5			**51**	2.3	0.88	—
	10	280	44	**1.5**	1.2			**54**	1.8	0.86	—
	15	187	47	**1.1**	1.2	80		**57**	1.3	0.84	—
	20	140	42	**0.75**	1.4	71		**58**	1.0	0.81	—
	25	112	50	**0.75**	1.0			**50**	0.75	0.78	—
	30	93	42	**0.55**	1.3			**55**	0.71	0.75	—
Kg	**40**	70	54	**0.55**	1.0	80-71-63		**54**	0.63	0.72	—
	50	56	43	**0.37**	1.3			**56**	0.48	0.68	—
3.4	**65**	43	53	**0.37**	1.0	71		**53**	0.37	0.64	—
	80	35	41	**0.25**	1.2	63		**48**	0.29	0.61	—
	100	28	35	**0.18**	1.3			**45**	0.23	0.58	—

50	n_1 = 1400		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	40	0.9	1.8			**70**	1.6	0.86	1.2
	10	140	52	0.9	1.4			**73**	1.3	0.84	1.0
	15	93	61	0.75	1.2	80		**74**	0.90	0.80	0.80
	20	70	59	0.55	1.3	71		**75**	0.71	0.78	0.70
	25	56	47	0.37	1.4			**65**	0.51	0.74	0.60
	30	47	54	0.37	1.5			**66**	0.46	0.71	0.60
Kg	40	35	68	0.37	1.2	80-71-63		**69**	0.38	0.67	0.50
	50	28	53	0.25	1.3			**70**	0.33	0.62	0.40
3.4	65	22	64	0.25	1.0	71		**64**	0.25	0.58	0.40
	80	18	53	0.18	1.1	63		**60**	0.20	0.54	0.40
	100	14	45	0.13	1.2			**55**	0.16	0.51	0.30

50	n_1 = 900		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	50	**0.75**	1.6			**83**	1.23	0.84	—
	10	90	66	**0.75**	1.3			**86**	0.98	0.82	—
	15	60	68	**0.55**	1.3	80		**88**	0.71	0.78	—
	20	45	59	**0.37**	1.5	71		**87**	0.54	0.75	—
	25	36	70	**0.37**	1.1			**75**	0.40	0.71	—
	30	30	79	**0.37**	1.0			**79**	0.37	0.67	—
Kg	**40**	23	67	**0.25**	1.1	80-71-63		**75**	0.28	0.63	—
	50	18	78	**0.25**	1.0			**80**	0.26	0.59	—
3.4	**65**	14	67	**0.18**	1.1	71		**74**	0.20	0.54	—
	80	11	56	**0.13**	1.2	63		**67**	0.16	0.51	—
	100	9	45	**0.09**	1.3			**58**	0.12	0.47	—

50	n_1 = 500		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	21	**0.18**	4.7			**100**	0.85	0.82	—
	10	50	28	**0.18**	3.8			**104**	0.68	0.80	—
	15	33	39	**0.18**	2.7	80		**106**	0.49	0.75	—
	20	25	50	**0.18**	2.1	71		**104**	0.38	0.72	—
	25	20	58	**0.18**	1.5			**88**	0.27	0.68	—
	30	17	65	**0.18**	1.5			**98**	0.27	0.63	—
Kg	**40**	13	81	**0.18**	1.2	80-71-63		**95**	0.21	0.59	—
	50	10	93	**0.18**	1.0			**94**	0.18	0.54	—
3.4	**65**	8	56	**0.09**	1.5	71		**86**	0.14	0.50	—
	80	6	63	**0.09**	1.2	63		**77**	0.11	0.46	—
	100	5	74	**0.09**	0.8			**61**	0.07	0.43	—

2.5 Dati tecnici — *2.5 Technical data* — 2.5 Technische Daten

63	n_1 = 2800		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	68	**3**	1.3	80 90		**88**	3.9	0.88	—
	10	280	89	**3**	1.1			**94**	3.2	0.87	—
	15	187	95	**2.2**	1.0			**98**	2.3	0.84	—
	20	140	85	**1.5**	1.3			**110**	1.9	0.83	—
	25	112	76	**1.1**	1.2			**93**	1.4	0.81	—
	30	93	87	**1.1**	1.3			**110**	1.4	0.77	—
Kg 6.3	**40**	70	111	**1.1**	1.1	71 80		**117**	1.2	0.74	—
	50	56	90	**0.75**	1.1			**97**	0.81	0.70	—
	65	43	81	**0.55**	1.2			**98**	0.66	0.67	—
	80	35	65	**0.37**	1.4			**91**	0.52	0.64	—
	100	28	75	**0.37**	1.1			**83**	0.41	0.60	—

63	n_1 = 1400		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	80	1.8	1.5	80 90		**120**	2.7	0.87	1.8
	10	140	105	1.8	1.2			**127**	2.2	0.85	1.6
	15	93	125	1.5	1.1			**130**	1.6	0.81	1.2
	20	70	120	1.1	1.2			**144**	1.3	0.80	1.2
	25	56	118	0.9	1.0			**118**	0.90	0.77	1.0
	30	47	134	0.9	1.1			**142**	0.95	0.73	0.90
Kg 6.3	40	35	142	0.75	1.1	71 80		**150**	0.79	0.69	0.80
	50	28	122	0.55	1.0			**122**	0.55	0.65	0.70
	65	22	100	0.37	1.2			**122**	0.45	0.61	0.60
	80	18	79	0.25	1.4			**113**	0.36	0.58	0.60
	100	14	91	0.25	1.1			**102**	0.28	0.53	0.50

63	n_1 = 900		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	102	**1.5**	1.4	80 90		**144**	2.1	0.85	—
	10	90	133	**1.5**	1.1			**150**	1.7	0.83	—
	15	60	139	**1.1**	1.1			**152**	1.2	0.79	—
	20	45	123	**0.75**	1.4			**167**	1.0	0.77	—
	25	36	109	**0.55**	1.3			**140**	0.71	0.74	—
	30	30	122	**0.55**	1.3			**164**	0.74	0.70	—
Kg 6.3	**40**	23	154	**0.55**	1.1	71 80		**171**	0.61	0.66	—
	50	18	120	**0.37**	1.2			**141**	0.44	0.61	—
	65	14	98	**0.25**	1.4			**139**	0.35	0.57	—
	80	11	115	**0.25**	1.1			**128**	0.28	0.54	—
	100	9	95	**0.18**	1.2			**115**	0.22	0.50	—

63	n_1 = 500		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	30	**0.25**	5.9	80 90		**177**	1.5	0.83	—
	10	50	39	**0.25**	4.7			**182**	1.2	0.81	—
	15	33	55	**0.25**	3.4			**184**	0.84	0.76	—
	20	25	71	**0.25**	2.8			**200**	0.70	0.74	—
	25	20	85	**0.25**	1.9			**165**	0.49	0.71	—
	30	17	94	**0.25**	2.1			**195**	0.52	0.65	—
Kg 6.3	**40**	13	118	**0.25**	1.7	71 80		**201**	0.43	0.62	—
	50	10	135	**0.25**	1.2			**165**	0.31	0.56	—
	65	8	163	**0.25**	1.0			**161**	0.25	0.52	—
	80	6	137	**0.18**	1.1			**148**	0.19	0.50	—
	100	5	77	**0.09**	1.6			**122**	0.14	0.45	—

2.5 **Dati tecnici** *2.5 Technical data* 2.5 **Technische Daten**

75	n_1 = 2800		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	125	**5.5**	1.0	90 100 112		**131**	5.8	0.89	—
	10	280	120	**4**	1.2			**143**	4.8	0.88	—
	15	187	131	**3**	1.2			**152**	3.5	0.85	—
	20	140	171	**3**	1.0			**172**	3.0	0.84	—
	25	112	154	**2.2**	1.0			**155**	2.2	0.82	—
	30	93	120	**1.5**	1.4	71-80-90-100-112		**170**	2.1	0.78	—
Kg	**40**	70	154	**1.5**	1.2	80 90		**183**	1.8	0.75	—
	50	56	136	**1.1**	1.2			**166**	1.3	0.73	—
7.6	**65**	43	114	**0.75**	1.4	71 80 90		**155**	1.0	0.69	—
	80	35	135	**0.75**	1.1			**145**	0.80	0.66	—
	100	28	159	**0.75**	0.8			**131**	0.62	0.62	—

75	n_1 = 1400		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	178	4	1.0	90 100 112		**180**	4.0	0.87	2.5
	10	140	176	3	1.1			**193**	3.3	0.86	2.3
	15	93	187	2.2	1.1			**202**	2.4	0.83	1.9
	20	70	199	1.8	1.1			**226**	2.0	0.81	1.7
	25	56	200	1.5	1.0			**202**	1.5	0.78	1.5
	30	47	167	1.1	1.3	71-80-90-100-112		**220**	1.5	0.74	1.2
Kg	40	35	213	1.1	1.1	80 90		**235**	1.2	0.71	1.1
	50	28	206	0.9	1.0			**211**	0.92	0.67	1.0
7.6	65	22	154	0.55	1.3	71 80 90		**195**	0.70	0.63	0.90
	80	18	180	0.55	1.0			**182**	0.55	0.60	0.80
	100	14	210	0.55	0.8			**182**	0.43	0.56	0.70

75	n_1 = 900		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	205	**3**	1.0	90 100 112		**215**	3.1	0.86	—
	10	90	197	**2.2**	1.2			**229**	2.6	0.84	—
	15	60	231	**1.8**	1.0			**237**	1.9	0.81	—
	20	45	250	**1.5**	1.1			**263**	1.6	0.78	—
	25	36	221	**1.1**	1.1			**233**	1.2	0.76	—
	30	30	249	**1.1**	1.0	71-80-90-100-112		**254**	1.1	0.71	—
Kg	**40**	23	214	**0.75**	1.3	80 90		**270**	0.94	0.67	—
	50	18	186	**0.55**	1.3			**241**	0.71	0.64	—
7.6	**65**	14	151	**0.37**	1.5	71 80 90		**221**	0.54	0.59	—
	80	11	177	**0.37**	1.2			**205**	0.43	0.56	—
	100	9	203	**0.37**	0.9			**184**	0.34	0.52	—

75	n_1 = 500		SFK					SRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	90	**0.75**	2.9	90 100 112		**265**	2.2	0.84	—
	10	50	118	**0.75**	2.4			**279**	1.8	0.82	—
	15	33	167	**0.75**	1.7			**286**	1.3	0.78	—
	20	25	216	**0.75**	1.5			**315**	1.1	0.75	—
	25	20	260	**0.75**	1.1			**278**	0.80	0.72	—
	30	17	288	**0.75**	1.1	71-80-90-100-112		**302**	0.79	0.67	—
Kg	**40**	13	265	**0.55**	1.2	80 90		**317**	0.66	0.63	—
	50	10	210	**0.37**	1.3			**282**	0.50	0.59	—
7.6	**65**	8	251	**0.37**	1.0	71 80 90		**257**	0.38	0.55	—
	80	6	197	**0.25**	1.2			**238**	0.30	0.52	—
	100	5	161	**0.18**	1.3			**206**	0.23	0.47	—

2.6 **Momenti d' inerzia** [Kg·cm²]
(riferiti all'albero veloce in entrata)

2.6 ***Moments of inertia*** *[Kg·cm²]*
(referred to input shaft)

2.6 **Trägheitsmoment** [Kg·cm²]
(bez. Antriebswelle)

30

i_n	SRK	SFK B5 - B14 IEC 56	SFK B5 - B14 IEC 63
7.5	0.058	0.112	0.109
10	0.049	0.103	0.100
15	0.042	0.097	0.094
20	0.039	0.095	0.092
25	0.038	0.094	0.091
30	0.038	0.093	0.090
40	0.037	0.093	0.090
50	0.037	0.092	0.089
65	0.024	0.079	-
80	0.024	0.079	-
100	0.024	0.078	-

40

i_n	SRK	SFK B5 - B14 IEC 56	SFK B5 - B14 IEC 63	SFK B5 - B14 IEC 71
7.5	0.170	-	0.321	0.356
10	0.144	-	0.272	0.347
15	0.125	-	0.266	0.340
20	0.094	-	0.263	0.338
25	0.091	-	0.262	0.337
30	0.113	-	0.262	0.337
40	0.087	-	0.261	0.337
50	0.087	0.182	0.261	-
65	0.069	0.182	0.261	-
80	0.069	0.182	0.261	-
100	0.068	0.182	0.261	-

50

i_n	SRK	SFK B5 - B14 IEC 63	SFK B5 - B14 IEC 71	SFK B5 - B14 IEC 80
7.5	0.499	-	0.684	0.935
10	0.417	-	0.602	0.853
15	0.358	-	0.543	0.794
20	0.281	-	0.523	0.774
25	0.272	-	0.513	0.764
30	0.323	-	0.508	0.759
40	0.262	0.311	0.503	0.755
50	0.183	0.311	0.501	-
65	0.136	0.311	0.499	-
80	0.136	0.310	0.498	-
100	0.135	0.309	0.498	-

63

i_n	SRK	SFK B5 - B14 IEC 71	SFK B5 - B14 IEC 80	SFK B5 - B14 IEC 63
7.5	1.363	-	1.949	2.269
10	1.158	-	1.744	2.063
15	1.011	-	1.597	1.916
20	0.710	-	1.545	1.864
25	0.679	-	1.514	1.833
30	0.922	-	1.508	1.828
40	0.660	0.958	1.495	-
50	0.653	0.958	1.488	-
65	0.552	0.955	1.484	-
80	0.550	0.953	1.482	-
100	0.549	0.952	1.481	-

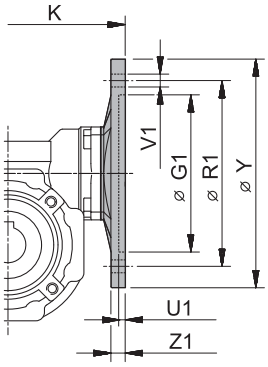
75

i_n	SRK	SFK B5 - B14 IEC 71	SFK B5 - B14 IEC 80	SFK B5 - B14 IEC 90	SFK B5 - B14 IEC 100-112
7.5	2.970	-	-	3.712	4.462
10	2.492	-	-	3.234	3.984
15	2.151	-	-	2.893	3.643
20	1.567	-	-	2.774	3.523
25	1.501	-	-	2.709	3.458
30	1.946	1.615	1.575	2.689	3.438
40	1.451	-	1.573	2.659	-
50	1.435	-	1.570	2.642	-
65	1.158	1.609	1.569	2.633	-
80	1.153	1.605	1.565	2.629	-
100	1.150	1.602	1.562	2.626	-

2.7 Predisposizioni possibili

2.7 Possible set-ups

2.7 Mögliche Vorrichtungen

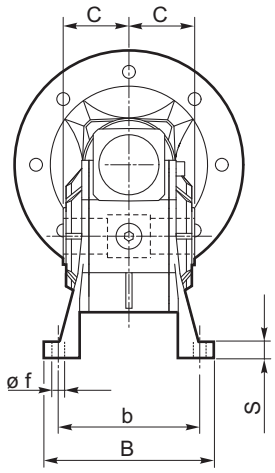


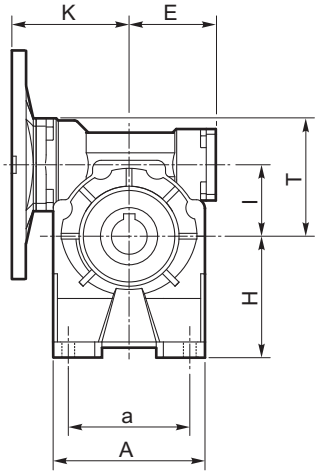
SFK	PAM IEC	G_1	K	R_1	U1	V1 Ø	V1	V1	Y	Z_1	Diametro fori PAM / *Holes diameter IEC-Input* Bohrungdurchmesser IEC-Antrieb 7.5	10	15	20	25	30	40	50	65	80	100
30	56 B5	80	57	100	4	7	n° 8		120	8	9	9	9	9	9	9	9	9	9	9	9
	56 B14	50		65	3.5	6	n° 8		80	8	9	9	9	9	9	9	9	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	8	11	11	11	11	11	11	11	11	/	/	/
	63 B14	60		75	4	6	n° 8		90	8	11	11	11	11	11	11	11	11	/	/	/
40	56 B5	80	75	100	4	7	n° 8		120	9	/	/	/	/	/	/	/	9	9	9	9
	56 B14	50		65	3.5	6		n° 4	80	8	/	/	/	/	/	/	/	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	9	11	11	11	11	11	11	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	11	11	11	11	11	11	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	/	/	/	/
	71 B14	70		85	3.5	7	n° 8		105	8	14	14	14	14	14	14	14	/	/	/	/
50	63 B5	95	82	115	4	9	n° 8		140	9	/	/	/	/	/	/	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	/	/	/	/	/	/	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	14	14	14	14
	71 B14	70		85	3.5	7	(n° 8)*	n° 4	105	8	14	14	14	14	14	14	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	/	/	/	/
	80 B14	80		100	4	7	n° 8		120	10	19	19	19	19	19	19	19	/	/	/	/
63	71 B5	110	97	130	4.5	9	n° 8		160	10	/	/	/	/	/	/	14	14	14	14	14
	71 B14	70		85	3.5	7		n° 4	105	10	/	/	/	/	/	/	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	19	19	19	19
	80 B14	80		100	4	7		n° 4	120	10	19	19	19	19	19	19	19	19	19	19	19
	90 B5	130		165	4.5	11	n° 8		200	10	24	24	24	24	24	24	/	/	/	/	/
	90 B14	95		115	4	8.5	n° 8		140	10	24	24	24	24	24	24	/	/	/	/	/
75	71 B5	110	114	130	4.5	9	n° 8		160	10	/	/	/	/	/	14	/	/	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	/	/	/	/	/	19	19	19	19	19	19
	80 B14	80		100	4	7		n° 4	120	11	/	/	/	/	/	19	19	19	19	19	19
	90 B5	130		165	4.5	11	n° 8		200	10	24	24	24	24	24	24	24	24	24	24	24
	90 B14	95		115	4	9		n° 4	140	11	24	24	24	24	24	24	24	24	24	24	24
	100/112 B5	180		215	5	14	n° 8		250	13	28	28	28	28	28	28	/	/	/	/	/
	100 B14	110		130	4.5	9	n° 8		160	11	28	28	28	28	28	28	/	/	/	/	/

* A richiesta, solo con corpo speciale / *Upon request, only with special body* / Auf Wunsch nur mit speziellen Körper

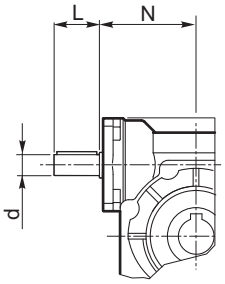
2.8 Dimensioni — *2.8 Dimensions* — 2.8 Abmessungen

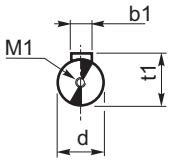
SFK.../A





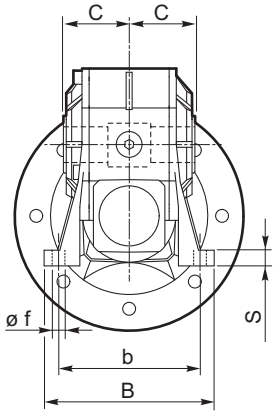
SRK.../A

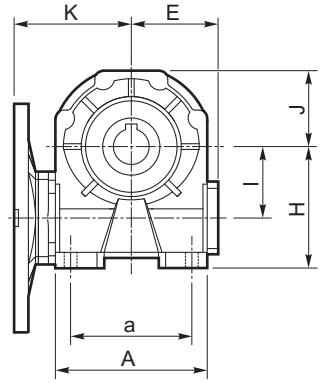




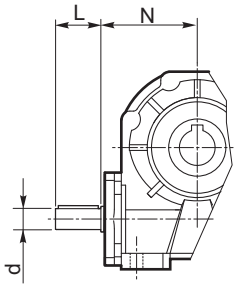
SRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	b1	t1	M1
30	9	3	10.2	M4x10
40	11	4	12.5	M4x10
50	14	5	16	M5x13
63	18	6	20.5	M6x16
75	19	6	21.5	M6x16

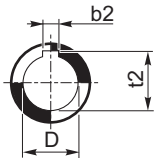
SFK.../B





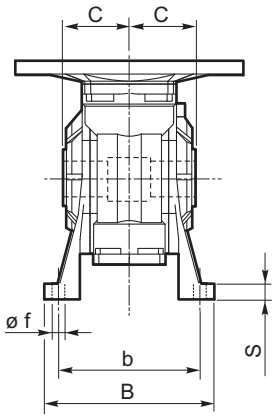
SRK.../B

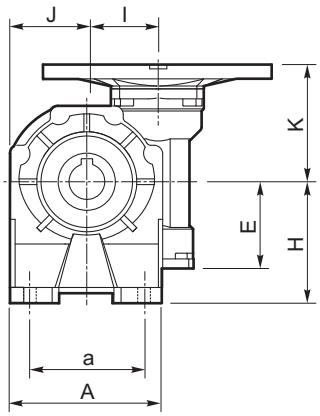




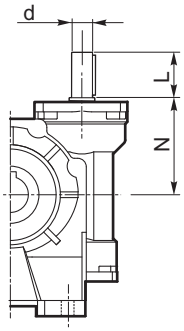
SFK SRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	b2	t2
30	**14**	5	16.3
40	**19**	6	21.8
50	**24**	8	27.3
63	**25**	8	28.3
75	**28** (30)	8 (8)	31.3 (33.3)

SFK.../V





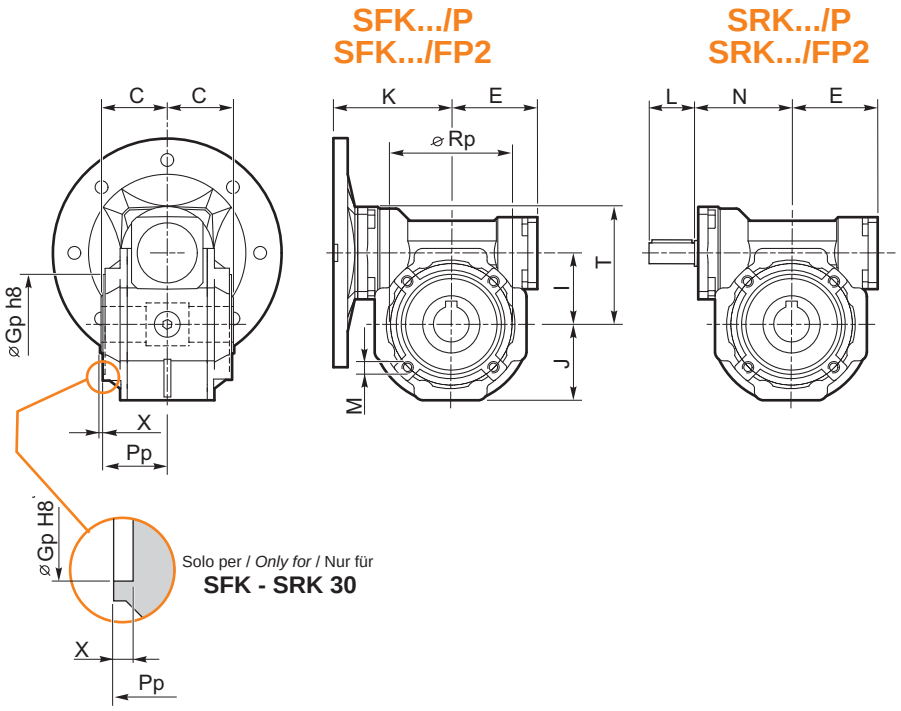
SRK.../V



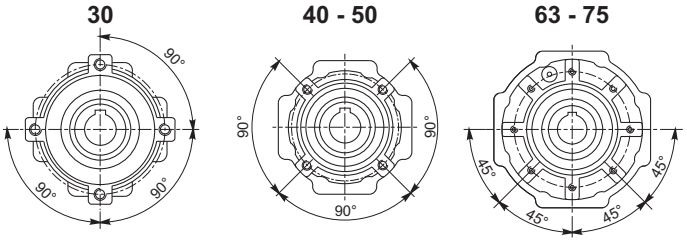
A, B, V

SFK SRK	A	a	B	b	C	E	f	H	I	J	K	L	N	s	T
30	67	52 ÷ 40	78	66	31.5	41	6.5	52	31.5	37.5	57	20	47	5	52.5
40	87	70	100	80 ÷ 88	41	51	7	71	40	43.5	75	22	64	9	68.5
50	115	85	119	96 ÷ 102	49	60	9	85	50	53.5	82	30	74	11	82.5
63	127.5	95	136	111	60	71	11	100	63	64	97	45	80	12	100.5
75	155.5	120	140	112 ÷ 120	60	85	11	115	75	78	114	40	98	12	116.5

2.8 Dimensioni — *2.8 Dimensions* — 2.8 Abmessungen



Flangia pendolare / *Side cover for shaft mounting* / Flansch für Drehmomentstutze



4 Fori / *Holes* / Bohrungen — 8 Fori / *Holes* / Bohrungen

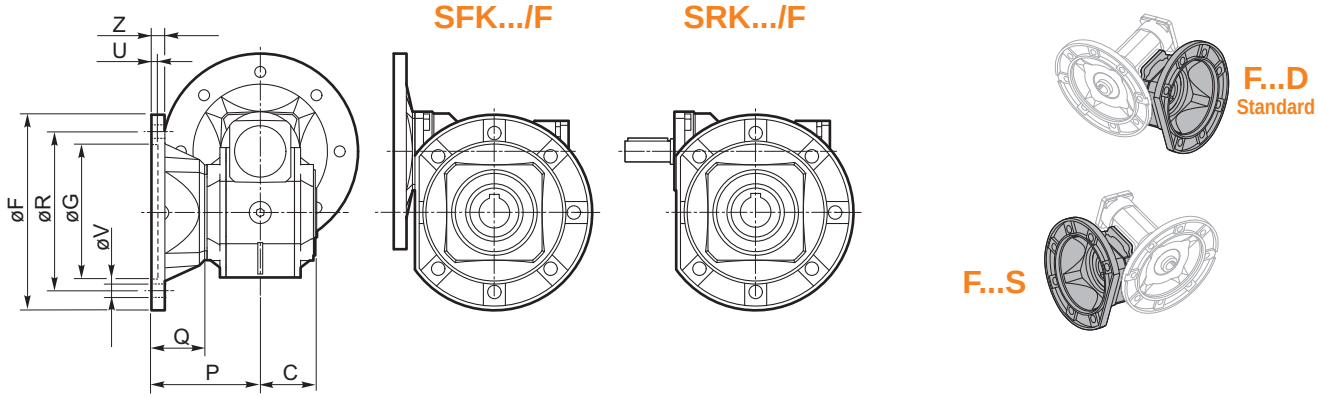
P					
SFK SRK	**30**	**40**	**50**	**63**	**75**
G_p	42* **H8**	60 **h8**	70 **h8**	70 **h8**	80 **h8**
M	M6x8	M6X10	M8x10	M8x14	M8x14
P_p	36	38	46	57.5	57
R_p	56	83	85	85	100
X	5.5	2	2	3.5	2

FP2					
SFK SRK	**30**	**40**	**50**	**63**	**75**
G_p h8	—	50 h8	60 h8	—	—
M	—	M6X8.5	M6X9	—	—
P_p	—	38	46	—	—
R_p	—	65	75	—	—
X	—	2	2	—	—

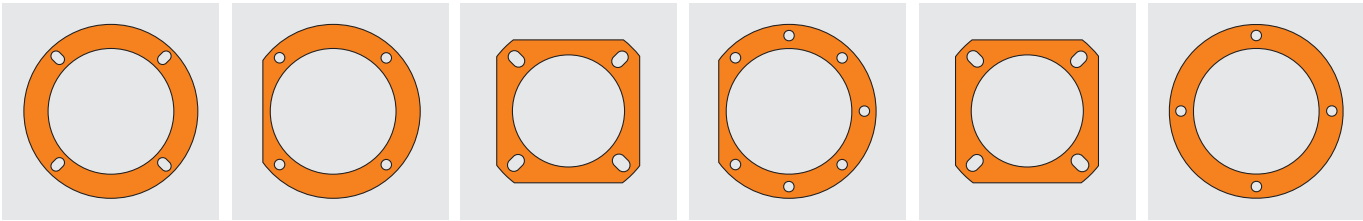
* Vedere dettaglio (SFK - SRK 30/P)
Pls refer to above detail (SFK - SRK 30/P)
Siehe o.g. Einzelheit (SFK - SRK 30/P)

2.8 Dimensioni — *2.8 Dimensions* — 2.8 Abmessungen

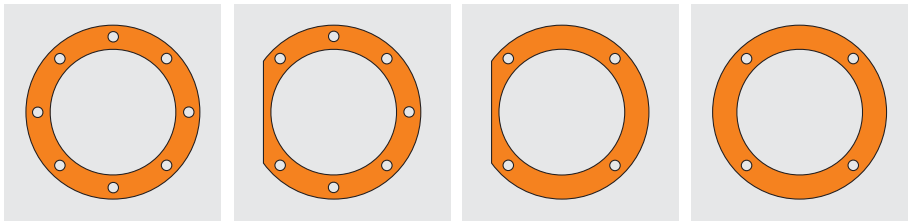
Flangia uscita / *Output flange* / Abtriebsflansch



Tipo flangia / *Type flange* / Typ flansch



30	40		50		
F	F	F1* - F2*	F	F1	F2 - F3



63	63	75	63	75	63	75
F*	F1*	F* - F1*	F2*	F2* - F3* F3A*	F3*	F4*

N.B.

Tutte le flange possono essere applicate sui riduttori in versione P, ad eccezione di quelle evidenziate con (*) che possono essere montate solo in presenza di un coperchio pendolare speciale.

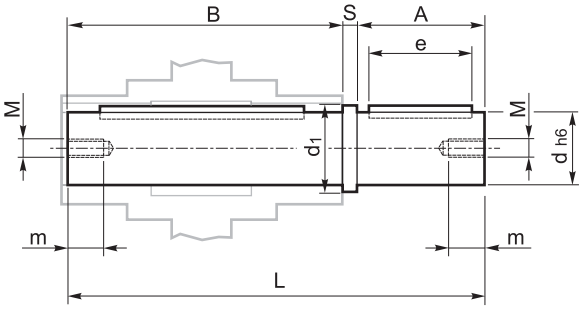
All flanges can be applied to the gearbox version of P, except those marked with (*) that can be installed only in presence of a special cover.

Alle Flansche können mit Getrieben der Version P eingesetzt werden, außer denen mit (*) gekennzeichneten - diese sind dann nur in der Kombination mit einem Deckel verwendbar.

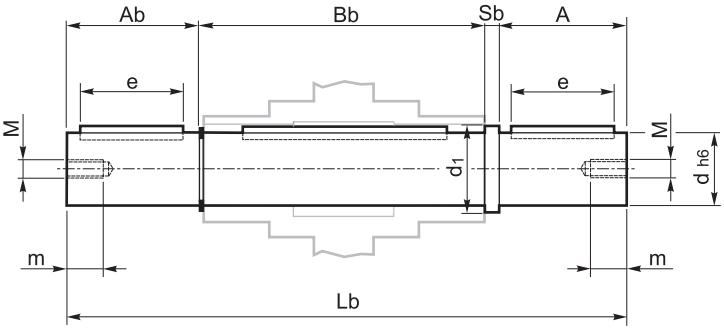
SFK SRK	Tipo flangia *Type flange* Typ flansch	C	F		G (H8)	P	Q	R	U	V			Z
												ø	
30	F	31.5	71		40	50.5	19	56 ÷ 60	3	n° 4		6.5	6
40	F	41	140		95	82	41	115	5	n° 4		9	9
	F1			85	60	68.5	27.5	75 ÷ 90	4	n° 4		9	8
	F2			85	60	98.5	57.5	75 ÷ 90	4	n° 4		9	8
50	F	49	160		110	92	43	130	5		n° 7	11	11
	F1			94	70	92.5	43.5	85 ÷ 100	5	n° 4		11	10
	F2		125		70	73	24	90 ÷ 115	5	n° 4		10.5	10
	F3		125		70	85	36	90	5	n° 4		10.5	10
63	F*	60	180		115	116	56	150	7		n° 8	11	12
	F1*		180		115	86	26	150	5		n° 7	11	11
	F2*		200		130	102	42	165	6	n° 4		13	11
	F3*		160		110	82	22	130	5	n° 4		11	11
75	F*	60	200		130	111	51	165	6		n° 7	13	13
	F1*		200		130	85	25	165	6		n° 7	13	13
	F2*		175		115	116	56	150	6	n° 4		11	12
	F3*		175		115	85	25	150	5	n° 4		11	12
	F3A*		160		110	85	25	130	5	n° 4		11	12
	F4*		160		110	101	41	130	6	n° 4		11	12

2.9 Accessori — *2.10 Accessories* — 2.9 Zubehör

Albero lento semplice / *Single output shaft* / Standard Abtriebswelle



Albero lento doppio / *Double output shaft* / Doppelte Abtriebswelle



SFK SRK	A	Ab	B	Bb	d (h6)	d1	e	L	Lb	M	m	S	Sb
30	30	29	62	64	14	18.5	20	94.5	126	M6	16	2.5	2.5
40	40	39	77	83.2	19	24.5	30	120	165.2	M6	16	3	3
50	50	49	90	99.2	24	29.5	40	143.5	201.7	M8	22	3.5	3.5
63	60	59	119	121.2	25	29.5	50	183	244.2	M8	22	4	4
75	60	59	119	121.5	28	34.5	50	183	244.5	M8	22	4	4

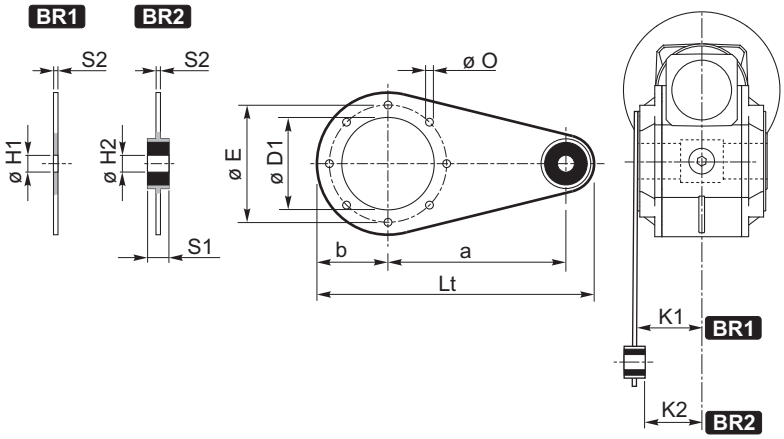
BR1 Senza boccola / *Without bush* / Ohne Büchse

SFK SRK	a	b	D1	E	H1	K1	Lt	O	S1	S2
30	70	34.5	42	56	9	36	119.5	7	—	4
40	90	50	60	83	10	38	165	7	—	4
50	100	55	70	85	10	46	180	9	—	4
63	150	53	70	85	10	57.5	230	9	—	6
75	—	—	—	—	—	—	—	—	—	—

BR2 Con boccola / *With bush* / Mit Büchse

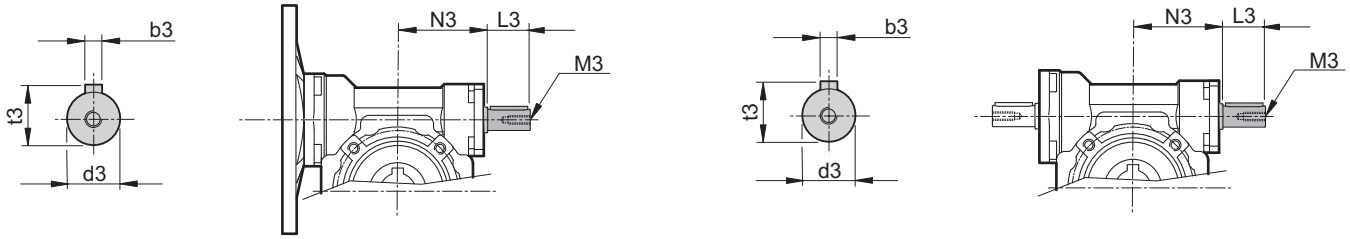
SFK SRK	a	b	D1	E	H2	K2	Lt	O	S1	S2
30	—	—	—	—	—	—	—	—	—	—
40	90	50	60	83	8	33	165	7	14	4
50	100	50	70	85	10	40.5	180	9	14	4
63	150	53	70	85	10	50.5	230	9	20	6
75	150	62	80	100	10	50	240	9	20	6

Braccio di reazione / *Torque arm* / Drehmomentstütze



Entrata supplementare (vite bisporgente) — *Additional input (double extended input shaft)* — Zusatzantrieb (beidseitige Welle)

S.e.A.



SFK	d3 (j6)	L3	M3	N3	b3	t3
30	9	15	M4x10	42.5	3	10.2
40	11	20	M4x12	52.5	4	12.5
50	14	25	M5x13	62.5	5	16
63	19	30	M8x20	72.5	6	21.5
75	24	40	M8x20	89	8	27

SRK	d3 (j6)	L3	M3	N3	b3	t3
30	9	20	M4x10	42.5	3	10.2
40	11	22	M4x10	52.5	4	12.5
50	14	30	M5x13	62.5	5	16
63	18	45	M6x16	72.5	6	20.5
75	19	40	M6x16	89	6	21.5

Opzioni disponibili:

Cuscinetti a rulli conici corona

Available options:

Tapered roller bearing for worm wheel

Auf Anfrage ist folgendes Zubehör erhältlich:

Kegelrollenlager für Schneckenrad

2.10 Limitatore di coppia cavo passante

Il limitatore di coppia viene consigliato in tutte quelle applicazioni che richiedono una limitazione sulla coppia trasmissibile per proteggere l'impianto e/o preservare il riduttore evitando sovraccarichi o urti indesiderati quanto inaspettati.
È un dispositivo con albero dotato di cavo passante, con funzionamento a frizione, ed è integrato al riduttore, presentando un ingombro limitato.
Concepito per lavorare a bagno d'olio, il dispositivo risulta affidabile nel tempo ed è esente da usura se non viene mantenuto in condizioni prolungate di slittamento (condizione che si verifica quando la coppia presenta valori superiori a quelli di taratura).
La taratura è facilmente regolabile dall'esterno attraverso il serraggio di una ghiera autobloccante che porta a compres- sione le 4 molle a tazza disposte tra loro in serie.
Il dispositivo non consente:
- l'impiego di cuscinetti a rulli conici in uscita
- funzionamento prolungato in condizioni di slittamento.

Nella tabella seguente vengono riportati i valori delle coppie di slittamento M_{2S} in funzione del n° di giri della ghiera.
I valori di taratura presentano una tolleranza del ±10% e si riferiscono ad una condizione statica.
In condizioni dinamiche è da notare che la coppia di slittamento assume valori diversi a seconda del tipo e/o modalità in cui si verifica il sovraccarico: con valori maggiori in caso di carico uniformemente crescente rispetto a volori più contenuti in seguito al verificarsi di picchi improvvisi di carico.
NOTA: quando si supera il valore di taratura si ha slittamento. Il coefficiente di attrito tra le superfici di contatto da statico diventa dinamico e la coppia trasmessa cala del 30% circa.
E' quindi opportuno prevedere uno stop per poter ripartire al valore di taratura iniziale.

E' importante notare che la coppia di slittamento non resta sempre la medesima durante tutta la vita del limitatore.
Tende infatti a diminuire in rapporto al numero e alla durata degli slittamenti che, rodando le superfici di contatto, ne aumentano il rendimento.
È quindi opportuno verificare periodicamente, soprattutto durante la fase di rodaggio, la taratura del dispositivo.
Là dove sia richiesto un errore più contenuto nella taratura, è necessario testare la coppia trasmissibile sull'impianto.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

2.10 Torque limiter with through hollow shaft

The use of a torque limiter is advisable when the application requires the limitation of the transmissible torque to safeguard the plant and/or the gearbox from unexpected or undesired overloads.
The torque limiter is equipped with a through hollow shaft and a friction clutch.
It is integrated in the gearbox, therefore space requirement is limited.
Designed to be working in oil bath, the device is reliable over time and is not subject to wear unless in case of operation with prolonged slipping (it occurs when the torque values are higher than the calibration values).
Calibration can be easily adjusted from outside by tightening of the self-locking ring nut, which causes the compression of the 4 Belleville washers arranged in series.

The device does not go together with:
- *the use of tapered roller bearings at output*
- *prolonged operation under slipping conditions*

The following table shows the values of M_{2S} slipping torques depending on the number of revolutions of the ring nut.
Calibration values feature a ±10% tolerance and refer to static conditions.
Under dynamic conditions the values of the slipping torque will change according to the type of overload: the values are higher if the load increase is uniform; the values are lower if sudden load peaks occur.

***NOTE:** Slipping occurs when the setting values are exceeded.*
The friction coefficient between the contact surfaces from static becomes dynamic and the transmitted torque is approx. 30% lower.
It is advisable to have a stop first in order to have a restart based on the initial setting value.

It is important to note that the slipping torque is not the same for the whole life of the torque limiter.
It usually decreases in connection with the numbers and the duration of the slipping which because of the surfaces' lapping will increase the efficiency.
For this reason it is advisable to check the calibration of the device at regular intervals, specially during the running-in period.
Should a smaller calibration error be required, it is necessary to test the transmissible torque on the plant.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

2.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Die Anwendung eines Drehmomentbegrenzers wird empfohlen, um die Anlage und/oder das Getriebe gegen ungewünschte und unerwartete Überbelastungen zu schützen.
Es handelt sich um eine Vorrichtung mit einer durchgehenden Hohlwelle.
Er ist in dem Getriebe integriert, d.h. der Raumbedarf ist klein. Der Begrenzer wurde für Betrieb in einem Ölbad entworfen.
Er ist zuverlässig und verschleißfrei (nur im Falle eines dauerhaften Rutschens entsteht Verschleiß, hier ist das Drehmoment größer als der eingestellte Eichwert).
Die Eichung kann mühelos von aussen durch das Anziehen einer selbstsperrenden Mutter ausgeführt werden, dadurch wird der Druck auf die 4 wechselseitig angeordneten Tellerfedern erhöht.

Die Vorrichtung sieht das folgende nicht vor:
- die Verwendung von Kegelrollenlager am Abtrieb
- Längerer Rutschbetrieb

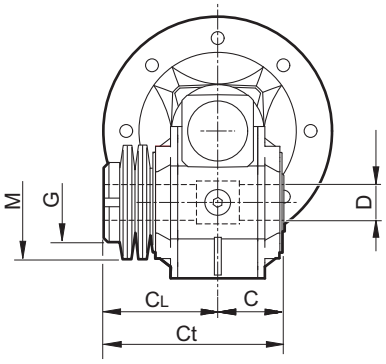
Die nachstehende Tabelle zeigt die Werte der Rutschmomente M_{2S} abhängig von der Anzahl der Umdrehungen der Mutter.
Die Eichwerte weisen ±10% Toleranz auf und beziehen sich auf statische Bedingungen.
Unter dynamischen Bedingungen hat das Rutschmoment verschiedene Werte je nach Art der Überbelastung. Die Werte sind höher, wenn die Belastung gleichmäßig zunimmt; sie sind niedriger im Falle von plötzlichen Belastungsspitzen.
BEMERKUNG: Rutschen tritt auf, wenn die eingestellten Werte überschritten werden. Der Reibungsfaktor zwischen den Berüehrungsflächen wird dynamisch anstatt statisch und das übertragene Drehmoment sinkt um ca. 30%.
Es ist daher ratsam, vor dem erneuten Anfahren anzuhalten, um die ursprünglichen Drehmomentwerte zu erreichen.

Es ist wichtig zu beachten, dass das Rutschmoment über die gesamte Lebensdauer der Rutschkupplung nicht konstant bleibt, sondern üblicherweise in Verbindung mit längeren Rutschzyklen aufgrund der eingelaufenen Berührungsflächen abnimmt.
Deswegen ist es ratsam, die Eichung der Vorrichtung besonders während der Einlaufzeit zu prüfen.
Falls ein niedrigerer Eichfehler gewünscht ist, sollte das übertragbare Drehmoment auf der Anlage getestet werden.
Wenn die Vorrichtung geliefert wird, ist sie schon auf das im Katalog T_{2M} angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegebene wird.

2.10 Limitatore di coppia cavo passante

2.10 Torque limiter with through hollow shaft

2.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle



SFK SRK	C	CL	Ct	D (H7)	M	G
30	31.5	61.5	93	14	50x25.4x1.25	M25X1.5
40	41	67	108	19	56x30.5x1.5	M30X1.5
50	49	79	128	24	63x40.5x1.8	M40X1.5
63	60	97	157	25	71x40.5x2	M40X1.5
75	60	100	160	28 (30)	90x50.5x2.5	M50X1.5

( ) A richiesta / *On request* / Auf Anfrage

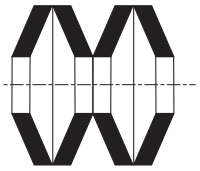
Nella versione con limitatore non è prevista la fornitura degli alberi lenti.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

The version with torque limiter is supplied without output shafts.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

Die Version mit Drehmomentbegrenzer wird ohne Abtriebswellen geliefert.
Wenn die Vorrichtung geliefert wird, ist sie schon auf das im Katalog mit T_{2M} angegebene Drehmoment geeicht, ausser wenn es in der Bestellung anders angegeben wird.

SFK SRK	N°. giri della ghiera di regolazione / *N°. revolutions of ring nut* Nr. Umdrehungen der Mutter										
	1 1/4	**1 1/2**	**1 3/4**	**2**	**2 1/4**	**2 1/2**	**2 3/4**	**3**	**3 1/4**	**3 1/2**	**3 3/4**
	$M_{2S\ [Nm]}$										
30	15	20	23	25	—	—	—	—	—	—	—
40	37	45	—	—	—	—	—	—	—	—	—
50	45	55	63	70	77	—	—	—	—	—	—
63	—	—	85	95	110	125	137	150	—	—	—
75	—	—	—	—	147	165	177	190	205	220	230

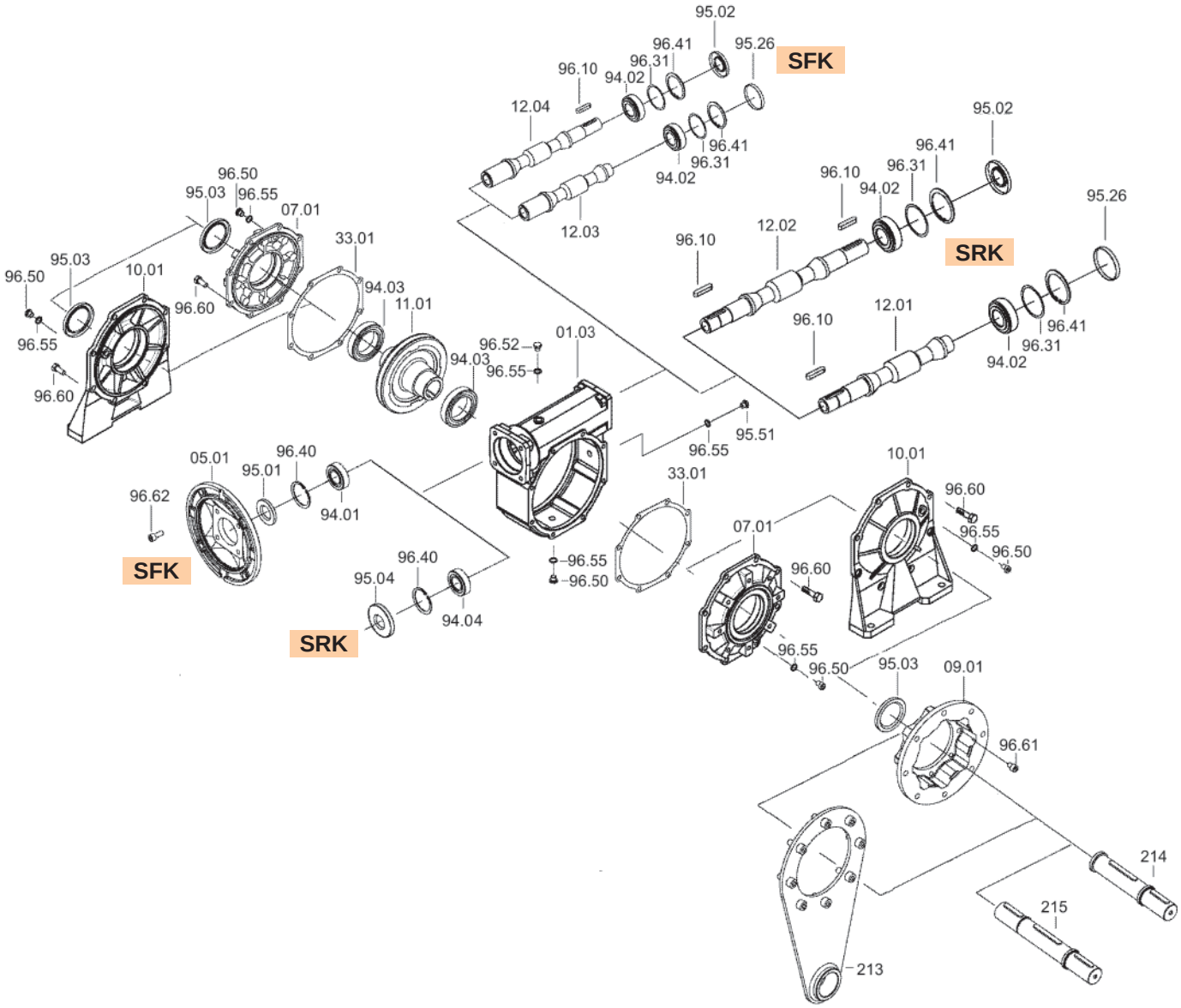
Disposizione delle molle
Washers' arrangement
Lage der Feder



IN SERIE (min. coppia, max. sensibilità)
***SERIES** (min. torque, max sensitivity)*
SERIE (min. Moment, max. Empfindlichkeit)

2.11 **Lista parti di ricambio** *2.11* ***Spare parts list*** 2.11 **Ersatzteilliste**

SFK - SRK



SFK SRK	IEC	Cuscinetti / *Bearings* / Lager				Anelli di tenuta / Oilseals Öldichtungen				Cappellotto *Closed oil seal* Geschlossene Öldichtung
		94.01	**94.02**	**94.03**	**94.04**	**95.01**	**95.02**	**95.03**	**95.04**	**95.26**
30	56	**61804** (20x32x7)	**6000** 10x26x8	**6005** 25x47x12	**6201** 12x32x10	20/32/7	10/26/7	25/40/7	12/32/7	ø 26x7
	63	**61804** (20x32x7)				20/32/7				
40	56	**6303** (17x47x14)	**6201** 12x32x10	**6006** 30x55x13	**6303** 17x47x14	17/47/7	12/32/7	30/47/7	17/47/7	ø 32x7
	63	**6204** (20x47x14)				20/47/7				
	71	**6005** (25x47x12)				25/47/7				
50	63	**6204** (20x47x14)	**6203** 17x40x12	**6008** 40x68x15	**6204** 20x47x14	20/47/7	17/40/7	40/62/8	20/47/7	ø 40x7
	71	**6005** (25x47x12)				25/47/7				
	80	**6006** (30x55x13)				30/55/7				
63	71	**30305** (25x62x18.25)	**30204** 20x47x15.25	**6008** 40x68x15	**30305** 25x62x18.25	25/62/7	20/47/7	40/62/8	25/62/7	ø 47x7
	80	**30206** (30x62x17.25)				30/62/7				
	90	**32007** (35x62x18)				35/62/7				
75	71	**30206** (30x62x17.25)	**30205** 25x52x16.25	**6010** 50x80x16	**30305** 25x62x18.25	30/62/7	25/52/7	50/72/8	25/62/7	ø 52x7
	80	**30206** (30x62x17.25)				30/62/7				
	90	**32007** (35x62x18)				35/62/7				
	100/112	**32008** (40x68x19)				40/68/10				

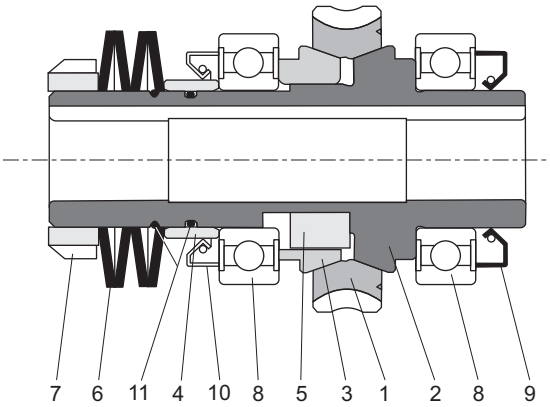
SFK - SRK

Limitatore di coppia cavo passante

Torque limiter with through hollow shaft

Drehmomentbegrenzer mit durchgehende Hohlwelle

A



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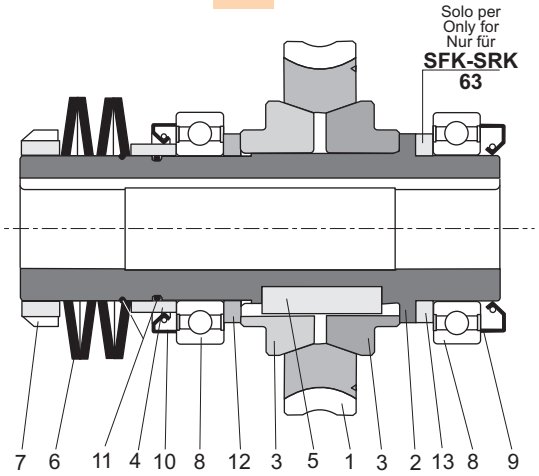
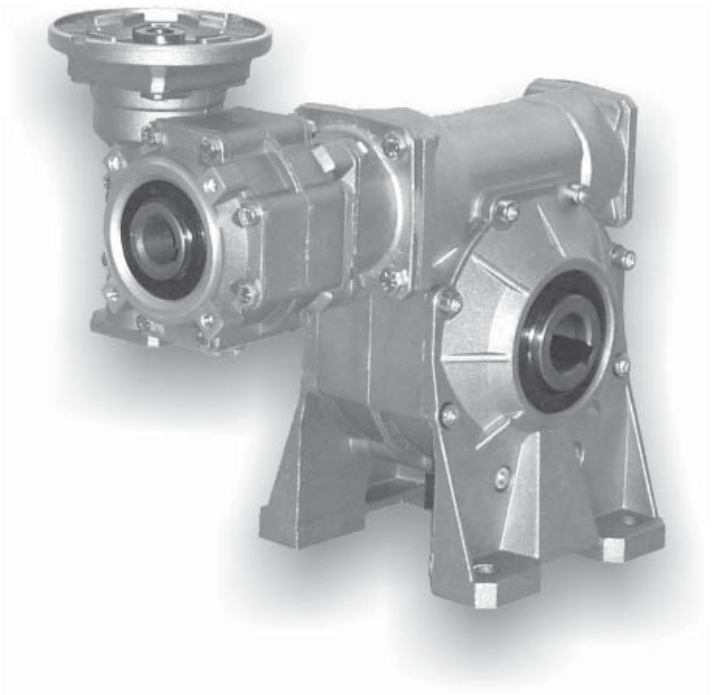


	A			B	
	SFK - SRK				
	30 (LD-LS)	**40** (LD - LS)	**50** (LD - LS)	**63** (LD - LS)	**75** (LD - LS)
5	8x7x10AB	10x8x13AB	12x8x18AB	12x8x40A	16x10x40A
8	6005 25x47x12	6006 30x55x13	6008 40x68x15	6008 40x68x15	6010 50x80x16
9	25x40x7	30x47x7	40x62x8	40x62x8	50x72x8
10	30x40x5	35x47x7	48x62x8	48x62x8	58x72x8
11	OR2087 21.95x1.78	OR2106 26.7x1.78	OR 36.27x1.78	OR 36.27x1.78	OR2187 47.37x1.78

3 RIDUTTORI A VITE SENZA FINE COMBINATI SCFK-SCRK / *SCFK-SCRK COMBINED WORM GEARBOXES* / KOMBINIERTE-SCHNECKENGETRIEBE SCFK-SCRK



01/2012

3 SCFK - SCRK

3.1 Caratteristiche

La combinazione di due riduttori a vite senza fine comporta rendimenti molto bassi, ma l'elevata riduzione di velocità ottenuta in uno spazio ridottissimo rende comunque interessante, e a volte insostituibile, questa soluzione.

Sono forniti con albero cavo di serie ed esiste un'ampia gamma di accessori: seconda entrata, cuscinetti conici sulla corona, flangia uscita, albero lento con 1 o 2 sporgenze, limitatore di coppia con cavo passante, braccio di reazione.

3.1 Characteristics

The combination of two worm gearboxes provides very low efficiency, however the fact that substantial reduction in speed can be obtained in an extremely reduced space makes this solution very interesting and sometimes irreplaceable.

The hollow shaft is supplied as standard. A broad range of accessories is avalable: second input, tapered roller bearings on the worm wheel, output flange, single or double extended output shaft, torque limiter with through hollow shaft, torque arm.

3.1 Merkmale

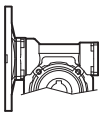
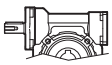
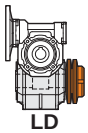
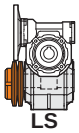
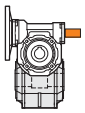
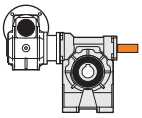
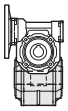
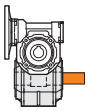
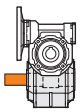
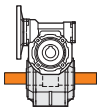
Die Kombination zweier Schneckengetriebe bringt sehr niedrigen Wirkungsgrad mit sich, es handelt sich jedoch um eine interessante und manchmal unersetzbare Lösung, weil eine hohe Drehzahlverringerung in einem beträchtlich reduzierten Raum erzielt werden kann.

Die Hohlwelle gehört zur serienmäßigen Ausstattung. Eine breite Auswahl an Zubehör ist erhältlich: zweiter Antrieb, Kegelrollenlager auf Schneckenrad, Abtriebs- flansch, standard oder doppelseitig herausragende Abtriebswelle, Drehmomentbegrenzer mit durchgehender Hohlwelle, Drehmomentstütze.

3.2 Designazione

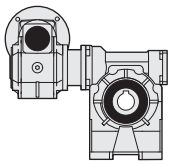
3.2 Designation

3.2 Bezeichnung

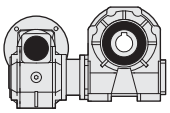
Riduttore *Gearbox* Getriebe	Grandezza *Size* Größe	Rapporto rid. *Ratio* *Untersetzung*	Predispos.att. mot. *Motor coupling* Motoranschluss	Versione *Version* Version	Forma costruttiva *Execution* Bauform	Posizione di mont. *Mounting position* Einbaulage	Limitatore di coppia. *Torque limiter* Drehmoment-begrenzer	Seconda entrata *Additional input* Zusatzantrieb	Albero uscita *Output shaft* Abtriebswelle	Braccio di reazione *Torque arm* Drehmomentstütze
SCFK	**50/75**	**1200**	**P.A.M.**	**FS**	**a**	**B3**	**LD**	**SeA1**	**H**	**BR**
 **SCFK**  **SCRK**	30/30 30/40 30/50 30/63 40/63 40/75 50/75	150 200 300 450 600 900 1200 1500 1950 2500 3250 4000 5000 10000	56 63 71 80 90	A B V P F...S F...D	ab cd ef gh ik im no pq	B3 B6 B7 B8 V5 V6	 LD  LS	 SeA1  SeA2	 H  SD  SS  DD	 BR1  BR2

Versioni

SCFK..A_
SCRK..A_

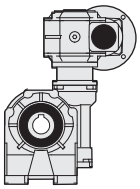


SCFK..B_
SCRK..B_

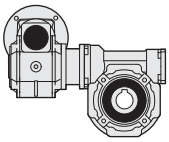


Versions

SCFK..V_
SCRK..V_

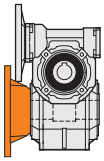


SCFK..P_
SCRK..P_

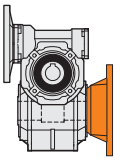


Ausführungen

SCFK..F_S
SCRK..F_S



SCFK..F_D
SCRK..F_D



Specificare sempre in fase di ordinazione la versione.

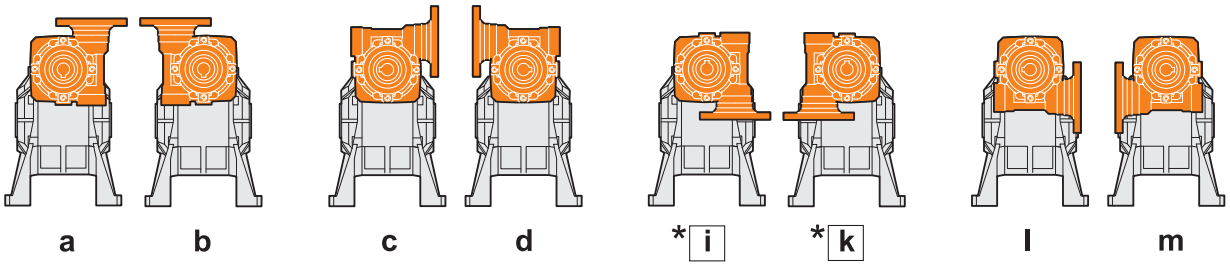
Specify the version when ordering.

Bei der Bestellung immer die Bauform angeben.

3.2 Designazione — *3.2 Designation* — 3.2 Bezeichnung

Forma costruttiva / *version* / Bauform

A



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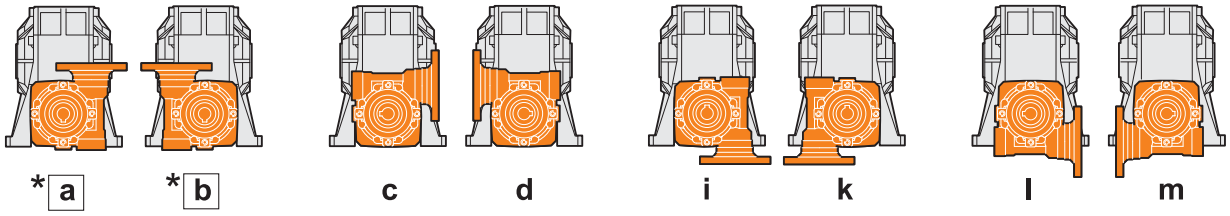

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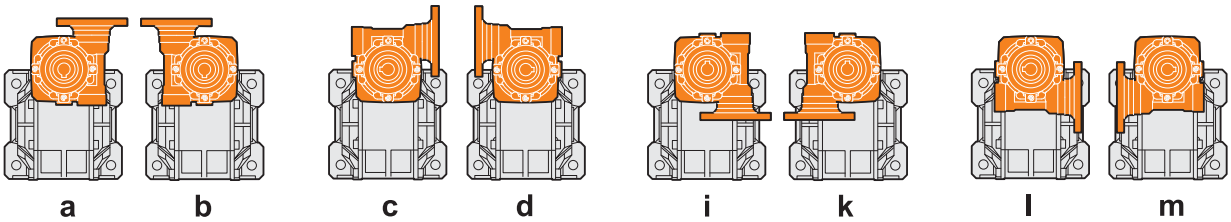

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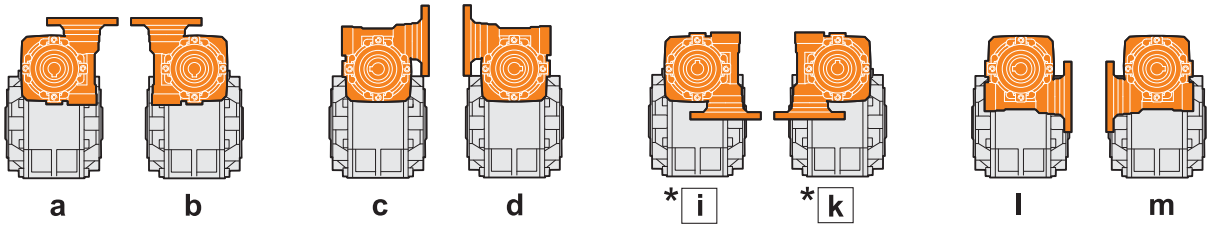
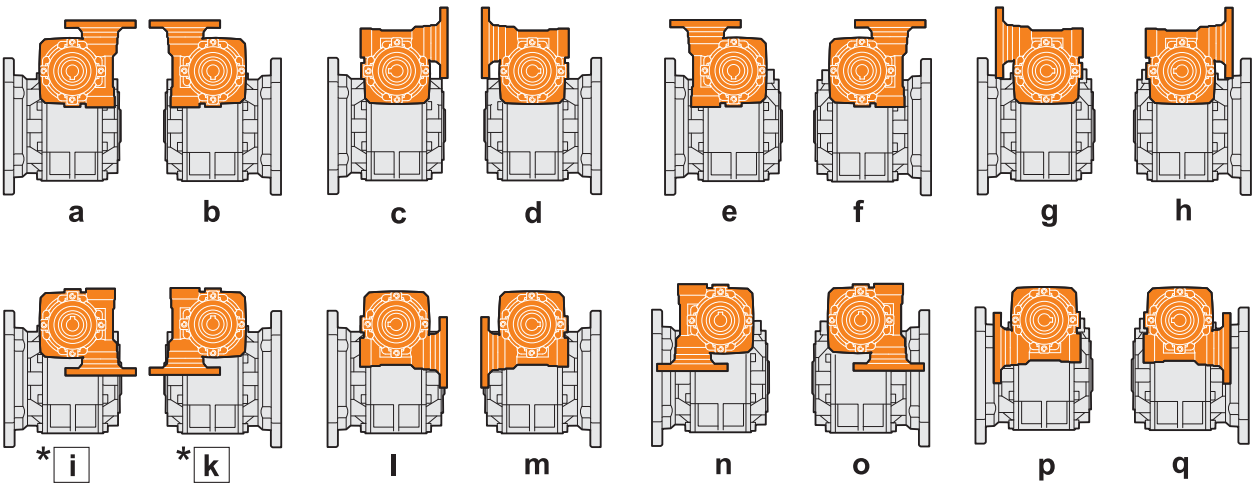


F



*☐ Forma costruttiva non realizzabile su: / *Version not feasible on:* / Bauform nicht ausführbar für:
30/30, 30/40, 30/50 PAM 63B5 (ø 140), 40/63 PAM 71B5 (ø 160)

3.3 Lubrificazione

I riduttori a vite senza fine SCFK - SCRK sono forniti tutti e sempre completi di lubrificante sintetico a base PAG con classe di viscosità ISO 320.
Nei corpi in alluminio è presente un solo tappo di riempimento olio.
Si raccomanda di precisare sempre in fase di ordine la forma costruttiva e la posizione di lavoro desiderata.

3.3 Lubrication

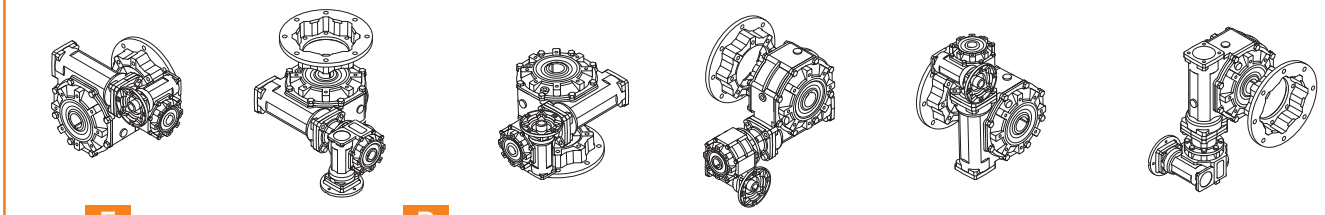
SCFK - SCRK worm gearboxes are supplied with PAG synthetic lubricant featuring an ISO 320 viscosity class.
Aluminium housings have one filling plug only.
Always specify the version and the mounting position when ordering.

3.3 Schmierung

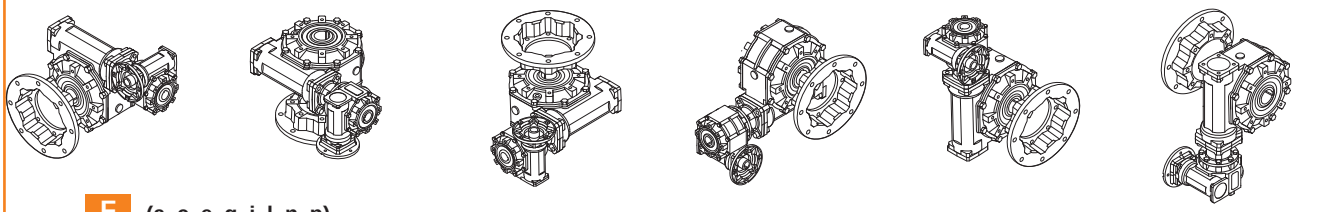
SCFK - SCRK Schneckengetriebe werden mit PAG synthetischen Schmierstoff Viskositätsklasse ISO 320 geliefert.
Gehäuse aus Alumiunium verfügen über nur eine Einfüllschraube.
Im Auftrag sind immer Einbaulage und Bauform anzugeben.

Posizioni di montaggio / *Mounting positions* / Bezeichnung

F,P

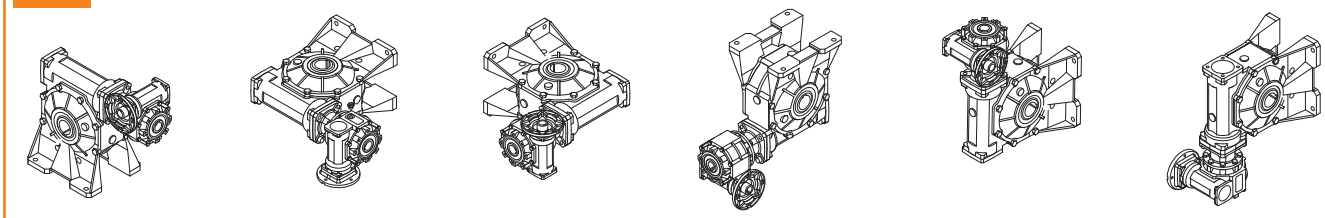


F (b, d, f, h, k, m, o, q) **P** (a, b, c, d, i, k, l, m)

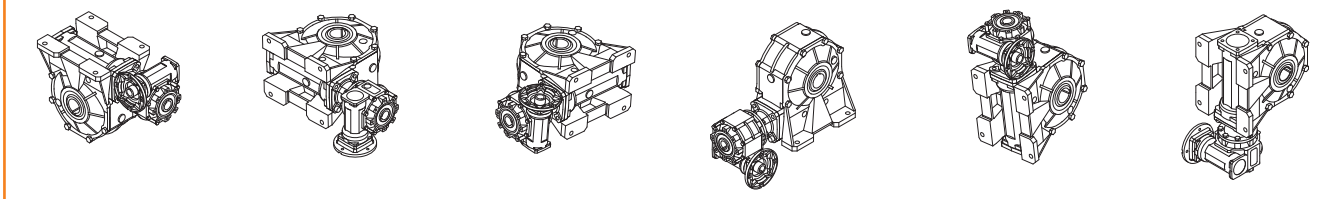


F (a, c, e, g, i, l, n, p)

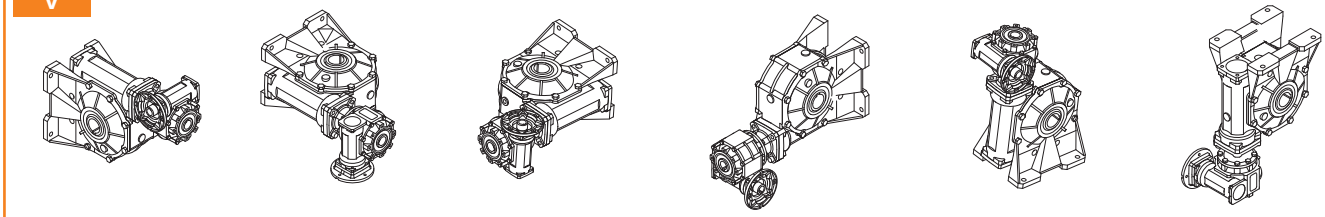
A



B



V



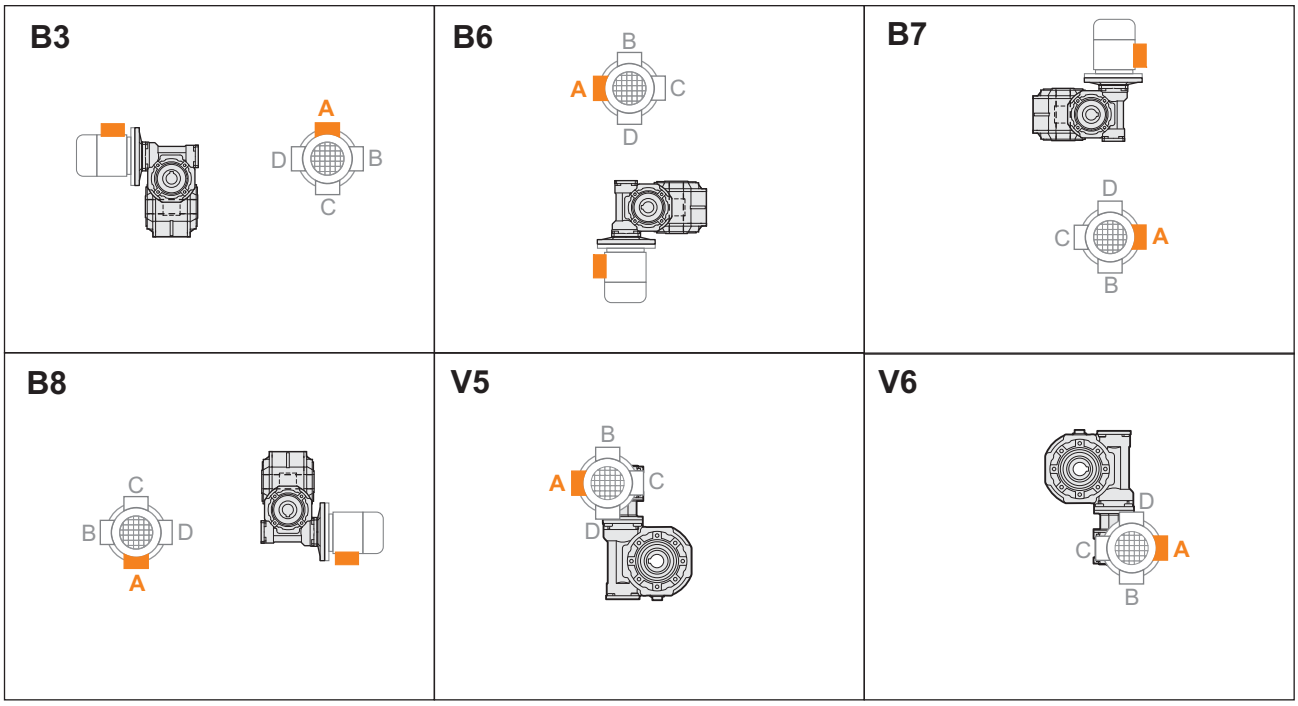
B3 **B6** **B7** **B8** **V5** **V6**

Quantità di lubrificante | *Lubricant quantity* | Schmiermittelmenge

			Q.tà olio / *Oil quantity* / Schmiermittelmenge [lt]						
			SCFK - SCRK						
			30/30	**30/40**	**30/50**	**30/63**	**40/63**	**40/75**	**50/75**
Posizioni di montaggio *Mounting positions* Einbaulage	**B3**	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B6	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B7	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B8	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	V5	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	V6	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26

IN = Riduttore entrata / *Gearbox at input* / Getriebe am Antrieb **OUT =** Riduttore uscita / *Gearbox at output* / Getriebe am Abtrieb

3.4 Posizione morsettiera | *3.4 Terminal board position* | 3.4 *Lage der Klemmenkaste*



3.5 **Dati tecnici** *3.5 **Technical data*** 3.5 **Technische Daten**

30/30	n_1 = 1400				SCFK					SCRK		
	i_n	30 i_1	30 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
	150	10	15	9.3	32	0.06	1.2	56-63		**37**	0.070	0.51
	200		20	7.0	39	0.06	0.8			**32**	0.050	0.47
	300		30	4.7	52*	0.06	0.8*			**39**	0.045	0.42
	450	15		3.1	73*	0.06	0.5*			**39**	0.032	0.40
	600	20		2.3	91*	0.06	0.4*			**39**	0.026	0.37
	900	30		1.6	125*	0.06	0.3*			**39**	0.019	0.34
	1200	40		1.2	149*	0.06	0.3*			**39**	0.016	0.30
	1500	50		0.9	173*	0.06	0.2*			**39**	0.014	0.28
Kg	**1950**	65		0.7	209*	0.06	0.2*	56		**39**	0.011	0.26
3.0	**2500**	50	50	0.6	235*	0.06	0.1*	56-63		**30**	0.008	0.23
	3250	65		0.4	283*	0.06	0.11*	56		**30**	0.006	0.21
	4000	80		0.4	328*	0.06	0.09*			**30**	0.005	0.20
	5000	100		0.3	385*	0.06	0.08*			**30**	0.005	0.19
	10000		100	0.1	609*	0.06	0.03*			**17**	0.002	0.15

30/40	n_1 = 1400				SCFK					SCRK		
	i_n	30 i_1	40 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
	150	10	15	9.3	72	0.13	1.1	56-63		**82**	0.148	0.54
	200		20	7.0	76	0.11	1.0			**76**	0.110	0.51
	300		30	4.7	79	0.09	1.0			**82**	0.094	0.43
	450	15		3.1	74	0.06	1.1			**82**	0.067	0.40
	600	20		2.3	92	0.06	0.9			**82**	0.054	0.37
	900	30		1.6	126*	0.06	0.6*			**82**	0.039	0.34
	1200	40		1.2	151*	0.06	0.5*			**82**	0.033	0.31
	1500	50		0.9	176*	0.06	0.5*			**82**	0.028	0.29
Kg	**1950**	65		0.7	212*	0.06	0.4*	56		**82**	0.023	0.27
4.0	**2500**	50	50	0.6	236*	0.06	0.3*	56-63		**68**	0.017	0.23
	3250	65		0.4	285*	0.06	0.24*	56		**68**	0.014	0.21
	4000	80		0.4	330*	0.06	0.21*			**68**	0.012	0.20
	5000	100		0.3	387*	0.06	0.18*			**68**	0.011	0.19
	10000		100	0.1	626*	0.06	0.06*			**35**	0.003	0.15

30/50	n_1 = 1400				SCFK					SCRK		
	i_n	30 i_1	50 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
	150	10	15	9.3	124	0.22	1.2	56-63		**149**	0.265	0.55
	200		20	7.0	129	0.18	1.1			**144**	0.201	0.52
	300		30	4.7	118	0.13	1.3			**150**	0.166	0.44
	450	15		3.1	140	0.11	1.1			**150**	0.118	0.42
	600	20		2.3	143	0.09	1.0			**150**	0.094	0.39
	900	30		1.6	131	0.06	1.1			**150**	0.069	0.36
	1200	40		1.2	156	0.06	1.0			**150**	0.058	0.32
	1500	50		0.9	182	0.06	0.8			**150**	0.049	0.30
Kg	**1950**	65		0.7	220*	0.06	0.7*	56		**150**	0.041	0.28
6.0	**2500**	50	50	0.6	253*	0.06	0.5*	56-63		**125**	0.030	0.25
	3250	65		0.4	305*	0.06	0.41*	56		**125**	0.025	0.23
	4000	80		0.4	354*	0.06	0.35*			**125**	0.021	0.22
	5000	100		0.3	414*	0.06	0.30*			**125**	0.018	0.20
	10000		100	0.1	645*	0.06	0.11*			**69**	0.006	0.16

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:** Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

3.5 Dati tecnici

3.5 Technical data

3.5 Technische Daten

30/63

Kg 8.5

n_1 = 1400				SCFK					SCRK		
i_n	30 i_1	63 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	126	0.22	1.8	56-63		**228**	0.400	0.56
200		20	7.0	162	0.22	1.7			**279**	0.378	0.54
300		30	4.7	207	0.22	1.3			**268**	0.285	0.46
450	15		3.1	238	0.18	1.1			**268**	0.202	0.43
600	20		2.3	215	0.13	1.2			**268**	0.162	0.40
900	30		1.6	250	0.11	1.1			**268**	0.118	0.37
1200	40		1.2	243	0.09	1.1			**268**	0.099	0.33
1500	50		0.9	189	0.06	1.4			**268**	0.085	0.31
1950	65		0.7	228	0.06	1.2	56		**268**	0.071	0.29
2500	50	50	0.6	265	0.06	0.8	56-63		**222**	0.050	0.26
3250	65		0.4	319*	0.06	0.70*	56		**222**	0.042	0.24
4000	80		0.4	369*	0.06	0.60*			**222**	0.036	0.23
5000	100		0.3	433*	0.06	0.51*			**222**	0.031	0.21
10000		100	0.1	663*	0.06	0.21*			**138**	0.012	0.16

40/63

Kg 9.5

n_1 = 1400				SCFK					SCRK		
i_n	40 i_1	63 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	214	0.37	1.2	63-71		**261**	0.452	0.56
200		20	7.0	277	0.37	1.0			**279**	0.373	0.55
300		30	4.7	238	0.25	1.1			**268**	0.282	0.46
450	15		3.1	244	0.18	1.1			**268**	0.197	0.44
600	20		2.3	226	0.13	1.2			**268**	0.154	0.43
900	30		1.6	257	0.11	1.0			**268**	0.115	0.38
1200	40		1.2	264	0.09	1.0			**268**	0.091	0.36
1500	50		0.9	203	0.06	1.3	63		**268**	0.079	0.33
1950	65		0.7	241	0.06	1.1	56-63		**268**	0.067	0.30
2500	50	50	0.6	284	0.06	0.8			**222**	0.047	0.28
3250	65		0.4	338*	0.06	0.66*			**222**	0.039	0.25
4000	80		0.4	400*	0.06	0.55*			**222**	0.033	0.24
5000	100		0.3	471*	0.06	0.47*			**222**	0.028	0.23
10000		100	0.1	722*	0.06	0.19*			**138**	0.011	0.18

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

3.5 **Dati tecnici** | *3.5* ***Technical data*** | 3.5 **Technische Daten**

40/75

Kg 14.5

n_1 = 1400				SCFK					SCRK		
i_n	40 i_1	75 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	322	0.55	1.3	63-71		**409**	0.698	0.57
200		20	7.0	417	0.55	1.1			**442**	0.593	0.56
300		30	4.7	358	0.37	1.2			**418**	0.432	0.47
450	15		3.1	346	0.25	1.2			**418**	0.302	0.45
600	20		2.3	390	0.22	1.1			**418**	0.236	0.43
900	30		1.6	309	0.13	1.4			**418**	0.176	0.39
1200	40		1.2	388	0.13	1.1			**418**	0.140	0.36
1500	50		0.9	379	0.11	1.1	63		**418**	0.121	0.34
1950	65		0.7	368	0.09	1.1	56-63		**418**	0.102	0.31
2500	50	50	0.6	296	0.06	1.3			**381**	0.077	0.29
3250	65		0.4	352	0.06	1.08			**381**	0.065	0.26
4000	80		0.4	417	0.06	0.91			**381**	0.055	0.25
5000	100		0.3	491*	0.06	0.78*			**381**	0.047	0.24
10000		100	0.1	762*	0.06	0.30*			**232**	0.018	0.19

50/75

Kg 14.5

n_1 = 1400				SCFK					SCRK		
i_n	50 i_1	75 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	409	0.75	1.0	71-80		**409**	0.750	0.57
200		20	7.0	422	0.55	1.0			**442**	0.576	0.56
300		30	4.7	363	0.37	1.2			**418**	0.427	0.48
450	15		3.1	350	0.25	1.2			**418**	0.299	0.46
600	20		2.3	418	0.25	1.0			**418**	0.250	0.42
900	30		1.6	418	0.18	1.0			**418**	0.180	0.40
1200	40		1.2	406	0.13	1.0			**418**	0.134	0.38
1500	50		0.9	470	0.13	0.9	71		**418**	0.116	0.35
1950	65		0.7	572*	0.13	0.7*	63-71		**418**	0.095	0.33
2500	50	50	0.6	674*	0.13	0.6*			**381**	0.074	0.30
3250	65		0.4	819*	0.13	0.47*			**381**	0.060	0.28
4000	80		0.4	939*	0.13	0.41*			**381**	0.053	0.26
5000	100		0.3	1108*	0.13	0.34*			**381**	0.045	0.25
10000		100	0.1	1719*	0.13	0.13*			**232**	0.018	0.19

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

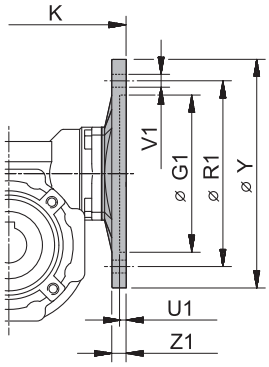
**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

3.6 Predisposizioni possibili

3.6 Possible set-ups

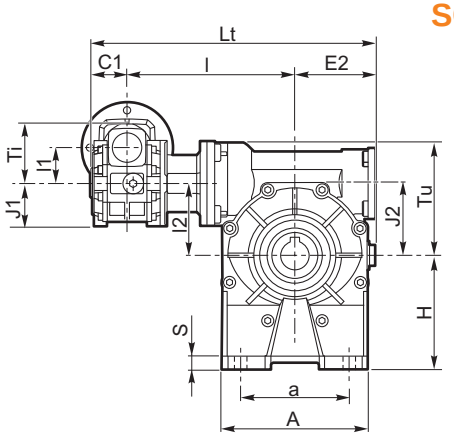
3.6 Mögliche Vorrichtungen

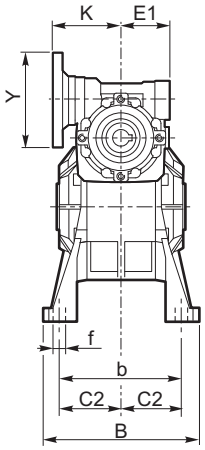


SCFK	PAM IEC	G_1	K	R_1	U1	V1 Ø	V1	V1	Y	Z_1	Diametro fori PAM / *Holes diameter IEC-Input* Bohrungdurchmesser IEC-Antrieb 7.5	10	15	20	25	30	40	50	65	80	100
30/30 30/40 30/50 30/63	**56 B5**	80	57	100	4	7	n° 8		120	8	9	9	9	9	9	9	9	9	9	9	9
	56 B14	50		65	3.5	6	n° 8		80	8	9	9	9	9	9	9	9	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	8	11	11	11	11	11	11	11	11	/	/	/
	63 B14	60		75	4	6	n° 8		90	8	11	11	11	11	11	11	11	11	/	/	/
40/63 40/75	**56 B5**	80	75	100	4	7	n° 8		120	9	/	/	/	/	/	/	/	9	9	9	9
	56 B14	50		65	3.5	6		n° 4	80	8	/	/	/	/	/	/	/	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	9	11	11	11	11	11	11	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	11	11	11	11	11	11	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	/	/	/	/
	71 B14	70		85	3.5	7	n° 8		105	8	14	14	14	14	14	14	14	/	/	/	/
50/75	**63 B5**	95	82	115	4	9	n° 8		140	9	/	/	/	/	/	/	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	/	/	/	/	/	/	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	14	14	14	14
	71 B14	70		85	3.5	7	(n° 8)*	n° 4	105	8	14	14	14	14	14	14	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	/	/	/	/
	80 B14	80		100	4	7	n° 8		120	10	19	19	19	19	19	19	19	/	/	/	/

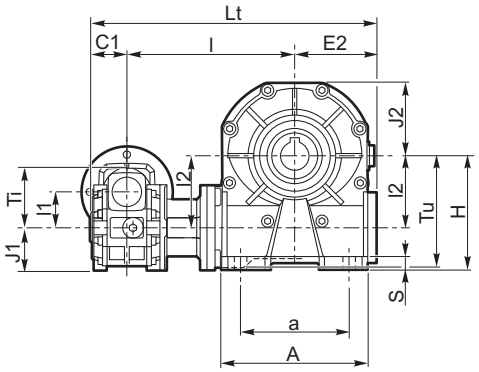
* A richiesta, solo con corpo speciale / *Upon request, only with special body* / Auf Wunsch nur mit speziellen Körper

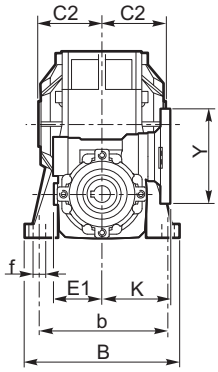
SCFK.../A



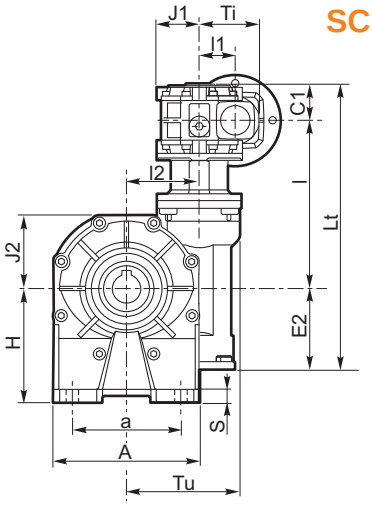


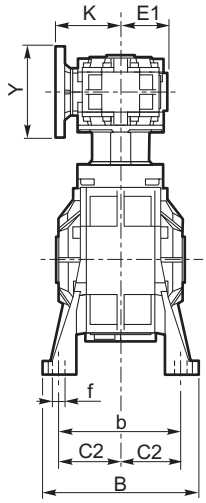
SCFK.../B

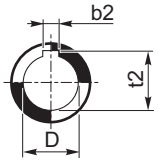




SCFK.../V







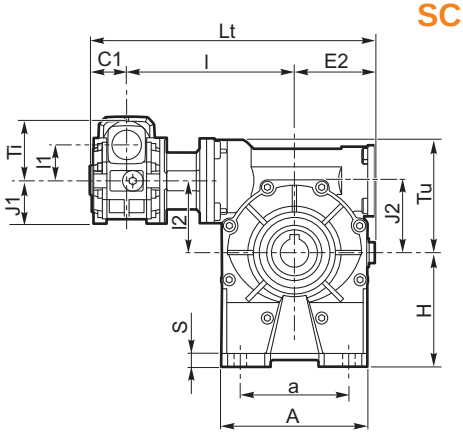
SCFK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
30/30	**14**	5	16.3
30/40	**19**	6	21.8
30/50	**24**	8	27.3
30/63 **40/63**	**25**	8	28.3
40/75 **50/75**	**28** (30)	8 (8)	31.3 (33.3)

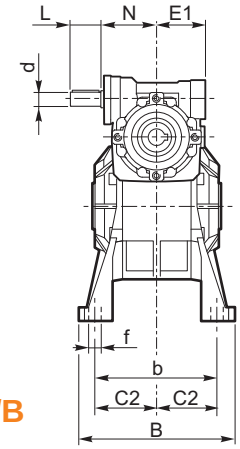
A, B, V

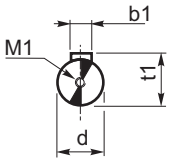
SCFK	A	a	B	b	C1	C2	E1	E2	f	H	l	l1	l2	J1	J2	Kc	Lt	S	Ti	Tu
30/30	67	52 ÷ 40	78	66		31.5		41	6.5	52	100		31.5		37.5	57	171.5	5		52.5
30/40	87	70	100	80 ÷ 88	31.5	41	41	51	7	71	122	31.5	40	37.5	43.5	57	203.5	9	52.5	68.5
30/50	115	85	119	96 ÷ 102		49		60	9	85	132		50		53.5	57	223.5	11		82.5
30/63	127.5	95	136	111		60		71	11	100	147		63		64	57	248.5	12		100.5
40/63	127.5	95	136	111	39	60	51	71	11	100	152	40	63	43.5	64	75	261	12	68.5	100.5
40/75	155.5	120	140	112÷120		60		85	11	115	176.5		75		78	75	301.5	12		116.5
50/75	155.5	120	140	112÷120	46	60	60	85	11	115	192	50	75	53.5	78	82	324	12	82.5	116.5

3.7 **Dimensioni** *3.7 **Dimensions*** 3.7 **Abmessungen**

SCRK.../A

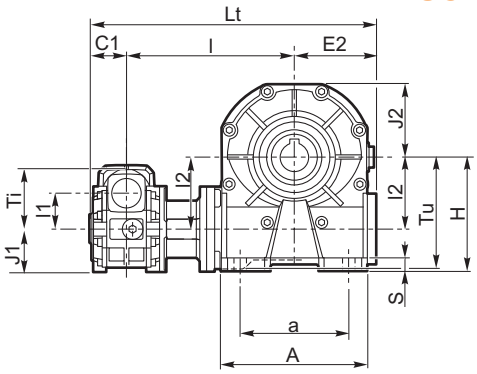


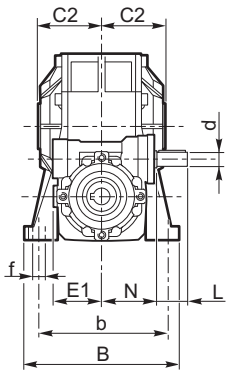


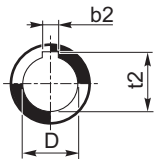


SCRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	**b1**	**t1**	**M1**
30/30 30/40 30/50 30/63	9	3	10.2	M4x10
40/63 40/75	11	4	12.5	M4x10
50/75	14	5	16	M5x13

SCRK.../B

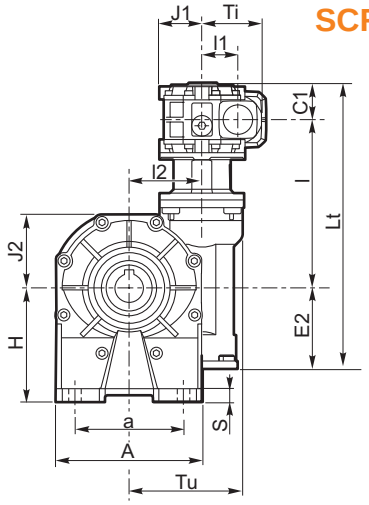


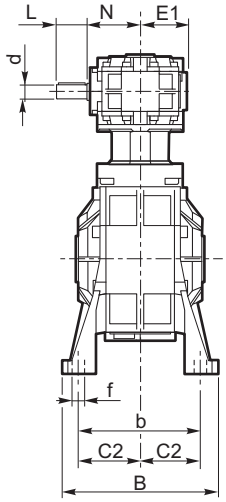




SCRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
3030	**14**	5	16.3
30/40	**19**	6	21.8
30/50	**24**	8	27.3
30/63 40/63	**25**	8	28.3
40/75 50/75	**28** (30)	8 (8)	31.3 (33.3)

SCRK.../V

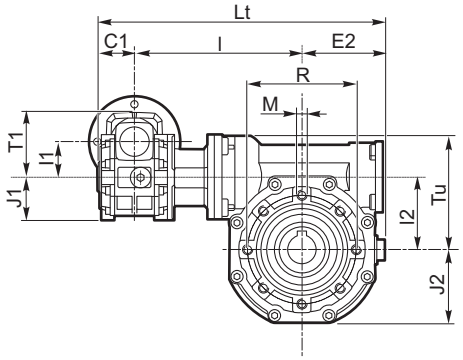




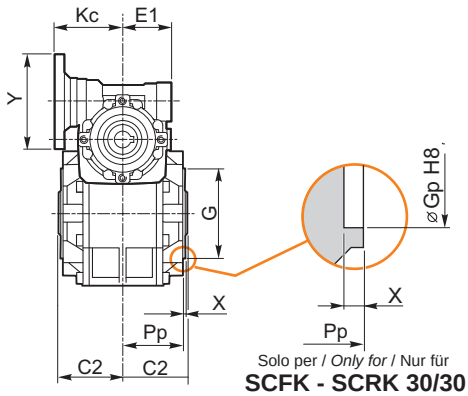
A, B, V

SCRK	A	a	B	b	C1	C2	E1	E2	f	H	I	I1	I2	J1	J2	Lt	L	N	S	Ti	Tu
30/30	67	52 ÷ 40	78	66	31.5	31.5	41	41	6.5	52	100	31.5	31.5	37.5	37.5	171.5	20	47	5	52.5	52.5
30/40	87	70	100	80 ÷ 88		41		51	7	71	122		40		43.5	203.5			9		68.5
30/50	115	85	119	96 ÷ 102		49		60	9	85	132		50		53.5	223.5			11		82.5
30/63	127.5	95	136	111		60		71	11	100	147		63		64	248.5			12		100.5
40/63	127.5	95	136	111	39	60	51	71	11	100	152	40	63	43.5	64	261	22	64	12	68.5	100.5
40/75	155.5	120	140	112 ÷ 120		60		85	11	115	176.5		75		78	301.5			12		116.5
50/75	155.5	120	140	112 ÷ 120	46	60	60	85	11	115	192	50	75	53.5	78	324	30	74	12	82.5	116.5

3.7 Dimensioni — *3.7 Dimensions* — 3.7 Abmessungen

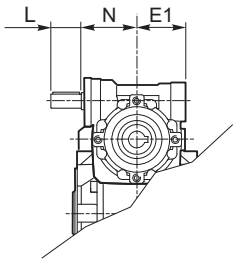


SCFK.../P
SCFK.../FP2



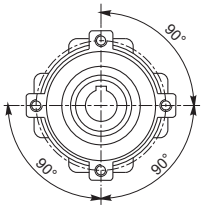
Solo per / *Only for* / Nur für
SCFK - SCRK 30/30

SCRK.../P
SCRK.../FP2



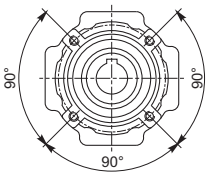
Flangia pendolare / *Side cover for shaft mounting* / Flansch für Drehmomentstutze

30

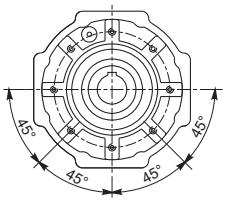


4 Fori / *Holes* / Bohrungen

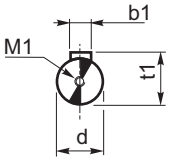
40 - 50



63 - 75



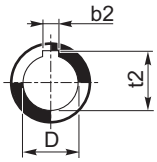
8 Fori / *Holes* / Bohrungen



SCRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	**b1**	**t1**	**M1**
30/30 30/40 30/50 30/63	9	3	10.2	M4x10
40/63 40/75	11	4	12.5	M4x10
50/75	14	5	16	M5x13

P					
SCFK SCRK	**30/30**	**30/40**	**30/50**	**30/63 40/63**	**40/75 50/75**
G_p	42* **H8**	60 **h8**	70 **h8**	70 **h8**	80 **h8**
M	M6x8	M6X10	M8x10	M8x14	M8x14
P_p	36	38	46	57.5	57
R_p	56	83	85	85	100
X	5.5	2	2	3.5	2

* Vedere dettaglio (SCFK - SCRK 30/P)
Pls refer to above detail (SCFK - SCRK 30/P)
Siehe o.g. Einzelheit (SCFK - SCRK 30/P)



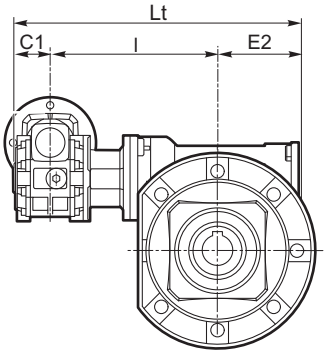
SCFK SCRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
30/30	**14**	5	16.3
30/40	**19** (18)	6 (6)	21.8 (20.8)
30/50	**24** (25)	8 (8)	27.3 (28.3)
30/63 40/63	**25**	8	28.3
40/75 50/75	**28** (30)	8 (8)	31.3 (33.3)

FP2					
SCFK SCRK	**30/30**	**30/40**	**30/50**	**30/63 40/63**	**40/75 50/75**
G_p h8	—	50 h8	60 h8	—	—
M	—	M6X8.5	M6X9	—	—
P_p	—	38	46	—	—
R_p	—	65	75	—	—
X	—	2	2	—	—

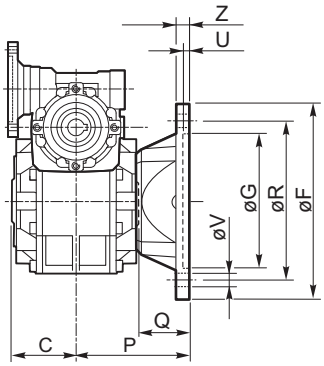
P - FP2															
SCFK SCRK	**C1**	**C2**	**E1**	**E2**	**I**	**I1**	**I2**	**J1**	**J2**	**Kc**	**L**	**Lt**	**N**	**Ti**	**Tu**
30/30	31.5	31.5	41	41	100	31.5	31.5	37.5	37.5	57	20	171.5	47	52.5	52.5
30/40		41		51	122		40		43.5	57		203.5			68.5
30/50		49		60	132		50		53.5	57		223.5			82.5
30/63		60		71	147		63		64	57		248.5			100.5
40/63	39		51	71	152	40	63	43.5	64	75	22	261	64	68.5	100.5
40/75		60		85	176.6		75		78	75		301.5			116.5
50/75	46		60	85	192	50	75	53.5	78	82	30	324	74	82.5	116.5

3.7 Dimensioni — *3.7 Dimensions* — 3.7 Abmessungen

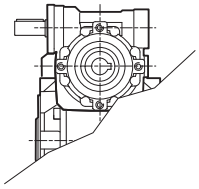
Flangia uscita / *Output flange* / Abtriebsflansch

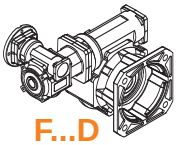


SCFK.../F

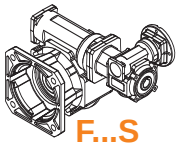


SCRK.../F



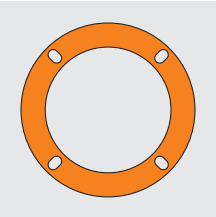
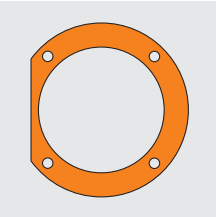
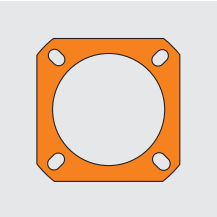
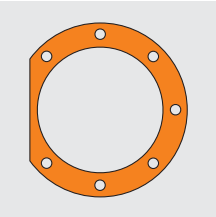
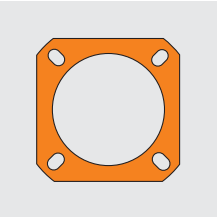
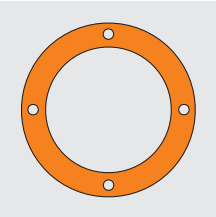


F...D
Standard

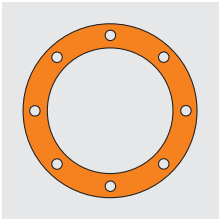
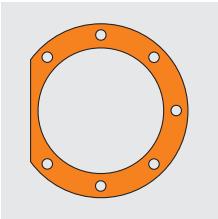
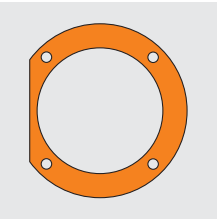
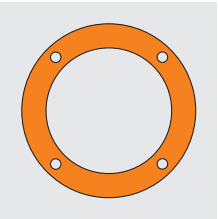


F...S

Tipo flangia / *Type flange* / Typ flansch

30/30	30/40		30/50		
F	F	F1* - F2*	F	F1	F2 - F3

30/63 40/63	63	40/75 50/75	30/63 40/63	40/75 50/75	30/63 40/63	40/75 50/75
F*	F1*	F* - F1*	F2*	F2* - F3* F3A*	F3*	F4*

N.B.

Tutte le flange possono essere applicate sui riduttori in versione P, ad eccezione di quelle evidenziate con (*) che possono essere montate solo in presenza di un coperchio pendolare speciale.

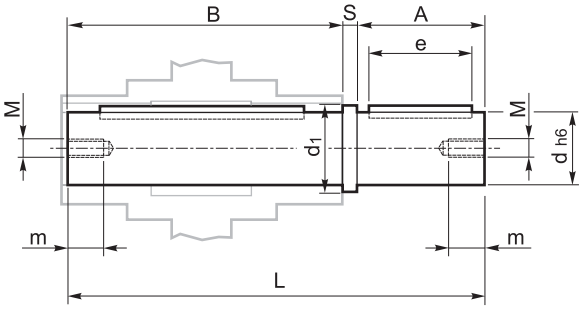
All flanges can be applied to the gearbox version of P, except those marked with (*) that can be installed only in presence of a special cover.

Alle Flansche können mit Getrieben der Version P eingesetzt werden, außer denen mit (*) gekennzeichneten - diese sind dann nur in der Kombination mit einem Deckel verwendbar.

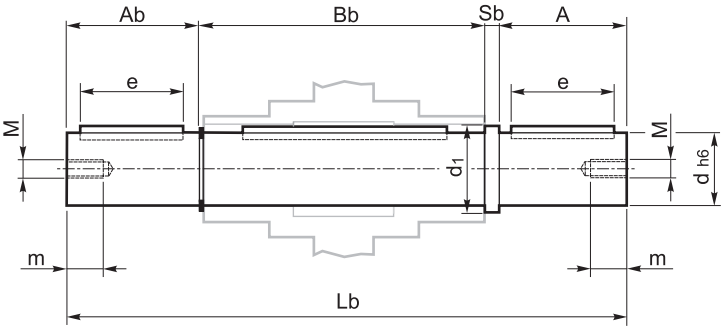
SCFK SCRK	Tipo flangia *Type flange* Typ flansch	C	F		G (H8)	P	Q	R	U	V			Z
												ø	
30/30	F	31.5	71		40	50.5	19	56 ÷ 60	3	n° 4		6.5	6
30/40	F	41	140		95	82	41	115	5	n° 4		9	9
	F1			85	60	68.5	27.5	75 ÷ 90	4	n° 4		9	8
	F2			85	60	98.5	57.5	75 ÷ 90	4	n° 4		9	8
30/50	F	49	160		110	92	43	130	5		n° 7	11	11
	F1			94	70	92.5	43.5	85 ÷ 100	5	n° 4		11	10
	F2		125		70	73	24	90 ÷ 115	5	n° 4		10.5	10
	F3		125		70	85	36	90	5	n° 4		10.5	10
30/63 40/63	F*	60	180		115	116	56	150	7		n° 8	11	12
	F1*		180		115	86	26	150	5		n° 7	11	11
	F2*		200		130	102	42	165	6	n° 4		13	11
	F3*		160		110	82	22	130	5	n° 4		11	11
40/75 50/75	F*	60	200		130	111	51	165	6		n° 7	13	13
	F1*		200		130	85	25	165	6		n° 7	13	13
	F2*		175		115	116	56	150	6	n° 4		11	12
	F3*		175		115	85	25	150	5	n° 4		11	12
	F3A*		160		110	85	25	130	5	n° 4		11	12
	F4*		160		110	101	41	130	6	n° 4		11	12

3.8 Accessori / *3.8 Accessories* / 3.8 Zubehör

Albero lento semplice / *Single output shaft* / Standard Abtriebswelle



Albero lento doppio / *Double output shaft* / Doppelte Abtriebswelle



SCFK SCRK	A	Ab	B	Bb	d (h6)	d1	e	L	Lb	M	m	S	Sb
30/30	30	29	62	64	14	18.5	20	94.5	126	M6	16	2.5	2.5
30/40	40	39	77	83.2	19	24.5	30	120	165.2	M6	16	3	3
30/50	50	49	90	99.2	24	29.5	40	143.5	201.2	M8	22	3.5	3.5
30/63 40/63	60	59	119	121.2	25	29.5	50	183	244.2	M8	22	4	4
40/75 50/75	60	59	119	121.5	28	34.5	50	183	244.5	M8	22	4	4

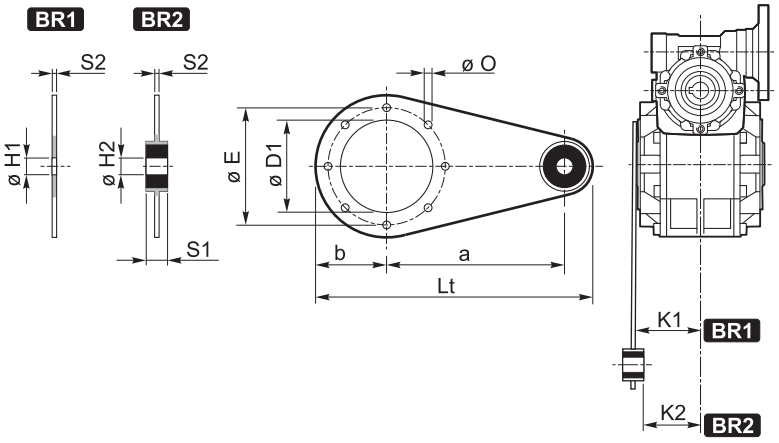
BR1 Senza boccola / *Without bush* / Ohne Büchse

SCFK SCRK	a	b	D1	E	H1	K1	Lt	O	S1	S2
30/30	70	34.5	42	56	9	36	119.5	7	—	4
30/40	90	50	60	83	10	38	165	7	—	4
30/50	100	55	70	85	10	46	180	9	—	4
30/63 40/63	150	53	70	85	10	57.5	230	9	—	6

BR2 Con boccola / *With bush* / Mit Büchse

SCFK SCRK	a	b	D1	E	H2	K2	Lt	O	S1	S2
30/40	90	50	60	83	8	33	165	7	14	4
30/50	100	50	70	85	10	40.5	180	9	14	4
30/63 40/63	150	53	70	85	10	50.5	230	9	20	6
40/75 50/75	150	62	80	100	10	50	240	9	20	6

Braccio di reazione / *Torque arm* / Drehmomentstütze



Opzioni disponibili:

Cuscinetti a rulli conici corona

Available options:

Tapered roller bearing for worm wheel

Auf Anfrage ist folgendes Zubehör erhältlich:

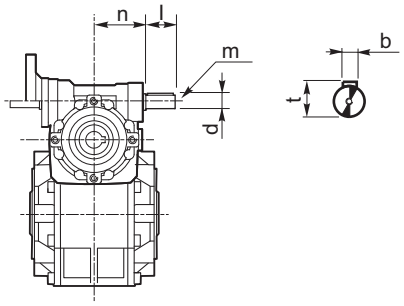
Kegelrollenlager für Schneckenrad

3.9 Esecuzione con vite bisporgente

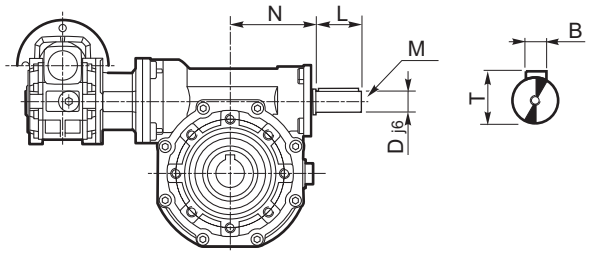
3.9 Double extended worm shaft design

3.9 Versionen mit Doppelseitig Herausragender Schneckenwelle

SeA1



SeA2



SCFK	SeA1					
	b	**d** j6	**l**	**m**	**n**	**t**
30/30 30/40 30/50 30/63	3	9	15	M4x10	42.5	10.2
40/63 40/75	4	11	20	M4x12	52.5	12.5
50/75	5	14	25	M5x13	62.5	16

SCFK SCRK	SeA2					
	B	**D** j6	**L**	**M**	**N**	**T**
30/30	3	9	15	M4x10	42.5	10.2
30/40	4	11	20	M4x12	52.5	12.5
30/50	5	14	25	M5x13	62.5	16
30/63 40/63	6	19	30	M8x20	72.5	21.5
40/75 50/75	8	24	40	M8x20	93	27

SCRK	SeA1					
	b	**d** j6	**l**	**m**	**n**	**t**
30/30 30/40 30/50 30/63	3	9	20	M4x10	42.5	10.2
40/63 40/75	4	11	22	M4x10	52.5	12.5
50/75	5	14	30	M5x13	62.5	16

L'entrata supplementare del riduttore in uscita (SeA2) non può essere utilizzata come comando in quanto il relativo movimento risulta impedito dalla irreversibilità del primo riduttore.
Utilizzato come asse condotto, avrà veliocità corrispondente a quella di ingresso ridotta del rapporto del primo riduttore.

The second input shaft of the output gearbox (SeA2) can not be utilized as a drive because its motion will be stopped by the reversibility of the first gearbox.
If utilized as a drive shaft its speed will be equal to the input speed decreased by the ratio of the first gearbox.

Die verlängerte Schneckenwelle des zweiten Getriebes (SeA2) kann nicht als Antrieb verwendet werden, da die Selbshemmung des ersten Getriebes entgegengewirkt.
Wird sie als Abtriebswelle verwendet, besitzt sie eine um die Untersetzung des ersten Getriebes entsprechend reduzierte Drehzahl und Drehmoment.

3.10 Limitatore di coppia cavo passante

Il limitatore di coppia viene consigliato in tutte quelle applicazioni che richiedono una limitazione sulla coppia trasmissibile per proteggere l'impianto e/o preservare il riduttore evitando sovraccarichi o urti indesiderati quanto inaspettati.
È un dispositivo con albero dotato di cavo passante, con funzionamento a frizione, ed è integrato al riduttore, presentando un ingombro limitato.
Concepito per lavorare a bagno d'olio, il dispositivo risulta affidabile nel tempo ed è esente da usura se non viene mantenuto in condizioni prolungate di slittamento (condizione che si verifica quando la coppia presenta valori superiori a quelli di taratura).
La taratura è facilmente regolabile dall'esterno attraverso il serraggio di una ghiera autobloccante che porta a compres- sione le 4 molle a tazza disposte tra loro in serie.
Il dispositivo non consente:
- l'impiego di cuscinetti a rulli conici in uscita
- funzionamento prolungato in condizioni di slittamento.

Nella tabella seguente vengono riportati i valori delle coppie di slittamento M_{2S} in funzione del n° di giri della ghiera.

3.10 Torque limiter with through hollow shaft

The use of a torque limiter is advisable when the application requires the limitation of the transmissible torque to safeguard the plant and/or the gearbox from unexpected or undesired overloads.
The torque limiter is equipped with a through hollow shaft and a friction clutch.
It is integrated in the gearbox, therefore space requirement is limited.
Designed to be working in oil bath, the device is reliable over time and is not subject to wear unless in case of operation with prolonged slipping (it occurs when the torque values are higher than the calibration values).
Calibration can be easily adjusted from outside by tightening of the self-locking ring nut, which causes the compression of the 4 Belleville washers arranged in series.

The device does not go together with:
- *the use of tapered roller bearings at output*
- *prolonged operation under slipping conditions*

The following table shows the values of M_{2S} slipping torques depending on the number of revolutions of the ring nut.

3.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Die Anwendung eines Drehmomentbegrenzers wird empfohlen, um die Anlage und/oder das Getriebe gegen ungewünschte und unerwartete Überbelastungen zu schützen.
Es handelt sich um eine Vorrichtung mit einer durchgehenden Hohlwelle.
Er ist in dem Getriebe integriert, d.h. der Raumbedarf ist klein. Der Begrenzer wurde für Betrieb in einem Ölbad entworfen.
Er ist zuverlässig und verschleißfrei (nur im Falle eines dauerhaften Rutschens entsteht Verschleiß, hier ist das Drehmoment größer als der eingestellte Eichwert).
Die Eichung kann mühelos von aussen durch das Anziehen einer selbstsperrenden Mutter ausgeführt werden, dadurch wird der Druck auf die 4 wechselseitig angeordneten Tellerfedern erhöht.

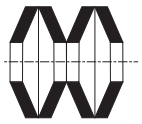
Die Vorrichtung sieht das folgende nicht vor:
- die Verwendung von Kegelrollenlager am Abtrieb
- Längerer Rutschbetrieb

Die nachstehende Tabelle zeigt die Werte der Rutschmomente M_{2S} abhängig von der Anzahl der Umdrehungen der Mutter. Die Eichwerte weisen ±10% Toleranz

SCFK SCRK	N°. giri della ghiera di regolazione / *N°. revolutions of ring nut* Nr. Umdrehungen der Mutter								
	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
	$M_{2S\ [Nm]}$								
30/30	22	27	33	38	43	—	—	—	—
30/40	55	64	73	87	—	—	—	—	—
30/50	75	97	120	157	—	—	—	—	—
30/63 40/63	—	127	155	180	205	262	260	282	—
40/75 50/75	—	—	235	265	295	327	360	407	455

Disposizione delle molle
Washers' arrangement
Lage der Feder

IN SERIE (min. coppia, max. sensibilità)
SERIES *(min. torque, max sensitivity)*
SERIE (min. Moment, max. Empfindlichkeit)



I valori di taratura presentano una tolleranza del ±10% e si riferiscono ad una condizione statica.
In condizioni dinamiche è da notare che la coppia di slittamento assume valori diversi a seconda del tipo e/o modalità in cui si verifica il sovraccarico: con valori maggiori in caso di carico uniformemente crescente rispetto a volori più contenuti in seguito al verificarsi di picchi improvvisi di carico.
NOTA: quando si supera il valore di taratura si ha slittamento. Il coefficiente di attrito tra le superfici di contatto da statico diventa dinamico e la coppia trasmessa cala del 30% circa.
E' quindi opportuno prevedere uno stop per poter ripartire al valore di taratura iniziale.

Calibration values feature a ±10% tolerance and refer to static conditions.
Under dynamic conditions the values of the slipping torque will change according to the type of overload: the values are higher if the load increase is uniform; the values are lower if sudden load peaks occur.

NOTE: *Slipping occurs when the setting values are exceeded.*
The friction coefficient between the contact surfaces from static becomes dynamic and the transmitted torque is approx. 30% lower.
It is advisable to have a stop first in order to have a restart based on the initial setting value.

auf und beziehen sich auf statische Bedingungen.
Unter dynamischen Bedingungen hat das Rutschmoment verschiedene Werte je nach Art der Überbelastung. Die Werte sind höher, wenn die Belastung gleichmäßig zunimmt; sie sind niedriger im Falle von plötzlichen Belastungsspitzen.
BEMERKUNG: Rutschen tritt auf, wenn die eingestellten Werte überschritten werden. Der Reibungsfaktor zwischen den Berüehrungsflächen wird dynamisch anstatt statisch und das übertragene Drehmoment sinkt um ca. 30%.
Es ist daher ratsam, vor dem erneuten Anfahren anzuhalten, um die ursprünglichen Drehmomentwerte zu erreichen.

3.10 Limitatore di coppia cavo passante

E' importante notare che la coppia di slittamento non resta sempre la medesima durante tutta la vita del limitatore.
Tende infatti a diminuire in rapporto al numero e alla durata degli slittamenti che, rodando le superfici di contatto, ne aumentano il rendimento.
È quindi opportuno verificare periodicamente, soprattutto durante la fase di rodaggio, la taratura del dispositivo.
Là dove sia richiesto un errore più contenuto nella taratura, è necessario testare la coppia trasmissibile sull'impianto.

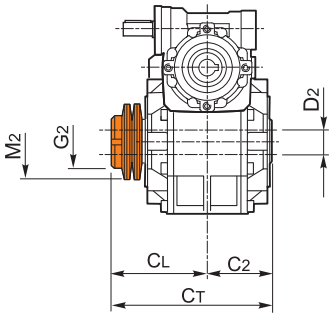
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

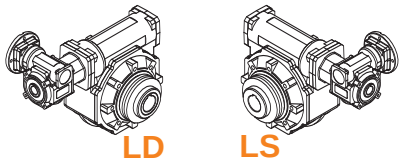
3.10 Torque limiter with through hollow shaft

It is important to note that the slipping torque is not the same for the whole life of the torque limiter.
It usually decreases in connection with the numbers and the duration of the slipping which because of the surfaces' lapping will increase the efficiency.
For this reason it is advisable to check the calibration of the device at regular intervals, specially during the running-in period.
Should a smaller calibration error be required, it is necessary to test the transmissible torque on the plant.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

3.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Es ist wichtig zu beachten, dass das Rutschmoment über die gesamte Lebensdauer der Rutschkupplung nicht konstant bleibt, sondern üblicherweise in Verbindung mit längeren Rutschzyklen aufgrund der eingelaufenen Berührungsflächen abnimmt.
Deswegen ist es ratsam, die Eichung der Vorrichtung besonders während der Einlaufzeit zu prüfen.
Falls ein niedrigerer Eichfehler gewünscht ist, sollte das übertragbare Drehmoment auf der Anlage getestet werden.
Wenn die Vorrichtung geliefert wird, ist sie schon auf das im Katalog T_{2M} angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegebene wird.





SCFK SCRK LD - LS	C_2	C_L	C_t	D_2 H7	M_2	G_2
30/30	31.5	61.5	93	14	50x25.4x1.5	M25X1.5
30/40	41	67	108	19	56x30.5x2	M30X1.5
30/50	49	79	128	24	63x40.5x2.5	M40X1.5
30/63 40/63	60	97	157	25	71x40.5x2.5	M40X1.5
40/75 50/75	60	100	160	28 (30)	90x50.5x3.5	M50X1.5

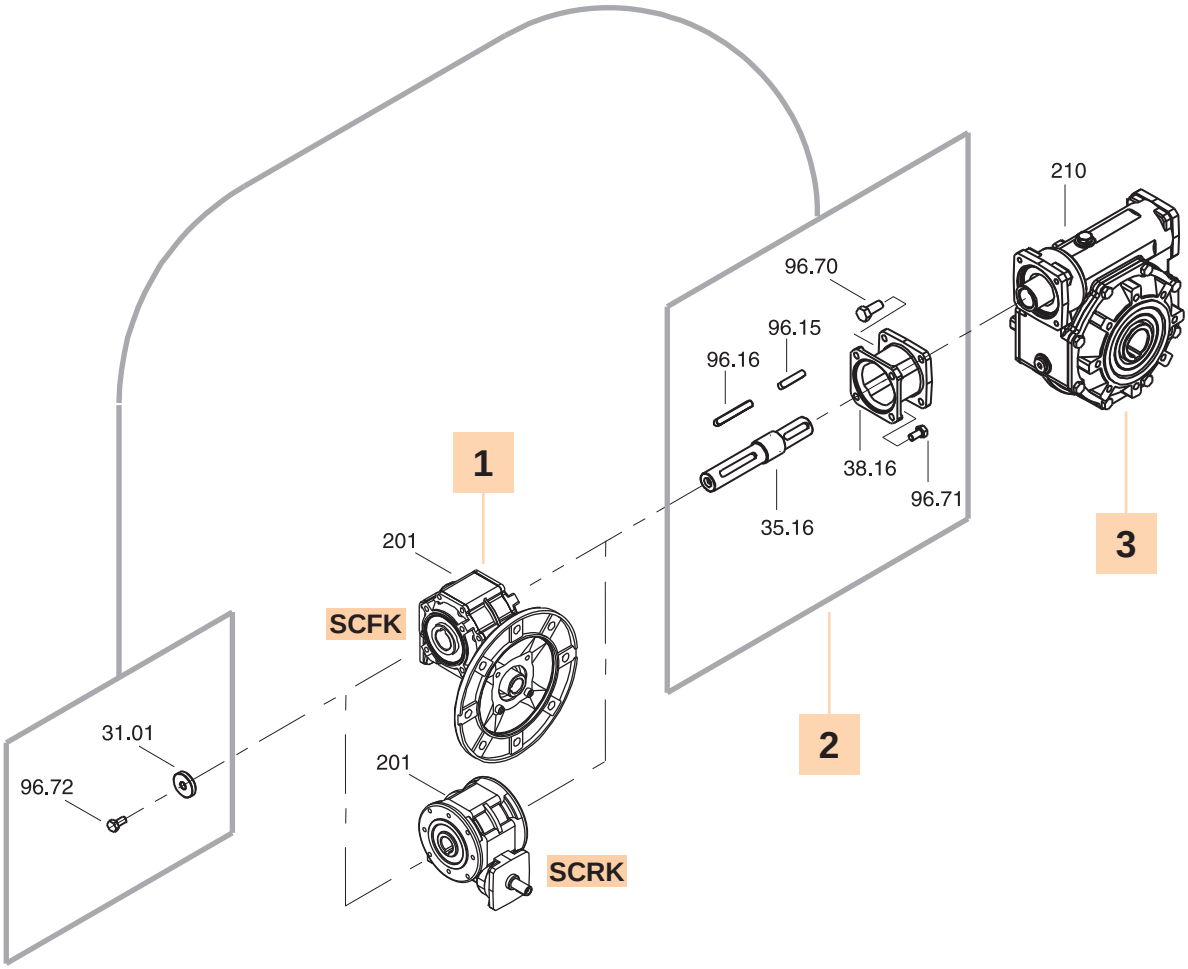
( ) A richiesta / *On request* / Auf Anfrage

Nella versione con limitatore non è prevista la fornitura degli alberi lenti.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

The version with torque limiter is supplied without output shafts.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

Die Version mit Drehmomentbegrenzer wird ohne Abtriebswellen geliefert.
Wenn die Vorrichtung geliefert wird, ist sie schon auf dem im Katalog T_{2M} angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegeben wird.

SCFK - SCRK



	1		2	3
	IN (SCFK)	IN (SCRK)	KIT	OUT
30/30	KC30	KA30	**KIT 30/30** (2850002010)	30/9
30/40			**KIT 30/40** (2850002013)	40/11
30/50			**KIT 30/50** (2850002016)	50/14
30/63			**KIT 30/63** (2850002019)	63/19
40/63	KC40	KA40	**KIT 40/63** (2850002028)	63/19
40/75			**KIT 40/75** (2850002031)	75/24
50/75	KC50	KA50	**KIT 50/75** (2850002034)	75/24

3.11 **Lista parti di ricambio** *3.11* ***Spare parts list*** 3.11 **Ersatzteilliste**

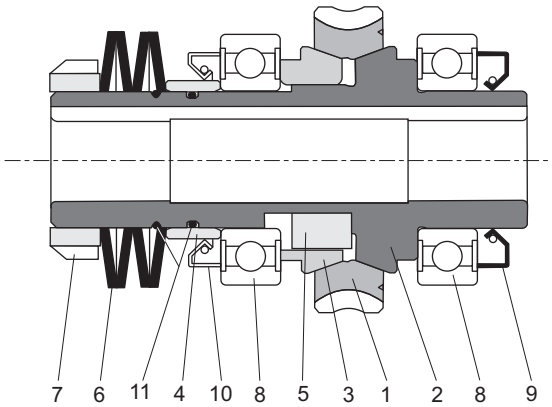
SCFK - SCRK

Limitatore di coppia cavo passante

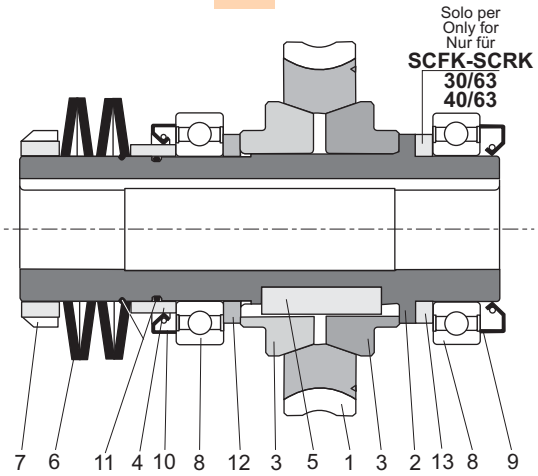
Torque limiter with through hollow shaft

Drehmomentbegrenzer mit durchgehende Hohlwelle

A

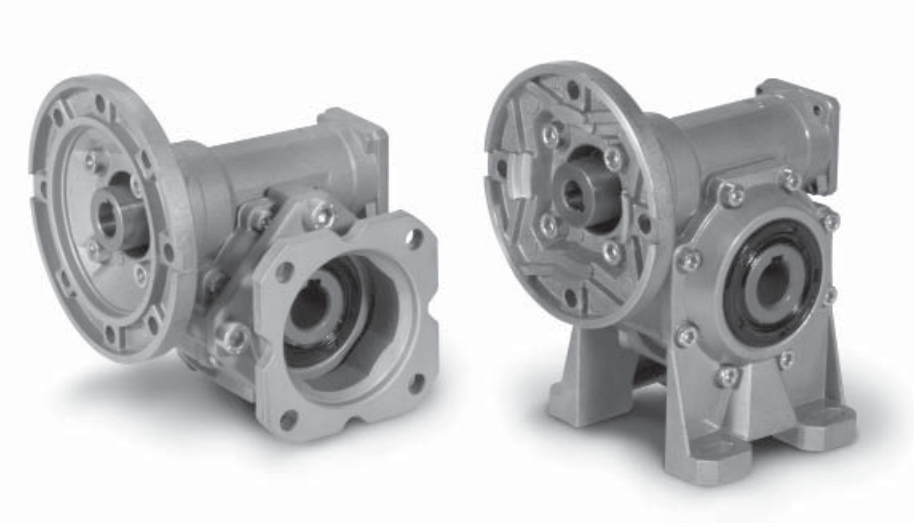


B



		A			B	
		SCFK - SCRK				
		30/30 (L1-LD-LS) **30/40** (L1) **30/50** (L1) **30/63** (L1)	**30/40** (LD - LS) **40/63** (L1) **40/75** (L1)	**30/50** (LD - LS) **50/75** (L1)	**30/63** (LD - LS) **40/63** (LD - LS)	**40/75** (LD - LS) **50/75** (LD - LS)
5	Linguetta / *Key* / Passfeder	8x7x10AB	10x8x13AB	12x8x18AB	12x8x40A	16x10x40A
8	Cuscinetti / *Bearings* / Lager	6005 25x47x12	6006 30x55x13	6008 40x68x15	6008 40x68x15	6010 50x80x16
9	Anelli di tenuta / *Oilseals* Öldichtungen	25x40x7	30x47x7	40x62x8	40x62x8	50x72x8
10		30x40x5	35x47x7	48x62x8	48x62x8	58x72x8
11	O-rings in gomma *Rubber O-rings* Gummi-O-ringe	OR2087 21.95x1.78	OR2106 26.7x1.78	OR 36.27x1.78	OR 36.27x1.78	OR2187 47.37x1.78

4 RIDUTTORI A VITE SENZA FINE BFK-BRK / *BFK-BRK WORM GEARBOXES* / SCHNECKENGETRIEBE BFK-BRK



09/2011

4.1 Caratteristiche

I riduttori della serie a vite senza fine BFK - BRK si presentano estremamente leggeri grazie alla forma compatta e la carcassa realizzata in alluminio pressofuso. La serie presenta una svariata possibilità di versioni, con e senza piedi e con numerosi accessori che la rendono più versatile nell'impiego delle più svariate tipologie di applicazioni.
La vite senza fine è in acciaio legato cementato-temprato ed è rettificata. La corona ha mozzo in ghisa con riporto di fusione in bronzo.

4.1 Characteristics

The BFK - BRK worm gearboxes are extremely light thanks to the compact shape of the housing made of cast aluminum. This series features a wide range of versions, with and without feet, with numerous accessories which make it extremely versatile for utilization in various applications.
The worm shaft is ground and is made of hardened-casehardened compound steel.
The worm wheel features a cast iron hub with bronze casting.

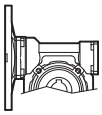
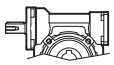
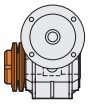
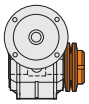
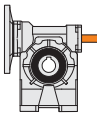
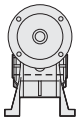
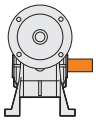
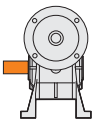
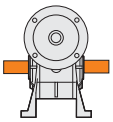
4.1 Merkmale

Die Schneckengetriebe der BFK - BRK Serie sind äußerst leicht dank der kompakten Form des Gehauses aus Aluminiumguss. Die Serie bietet verschiedene Versionen mit und ohne Füße sowie zahlreiche Zubehörteile an, was zur vielseitigen Anwendbarkeit der Getriebe in vielerlei Applikationen dient.
Die Schneckenwelle ist aus legierten gehärteten Einsatzstahl und ist geschliffen.
Die Zahnkranz verfügt über eine Nabe aus Gusseisen mit Schmelzeneinsatz aus Bronze.

4.2 Designazione

4.2 Designation

4.2 Bezeichnung

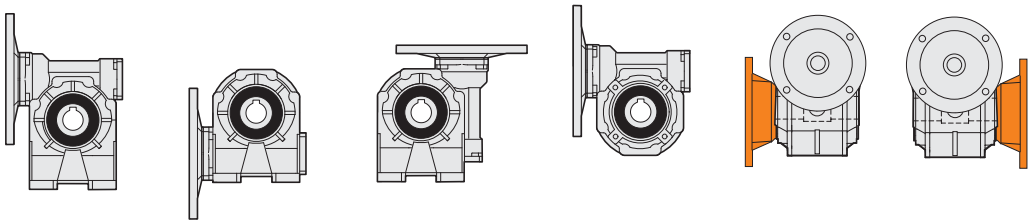
Riduttore *Gearbox* Getriebe	Grandezza *Size* Größe	Versione *Version* Ausführung	Rapporto rid. *Ratio* Untersetzung	Predispos.att. mot. *Motor coupling* Motoranschluss	Posizione di mont. *Mounting position* Einbaulage	Limitatore di coppia. *Torque limiter* Drehmoment-begrenzer	Seconda entrata *Additional input* Zusatzantrieb	Albero uscita *Output shaft* Abtriebswelle	Braccio di reazione *Torque arm* Drehmomentstütze
BFK	**50**	**FS**	**10**	**80 B14**	**B3**	**LD**	**SeA**	**H**	**BR2**
 **BFK**  **BRK**	30 40 50 63 75	A B V P F...S F...D	7.5 10 15 20 25 30 40 50 65 80 100	56 ÷ 112 B5 56 ÷ 112 B14	B3 B6 B7 B8 V5 V6	 **LS**  **LD**	 **SeA**	 **H**  **SD**  **SS**  **DD**	 **BR2**

Versioni

Versions

Ausführungen

BFK..A_ BRK..A_ | BFK..B_ BRK..B_ | BFK..V_ BRK..V_ | BFK..P_ BRK..P_ | BFK..F_S BRK..F_S | BFK..F_D BRK..F_D



Specificare sempre in fase di ordinazione la versione.

Specify the version when ordering.

Bei der Bestellung immer die Bauform angeben.

4.3 Lubrificazione

Riduttori a vite senza fine BFK - BRK sono forniti tutti e sempre completi di lubrificante sintetico a base PAG con classe di viscosità ISO 320.
Nei corpi in alluminio 30, 40, 50, 63, 75 è presente un solo tappo di riempimento olio.

4.3 Lubrication

BFK - BRK worm gearboxes are supplied with PAG synthetic lubricant featuring an ISO 320 viscosity class.
Aluminium housings size 30, 40, 50, 63 and 75 have one filling plug only.

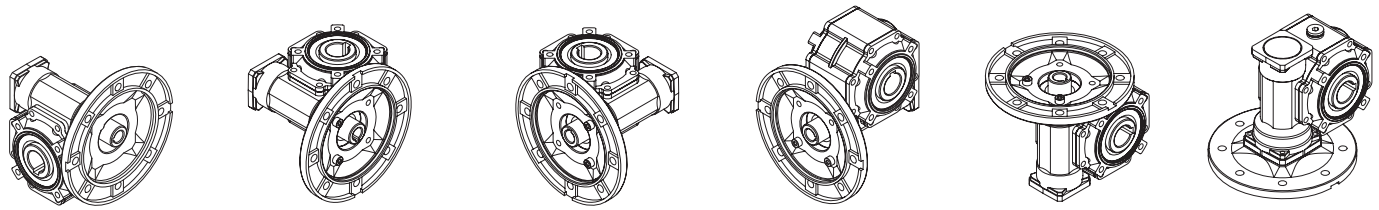
4.3 Schmierung

BFK - BRK Schneckengetriebe werden mit PAG synthetischen Schmierstoff Viskositätsklasse ISO 320 geliefert.
Gehäuse aus Alumiunium Größe 30, 40, 50, 63 und 75 verfügen über nur eine Einfüllschraube.

Quantità di lubrificante (litri) / *Lubricant quantity (liters)* / Schmiermittelmenge (Liter)

BFK BRK	B3	B6-B7	B8	V5-V6
30	0.015			
40	0.040			
50	0.080			
63	0.160			
75	0.260			

Posizioni di montaggio / *Mounting positions* / Bezeichnung

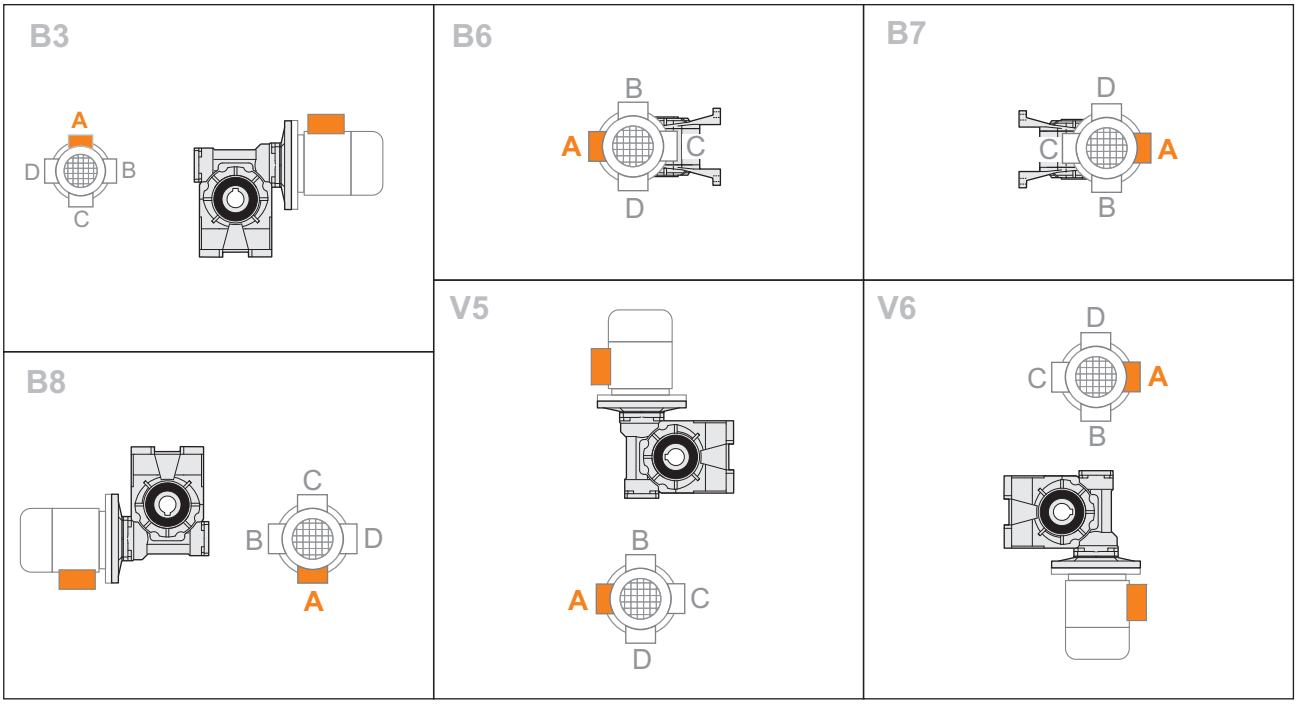


B3 B6 B7 B8 V5 V6

4.4 Posizione morsettiera

4.4 Terminal board position

4.4 Lage der Klemmenkaste



4.5 **Dati tecnici** *4.5 Technical data* 4.5 **Technische Daten**

	n_1 = 2800		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	373	8	0.37	2.0	63	56	16	0.72	0.86	—
	10	280	11	0.37	1.5			16	0.56	0.84	—
	15	187	15	0.37	1.1			17	0.41	0.81	—
	20	140	13	0.25	1.2			15	0.29	0.76	—
	25	112	16	0.25	1.0			16	0.25	0.74	—
	30	93	13	0.18	1.0			13	0.18	0.71	—
Kg	40	70	16	0.18	1.0			16	0.18	0.65	—
	50	56	14	0.13	1.1			15	0.14	0.62	—
1.2	65	43	17	0.13	1.0	56		17	0.13	0.57	—
	80	35	13	0.09	1.0			13	0.09	0.54	—
	100	28	16	0.09	0.8			12	0.07	0.52	—

	n_1 = 1400		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	187	9	0.22	2.2	63	56	21	0.49	0.84	0.40
	10	140	12	0.22	1.8			22	0.40	0.82	0.40
	15	93	17	0.22	1.3			22	0.28	0.77	0.30
	20	70	18	0.18	1.1			19	0.19	0.72	0.20
	25	56	15	0.13	1.1			21	0.18	0.69	0.20
	30	47	18	0.13	1.4			20	0.15	0.66	0.20
Kg	40	35	14	0.09	1.4			21	0.13	0.59	0.20
	50	28	17	0.09	1.1			19	0.10	0.55	0.20
1.2	65	22	14	0.06	1.3	56		20	0.09	0.51	0.10
	80	18	16	0.06	1.1			17	0.06	0.48	0.10
	100	14	18	0.06	0.8			14	0.05	0.45	0.10

	n_1 = 900		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	120	9	0.13	2.9	63	56	25	0.38	0.82	—
	10	90	11	0.13	2.3			25	0.30	0.80	—
	15	60	15	0.13	1.6			25	0.21	0.75	—
	20	45	19	0.13	1.2			22	0.15	0.69	—
	25	36	23	0.13	1.1			24	0.14	0.66	—
	30	30	18	0.09	1.2			21	0.10	0.63	—
Kg	40	23	21	0.09	1.1			24	0.10	0.55	—
	50	18	16	0.06	1.3			21	0.08	0.52	—
1.2	65	14	20	0.06	1.1	56		22	0.07	0.48	—
	80	11	11	0.03	1.7			19	0.05	0.44	—
	100	9	13	0.03	1.1			15	0.03	0.42	—

	n_1 = 500		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
30	7.5	67	—	—	—	63	56	31	0.27	0.80	—
	10	50	—	—	—			31	0.21	0.77	—
	15	33	—	—	—			31	0.15	0.72	—
	20	25	—	—	—			26	0.10	0.66	—
	25	20	—	—	—			27	0.09	0.62	—
	30	17	—	—	—			25	0.07	0.59	—
Kg	40	13	—	—	—			28	0.07	0.51	—
	50	10	—	—	—			25	0.06	0.48	—
1.2	65	8	—	—	—	56		25	0.05	0.43	—
	80	6	—	—	—			20	0.03	0.40	—
	100	5	—	—	—			16	0.02	0.38	—

4.5 Dati tecnici

4.5 Technical data

4.5 Technische Daten

40 — Kg 2.0

n_1 = 2800		BFK					BRK			
i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
7.5	373	17	**0.75**	1.8	71	63	**30**	1.3	0.87	—
10	280	22	**0.75**	1.4			**31**	1.1	0.86	—
15	187	32	**0.75**	1.0			**32**	0.76	0.82	—
20	140	30	**0.55**	1.0			**31**	0.57	0.80	—
25	112	24	**0.37**	1.1			**27**	0.41	0.76	—
30	93	28	**0.37**	1.3			**35**	0.47	0.73	—
40	70	24	**0.25**	1.4			**33**	0.35	0.70	—
50	56	28	**0.25**	1.1	63	56	**30**	0.27	0.65	—
65	43	24	**0.18**	1.2			**28**	0.21	0.61	—
80	35	21	**0.13**	1.3			**26**	0.16	0.58	—
100	28	24	**0.13**	1.0			**25**	0.13	0.55	—

40 — Kg 2.0

n_1 = 1400		BFK					BRK			
i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
7.5	187	24	**0.55**	1.7	71	63	**40**	0.92	0.85	0.80
10	140	31	**0.55**	1.3			**41**	0.73	0.83	0.70
15	93	30	**0.37**	1.4			**42**	0.52	0.79	0.50
20	70	38	**0.37**	1.0			**40**	0.39	0.76	0.50
25	56	31	**0.25**	1.1			**35**	0.29	0.72	0.40
30	47	35	**0.25**	1.3			**41**	0.29	0.68	0.40
40	35	38	**0.22**	1.1			**38**	0.22	0.64	0.30
50	28	36	**0.18**	1.0	63	56	**38**	0.19	0.59	0.30
65	22	31	**0.13**	1.1			**35**	0.15	0.54	0.20
80	18	31	**0.11**	1.1			**33**	0.12	0.52	0.20
100	14	30	**0.09**	0.9			**28**	0.08	0.49	0.20

40 — Kg 2.0

n_1 = 900		BFK					BRK			
i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
7.5	120	25	**0.37**	2.0	71	63	**48**	0.72	0.83	—
10	90	32	**0.37**	1.5			**48**	0.56	0.81	—
15	60	45	**0.37**	1.1			**49**	0.40	0.76	—
20	45	39	**0.25**	1.2			**46**	0.29	0.74	—
25	36	33	**0.18**	1.3			**42**	0.23	0.69	—
30	30	37	**0.18**	1.3			**48**	0.23	0.65	—
40	23	33	**0.13**	1.3			**42**	0.16	0.61	—
50	18	38	**0.13**	1.1	63	56	**42**	0.14	0.55	—
65	14	32	**0.09**	1.2			**39**	0.11	0.51	—
80	11	37	**0.09**	1.0			**37**	0.09	0.48	—
100	9	29	**0.06**	1.0			**30**	0.06	0.45	—

40 — Kg 2.0

n_1 = 500		BFK					BRK			
i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
7.5	67	10	**0.09**	5.5	71	63	**58**	0.50	0.81	—
10	50	14	**0.09**	4.4			**59**	0.39	0.79	—
15	33	19	**0.09**	3.1			**59**	0.28	0.73	—
20	25	24	**0.09**	2.3			**55**	0.20	0.70	—
25	20	28	**0.09**	1.7			**48**	0.15	0.65	—
30	17	31	**0.09**	1.8			**58**	0.17	0.61	—
40	13	39	**0.09**	1.3			**52**	0.12	0.57	—
50	10	44	**0.09**	1.2	63	56	**51**	0.11	0.51	—
65	8	52	**0.09**	0.9			**45**	0.08	0.46	—
80	6	61*	**0.09**	0.7*			**42**	0.06	0.44	—
100	5	71*	**0.09**	0.4*			**32**	0.04	0.41	—

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

4.5 **Dati tecnici** *4.5 Technical data* 4.5 **Technische Daten**

50	n_1 = 2800		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	34	**1.5**	1.5			**51**	2.3	0.88	—
	10	280	44	**1.5**	1.2			**54**	1.8	0.86	—
	15	187	47	**1.1**	1.2	80		**57**	1.3	0.84	—
	20	140	42	**0.75**	1.4	71		**58**	1.0	0.81	—
	25	112	50	**0.75**	1.0			**50**	0.75	0.78	—
	30	93	42	**0.55**	1.3			**55**	0.71	0.75	—
	40	70	54	**0.55**	1.0	80-71-63		**54**	0.63	0.72	—
Kg 3.4	**50**	56	43	**0.37**	1.3			**56**	0.48	0.68	—
	65	43	53	**0.37**	1.0	71		**53**	0.37	0.64	—
	80	35	41	**0.25**	1.2	63		**48**	0.29	0.61	—
	100	28	35	**0.18**	1.3			**45**	0.23	0.58	—

50	n_1 = 1400		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	40	0.9	1.8			**70**	1.6	0.86	1.2
	10	140	52	0.9	1.4			**73**	1.3	0.84	1.0
	15	93	61	0.75	1.2	80		**74**	0.90	0.80	0.80
	20	70	59	0.55	1.3	71		**75**	0.71	0.78	0.70
	25	56	47	0.37	1.4			**65**	0.51	0.74	0.60
	30	47	54	0.37	1.5			**66**	0.46	0.71	0.60
	40	35	68	0.37	1.2	80-71-63		**69**	0.38	0.67	0.50
Kg 3.4	50	28	53	0.25	1.3			**70**	0.33	0.62	0.40
	65	22	64	0.25	1.0	71		**64**	0.25	0.58	0.40
	80	18	53	0.18	1.1	63		**60**	0.20	0.54	0.40
	100	14	45	0.13	1.2			**55**	0.16	0.51	0.30

50	n_1 = 900		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	50	**0.75**	1.6			**83**	1.23	0.84	—
	10	90	66	**0.75**	1.3			**86**	0.98	0.82	—
	15	60	68	**0.55**	1.3	80		**88**	0.71	0.78	—
	20	45	59	**0.37**	1.5	71		**87**	0.54	0.75	—
	25	36	70	**0.37**	1.1			**75**	0.40	0.71	—
	30	30	79	**0.37**	1.0			**79**	0.37	0.67	—
	40	23	67	**0.25**	1.1	80-71-63		**75**	0.28	0.63	—
Kg 3.4	**50**	18	78	**0.25**	1.0			**80**	0.26	0.59	—
	65	14	67	**0.18**	1.1	71		**74**	0.20	0.54	—
	80	11	56	**0.13**	1.2	63		**67**	0.16	0.51	—
	100	9	45	**0.09**	1.3			**58**	0.12	0.47	—

50	n_1 = 500		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	21	**0.18**	4.7			**100**	0.85	0.82	—
	10	50	28	**0.18**	3.8			**104**	0.68	0.80	—
	15	33	39	**0.18**	2.7	80		**106**	0.49	0.75	—
	20	25	50	**0.18**	2.1	71		**104**	0.38	0.72	—
	25	20	58	**0.18**	1.5			**88**	0.27	0.68	—
	30	17	65	**0.18**	1.5			**98**	0.27	0.63	—
	40	13	81	**0.18**	1.2	80-71-63		**95**	0.21	0.59	—
Kg 3.4	**50**	10	93	**0.18**	1.0			**94**	0.18	0.54	—
	65	8	56	**0.09**	1.5	71		**86**	0.14	0.50	—
	80	6	63	**0.09**	1.2	63		**77**	0.11	0.46	—
	100	5	74	**0.09**	0.8			**61**	0.07	0.43	—

4.5 Dati tecnici

4.5 Technical data

4.5 Technische Daten

63	n_1 = 2800		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	68	**3**	1.3	80 90		**88**	3.9	0.88	—
	10	280	89	**3**	1.1			**94**	3.2	0.87	—
	15	187	95	**2.2**	1.0			**98**	2.3	0.84	—
	20	140	85	**1.5**	1.3			**110**	1.9	0.83	—
	25	112	76	**1.1**	1.2			**93**	1.4	0.81	—
	30	93	87	**1.1**	1.3			**110**	1.4	0.77	—
Kg 6.3	**40**	70	111	**1.1**	1.1	71 80		**117**	1.2	0.74	—
	50	56	90	**0.75**	1.1			**97**	0.81	0.70	—
	65	43	81	**0.55**	1.2			**98**	0.66	0.67	—
	80	35	65	**0.37**	1.4			**91**	0.52	0.64	—
	100	28	75	**0.37**	1.1			**83**	0.41	0.60	—

63	n_1 = 1400		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	80	1.8	1.5	80 90		**120**	2.7	0.87	1.8
	10	140	105	1.8	1.2			**127**	2.2	0.85	1.6
	15	93	125	1.5	1.1			**130**	1.6	0.81	1.2
	20	70	120	1.1	1.2			**144**	1.3	0.80	1.2
	25	56	118	0.9	1.0			**118**	0.90	0.77	1.0
	30	47	134	0.9	1.1			**142**	0.95	0.73	0.90
Kg 6.3	40	35	142	0.75	1.1	71 80		**150**	0.79	0.69	0.80
	50	28	122	0.55	1.0			**122**	0.55	0.65	0.70
	65	22	100	0.37	1.2			**122**	0.45	0.61	0.60
	80	18	79	0.25	1.4			**113**	0.36	0.58	0.60
	100	14	91	0.25	1.1			**102**	0.28	0.53	0.50

63	n_1 = 900		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	102	**1.5**	1.4	80 90		**144**	2.1	0.85	—
	10	90	133	**1.5**	1.1			**150**	1.7	0.83	—
	15	60	139	**1.1**	1.1			**152**	1.2	0.79	—
	20	45	123	**0.75**	1.4			**167**	1.0	0.77	—
	25	36	109	**0.55**	1.3			**140**	0.71	0.74	—
	30	30	122	**0.55**	1.3			**164**	0.74	0.70	—
Kg 6.3	**40**	23	154	**0.55**	1.1	71 80		**171**	0.61	0.66	—
	50	18	120	**0.37**	1.2			**141**	0.44	0.61	—
	65	14	98	**0.25**	1.4			**139**	0.35	0.57	—
	80	11	115	**0.25**	1.1			**128**	0.28	0.54	—
	100	9	95	**0.18**	1.2			**115**	0.22	0.50	—

63	n_1 = 500		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	30	**0.25**	5.9	80 90		**177**	1.5	0.83	—
	10	50	39	**0.25**	4.7			**182**	1.2	0.81	—
	15	33	55	**0.25**	3.4			**184**	0.84	0.76	—
	20	25	71	**0.25**	2.8			**200**	0.70	0.74	—
	25	20	85	**0.25**	1.9			**165**	0.49	0.71	—
	30	17	94	**0.25**	2.1			**195**	0.52	0.65	—
Kg 6.3	**40**	13	118	**0.25**	1.7	71 80		**201**	0.43	0.62	—
	50	10	135	**0.25**	1.2			**165**	0.31	0.56	—
	65	8	163	**0.25**	1.0			**161**	0.25	0.52	—
	80	6	137	**0.18**	1.1			**148**	0.19	0.50	—
	100	5	77	**0.09**	1.6			**122**	0.14	0.45	—

4.5 **Dati tecnici** *4.5 Technical data* 4.5 **Technische Daten**

75	n_1 = 2800		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	373	125	**5.5**	1.0	90 100 112		**131**	5.8	0.89	—
	10	280	120	**4**	1.2			**143**	4.8	0.88	—
	15	187	131	**3**	1.2			**152**	3.5	0.85	—
	20	140	171	**3**	1.0			**172**	3.0	0.84	—
	25	112	154	**2.2**	1.0			**155**	2.2	0.82	—
	30	93	120	**1.5**	1.4	71-80-90-100-112		**170**	2.1	0.78	—
Kg	**40**	70	154	**1.5**	1.2	80 90		**183**	1.8	0.75	—
	50	56	136	**1.1**	1.2			**166**	1.3	0.73	—
7.6	**65**	43	114	**0.75**	1.4	71 80 90		**155**	1.0	0.69	—
	80	35	135	**0.75**	1.1			**145**	0.80	0.66	—
	100	28	159	**0.75**	0.8			**131**	0.62	0.62	—

75	n_1 = 1400		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	187	178	4	1.0	90 100 112		**180**	4.0	0.87	2.5
	10	140	176	3	1.1			**193**	3.3	0.86	2.3
	15	93	187	2.2	1.1			**202**	2.4	0.83	1.9
	20	70	199	1.8	1.1			**226**	2.0	0.81	1.7
	25	56	200	1.5	1.0			**202**	1.5	0.78	1.5
	30	47	167	1.1	1.3	71-80-90-100-112		**220**	1.5	0.74	1.2
Kg	40	35	213	1.1	1.1	80 90		**235**	1.2	0.71	1.1
	50	28	206	0.9	1.0			**211**	0.92	0.67	1.0
7.6	65	22	154	0.55	1.3	71 80 90		**195**	0.70	0.63	0.90
	80	18	180	0.55	1.0			**182**	0.55	0.60	0.80
	100	14	210	0.55	0.8			**182**	0.43	0.56	0.70

75	n_1 = 900		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	120	205	**3**	1.0	90 100 112		**215**	3.1	0.86	—
	10	90	197	**2.2**	1.2			**229**	2.6	0.84	—
	15	60	231	**1.8**	1.0			**237**	1.9	0.81	—
	20	45	250	**1.5**	1.1			**263**	1.6	0.78	—
	25	36	221	**1.1**	1.1			**233**	1.2	0.76	—
	30	30	249	**1.1**	1.0	71-80-90-100-112		**254**	1.1	0.71	—
Kg	**40**	23	214	**0.75**	1.3	80 90		**270**	0.94	0.67	—
	50	18	186	**0.55**	1.3			**241**	0.71	0.64	—
7.6	**65**	14	151	**0.37**	1.5	71 80 90		**221**	0.54	0.59	—
	80	11	177	**0.37**	1.2			**205**	0.43	0.56	—
	100	9	203	**0.37**	0.9			**184**	0.34	0.52	—

75	n_1 = 500		BFK					BRK			
	i_n	n_2 [min-1]	T_2 [Nm]	P_1 [kW]	FS'	input IEC B5	input IEC B14	T_{2M} [Nm]	P [kW]	Rd	P_{t0}
	7.5	67	90	**0.75**	2.9	90 100 112		**265**	2.2	0.84	—
	10	50	118	**0.75**	2.4			**279**	1.8	0.82	—
	15	33	167	**0.75**	1.7			**286**	1.3	0.78	—
	20	25	216	**0.75**	1.5			**315**	1.1	0.75	—
	25	20	260	**0.75**	1.1			**278**	0.80	0.72	—
	30	17	288	**0.75**	1.1	71-80-90-100-112		**302**	0.79	0.67	—
Kg	**40**	13	265	**0.55**	1.2	80 90		**317**	0.66	0.63	—
	50	10	210	**0.37**	1.3			**282**	0.50	0.59	—
7.6	**65**	8	251	**0.37**	1.0	71 80 90		**257**	0.38	0.55	—
	80	6	197	**0.25**	1.2			**238**	0.30	0.52	—
	100	5	161	**0.18**	1.3			**206**	0.23	0.47	—

4.6 **Momenti d' inerzia** [Kg·cm²] (riferiti all'albero veloce in entrata)

4.6 ***Moments of inertia*** *[Kg·cm²] (referred to input shaft)*

4.6 **Trägheitsmoment** [Kg·cm²] (bez. Antriebswelle)

30

i_n	BRK	BFK B5 - B14 IEC 56	BFK B5 - B14 IEC 63
7.5	0.058	0.112	0.109
10	0.049	0.103	0.100
15	0.042	0.097	0.094
20	0.039	0.095	0.092
25	0.038	0.094	0.091
30	0.038	0.093	0.090
40	0.037	0.093	0.090
50	0.037	0.092	0.089
65	0.024	0.079	-
80	0.024	0.079	-
100	0.024	0.078	-

40

i_n	BRK	BFK B5 - B14 IEC 56	BFK B5 - B14 IEC 63	BFK B5 - B14 IEC 71
7.5	0.170	-	0.321	0.356
10	0.144	-	0.272	0.347
15	0.125	-	0.266	0.340
20	0.094	-	0.263	0.338
25	0.091	-	0.262	0.337
30	0.113	-	0.262	0.337
40	0.087	-	0.261	0.337
50	0.087	0.182	0.261	-
65	0.069	0.182	0.261	-
80	0.069	0.182	0.261	-
100	0.068	0.182	0.261	-

50

i_n	BRK	BFK B5 - B14 IEC 63	BFK B5 - B14 IEC 71	BFK B5 - B14 IEC 80
7.5	0.499	-	0.684	0.935
10	0.417	-	0.602	0.853
15	0.358	-	0.543	0.794
20	0.281	-	0.523	0.774
25	0.272	-	0.513	0.764
30	0.323	-	0.508	0.759
40	0.262	0.311	0.503	0.755
50	0.183	0.311	0.501	-
65	0.136	0.311	0.499	-
80	0.136	0.310	0.498	-
100	0.135	0.309	0.498	-

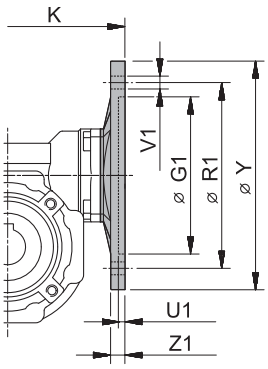
63

i_n	BRK	BFK B5 - B14 IEC 71	BFK B5 - B14 IEC 80	BFK B5 - B14 IEC 63
7.5	1.363	-	1.949	2.269
10	1.158	-	1.744	2.063
15	1.011	-	1.597	1.916
20	0.710	-	1.545	1.864
25	0.679	-	1.514	1.833
30	0.922	-	1.508	1.828
40	0.660	0.958	1.495	-
50	0.653	0.958	1.488	-
65	0.552	0.955	1.484	-
80	0.550	0.953	1.482	-
100	0.549	0.952	1.481	-

75

i_n	BRK	BFK B5 - B14 IEC 71	BFK B5 - B14 IEC 80	BFK B5 - B14 IEC 90	BFK B5 - B14 IEC 100-112
7.5	2.970	-	-	3.712	4.462
10	2.492	-	-	3.234	3.984
15	2.151	-	-	2.893	3.643
20	1.567	-	-	2.774	3.523
25	1.501	-	-	2.709	3.458
30	1.946	1.615	1.575	2.689	3.438
40	1.451	-	1.573	2.659	-
50	1.435	-	1.570	2.642	-
65	1.158	1.609	1.569	2.633	-
80	1.153	1.605	1.565	2.629	-
100	1.150	1.602	1.562	2.626	-

4.7 Predisposizioni possibili — *4.7 Possible set-ups* — 4.7 Mögliche Vorrichtungen



BFK	PAM IEC	G_1	K	R_1	U1	V1 Ø	V1	V1	Y	Z_1	Diametro fori PAM / *Holes diameter IEC-Input* Bohrungdurchmesser IEC-Antrieb 7.5	10	15	20	25	30	40	50	65	80	100
30	56 B5	80	57	100	4	7	n° 8		120	8	9	9	9	9	9	9	9	9	9	9	9
	56 B14	50		65	3.5	6	n° 8		80	8	9	9	9	9	9	9	9	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	8	11	11	11	11	11	11	11	11	/	/	/
	63 B14	60		75	4	6	n° 8		90	8	11	11	11	11	11	11	11	11	/	/	/
40	56 B5	80	75	100	4	7	n° 8		120	9	/	/	/	/	/	/	/	9	9	9	9
	56 B14	50		65	3.5	6		n° 4	80	8	/	/	/	/	/	/	/	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	9	11	11	11	11	11	11	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	11	11	11	11	11	11	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	/	/	/	/
	71 B14	70		85	3.5	7	n° 8		105	8	14	14	14	14	14	14	14	/	/	/	/
50	63 B5	95	82	115	4	9	n° 8		140	9	/	/	/	/	/	/	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	/	/	/	/	/	/	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	14	14	14	14
	71 B14	70		85	3.5	7	(n° 8)*	n° 4	105	8	14	14	14	14	14	14	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	/	/	/	/
	80 B14	80		100	4	7	n° 8		120	10	19	19	19	19	19	19	19	/	/	/	/
63	71 B5	110	97	130	4.5	9	n° 8		160	10	/	/	/	/	/	/	14	14	14	14	14
	71 B14	70		85	3.5	7		n° 4	105	10	/	/	/	/	/	/	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	19	19	19	19
	80 B14	80		100	4	7		n° 4	120	10	19	19	19	19	19	19	19	19	19	19	19
	90 B5	130		165	4.5	11	n° 8		200	10	24	24	24	24	24	24	/	/	/	/	/
	90 B14	95		115	4	8.5	n° 8		140	10	24	24	24	24	24	24	/	/	/	/	/
75	71 B5	110	114	130	4.5	9	n° 8		160	10	/	/	/	/	/	14	/	/	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	/	/	/	/	/	19	19	19	19	19	19
	80 B14	80		100	4	7		n° 4	120	11	/	/	/	/	/	19	19	19	19	19	19
	90 B5	130		165	4.5	11	n° 8		200	10	24	24	24	24	24	24	24	24	24	24	24
	90 B14	95		115	4	9		n° 4	140	11	24	24	24	24	24	24	24	24	24	24	24
	100/112 B5	180		215	5	14	n° 8		250	13	28	28	28	28	28	28	/	/	/	/	/
	100 B14	110		130	4.5	9	n° 8		160	11	28	28	28	28	28	28	/	/	/	/	/

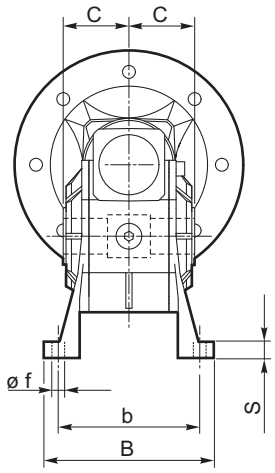
* A richiesta, solo con corpo speciale / *Upon request, only with special body* / Auf Wunsch nur mit speziellen Körper

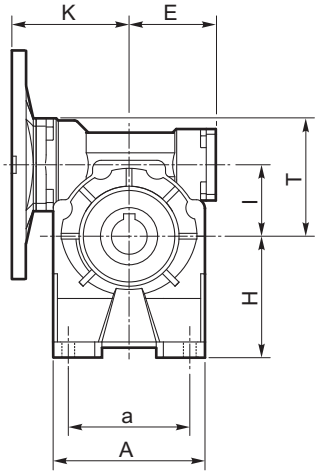
4.8 Dimensioni

4.8 Dimensions

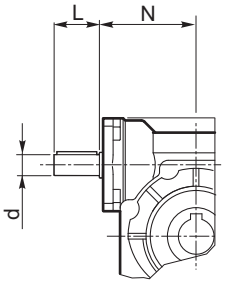
4.8 Abmessungen

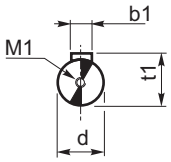
BFK.../A





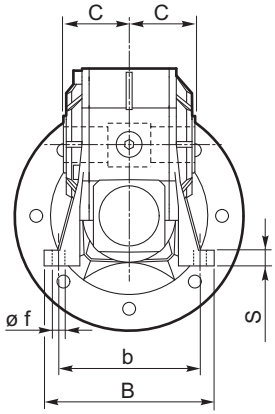
BRK.../A

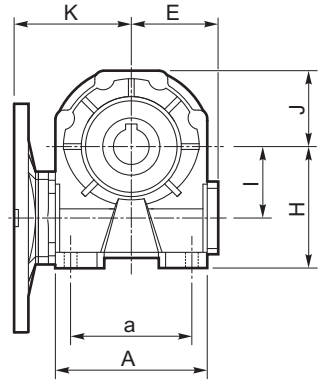




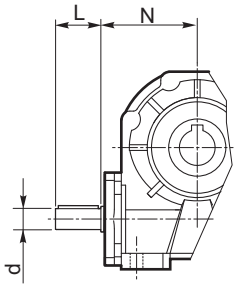
BRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	b1	t1	M1
30	9	3	10.2	M4x10
40	11	4	12.5	M4x10
50	14	5	16	M5x13
63	18	6	20.5	M6x16
75	19	6	21.5	M6x16

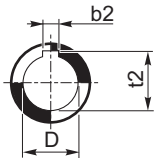
BFK.../B





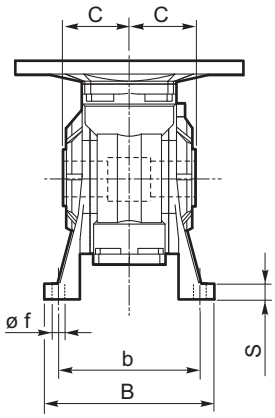
BRK.../B

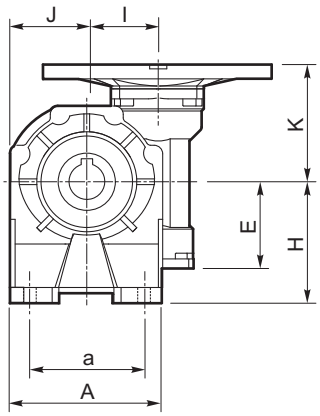




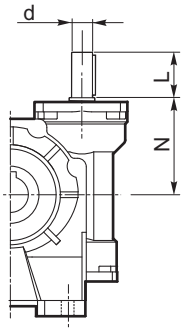
BFK BRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	b2	t2
30	**14**	5	16.3
40	**18**	6	20.8
50	**25**	8	28.3
63	**25**	8	28.3
75	**28** (30)	8 (8)	31.3 (33.3)

BFK.../V





BRK.../V

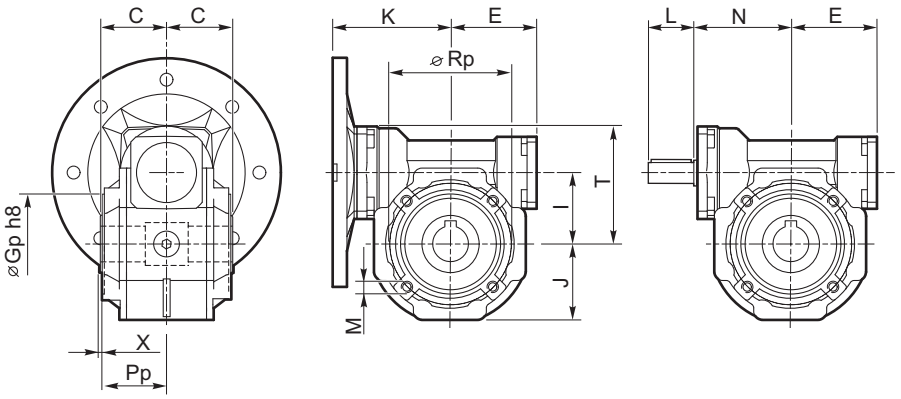


A, B, V

BFK BRK	A	a	B	b	C	E	f	H	I	J	K	L	N	s	T
30	67	52 ÷ 40	78	66	27.5	41	6.5	55	31.5	37.5	57	20	47	8	52.5
40	86.5	52	98	81	32	51	8.5	72	40	43.5	75	22	64	10	68.5
50	107	63	118	98.5	41	60	9	82	50	53.5	82	30	74	10	82.5
63	127.5	95	136	111	60	71	11	100	63	64	97	45	80	12	100.5
75	155.5	120	140	112 ÷ 120	60	85	11	115	75	78	114	40	98	12	116.5

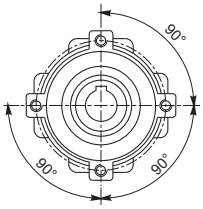
4.8 Dimensioni *4.8 Dimensions* 4.8 Abmessungen

BFK.../P BRK.../P



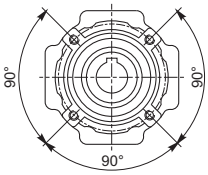
Flangia pendolare / *Side cover for shaft mounting* / Flansch für Drehmomentstutze

30

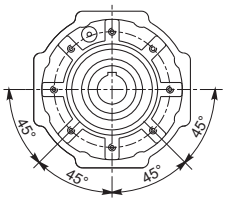


4 Fori / *Holes* / Bohrungen

40 - 50



63 - 75



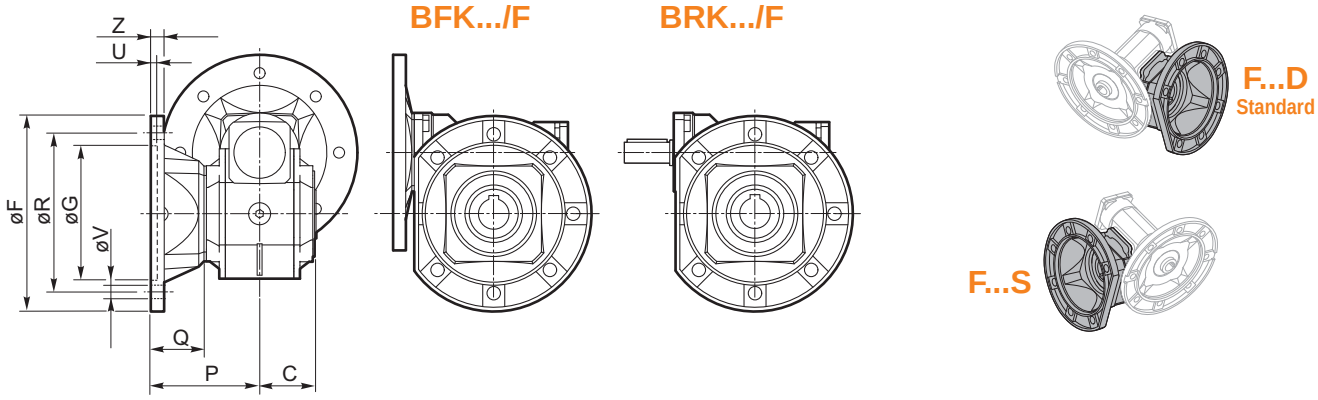
8 Fori / *Holes* / Bohrungen

P					
BFK BRK	**30**	**40**	**50**	**63**	**75**
$G_{p\ h8}$	50	50	68	75	90
M	M6x8	M6X10	M6x8	M8x14	M8x14
P_p	30	38	44	45	46
R_p	65	65	94	90	110
X	1.5	1.5	2	10	13

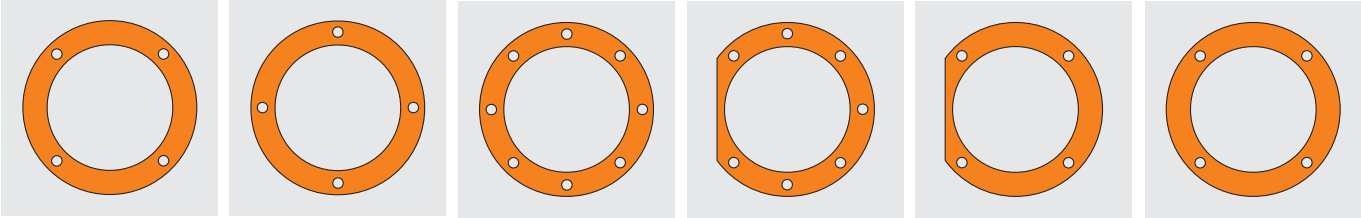
P								
BFK BRK	**C**	**E**	**I**	**J**	**K**	**L**	**N**	**T**
30	27.5	41	31.5	37.5	57	20	47	52.5
40	32	51	40	43.5	75	22	64	68.5
50	41	60	50	53.5	82	30	74	82.5
63	60	71	63	64	97	45	80	100.5
75	60	85	75	78	114	40	98	116.5

4.8 Dimensioni — *4.8 Dimensions* — 4.8 Abmessungen

Flangia uscita / *Output flange* / Abtriebsflansch



Tipo flangia / *Type flange* / Typ Flansch

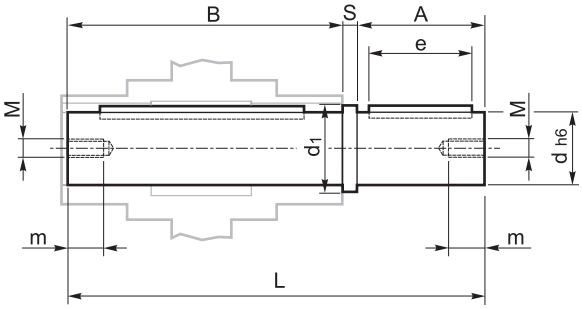


30	40	50	63	63	75	63	75	63	75
F	F	F - F1	F	F1	F - F1	F2	F2 - F3 F3A	F3	F4

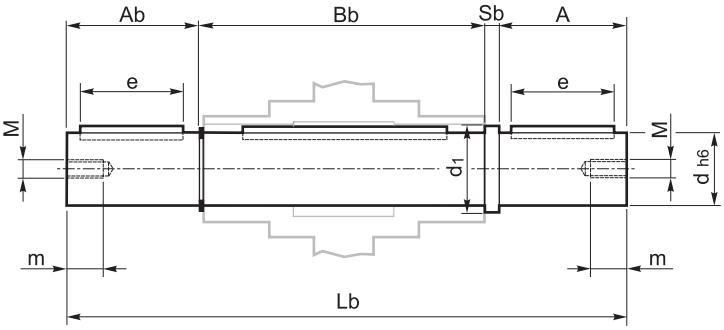
BFK BRK	Tipo flangia *Type flange* Typ flansch	C	F		G (H8)	P	Q	R	U	V			Z
												ø	
30	F	27.5	82		50	50.5	23	68	3.5	n° 4		6.0	6
40	F	32	110		60	60	28	87	5	n° 4		9	8
50	F	41	125		70	85	44	90	5	n° 4		10.5	10
	F1		125		70	115	74	90	5	n° 4		10.5	10
63	F	60	180		115	116	56	150	7		n° 8	11	12
	F1		180		115	86	26	150	5		n° 7	11	11
	F2		200		130	102	42	165	6	n° 4		13	11
	F3		160		110	82	22	130	5	n° 4		11	11
75	F	60	200		130	111	51	165	6		n° 7	13	13
	F1		200		130	85	25	165	6		n° 7	13	13
	F2		175		115	116	56	150	6	n° 4		11	12
	F3		175		115	85	25	150	5	n° 4		11	12
	F3A		160		110	85	25	130	5	n° 4		11	12
	F4		160		110	101	41	130	6	n° 4		11	12

4.9 Accessori — *4.9 Accessories* — 4.9 Zubehör

Albero lento semplice / *Single output shaft* / Standard Abtriebswelle



Albero lento doppio / *Double output shaft* / Doppelte Abtriebswelle

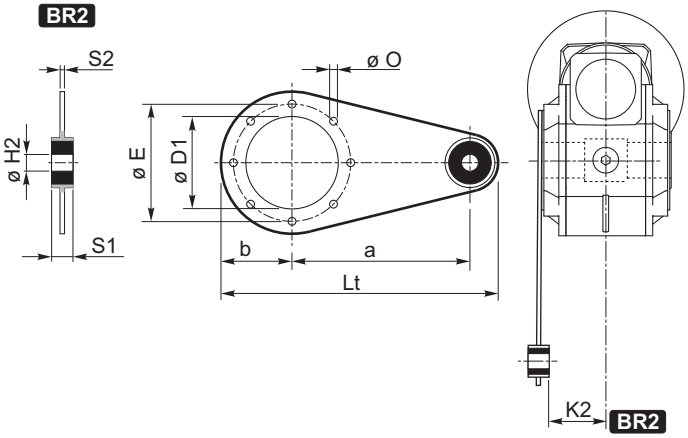


BFK BRK	A	Ab	B	Bb	d (h6)	d1	e	L	Lb	M	m	S	Sb
30	30	29	52	56	14	18.5	20	84.5	117.5	M6	16	2.5	2.5
40	40	39	62	65.2	18	24.5	30	105	147.2	M6	16	3	3
50	60	59	80	83.2	25	29.5	50	143.5	205.7	M8	22	3.5	3.5
63	60	59	119	121.2	25	29.5	50	183	244.2	M8	22	4	4
75	60	59	119	121.5	28	34.5	50	183	244.5	M8	22	4	4

Braccio di reazione / *Torque arm* / Drehmomentstütze

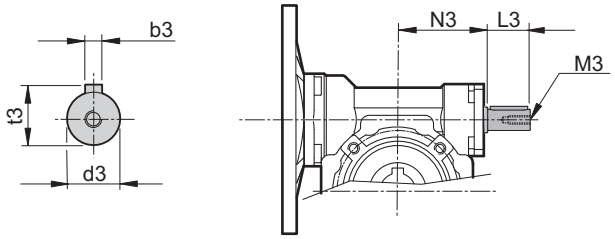
BR2 Con boccola / *With bush* / Mit Büchse

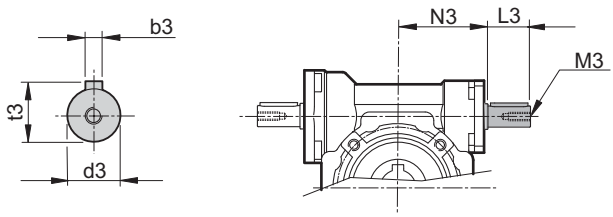
BFK BRK	a	b	D1	E	H2	K2	Lt	O	S1	S2
30	100	40	50	65	8	24.5	157.5	7	15	4
40	100	40	50	65	8	32.5	157.5	7	15	4
50	100	55	68	94	8	38.5	175	7	15	4
63	150	55	75	90	10	38	233	9	20	6
75	200	63	90	110	10	36.5	300	9	25	6



Entrata supplementare (vite bisporgente) — *Additional input (double extended input shaft)* — Zusatzantrieb (beidseitige Welle)

S.e.A.





BFK	d3 (j6)	L3	M3	N3	b3	t3
30	9	15	M4x10	42.5	3	10.2
40	11	20	M4x12	52.5	4	12.5
50	14	25	M5x13	62.5	5	16
63	19	30	M8x20	72.5	6	21.5
75	24	40	M8x20	89	8	27

BRK	d3 (j6)	L3	M3	N3	b3	t3
30	9	20	M4x10	42.5	3	10.2
40	11	22	M4x10	52.5	4	12.5
50	14	30	M5x13	62.5	5	16
63	18	45	M6x16	72.5	6	20.5
75	19	40	M6x16	89	6	21.5

Opzioni disponibili:

Cuscinetti a rulli conici corona

Available options:

Tapered roller bearing for worm wheel

Auf Anfrage ist folgendes Zubehör erhältlich:

Kegelrollenlager für Schneckenrad

4.10 Limitatore di coppia cavo passante

Il limitatore di coppia viene consigliato in tutte quelle applicazioni che richiedono una limitazione sulla coppia trasmissibile per proteggere l'impianto e/o preservare il riduttore evitando sovraccarichi o urti indesiderati quanto inaspettati.
È un dispositivo con albero dotato di cavo passante, con funzionamento a frizione, ed è integrato al riduttore, presentando un ingombro limitato.
Concepito per lavorare a bagno d'olio, il dispositivo risulta affidabile nel tempo ed è esente da usura se non viene mantenuto in condizioni prolungate di slittamento (condizione che si verifica quando la coppia presenta valori superiori a quelli di taratura).
La taratura è facilmente regolabile dall'esterno attraverso il serraggio di una ghiera autobloccante che porta a compres- sione le 4 molle a tazza disposte tra loro in serie.
Il dispositivo non consente:
- l'impiego di cuscinetti a rulli conici in uscita
- funzionamento prolungato in condizioni di slittamento.

Nella tabella seguente vengono riportati i valori delle coppie di slittamento M_{2S} in funzione del n° di giri della ghiera.
I valori di taratura presentano una tolleranza del ±10% e si riferiscono ad una condizione statica.
In condizioni dinamiche è da notare che la coppia di slittamento assume valori diversi a seconda del tipo e/o modalità in cui si verifica il sovraccarico: con valori maggiori in caso di carico uniformemente crescente rispetto a volori più contenuti in seguito al verificarsi di picchi improvvisi di carico.
NOTA: quando si supera il valore di taratura si ha slittamento. Il coefficiente di attrito tra le superfici di contatto da statico diventa dinamico e la coppia trasmessa cala del 30% circa.
E' quindi opportuno prevedere uno stop per poter ripartire al valore di taratura iniziale.

E' importante notare che la coppia di slittamento non resta sempre la medesima durante tutta la vita del limitatore.
Tende infatti a diminuire in rapporto al numero e alla durata degli slittamenti che, rodando le superfici di contatto, ne aumentano il rendimento.
È quindi opportuno verificare periodicamente, soprattutto durante la fase di rodaggio, la taratura del dispositivo.
Là dove sia richiesto un errore più contenuto nella taratura, è necessario testare la coppia trasmissibile sull'impianto.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

4.10 Torque limiter with through hollow shaft

The use of a torque limiter is advisable when the application requires the limitation of the transmissible torque to safeguard the plant and/or the gearbox from unexpected or undesired overloads.
The torque limiter is equipped with a through hollow shaft and a friction clutch.
It is integrated in the gearbox, therefore space requirement is limited.
Designed to be working in oil bath, the device is reliable over time and is not subject to wear unless in case of operation with prolonged slipping (it occurs when the torque values are higher than the calibration values).
Calibration can be easily adjusted from outside by tightening of the self-locking ring nut, which causes the compression of the 4 Belleville washers arranged in series.

The device does not go together with:
- *the use of tapered roller bearings at output*
- *prolonged operation under slipping conditions*

The following table shows the values of M_{2S} slipping torques depending on the number of revolutions of the ring nut.
Calibration values feature a ±10% tolerance and refer to static conditions.
Under dynamic conditions the values of the slipping torque will change according to the type of overload: the values are higher if the load increase is uniform; the values are lower if sudden load peaks occur.

***NOTE:** Slipping occurs when the setting values are exceeded.*
The friction coefficient between the contact surfaces from static becomes dynamic and the transmitted torque is approx. 30% lower.
It is advisable to have a stop first in order to have a restart based on the initial setting value.

It is important to note that the slipping torque is not the same for the whole life of the torque limiter.
It usually decreases in connection with the numbers and the duration of the slipping which because of the surfaces' lapping will increase the efficiency.
For this reason it is advisable to check the calibration of the device at regular intervals, specially during the running-in period.
Should a smaller calibration error be required, it is necessary to test the transmissible torque on the plant.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

4.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Die Anwendung eines Drehmoment- Die Anwendung eines Drehmoment- begrenzers wird empfohlen, um die Anlage und/ oder das Getriebe gegen ungewünschte und unerwartete Überbe- lastungen zu schützen.
Es handelt sich um eine Vorrichtung mit einer durchgehenden Hohlwelle.
Er ist in dem Getriebe integriert, d.h. der Raumbedarf ist klein. Der Begrenzer wurde für Betrieb in einem Ölbad entworfen.
Er ist zuverlässig und verschleißfrei (nur im Falle eines dauerhaften Rutschens entsteht Verschleiß, hier ist das Drehmoment größer als der eingestellte Eichwert).
Die Eichung kann mühelos von aussen durch das Anziehen einer selbstsperrenden Mutter ausgeführt werden, dadurch wird der Druck auf die 4 wechselseitig angeordneten Tellerfedern erhöht.

Die Vorrichtung sieht das folgende nicht vor:
- die Verwendung von Kegelrollenlager am Abtrieb
- Längerer Rutschbetrieb

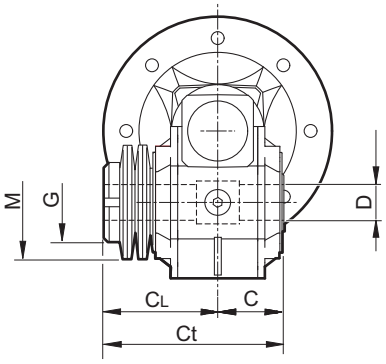
Die nachstehende Tabelle zeigt die Werte der Rutschmomente M_{2S} abhängig von der Anzahl der Umdrehungen der Mutter.
Die Eichwerte weisen ±10% Toleranz auf und beziehen sich auf statische Bedingungen.
Unter dynamischen Bedingungen hat das Rutschmoment verschiedene Werte je nach Art der Überbelastung. Die Werte sind höher, wenn die Belastung gleichmäßig zunimmt; sie sind niedriger im Falle von plötzlichen Belastungsspitzen.
BEMERKUNG: Rutschen tritt auf, wenn die eingestellten Werte überschritten werden. Der Reibungsfaktor zwischen den Berüehrungsflächen wird dynamisch anstatt statisch und das übertragene Drehmoment sinkt um ca. 30%.
Es ist daher ratsam, vor dem erneuten Anfahren anzuhalten, um die ursprünglichen Drehmomentwerte zu erreichen.

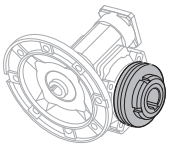
Es ist wichtig zu beachten, dass das Rutschmoment über die gesamte Lebensdauer der Rutschkupplung nicht konstant bleibt, sondern üblicherweise in Verbindung mit längeren Rutschzyklen aufgrund der eingelaufenen Berührungsflächen abnimmt.
Deswegen ist es ratsam, die Eichung der Vorrichtung besonders während der Einlaufzeit zu prüfen.
Falls ein niedrigerer Eichfehler gewünscht ist, sollte das übertragbare Drehmoment auf der Anlage getestet werden.
Wenn die Vorrichtung geliefert wird, ist sie schon auf das im Katalog T_{2M} angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegebene wird.

4.10 Limitatore di coppia cavo passante

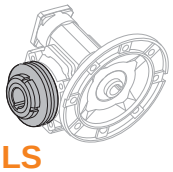
4.10 Torque limiter with through hollow shaft

4.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle





LD



LS

BFK BRK	C	CL	Ct	D (H7)	M	G
63	60	97	157	25	71x40.5x2	M40X1.5
75	60	100	160	28 (30)	90x50.5x2.5	M50X1.5

( ) A richiesta / *On request* / Auf Anfrage

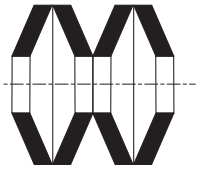
Nella versione con limitatore non è prevista la fornitura degli alberi lenti.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T2M salvo diversa indicazione espressa in fase di ordinazione.

The version with torque limiter is supplied without output shafts.
The device is supplied already calibrated at the torque reported in the catalogue T2M, unless otherwise specified in the order.

Die Version mit Drehmomentbegrenzer wird ohne Abtriebswellen geliefert.
Wenn die Vorrichtung geliefert wird, ist sie schon auf dem im Katalog T2M angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegeben wird.

BFK BRK	N°. giri della ghiera di regolazione / *N°. revolutions of ring nut* Nr. Umdrehungen der Mutter										
	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4
	$M_{2S\ [Nm]}$										
63	—	—	85	95	110	125	137	150	—	—	—
75	—	—	—	—	147	165	177	190	205	220	230

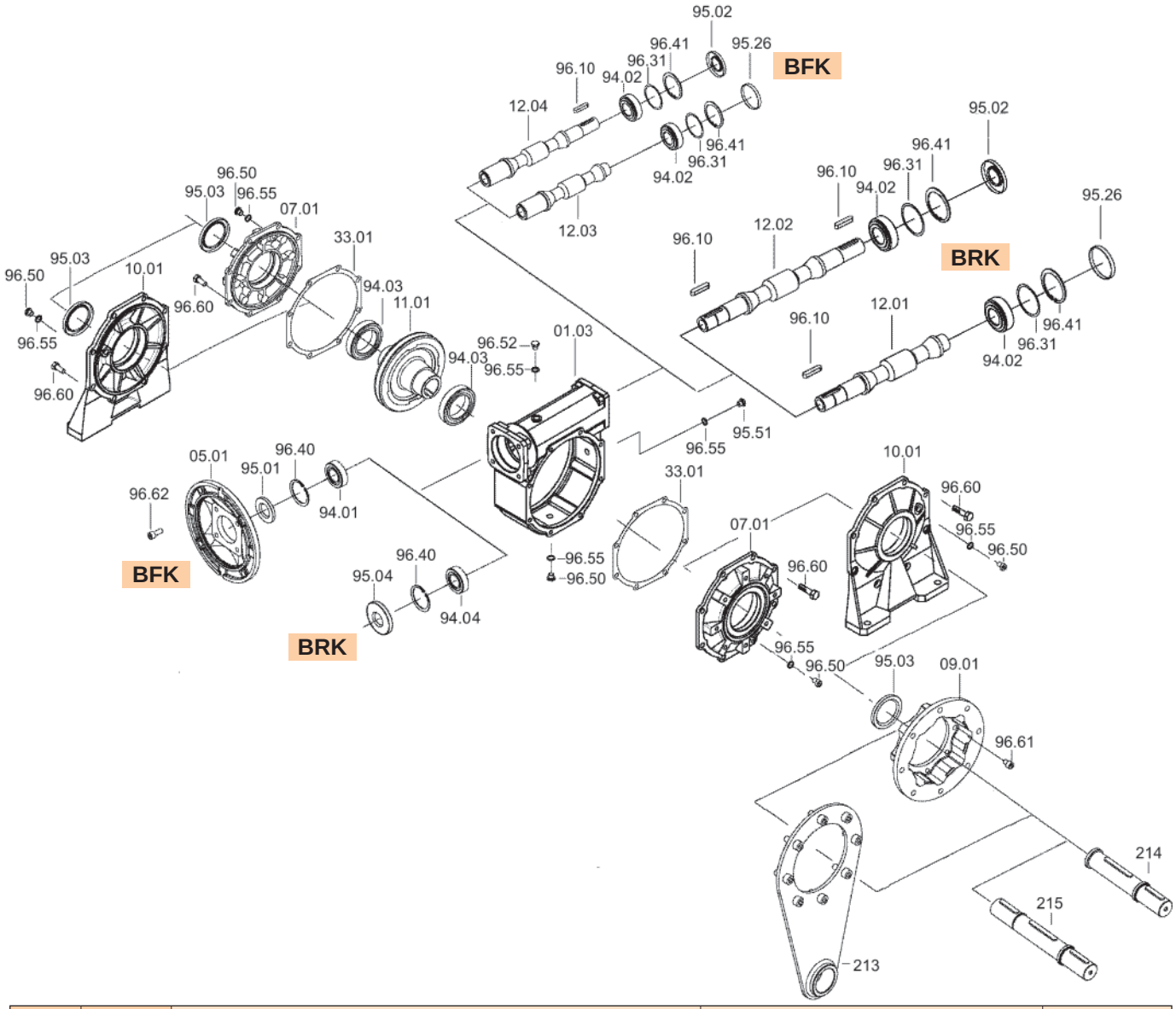
Disposizione delle molle
Washers' arrangement
Lage der Feder



IN SERIE (min. coppia, max. sensibilità)
SERIES *(min. torque, max sensitivity)*
SERIE (min. Moment, max. Empfindlichkeit)

4.11 **Lista parti di ricambio** *4.11 **Spare parts list*** 4.11 **Ersatzteilliste**

BFK - BRK



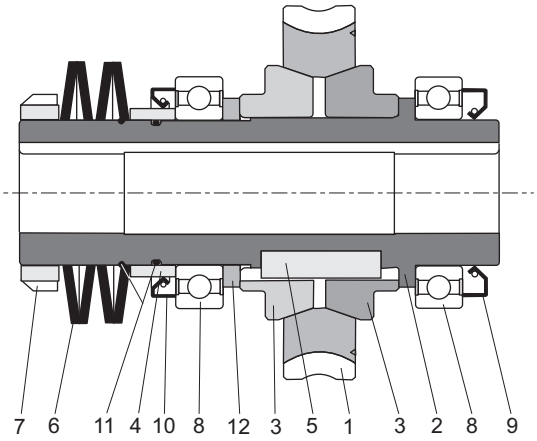
BFK BRK	IEC	Cuscinetti / *Bearings* / Lager				Anelli di tenuta / Oilseals Öldichtungen				Cappellotto *Closed oil seal* Geschlossene Öldichtung
		94.01	**94.02**	**94.03**	**94.04**	**95.01**	**95.02**	**95.03**	**95.04**	**95.26**
30	56	**61804** (20x32x7)	**6000** 10x26x8	**16005** 25x47x8	**6201** 12x32x10	20/32/7	10/26/7	25/40/7	12/32/7	ø 26x7
	63	**61804** (20x32x7)				20/32/7				
40	56	**6303** (17x47x14)	**6201** 12x32x10	**16006** 30x55x9	**6303** 17x47x14	17/47/7	12/32/7	30/47/7 (A, B, V) 30/45/7 (P)	17/47/7	ø 32x7
	63	**6204** (20x47x14)				20/47/7				
	71	**6005** (25x47x12)				25/47/7				
50	63	**6204** (20x47x14)	**6203** 17x40x12	**6008** 40x68x15	**6204** 20x47x14	20/47/7	17/40/7	40/56/8	20/47/7	ø 40x7
	71	**6005** (25x47x12)				25/47/7				
	80	**6006** (30x55x13)				30/55/7				
63	71	**30305** (25x62x18.25)	**30204** 20x47x15.25	**6008** 40x68x15	**30305** 25x62x18.25	25/62/7	20/47/7	40/62/8	25/62/7	ø 47x7
	80	**30206** (30x62x17.25)				30/62/7				
	90	**32007** (35x62x18)				35/62/7				
75	71	**30206** (30x62x17.25)	**30205** 25x52x16.25	**6010** 50x80x16	**30305** 25x62x18.25	30/62/7	25/52/7	50/72/8	25/62/7	ø 52x7
	80	**30206** (30x62x17.25)				30/62/7				
	90	**32007** (35x62x18)				35/62/7				
	100/112	**32008** (40x68x19)				40/68/10				

BFK - BRK

Limitatore di coppia cavo passante

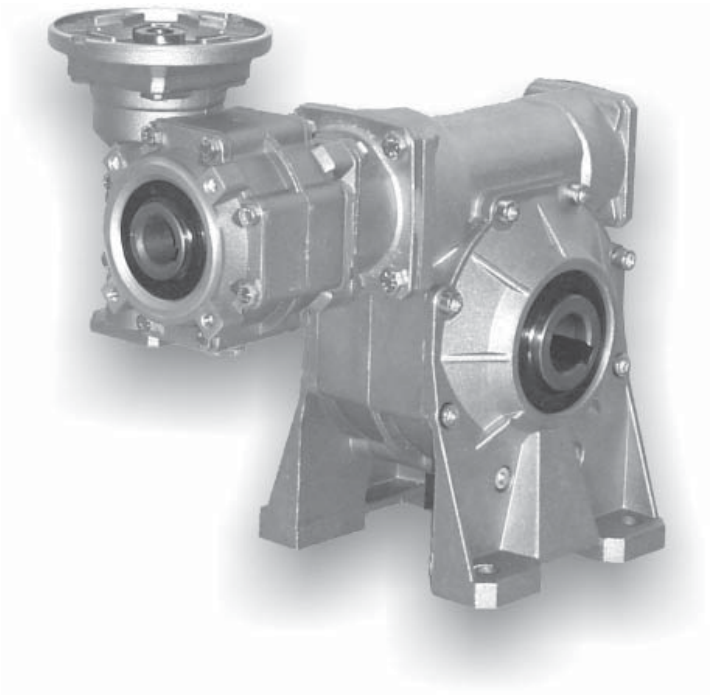
Torque limiter with through hollow shaft

Drehmomentbegrenzer mit durchgehende Hohlwelle



		BFK - BRK	
		63 (LD - LS)	**75** (LD - LS)
5	Linguetta / *Key* / Passfeder	12x8x40A	16x10x40A
8	Cuscinetti / *Bearings* / Lager	6008 40x68x15	6010 50x80x16
9	Anelli di tenuta / *Oilseals* Öldichtungen	40x62x8	50x72x8
10		48x62x8	58x72x8
11	O-rings in gomma *Rubber O-rings* Gummi-O-ringe	OR 36.27x1.78	OR2187 47.37x1.78

5 RIDUTTORI A VITE SENZA FINE COMBINATI BCFK-BCRK / *BCFK-BCRK COMBINED WORM GEARBOXES* / KOMBINIERTE-SCHNECKENGETRIEBE BCFK-BCRK



01/2012

5 BCFK - BCRK

5.1 Caratteristiche

La combinazione di due riduttori a vite senza fine comporta rendimenti molto bassi, ma l'elevata riduzione di velocità ottenuta in uno spazio ridottissimo rende comunque interessante, e a volte insostituibile, questa soluzione.

Sono forniti con albero cavo di serie ed esiste un'ampia gamma di accessori: seconda entrata, cuscinetti conici sulla corona, flangia uscita, albero lento con 1 o 2 sporgenze, limitatore di coppia con cavo passante, braccio di reazione.

5.1 Characteristics

The combination of two worm gearboxes provides very low efficiency, however the fact that substantial reduction in speed can be obtained in an extremely reduced space makes this solution very interesting and sometimes irreplaceable.

The hollow shaft is supplied as standard. A broad range of accessories is avalable: second input, tapered roller bearings on the worm wheel, output flange, single or double extended output shaft, torque limiter with through hollow shaft, torque arm.

5.1 Merkmale

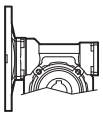
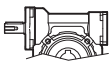
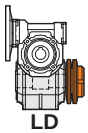
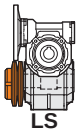
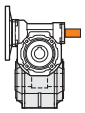
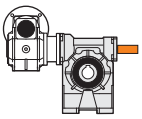
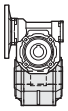
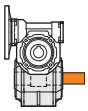
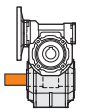
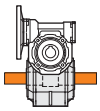
Die Kombination zweier Schneckengetriebe bringt sehr niedrigen Wirkungsgrad mit sich, es handelt sich jedoch um eine interessante und manchmal unersetzbare Lösung, weil eine hohe Drehzahlverringerung in einem beträchtlich reduzierten Raum erzielt werden kann.

Die Hohlwelle gehört zur serienmäßigen Ausstattung. Eine breite Auswahl an Zubehör ist erhältlich: zweiter Antrieb, Kegelrollenlager auf Schneckenrad, Abtriebs- flansch, standard oder doppelseitig herausragende Abtriebswelle, Drehmomentbegrenzer mit durchgehender Hohlwelle, Drehmomentstütze.

5.2 Designazione

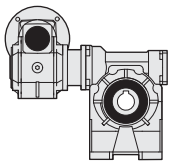
5.2 Designation

5.2 Bezeichnung

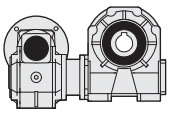
Riduttore *Gearbox* Getriebe	Grandezza *Size* Größe	Rapporto rid. *Ratio* *Untersetzung*	Predispos.att. mot. *Motor coupling* Motoranschluss	Versione *Version* Version	Forma costruttiva *Execution* Bauform	Posizione di mont. *Mounting position* Einbaulage	Limitatore di coppia. *Torque limiter* Drehmoment-begrenzer	Seconda entrata *Additional input* Zusatzantrieb	Albero uscita *Output shaft* Abtriebswelle	Braccio di reazione *Torque arm* Drehmomentstütze
BCFK	**50/75**	**1200**	**P.A.M.**	**FS**	**a**	**B3**	**LD**	**SeA1**	**H**	**BR**
 **BCFK**  **BCRK**	30/30 30/40 30/50 30/63 40/63 40/75 50/75	150 200 300 450 600 900 1200 1500 1950 2500 3250 4000 5000 10000	56 63 71 80 90	A B V P F...S F...D	ab cd ef gh ik im no pq	B3 B6 B7 B8 V5 V6	 LD  LS	 SeA1  SeA2	 H  SD  SS  DD	 BR1  BR2

Versioni

BCFK..A_
BCRK..A_

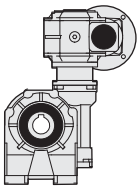


BCFK..B_
BCRK..B_

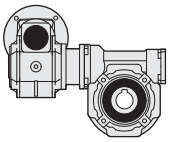


Versions

BCFK..V_
BCRK..V_

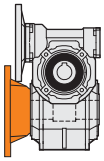


BCFK..P_
BCRK..P_

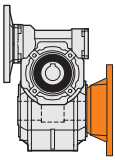


Ausführungen

BCFK..F_S
BCRK..F_S



BCFK..F_D
BCRK..F_D



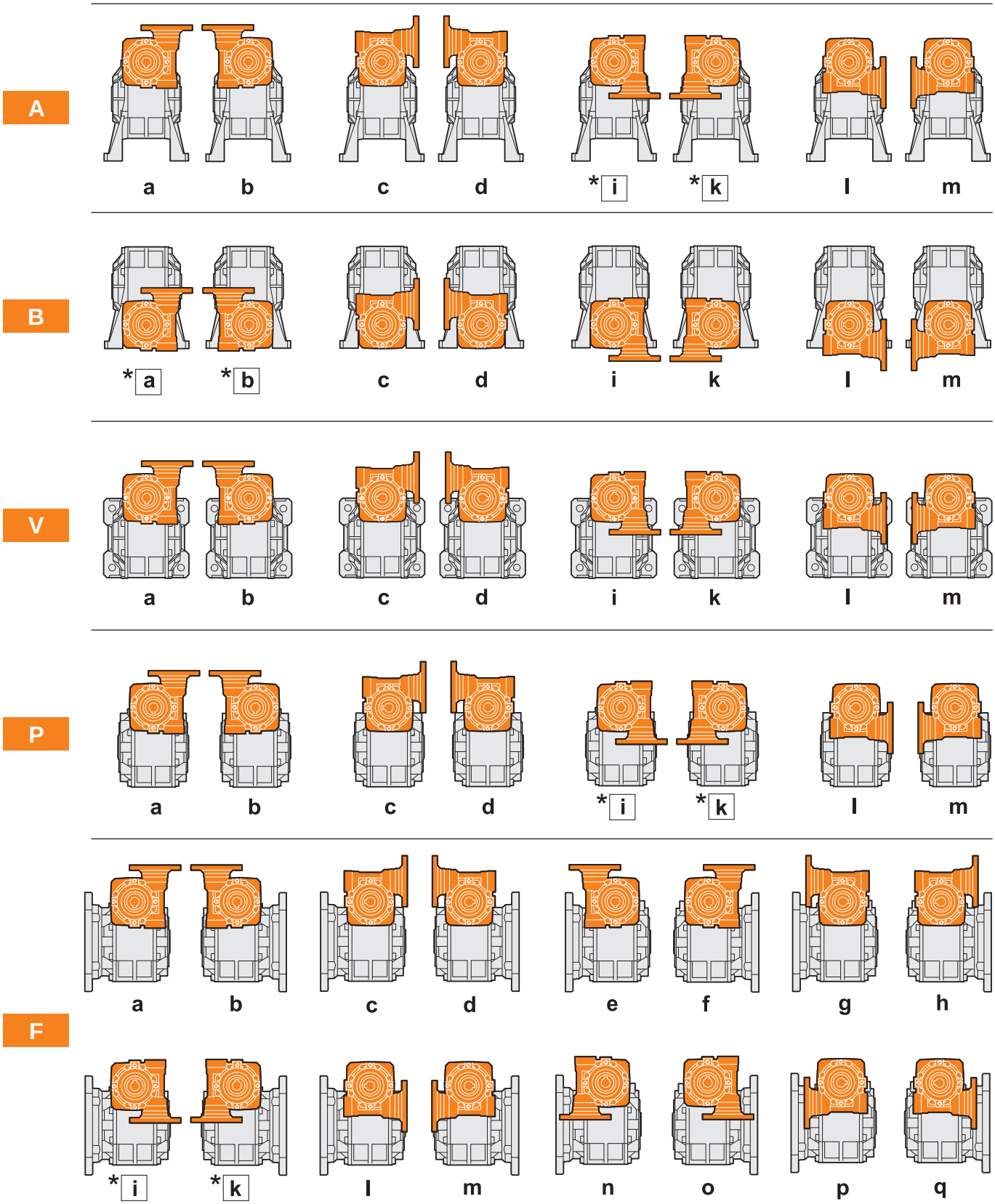
Specificare sempre in fase di ordinazione la versione.

Specify the version when ordering.

Bei der Bestellung immer die Bauform angeben.

5.2 Designazione / *5.2 Designation* / 5.2 Bezeichnung

Forma costruttiva / *version* / Bauform



*☐ Forma costruttiva non realizzabile su: / *Version not feasible on:* / Bauform nicht ausführbar für:
30/30, 30/40, 30/50 PAM 63B5 (ø 140), 40/63 PAM 71B5 (ø 160)

5.3 Lubrificazione

I riduttori a vite senza fine BCFK - BCRK sono forniti tutti e sempre completi di lubrificante sintetico a base PAG con classe di viscosità ISO 320.
Nei corpi in alluminio è presente un solo tappo di riempimento olio.
Si raccomanda di precisare sempre in fase di ordine la forma costruttiva e la posizione di lavoro desiderata.

5.3 Lubrication

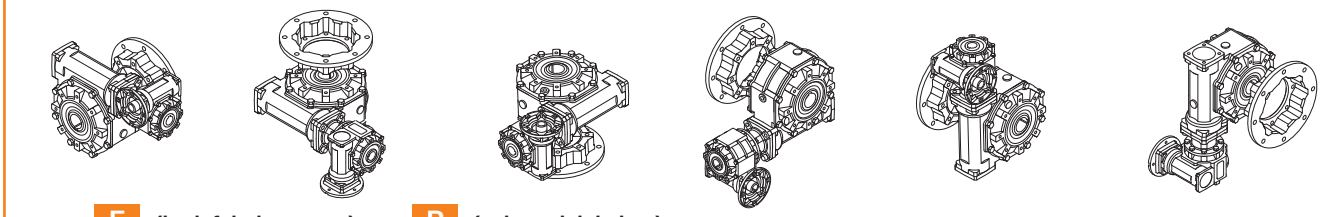
BCFK - BCRK worm gearboxes are supplied with PAG synthetic lubricant featuring an ISO 320 viscosity class.
Aluminium housings have one filling plug only.
Always specify the version and the mounting position when ordering.

5.3 Schmierung

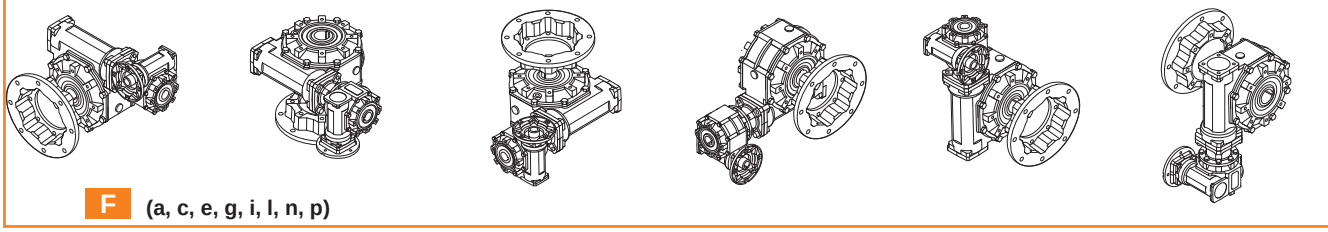
BCFK - BCRK Schneckengetriebe werden mit PAG synthetischen Schmierstoff Viskositätsklasse ISO 320 geliefert.
Gehäuse aus Alumiunium verfügen über nur eine Einfüllschraube.
Im Auftrag sind immer Einbaulage und Bauform anzugeben.

Posizioni di montaggio / *Mounting positions* / Bezeichnung

F,P

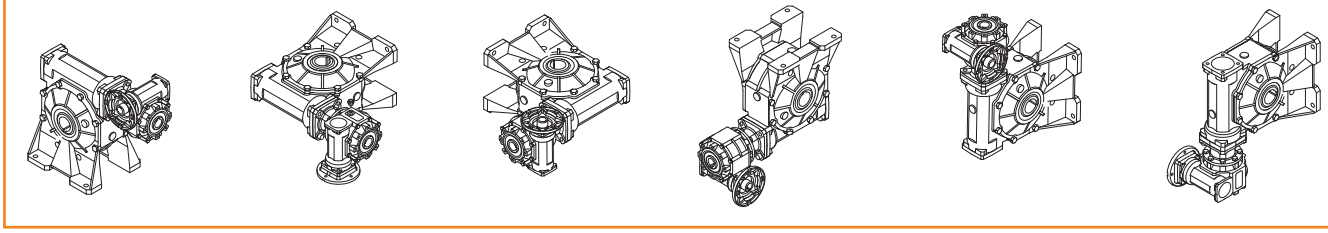


F (b, d, f, h, k, m, o, q) **P** (a, b, c, d, i, k, l, m)

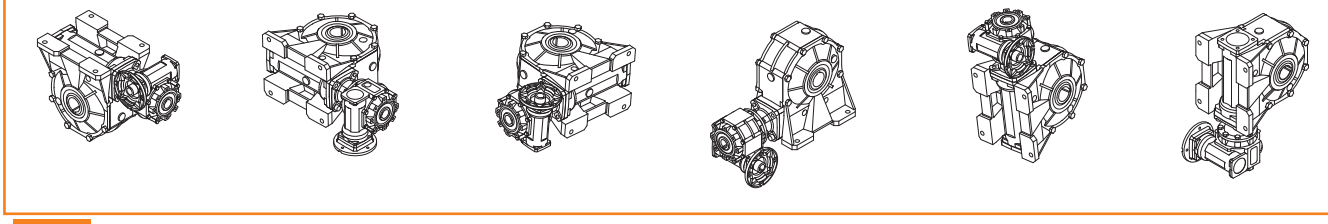


F (a, c, e, g, i, l, n, p)

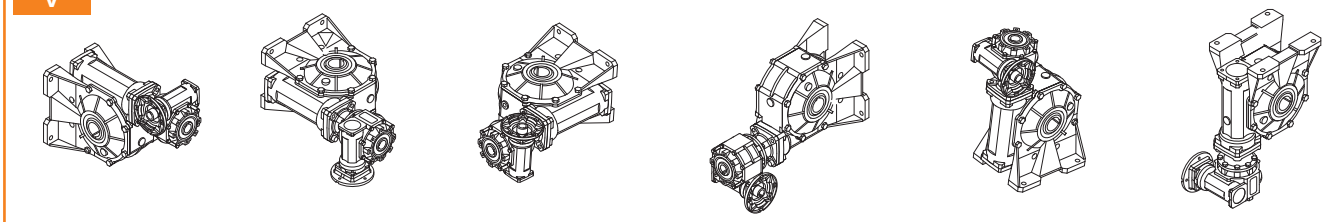
A



B



V



B3 **B6** **B7** **B8** **V5** **V6**

Quantità di lubrificante | *Lubricant quantity* | Schmiermittelmenge

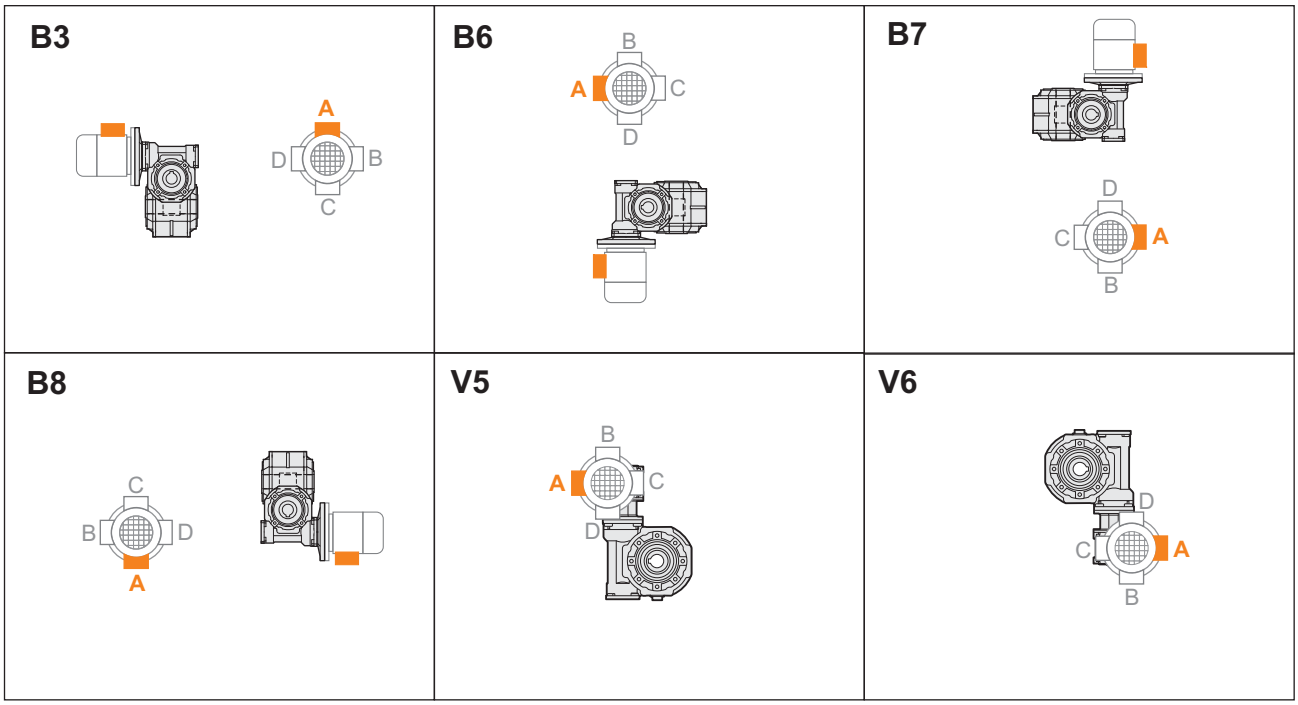
			Q.tà olio / *Oil quantity* / Schmiermittelmenge [lt]						
			BCFK - BCRK						
			30/30	**30/40**	**30/50**	**30/63**	**40/63**	**40/75**	**50/75**
Posizioni di montaggio *Mounting positions* Einbaulage	**B3**	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B6	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B7	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	B8	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	V5	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26
	V6	**IN**	0.015				0.04		0.08
		OUT	0.015	0.04	0.08	0.16	0.16	0.26	0.26

IN = Riduttore entrata / *Gearbox at input* / Getriebe am Antrieb **OUT =** Riduttore uscita / *Gearbox at output* / Getriebe am Abtrieb

5.4 Posizione morsettiera

5.4 Terminal board position

5.4 *Lage der Klemmenkaste*



5.5 **Dati tecnici** | *5.5* ***Technical data*** | 5.5 **Technische Daten**

30/30

Kg 3.0

n_1 = 1400				BCFK				BCRK		
i_n	30 i_1	30 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	32	0.06	1.2	56-63	**37**	0.070	0.51
200		20	7.0	39	0.06	0.8		**32**	0.050	0.47
300		30	4.7	52*	0.06	0.8*		**39**	0.045	0.42
450	15		3.1	73*	0.06	0.5*		**39**	0.032	0.40
600	20		2.3	91*	0.06	0.4*		**39**	0.026	0.37
900	30		1.6	125*	0.06	0.3*		**39**	0.019	0.34
1200	40		1.2	149*	0.06	0.3*		**39**	0.016	0.30
1500	50		0.9	173*	0.06	0.2*		**39**	0.014	0.28
1950	65		0.7	209*	0.06	0.2*	56	**39**	0.011	0.26
2500	50	50	0.6	235*	0.06	0.1*	56-63	**30**	0.008	0.23
3250	65		0.4	283*	0.06	0.11*	56	**30**	0.006	0.21
4000	80		0.4	328*	0.06	0.09*		**30**	0.005	0.20
5000	100		0.3	385*	0.06	0.08*		**30**	0.005	0.19
10000		100	0.1	609*	0.06	0.03*		**17**	0.002	0.15

30/40

Kg 4.0

n_1 = 1400				BCFK				BCRK		
i_n	30 i_1	40 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	72	0.13	1.1	56-63	**82**	0.148	0.54
200		20	7.0	76	0.11	1.0		**76**	0.110	0.51
300		30	4.7	79	0.09	1.0		**82**	0.094	0.43
450	15		3.1	74	0.06	1.1		**82**	0.067	0.40
600	20		2.3	92	0.06	0.9		**82**	0.054	0.37
900	30		1.6	126*	0.06	0.6*		**82**	0.039	0.34
1200	40		1.2	151*	0.06	0.5*		**82**	0.033	0.31
1500	50		0.9	176*	0.06	0.5*		**82**	0.028	0.29
1950	65		0.7	212*	0.06	0.4*	56	**82**	0.023	0.27
2500	50	50	0.6	236*	0.06	0.3*	56-63	**68**	0.017	0.23
3250	65		0.4	285*	0.06	0.24*	56	**68**	0.014	0.21
4000	80		0.4	330*	0.06	0.21*		**68**	0.012	0.20
5000	100		0.3	387*	0.06	0.18*		**68**	0.011	0.19
10000		100	0.1	626*	0.06	0.06*		**35**	0.003	0.15

30/50

Kg 6.0

n_1 = 1400				BCFK				BCRK		
i_n	30 i_1	50 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	124	0.22	1.2	56-63	**149**	0.265	0.55
200		20	7.0	129	0.18	1.1		**144**	0.201	0.52
300		30	4.7	118	0.13	1.3		**150**	0.166	0.44
450	15		3.1	140	0.11	1.1		**150**	0.118	0.42
600	20		2.3	143	0.09	1.0		**150**	0.094	0.39
900	30		1.6	131	0.06	1.1		**150**	0.069	0.36
1200	40		1.2	156	0.06	1.0		**150**	0.058	0.32
1500	50		0.9	182	0.06	0.8		**150**	0.049	0.30
1950	65		0.7	220*	0.06	0.7*	56	**150**	0.041	0.28
2500	50	50	0.6	253*	0.06	0.5*	56-63	**125**	0.030	0.25
3250	65		0.4	305*	0.06	0.41*	56	**125**	0.025	0.23
4000	80		0.4	354*	0.06	0.35*		**125**	0.021	0.22
5000	100		0.3	414*	0.06	0.30*		**125**	0.018	0.20
10000		100	0.1	645*	0.06	0.11*		**69**	0.006	0.16

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

5.5 Dati tecnici / *5.5 Technical data* / 5.5 Technische Daten

30/63

Kg 8.5

n_1 = 1400				BCFK				BCRK		
i_n	30 i_1	63 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	126	0.22	1.8	56-63	**228**	0.400	0.56
200		20	7.0	162	0.22	1.7		**279**	0.378	0.54
300		30	4.7	207	0.22	1.3		**268**	0.285	0.46
450	15		3.1	238	0.18	1.1		**268**	0.202	0.43
600	20		2.3	215	0.13	1.2		**268**	0.162	0.40
900	30		1.6	250	0.11	1.1		**268**	0.118	0.37
1200	40		1.2	243	0.09	1.1		**268**	0.099	0.33
1500	50		0.9	189	0.06	1.4		**268**	0.085	0.31
1950	65		0.7	228	0.06	1.2	56	**268**	0.071	0.29
2500	50	50	0.6	265	0.06	0.8	56-63	**222**	0.050	0.26
3250	65		0.4	319*	0.06	0.70*	56	**222**	0.042	0.24
4000	80		0.4	369*	0.06	0.60*		**222**	0.036	0.23
5000	100		0.3	433*	0.06	0.51*		**222**	0.031	0.21
10000		100	0.1	663*	0.06	0.21*		**138**	0.012	0.16

40/63

Kg 9.5

n_1 = 1400				BCFK				BCRK		
i_n	40 i_1	63 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
150	10	15	9.3	214	0.37	1.2	63-71	**261**	0.452	0.56
200		20	7.0	277	0.37	1.0		**279**	0.373	0.55
300		30	4.7	238	0.25	1.1		**268**	0.282	0.46
450	15		3.1	244	0.18	1.1		**268**	0.197	0.44
600	20		2.3	226	0.13	1.2		**268**	0.154	0.43
900	30		1.6	257	0.11	1.0		**268**	0.115	0.38
1200	40		1.2	264	0.09	1.0		**268**	0.091	0.36
1500	50		0.9	203	0.06	1.3	63	**268**	0.079	0.33
1950	65		0.7	241	0.06	1.1	56-63	**268**	0.067	0.30
2500	50	50	0.6	284	0.06	0.8		**222**	0.047	0.28
3250	65		0.4	338*	0.06	0.66*		**222**	0.039	0.25
4000	80		0.4	400*	0.06	0.55*		**222**	0.033	0.24
5000	100		0.3	471*	0.06	0.47*		**222**	0.028	0.23
10000		100	0.1	722*	0.06	0.19*		**138**	0.011	0.18

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

5.5 **Dati tecnici** *5.5 **Technical data*** 5.5 **Technische Daten**

40/75	n_1 = 1400				BCFK				BCRK		
	i_n	40 i_1	75 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
	150	10	15	9.3	322	0.55	1.3	63-71	**409**	0.698	0.57
	200		20	7.0	417	0.55	1.1		**442**	0.593	0.56
	300		30	4.7	358	0.37	1.2		**418**	0.432	0.47
	450	15		3.1	346	0.25	1.2		**418**	0.302	0.45
	600	20		2.3	390	0.22	1.1		**418**	0.236	0.43
	900	30		1.6	309	0.13	1.4		**418**	0.176	0.39
	1200	40		1.2	388	0.13	1.1		**418**	0.140	0.36
	1500	50		0.9	379	0.11	1.1	63	**418**	0.121	0.34
Kg	**1950**	65		0.7	368	0.09	1.1	56-63	**418**	0.102	0.31
14.5	**2500**	50	50	0.6	296	0.06	1.3		**381**	0.077	0.29
	3250	65		0.4	352	0.06	1.08		**381**	0.065	0.26
	4000	80		0.4	417	0.06	0.91		**381**	0.055	0.25
	5000	100		0.3	491*	0.06	0.78*		**381**	0.047	0.24
	10000		100	0.1	762*	0.06	0.30*		**232**	0.018	0.19

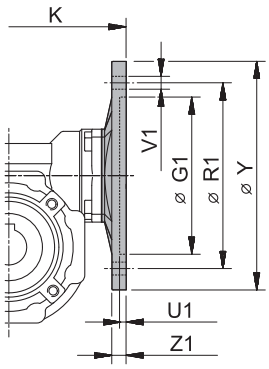
50/75	n_1 = 1400				BCFK				BCRK		
	i_n	50 i_1	75 i_2	n_2 [min^{-1}]	T_2 [Nm]	P_1 [kW]	FS'	Input IEC B5/B14	T_{2M} [Nm]	P [kW]	Rd
	150	10	15	9.3	409	0.75	1.0	71-80	**409**	0.750	0.57
	200		20	7.0	422	0.55	1.0		**442**	0.576	0.56
	300		30	4.7	363	0.37	1.2		**418**	0.427	0.48
	450	15		3.1	350	0.25	1.2		**418**	0.299	0.46
	600	20		2.3	418	0.25	1.0		**418**	0.250	0.42
	900	30		1.6	418	0.18	1.0		**418**	0.180	0.40
	1200	40		1.2	406	0.13	1.0		**418**	0.134	0.38
	1500	50		0.9	470	0.13	0.9	71	**418**	0.116	0.35
Kg	**1950**	65		0.7	572*	0.13	0.7*	63-71	**418**	0.095	0.33
14.5	**2500**	50	50	0.6	674*	0.13	0.6*		**381**	0.074	0.30
	3250	65		0.4	819*	0.13	0.47*		**381**	0.060	0.28
	4000	80		0.4	939*	0.13	0.41*		**381**	0.053	0.26
	5000	100		0.3	1108*	0.13	0.34*		**381**	0.045	0.25
	10000		100	0.1	1719*	0.13	0.13*		**232**	0.018	0.19

*** ATTENZIONE:** la coppia massima utilizzabile [T_{2M}] deve essere calcolata utilizzando il fattore di servizio: $T_{2M} = T_2 \times FS'$

**** WARNING:*** *Maximum allowable torque [T_{2M}] must be calculated using the following service factor : $T_{2M} = T_2 \times FS'$*

*** ACHTUNG:** das max. anwendbare Drehmoment [T_{2M}] muss mit folgendem Betriebsfaktor berechnet werden: $T_{2M} = T_2 \times FS'$

5.6 Predisposizioni possibili — *5.6 Possible set-ups* — 5.6 Mögliche Vorrichtungen

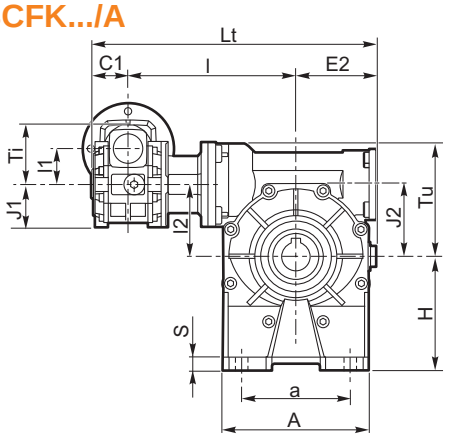


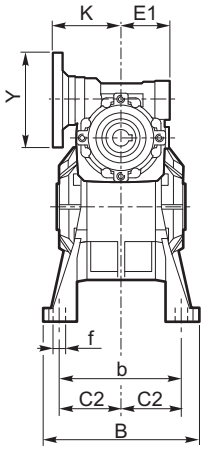
BCFK	PAM IEC	G_1	K	R_1	U1	V1 Ø	V1	V1	Y	Z_1	Diametro fori PAM / *Holes diameter IEC-Input* Bohrungdurchmesser IEC-Antrieb 7.5	10	15	20	25	30	40	50	65	80	100
30/30 30/40 30/50 30/63	56 B5	80	57	100	4	7	n° 8		120	8	9	9	9	9	9	9	9	9	9	9	9
	56 B14	50		65	3.5	6	n° 8		80	8	9	9	9	9	9	9	9	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	8	11	11	11	11	11	11	11	11	/	/	/
	63 B14	60		75	4	6	n° 8		90	8	11	11	11	11	11	11	11	11	/	/	/
40/63 40/75	56 B5	80	75	100	4	7	n° 8		120	9	/	/	/	/	/	/	/	9	9	9	9
	56 B14	50		65	3.5	6		n° 4	80	8	/	/	/	/	/	/	/	9	9	9	9
	63 B5	95		115	4	9	n° 8		140	9	11	11	11	11	11	11	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	11	11	11	11	11	11	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	/	/	/	/
	71 B14	70		85	3.5	7	n° 8		105	8	14	14	14	14	14	14	14	/	/	/	/
50/75	63 B5	95	82	115	4	9	n° 8		140	9	/	/	/	/	/	/	11	11	11	11	11
	63 B14	60		75	3.5	6		n° 4	90	8	/	/	/	/	/	/	11	11	11	11	11
	71 B5	110		130	4.5	9	n° 8		160	10	14	14	14	14	14	14	14	14	14	14	14
	71 B14	70		85	3.5	7	(n° 8)*	n° 4	105	8	14	14	14	14	14	14	14	14	14	14	14
	80 B5	130		165	4.5	11	n° 8		200	10	19	19	19	19	19	19	19	/	/	/	/
	80 B14	80		100	4	7	n° 8		120	10	19	19	19	19	19	19	19	/	/	/	/

* A richiesta, solo con corpo speciale / *Upon request, only with special body* / Auf Wunsch nur mit speziellen Körper

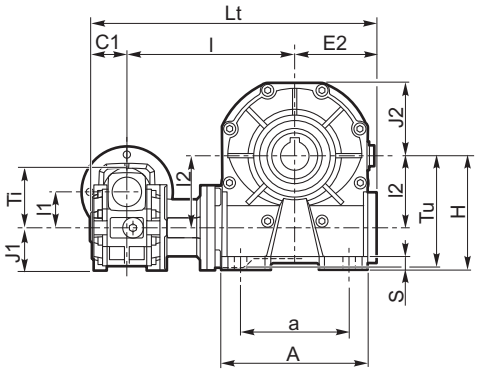
5.7 **Dimensioni** *5.7* ***Dimensions*** 5.7 **Abmessungen**

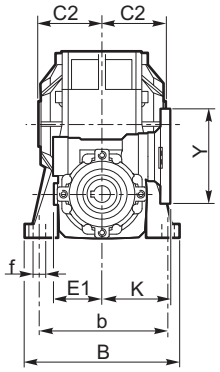
BCFK.../A



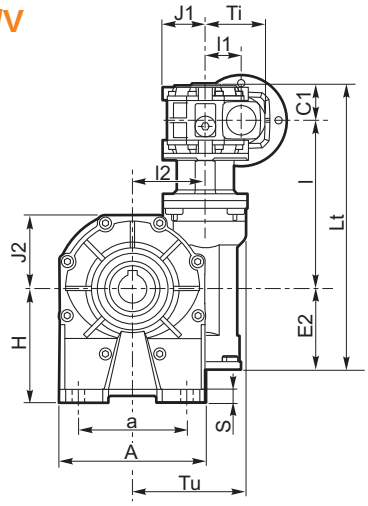


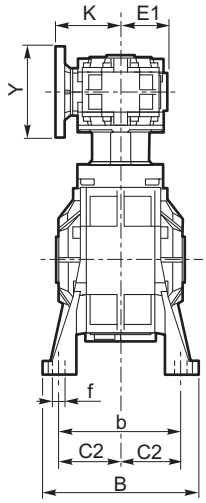
BCFK.../B

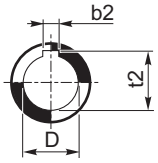




BCFK.../V







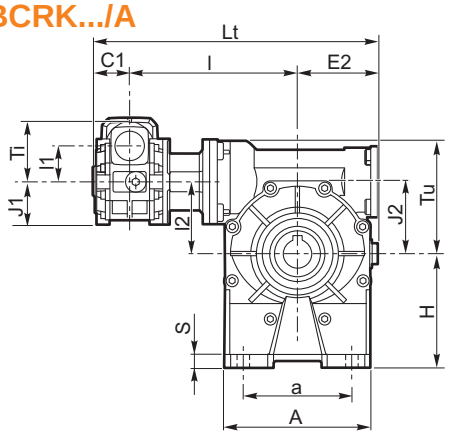
BCFK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
30/30	**14**	5	16.3
30/40	**18**	6	20.8
30/50	**25**	8	28.3
30/63 **40/63**	**25**	8	28.3
40/75 **50/75**	**28** (30)	8 (8)	31.3 (33.3)

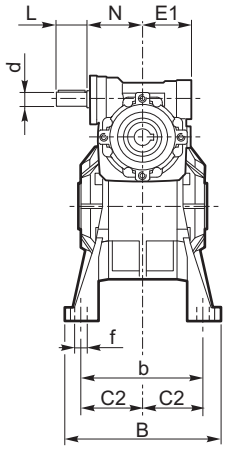
A, B, V

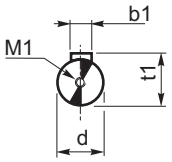
BCFK	A	a	B	b	C1	C2	E1	E2	f	H	l	l1	l2	J1	J2	Kc	Lt	S	Ti	Tu
30/30	67	52 ÷ 40	78	66	31.5	27.5	41	41	6.5	55	100	31.5	31.5	37.5	37.5	57	171.5	8	52.5	52.5
30/40	86.5	52	98	81		32		51	8.5	72	122		40		43.5	57	203.5	10		68.5
30/50	107	63	118	98.5		41		60	9	82	132		50		53.5	57	223.5	10		82.5
30/63	127.5	95	136	111		60		71	11	100	147		63		64	57	248.5	12		100.5
40/63	127.5	95	136	111	39	60	51	71	11	100	152	40	63	43.5	64	75	261	12	68.5	100.5
40/75	155.5	120	140	112÷120		60		85	11	115	176.5		75		78	75	301.5	12		116.5
50/75	155.5	120	140	112÷120	46	60	60	85	11	115	192	50	75	53.5	78	82	324	12	82.5	116.5

5.7 **Dimensioni** | *5.7* ***Dimensions*** | 5.7 **Abmessungen**

BCRK.../A

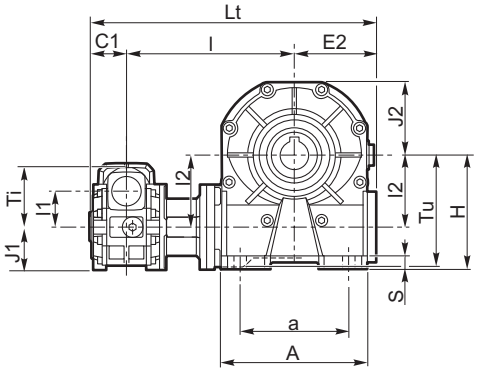


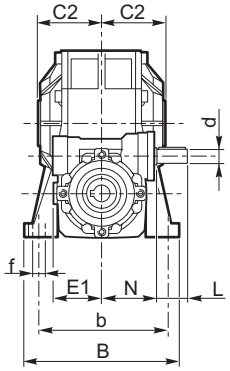


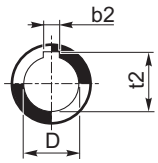


BCRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	**b1**	**t1**	**M1**
30/30 30/40 30/50 30/63	9	3	10.2	M4x10
40/63 40/75	11	4	12.5	M4x10
50/75	14	5	16	M5x13

BCRK.../B

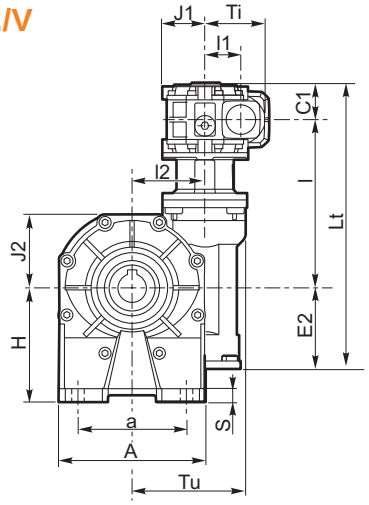


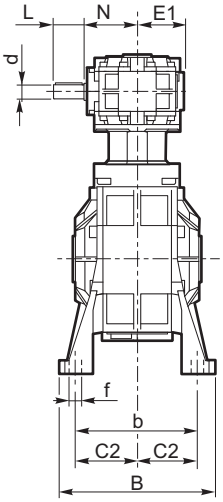




BCRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
3030	**14**	5	16.3
30/40	**18**	6	20.8
30/50	**25**	8	28.3
30/63 40/63	**25**	8	28.3
40/75 50/75	**28** (30)	8 (8)	31.3 (33.3)

BCRK.../V

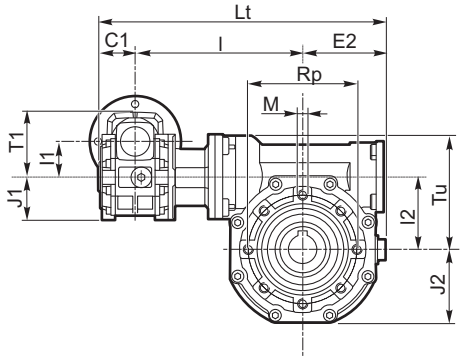




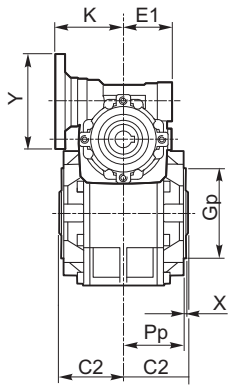
A, B, V

BCRK	A	a	B	b	C1	C2	E1	E2	f	H	l	l1	l2	J1	J2	Lt	L	N	S	Ti	Tu
30/30	67	52 ÷ 40	78	66	31.5	27.5	41	41	6.5	55	100	31.5	31.5	37.5	37.5	171.5	20	47	8	52.5	52.5
30/40	86.5	52	98	81		32		51	8.5	72	122		40		43.5	203.5			10		68.5
30/50	107	63	118	98.5		41		60	9	82	132		50		53.5	223.5			10		82.5
30/63	127.5	95	136	111		60		71	11	100	147		63		64	248.5			12		100.5
40/63	127.5	95	136	111	39	60	51	71	11	100	152	40	63	43.5	64	261	22	64	12	68.5	100.5
40/75	155.5	120	140	112÷120		60		85	11	115	176.5		75		78	301.5			12		116.5
50/75	155.5	120	140	112÷120	46	60	60	85	11	115	192	50	75	53.5	78	324	30	74	12	82.5	116.5

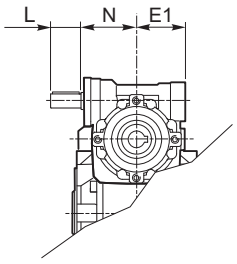
5.7 Dimensioni *5.7 Dimensions* 5.7 Abmessungen



BCFK.../P

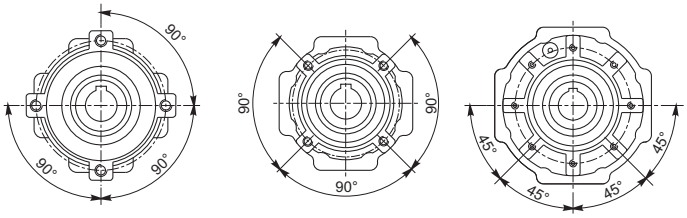


BCRK.../P



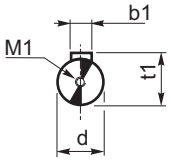
Flangia pendolare / *Side cover for shaft mounting* / Flansch für Drehmomentstutze

30 **40 - 50** **63 - 75**

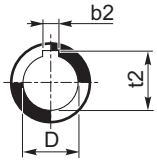


4 Fori / *Holes* / Bohrungen 8 Fori / *Holes* / Bohrungen

P					
BCFK BCRK	**30/30**	**30/40**	**30/50**	**30/63 40/63**	**40/75 50/75**
$G_{p\ h8}$	50	50	68	75	90
M	M6x8	M6X10	M6x8	M8x14	M8x14
P_p	30	38	44	45	46
R_p	65	65	94	90	110
X	1.5	1.5	2	10	13



BCRK	Albero entrata *Input shaft* Eingangswelle			
	d (j6)	**b1**	**t1**	**M1**
30/30 30/40 30/50 30/63	9	3	10.2	M4x10
40/63 40/75	11	4	12.5	M4x10
50/75	14	5	16	M5x13

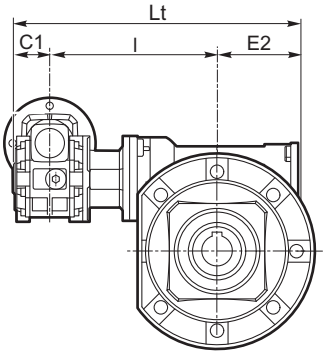


BCFK BCRK	Albero lento cavo *Hollow output shaft* Ausgangshohlwelle		
	D H7	**b2**	**t2**
30/30	**14**	5	16.3
30/40	**18**	6	20.8
30/50	**25**	8	28.3
30/63 40/63	**25**	8	28.3
40/75 50/75	**28** (30)	8 (8)	31.3 (33.3)

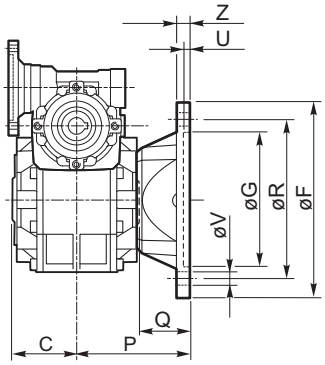
P															
BCFK BCRK	**C1**	**C2**	**E1**	**E2**	**I**	**I1**	**I2**	**J1**	**J2**	**Kc**	**L**	**Lt**	**N**	**Ti**	**Tu**
30/30		27.5		41	100		31.5		37.5	57		171.5			52.5
30/40	27.5	32	41	51	122	31.5	40	37.5	43.5	57	20	203.5	47	52.5	68.5
30/50		41		60	132		50		53.5	57		223.5			82.5
30/63		60		71	147		63		64	57		248.5			100.5
40/63	32	60	51	71	152	40	63	43.5	64	75	22	261	64	68.5	100.5
40/75		60		85	176.6		75		78	75		301.5			116.5
50/75	41	60	60	85	192	50	75	53.5	78	82	30	324	74	82.5	116.5

5.7 **Dimensioni** *5.7* ***Dimensions*** 5.7 **Abmessungen**

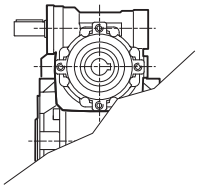
Flangia uscita / *Output flange* / Abtriebsflansch



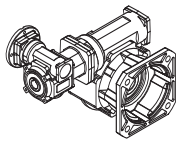
BCFK.../F



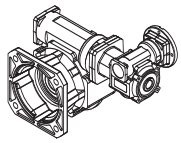
BCRK.../F



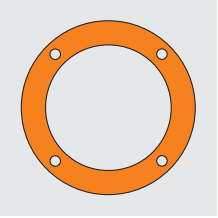
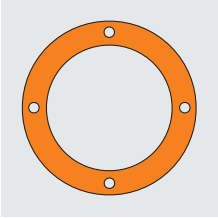
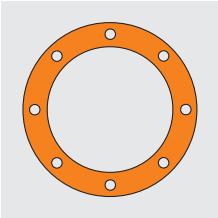
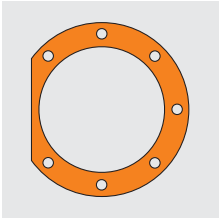
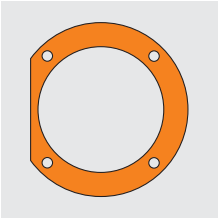
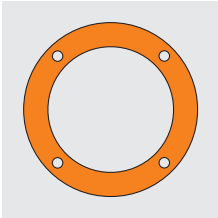
F...D
Standard



F...S



Tipo flangia / *Type flange* / Typ flansch

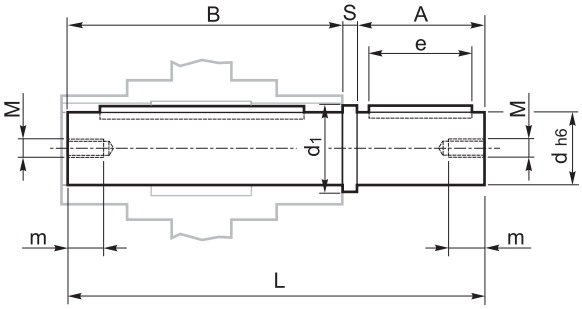







30/30	30/40	30/50	30/63 40/63	30/63 40/63	40/75 50/75	30/63 40/63	40/75 50/75	30/63 40/63	40/75 50/75
F	F	F - F1	F	F1	F - F1	F2	F2 - F3 F3A	F3	F4

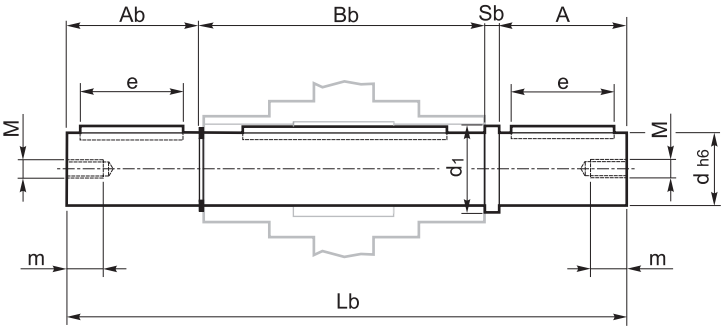
BFK BRK	Tipo flangia *Type flange* Typ flansch	C	F		G (H8)	P	Q	R	U	V			Z
												ø	
30/30	F	27.5	82		50	50.5	23	68	3.5	n° 4		6.0	6
30/40	F	32	110		60	60	28	87	5	n° 4		9	8
30/50	F	41	125		70	85	44	90	5	n° 4		10.5	10
	F1		125		70	115	74	90	5	n° 4		10.5	10
30/63 40/63	F	60	180		115	116	56	150	7		n° 8	11	12
	F1		180		115	86	26	150	5		n° 7	11	11
	F2		200		130	102	42	165	6	n° 4		13	11
	F3		160		110	82	22	130	5	n° 4		11	11
40/75 50/75	F	60	200		130	111	51	165	6		n° 7	13	13
	F1		200		130	85	25	165	6		n° 7	13	13
	F2		175		115	116	56	150	6	n° 4		11	12
	F3		175		115	85	25	150	5	n° 4		11	12
	F3A		160		110	85	25	130	5	n° 4		11	12
	F4		160		110	101	41	130	6	n° 4		11	12

5.8 Accessori / *5.8 Accessories* / 5.8 Zubehör

Albero lento semplice / *Single output shaft* / Standard Abtriebswelle



Albero lento doppio / *Double output shaft* / Doppelte Abtriebswelle

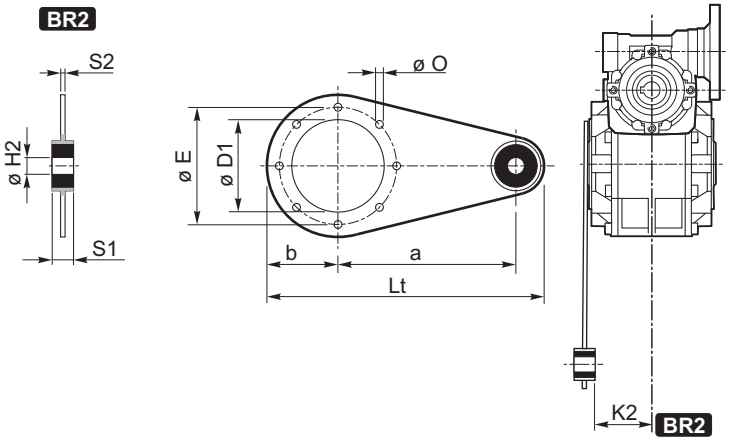


BCFK BCRK	A	Ab	B	Bb	d (h6)	d1	e	L	Lb	M	m	S	Sb
30/30	30	29	52	56	14	18.5	20	84.5	117.5	M6	16	2.5	2.5
30/40	40	39	62	65.2	18	24.5	30	105	147.2	M6	16	3	3
30/50	60	59	80	83.2	25	29.5	50	143.5	205.7	M8	22	3.5	3.5
30/63 40/63	60	59	119	121.2	25	29.5	50	183	244.2	M8	22	4	4
40/75 50/75	60	59	119	121.5	28	34.5	50	183	244.5	M8	22	4	4

Braccio di reazione / *Torque arm* / Drehmomentstütze

BR2 Con boccola / *With bush* / Mit Büchse

BCFK BCRK	a	b	D1	E	H2	K2	Lt	O	S1	S2
30/30	100	40	50	65	8	24.5	157.5	7	15	4
30/40	100	40	50	65	8	32.5	157.5	7	15	4
30/50	100	55	68	94	8	38.5	175	7	15	4
30/63 40/63	150	55	75	90	10	38	233	9	20	6
40/75 50/75	200	63	90	110	10	36.5	300	9	25	6



Opzioni disponibili:

Cuscinetti a rulli conici corona

Available options:

Tapered roller bearing for worm wheel

Auf Anfrage ist folgendes Zubehör erhältlich:

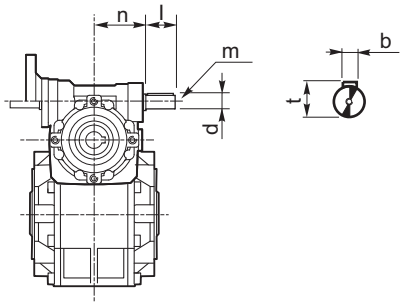
Kegelrollenlager für Schneckenrad

5.9 Esecuzione con vite bisporgente

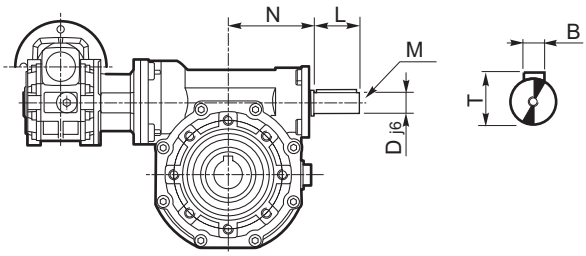
5.9 Double extended worm shaft design

5.9 Versionen mit Doppelseitig Herausragender Schneckenwelle

SeA1



SeA2



BCFK	SeA1					
	b	d j6	l	m	n	t
30/30 30/40 30/50 30/63	3	9	15	M4x10	42.5	10.2
40/63 40/75	4	11	20	M4x12	52.5	12.5
50/75	5	14	25	M5x13	62.5	16

BCFK BCRK	SeA2					
	B	D j6	L	M	N	T
30/30	3	9	15	M4x10	42.5	10.2
30/40	4	11	20	M4x12	52.5	12.5
30/50	5	14	25	M5x13	62.5	16
30/63 40/63	6	19	30	M8x20	72.5	21.5
40/75 50/75	8	24	40	M8x20	93	27

BCRK	SeA1					
	b	d j6	l	m	n	t
30/30 30/40 30/50 30/63	3	9	20	M4x10	42.5	10.2
40/63 40/75	4	11	22	M4x10	52.5	12.5
50/75	5	14	30	M5x13	62.5	16

L'entrata supplementare del riduttore in uscita (SeA2) non può essere utilizzata come comando in quanto il relativo movimento risulta impedito dalla irreversibilità del primo riduttore.
Utilizzato come asse condotto, avrà veliocità corrispondente a quella di ingresso ridotta del rapporto del primo riduttore.

The second input shaft of the output gearbox (SeA2) can not be utilized as a drive because its motion will be stopped by the reversibility of the first gearbox.
If utilized as a drive shaft its speed will be equal to the input speed decreased by the ratio of the first gearbox.

Die verlängerte Schneckenwelle des zweiten Getriebes (SeA2) kann nicht als Antrieb verwendet werden, da die Selbshemmung des ersten Getriebes entgegengewirkt.
Wird sie als Abtriebswelle verwendet, besitzt sie eine um die Untersetzung des ersten Getriebes entsprechend reduzierte Drehzahl und Drehmoment.

5.10 Limitatore di coppia cavo passante

Il limitatore di coppia viene consigliato in tutte quelle applicazioni che richiedono una limitazione sulla coppia trasmissibile per proteggere l'impianto e/o preservare il riduttore evitando sovraccarichi o urti indesiderati quanto inaspettati.
È un dispositivo con albero dotato di cavo passante, con funzionamento a frizione, ed è integrato al riduttore, presentando un ingombro limitato.
Concepito per lavorare a bagno d'olio, il dispositivo risulta affidabile nel tempo ed è esente da usura se non viene mantenuto in condizioni prolungate di slittamento (condizione che si verifica quando la coppia presenta valori superiori a quelli di taratura).
La taratura è facilmente regolabile dall'esterno attraverso il serraggio di una ghiera autobloccante che porta a compres- sione le 4 molle a tazza disposte tra loro in serie.
Il dispositivo non consente:
- l'impiego di cuscinetti a rulli conici in uscita
- funzionamento prolungato in condizioni di slittamento.

Nella tabella seguente vengono riportati i valori delle coppie di slittamento M_{2S} in funzione del n° di giri della ghiera.

5.10 Torque limiter with through hollow shaft

The use of a torque limiter is advisable when the application requires the limitation of the transmissible torque to safeguard the plant and/or the gearbox from unexpected or undesired overloads.
The torque limiter is equipped with a through hollow shaft and a friction clutch.
It is integrated in the gearbox, therefore space requirement is limited.
Designed to be working in oil bath, the device is reliable over time and is not subject to wear unless in case of operation with prolonged slipping (it occurs when the torque values are higher than the calibration values).
Calibration can be easily adjusted from outside by tightening of the self-locking ring nut, which causes the compression of the 4 Belleville washers arranged in series.

The device does not go together with:
- *the use of tapered roller bearings at output*
- *prolonged operation under slipping conditions*

The following table shows the values of M_{2S} slipping torques depending on the number of revolutions of the ring nut.

5.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Die Anwendung eines Drehmomentbegrenzers wird empfohlen, um die Anlage und/oder das Getriebe gegen ungewünschte und unerwartete Überbelastungen zu schützen.
Es handelt sich um eine Vorrichtung mit einer durchgehenden Hohlwelle.
Er ist in dem Getriebe integriert, d.h. der Raumbedarf ist klein. Der Begrenzer wurde für Betrieb in einem Ölbad entworfen.
Er ist zuverlässig und verschleißfrei (nur im Falle eines dauerhaften Rutschens entsteht Verschleiß, hier ist das Drehmoment größer als der eingestellte Eichwert).
Die Eichung kann mühelos von aussen durch das Anziehen einer selbstsperrenden Mutter ausgeführt werden, dadurch wird der Druck auf die 4 wechselseitig angeordneten Tellerfedern erhöht.

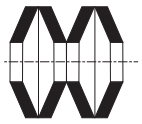
Die Vorrichtung sieht das folgende nicht vor:
- die Verwendung von Kegelrollenlager am Abtrieb
- Längerer Rutschbetrieb

Die nachstehende Tabelle zeigt die Werte der Rutschmomente M_{2S} abhängig von der Anzahl der Umdrehungen der Mutter. Die Eichwerte weisen ±10% Toleranz

BCFK BCRK	N°. giri della ghiera di regolazione / *N°. revolutions of ring nut* Nr. Umdrehungen der Mutter								
	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
	$M_{2S\ [Nm]}$								
30/63 40/63	—	127	155	180	205	262	260	282	—
40/75 50/75	—	—	235	265	295	327	360	407	455

Disposizione delle molle
Washers' arrangement
Lage der Feder

IN SERIE (min. coppia, max. sensibilità)
SERIES *(min. torque, max sensitivity)*
SERIE (min. Moment, max. Empfindlichkeit)



I valori di taratura presentano una tolleranza del ±10% e si riferiscono ad una condizione statica.
In condizioni dinamiche è da notare che la coppia di slittamento assume valori diversi a seconda del tipo e/o modalità in cui si verifica il sovraccarico: con valori maggiori in caso di carico uniformemente crescente rispetto a volori più contenuti in seguito al verificarsi di picchi improvvisi di carico.
NOTA: quando si supera il valore di taratura si ha slittamento. Il coefficiente di attrito tra le superfici di contatto da statico diventa dinamico e la coppia trasmessa cala del 30% circa.
E' quindi opportuno prevedere uno stop per poter ripartire al valore di taratura iniziale.

Calibration values feature a ±10% tolerance and refer to static conditions.
Under dynamic conditions the values of the slipping torque will change according to the type of overload: the values are higher if the load increase is uniform; the values are lower if sudden load peaks occur.

NOTE: *Slipping occurs when the setting values are exceeded.*
The friction coefficient between the contact surfaces from static becomes dynamic and the transmitted torque is approx. 30% lower.
It is advisable to have a stop first in order to have a restart based on the initial setting value.

auf und beziehen sich auf statische Bedingungen.
Unter dynamischen Bedingungen hat das Rutschmoment verschiedene Werte je nach Art der Überbelastung. Die Werte sind höher, wenn die Belastung gleichmäßig zunimmt; sie sind niedriger im Falle von plötzlichen Belastungsspitzen.
BEMERKUNG: Rutschen tritt auf, wenn die eingestellten Werte überschritten werden. Der Reibungsfaktor zwischen den Berüehrungsflächen wird dynamisch anstatt statisch und das übertragene Drehmoment sinkt um ca. 30%.
Es ist daher ratsam, vor dem erneuten Anfahren anzuhalten, um die ursprünglichen Drehmomentwerte zu erreichen.

5.10 Limitatore di coppia cavo passante

E' importante notare che la coppia di slittamento non resta sempre la medesima durante tutta la vita del limitatore.
Tende infatti a diminuire in rapporto al numero e alla durata degli slittamenti che, rodando le superfici di contatto, ne aumentano il rendimento.
È quindi opportuno verificare periodicamente, soprattutto durante la fase di rodaggio, la taratura del dispositivo.
Là dove sia richiesto un errore più contenuto nella taratura, è necessario testare la coppia trasmissibile sull'impianto.

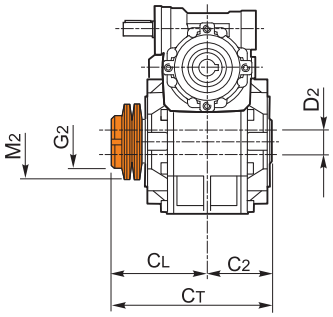
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

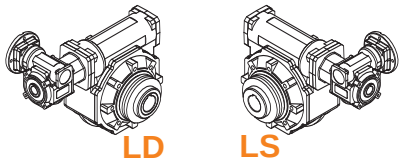
5.10 Torque limiter with through hollow shaft

It is important to note that the slipping torque is not the same for the whole life of the torque limiter.
It usually decreases in connection with the numbers and the duration of the slipping which because of the surfaces' lapping will increase the efficiency.
For this reason it is advisable to check the calibration of the device at regular intervals, specially during the running-in period.
Should a smaller calibration error be required, it is necessary to test the transmissible torque on the plant.
The device is supplied already calibrated at the torque reported in the catalogue T_{2M}, unless otherwise specified in the order.

5.10 Drehmomentenbegrenzer mit durchgehender Hohlwelle

Es ist wichtig zu beachten, dass das Rutschmoment über die gesamte Lebensdauer der Rutschkupplung nicht konstant bleibt, sondern üblicherweise in Verbindung mit längeren Rutschzyklen aufgrund der eingelaufenen Berührungsflächen abnimmt.
Deswegen ist es ratsam, die Eichung der Vorrichtung besonders während der Einlaufzeit zu prüfen.
Falls ein niedrigerer Eichfehler gewünscht ist, sollte das übertragbare Drehmoment auf der Anlage getestet werden.
Wenn die Vorrichtung geliefert wird, ist sie schon auf das im Katalog T_{2M} angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegebene wird.





BCFK BCRK LD - LS	C_2	C_L	C_t	D_2 H7	M_2	G_2
30/63 40/63	60	97	157	25	71x40.5x2.5	M40X1.5
40/75 50/75	60	100	160	28 (30)	90x50.5x3.5	M50X1.5

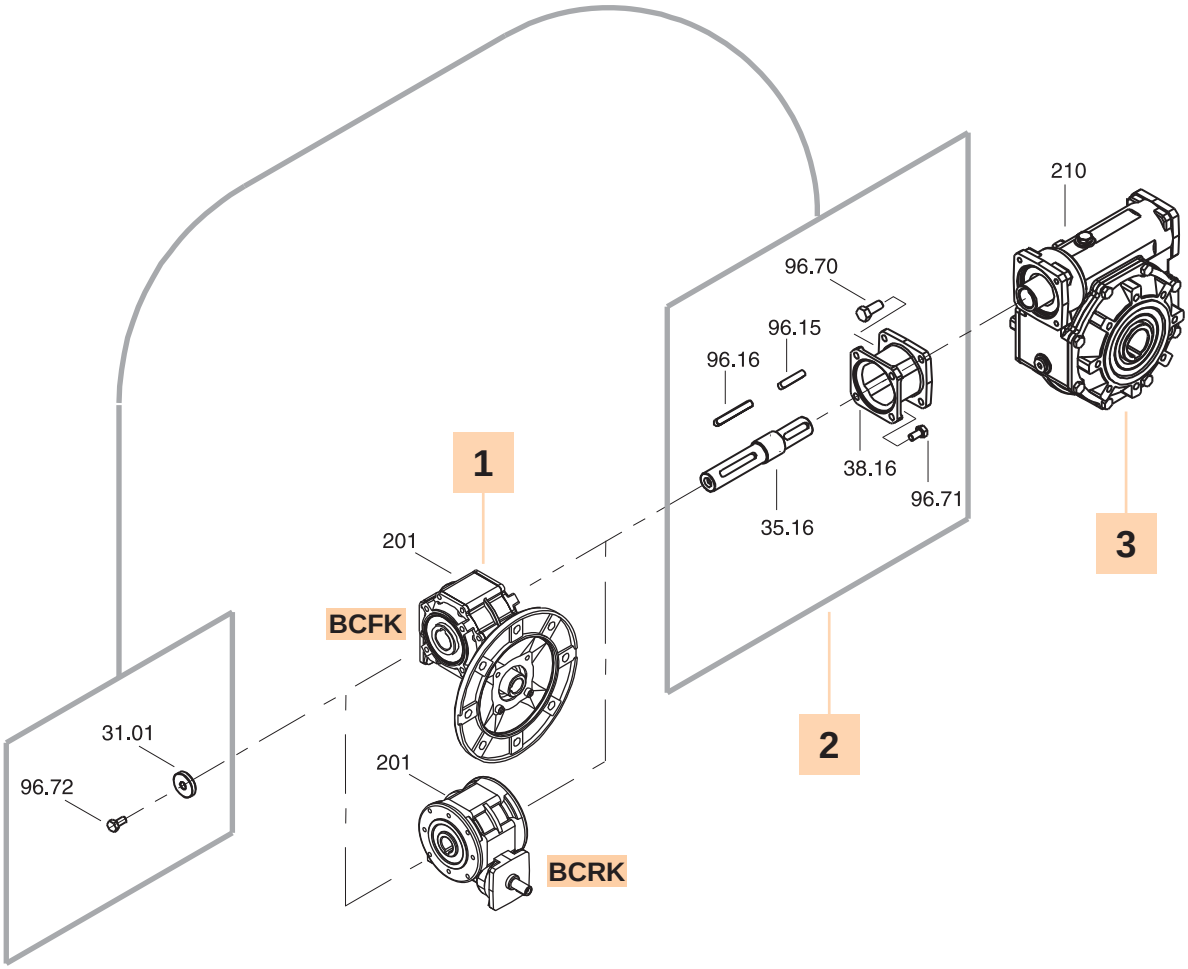
( ) A richiesta / *On request* / Auf Anfrage

Nella versione con limitatore non è prevista la fornitura degli alberi lenti.
Il dispositivo viene consegnato tarato alla coppia riportata a catalogo T_{2M} salvo diversa indicazione espressa in fase di ordinazione.

The version with torque limiter is supplied without output shafts.
The device is supplied already calibrated at the torque reported in the catalogue T2M, unless otherwise specified in the order.

Die Version mit Drehmomentbegrenzer wird ohne Abtriebswellen geliefert.
Wenn die Vorrichtung geliefert wird, ist sie schon auf dem im Katalog T2M angegebenen Drehmoment geeicht, ausser wenn es in der Bestellung anders angegeben wird.

BCFK - BCRK



	1		2	3
	IN (SCFK)	IN (SCRK)	KIT	OUT
30/30	KC30	KA30	**KIT 30/30** (2850002010)	30/9
30/40			**KIT 30/40** (2850002013)	40/11
30/50			**KIT 30/50** (2850002016)	50/14
30/63			**KIT 30/63** (2850002019)	63/19
40/63	KC40	KA40	**KIT 40/63** (2850002028)	63/19
40/75			**KIT 40/75** (2850002031)	75/24
50/75	KC50	KA50	**KIT 50/75** (2850002034)	75/24

5.11 **Lista parti di ricambio** *5.11* ***Spare parts list*** 5.11 **Ersatzteilliste**

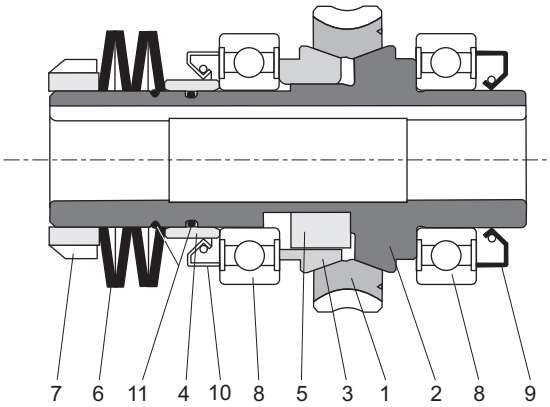
BCFK - BCRK

Limitatore di coppia cavo passante

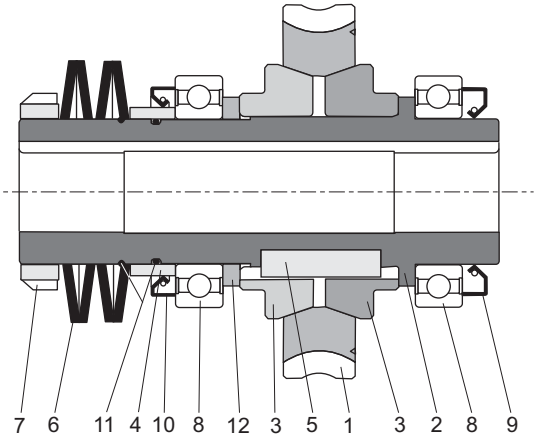
Torque limiter with through hollow shaft

Drehmomentbegrenzer mit durchgehende Hohlwelle

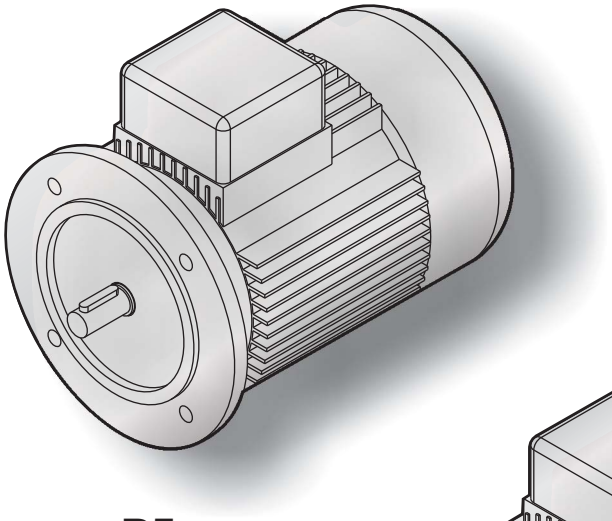
A



B



		A			B	
		BCFK - BCRK				
		30/63 (L1)	**40/63** (L1) **40/75** (L1)	**50/75** (L1)	**30/63** (LD - LS) **40/63** (LD - LS)	**40/75** (LD - LS) **50/75** (LD - LS)
5	Linguetta / *Key* / Passfeder	8x7x10AB	10x8x13AB	12x8x18AB	12x8x40A	16x10x40A
8	Cuscinetti / *Bearings* / Lager	6005 25x47x12	6006 30x55x13	6008 40x68x15	6008 40x68x15	6010 50x80x16
9	Anelli di tenuta / *Oilseals* Öldichtungen	25x40x7	30x47x7	40x62x8	40x62x8	50x72x8
10		30x40x5	35x47x7	48x62x8	48x62x8	58x72x8
11	O-rings in gomma *Rubber O-rings* Gummi-O-ringe	OR2087 21.95x1.78	OR2106 26.7x1.78	OR 36.27x1.78	OR 36.27x1.78	OR2187 47.37x1.78



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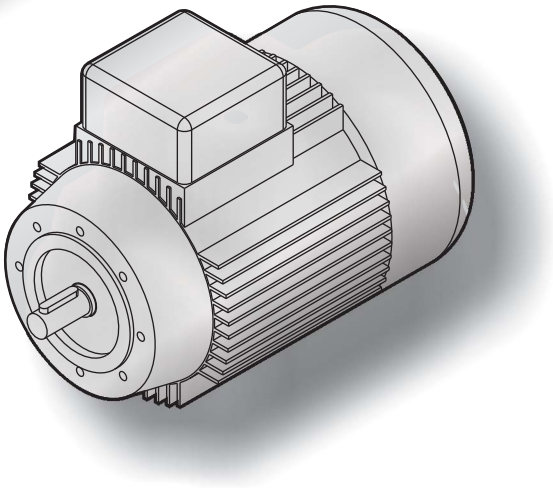

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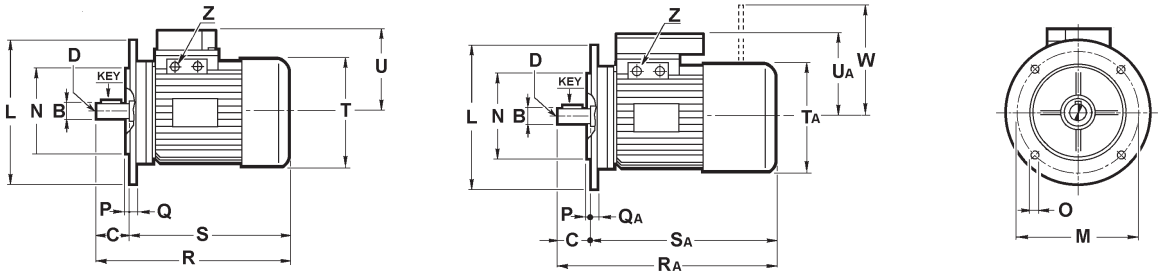


Motori elettrici [1]
Electric motors
Elektromotoren

Motori elettrici autofrenanti [2]
Electric brake motors
Elektro-Bremsmotoren

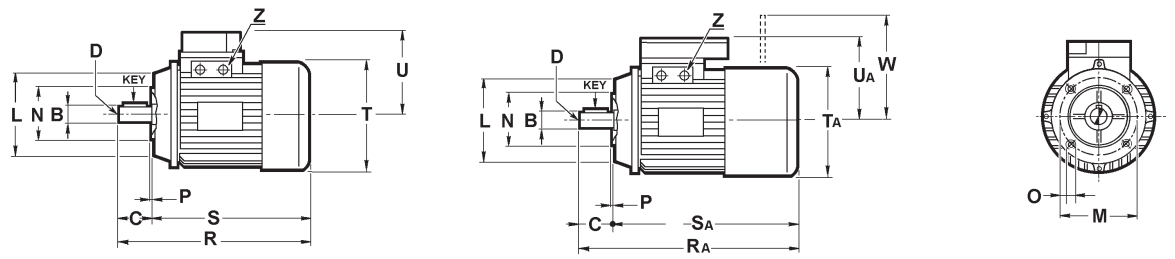
		4 poles kW	kg. (1)	kg. (2)	B	C	D	L	M	N	O	P	Q	QA	R	RA	S	SA	T	TA	U	UA	W	Z	KEY
56	A	0.06	2.5	4	9	20	M4	120	100	80	7	3	8	8	188	220	168	200	110	110	108	108	90	PG11	3x3x15
	B	0.09	2.6	5																				PG11	3x3x15
	C	0.11	3.2	5																				PG11	3x3x15
63	A	0.13	3.7	5	11	23	M4	140	115	95	9	3	9	9	208	257	185	234	123	123	110	110	98	PG11	4x4x15
	B	0.18	4.3	7																				PG11	
	C	0.22	4.3	7																				PG11	
71	A	0.25	5.8	8	14	30	M5	160	130	110	9	3.5	9	9	245	297	215	267	140	140	121	121	98	PG11	5x5x20
	B	0.37	6.2	8																				PG11	
	C	0.55	7.4	9																				PG11	
80	A	0.55	8.5	11	19	40	M6	200	165	130	11	3.5	10	10	278	336	238	296	159	159	138	138	111	PG16	6x6x30
	B	0.75	9.8	13																				PG16	
	C	0.9	10.5	13.5																				PG16	
90	S	1.1	12	17	24	50	M8	200	165	130	11	3.5	10	10	305	369	255	319	176	176	149	149	129	PG16	8x7x35
	L	1.5	13.5	18											330	394	280	344						PG16	
	LB	1.8	15.5	20																				PG16	
100	A	2.2	19	25.5	28	60	M10	250	215	180	14	4	14	14	369	434	309	374	195	195	160	160	139	PG16	8x7x45
	B	3	21	28																				PG16	
	BL	4	23	30																				PG16	
112	A	4	29	38	28	60	M10	250	215	180	14	4	14	14	388	467	328	407	219	219	172	172	161	PG16	8x7x45
	BL	5.5	35	44																				PG16	8x7x45
132	S	5.5	43	56	38	80	M12	300	265	230	14	4	20	14	448	570	368	490	258	258	192	192	186	PG21	10x8x60
	M	7.5	52	66											485	600	405	520							
	ML	9.2	54	68																					

Le dimensioni dei motori elettrici sono puramente indicative.

The dimensions of the electric motors are approximate values.

Die Abmessungen der Elektromotoren sind Näherungswerte.

B14



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Electric motors
Elektromotoren

Motori elettrici autofrenanti [2]
Electric brake motors
Elektro-Bremsmotoren

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56	A	0.06	2.5	4	9	20	M4	80	65	50	M5	2.5	188	220	168	200	110	110	108	108	90	PG11	3x3x15
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63	A	0.13	3.7	5	11	23	M4	90	75	60	M5	2.5	208	257	185	234	123	123	110	110	98	PG11	4x4x15
	B	0.18	4.3	7																		PG11	
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71	A	0.25	5.8	8	14	30	M5	105	85	70	M6	2.5	245	297	215	267	140	140	121	121	98	PG11	5x5x20
	B	0.37	6.2	8																		PG11	
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	B	0.75	9.8	13																		PG16	
	C	0.9	10.5	13.5																		PG16	
90	S	1.1	12	17	24	50	M8	140	115	95	M8	3	305	369	255	319	176	176	149	149	129	PG16	8x7x35
	L	1.5	13.5	18									330	394	280	344			160				
	LB	1.8	15.5	20																			
100	A	2.2	19	25.5	28	60	M10	160	130	110	M8	3.5	369	434	309	374	195	195	173	160	139	PG16	8x7x45
	B	3	21	28																			
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Note

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01/2012

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