2.0 RIDUTTORE AD ASSI ORTOGONALI — *BEVEL HELICAL GEARBOX* — KEGELSTIRNRADGETRIEBE

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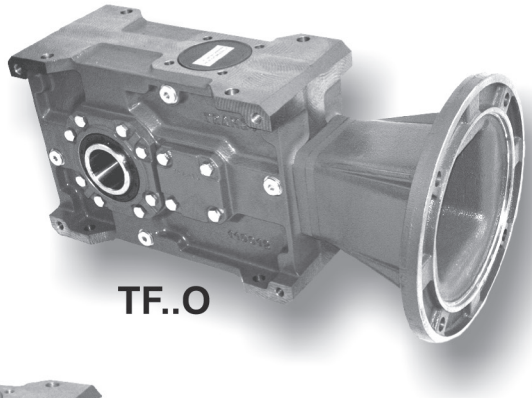
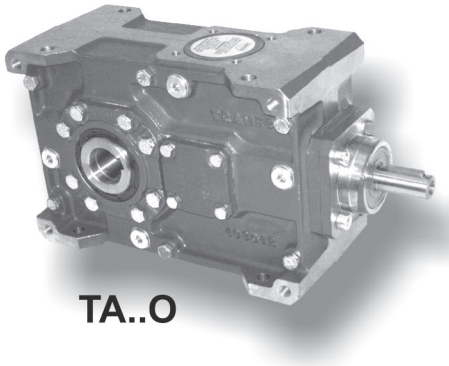
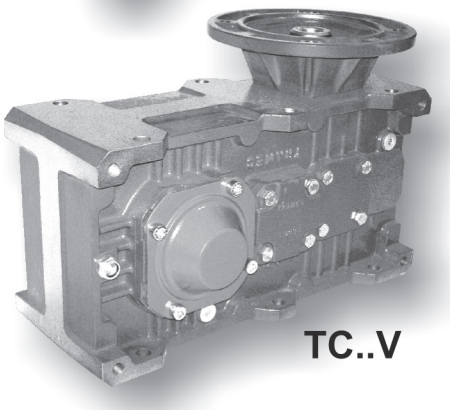
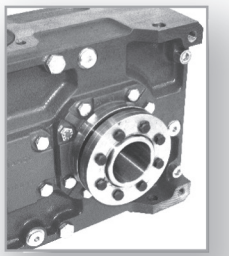
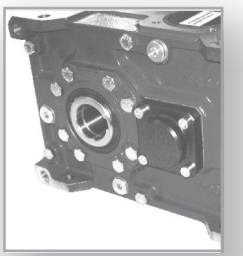
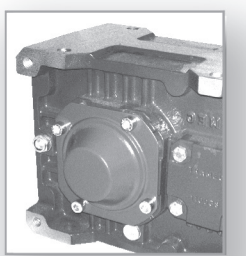

TF..O


TA..O


TC..V







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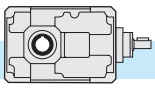


2.1 Caratteristiche

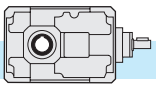
- Costruti in 10 grandezze a 2 riduzioni e in 9 grandezze a 3 riduzioni.
- Sono previsti tre tipi di entrata: con albero entrata sporgente, con predisposizione attacco motore (campana e giunto) e predisposizione attacco motore COMPATTA, escluse grandezze 56, 63 e 75. I tre tipi di entrata possono essere montati indifferentemente nelle esecuzioni verticale e/o orizzontale.
- Il corpo riduttore in lega di alluminio, EN AL - AlSi9Cu - AL - AlSi7 UNI EN 1706 (56-63-75), in ghisa meccanica EN GJL 200 UNI EN 1561 (71-180) o in ghisa sferoidale EN GJS 400-15U UNI EN1563 (200-225), abbondantemente nervato all'interno e all'esterno per garantire la rigidità, è lavorato su tutti i piani per consentire un facile posizionamento; inoltre un'unica camera di lubrificazione garantisce una maggiore dissipazione termica e una migliore lubrificazione di tutti gli organi interni.
- Gli ingranaggi sono costruiti in acciaio legato da cementazione e sottoposti a trattamento di cementazione e tempra. In particolare, la prima riduzione è costituita da due ingranaggi conici a dentatura spiroidale GLEASON con profilo accuratamente rodato, in acciaio 16NiCr4 o 18NiCrMo5 cementati e temprati. Gli ingranaggi cilindrici, a dentatura elicoidale, sono costruiti in acciaio 16NiCr4, 18NiCrMo5 o 20MnCr5 UNI EN 10084 cementati e temprati, rettificati entro la classe di qualità 6 della DIN 3962.
- L'utilizzo dei cuscinetti a rulli conici di qualità su tutti gli assi (ad eccezione del manicotto in entrata nella predisposizione attacco motore compatta, il quale è sostenuto da cuscinetti obliqui a sfere) consente al riduttore di ottenere delle durate molto elevate e di sopportare dei carichi radiali e assiali esterni molto elevati.
- L'albero lento cavo di serie in acciaio (disponibile a richiesta con calettatore), la possibilità di montare una flangia uscita su uno o entrambi i fianchi laterali e la predisposizione per il montaggio del dispositivo antiritorno esaltano la versatilità di questi riduttori facilitandone l'installazione.
- Il corpo riduttore, le flange, le campane ed i coperchi vengono verniciati esternamente di colore BLU RAL 5010, ad eccezione dei riduttori ortogonali delle grandezze 56, 63 e 75 realizzati in alluminio.

2.1 Characteristics

- *Built in 10 sizes with 2 reduction stages and in 9 sizes with 3 reduction stages .*
- *Three input types are available : projecting input shaft, pre-engineered motor coupling (bell and joint) and pre-engineered COMPACT motor coupling. (Size 56, 63 and 75 excluded). The 3 input types can be mounted either vertically and/or horizontally.*
- *Gear unit casing in aluminium alloy EN AL - AlSi9Cu - AL - AlSi7 UNI EN 1706 (56-63-75), in engineering cast iron, EN GJL 200 UNI EN 1561 (71-180) or spheroidal graphite cast iron EN GJS 400-15U UNI EN 1563 (200-225), is ribbed internally and externally to guarantee rigidity. It is machined on all surfaces for easy positioning. The single lubrication chamber guarantees improved heat dissipation and improved lubrication of all the internal components.*
- *The gears are built in casehardened compound steel and have undergone case-hardening and quench-hardening treatments. In particular, the first reduction stage consists of two GLEASON spiral bevel gears with precision ground profile, in 16CrNi4 or 18NiCrMo5 case-hardened and quench-hardened steel. The helical spur gears are built in 16NiCr4, 18NiCrMo5 or 20MnCr5 UNI EN 10084 quench-hardened and case-hardened steel, grinded in quality 6 DIN 3962.*
- *The use of high-quality tapered roller bearings on all shafts (except for the input sleeve on the pre-engineered compact motor coupling, which is supported by angular ball bearings) ensures long life and enables very high external radial and axial loads.*
- *The standard hollow output shaft made of steel (shrink disc available on request), the option of mounting an output flange on one or both sides and the possibility of mounting a backstop device make these gear units extremely versatile and easy to install.*
- *Gearbox housing, flanges, bells and covers are externally painted with BLUE RAL 5010, except for bevel helical gearboxes size 56, 63 and size 75 which are made in aluminium.*

2.1 Merkmale

- Erhältlich in 10 Größen zu je 2 Untersetzungsstufen und in 9 Größen zu je 3 Untersetzungsstufen.
- Vorgesehen sind drei Antriebsarten: mit vorstehender Antriebswelle, mit Auslegung für Motoranschluß (Glocke und Kupplung), mit Kompaktauslegung für Motoranschluß (Baugrösse 56, 63 und 75 ausgenommen). Die drei Antriebstypen können alle sowohl in der vertikalen als auch in der horizontalen Ausführung verwendet werden.
- Die Getriebegehäuse ist aus Aluminiumlegierung EN AL - AlSi9Cu - AL - AlSi7 UNI EN 1706 (56-63-75), Maschinenguß EN GJL 200 UNI EN 1561 (71-180) oder aus Sphäroguß EN GJS 400-15U UNI EN 1563 (200-225) und mit Rippen Versehen, die die Steifheit gewährleisten; die Bearbeitung aller Flächen ermöglicht eine leichte Positionierung; eine einzige Schmierkammer gewährleistet eine höhere Wärmedissipation und eine bessere Schmierung aller inneren Elemente.
- Die Zahnräder bestehen aus legiertem Einsatzstahl, sie wurden einsatz- und abschreckgehärtet. Insbesondere, die erste Untersetzungsstufe besteht aus zwei spiralverzahnten GLEASON – Kegelrädern mit sorgfältig eingelaufenem Profil aus einsatz- und abschreckgehaertetem 16CrNi4- oder 18NiCrMo5. Die Schrägstirnräder bestehen aus einsatz-und abschreckgehärtetem 16NiCr4, 18NiCrMo5-oder 20MnCr5-Stahl UNI EN 10084, geschliffen innerhalb Qualitaetsklasse 6 der Spez. DIN 3962.
- An allen Achsen werden Qualitäts-Kegelrollenlager eingebaut. Diese gewährleisten eine hohe Lebensdauer und das Aushalten von sehr hohen Radial- und Axialbelastungen. (Ausnahme: Muffe am Antrieb bei Kompaktauslegung die von Schrägkugellagern gehalten wird)
- Die serienmäßige Abtriebshohlwelle aus Stahl (auf Wunsch mit Schrumpfscheibe erhältlich), die Möglichkeit der Montage eines Abtriebsflansches an einer oder an beiden Seiten und die Auslegung für die Montage der Rücklaufsperre heben die Vielseitigkeit dieser Untersetzungsgetriebe hervor und erleichtern ihren Einbau.
- Getriebegehäuse, Flansche, Glocken und Deckel werden in BLAU RAL 5010 lackiert (mit Ausnahme von Kegelstirnradgetriebe Größe 56, 63 und 75 die aus Aluminium bestehen).



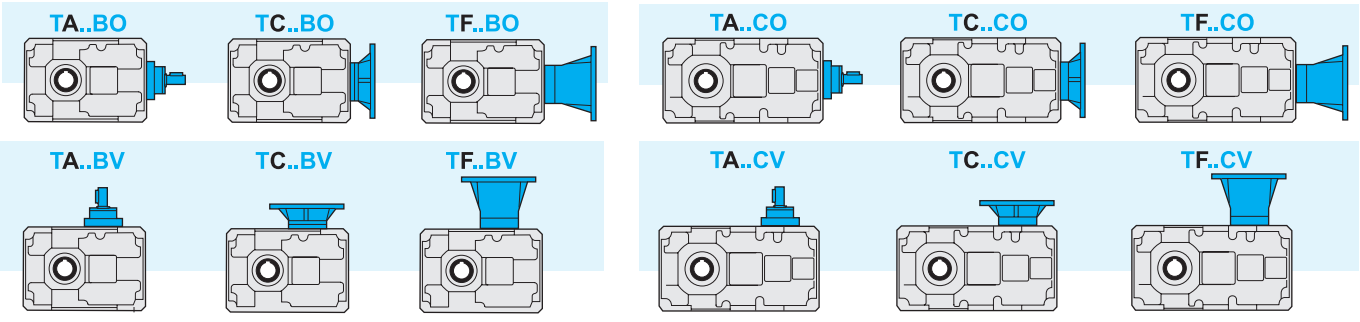
2.2 Designazione — 2.2 *Designation* — 2.2 Bezeichnung

Riduttore *Gearbox* Getriebe	Tipo entrata *Input type* Antriebsart	Grandezza *Size* Größe	Rotismo *Gearing* Räderwerk	Rapporto rid. *Ratio* *Untersetzungsverhältnis*	Predisposiz. *Motor coupling* Motoranschluss	Esecuzione *Execution* Ausführung	Posizione di montaggio *Mounting position* Baulage	Albero uscita cavo *Hollow output shaft* Abtriebshohlwelle	Flangia uscita *Output flange* Abtriebsflansch	Antiritorno *Back-stop device* Rücklaufsperre	Calettatore *Shrink disk* Schrumpfscheibe	Entrata supplementare *Additional input* Zusatzantrieb
T	**A**	**112**	**B**	**10**	**P.A.M.**	**O**	**B3**	**-**	**FLS**	**CW**	**C.S.**	**S.e.A.**
Riduttore ad assi ortogonali ***Bevel helical gearbox*** **Kegelstirnradgetriebe**	A C F	56 63 71 75 90 112 140 180 200 225 56 63 75 80 100 125 160 180 200	B C	i_n = 5 ... 630	56 ... 225	O V	B3 B6 B7 B8 VA VB	(1)	FLS FLD FL2	AW CW	C.S. C.D.	A C F

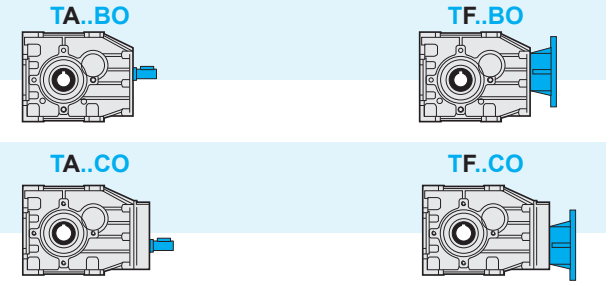
(1) Indicare il diametro dell'albero cavo **solo** se non è standard.
Es.: T A 112 B 10 90 O B3 **40**

(1) Diameter of the hollow output shaft to be specified only if it is not standard.
Ex.: T A 112 B 10 90 O B3 ***40***

(1) Benennen Sie bitte den Durchmesser der Abtriebshohlwelle, insofern dieser nicht dem Standarddurchmesser entspricht
Beispiel: T A 112 B 10 90 O B3 **40**



T56 - 63 - 75



2.3 Sensi di rotazione alberi

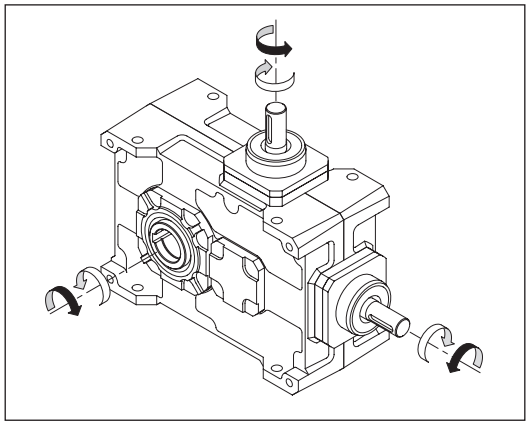
Nei riduttori esecuzione orizzontale, per ottenere il senso di rotazione contrario al catalogo dell'albero lento mantenendo invariato il senso di rotazione dell' albero veloce, è sufficiente ruotare il riduttore di 180° attorno all' asse dell'albero veloce, utilizzando in pratica il piano di fissaggio opposto.
Nei riduttori esecuzione verticale è possibile fornire il senso di rotazione contrario al catalogo specificandolo al momento dell' ordine.

2.3 Direction of shaft rotation

With regard to horizontal mounted gearboxes, in order to get output rotation in a direction opposite to that given in the catalogue, nevertheless keeping input rotation direction unchanged, simply turn the gearbox 180° around the input shaft; in practice, mount the other way up.
Vertical units can be supplied with rotation direction opposite to that given in the catalogue; specify when ordering.

2.3 Drehrichtungen der Wellen

Wenn bei Untersetzungsgetrieben in waagerechter Ausführung für die Abtriebswelle eine andere als die im Katalog angegebene Drehrichtung gewünscht wird und die Antriebswelle ihre Drehrichtung beibehalten soll, so genügt es, das Getriebe um 180° um die Achse der Antriebswelle zu drehen, d.h. die gegenüberliegende Anschlußfläche zu verwenden.
Untersetzungsgetrieben in vertikaler Ausführung sind mit gegensätzlicher Drehrichtung lieferbar, deswegen ist es bei der Bestellung anzugeben, falls die umgekehrte Drehrichtung gewünscht wird.



Sensi di rotazione standard
Standard direction of rotation
Standarddrehrichtungen.

2.4 Entrata supplementare

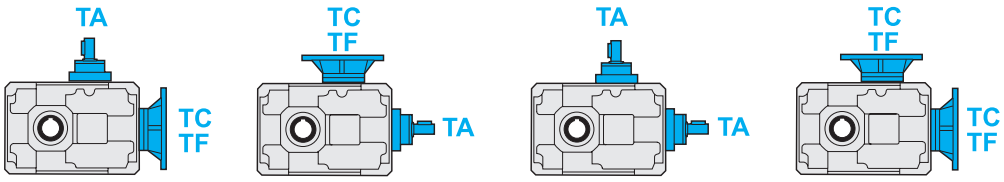
L'albero entrata può essere montato nella posizione orizzontale (O) o verticale (V), eccetto le grandezze 56,63 e 75. Il cambio di versione può essere facilmente realizzato anche succesivamente al primo montaggio.
Eccetto le grandezze 56, 63 e 75, esiste la possibilità di montare una seconda entrata scegliendola, in base alle necessità, tra quelle previste: TA, TC, TF.
In questo caso occorre definire la versione del riduttore con l'entrata principale e specificare quindi la seconda entrata.

2.4 Additional input

The input shaft can be mounted either horizontally (O) or vertically (V) on all sizes except for 56, 63 and 75. The version can be easily changed even after the first assembly.
Except for sizes 56, 63 and 75, there is the possibility of mounting a second input; the available options are TA, TC, TF.
Both the main input and the additional second input shall be specified when ordering.

2.4 Zusatzantrieb

Die Antriebswelle kann entweder waagerecht (O) order senkrecht (V) montiert werden ((Baugrösse 56, 63 und 75 ausgenommen). Auch nach der ersten Montage kann die Version leicht geändert werden. Mit Ausnahme von den Groeßen 56,63 und 75 kann ein zweiter Antrieb TA, TC oder TF montiert werden.
Bei der Bestellung sollte sowohl der hauptsächliche Antrieb als auch der zweite Antrieb angegeben werden.



2.5 Rendimento

Il valore del rendimento dei riduttori può essere stimato con sufficiente approssimazione in base al numero di riduzioni, trascurando le variazioni non significative attribuibili alle varie grandezze e rapporti.

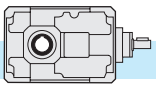
2.5 Efficiency

The efficiency value of the gear units can be estimated sufficiently well on the basis of the number of reduction stages, ignoring non-significant variations which can be attributed to the various sizes and ratios.

2.5 Wirkungsgrad

Der Wirkungsgrad des Getriebes kann mit ausreichender Annährung aufgrund der Anzahl der Untersetzungsstufen ermittelt werden. Dabei können die unwesentlichen Veränderungen, die auf die verschiedenen Grössen und Untersetzungsverhältnisse zurückzuführen sind, ausser Acht gelassen werden.

	T...B	T...C
η	0.95	0.93



2.6 Velocità in entrata

Tutte le prestazioni dei riduttori sono calcolate in base ad una velocità in entrata di 1400 min^{-1}.
Tutti i riduttori ammettono velocità fino a 3000 min^{-1} anche se è consigliabile, dove l'applicazione lo permette, utilizzare valori inferiori a 1400 min^{-1}.
Nella tabella sottostante riportiamo I coefficienti correttivi della potenza in entrata P alle varie velocità riferita ad Fs =1

2.6 Input speed

All calculations of gear unit performance are based on an input speed of 1400 min^{-1}. All gear units permit speed up to 3000 min^{-1}, nevertheless it is advisable to keep below 1400 min^{-1}, depending on application.
The table below reports input power P corrective coefficients at the various speeds, with Fs = 1.

2.6 Antriebsdrehzahl

Bei der Berechnung der Getriebeleistungen wurde eine Antriebsdrehzahl von 1400 min^{-1} berücksichtigt.
Bei allen Getrieben sind Antriebsdrehzahlen bis 3000 min^{-1}. möglich; es ist jedoch ratsam, die Drehzahlen unter 1400 min^{1}. zu halten, wenn die Anwendung es ermöglicht.
In der folgenden Tabelle finden Sie die Korrekturkoeffizienten für die Antriebsleistung P bei den verschiedenen Drehzahlen, bezogen auf Fs =1.

Tab. 1

n_1 (rpm)	3000	2800	2200	1800	1400	900	700	500
Pc (kW)	P x 1.9	P x 1.8	P x 1.48	P x 1.24	P x 1	P x 0.7	P x 0.56	P x 0.42

2.7 Potenza termica

I valori delle potenze termiche, P_{t0} (kW), sono riportati nella tabella seguente, in funzione di grandezza, rapporto e velocità entrata del riduttore.
I valori sono calcolati considerando l'utilizzo di olio sintetico ISO 320.
Vedere paragrafo 1.4 per la scelta dei fattori correttivi.

2.7 Thermal power

The following table shows the values of thermal power P_{t0} (kW) for each gearbox size on the basis of ratio and input speed.
The values have been calculated considering the utilization of synthetic oil ISO 320.
See chapter 1.4 for the corrective coefficients.

2.7 Thermische Leistung

Die folgende Tabelle enthält die Werte P_{t0} der thermischen Leistung (kW) je nach Getriebegröße und abhängig von Untersetzung und von Drehzahlen am Getriebeantrieb. Die angegebenen Werte beziehen sich auf Schmierung mit synthetischen ÖI ISO 320.
Im Abschnitt 1.4 finden Sie die Korrekturkoeffizienten.

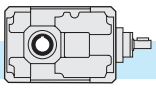
Potenza Termica / *Thermal power* / Thermische Leistung
P_{t0} [kW]

	T56B		T63B		T75B		T63B		T90B		T112B		T140B		T180B		T200B		T225B	
i_n	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**
8	4	3.4	5.5	4.7	5.6	4.8	-		-		-		-		-		48.3	45.4	59	48
10							4		6.3		10.8		17		32		43.3	42	55	45.8
12.5							3.7		5.8		10		15.5		28.7		39	38.5	49	41.5
16							3.3		5.2		9		14		25.8		33.8		37	
18*	-	-	-	-	-	-	-		-		-		12.9		24.6		-		-	
20	4	3.4	5.5	4.7	5.6	4.8	2.8		4.4		7.7		11.8		23.5		30.8		35	
25							2.7		4.2		7.3		11		21.6		28.6		32.3	
31.5							2.5		3.9		6.8		10.4		20		25.6		27.7	
35*	-	-	-	-	-	-	-		-		-		10		19		-		-	
40	4	3.4	5.5	4.7	5.6	4.8	2.3		3.6		6.3		9.5		18		23.9		25.8	
50							1.9		3		4.7		7.6		11.3		17.4		-	
63	-	-	-	-	-	-	1.8		2.8		4.4		7.3		10.7		16.6		-	
70*							-		-		-		7		10.3		-		-	
80							1.7		2.6		4.2		6.8		10		-		-	

Potenza Termica / *Thermal power* / Thermische Leistung
P_{t0} [kW]

	T56C		T63C		T75C		T80C		T100C		T125C		T160C		T180C		T200C	
i_n	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**	**1400**	**2800**
40	3.3	2.8	4.2	3.6	-	-	-		-		-		-		-		32	34.2
50					4.3	3.7	3.6		5.8		9.7		16.8	18.2	21	23.3	30.7	32.6
63							3.4		5.3		9		15.5	17	19.5	21.6	28.5	30
80							3.2		5		8.6		14.6	16	18.4	20.4	26.4	27.7
100							2.9		4.5		7.7		13	14	17	18.4	24.8	27
125							2.7		4.2		7.3		12.3	13.2	15.6	17	23.3	25.3
160							2.6		4		7		11.7	12.5	14.7	16	21.8	23.5
200							2.5		4		6.6		11	12	13.6	14.7	16	17.5
225*	-	-	-	-	-	-	-		-		6		10.2	11	-	-	-	-
250	3.3	2.8	4.2	3.6	4.3	3.7	2.2		3.3		5.3		9.3	10	12	12.8	15.3	16.7
315	-	-			-	-	2		3.2		5.2		9	9.7	11.4	12.3	14.6	15.8
400			-	-			2		3		5		8.6	9.3	10.7	11.5	-	
450*							-		-		4.9		8.3	9	-			
500							2		3		4.7		8	8.6				
550*							-		-		4.7		7.9	8.5				
630							2		3		4.6		7.8	8.4				

* **Rapporti speciali** / ***Special ratios*** / **Sonderverhältnisse**



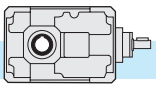
2.8 Dati tecnici — *2.8 Technical data* — 2.8 Technische Daten

T	n_1 = 1400			TC - TF				TA	
	in	ir	n_2 rpm	T_2 Nm	P1 kW	FS'	IEC	T_{2M} Nm	P kW
56B	8	8.06	174	*94*	1.8	*1.2*	56 63 (B5) 71 80 90 (B5) (B14) TF	110	*2.1*
	10	10.17	138	*120*	1.8	*1.0*		120	*1.8*
	12.5	12.31	114	*120*	1.5	*1.1*		130	*1.6*
	16	15.00	93	*107*	1.1	*1.3*		140	*1.4*
	20	20.33	69	*140*	1.1	*1.0*		140	*1.1*
	25	24.62	57	*140*	0.9	*1.0*		140	*0.90*
	31.5	30.00	47	*107*	0.55	*1.3*		140	*0.70*
	40	39.38	36	*140*	0.55	*1.0*		140	*0.55*
	50	48.00	29	*115*	0.37	*1.2*		140	*0.45*
56C	40	40.28	35	*140*	0.55	*1.0*	56 63 (B5) 71 80 90 (B5) (B14) TF	140	*0.55*
	50	50.83	28	*119*	0.37	*1.2*		140	*0.45*
	63	61.54	23	*140*	0.37	*1.0*		140	*0.37*
	80	75.00	19	*119*	0.25	*1.2*		145	*0.30*
	100	101.67	14	*145*	0.22	*1.0*		145	*0.22*
	125	123.08	11	*141*	0.18	*1.0*		145	*0.19*
	160	150.00	9	*124*	0.13	*1.2*		145	*0.15*
	200	196.92	7	*136*	0.11	*1.1*		145	*0.12*
	250	240.00	6	*135*	0.09	*1.0*		135	*0.09*
63B	8	7.94	176	*93*	1.8	*1.7*	56 63 (B5) 71 80 90 (B5) (B14) TF	155	*3.0*
	10	10.18	138	*119*	1.8	*1.4*		170	*2.6*
	12.5	12.50	112	*146*	1.8	*1.3*		185	*2.3*
	16	15.88	88	*185*	1.8	*1.0*		185	*1.8*
	20	20.36	69	*200*	1.5	*1.0*		200	*1.5*
	25	25.00	56	*180*	1.1	*1.1*		200	*1.2*
	31.5	31.00	45	*181*	0.9	*1.1*		200	*1.0*
	40	40.00	35	*194*	0.75	*1.0*		200	*0.80*
	50	49.60	28	*177*	0.55	*1.0*		200	*0.60*
	63	60.80	23	*146*	0.37	*1.0*		170	*0.40*
63C	40	39.71	35	*194*	0.75	*1.0*	56 63 (B5) 71 80 90 (B5) (B14) TF	200	*0.80*
	50	50.89	28	*178*	0.55	*1.2*		210	*0.65*
	63	62.50	22	*210*	0.55	*1.0*		210	*0.55*
	80	79.41	18	*186*	0.37	*1.1*		210	*0.42*
	100	101.79	14	*161*	0.25	*1.3*		210	*0.33*
	125	125.00	11	*198*	0.25	*1.0*		210	*0.26*
	160	155.00	9	*210*	0.22	*1.0*		210	*0.22*
	200	200.00	7	*165*	0.13	*1.3*		210	*0.17*
	250	248.00	6	*200*	0.13	*1.0*		200	*0.13*
	315	304.00	5	*180*	0.09	*1.0*		180	*0.09*
75B	8	7.87	178	*204*	4.0	*1.2*	71 80 90 100 112 (B5) (B14) TF	245	*4.8*
	10	9.82	143	*254*	4.0	*1.1*		279	*4.4*
	12.5	12.67	110	*330*	4.0	*1.0*		330	*4.0*
	16	15.43	91	*299*	3.0	*1.1*		329	*3.3*
	20	19.38	72	*277*	2.2	*1.3*		360	*2.9*
	25	25.00	56	*356*	2.2	*1.0*		356	*2.2*
	31.5	30.45	46	*355*	1.8	*1.1*		391	*2.0*
	40	40.00	35	*285*	1.1	*1.3*		371	*1.4*
	50	48.73	29	*344*	1.1	*1.1*		378	*1.2*

T	n_1 = 1400			TC - TF				TA	
	in	ir	n_2 rpm	T_2 Nm	P1 kW	FS'	IEC	T_{2M} Nm	P kW
75C	50	49.08	29	*330*	1.1	*1.0*	63 (B5) 71 80 90 (B5) (B14) TF	330	*1.1*
	63	63.33	22	*303*	0.75	*1.1*		333	*0.8*
	80	77.15	18	*271*	0.55	*1.3*		352	*0.70*
	100	96.88	14	*350*	0.55	*1.0*		350	*0.55*
	125	125.00	11	*299*	0.37	*1.2*		359	*0.44*
	160	152.27	9	*247*	0.25	*1.4*		346	*0.35*
	200	200.00	7	*317*	0.25	*1.2*		380	*0.30*
	250	243.64	6	*370*	0.25	*1.0*		370	*0.25*
71B	10	10.25	137	*120*	1.8	*1.9*	63 71 80 90 (B5) TC-TF 80 (B14) TC	230	*3.5*
	12.5	13.05	107	*152*	1.8	*1.6*		240	*2.8*
	16	15.63	90	*182*	1.8	*1.4*		250	*2.5*
	20	19.64	71	*229*	1.8	*1.3*		290	*2.3*
	25	24.99	56	*243*	1.5	*1.2*		280	*1.7*
	31.5	29.95	47	*213*	1.1	*1.2*		260	*1.3*
	40	38.73	36	*226*	0.9	*1.1*		240	*1.0*
	50	50.18	28	*244*	0.75	*1.1*		260	*0.80*
	63	60.13	23	*214*	0.55	*1.2*		260	*0.70*
	80	77.76	18	*186*	0.37	*1.3*		240	*0.50*
90B	5*	4.56	307	*118*	4	*1.8*	71 80 90 100 112 (B5) TC-TF 90• (B14) TC	210	*7.2*
	6.3*	6.26	224	*162*	4	*1.8*		290	*7.2*
	10	10.25	137	*266*	4	*1.8*		480	*7.2*
	12.5	13.05	107	*338*	4	*1.6*		530	*6.3*
	16	15.63	90	*405*	4	*1.4*		550	*5.4*
	20	19.64	71	*509*	4	*1.2*		620	*4.9*
	25	24.99	56	*630*	4	*1.0*		630	*4.0*
	31.5	29.95	47	*560*	3	*1.0*		560	*3.0*
	40	38.73	36	*452*	1.8	*1.1*		500	*2.0*
	50	50.18	28	*488*	1.5	*1.1*		550	*1.7*
	63	60.13	23	*570*	1.5	*1.0*		570	*1.5*
	80	77.76	18	*454*	0.9	*1.1*		505	*1.0*
80C	50	52.18	27	*596*	1.8	*1.1*	63 71 80 90 (B5) TC-TF 80 (B14) TC	660	*2.0*
	63	62.53	22	*595*	1.5	*1.1*		680	*1.7*
	80	79.58	18	*555*	1.1	*1.3*		710	*1.4*
	100	99.97	14	*698*	1.1	*1.1*		740	*1.2*
	125	119.78	12	*684*	0.9	*1.1*		740	*1.0*
	160	152.45	9	*532*	0.55	*1.3*		680	*0.70*
	200	182.67	8	*637*	0.55	*1.1*		700	*0.60*
	250	240.51	6	*565*	0.37	*1.3*		750	*0.49*
	315	306.11	5	*719*	0.37	*1.0*		740	*0.38*
	400	366.78	4	*582*	0.25	*1.2*		700	*0.30*
	500	474.35	3	*660*	0.22	*1.0*		660	*0.22*
	630	613.46	2	*506*	0.13	*1.2*		620	*0.16*
112B	5*	4.86	288	*290*	9.2	*1.5*	80 90 100 112 132 (B5) TC-TF	430	*13.9*
	10	10.25	137	*611*	9.2	*1.5*		920	*13.9*
	12.5	13.05	107	*778*	9.2	*1.3*		1000	*11.8*
	16	15.63	90	*932*	9.2	*1.2*		1100	*10.9*
	20	19.64	71	*1171*	9.2	*1.0*		1190	*9.4*
	25	24.99	56	*1215*	7.5	*1.1*		1280	*7.9*
	31.5	29.95	47	*1067*	5.5	*1.1*		1220	*6.3*
	40	38.73	36	*1004*	4	*1.0*		1050	*4.2*
	50	50.18	28	*976*	3	*1.1*		1070	*3.3*
	63	60.13	23	*857*	2.2	*1.3*		1140	*2.9*
	80	77.76	18	*907*	1.8	*1.2*		1080	*2.1*

- • **Flange quadrate / *Square flanges* / Viereckige Flansche**
- * **Rapporti speciali / *Special ratios* / Sonderverhältnisse**

Verifica termica necessaria / *Thermal rating needed* / Thermische - Prüfung erforderlich



2.8 Dati tecnici — *2.8 Technical data* — 2.8 Technische Daten

T	n_1 = 1400			TC - TF				TA	
	in	ir	n_2 rpm	T_2 Nm	P1 kW	FS'	IEC	T_{2M} Nm	P kW
100C	50	52.18	27	*993*	3	*1.3*	71 80 90 100 112 (B5) TC-TF 90• (B14) TC	1300	*3.9*
	63	62.53	22	*1190*	3	*1.1*		1350	*3.4*
	80	79.58	18	*1111*	2.2	*1.3*		1410	*2.8*
	100	99.97	14	*1395*	2.2	*1.1*		1470	*2.3*
	125	119.78	12	*1368*	1.8	*1.1*		1480	*1.9*
	160	152.45	9	*1064*	1.1	*1.3*		1360	*1.4*
	200	182.67	8	*1275*	1.1	*1.1*		1400	*1.2*
	250	240.51	6	*1330*	0.90	*1.1*		1500	*1.0*
	315	306.11	5	*1456*	0.75	*1.1*		1480	*0.80*
	400	366.78	4	*1280*	0.55	*1.1*		1400	*0.60*
	500	474.35	3	*1113*	0.37	*1.3*		1360	*0.50*
	630	613.46	2	*973*	0.25	*1.2*		1240	*0.30*
140B	7*	6.88	203	*983*	22	*1.3*	80 90 100 112 132 160 180 (B5) TC-TF	1200	*27.9*
	10	10.25	137	*1461*	22	*1.3*		1850	*27.9*
	12.5	13.05	107	*1860*	22	*1.1*		2050	*24.3*
	16	15.63	90	*1874*	18.5	*1.2*		2200	*21.7*
	18*	17.43	80	*2098*	18.5	*1.1*		2300	*20.3*
	20	19.64	71	*2354*	18.5	*1.0*		2400	*18.9*
	25	24.99	56	*2429*	15	*1.0*		2540	*15.7*
	31.5	29.95	47	*2135*	11	*1.1*		2300	*11.9*
	35*	33.38	42	*1620*	7.5	*1.4*		2300	*10.6*
	40	38.73	36	*1882*	7.5	*1.2*		2210	*8.8*
	50	50.18	28	*1789*	5.5	*1.2*		2120	*6.5*
	63	60.13	23	*2143*	5.5	*1.1*		2350	*6.0*
	70*	67.03	21	*2376*	5.5	*1.0*		2400	*5.5*
	80	77.76	18	*2016*	4	*1.1*		2250	*4.5*
125C	50	52.18	27	*2483*	7.5	*1.1*	80 90 100 112 132 (B5) TC-TF	2650	*8.0*
	63	62.53	22	*2182*	5.5	*1.3*		2760	*7.0*
	80	79.58	18	*2777*	5.5	*1.0*		2880	*5.7*
	100	99.97	14	*2537*	4	*1.2*		3000	*4.7*
	125	119.78	12	*3000*	4	*1.0*		3000	*4.0*
	160	152.45	9	*2128*	2.2	*1.3*		2720	*2.8*
	200	182.67	8	*2549*	2.2	*1.1*		2800	*2.4*
	225*	203.63	7	*2284*	1.8	*1.1*		2580	*2.0*
	250	240.51	6	*2746*	1.8	*1.1*		3050	*2.0*
	315	306.11	5	*2913*	1.5	*1.0*		2960	*1.5*
	400	366.78	4	*2560*	1.1	*1.1*		2800	*1.2*
	450*	408.87	3	*2350*	0.90	*1.1*		2600	*1.0*
	500	474.35	3	*2640*	0.90	*1.0*		2640	*0.90*
	550*	528.78	3	*2562*	0.75	*1.1*		2800	*0.85*
	630	613.46	2	*2140*	0.55	*1.2*		2550	*0.70*
180B	10	10.25	137	*1993*	30	*2.0*	100 112 132 160 180 200 (B5) TC-TF	3900	*58.7*
	12.5	13.05	107	*2536*	30	*1.7*		4300	*50.9*
	16	15.63	90	*3039*	30	*1.5*		4500	*44.4*
	18*	17.43	80	*3402*	30	*1.4*		4800	*42.5*
	20	19.64	71	*3818*	30	*1.3*		5100	*40.1*
	25	24.99	56	*4859*	30	*1.1*		5230	*32.3*
	31.5	29.95	47	*4269*	22	*1.1*		4680	*24.1*
	35*	33.38	42	*3996*	18.5	*1.2*		4650	*21.5*
	40	38.73	36	*3764*	15	*1.1*		4300	*17.1*
	50	50.18	28	*3577*	11	*1.2*		4300	*13.2*
	63	60.13	23	*4286*	11	*1.1*		4780	*12.3*
	70*	67.03	21	*3975*	9.2	*1.2*		4650	*10.7*
	80	77.76	18	*3779*	7.5	*1.2*		4380	*8.7*

T	n_1 = 1400			TC - TF				TA	
	in	ir	n_2 rpm	T_2 Nm	P1 kW	FS'	IEC	T_{2M} Nm	P kW
160C	50	52.18	27	*4966*	15	*1.0*	80 90 100 112 132 160 180 (B5) TC-TF	5130	*15.5*
	63	62.53	22	*4363*	11	*1.2*		5350	*13.5*
	80	79.58	18	*5570*	11	*1.0*		5570	*11.0*
	100	99.97	14	*5800*	9.2	*1.0*		5800	*9.2*
	125	119.78	12	*5699*	7.5	*1.0*		5800	*7.6*
	160	152.45	9	*5319*	5.5	*1.0*		5470	*5.7*
	200	182.67	8	*4635*	4	*1.2*		5560	*4.8*
	225*	203.63	7	*5149*	4	*1.1*		5800	*4.5*
	250	240.51	6	*5890*	4	*1.0*		5890	*4.0*
	315	306.11	5	*5920*	3	*1.0*		5826	*3.0*
	400	366.78	4	*5119*	2.2	*1.1*		5600	*2.4*
	450*	408.87	3	*5747*	2.2	*1.0*		5700	*2.2*
	500	474.35	3	*5280*	1.8	*1.0*		5280	*1.8*
	550*	528.78	3	*5124*	1.5	*1.1*		5360	*1.6*
	630	613.46	2	*4281*	1.1	*1.2*		4960	*1.3*
200B	8	8.14	172	*2370*	45	*2.1*	112 132 160 180 200 (B5) TC-TF 225 (B5) TF	5000	*94.8*
	10	10.43	134	*3050*	45	*1.8*		5500	*81.4*
	12.5	12.60	111	*3680*	45	*1.6*		6000	*73.5*
	16	15.63	90	*4540*	45	*1.4*		6500	*64.2*
	20	17.65	79	*5170*	45	*1.3*		7100	*62.1*
	25	24.14	58	*7030*	45	*1.0*		7150	*45.7*
	31.5	29.95	47	*7150*	37	*1.0*		7250	*37.4*
	40	33.82	41	*6575*	30	*1.1*		7300	*33.3*
	50	47.93	29	*6833*	22	*1.1*		7400	*23.8*
	63	54.13	26	*6489*	18.5	*1.1*		7400	*21.1*
180C	50	53.11	26	*6234*	18.5	*1.1*	80 90 100 112 132 160 180 (B5) TC-TF	7240	*21.0*
	63	63.64	22	*7280*	18.5	*1.0*		7280	*18.5*
	80	76.85	18	*7313*	15	*1.0*		7420	*15.2*
	100	99.39	14	*6936*	11	*1.1*		7500	*11.9*
	125	122.88	11	*7172*	9.2	*1.0*		7500	*9.6*
	160	147.23	10	*7005*	7.5	*1.1*		7550	*8.1*
	200	190.41	7	*6644*	5.5	*1.1*		7600	*6.3*
	250	246.73	6	*6261*	4	*1.2*		7650	*4.9*
	315	295.63	5	*7502*	4	*1.0*		7700	*4.1*
	400	382.33	4	*7276*	3	*1.1*		7950	*3.3*
225B	8	8.44	166	*2461*	45	*3.0*	132 160 180 200 225 (B5) TF	7500	*137.1*
	10	10.13	138	*2955*	45	*2.8*		8300	*126.4*
	12.5	12.45	112	*3630*	45	*2.5*		9100	*112.8*
	16	15.93	88	*4644*	45	*2.2*		10000	*96.9*
	20	19.13	73	*5577*	45	*1.9*		10700	*86.3*
	25	23.49	60	*6850*	45	*1.6*		11000	*72.3*
	31.5	30.29	46	*8832*	45	*1.3*		11100	*56.6*
	40	37.09	38	*10800*	45	*1.0*		10800	*45.0*
200C	40	42.62	33	*8110*	30	*1.3*	100 112 132 160 180 200 (B5) TC-TF	10900	*40.3*
	50	51.18	27	*9740*	30	*1.1*		11000	*33.9*
	63	62.86	22	*8772*	22	*1.3*		11350	*28.5*
	80	76.97	18	*10742*	22	*1.0*		11050	*22.6*
	100	98.04	14	*11200*	18.5	*1.0*		11200	*18.5*
	125	120.41	12	*11459*	15	*1.0*		11500	*15.1*
	160	147.45	9	*10290*	11	*1.1*		11200	*12.0*
	200	196.87	7	*11400*	9.2	*1.0*		11400	*9.2*
	250	241.79	6	*11504*	7.5	*1.0*		11700	*7.6*
	315	296.07	5	*10330*	5.5	*1.1*		11850	*6.3*

• **Flange quadrate / *Square flanges* / Viereckige Flansche**

* **Rapporti speciali / *Special ratios* / Sonderverhältnisse**

Verifica termica necessaria / *Thermal rating needed*
Thermische - Prüfung erforderlich

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

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

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

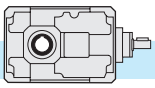
TA..B - TC..B - TF..B

	i_n	TA	TF IEC B5				
			56	63	71	80	90
56B	**8**	0.25		0.32	0.40	0.60	0.77
	10	0.22	0.29	0.29	0.37	0.56	0.74
	12.5	0.20	0.27	0.27	0.35	0.54	0.72
	16	0.18	0.25	0.26	0.33	0.53	0.71
	20	0.08	0.15	0.15	0.22	0.42	0.60
	25	0.07	0.14	0.15	0.22	0.42	0.59
	31.5	0.07	0.14	0.14	0.21	0.41	0.59
	40	0.04	0.11	0.12	0.19	0.39	0.56
	50	0.04	0.11	0.11	0.19	0.39	0.56

	i_n	TA	TF IEC B5				
			56	63	71	80	90
63B	**8**	0.40	0.47	0.47	0.55	0.74	0.92
	10	0.34	0.41	0.42	0.49	0.69	0.87
	12.5	0.31	0.38	0.38	0.45	0.65	0.83
	16	0.16	0.23	0.24	0.31	0.51	0.68
	20	0.15	0.22	0.22	0.29	0.49	0.67
	25	0.14	0.21	0.21	0.29	0.48	0.66
	31.5	0.13	0.20	0.21	0.28	0.48	0.65
	40	0.07	0.15	0.15	0.22	0.42	0.60
	50	0.07	0.14	0.15	0.22	0.42	0.60
	63	0.07	0.14	0.15	0.22	0.42	0.59

	i_n	TA	TF IEC B5			
			71	80	90	100-112
75B	**8**	1.35	1.70	2.10	2.01	3.05
	10	1.21	1.55	1.96	1.87	2.91
	12.5	1.05	1.39	1.80	1.71	2.75
	16	0.99	1.34	1.74	1.65	2.69
	20	0.36	0.71	1.11	1.02	2.06
	25	0.32	0.67	1.07	0.98	2.02
	31.5	0.30	0.65	1.06	0.97	2.01
	40	0.16	0.51	0.92	0.82	1.86
	50	0.15	0.50	0.91	0.82	1.86

	i_n	TA	TC IEC B5				TF IEC B5			
			63	71	80	90	63	71	80	90
71B	**10**	0.95	1.00	1.14	1.52	1.57	1.20	1.22	1.89	2.96
	12.5	0.89	0.94	1.08	1.46	1.51	1.14	1.16	1.83	2.90
	16	0.85	0.91	1.05	1.43	1.47	1.11	1.12	1.80	2.87
	20	0.38	0.43	0.57	0.94	0.99	0.63	0.65	1.32	2.39
	25	0.36	0.41	0.55	0.93	0.98	0.61	0.63	1.31	2.37
	31.5	0.35	0.40	0.54	0.92	0.97	0.61	0.62	1.30	2.36
	40	0.34	0.39	0.53	0.91	0.96	0.60	0.61	1.29	2.35
	50	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.14	2.20
	63	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.14	2.20
	80	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.13	2.20



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

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

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

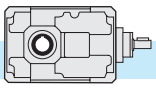
TA..B - TC..B - TF..B

	i_n	TA	TC				TF			
			IEC B5				IEC B5			
			71	80	90	110-112	71	80	90	110-112
90B	5*	4.36	4.77	4.94	5.31	6.15	5.22	5.35	6.53	8.70
	6.3*	3.67	4.07	4.24	4.62	5.46	4.52	4.66	5.84	8.00
	10	2.77	3.18	3.35	3.73	4.57	3.63	3.77	4.94	7.11
	12.5	2.60	3.01	3.18	3.56	4.40	3.46	3.60	4.77	6.94
	16	2.49	2.90	3.07	3.44	4.28	3.35	3.48	4.66	6.82
	20	1.16	1.53	1.70	2.08	2.92	2.02	2.16	3.33	5.50
	25	1.12	1.49	1.66	2.04	2.88	1.98	2.11	3.29	5.45
	31.5	1.09	1.46	1.63	2.00	2.84	1.94	2.08	3.25	5.42
	40	1.06	1.43	1.60	1.98	2.82	1.92	2.05	3.23	5.40
	50	0.65	0.98	1.15	1.53	2.37	1.50	1.64	2.81	4.98
	63	0.64	0.97	1.14	1.52	2.36	1.50	1.63	2.81	4.97
	80	0.63	0.97	1.14	1.51	2.35	1.49	1.62	2.80	4.97

	i_n	TA	TC				TF			
			IEC B5				IEC B5			
			80	90	110-112	132	80	90	110-112	132
112B	5*	12.20	13.70	13.57	14.53	17.67	14.53	14.46	16.78	30.77
	10	8.51	9.44	9.31	10.26	13.40	10.84	10.77	13.09	27.08
	12.5	7.67	8.60	8.47	9.42	12.56	10.00	9.93	12.25	26.24
	16	7.27	8.20	8.07	9.03	12.16	9.61	9.54	11.85	25.85
	20	3.62	4.46	4.33	5.29	8.43	5.96	5.89	8.20	22.20
	25	3.39	4.23	4.10	5.06	8.20	5.73	5.66	7.97	21.97
	31.5	3.29	4.13	4.00	4.95	8.09	5.62	5.55	7.87	21.86
	40	3.21	4.05	3.92	4.87	8.01	5.55	5.47	7.79	21.79
	50	1.79	2.50	2.37	3.32	6.46	4.13	4.05	6.37	20.37
	63	1.77	2.47	2.35	3.30	6.44	4.10	4.03	6.34	20.34
	80	1.75	2.46	2.33	3.28	6.42	4.08	4.01	6.33	20.32

	i_n	TA	TC						TF					
			IEC B5						IEC B5					
			80	90	110-112	132	160	180	80	90	110-112	132	160	180
140B	7*	29.65	30.78	30.65	30.79	33.99	38.41	41.43	31.85	34.23	34.40	49.26	51.44	96.71
	10	25.04	26.17	26.04	26.18	29.38	33.80	36.82	27.23	29.62	29.79	44.65	46.83	92.10
	12.5	22.28	23.41	23.28	23.42	26.62	31.05	34.06	24.48	26.86	27.04	41.90	44.08	89.34
	16	21.26	22.39	22.26	22.40	25.60	30.02	33.04	23.46	25.84	26.01	40.87	43.05	88.32
	18*	20.60	21.73	21.60	21.74	24.94	29.36	32.38	22.79	25.18	25.36	40.22	42.40	87.66
	20	9.17	10.13	10.00	10.14	13.34	17.76	20.78	11.37	13.75	13.92	28.78	30.97	76.23
	25	8.42	9.38	9.25	9.39	12.59	17.01	20.03	10.62	13.00	13.17	28.03	30.22	75.48
	31.5	8.14	9.10	8.97	9.11	12.31	16.73	19.75	10.34	12.72	12.90	27.76	29.94	75.20
	35*	7.96	8.92	8.79	8.93	12.13	16.55	19.57	10.16	12.54	12.72	24.58	29.76	75.02
	40	7.92	8.87	8.74	8.88	12.08	16.51	19.52	10.11	12.49	12.67	27.53	29.71	74.98
	50	4.28	4.94	4.81	4.95	8.15	12.57	15.59	6.47	8.85	9.03	23.89	26.07	71.34
	63	4.21	4.87	4.74	4.88	8.08	12.50	15.52	6.40	8.79	8.96	23.82	26.00	71.27
	70*	4.17	4.82	4.69	4.83	8.03	12.45	15.47	6.36	8.74	8.92	23.78	25.96	71.22
	80	4.15	4.81	4.68	4.82	8.02	12.44	15.46	6.35	8.73	8.91	23.77	25.95	71.21

* **Rapporti speciali** / ***Special ratios*** / **Sonderverhältnisse**



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

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

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

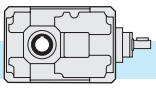
TA..B - TC..B - TF..B

	i_n	TA	TC					TF				
			IEC B5					IEC B5				
			100-112	132	160	180	200	100-112	132	160	180	200
180B	**10**	78.24	80.83	86.51	85.51	88.42	98.81	97.86	99.23	101.41	150.52	147.05
	12.5	68.84	71.43	77.11	76.11	79.02	89.41	88.46	89.82	92.01	141.12	137.65
	16	66.22	68.81	74.49	73.49	76.40	86.79	85.84	87.20	89.38	138.50	135.03
	18*	64.77	67.36	73.04	72.04	74.95	85.34	84.39	85.75	87.94	137.05	133.58
	20	28.52	31.29	36.97	35.97	38.88	49.27	48.14	49.50	51.68	100.80	97.33
	25	25.96	26.14	31.82	30.82	33.73	44.12	45.58	46.94	49.12	98.24	94.77
	31.5	25.25	28.01	33.69	32.69	35.60	45.99	44.86	46.23	48.41	97.53	94.05
	35*	24.85	27.62	33.3	32.30	35.21	45.60	44.47	45.83	48.01	97.13	93.66
	40	24.43	27.19	32.88	31.88	34.79	45.17	44.04	45.41	47.59	96.71	93.23
	50	11.97	14.25	19.93	18.93	21.84	32.23	31.59	32.95	35.13	84.25	80.78
	63	11.80	14.07	19.75	18.75	21.66	32.05	31.41	32.78	34.96	84.08	80.60
	70*	11.70	13.97	19.66	18.66	21.57	31.95	31.31	32.68	34.86	83.98	80.50
	80	11.59	13.87	19.55	18.55	21.46	31.85	31.21	32.57	34.75	83.87	80.40

	i_n	TA	TC					TF					
			IEC B5					IEC B5					
			110-112	132	160	180	200	110-112	132	160	180	200	225
200B	**8**	109.38	110.72	116.40	115.40	118.31	128.70	129.00	130.37	132.55	181.66	178.19	181.78
	10	95.71	97.05	102.73	101.73	104.64	115.03	115.33	116.69	118.87	167.99	164.52	168.11
	12.5	85.34	86.68	92.36	91.36	94.27	104.66	104.96	106.32	108.51	157.62	154.15	157.74
	16	79.58	80.92	86.60	85.60	88.51	98.90	99.20	100.56	102.74	151.86	148.39	151.98
	20	75.15	76.49	82.17	81.17	84.08	94.47	94.77	96.13	98.32	147.43	143.96	147.55
	25	31.37	32.88	38.56	37.56	40.47	50.86	50.98	52.35	54.53	103.65	100.17	103.76
	31.5	29.80	31.31	36.99	35.99	38.90	49.29	49.41	50.78	52.96	102.08	98.60	102.20
	40	28.59	30.11	35.79	34.79	37.70	48.09	48.21	49.57	51.75	100.87	97.40	100.99
	50	20.48	21.49	27.17	26.17	29.08	39.47	40.09	41.46	43.64	92.76	89.28	92.88
	63	20.01	21.02	26.70	25.70	28.61	39.00	39.62	40.99	43.17	92.29	88.81	92.40

	i_n	TA	TF				
			IEC B5				
			132	160	150	200	225
225B	**8**	265.00	337.3	345.3	343.3	339.8	342.6
	10	249.31	321.6	329.6	327.6	324.1	326.9
	12.5	234.27	306.6	314.5	312.5	309.1	311.9
	16	90.92	163.2	171.2	169.2	165.7	168.5
	20	86.52	158.8	166.8	164.8	161.3	164.1
	25	82.29	154.6	162.6	160.6	157.1	159.9
	31.5	68.32	140.6	148.6	146.6	143.1	145.9
	40	64.25	136.5	144.5	142.5	139.0	141.9

* **Rapporti speciali** / ***Special ratios*** / **Sonderverhältnisse**



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

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

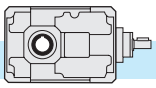
2.9 **Trägheitsmoment** [Kg·cm²] (bez. Antriebswelle)

TA..C - TC..C - TF..C

	i_n	TA	TF				
			IEC B5				
			56	63	71	80	90
56C	40	0.06	0.136	0.139	0.212	0.410	0.588
	50	0.06	0.134	0.138	0.211	0.409	0.587
	63	0.06	0.134	0.137	0.210	0.408	0.586
	80	0.06	0.133	0.137	0.210	0.408	0.585
	100	0.06	0.129	0.132	0.205	0.403	0.581
	125	0.06	0.129	0.132	0.205	0.403	0.581
	160	0.06	0.128	0.132	0.205	0.403	0.581
	200	0.06	0.127	0.131	0.204	0.402	0.580
	250	0.06	0.127	0.131	0.204	0.402	0.580

	i_n	TA	TF				
			IEC B5				
			56	63	71	80	90
63C	40	0.07	0.142	0.145	0.218	0.416	0.594
	50	0.07	0.139	0.143	0.216	0.414	0.592
	63	0.07	0.138	0.142	0.215	0.413	0.590
	80	0.06	0.132	0.136	0.209	0.407	0.585
	100	0.06	0.132	0.135	0.208	0.406	0.584
	125	0.06	0.131	0.135	0.208	0.406	0.584
	160	0.06	0.131	0.135	0.208	0.406	0.583
	200	0.06	0.129	0.132	0.205	0.403	0.581
	250	0.06	0.129	0.132	0.205	0.403	0.581
	315	0.06	0.129	0.132	0.205	0.403	0.581

	i_n	TA	TF			
			IEC B5			
			63	71	80	90
75C	50	0.104	0.179	0.252	0.450	0.628
	63	0.098	0.173	0.246	0.444	0.622
	80	0.095	0.171	0.244	0.442	0.619
	100	0.070	0.145	0.219	0.417	0.594
	125	0.069	0.144	0.217	0.415	0.593
	160	0.068	0.143	0.216	0.414	0.592
	200	0.062	0.138	0.211	0.409	0.586
	250	0.062	0.137	0.210	0.408	0.586



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

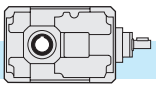
2.9 ***Moments of inertia*** *[Kg·cm²]*
(referred to input shaft)

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

TA..C - TC..C - TF..C

	i_n	TA	TC				TF			
			IEC B5				IEC B5			
			63	71	80	90	63	71	80	90
80C	50	0.90	0.95	1.09	1.47	1.52	1.15	1.17	1.84	2.91
	63	0.86	0.91	1.05	1.43	1.48	1.11	1.13	1.81	2.87
	80	0.86	0.91	1.05	1.43	1.48	1.11	1.13	1.80	2.87
	100	0.36	0.41	0.55	0.93	0.98	0.62	0.63	1.31	2.38
	125	0.35	0.38	0.52	0.90	0.95	0.61	0.62	1.30	2.37
	160	0.35	0.40	0.54	0.92	0.97	0.61	0.62	1.30	2.36
	200	0.35	0.40	0.54	0.92	0.97	0.61	0.62	1.30	2.36
	250	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.14	2.20
	315	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.14	2.20
	400	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.14	2.20
	500	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.13	2.20
	630	0.19	0.22	0.36	0.74	0.79	0.44	0.46	1.13	2.20

	i_n	TA	TC				TF			
			IEC B5				IEC B5			
			71	80	90	110-112	71	80	90	110-112
100C	50	2.68	3.08	3.25	3.63	4.47	3.53	3.67	4.84	7.01
	63	2.56	2.96	3.13	3.51	4.35	3.41	3.55	4.72	6.89
	80	2.53	2.94	3.11	3.49	4.33	3.39	3.52	4.70	6.87
	100	1.14	1.51	1.68	2.06	2.89	2.00	2.13	3.31	5.47
	125	1.10	1.47	1.64	2.02	2.86	1.96	2.10	3.27	5.44
	160	1.10	1.47	1.64	2.02	2.86	1.96	2.09	3.27	5.44
	200	1.10	1.47	1.64	2.01	2.85	1.95	2.09	3.26	5.43
	250	0.64	0.98	1.15	1.52	2.36	1.50	1.63	2.81	4.98
	315	0.64	0.97	1.14	1.52	2.36	1.50	1.63	2.81	4.98
	400	0.64	0.97	1.14	1.52	2.36	1.50	1.63	2.81	4.98
	500	0.63	0.97	1.14	1.51	2.35	1.49	1.62	2.80	4.97
	630	0.63	0.97	1.14	1.51	2.35	1.49	1.62	2.80	4.97



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

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

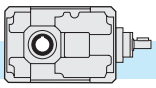
2.9 **Trägheitsmoment** [Kg·cm²] (bez. Antriebswelle)

TA..C - TC..C - TF..C

	i_n	TA	TC				TF			
			IEC B5				IEC B5			
			80	90	110-112	132	80	90	110-112	132
125C	50	7.82	8.75	8.62	9.57	12.71	10.16	10.08	12.40	26.40
	63	7.46	8.39	8.26	9.22	12.36	9.80	9.73	12.04	26.04
	80	7.39	8.32	8.19	9.14	12.28	9.72	9.65	11.97	25.96
	100	3.44	4.28	4.15	5.10	8.24	5.77	5.70	8.02	22.01
	125	3.34	4.18	4.05	5.00	8.14	5.67	5.60	7.92	21.91
	160	3.32	4.16	4.03	4.98	8.12	5.65	5.58	7.90	21.89
	200	3.31	4.15	4.02	4.97	8.11	5.65	5.57	7.89	21.89
	225*	3.31	4.15	4.02	4.97	8.11	4.08	4.01	6.33	20.32
	250	1.78	2.49	2.36	3.31	6.45	4.11	4.04	6.36	20.35
	315	1.77	2.48	2.35	3.31	6.45	4.11	4.04	6.35	20.35
	400	1.77	2.48	2.35	3.30	6.44	4.11	4.03	6.35	20.35
	450*	1.77	2.48	2.35	3.30	6.44	4.10	4.03	6.35	20.35
	500	1.75	2.46	2.33	3.28	6.42	4.08	4.01	6.33	20.32
	550*	1.75	2.46	2.33	3.28	6.42	4.08	4.01	6.33	20.32
	630	1.75	2.46	2.33	3.28	6.42	4.08	4.01	6.33	20.32

	i_n	TA	TC						TF					
			IEC B5						IEC B5					
			80	90	110-112	132	160	180	80	90	110-112	132	160	180
160C	50	23.13	24.26	24.13	24.27	27.47	31.89	34.91	25.33	27.71	27.88	42.74	44.92	90.19
	63	22.01	23.14	23.01	23.15	26.35	30.77	33.79	24.21	26.59	26.77	41.63	43.81	89.07
	80	21.76	22.89	22.76	22.90	26.10	30.52	33.54	23.96	26.34	26.51	41.37	43.56	88.82
	100	8.65	9.61	9.48	9.62	12.82	17.24	20.26	10.85	13.23	13.40	28.26	30.45	75.71
	125	8.35	9.30	9.17	9.31	12.51	16.94	19.95	10.54	12.92	13.10	27.96	30.14	75.41
	160	8.28	9.23	9.10	9.24	12.44	16.87	19.88	10.47	12.86	13.03	27.89	30.07	75.34
	200	8.26	9.21	9.09	9.22	12.42	16.85	19.87	10.46	12.84	13.01	27.87	30.05	75.32
	225*	8.25	9.20	9.08	9.21	12.41	16.84	19.86	10.44	12.83	13.00	27.86	30.04	75.31
	250	4.26	4.92	4.79	4.93	8.13	12.55	15.57	6.46	8.84	9.01	23.87	26.05	71.32
	315	4.24	4.90	4.77	4.91	8.11	12.53	15.55	6.44	8.82	9.00	23.86	26.04	71.30
	400	4.24	4.90	4.77	4.91	8.11	12.53	15.55	6.43	8.81	8.99	23.85	26.03	71.30
	450*	4.23	4.89	4.76	4.90	8.10	12.52	15.54	6.43	8.81	8.99	23.85	26.03	71.29
	500	4.17	4.83	4.70	4.84	8.03	12.46	15.48	6.36	8.74	8.92	23.78	25.96	71.23
	550*	4.16	4.82	4.69	4.83	8.03	12.46	15.47	6.36	8.74	8.92	23.78	25.96	71.22
	630	4.16	4.82	4.69	4.83	8.03	12.45	15.47	6.36	8.74	8.92	23.78	25.96	71.22

* **Rapporti speciali** / ***Special ratios*** / **Sonderverhältnisse**



2.9 **Momenti d'inerzia** [Kg·cm^2]
(riferiti all'albero veloce in entrata)

2.9 ***Moments of inertia*** *[Kg·cm^2]*
(referred to input shaft)

2.9 **Trägheitsmoment** [Kg·cm^2]
(bez. Antriebswelle)

TA..C - TC..C - TF..C

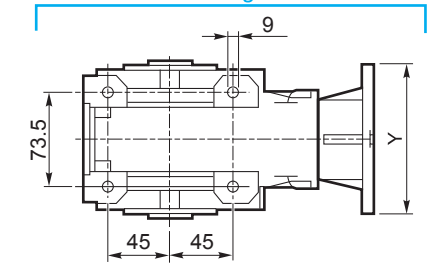
	i_n	TA	TC						TF					
			IEC B5						IEC B5					
			80	90	110-112	132	160	180	80	90	110-112	132	160	180
180C	50	23.76	24.89	24.76	24.90	28.10	32.52	35.54	25.95	28.34	28.51	43.37	45.55	90.82
	63	22.45	23.58	23.45	23.59	26.79	31.21	34.23	24.65	27.03	27.20	42.06	44.25	89.51
	80	22.17	23.30	23.17	23.31	26.51	30.93	33.95	24.37	26.75	26.93	41.79	43.97	89.23
	100	20.94	22.07	21.94	22.07	25.27	29.70	32.72	23.13	25.51	25.69	40.55	42.73	88.00
	125	8.71	9.67	9.54	9.68	12.88	17.30	20.32	10.91	13.29	13.47	28.33	30.51	75.77
	160	8.39	9.35	9.22	9.36	12.56	16.98	20.00	10.59	12.97	13.14	28.00	30.18	75.45
	200	8.05	9.01	8.88	9.02	12.22	16.64	19.66	10.25	12.63	12.81	27.67	29.85	75.11
	250	4.35	5.01	4.88	5.02	8.22	12.64	15.66	6.55	8.93	9.10	23.96	26.14	71.41
	315	4.27	4.93	4.80	4.94	8.14	12.56	15.58	6.47	8.85	9.02	23.88	26.06	71.33
	400	4.18	4.84	4.72	4.85	8.05	12.48	15.50	6.38	8.76	8.94	23.80	25.98	71.25

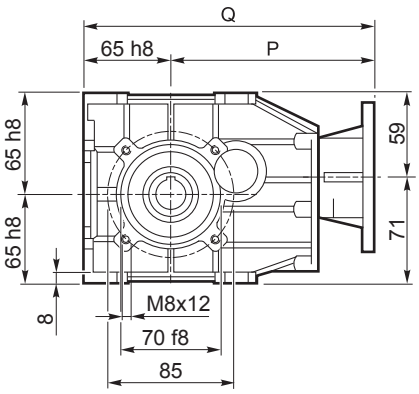
	i_n	TA	TC					TF				
			IEC B5					IEC B5				
			110-112	132	160	180	200	110-112	132	160	180	200
200C	40	72.31	74.90	80.58	79.58	82.49	92.88	91.93	93.29	95.47	144.59	141.12
	50	71.70	74.28	79.97	78.97	81.87	92.26	91.31	92.68	94.86	143.98	140.50
	63	71.11	73.69	79.38	78.38	81.28	91.67	90.72	92.09	94.27	143.39	139.91
	80	70.63	73.22	78.90	77.90	80.81	91.20	90.24	91.61	93.79	142.91	139.43
	100	26.74	29.50	35.19	34.19	37.09	47.48	46.35	47.72	49.90	99.02	95.54
	125	26.58	29.34	35.03	34.02	36.93	47.32	46.19	47.56	49.74	98.86	95.38
	160	26.45	29.21	34.90	33.89	36.80	47.19	46.06	47.43	49.61	98.73	95.25
	200	12.17	14.44	20.12	19.12	22.03	32.42	31.78	33.15	35.33	84.45	80.97
	250	12.13	14.40	20.09	19.08	21.99	32.38	31.74	33.11	35.29	84.41	80.93
	315	12.09	14.37	20.05	19.05	21.96	32.35	31.71	33.07	35.25	84.37	80.90

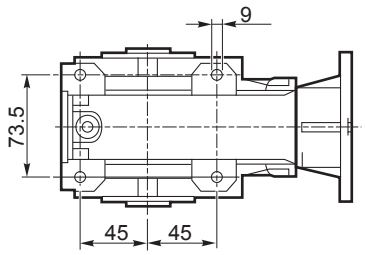
2.10 **Dimensioni** *2.10* ***Dimensions*** 2.10 **Abmessungen**

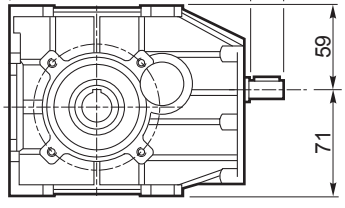
TF56B...

2 Riduzioni/*Stages*/Stufen



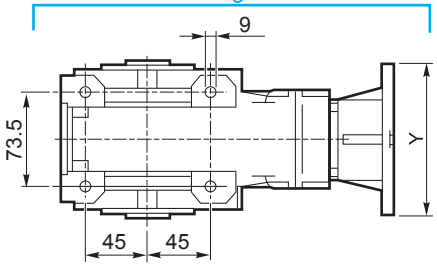


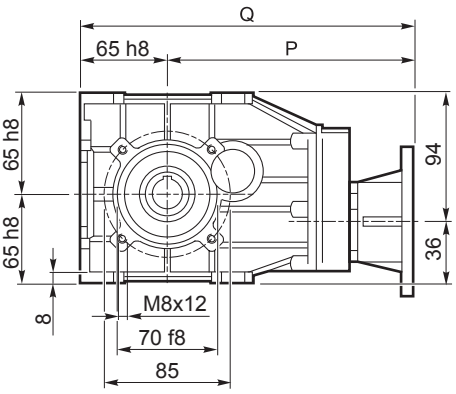


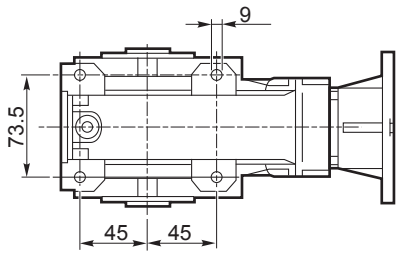


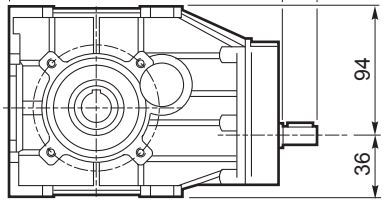
TF56C...

3 Riduzioni/*Stages*/Stufen









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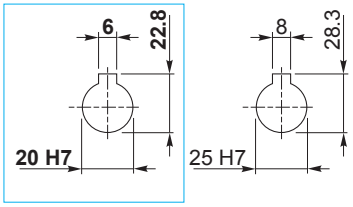
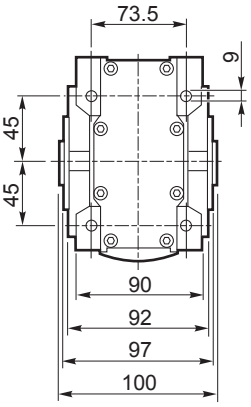
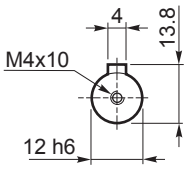




IEC	
	
	56 B5
	63 B5
71 B14	71 B5
	80 B5/B14
	90 B5/B14



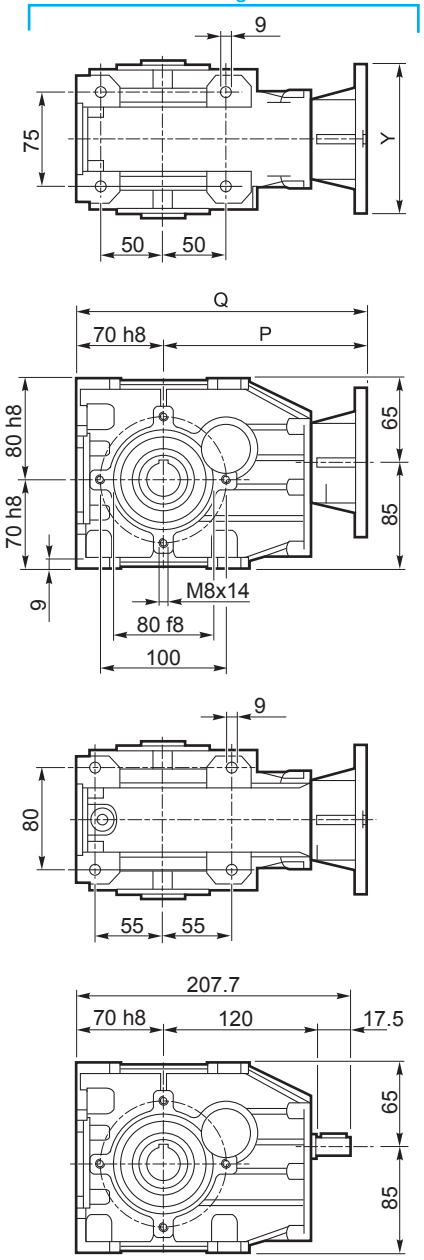
B5	TF...									
	56B					56C				
IEC..	56	63	71	80	90	56	63	71	80	90
Y	120	140	160	200	200	120	140	160	200	200
P	153	156	163	183	183	187	190	197	217	217
Q	218	221	228	248	248	252	255	262	282	282
kg	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0

B14	TF...									
	56B					56C				
IEC..	56	63	71	80	90	56	63	71	80	90
Y	—	—	105	120	140	—	—	105	120	140
P	—	—	163	183	183	—	—	197	217	217
Q	—	—	228	248	248	—	—	262	282	282
kg	—	—	4.5	4.5	4.5	—	—	5.0	5.0	5.0

2.10 **Dimensioni** *2.10* ***Dimensions*** 2.10 **Abmessungen**

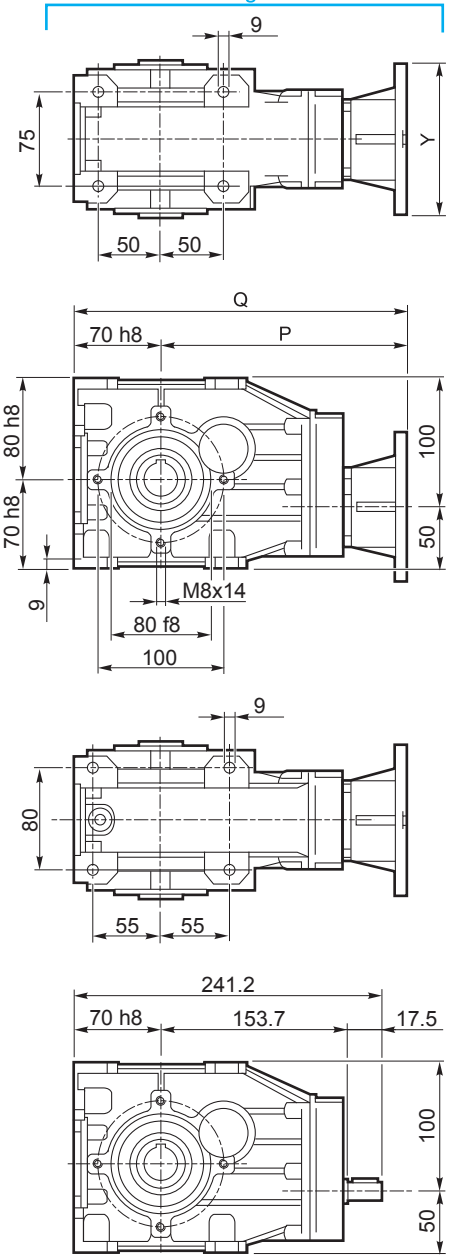
TF63B...

2 Riduzioni/*Stages*/Stufen

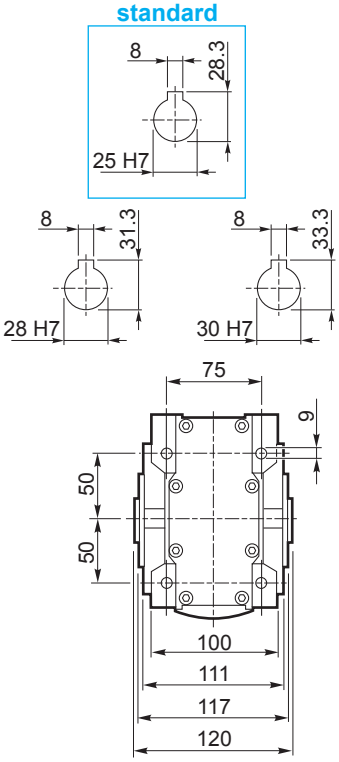


TF63C...

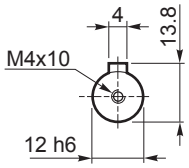
3 Riduzioni/*Stages*/Stufen



standard



IEC	
	56 B5
	63 B5
71 B14	71 B5
	80 B5/B14
	90 B5/B14



B5

	TF...									
	63B					63C				
IEC..	**56**	**63**	**71**	**80**	**90**	**56**	**63**	**71**	**80**	**90**
Y	120	140	160	200	200	120	140	160	200	200
P	160	163	170	190	190	194	197	204	224	224
Q	230	233	240	260	260	264	267	274	294	294
kg	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5	6.5

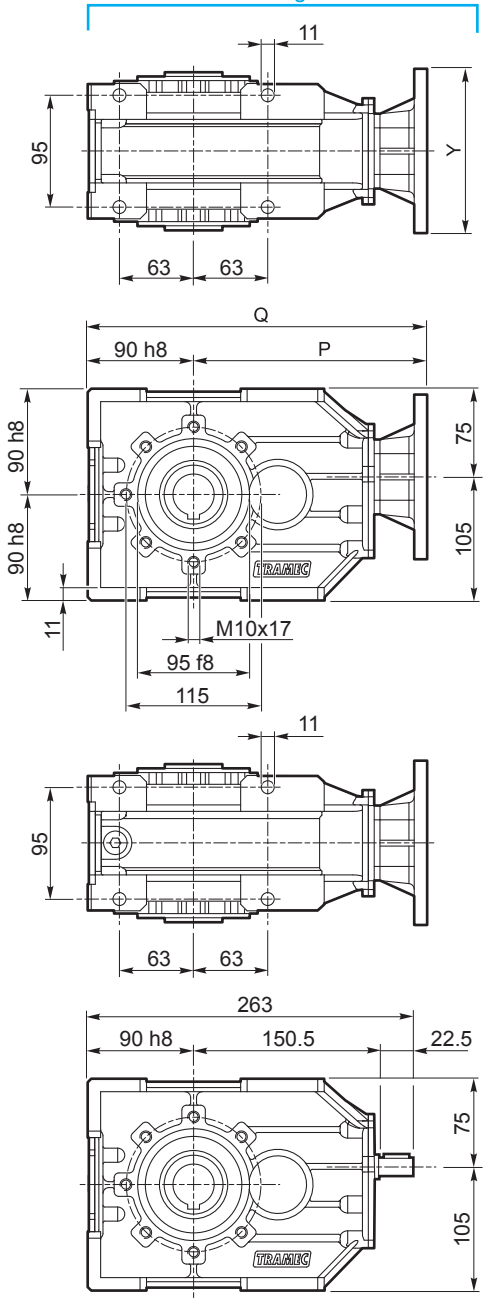
B14

	TF...									
	63B					63C				
IEC..	**56**	**63**	**71**	**80**	**90**	**56**	**63**	**71**	**80**	**90**
Y	—	—	105	120	140	—	—	105	120	140
P	—	—	170	190	190	—	—	204	224	224
Q	—	—	240	260	260	—	—	274	294	294
kg	—	—	6.0	6.0	6.0	—	—	6.5	6.5	6.5

2.10 **Dimensioni** *2.10* ***Dimensions*** 2.10 **Abmessungen**

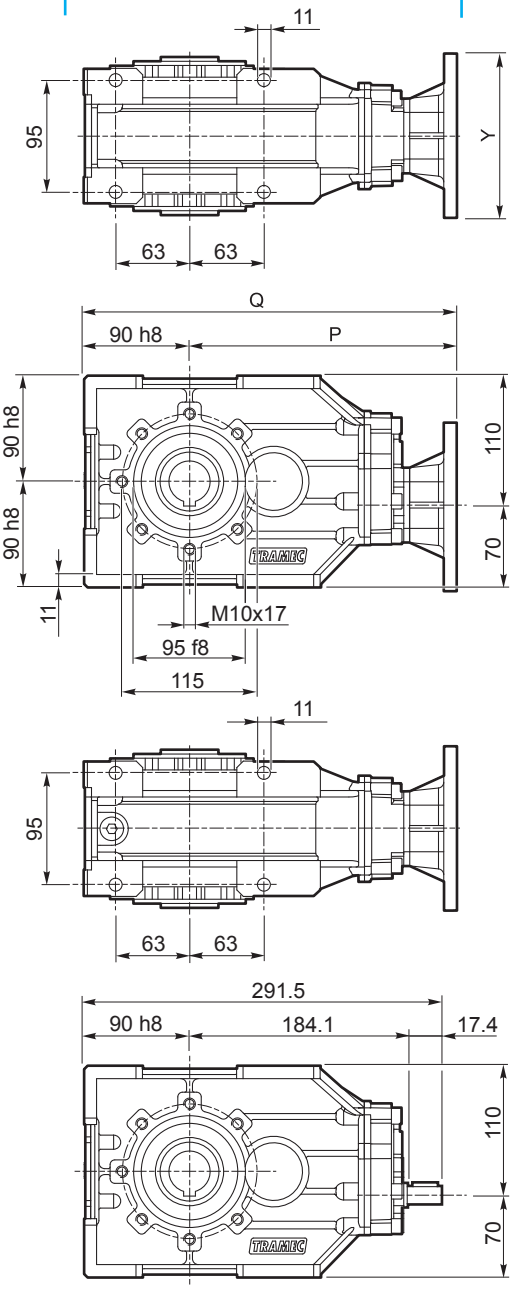
TF75B...

2 Riduzioni/*Stages*/Stufen



TF75C...

3 Riduzioni/*Stages*/Stufen



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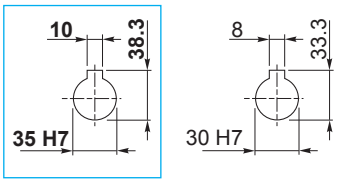
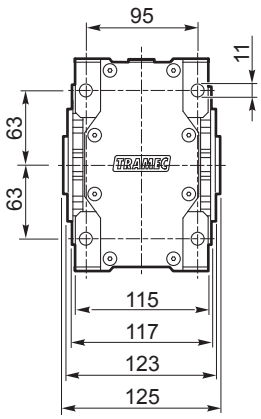
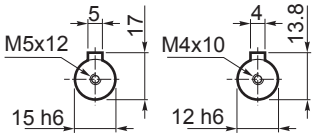




IEC	
	63 B5
71 B14	71 B5
	80 B5/B14
	90 B5/B14
	100 B5/B14

TA75B... **TA75C...**

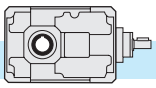


B5

	TF...								
	75B					75C			
IEC..	71	80	90	100	112	63	71	80	90
Y	160	200	200	250	250	140	160	200	200
P	205.5	225.5	225.5	235.5	235.5	227	234	254	254
Q	295.5	315.5	315.5	325.5	325.5	317	324	344	344
kg	6.5	6.5	6.5	6.5	6.5	7	7	7	7

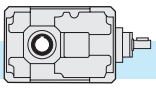
B14

	TF...								
	75B					75C			
IEC..	71	80	90	100	112	63	71	80	90
Y	105	120	140	160	160	-	105	120	140
P	205.5	225.5	225.5	235.5	235.5	-	234	254	254
Q	295.5	315.5	315.5	325.5	325.5	-	324	344	344
kg	6.5	6.5	6.5	6.5	6.5	7	7	7	7

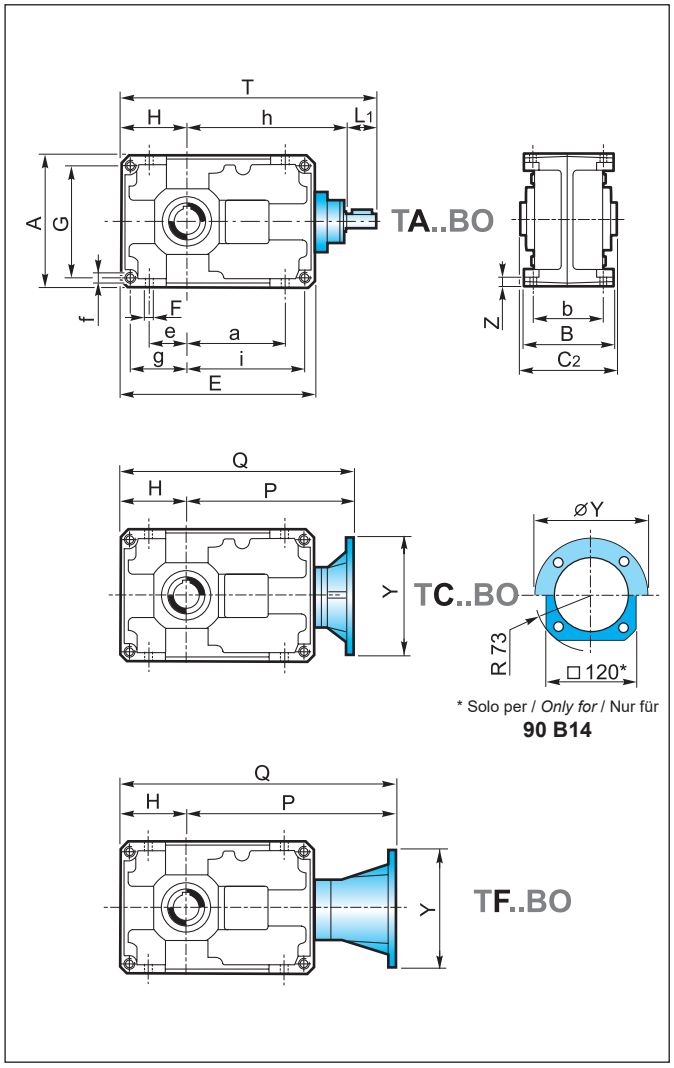


2.10 **Dimensioni** — *2.10 **Dimensions*** — 2.10 **Abmessungen**

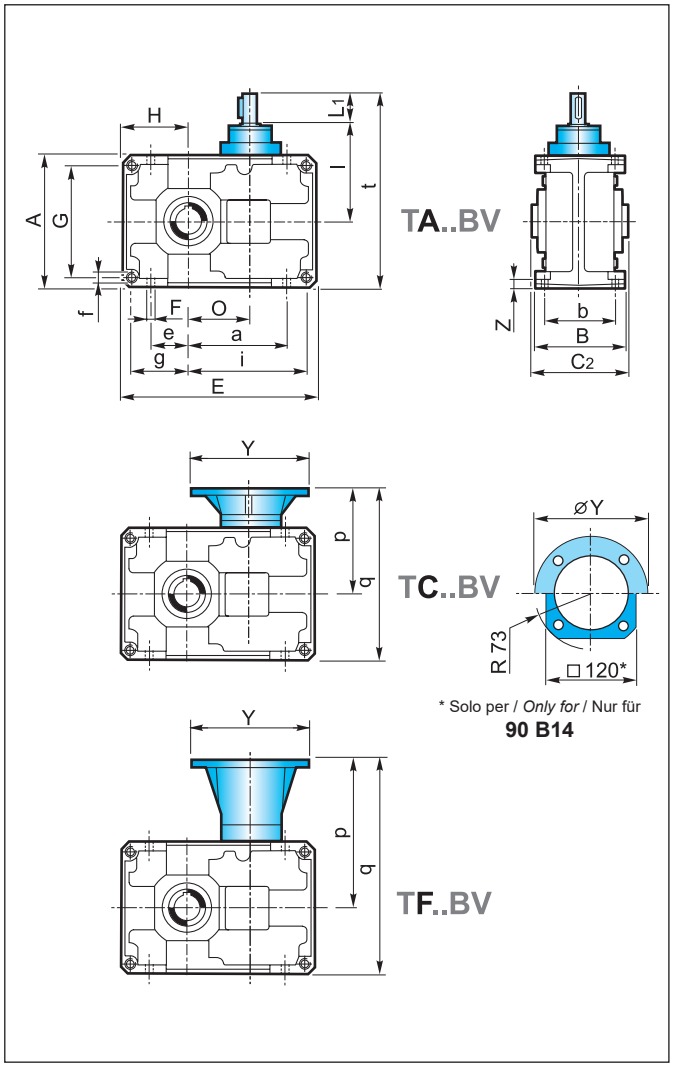
| | TA... - TC... - TF.. | | |



T..71B - T..225B

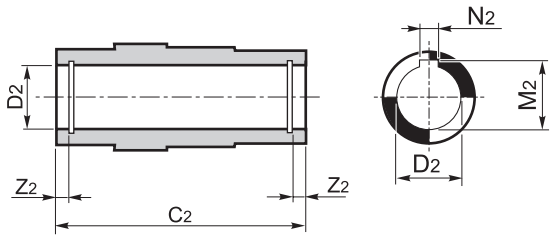


* Solo per / *Only for* / Nur für **90 B14**

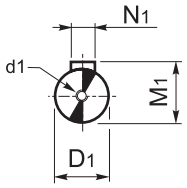


* Solo per / *Only for* / Nur für **90 B14**

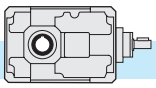
Albero uscita cavo
Hollow output shaft
Abtriebshohlwelle



Albero entrata
Input shaft
Antriebswelle



	TA... - TC... - TF...															
	71B			**90B**			**112B**			**140B**		**180B**		**200B**		**225B**	
D1 h6	14			19			24			28		38		38		48	
d1	M4x15			M8x22			M8x22			M8x22		M10x28		M10x28		M12x34	
M1	16			21.5			27			31		41		41		51.5	
N1	5			6			8			8		10		10		14	
C2	115			130			155			180		220		260		300	
D2 H7	**24**	28	30	**32**	30	35	**42**	40	45	**55**	50	**70**	60	**90**	80	**100**	90
M2	27.3	31.3	33.3	35.3	33.3	38.3	45.3	43.3	48.8	59.3	53.8	74.9	64.4	95.4	85.4	106.4	95.4
N2	8	8	8	10	8	10	12	12	14	16	14	20	18	25	22	28	25
Z2	—			8.7	8.7	8.4	10.7	10.7	10.7	11.9	11.9	15.4	15.9	18.9	19.4	16.9	-



2.10 **Dimensioni** — *2.10 **Dimensions*** — 2.10 **Abmessungen**

	TA... - TC... - TF...					
	80C	**100C**	**125C**	**160C**	**180C**	**200C**
A	160	200	250	320	360	400
a	82	102	127	162.5	185	204
a1	106	134	169	217	207	277.5
B	127	150	175	215	255	290
b	104	125	145	180	210	240
C2	130	155	180	220	260	300
D1 h6	14	19	24	28	28	38
D2 H7	**32** 30 35	**42** 40 45	**55** 50	**70** 60	**90** 80	**100** 90
E	306	384	479	609.5	652	766.5
e	42	52	67	90	100	115
F	11	13	15	17	19	21
f	M10x16	M12x19	M14x22	M16x25	M18x35	M18x30
G	135	170	214	280	310	350
g	67.5	85	107	140	155	175
H	80	100	125	160	180	200
h	256	314	389	479.5	502	604
I	110	130	160	190	190	237.5
i	213.5	269	336	429.5	447	541.5
L1	30	40	50	60	60	80
O	146	184	229	289.5	312	366.5
T	366	454	564	699.5	742	884
t	220	270	335	410	430	517.5
Z	11	13	16	20	22	25

	TA..					
kg	19	36	66	120	170	260

	TC... - TF...					
kg	22	41	76	137	190	295

	TC...										
	80C				**100C**				**125C**		
IEC	63 B5	71 B5	80/90 B5	80 B14	71 B5	80/90 B5	*90 B14	100/112 B5	80/90 B5	100/112 B5	132 B5
Y	140	160	200	120	160	200	□ 120 / R 73	250	200	250	300
P	259	266	286	286	322	342	342	352	413	423	445
p	113	120	140	140	138	158	158	168	184	194	216
Q	339	346	366	366	422	442	442	452	538	548	570
q	193	200	220	220	238	258	258	268	309	319	341

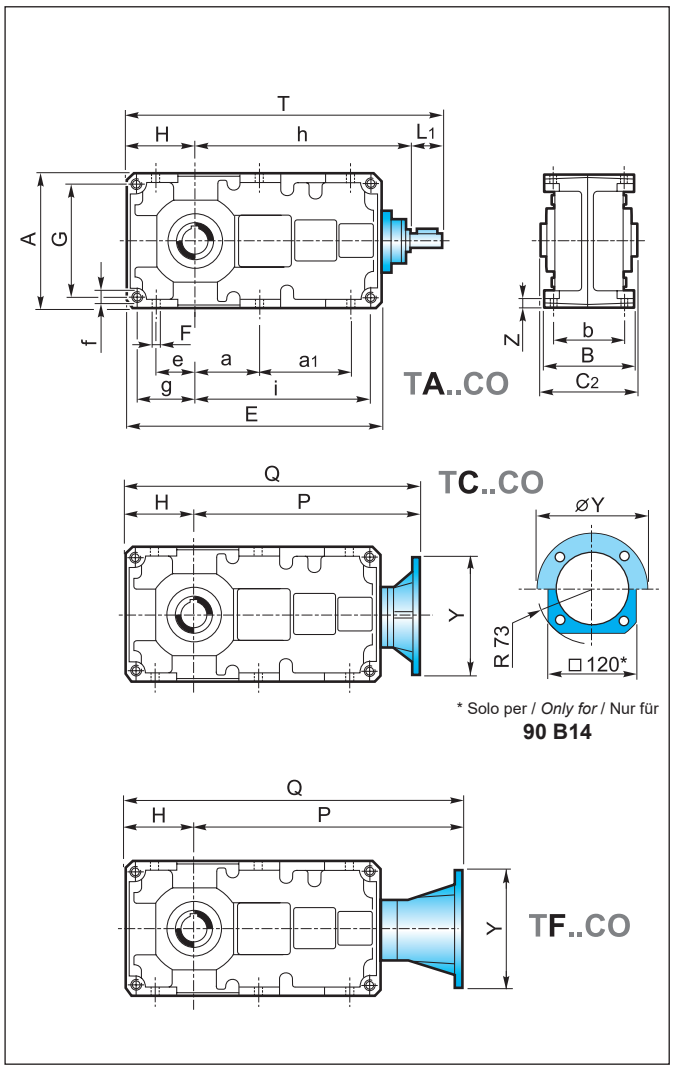
	160C				**180C**				**200C**			
IEC	80/90B5	100/112 B5	132 B5	160/180 B5	80/90 B5	100/112 B5	132 B5	160/180 B5	100/112 B5	132 B5	160/180 B5	200 B5
Y	200	250	300	350	200	250	300	350	250	300	350	400
P	493	503	525	555	516	526	548	578	617 / 627 (i=40-160) / (i=200-315)	637 / 647 (i=40-160) / (i=200-315)	667 / 677 (i=40-160) / (i=200-315)	
p	204	214	236	266	204	214	236	266	250 / 260 (i=40-160) / (i=200-315)	270 / 280 (i=40-160) / (i=200-315)	300 / 310 (i=40-160) / (i=200-315)	
Q	653	663	686	715	696	706	728	758	617 / 627 (i=40-160) / (i=200-315)	837 / 647 (i=40-160) / (i=200-315)	867 / 877 (i=40-160) / (i=200-315)	
q	364	374	396	426	384	394	416	446	450 / 460 (i=40-160) / (i=200-315)	470 / 480 (i=40-160) / (i=200-315)	500 / 510 (i=40-160) / (i=200-315)	

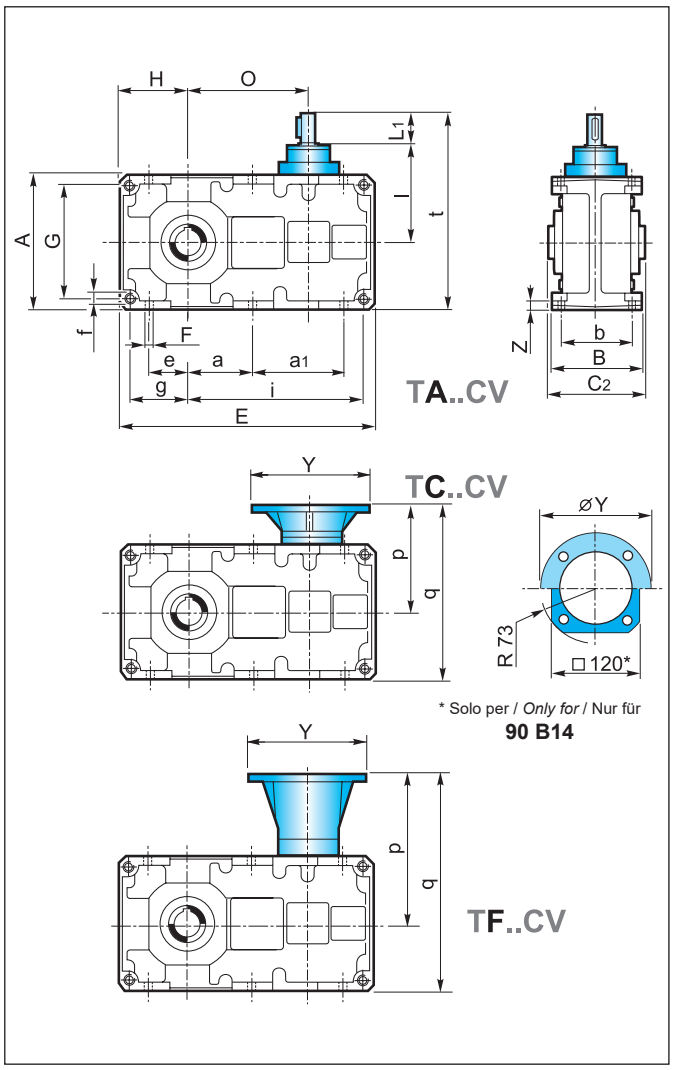
* Flange quadrate / *Square flanges* / Viereckige Flansche

	TF...								
	80C			**100C**			**125C**		
IEC	63 B5	71 B5	80/90 B5	71 B5	80/90 B5	100/112 B5	80/90 B5	100/112 B5	132 B5
Y	140	160	200	160	200	250	200	250	300
P	313	320	341	388	409	419	494	504	525
p	167	174	195	204	225	235	265	275	296
Q	393	400	421	488	509	519	619	629	650
q	247	254	275	304	325	335	390	400	421

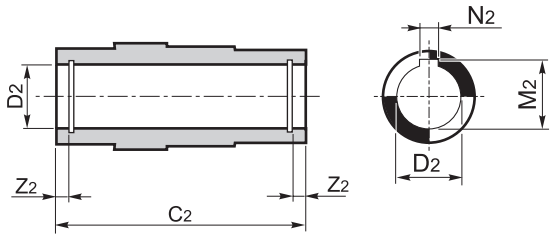
	160C				**180C**				**200C**			
IEC	80/90 B5	100/112 B5	132 B5	160/180 B5	80/90 B5	100/112 B5	132 B5	160/180 B5	100/112 B5	132 B5	160/180 B5	200 B5
Y	200	250	300	350	200	250	300	350	250	300	350	400
P	594	604	625	655	617	627	648	678	750	770	800	802
p	305	315	336	366	305	315	336	366	383.5	404	434	436
Q	754	764	785	815	797	807	828	858	950	970	1000	1002
q	465	475	496	526	485	495	516	546	583.5	604	634	636

T..80C - T..200C

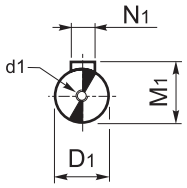




Albero uscita cavo
Hollow output shaft
Abtriebshohlwelle



Albero entrata
Input shaft
Antriebswelle



	TA... - TC... - TF...													
	80C			**100C**			**125C**		**160C**		**180C**		**200C**	
D1 h6	14			19			24		28		28		38	
d1	M4x15			M8x22			M8x22		M8x22		M8x22		M10x28	
M1	16			21.5			27		31		31		41	
N1	5			6			8		8		8		10	
C2	130			155			180		220		260		300	
D2 H7	**32**	30	35	**42**	40	45	**55**	50	**70**	60	**90**	80	**100**	90
M2	35.3	33.3	38.3	45.3	43.3	48.8	59.3	53.8	74.9	64.4	95.4	85.4	106.4	95.4
N2	10	8	10	12	12	14	16	14	20	18	25	22	28	25
Z2	8.7		8.4	10.7			11.9	11.9	15.4	15.9	18.9	19.4	16.9	-

2.11 Accessori

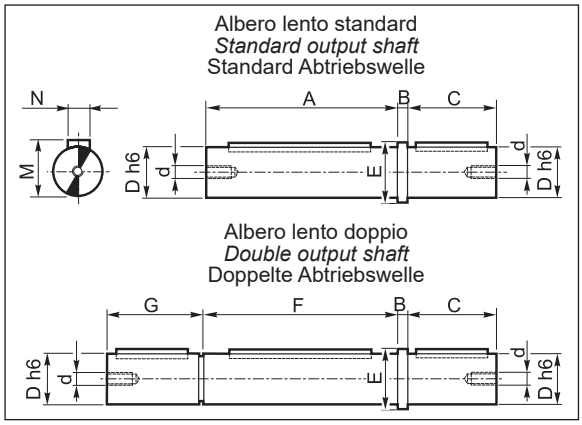
2.11 Accessories

2.11 Zubehör

Albero lento

Output shaft

Abtriebswelle



	T											
	56B 56C	63B 63C	75B 75C	71B	90B 80C		112B 100C		140B 125C	180B 160C	200B 180C	225B 200C
A	100	120	123	114	129	129	154	154	179	219	259	298
B	5	5	6	5	6	6	8	8	10	12	15	15
C	40	45	60	50	60	60	80	80	100	125	140	180
D_{h6}	20	25	35	24	32	35	42	45	55	70	90	100
d	M8	M8	M10	M8	M8	M8	M10	M10	M10	M12	M16	M18
E	26	32	43	30	40	43	50	53	65	80	110	118
F	100	120	125	115	130	—	155	—	180	220	260	300
G	41	46	60	49	59	—	79	—	99	124	141	178
M	22.5	28	38	27	35	38	45	48.5	59	74.5	95	106
N	6	8	10	8	10	10	12	14	16	20	25	28

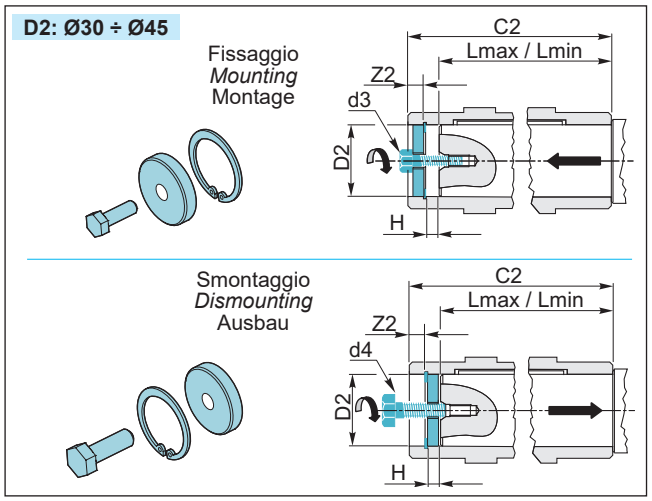
Materiale albero lento: **C45**
Output shaft material: ***C45***
Material der Abtriebswelle: **C45**

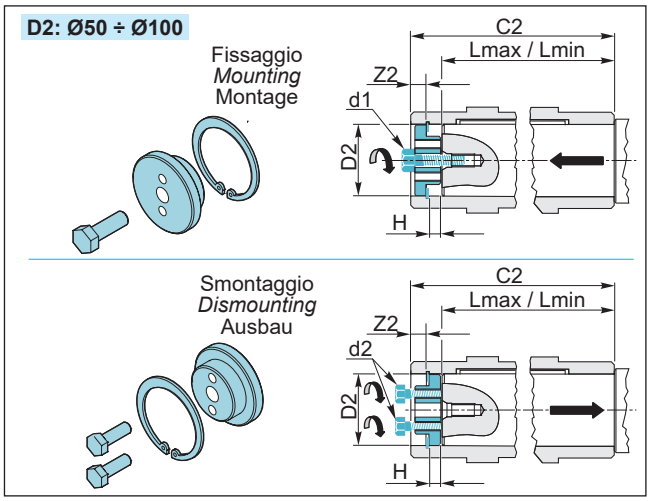
Kit fissaggio e smontaggio riduttori con albero lento cavo (escluso T 56, 63, 71 e 75)

Kit for the mounting and dismounting of the gearboxes with hollow output shaft (except T 56, 63, 71 and 75)

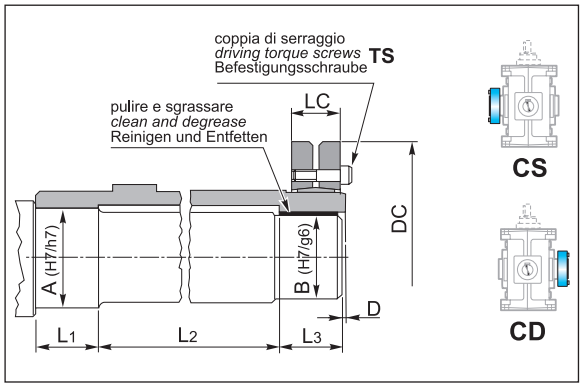
Kit für Montage und Ausbau der Getriebe mit Abtriebshohlwelle (außer dass T 56, 63, 71 und 75)

	T																			
	90B 80C			112B 100C			140B 125C		180B 160C		200B 180C		225B 200C
C2	130			155			180		220		260		300
D2	**32**	30	35	**42**	40	45	**55**	50	**70**	60	**90**	80	**100**
H	8	7	6.5	10	8		9		12		16	15.5	17
d1	—			—			M10		M12		M16		M18
d2	—			—			M8		M10		M12		M16
d3	M8			M8			—		—		—		—
d4	M12			M12			—		—		—		—
Z2	8.7		8.4	10.7			11.9		15.4	15.9	18.9	19.4	16.9
Lmax	111	112		131	133		156		189		221		262
Lmin	106	107		126	128		149		182		211		252



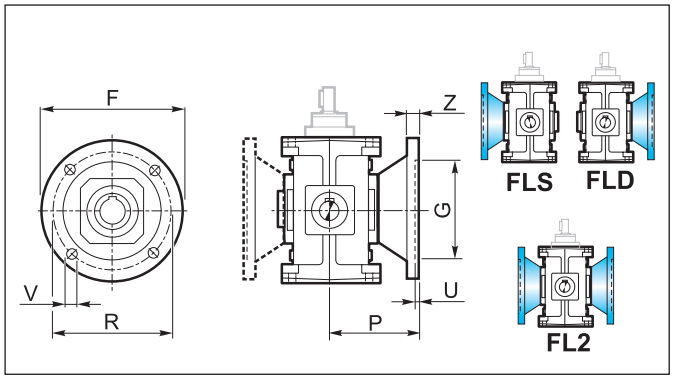


Albero lento cavo con calettatore — *Hollow output shaft with shrink disc* — Abtriebshohlwelle mit Schrumpfscheibe



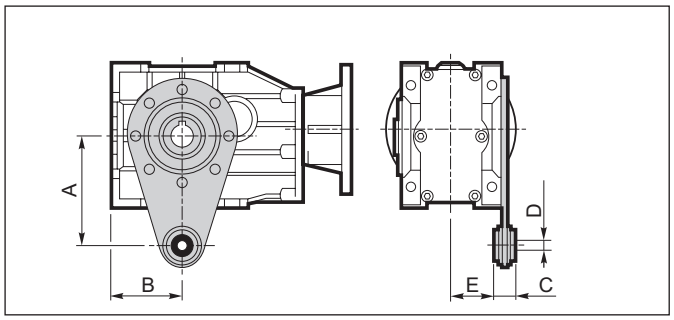
	T									
	56B 56C	63B 63C	75B 75C	71B	90B 80C	112B 100C	140B 125C	180B 160C	200B 180C	225B 200C
A	27	32	37	27	37	47	57	72	92	102
B	25	30	35	25	35	45	55	70	90	100
D	2	2	2	2	2	2	2	2	3	3
DC	60	72	80	60	80	100	115	155	188	215
LC	21.5	23.5	26	22	26	31	31	39	50	54
L_1	32	36	39	36	39	45	50	60	70	80
L_2	61	75	82	68	82	100	115	143	175	200
L_3	32	36	39	36	39	45	50	60	70	80
$TS_{(Nm)}$	4	12	12	4	12	12	12	30	59	59

Flangia uscita — *Output flange* — Abtriebsflansch



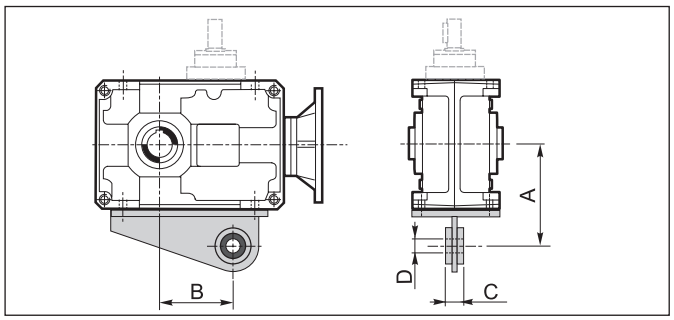
	T								
	56B 56C	63B 63C	75B 75C	71B	90B 80C	112B 100C	140B 125C	180B 160C	200B 180C
F	140	160	200	160	200	250	300	350	400
G_{F7}	95	110	130	110	130	180	230	250	300
R	115	130	165	130	165	215	265	300	350
P	82	91.5	97.5	87	100	125	150	180	215
U	5	5	5	4	4.5	5	5	6	6
V	9	9	12	12	12	14	16	18	20
Z	15	10	15	10	12	16	20	25	30
kg	0.5	0.5	0.9	2	3.2	5	8	12.5	24

Braccio di reazione — *Torque arm* — Drehmomentstütze



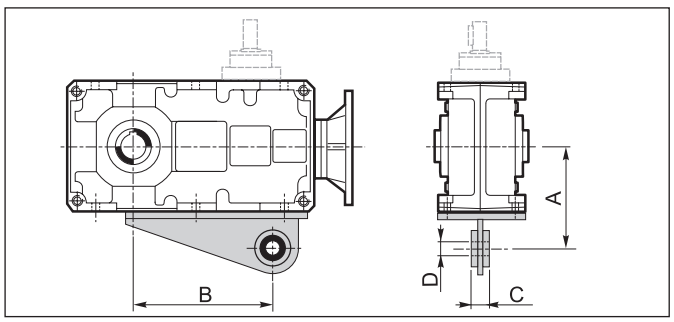
56B - 56C - 63B - 63C - 75B - 75C

	T		
	56B 56C	63B 63C	75B 75C
A	100	150	200
B	65	70	90
C	20	20	25
D	10	10	20
E	39	48.5	49



71B - 225B

	T						
	71B	90B	112B	140B	180B	200B	225B
A	123	140	172	205	260	300	325
B	84	116	144	189	247.5	280	319
C	25	25	30	30	35	45	45
D	20	20	25	25	35	40	40



80C - 200C

	T					
	80C	100C	125C	160C	180C	200C
A	130	160	190	240	280	300
B	170	214	276	354.5	367	456.5
C	25	30	30	35	45	45
D	20	25	25	35	40	40

Kit protezione albero cavo

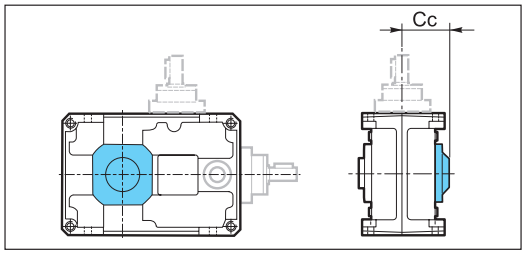
Ad esclusione delle grandezze 56, 63 e 75, a richiesta è possibile predisporre il riduttore con un kit di protezione dell'albero cavo. Tale protezione, essendo dotata di un'opportuna guarnizione, impedisce ad eventuali fluidi, presenti nell'ambiente di lavoro, di venire a contatto con l'albero cavo del riduttore oltre ad impedire il contatto con corpi estranei. Le dimensioni di ingombro sono riportate nella tabella seguente.

Hollow shaft protection kit

On request we can supply a hollow shaft protection kit (except for sizes 56, 63 and 75).
The kit features a gasket which prevents any contact between hollow shaft and foreign bodies or fluids existing in the working environment. Over-all dimensions are reported in the following table.

Schutzvorrichtung für die Hohlwelle

Auf Wunsch ist eine Schutzvorrichtung für die Hohlwelle lieferbar (Größen 56, 63 und 75 ausgenommen).
Die Schutzvorrichtung weist eine Dichtung auf, die zur Vermeidung von irgendwelchem Kontakt zwischen Hohlwelle und Fremdkörper oder Flüssigkeiten der Arbeitsumgebung dient. Den Tabelle wird der Raumbedarf angegeben.



	T						
	71B	90B 80C	112B 100C	140B 125C	180B 160C	200B 180C	225B 200C
Cc	79.5	87	105	120.5	141.5	167.5	191.5

Dispositivo antiritorno

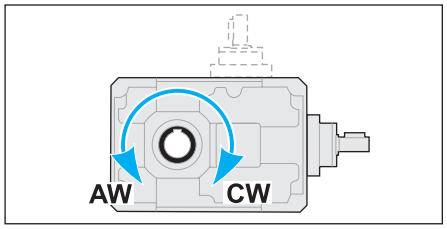
Il riduttore ad assi ortogonali presenta valori di rendimento statico (e dinamico) molto elevati: per questo motivo non è garantita spontaneamente l'irreversibilità statica. L'irreversibilità statica si realizza quando, a riduttore fermo, l'applicazione di un carico all'albero lento non pone in rotazione l'asse entrata.Pertanto, per garantire l'irreversibilità del moto, a riduttore fermo, occorre predisporre il riduttore stesso con un opportuno dispositivo antiritorno, fornibile a richiesta tranne che sulle grandezze T56, T63 e T75.
Tale dispositivo permette la rotazione dell'albero lento solo nel senso desiderato, da specificare all'atto dell'ordine.

Backstop device

Bevel helical gearboxes feature quite high values of static (and dynamic) efficiency: for this reason spontaneous static irreversibility is not guaranteed. Static irreversibility, with motionless gearbox, occurs when the application of a load on the output shaft does not cause rotation of the input axis. In order to guarantee motion irreversibility, with motionless gearbox, it is necessary to fit a backstop device, which is available on request, except for sizes 56, 63 and 75.
The backstop device enables rotation of the output shaft only in the required direction, which is to be specified when ordering.

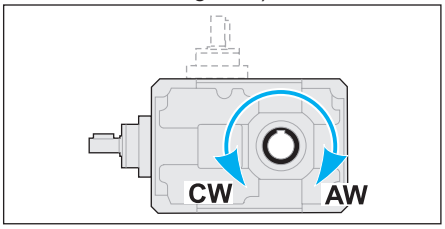
Rücklaufsperre

Kegelstirnradgetriebe haben sehr hohen statischen (und dynamischen) Wirkungsgrad: deshalb wird keine spontane statische Irreversibilität garantiert. Statische Irreversibilität bei stillstehenden Getriebe hat man, wenn die Applikation mit einer Last auf die Abtriebswelle keine Drehung der Antriebswelle verursacht. Um Irreversibilität der Bewegung bei stillstehendem Getriebe zu sichern, sollte eine Rücklaufsperre montiert werden. Die Rücklaufsperre wird auf Wunsch geliefert (Größen 56, 63 und 75 ausgenommen).
Die Rücklaufsperre ermöglicht, dass die Abtriebswelle nur in der gewünschten Richtung dreht (gewünschte Richtung beim Bestellen angeben).



CW Rotazione oraria
Clockwise rotation
Im Uhrzeigersinn

AW Rotazione antioraria
Anti-clockwise rotation
Gegen den Uhrzeigersinn



Nel caso in cui sia presente il dispositivo antiritorno è necessario l'utilizzo di olio lubrificante sintetico, classe di viscosità ISO 150.

The utilization of synthetic oil, viscosity class ISO 150, is necessary for the gearboxes equipped with back stop device.

Getriebe mit einer Rücklaufsperre müssen mit synthetischem Oel (Viskosität ISO150) betrieben werden.

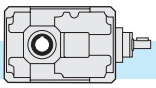
Nella tabella seguente (tab. 3) sono indicati i valori dei momenti torcenti nominali massimi (T_{2M}max), riferiti all'albero uscita, garantiti dal dispositivo di antiritorno, per ogni rapporto di riduzione e per ogni grandezza di riduttore. Se, in corrispondenza dell'albero lento, viene applicata una coppia maggiore di quella indicata, l'irreversibilità del moto non è più garantita.
Questi valori di coppia non sono da confondere con quelli riportati nella tabella riguardante i dati tecnici dei riduttori.
Infatti, si noti come in tabella siano stati messi in evidenza i valori di coppia garantiti (in uscita) dal dispositivo antiretro che risultano essere minori dei massimi valori di coppia motrice trasmissibili, con fattore di servizio Fs =1, dal riduttore.
Vedere paragrafo 1.5 per la verifica del dispositivo antiritorno.

The following table (tab..3) shows the max. rated torques (T_{2M}max) at gearbox output guaranteed by the backstop device, for each ratio and each gearbox size. If a higher torque is applied at gearbox output, motion irreversibility is no longer guaranteed.
These torque values are not to be confused with the values reported in the gearbox specifications tables.
Please note that the torque values guaranteed (at output) by the backstop device are lower than the max. driving torque values transmissible by the gearbox, with service factor Fs =1.

To check the back stop device pls see paragraph 1.5.

In der folgenden Tabelle (Tab. 3) werden die max. Nenndrehmomente am Abtrieb angegeben (T_{2M}max), die die Rücklaufsperre je nach Untersetzungsverhältnis und Getriebegröße garantiert. Falls am Abtrieb ein höheres Drehmoment eingesetzt wird, dann ist die Irreversibilität der Bewegung nicht mehr garantiert.
Diese Drehmomente sind nicht mit den Werten zu verwechseln, die in der Tabelle der technischen Daten der Getriebe angegeben werden.
Die von der Rücklaufsperre (am Abtrieb) garantierten Drehmomente sind niedriger Als die von den Getrieben übersetzbaren max. Drehmomente, unter Berücksichtigung eines Betriebsfaktors Fs =1.

Überprüfung der Rücklaufsperre siehe Abschnitt 1.5.



Coppia massima garantita in uscita dal dispositivo antiritorno
Max. output torque guaranteed by the backstop device
Von der Rücklaufsperre garantierten max. Abtriebsdrehmomente

Tab. 3

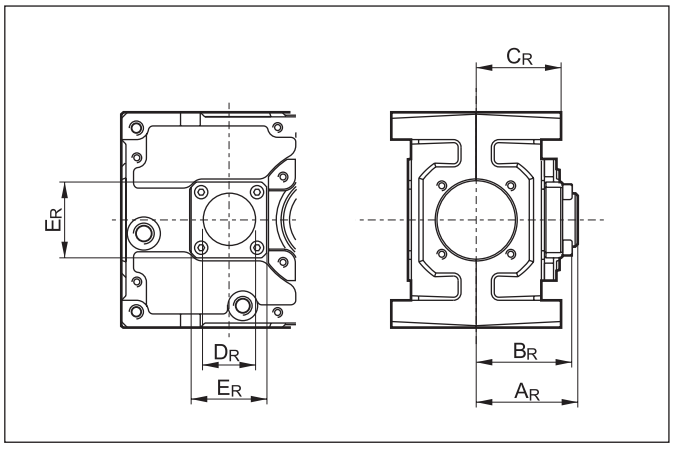
T	in																
	5*	6.3*	7*	8	10	12.5	16	18*	20	25	31.5	35*	40	50	63	70*	80
	T_{2M} max [Nm]																
71B	—	—	—	—	213	272	325	—	213	271	325	—	421	272	325	—	421
90B	148	204	—	—	333	424	508	—	333	424	508	—	657	424	508	—	657
112B	326	—	—	—	733	934	1118	—	733	933	1119	—	1446	933	1118	—	1446
140B	—	—	1038	—	1547	1969	2358	2630	1547	1968	2359	2630	3051	1968	2359	2630	3050
180B	—	—	—	—	3009	3831	4588	5115	3009	3829	4589	5115	5935	3829	4589	5115	5934
200B	—	—	—	5937	7607	9189	11399	—	12873	9190	11402	—	12875	11401	12875	—	—
225B	—	—	—	9856	11829	14538	9858	—	11838	14536	14537	—	17800	—	—	—	—

T	in															
	40	50	63	80	100	125	160	200	225*	250	315	400	450*	500	550*	630
	T_{2M} max [Nm]															
80C	—	1086	1301	1656	1086	1301	1656	1985	—	1301	1656	1985	—	2567	—	3319
100C	—	1697	2033	2588	1697	2033	2588	3101	—	2033	2588	3101	—	4010	—	5186
125C	—	3733	4474	5694	3733	4473	5693	6822	7605	4473	5693	6822	7605	8822	9836	11410
160C	—	7874	9435	12008	7873	9435	12008	14388	16042	9434	12008	14388	16042	18607	20747	24064
180C	—	7874	9435	12008	7873	9435	12008	14388	—	9434	12008	14388	—	18607	—	24064
200C	12511	15024	18453	22586	15023	18450	22594	15024	—	18452	22594	—	—	—	—	—

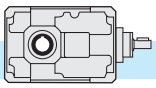
* Rapporti speciali / *Special ratios* / Sonderverhältnisse

Valori di coppia garantiti inferiori alla T_{2M} — *Torque values guaranteed lower than T_{2M} value* — Zuverlässige Drehmomente unter T_{2M} Wert

Dimensioni riferite alla versione con antiretro — *Dimensions of the version with backstop device* — Abmessungen der Version mit Rücklaufsperre



	A_R	B_R	C_R	D_R	E_R
T 71B	67	63	56	35	50
T 80C	67	63	63.5	45	60
T 90B	73	68	63.5	45	60
T 100C	71.5	70	75	55	80
T 112B	90	83	75	55	80
T 125C	86.5	96.5	87.5	60	90
T 140B	108	95	87.5	70	90
T 160C	106.5	101	107.5	70	100
T 180B	122	113	107.5	80	110
T180C	110.5	110	127.5	70	100
T200B	163	137.5	127.5	90	160
T 200C	125	124	145	90	130
T 225B	169	147	145	110	155



2.12 Giochi angolari

Bloccando l'albero di entrata, il gioco viene misurato sull'albero uscita ruotandolo nelle due direzioni ad applicando la coppia strettamente necessaria a creare il contatto tra i denti degli ingranaggi, al massimo pari al 2% della coppia massima garantita dal riduttore (T_{2M}).
Nella tabella seguente sono riportati i valori indicativi del gioco angolare (in minuti di angolo) per quanto riguarda il montaggio normale. I valori ottenibili con una registrazione più precisa sono di poco inferiori di uno o due primi. Quest' ultima esecuzione è da utilizzare solo in caso di reale necessità in quanto potrebbe comportare un leggero aumento della rumorosità e rendere meno efficace l'azione dell'olio lubrificante.

2.12 Angular backlash

After having blocked the input shaft the angular backlash can be measured on the output shaft by rotating it in both directions and applying the torque which is strictly necessary to create a contact between the teeth of the gears. The applied torque should be at most 2% of the max. torque guaranteed by the gearbox. (T_{2M}).
The following table reports the approximate values of the angular backlash (in minutes of arc) referred to standard mounting. The values that can be obtained with a more precise recording are slightly lower than one or two primes or two minutes of arc. The latter solution should be adopted only in case of necessity because it may rise the noise level and lessen the action of the lubricant.

2.12 Winkelspiel

Nachdem die Antriebswelle blockiert worden ist, darf das Winkelspiel auf die Abtriebswelle bemessen werden. Dabei soll die Abtriebswelle in beiden Richtungen gedreht und ein Drehmoment ausgeübt werden, dass zur Entstehung eines Kontaktes zwischen den Zahnen genügt. Das ausgeübte Drehmoment soll höchstens 2% des max. vom Getriebe garantierten Drehmoment (T_{2M}) sein.
Die folgende Tabelle weist die Näherungswerte des Winkelspiels (in Bogenminuten) für Standardmontage. Die mit einer genaueren Feineinstellung erhältlichen Werte sind um wenig geringer als 1 oder 2 Winkelminuten. Die präzise Lösung darf nur im Notfall angewendet werden, weil infolgedessen der Geräuschpegel zunimmt und die Wirkung des Schmiermittels abnimmt.

T	Gioco angolare massimo / Maximum *Backlash* / maximales Winkelspiel (1')
56B / 56C / 63B / 63C / 75B / 75C 71B / 90B / 80C / 112B / 100C	20'
140B / 125C / 180B / 160C / 200B / 180C / 225B / 200C	15'

2.13 Lubrificazione

I riduttori ad assi ortogonali (ad esclusione dei tipi T56, T63 e T75, con lubrificazione a vita) sono forniti predisposti per lubrificazione a olio e muniti dei tappi di carico, livello e scarico olio.
Si raccomanda di precisare sempre la posizione di montaggio desiderata in fase di ordine.
POMPA DI LUBRIFICAZIONE.
Una pompa per lubrificazione forzata dei cuscinetti superiori è fornita a richiesta sulle grandezze 112, 125, 140, 160, 180, 200 e 225 nella posizione di montaggio VA.
Nelle posizioni di montaggio in cui sono presenti cuscinetti posti al di sopra del livello dell'olio lubrificante è prevista l'applicazione di grasso speciale su tali cuscinetti per migliorarne la lubrificazione. E' possibile dotare gli stessi cuscinetti di un anello metallico (nylos) con la funzione di contenimento del grasso e, di conseguenza, di prolungare l'efffetto nel tempo. Questa soluzione viene fornita su specifica richiesta.

2.13 Lubrication

Bevel helical gearboxes (except for T56, T63 and T75 which are lubricated for life) require oil lubrication and are equipped with filler, level and drain plugs.
The mounting position should always be specified when ordering the gearbox.

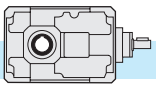
OIL PUMP.
A pump for forced lubrication of the upper bearings is supplied on request for sizes 112, 125, 140, 160, 180, 200 and 225 in the VA mounting position.

Depending on the mounting position, the bearings may be lodged above the lubricant level. In this case it is necessary to apply special grease on the bearings in order to improve their lubrication. A metallic ring (nylos) can be fitted on the bearings it keeps the grease in place thus prolonging the action. It is supplied on specific request.

2.13 Schmierung

Die Kegelstirnradgetriebe sind für die Ölschmierung mit Einfüll-, Ölstand- und Ablaßstopfen versehen.
Bei der Bestellung ist immer die gewünschte Montageposition anzugeben.

ÖLPUMPE.
Eine Pumpe für die Zwangsschmierung der oberen Lager kann auf Wunsch bei den Größen 112, 125, 140, 160, 180, 200 und 225 in der Montageposition VA geliefert werden.
Abhängig von der Einbaulage kann es sein, dass die Lager Über dem Ölstand liegen. In dem Fall wird Sonderfett auf die Lager geschmiert, um deren Schmierung zu verbessern. Ein metallischer Ring (nylos) für die Lager kann auf Wunsch geliefert werden: er hält das Fett fest und verlängert die Lebensdauer.



Posizione di montaggio e quantità di lubrificante (litri)

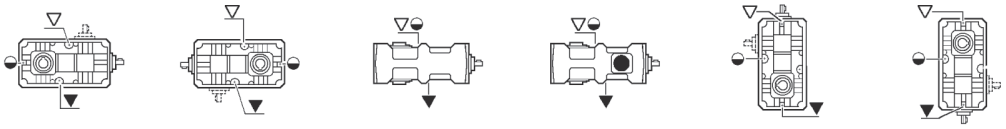
I quantitativi di olio riportati nelle varie tabelle sono indicativi e riferiti alle posizioni di lavoro indicate e considerando le condizioni di funzionamento a temperatura ambiente e velocità in ingresso di 1400 min^{-1}. Per condizioni di lavoro diverse da quelle sopra riportate contattare il servizio tecnico.

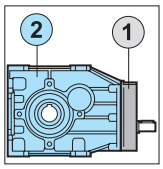
Mounting positions and lubricant quantity (liters)

The oil quantities stated in the tables are approximate values and refer to the indicated working positions, considering operating conditions at ambient temperature and an input speed of 1400 min^{-1}. Should the operating conditions be different, please contact the technical service.

Montageposition und Ölmenge (liter)

Die in der Tabellen angegebenen Daten sind Richtwerte. Die Ölmengen beziehen sich auf die angegebenen Betriebspositionen. Dabei wird den Betrieb bei Umgebungstemperatur und Antriebsdrehzahl von 1400 min^{-1} berücksichtigt. Falls die Betriebsbedingungen anders sind, dann ist das technische Büro zu befragen.

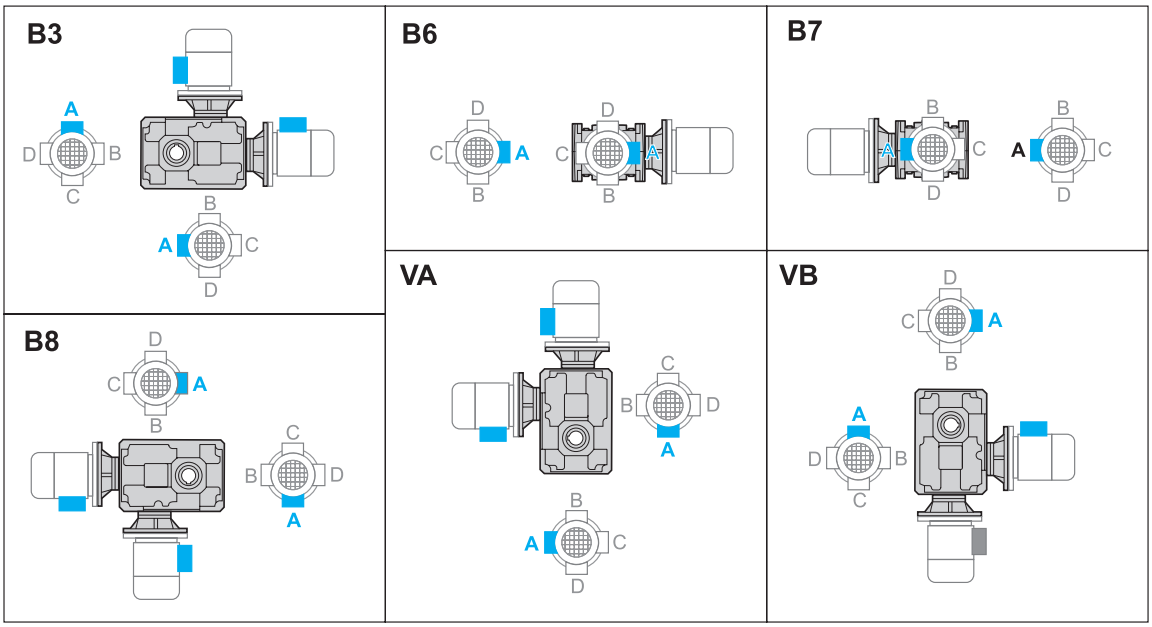




	T	B3	B8	B6	B7	VA	VB
(2)	56B	0.30				0.40	0.30
(1)	56C	0.05					
(2)	56C	0.30				0.40	0.30
(2)	63B	0.35				0.45	0.35
(1)	63C	0.05					
(2)	63C	0.35				0.45	0.35
(2)	75B	0.45					
(1)	75C	0.08					
(2)	75C	0.45					
	71B	0.6		0.7	0.5	0.8	
	80C	1.1		1.5	1.3	1.5	
	90B	1.0		1.4	1.2	1.3	
	100C	2.0		2.6	2.3	2.8	
	112B	1.8		2.6	2.3	2.4	
	125C	3.8		4.8	4.5	5.0	
	140B	3.6		4.6	4.3	4.3	
	160C	7.0		9.2	8.7	10.0	
	180B	7.5		9.7	9.2	8.0	
	180C	9.5		14.0	13.0	15.5	
	200B	12.5		15.0	14.0	17.5	
	200C	13.5		19.0	18.0	19.5	
	225B	14.5		19.0	18.0	18.7	

* Nella posizione di montaggio B6-B7 è previsto un tappo di sfiato con asta di livello, tranne T 56, 63 e 75.
* *In mounting position B6-B7 the breather plug is supplied complete with the dipstick, except T 56, 63 and 75.*
* Für die Version B6-B7 ist eine Entlüftungsschraube mit Ölstandsanzeige vorgesehen, außer dass T 56, 63 und 75.

Posizione morsettiera ***Terminal board position*** **Lage des Klemmenkastens**



N.B.
Se non diversamente specificato, il motore verrà fornito con la morsettiera in posizione A.

N.B.
Unless o therwise agreed, the motor will be supplied with the terminal board in position A..

ANMERKUNG:
Ausser wenn anders angegeben, wird der Motor mit Klemmenkasten in der A Position geliefert.

2.14 Carichi radiali e assiali (N)

Le trasmissioni effettuate tramite pignoni per catena, ruote dentate o pulegge generano delle forze radiali (F_R) sugli alberi dei riduttori. L'entità di tali forze può essere calcolata con la formula:

$$F_R = \frac{K_R \cdot T}{d} \text{ [N]}$$

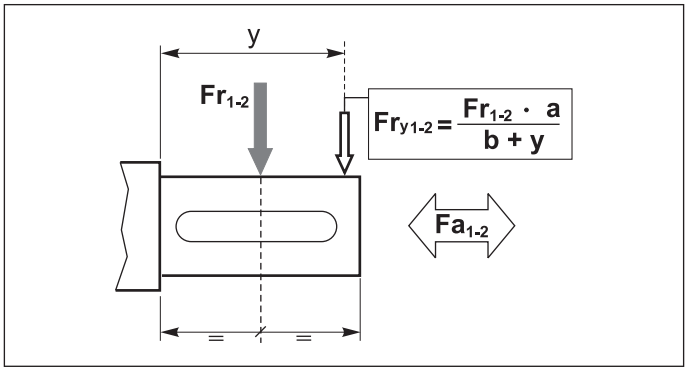
dove:
T = Momento torcente [Nm]
d = Diametro pignone o puleggia [mm]

K_R = 2000 per pignone per catena
= 2500 per ruote dentate
= 3000 per puleggia con cinghie a V

I valori dei carichi radiali e assiali generati dall'applicazione debbono essere sempre minori o uguali a quelli ammissibili indicati nelle tabelle.

$$F_R \geq Fr_{1-2}$$

Se il carico radiale sull'albero non è applicato a metà della sporgenza dell'albero, il valore del carico ammissibile deve essere valutato utilizzando la formula che si riferisce ad Fry_{1-2}, in cui i valori di a, b e Fr_{1-2} sono riportati nelle tabelle relative ai carichi radiali.
Nel caso di alberi bisporgenti il valore del carico applicabile a ciascuna estremità è uguale ai 2/3 del valore di tabella, purchè i carichi applicati siano uguali di intensità e direzione ed agiscano nello stesso senso. Diversamente contattare il servizio tecnico.



I carichi radiali indicati nelle tabelle si intendono applicati a metà della sporgenza dell'albero e sono riferiti ai riduttori operanti con fattore di servizio 1.

2.14 Radial and axial loads (N)

Transmissions implemented by means of chain pinions, wheels or pulleys generate radial forces (F_R) on the gear unit shafts. The entity of these forces may be calculated using the following formula:

where:
T = torque [Nm]
d = pinion or pulley diameter [mm]

K_R = 2000 for chain pinion
=2500 for wheel
=3000 for V-belt pulley

The values of the radial and axial loads generated by the application must always be lower than or equal to the admissible values reported in the tables.

Should the radial load affect the shaft not at the half-way point of its projection but at a different point, the value of the admissible load has to be calculated using the Fry_{1-2} formula: a, b and Fr_{1-2} values are reported in the radial load tables.
With regard to double-projecting shafts, the load applicable at each end is 2/3 of the value given in the table, on condition that the applied loads feature same intensity and direction and that they act in the same direction.
Otherwise please contact the technical department.

The radial loads indicated in the chart are considered to be applied at the half-way point of the shaft projection, and refer to gear units operating with service factor 1.

2.14 Radial- und Axialbelastungen (N)

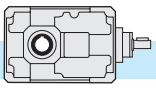
Antriebe mit Kettenritzel, Zahnrädern oder Riemenscheiben erzeugen radiale Kräfte (F_R) an den Wellen der Untersetzungsgetriebe. Das Ausmaß dieser Kräfte kann nach folgender Formel berechnet werden:

dabei ist:
T = Drehmoment [Nm]
d = Kettenritzel- bzw. Riemenscheiben durchmesser [mm]
K_R = 2000 bei Kettenritzel
= 2500 bei Zahnrad
= 3000 bei Riemenscheibe mit Keilriemen

Die Werte der Radial- und Axialbelastungen, die durch die Anwendung hervorgerufen werden, dürfen nicht über den in den Tabellen angegebenen zulässigen Werten liegen.

Falls die Radialbelastungen nicht in dem Mittelpunkt der herausragenden Welle sondern in einem anderen Punkt wirken, soll die zulässige Belastung mit der Formel bezüglich Fry_{1-2} kalkuliert werden: a, b und Fr_{1-2} Werte sind aus der Tabelle der Radialbelastungen zu entnehmen.
Bei doppelseitigen Abtriebswellen ist die Belastung, die an jedem Ende anwendbar ist, 2/3 des in der Tabelle angegebenen Wertes unter der Bedingung, dass die Belastungen die selbe Stärke und Richtung aufweisen und dass sie in der selben Richtung wirken. Andernfalls muß mit dem technischen Büro Rücksprache gehalten werden.

Die Radialbelastungen, die in den Tabellen angegeben werden, gelten für Ansatzpunkte in der Mitte des herausragenden Wellenteils und für Getriebe mit Betriebsfaktor 1.



	T 56B		T 63B		T 75B			T 56C		T 63C		T 75C	
ALBERO ENTRATA / *INPUT SHAFT* / ANTRIEBSWELLE (n_1 = 1400 min^{-1})													
	a = *	b = *	a = *	b = *	a = *	b = *		a = *	b = *	a = *	b = *	a = *	b = *
in	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**in**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**
Tutti *All* Alle	*	*	*	*	*	*	**Tutti *All* Alle**	*	*	*	*	*	*

* Consultare il ns. Servizio Tecnico. * *Contact Tramec Technical dept.*. * Fragen sie Tramec technisches Büro.

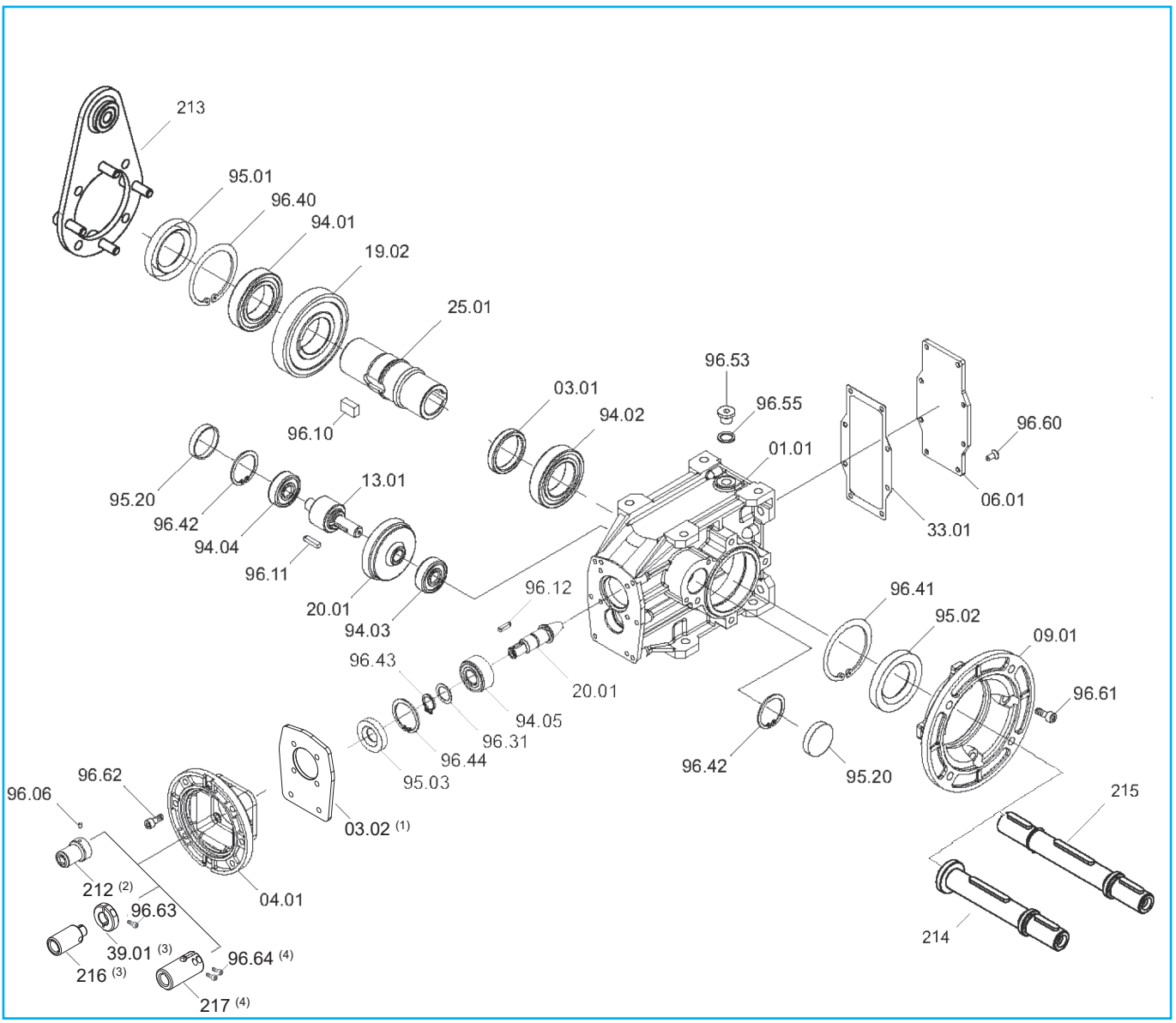
	T 56B		T 63B		T 75B			T 56C		T 63C		T 75C	
ALBERO USCITA / *OUTPUT SHAFT* / ABTRIEBSWELLE (n_1 = 1400 min^{-1})													
	a = 106	b = 81	a = 121	b = 93.5	a = 106	b = 81		a = 106	b = 81	a = 121	b = 93.5	a = 121	b = 93.5
	Fr_2	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**in**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**
8	1300	260	1500	300	2500	500	**40**	2300	460	2500	500	—	—
10	1300	260	1500	300	2500	500	**50**	2300	460	2500	500	3500	700
12.5	1300	260	1500	300	2500	500	**63**	2300	460	2500	500	3500	700
16	1800	360	2000	400	2500	500	**80**	2800	560	3000	600	3500	700
20	1800	360	2000	400	3000	600	**100**	2800	560	3000	600	4000	800
25	1800	360	2000	400	3000	600	**125**	2800	560	3000	600	4000	800
31.5	1800	360	2000	400	3000	600	**160**	2800	560	3000	600	4000	800
40	2300	460	2500	500	3500	700	**200**	3000	600	3500	700	4500	900
50	2300	460	2500	500	3500	700	**250**	3000	600	3500	700	4500	900
63	—	—	2500	500	—	—	**315**	—	—	3500	700	—	—

	T 71B		T 90B		T 112B		T 140B		T 180B		T200B		T 225B	
ALBERO ENTRATA / *INPUT SHAFT* / ANTRIEBSWELLE (n_1 = 1400 min^{-1})														
	a = 66.75	b = 51.75	a = 77	b = 57	a = 90	b = 70	a = 113	b = 83	a = 141.5	b = 101.5	a = 138.5	b = 98.5	a = 201	b = 146
in	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**
8-40	400	80	630	125	1000	200	1600	320	2500	500	2500	500	3150	630
50÷ 80									2000	400	2000	400		
ALBERO USCITA / *OUTPUT SHAFT* / ABTRIEBSWELLE (n_1 = 1400 min^{-1})														
	a = 114.5	b = 84.5	a = 131	b = 95	**a = 161.5**	b = 113.5	a = 192	b = 132	a = 236.5	b = 162	a = 276	b = 191	a = 325	b = 220
in	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**
≤ 8	—	—	4300	860	7000	1400	11000	2200	—	—	25000	5000	36000	7200
10	3000	600	4750	950	7500	1500	11800	2360	19000	3800	26800	5360	38000	7600
12.5	3150	630	5000	1000	8000	1600	12500	2500	20000	4000	28800	5760	40000	8000
16	3350	670	5300	1060	8500	1700	13200	2640	21200	4240	30400	6080	42400	8480
18*	—	—	—	—	—	—	13600	2720	21800	4360	—	—	—	—
20	3550	710	5600	1120	9000	1800	14000	2800	22400	4480	32200	6440	44800	8960
25	3750	750	6000	1200	9500	1900	15000	3000	23600	4720	34000	6800	47200	9440
31.5	4000	800	6300	1260	10000	2000	16000	3200	25000	5000	35800	7160	50000	10000
35*	—	—	—	—	—	—	16500	3300	25700	5140	—	—	—	—
40	4250	850	6700	1340	10600	2120	17000	3400	26500	5300	37600	7520	53000	10600
50 ÷ 80	4500	900	7100	1420	11200	2240	18000	3600	28000	5600	38000	7600	—	—

* **Rapporti speciali / *Special ratios* / Sonderverhältnisse**

	T 80C		T 100C		T 125C		T 160C		T180C		T 200C	
ALBERO ENTRATA / *INPUT SHAFT* / ANTRIEBSWELLE (n_1 = 1400 min^{-1})												
	a = 66.75	b = 51.75	a = 77	b = 57	**a = 90**	b = 70	a = 113	b = 83	a = 113	b = 83	a = 141.5	b = 101.5
in	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**	**Fr_1**	**Fa_1**
Tutti *All* Alle	400	80	630	125	1000	200	1600	320	2000	400	2500	500
ALBERO USCITA / *OUTPUT SHAFT* / ABTRIEBSWELLE (n_1 = 1400 min^{-1})												
	a = 131	b = 95	a = 161.5	b = 113.5	**a = 192**	b = 132	a = 236.5	b = 162	a = 276	b = 191	a = 325	b = 220
in	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**	**Fr_2**	**Fa_2**
Tutti *All* Alle	8000	1600	12500	2500	20000	4000	32000	6400	43000	8600	53000	10600

TA/TF 56B - TA/TF 63B - TA/TF 75B

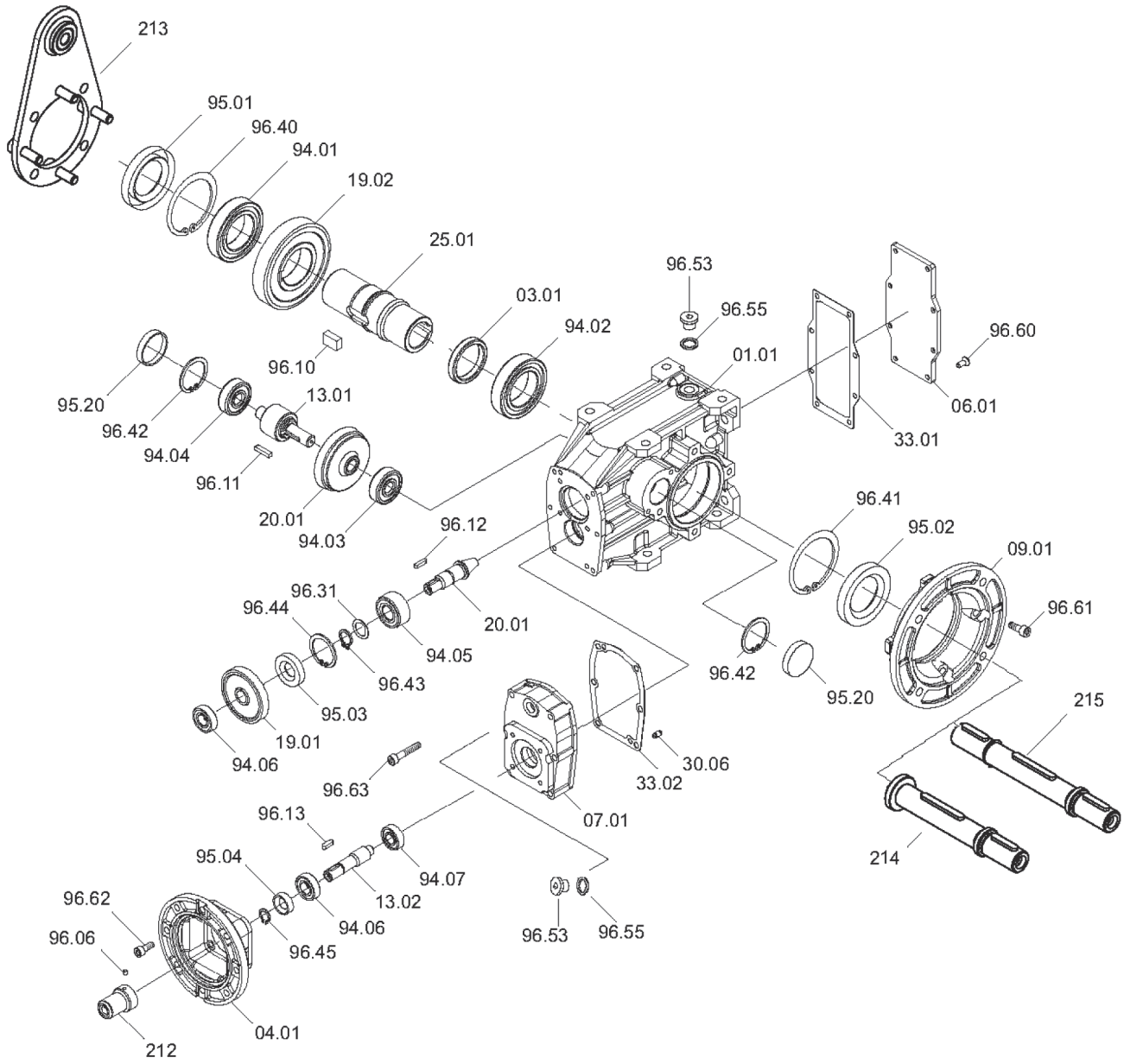


T	Cuscinetti/ *Bearings* / Lager					Anelli di tenuta / *Oilseals* / Öldichtungen			Cappellotto / *Closed oil seal* Geschlossene Öldichtung
	94.01	94.02	94.03	94.04	94.05	95.01	95.02	95.03	95.20
56B	**6007** 35/62/14	**6007** 35/62/14	**6201** 12/32/10	**6201** 12/32/10	**3201** 12/32/15.9	35/62/7	35/62/7	**12/32/7**	ø 32x7
63B	**6008** 40/68/15	**6008** 40/68/15	**6301** 12/37/12	**6301** 12/37/12	**3202** 15/35/15.9	40/68/10	40/68/10	**15/35/7**	ø 37x7
75B	**6010** 50/80/16	**6010** 50/80/16	**6203** 17/40/12	**6203** 17/40/12	**3202** 15/35/15.9	50/80/8	50/80/8	**15/35/7**	ø 47x7

(1) Solo per TF75B PAM 71, 80, 90/ *Only for TF75B PAM 71, 80, 90* / Nur für T75B PAM 71, 80, 90.
(2) Solo per TF56B e TF63B PAM 56, 63 / *Only for TF56B and TF63B PAM 56, 63* / Nur für TF56B und TF63B PAM 56, 63.
(3) Solo per TF56B e TF63B PAM 71, 80, 90 / *Only for TF56B and TF63B PAM 71, 80, 90* / Nur für TF56B und TF63B PAM 71, 80, 90.
(4) Solo per TF75B tutti i PAM / *Only for TF75B all PAM* / Nur für TF75B alle PAM.

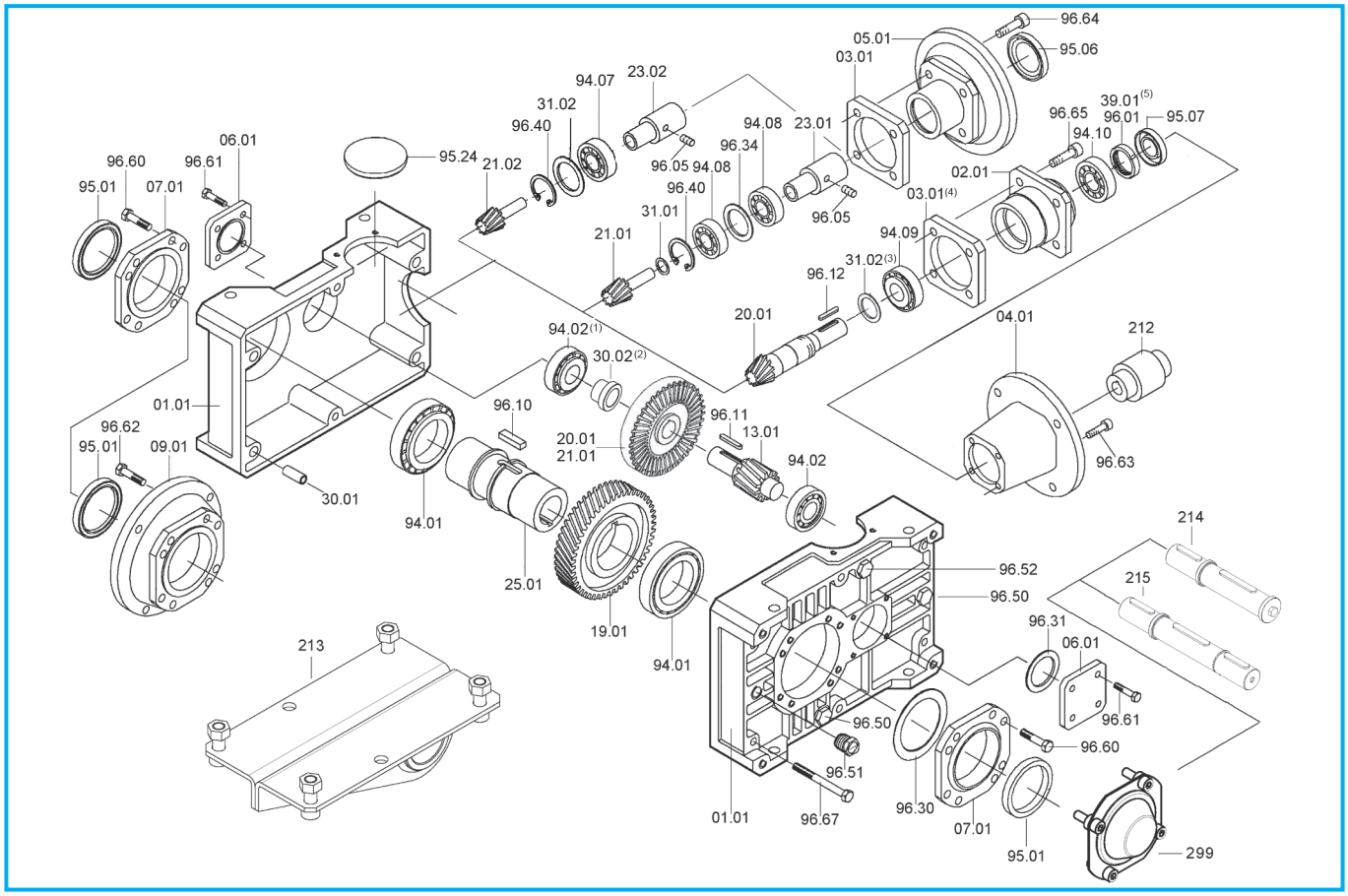
2.15 **Lista parti di ricambio** *2.15* ***Spare parts list*** 2.15 **Ersatzteilliste**

TA/TF 56C - TA/TF 63C - TA/TF 75 C



T	Cuscinetti/ *Bearings* / Lager								Anelli di tenuta / *Oilseals* / Öldichtungen				Cappellotto / *Closed oil seal* / Geschlossene Öldichtung
	94.01	94.02	94.03	94.04	94.05	94.06	94.07	94.08	95.01	95.02	95.03	95.04	95.20
56C	**6007** 35/62/14	**6007** 35/62/14	**6201** 12/32/10	**6201** 12/32/10	**3201** 12/32/15.9	**6001** 12/28/8	**6000** 10/26/8	**6001** 12/28/8	35/62/7	35/62/7	**12/32/7**	**12/22/7**	ø 32x7
63C	**6008** 40/68/15	**6008** 40/68/15	**6301** 12/37/12	**6301** 12/37/12	**3202** 15/35/15.9	**6001** 12/28/8	**6000** 10/26/8	**6001** 12/28/8	40/68/10	40/68/10	**15/35/7**	**12/22/7**	ø 37x7
75C	**6010** 50/80/16	**6010** 50/80/16	**6203** 17/40/12	**6203** 17/40/12	**3202** 15/35/15.9	**6002** 16/32/9	**6000** 10/26/8	**6001** 12/28/8	50/80/8	50/80/8	**15/35/7**	**12/22/7**	ø 47x7

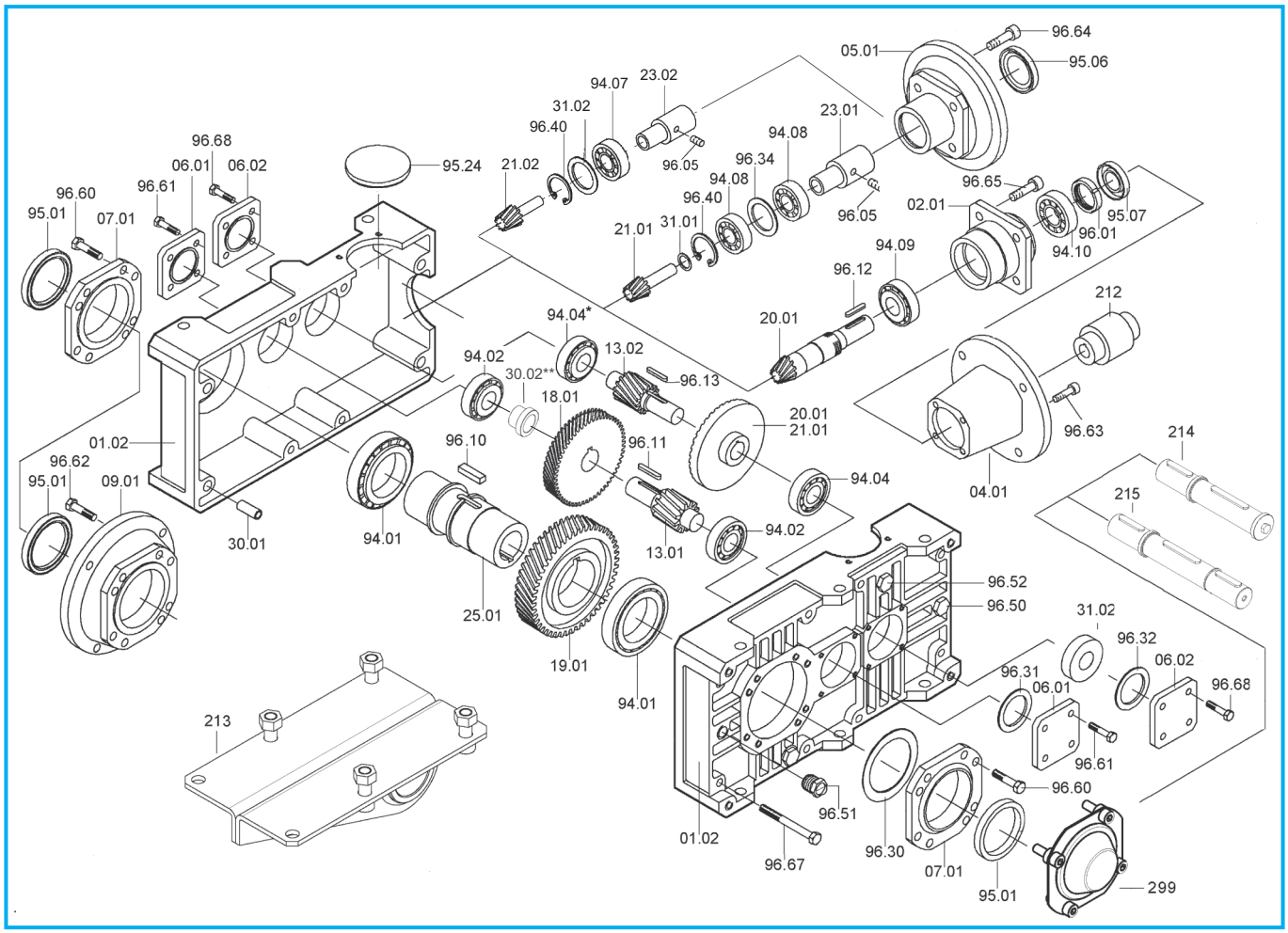
TA..B - TC..B - TF..B



T	Cuscinetti/ *Bearings* / Lager						Anelli di tenuta / *Oilseals* / Öldichtungen			
	TA - TC - TF		TC		TA - TF		TA - TC - TF	TC		TA - TF
	94.01	94.02	94.07	94.08	94.09	94.10	95.01	IEC	95.06	95.07
71B	**32008** 40/68/19	**30302** 15/42/14.25	**3203** 17/40/17.5 (i= 50, 63, 80)	**7203** 17/40/12	**30203** 17/40/13.25		40/56/8	**63** 71 **80** 90	**25/52/7** **30/52/7** **35/52/7** **37/52/8**	**15/40/10**
90B	**32010** 50/80/20	**30204** 20/47/15.25	**3205** 25/52/20.6 (i= 50, 63, 80)	**7205** 25/52/15	**32005** 25/47/15		50/65/8	71 - 80 90 100 - 112	**35/62/7** **40/62/7** **45/62/8**	**20/47/7**
112B	**32012** 60/95/23	**30305** 25/62/18.25	**3206** 30/62/23.8 (i= 50, 63, 80)	**7206** 30/62/16	**32006** 30/55/17		60/80/10	80 - 90 100 - 112 132	**40/72/7** **45/72/8** **55/72/10**	**25/58/10**
140B	**32015** 75/115/25	**32206B** 30/62/21.25	**3207** 35/72/27 (i= 50, 63, 80)	**7207** 35/72/17	**32007** 35/62/18		75/95/10	80 - 90 100 - 112 132 160 180	**45/80/10** **45/80/10** **55/80/10** **60/80/8** **65/80/8**	**30/62/7**
180B	**32019** 95/145/32	**31307** 35/80/22.75 **32208** (1) 40/80/24.75	—	**7209** 45/85/19	**33109** 45/80/26		95/125/12	100 - 112 132 - 160 180 200	**55/100/13** **60/100/10** **65/100/10** **75/100/10**	**40/80/10**
200B	**32024** 120/180/38	**31309** 45/100/27.25	—	**7209** 45/85/19	**33109** 45/80/26		120/160/15	100 - 112 132 - 160 180 200	**55/100/13** **60/100/10** **65/100/10** **75/100/10**	**40/80/10**
225B	**32026** 130/200/45	**31310** 50/110/29.25	—	—	**33211** 55/100/35		130/160/12	—	—	**75/100/10**

(1) Presente solo nella versione con antiretro / *Only on version with back stop device* / Nur für die Version mit Rücklaufsperre
(2) Solo per T200B / *Only for T200B* / Nur fur T200B
(3) Solo per T225B i=16 - 40 (no per i = 8 - 12.5) / *Only for T225B i = 16- 40 (not for i = 8 - 12.5)* / Nur fur T225B i= 16- 40 (Nicht fur i = 8 - 12.5)
(4) Non presente nel T225B / *Not on T225B* / Nicht vorhanden fur T225B
(5) Solo per T225B / *Only for T225B* / Nur fur T225B

TA..C - TC..C - TF..C

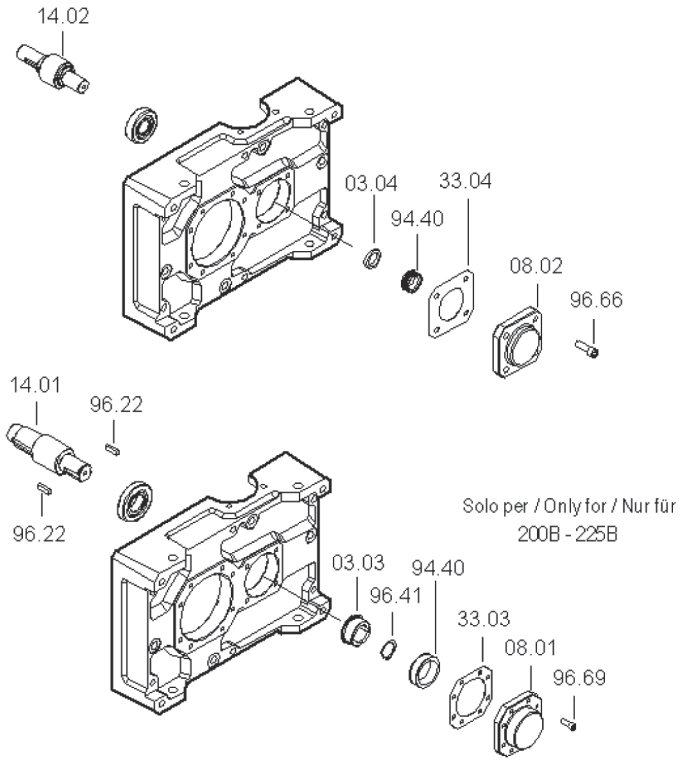


T	Cuscinetti/ *Bearings* / Lager							Anelli di tenuta / *Oilseals* / Öldichtungen			
	TA - TC - TF			TC		TA - TF		TA - TC - TF	TC		TA - TF
	94.01	94.02	94.04	94.07	94.08	94.09	94.10	95.01	IEC	95.06	95.07
80C	**32010** 50/80/20	**30204** 20/47/15.25	**30302** 15/42/14.25	**3203** 17/40/17.5 (i= 250, 315, 400, 500, 630)	**7203** 17/40/12	**30203** 17/40/13.25		50/65/8	**63**	**25/52/7**	**15/40/10**
									71	**30/52/7**	
									80	**35/52/7**	
									90	**37/52/8**	
100C	**32012** 60/95/23	**30305** 25/62/18.25	**30204** 20/47/15.25	**3205** 25/52/20.6 (i= 250, 315, 400, 500, 630)	**7205** 25/52/15	**32005** 25/47/15		60/80/10	71 - 80	**35/62/7**	**20/47/7**
									90	**40/62/7**	
									100 - 112	**45/62/8**	
125C	**32015** 75/115/25	**32206** 30/62/21.25	**30305** 25/62/18.25	**3206** 30/62/23.8 (i= 250, 315, 400, 500, 630)	**7206** 30/62/16	**32006** 30/55/17		75/95/10	80 - 90	**40/72/7**	**25/58/10**
									100 - 112	**45/72/8**	
									132	**55/72/10**	
160C	**32019** 95/145/32	**32207** 35/72/24.25	**32206** 30/62/21.25	**3207** 35/72/27 (i= 250, 315, 400, 500, 630)	**7207** 35/72/17	**32007** 35/62/18		95/125/12	80 - 90	**45/80/10**	**30/62/7**
									100 - 112	**45/80/10**	
									132	**55/80/10**	
									160	**60/80/8**	
									180	**65/80/8**	
180C	**32024** 120/180/38	**31309** 45/100/27.25	**32206B** 30/62/21.25	**3207** 35/72/27 (i= 250, 315, 400)	**7207** 35/72/17	**32007** 35/62/18		120/160/15	80 - 90	**45/80/10**	**30/62/7**
									100 - 112	**45/80/10**	
									132	**55/80/10**	
									160	**60/80/10**	
									180	**65/80/10**	
200C	**32026** 130/200/45	**31310** 50/110/29.25	**30307** 35/80/22.75	—	**7209** 45/85/38	**33109** 45/80/26		130/160/12	100 - 112	**55/100/13**	**40/80/10**
									132 - 160	**60/100/10**	
			* **32208** 40/80/24.75						180	**65/100/10**	
									200	**75/100/10**	

* Presente solo nella versione con antiretro / *Only on version with back stop device* / Nur für die Version mit Rücklaufsperre
** Solo per T180C / *Only for T180C* / Nur fur T180C

TA..B - TC..B - TF..B - TA..C - TC..C - TF..C

Dispositivo antiritorno - *Backstop device* - Rücklaufsperre



T...B	Ruota libera / *Free wheel* / Freilaufrad 94.40
71	FE 423 Z
90	FE 428 Z
112	BF 50 Z 16
140	BF 70 Z 21
180	FE 8040 Z 19
200	FE 8054 Z 25
225	FE 8072 Z 25

T...C	Ruota libera / *Free wheel* / Freilaufrad 94.40
80	FE 423 Z
100	FE 428 Z
125	BF 50 Z 16
160	BF 70 Z 21
180	BF 70 Z 21
200	FE 8040 Z 19

In fase di ordine delle parti di ricambio, specificare sempre n° particolare (vedi disegno esploso), data (1), n° codice (2) e n° variante (3). (Vedi targhetta).

When ordering please specify the spare part number (see exploded view) as well as the date (1) , the article number (2) and the variant number (3) (see plate)

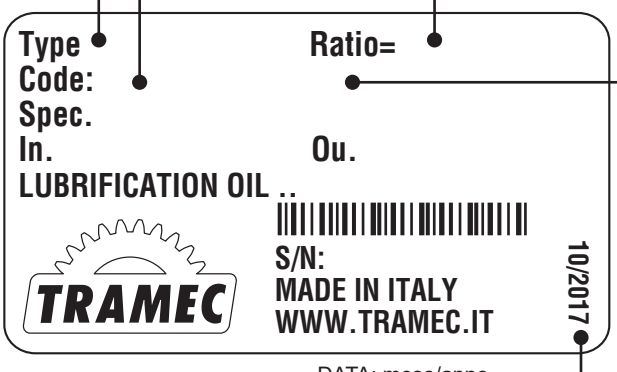
Bei der Bestellung von Ersatzteilen sind Ersatzteilnummer (s. Explosionszeichnung), Datum (1), Artikelnummer (2) und Variantenummer (3) anzugeben. (s. Schild)

CODICE: distinta base
CODE: base list
ART.-Nr.: Basisstückliste

TIPO: descrizione
TYPE: description
TYP: Bezeichnung

RAP: rapporto di riduzione
RATIO: reduction ratio
ÜBERS: Untersetzungsverhältnis

VARIANTE:
codice alfanumerico
MODEL:
alphanumeric code
VARIANTE:
alphanumerische Nummer



DATA: mese/anno
DATE: month/year
DATUM: Monat/Jahr