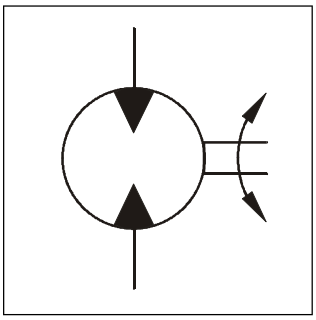
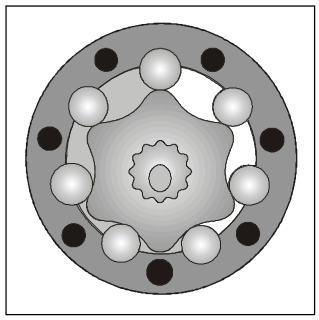
Drehzahl Speed Vitesse de rotation Velocità di rotazione	5...750 rev/min
Schluckstrom Oil flow Débit d`huile Portata	max. 100 l/min
Eingangsdruck Supply pressure Pression entrée Pressione in entrata	max. 300 bar
Drehmoment Torque Couple Coppia	max. 900 Nm
Seitenlast Side load Charges latérales Carico radiale	max. 16.000 N

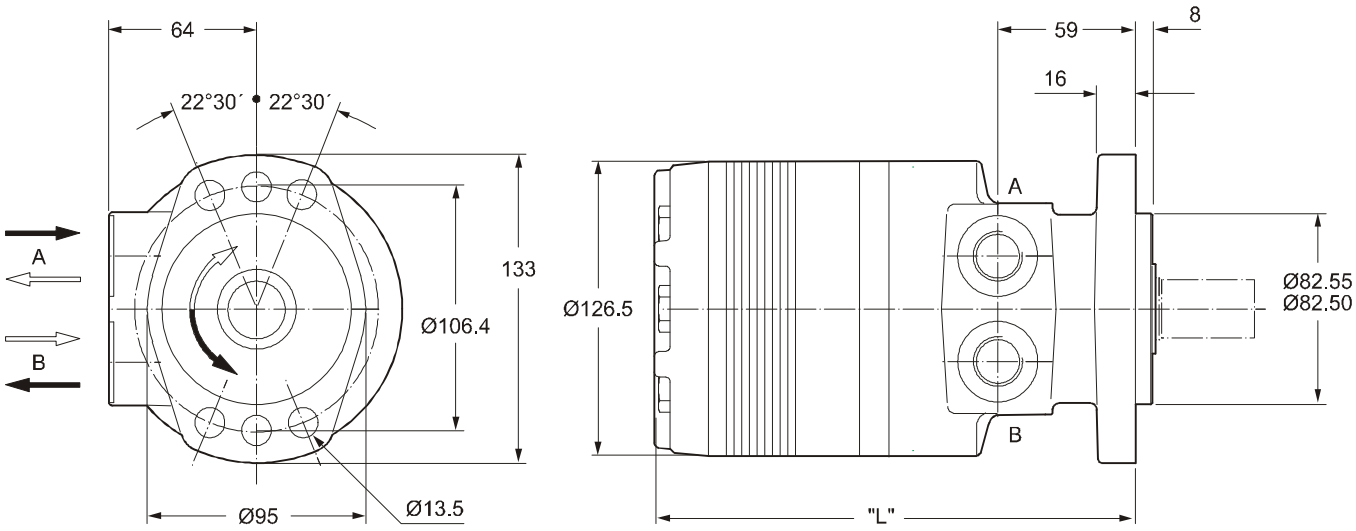




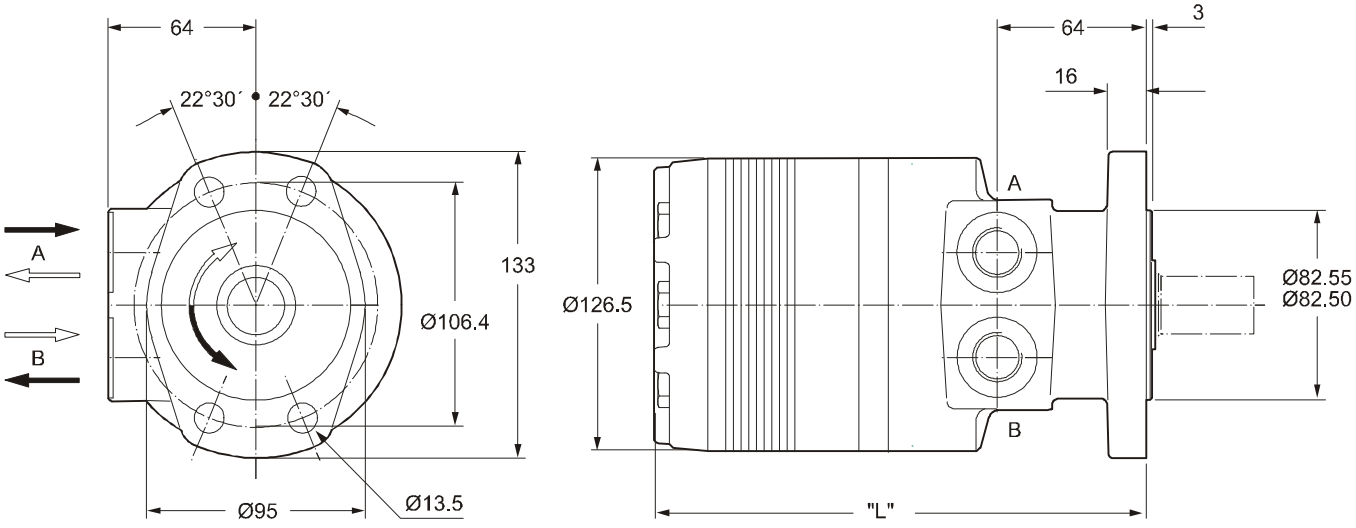
Motor series TF	Geom. Schluckvolumen Geometric displacement Cylindrée Cilindrata cm³/U cm³/rev cm³/tr cm³/giro	Max. Drehzahl Max. speed Vitesse de rotation maxi Velocità di rotazione max cont / int U/min rev/min tr/min giri/min	Max. Schluckstrom Max. oil flow Débit d`huile maxi Portata max cont / int l/min	Max. Druckgefälle Max. differential pressure Chute de pression maxi Caduta di pressione max cont / int bar	Max. Eingangsdruck Max. supply pressure Pression maxi entrée Pressione max in entrata max bar	Max. Drehmoment Max. torque Couple maxi Coppia max cont / int Nm	Max. Leistungabgabe Max. performance Puissance de sortie maxi Potenza meccanica max cont / int max. KW	Min. Anlaufmoment Min. starting torque Couple min. fourni au dé manrage Coppia min. di spunto cont / int Nm
TF 80	81	550/730	45/60	200/280	300	215/295	19	172/236
TF 100	100	600/750	60/75	160/240	300	210/315	21	168/252
TF 130	128	470/580	60/75	140/200	300	240/350	19	192/280
TF 140	141	370/530	60/75	140/200	300	250/390	18	197/308
TF 170	169	355/440	60/75	140/200	300	330/485	19	264/388
TF 195	197	300/380	60/75	140/200	300	380/560	19	304/448
TF 240	238	320/420	75/100	140/200	300	460/685	24	368/548
TF 280	280	270/350	75/100	140/200	300	550/800	24	440/640
TF 360	364	200/260	75/100	130/200	300	590/910	24	510/780
TF 405	405	170/230	75/100	130/175	300	650/910	21	575/789
TF 475	477	150/200	75/100	115/140	300	680/850	17	603/740

int. =
Intermittierende Werte maximal: 10% von jeder Betriebsminute.
Intermittent operation rating applies to 10% of every minute.
Fonctionnement interm.: 10% max. de chaque minute d`utilisation.
Servizio intermittente: 10% max di ogni minuto di utilizzazione.

Code E



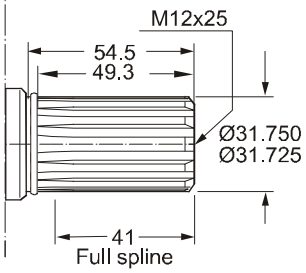
Code M



Gewicht / Weight		TF80	TF100	TF130	TF140	TF170	TF195	TF240	TF280	TF360	TF405	TF475
Poids / Peso	kg	13.6	13.7	13.9	14.0	14.2	14.7	15.0	15.5	16.0	16.5	17.5
Code E	"L" mm	186	186	189	191	194	197	202	206	215	220	229
Code M	"L" mm	191	191	194	196	199	202	207	212	220	225	234

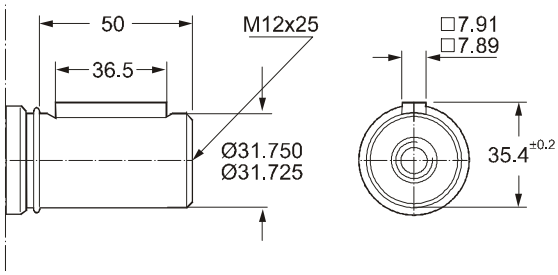
Parker Hannifin GmbH
Hydraulic Controls Division
Kaarst, Germany

Code 44

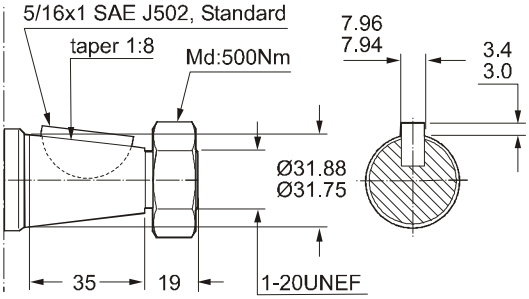


Involute spline
ANS B92.1-1970 Standard
Flat root side fit
Pitch 12/24
Teeth 14
Major diam. 1.25 in
Pressure angle 30°

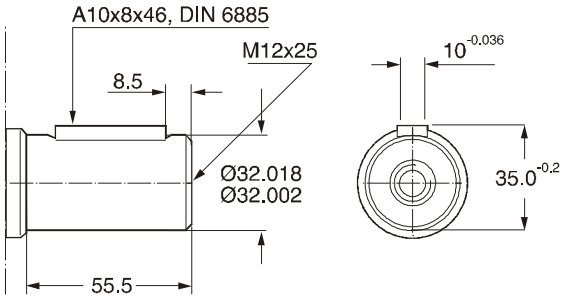
Code 45



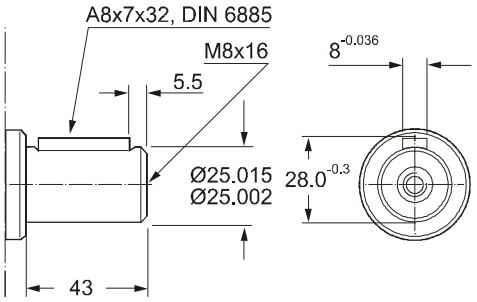
Code 08



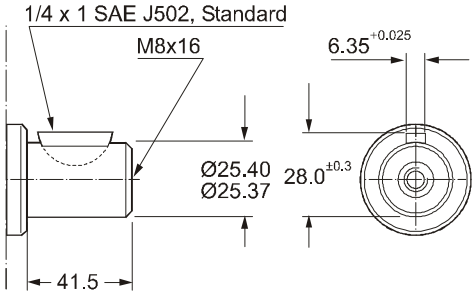
Code 46



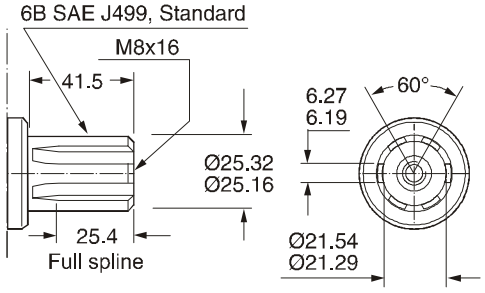
Code 26



Code 47

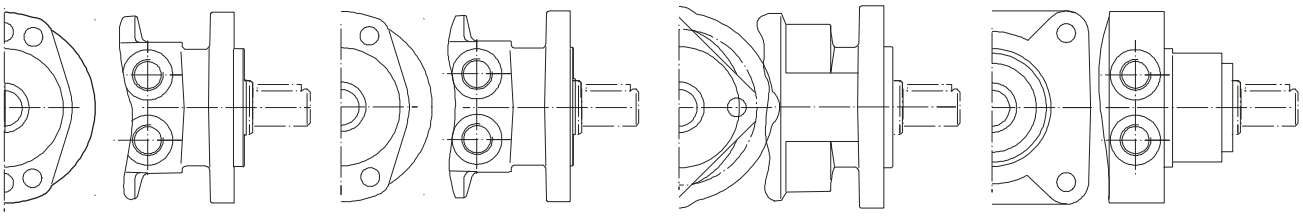


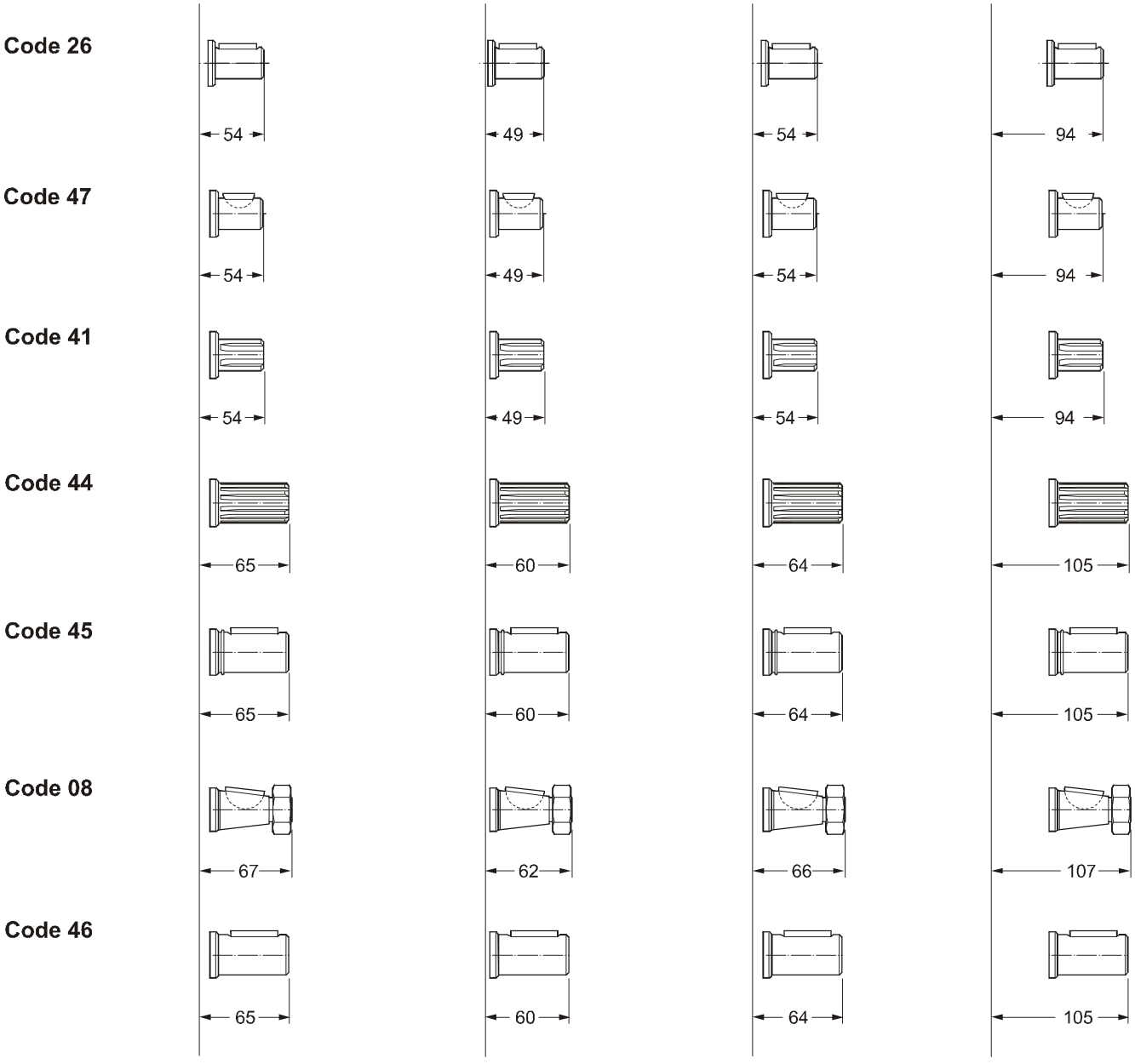
Code 41



Codes 26, 41, 47

Abtriebswelle	Ø 25mm	Max. Moment cont./int.	450/550 Nm
Coupling shaft	Ø 1 inch	Max. torque cont./int.	
Arbre	6B SAE	Couple maxi cont./int.	
Albero		Coppia max cont./int.	




Code 26
54
49
54
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Code 47
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Code 41
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94
Code 44
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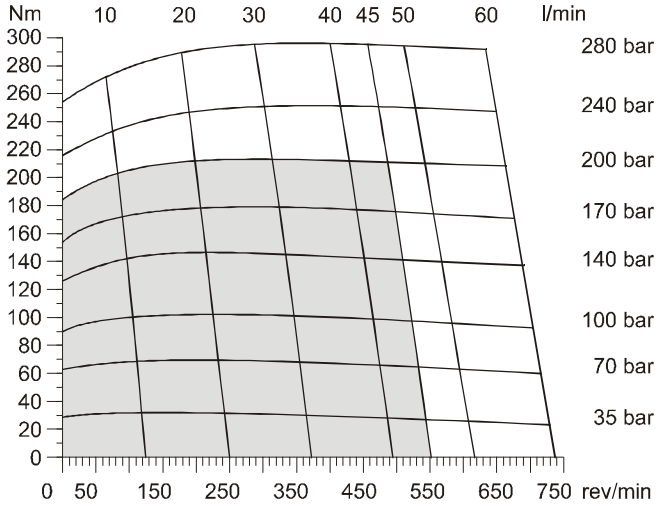
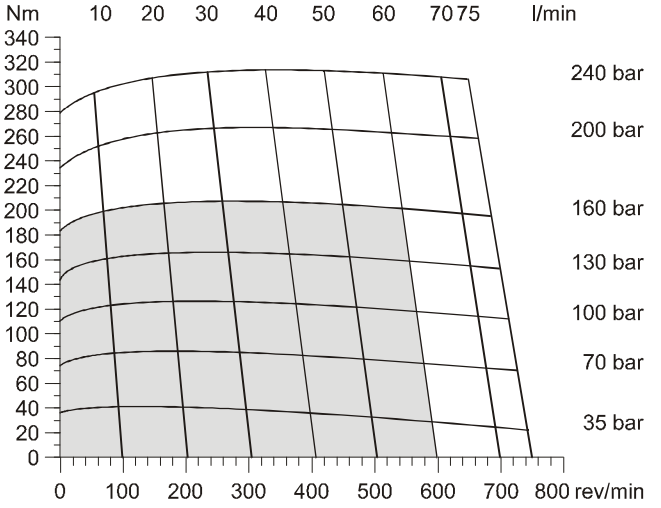
60
64
105
Code 45
65
60
64
105
Code 08
67
62
66
107
Code 46
65
60
64
105

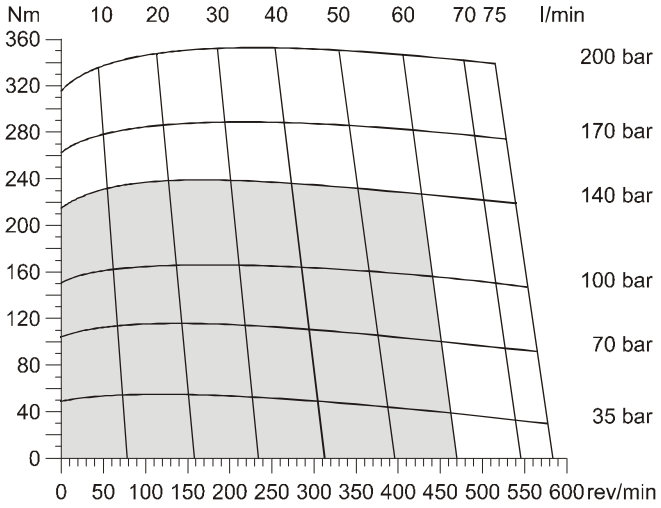
TF 80



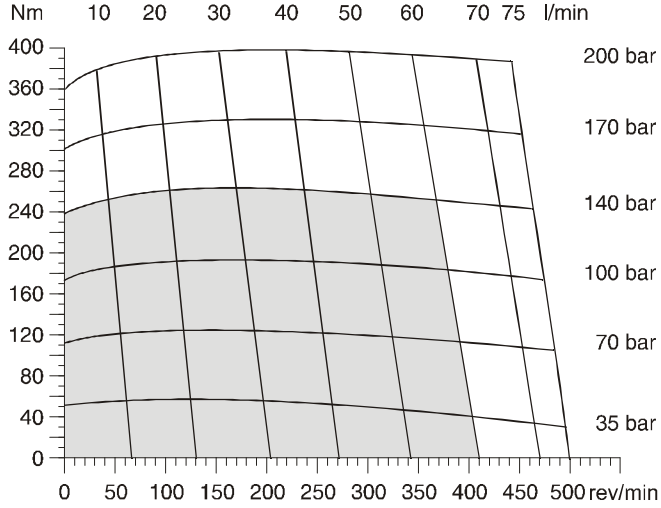
TF 100



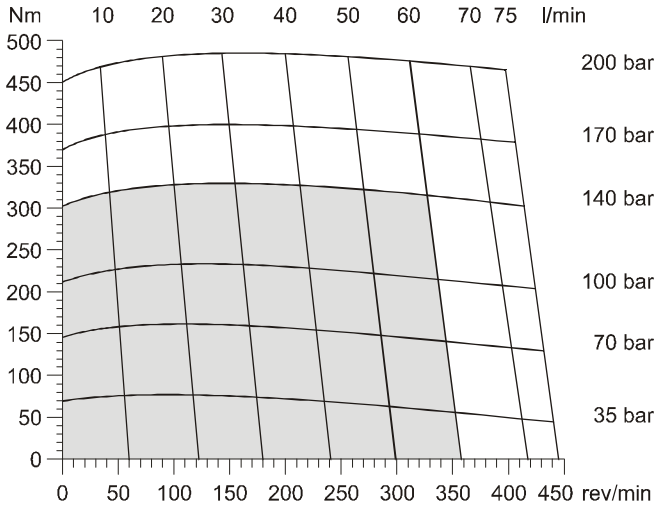
TF 130



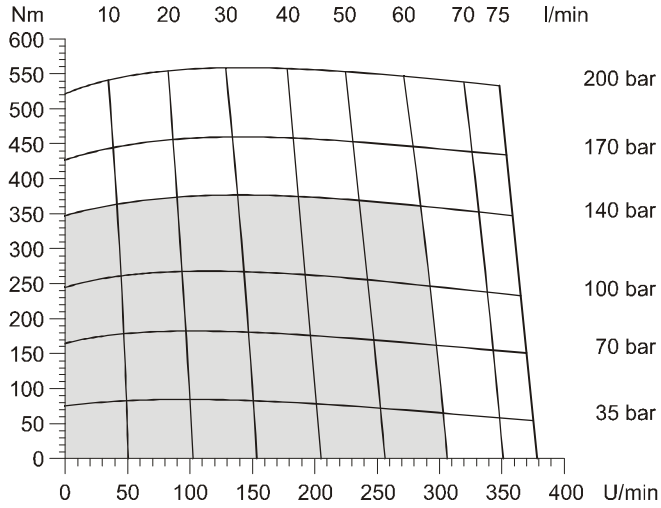
TF 140



TF 170



TF 195

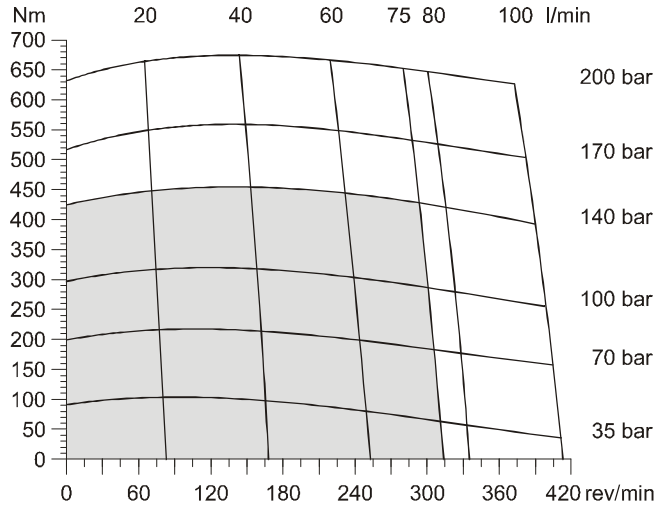


int. =
Intermittierende Werte maximal: 10% von jeder Betriebsminute.
Intermittent operation rating applies to 10% of every minute.
Fonctionnement interm.: 10% max. de chaque minute d`utilisation.
Servizio intermittente: 10% max di ogni minuto di utilizzazione.

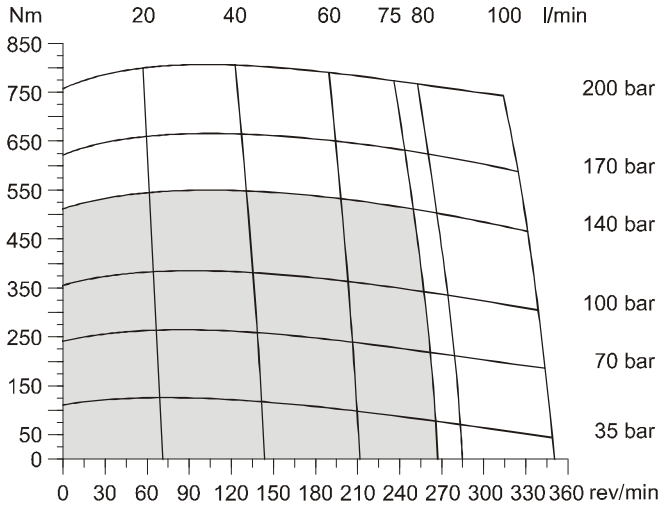
Torqmotoren 3213.PM6.5 RH

Parker Hannifin GmbH
Hydraulic Controls Division
Kaarst, Germany

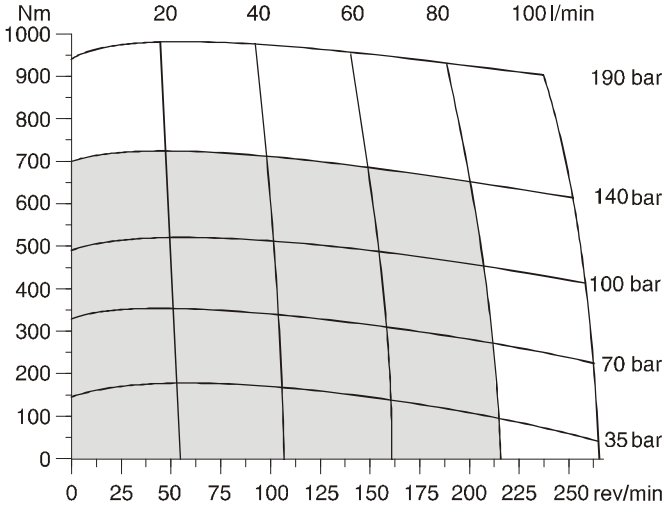
TF 240



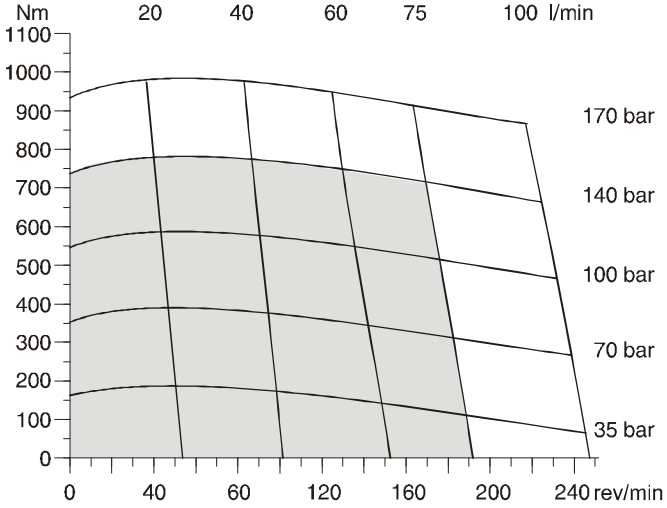
TF 280



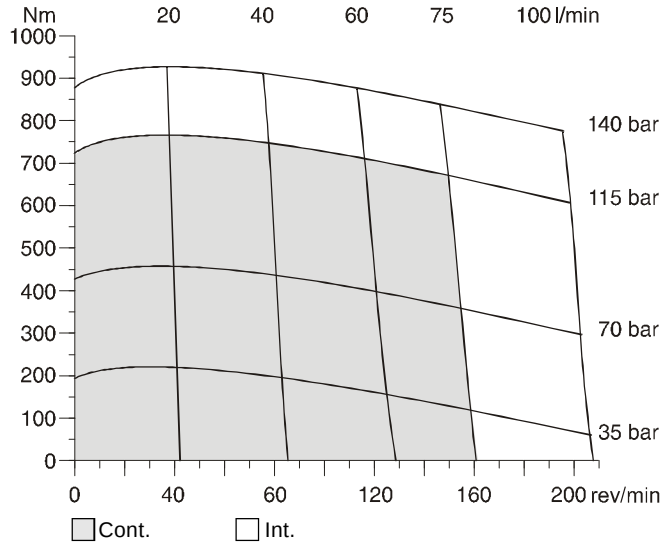
TF 360



TF 405

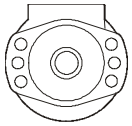


TF475

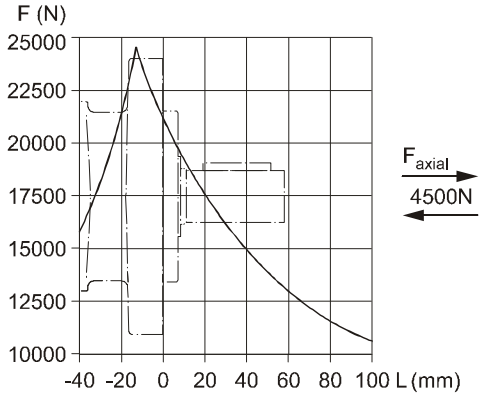


int. =
Intermittierende Werte maximal: 10% von jeder Betriebsminute.
Intermittent operation rating applies to 10% of every minute.
Fonctionnement interm.: 10% max. de chaque minute d`utilisation.
Servizio intermittente: 10% max di ogni minuto di utilizzazione.

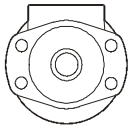
Code E



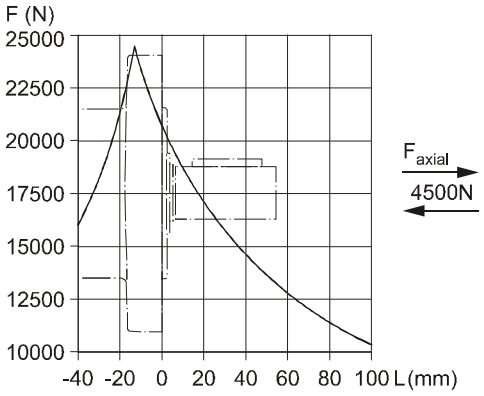
$$L_h = \frac{\left(\frac{670000}{F_R \cdot \left(1.10 + \frac{L}{88mm}\right)}\right)^{3.3}}{n}$$



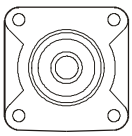
Code M



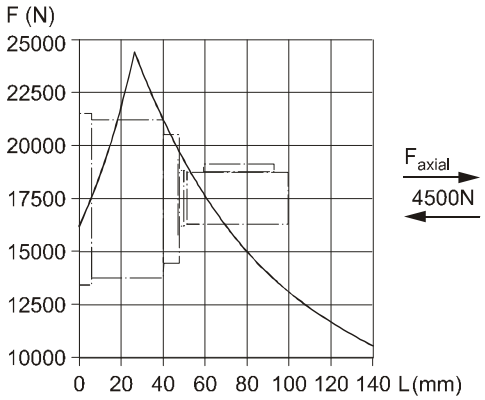
$$L_h = \frac{\left(\frac{670000}{F_R \cdot \left(1.16 + \frac{L}{88mm}\right)}\right)^{3.3}}{n}$$



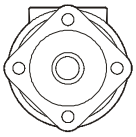
Code H



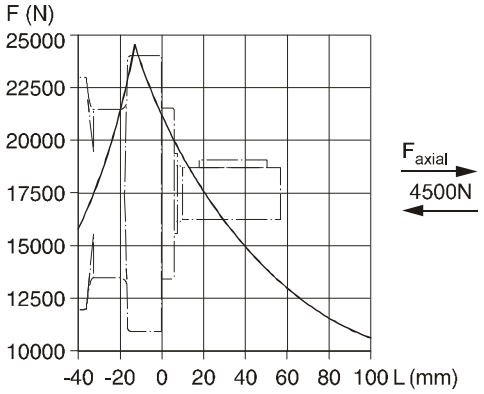
$$L_h = \frac{\left(\frac{670000}{F_R \cdot \left(0.56 + \frac{L}{88mm}\right)}\right)^{3.3}}{n}$$



Code V



$$L_h = \frac{\left(\frac{670000}{F_R \cdot \left(1.11 + \frac{L}{88mm}\right)}\right)^{3.3}}{n}$$



Die Lebensdauer der Radiallager (L_h in Stunden) läßt sich nach folgender Formel berechnen. Die Größe F_R ist durch die mechanische Festigkeit der Abtriebswelle begrenzt (siehe Diagramm). Das Maß "L" ist das Längenmaß vom Gehäuseflansch bis zum Angriffspunkt der Radialkraft F_R.

Life time (L_h in hours) of the radial bearings can be calculated with the following formula. The value F_R is limited by the mechanical strength of the shaft (see diagram). The measurement "L" is the length from the housing flange up to the point of impact of the radial force F_R.

La durée de vie des roulements radiaux (L_h en heures) peut être calculée par les formules suivantes. La grandeur F_R est limitée par les résistances mécaniques de l`arbre de sortie (voir diagramme). La cote "L" est la longueur entre la bride du carter jusqu`au point d`appui de l`effort radial F_R.

La durata dei cuscinetti (L_h in ore) può essere calcolata con la seguente formula. Il valore F_R è limitato dalla resistenza meccanica dell`albero (vedi diagramma). La quota "L" è la distanza tra la flangia del corpo ed il punto di applicazione della forza radiale F_R.

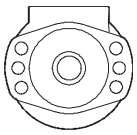
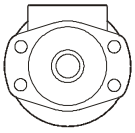
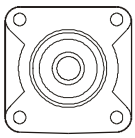
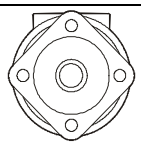
Vorstehende Formeln gelten für eine B10-Lebensdauer.	**L_h**	**=**	**h**
The preceding formulas are valid for a B10 duration of life.	**L**	**=**	**mm**
Les formules prècèdentes sont valables pour une durèe de vie B10.	**F_R**	**=**	**F (N)**
Le formule precedenti sono valide per una durata della vita B10.	**n**	**=**	**rev/min**

TF	0 2 8 0	E	Y	4 6	1	A A A B
Serie Series Série Serie	Schluckvolumen Displacement Cylindrée Cilindrata	Gehäuse Housing Carter Corpo motore	Anschluß Ports Plan de raccordement Connessioni	Welle Shaft Arbre Albero	Drehrichtung Direction of rotation Direction de rotation Direzione di rotazione	Option code

Seite 11

For further options different to standard 'AAAB' see page 57.

Code	cm³/rev
0080	81
0100	100
0130	128
0140	141
0170	169
0195	195
0240	237
0280	280
0360	364
0405	405
0475	477

Code	Housing
E	
M	
H	
V [1]	

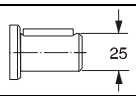
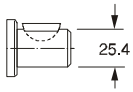
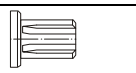
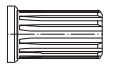
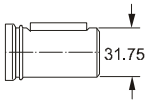
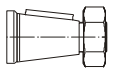
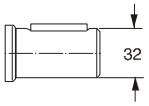
[1] Nur verfügbar mit Endanschluß
Only possible with rear port
Possible seulement avec orifice arrière
Possible solo con connessioni Posteriori

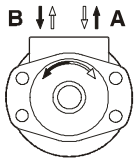
Code	Front port
W	G 1/2
V	7/8-14 UNF O-Ring
N [2]	Universal-M8x13
K [3]	Universal-M6x12

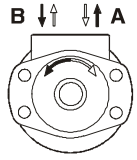
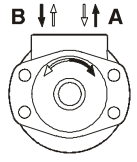
[2] Nicht verfügbar für Gehäuse "H"
Not possible for housing "H"
Pas disponible pour carter "H"
Non disponibile con il corpo codice "H"

[3] Nicht verfügbar für Gehäuse "M, E, V"
Not possible for housing "M, E, V"
Pas disponible pour carter "M, E, V"
Non disponibile con il corpo codice "M, E, V"

Code	Rear port
Y	G 1/2 Axial
A	7/8-14 UNF Axial
X	G 1/2 Radial
B	7/8-14 UNF Radial
L	Universal Radial M8x13

Code	Shaft
26	
47	
41	 6B SAE
44	 Pitch 12/24
45	
08	
46	

Code	Front port
0	 Standard
1	

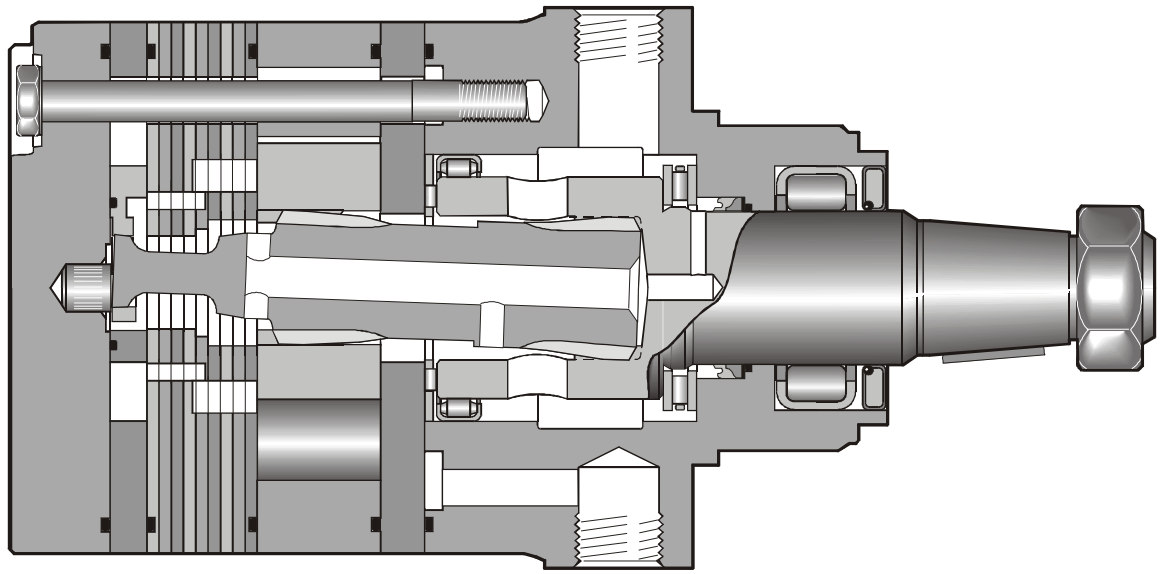
Code	Rear port
0	 Standard
1	

- **Langsamlaufender Gerotor-Motor**
- **Spezielle Orbital-Steuerung**
  Geringe interne Leckage
  Hoher volumetrischer Wirkungsgrad
- **Rollen im Rotorsatz**
  Reduzierte Reibung
  Lange Lebensdauer
- **Patentierte Hochdruckwellendichtung**
  Keine Leckölleitung
  Keine Rückschlagventile
- **Vielzahl von Varianten**
  Großer Einsatzbereich

- **Low Speed Gerotor Motor**
- **Zero leak commutation valve**
  For greater, more consistent volumetric efficiency
- **Roller vane rotor set**
  Reduces friction and internal leakage
  Maintaining efficiency throughout the life of the motor
- **A patented high-pressure shaft seal**
  No check valves needed
  No extra plumbing
- **Wide choice of displacement range, flange and shaft options**
  Greater efficiency in systems design to suit your application

- **Moteur lent systéme Gerotor**
- **Une distribution orbitale particuliére assure**
  fuites internes minimales
  rendements volumàtriques élevés
- **Le rotor à rouleaux**
  réduit les frottements
  augmente la durée de vié
- **Par l`utilisation de joints d`arbre haute pression brevetés**
  pas de conduite de drainage
  pas de clapets anti-retour
- **Gràce à de nombreuses variantes**
  larges domaines d`application

- **Motore orbitale a bassa velocità**
- **Una particolare distribuzione orbitale assicura**
  trafilamento ridotto
  elevato rendimento volumetrico
- **Con lo statore a rullini**
  si riduce l`attrito interno
  si mantiene nel tempo l`efficieza del motore
- **Una guarnizione di tenuta ad alta pressione brevettata elimina la necessità**
  di una linea di drenaggio esterna
  e di valvole di non ritorno
- **Un`ampia gamma di cilindrate, flange ed alberi**
  consentono scelte adeguate ad
  ogni esigenza costruttiva



Produktübersicht Motor range Gamme de moteurs Serie di motori	Geom. Schluckvolumen Geometric displacement Cylindrée Cilindrata	Max. Drehzahl Max. speed Vitesse de rotation maxi Velocità di rotazione max	Max. Schluckstrom Max. oil flow Debit d'huile maxi Portata max	Max. Druckgefälle Max. differential pressure Chute de pression maxi Caduta di pressione max	Max. Eingangsdruck Max. supply pressure Pression maxi entrée Pressione max in entrata	Max. Drehmoment Max. torque Couple maxi Coppia max	Max. Leistungsabgabe Max. performance Puissance de sortie maxi Potenza meccanica max	
TE / TJ	**cm³/rev**	**rev/min**	**cont / int l/min**	**cont / int bar**	**bar**	**cont / int Nm**	**max KW**	Radiale Wellen-belastung Side loads Charges latérales Carico radiale
TE/TJ50	50	725 / 935	35 / 45	140 / 175	200	90 / 115	11	**TE 7.000 N**
TE/TJ65	66	705 / 940	45 / 60	140 / 175	200	125 / 160	15	**TJ 14.000 N**
TE/TJ80	82	560 / 750	45 / 60	140 / 175	200	160 / 200	15	
TE/TJ100	98	470 / 630	45 / 60	140 / 175	200	190 / 240	15	
TE/TJ130	130	350 / 470	45 / 60	140 / 175	200	255 / 320	15	
TE/TJ165	163	280 / 375	45 / 60	140 / 175	200	310 / 395	15	
TE/TJ195	196	235 / 315	45 / 60	140 / 175	200	390 / 480	15	
TE/TJ230	228	265 / 330	60 / 75	120 / 150	200	380 / 480	15	
TE/TJ260	261	230 / 290	60 / 75	110 / 140	200	400 / 525	15	
TE/TJ295	293	200 / 255	60 / 75	100 / 130	200	410 / 520	13	
TE/TJ330	326	185 / 235	60 / 75	100 / 120	200	430 / 530	13	
TE/TJ365	370	150 / 200	60 / 75	95 / 110	200	467 / 558	11	
TE/TJ390	392	152 / 190	60 / 75	85 / 100	200	435 / 540	10	
TF	**cm³/rev**	**rev/min**	**cont / int l/min**	**cont / int bar**	**bar**	**cont / int Nm**	**max KW**	Radiale Wellen-belastung Side loads Charges latérales Carico radiale
TF 80	81	550/730	45/60	200/280	300	215/295	19	**TF 16.000 N**
TF 100	100	600/750	60/75	160/240	300	210/315	21	
TF 130	128	470/580	60/75	140/200	300	240/350	19	
TF 140	141	370/530	60/75	140/200	300	250/390	18	
TF 170	169	355/440	60/75	140/200	300	330/485	19	
TF 195	197	300/380	60/75	140/200	300	380/560	19	
TF 240	238	320/420	75/100	140/200	300	460/685	24	
TF 280	280	270/350	75/100	140/200	300	550/800	24	
TF 360	364	200/260	75/100	130/200	300	590/910	24	
TF 405	405	170/230	75/100	130/175	300	650/910	21	
TF 475	477	150/200	75/100	115/140	300	680/850	17	
TG/BG TH	**cm³/rev**	**rev/min**	**cont / int l/min**	**cont / int bar**	**bar**	**cont / int Nm**	**max KW**	Radiale Wellen-belastung Side loads Charges latérales Carico radiale
TG/BG, TH 140	140	530/710	75/100	200/280	300	400/ 545	33	**TG/BG 16.000 N**
TG/BG, TH 170	169	440/575	75/100	200/280	300	485/ 670	33	**TH 30.000 N**
TG/BG, TH 195	195	380/510	75/100	200/280	300	560/ 770	33	
TG/BG, TH 240	237	320/420	75/100	200/280	300	685/ 945	32	
TG/BG, TH 280	280	270/350	75/100	200/280	300	800/1100	31	
TG/BG, TH 335	337	225/290	75/100	200/280	300	980/1350	30	
TG/BG, TH 405	405	185/245	75/100	170/240	300	960/1350	27	
TG/BG, TH 475	476	160/240	75/115	140/200	300	960/1400	28	
TG/BG, TH 530	529	140/215	75/115	140/170	300	1050/1280	23	
TG/BG, TH 625	624	120/185	75/115	120/160	300	1040/1360	20	
TG/BG, TH 785	786	95/145	75/115	100/140	300	1150/1490	17	
TG/BG, TH 960	958	78/119	75/115	70/100	300	925/1390	12	
TK	**cm³/rev**	**rev/min**	**cont / int l/min**	**cont / int bar**	**bar**	**cont / int Nm**	**max KW**	Radiale Wellen-belastung Side loads Charges latérales Carico radiale
TK 250	251	520	114 / 133	240 / 310	330	815 / 1040	49	**TK 26.000 N**
TK 315	315	410	114 / 133	240 / 310	330	1030 / 1315	47	
TK 400	400	370	114 / 151	205 / 275	290	1150 / 1525	49	
TK 500	500	300	114 / 151	205 / 275	290	1440 / 1915	48	
TK 630	629	240	114 / 151	205 / 225	240	1620 / 1715	34	
TK 800	800	275	151 / 227	190 / 205	240	1915 / 2300	44	
TK 1000	1000	220	151 / 227	175 / 190	220	2410 / 2660	35	

int. = Intermittierende Werte maximal: 10% von jeder Betriebsminute.
Intermittent operation rating applies to 10% of every minute.
Fonctionnement interm.: 10% max. de chaque minute d`utilisation.
Servizio intermittente: 10% max di ogni minuto di utilizzazione.

Torqmotoren 3213.PM6.5 RH

Parker Hannifin GmbH
Hydraulic Controls Division
Kaarst, Germany

Availability						Code		
TF/DF	Clutch	TG/DG	TH	BG/BH	TL	Painted	Unpainted	Description
x	x	x	x	x	x	AAAA	AAAB	Black Paint
x	x	x	x	x	x	AAAC	-	Double Paint
x[9]	x	x[15]	x[15]	x[15]	x	AAAF	AABP	Castle Nut
x	x	x	x	x	x	AAAG	AAAH	Fluorocarbon Seals
x	x	x	x	x	x	AAAJ	AAFG	High Temperature Commutator Seal
x	x	x	x	x		AABJ	AABK	Free Running Rotorset
x[10]		x[10]	x[10]	x		AAAT	AAFX	Hot Oil Shuttle (11:00)
x		x				AANM	-	Seal saver for 1.25 taper shaft only
x				x		AANB	-	678 Nm (6000 in-lb) Holding Capacity
				x		AAMN	AANH	1808 Nm (16000 in-lb) Holding Capacity
x[9,10]		x[10,15]	x[10,15]	x	x	AAAU	AAGF	Bi-directional Shuttle (11:00*), Castle Nut
x		x	x	x	x	AAAW	-	Bi-directional Shuttle (11:00*), High Temperature Commutator Seal
x	x	x	x	x		AABL	AABM	Free Running Rotor Set & No Commutator Seal
x	x	x	x	x		AABT	-	No Nut
x		x	x	x	x	AACP	-	Free Running Rotor Set, Castle Nut
x	x	x	x	x	x	-	AADJ	High Temperature Commutator Seal, Castle Nut
x	x	x		x	x	AAFW	AAFA	Fluorocarbon (Viton) Seals, High Temperature Commutator Seal
x	x	x	x	x	x	-	AAFX	Bidirectional shuttle (11:00*)
x		x	x	x	x	AAHU	-	High Temperature Commutator Seal, No Nut
x		x	x	x	x	-	AAJL	No Nut
x		x	x	x	x	AALD	-	Bidirectional shuttle (1:00*), Castle Nut
x		x	x	x	x	AALE	-	Bidirectional shuttle (1:00*)
x		x	x	x		AALF	-	No Commutator Seal
x		x	x	x		-	AALP	Free Running Rotor Set, Fluorocarbon (Viton) Seals, High Temperature Commutator Seal
				x		AAML	-	(IBM) Bidirectional shuttle (11:00*), Castle Nut, 6 Brake Springs Installed
				x		AAMM	-	(IBM) Castle Nut, 6 brake springs installed, (9000 in-lbs hold cap)
				x		AAMN	-	(IBM) 'Yellow' brake springs (8), (16,000 in-lbs hold cap)
				x		AAMP	-	(IBM) 'Yellow' brake springs (8), (16,000 in-lbs hold cap), Castle Nut
x[10]	x	x[10]	x[10]	x[10]	x	BBBA	BBBM	69 Bar (1000 PSI) Internal Bidirectional Relief
x[10]	x	x[10]	x[10]	x[10]	x	BBBG	BBBJ	103 Bar (1500 PSI) nternal Bidirectional Relief
x[10]	x	x[10,16]	x[10,16]	x[10,16]	x	BBBB	BBBN	138 Bar (2000 PSI) Internal Bidirectional Relief
x[10,12]	x[14]	x[10,18]	x[10,18]	x[10,18]	x	BBBC	BBBF	207 Bar (3000 PSI) Internal Bidirectional Relief
x[10,13]	x[13]	x[10,19]	x[10,19]	x[10,19]		BBBD	BBBW	276 Bar (4000 PSI) Internal Bidirectional Relief
x[10,11]	x[14]	x[10,17]	x[10,17]	x[10,17]	x	BBDL	BBCG	2500 PSI Int Bidirectional Relief
x		x	x	x	x	-	BBCW	3000 PSI Int Bidirectional Relief, No Nut
x		x	x	x	x	BBCX	-	2500 PSI Int Bidirectional Relief, No Nut
x		x	x	x	x	-	BBDA	3000 PSI Int Bidirectional Relief, Castle Nut
x		x	x	x	x	-	BBDH	2500 PSI Int Bidirectional Relief, Castle Nut
x[10]	x	x	x	x	x	BBDN	-	1750 PSI Int Bidirectional Relief
x	x	x	x	x	x	-	BBDP	725 PSI Int Bidirectional Relief
x		x	x	x		BBDW	-	725 PSI CCW Int Bidirectional Relief (045134)
x		x				FSAA	FSAB	Speed Sensor
x		x				FSAJ	FSAH	Int Short Speed Sensor, Castle Nut
x		x	x			-	AAUY	Complete Motor Nickel Plated, 40 um, Except Shaft
Consult factory for other positions and combinations.								

[9] Available only with shaft code 08
[10] Not available with ports code A, B or E
[11] Not available with displacement 0475
[12] Not available with displacements 0360, 0405 or 0475
[13] Only available with displacement 0080
[14] Not available with displacements 0365
[15] Available only with shaft codes 08 and 19
[16] Not available with displacement 0960
[17] Not available with displacements 0625, 0785 or 0960
[18] Not available with displacements 0530, 0625, 0785 or 0960
[19] Not available with displacements 0360, 0405, 0530, 0625, 0785 or 0960