



**Torqmotor™**  
**Series TF/TG/TH/TK**  
*max. 49 kW*

*Catalogue HY11-3213/EU*  
*Ed. 06 / 2003*



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**FR Note**

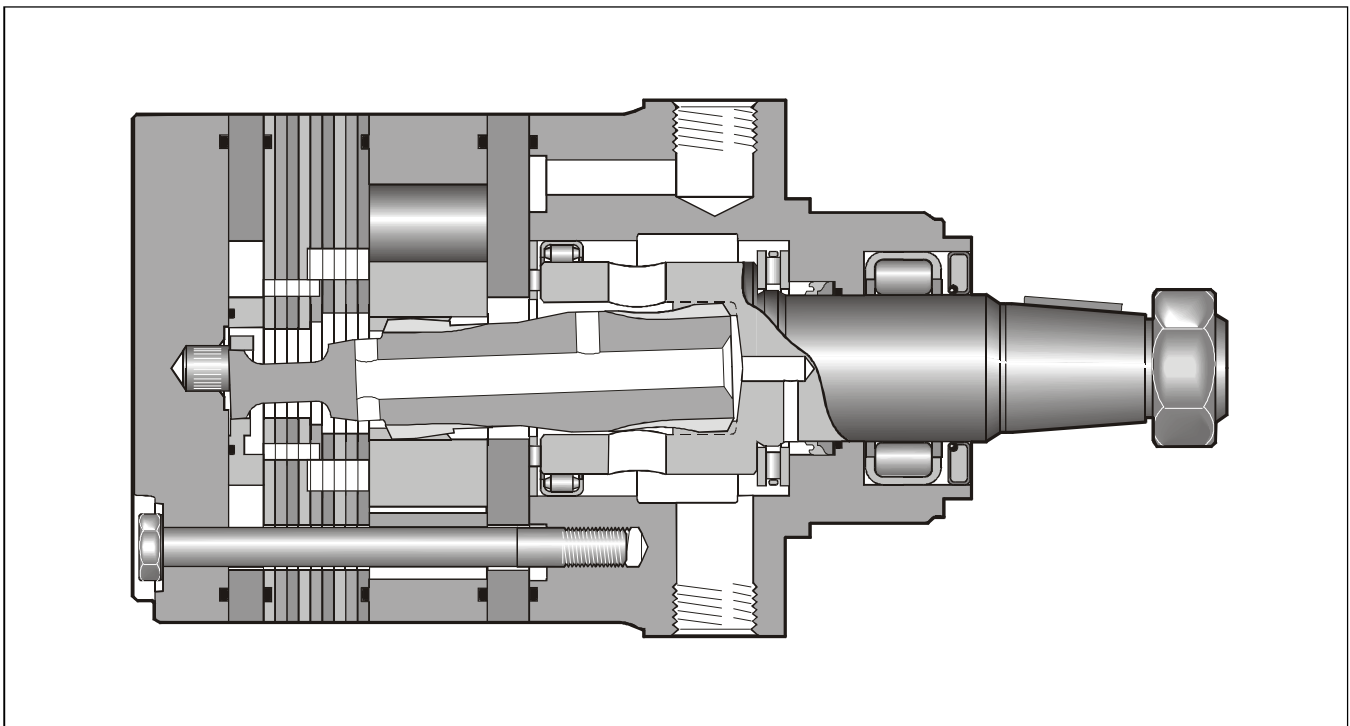
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<b>Description</b>				<b>Series</b>	<b>Page</b>
<b>DE</b>	<b>UK</b>	<b>FR</b>	<b>IT</b>		
Merkmale	Features	Caractéristique	Carratteristiche	<b>TF</b>	<b>4</b>
Kenndaten	Performance	Puissance	Prestazioni	<b>TF</b>	<b>5</b>
Gehäuse	Housing	Carter	Corpo	<b>TF</b>	<b>6</b>
Anschlüsse	Ports	Orifices	Conessioni	<b>TF</b>	<b>8</b>
Endanschluss	Rear Ports	Orifices arrières	Conessioni posteriori	<b>TF</b>	<b>9</b>
Abtriebswelle	Coupling shaft	Arbre	Alberi	<b>TF</b>	<b>10</b>
Diagramme	Diagrams	Diagrammes	Diagrammi	<b>TF</b>	<b>12</b>
Lebensdauer	Life Time	Durée de vie	Durata	<b>TF</b>	<b>14</b>
Bestellschlüssel	Ordering Code	Système d. commande	Sistema di ordinazione	<b>TF</b>	<b>15</b>
Merkmale	Features	Caractéristique	Carratteristiche	<b>TG</b>	<b>16</b>
Kenndaten	Performance	Puissance	Prestazioni	<b>TG</b>	<b>17</b>
Gehäuse	Housing	Carter	Corpo	<b>TG</b>	<b>18</b>
Anschlüsse	Ports	Orifices	Conessioni	<b>TG</b>	<b>20</b>
Endanschluss	Rear Ports	Orifices arrières	Conessioni posteriori	<b>TG</b>	<b>21</b>
Abtriebswelle	Coupling shaft	Arbre	Alberi	<b>TG</b>	<b>22</b>
Diagramme	Diagrams	Diagrammes	Diagrammi	<b>TG</b>	<b>23</b>
Lebensdauer	Life Time	Durée de vie	Durata	<b>TG</b>	<b>25</b>
Bestellschlüssel	Ordering Code	Système d. commande	Sistema di ordinazione	<b>TG</b>	<b>26</b>
Merkmale	Features	Caractéristique	Carratteristiche	<b>TH</b>	<b>27</b>
Kenndaten	Performance	Puissance	Prestazioni	<b>TH</b>	<b>28</b>
Gehäuse	Housing	Carter	Corpo	<b>TH</b>	<b>29</b>
Anschlüsse	Ports	Orifices	Conessioni	<b>TH</b>	<b>30</b>
Abtriebswelle	Coupling shaft	Arbre	Alberi	<b>TH</b>	<b>30</b>
Endanschluss	Rear Ports	Orifices arrières	Conessioni posteriori	<b>TH</b>	<b>31</b>
Diagramme	Diagrams	Diagrammes	Diagrammi	<b>TH</b>	<b>32</b>
Lebensdauer	Life Time	Durée de vie	Durata	<b>TH</b>	<b>34</b>
Bestellschlüssel	Ordering Code	Système d. commande	Sistema di ordinazione	<b>TH</b>	<b>35</b>
Merkmale	Features	Caractéristique	Carratteristiche	<b>TK</b>	<b>36</b>
Kenndaten	Performance	Puissance	Prestazioni	<b>TK</b>	<b>37</b>
Gehäuse	Housing	Carter	Corpo	<b>TK</b>	<b>38</b>
Endanschluss	Rear Ports	Orifices arrières	Conessioni posteriori	<b>TK</b>	<b>39</b>
Abtriebswelle	Coupling shaft	Arbre	Giunto	<b>TK</b>	<b>40</b>
Diagramme	Diagrams	Diagrammes	Diagrammi	<b>TK</b>	<b>41</b>
Lebensdauer	Life Time	Durée de vie	Durata di vita	<b>TK</b>	<b>42</b>
Bestellschlüssel	Ordering Code	Système d. commande	Sistema di ordinazione	<b>TK</b>	<b>43</b>
Beispiel	Example	Exemple	Esempio	<b>TF/TG/TH/TK</b>	<b>44</b>
Schockventil	Crossover relief valve	Valve antichoc	Valvola anti-urto	<b>TF / TG</b>	<b>45</b>
				<b>TF / TG / TH</b>	<b>46</b>
				<b>TF / TG</b>	<b>47</b>
Spülventil	Hot oil shuttle valve	Valve de rinçage	Valvola di scambio	<b>TF / TG</b>	<b>48</b>
				<b>TH</b>	<b>49</b>
Drehzahlsensor	Speed sensor	Compte-tours	Contagiri	<b>TF / TG</b>	<b>49</b>
Lamellenbremse	Multiple disc brake	Frein multi-disque	Freno multidisco	<b>TF</b>	<b>51</b>
				<b>TF / TG</b>	<b>52</b>
Merkmale	Features	Caractéristique	Carratteristiche	<b>BG</b>	<b>55</b>
Bestellschlüssel	Ordering Code	Système d. commande	Sistema di ordinazione	<b>BG</b>	<b>56</b>
Optionen Codes	Option Codes	Option Codes	Codici opzioni	<b>TF / TG / TH</b>	<b>57</b>
Betrieb	Operation	Mise en service	Istruzioni pez l' uso	<b>all</b>	<b>58</b>
Produktübersicht	Motor range	Gamme de moteurs	Gamma di motori	<b>all</b>	<b>59</b>

- **Langsamlaufender Gerotor-Motor**
  - **Spezielle Orbital-Steuerung**  
Geringe interne Leckage  
Hoher volumetrischer Wirkungsgrad
  - **Rollen im Rotorsatz**  
Reduzierte Reibung  
Lange Lebensdauer
  - **Patentierter 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 système Gerotor**
  - **Une distribution orbitale particulière assure**  
fuites internes minimales  
rendements volumétriques élevés
  - **Le rotor à rouleaux**  
réduit les frottements  
augmente la durée de vie
  - **Par l'utilisation de joints d'arbre haute pression brevetés**  
pas de conduite de drainage  
pas de clapets anti-retour
  - **Grâce 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'efficienza 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

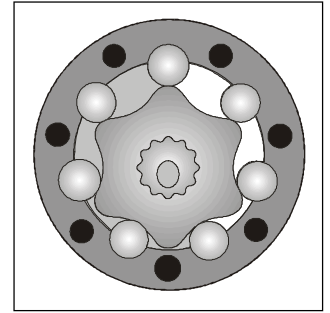
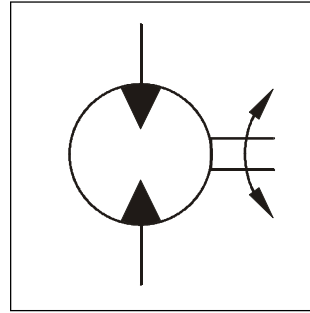


Torqmotoren 3213.PM6.5 RH

**Performance**

**Torqmotor  
Series TF**

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	cm <sup>3</sup> /U cm <sup>3</sup> /rev cm <sup>3</sup> /tr cm <sup>3</sup> /giro	cont / int U/min rev/min tr/min giri/min	cont / int l/min	cont / int bar	max bar	cont / int Nm	cont / int max. KW	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.

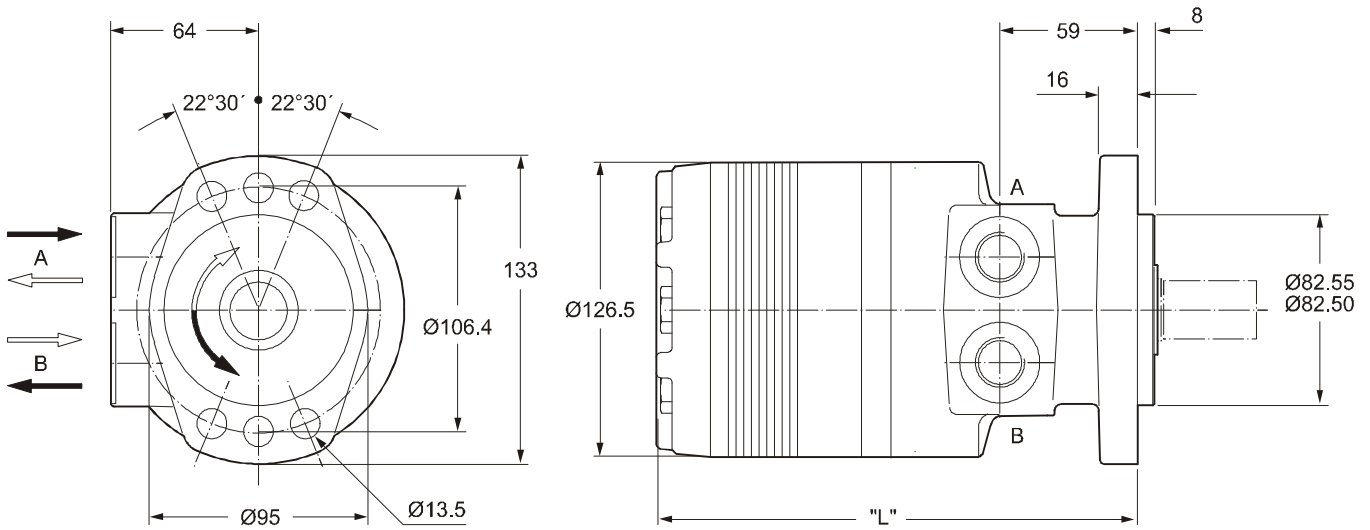
Fonctionnement interm.: 10% max. de chaque minute d'utilisation.

Servizio intermittente: 10% max di ogni minuto di utilizzazione.

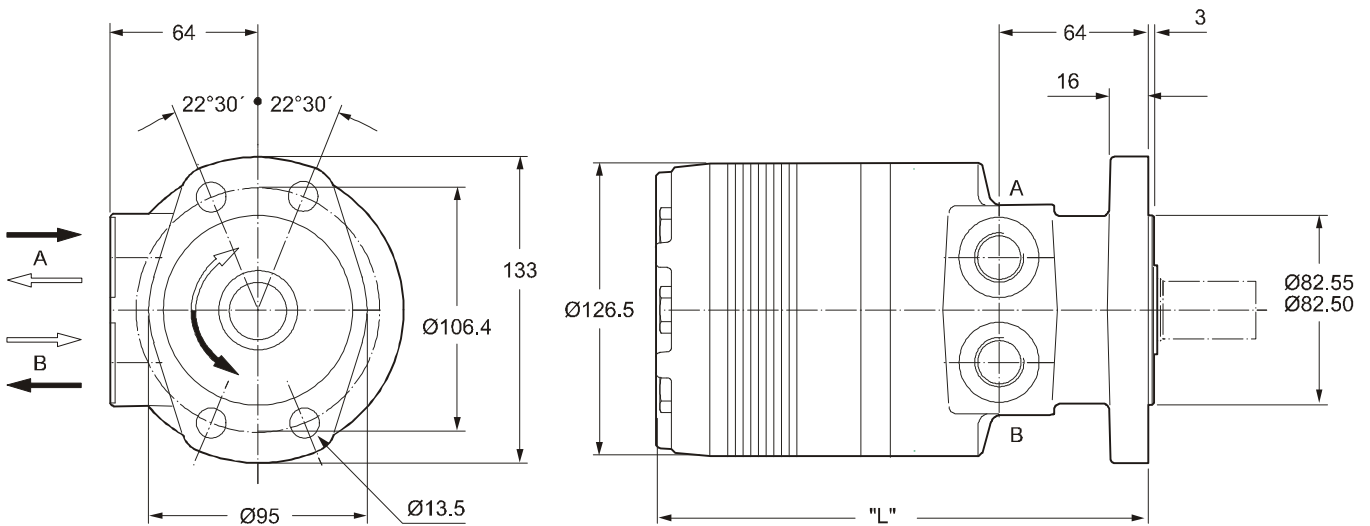
Torqmotoren 3213.PM6.5 RH



**Code E**

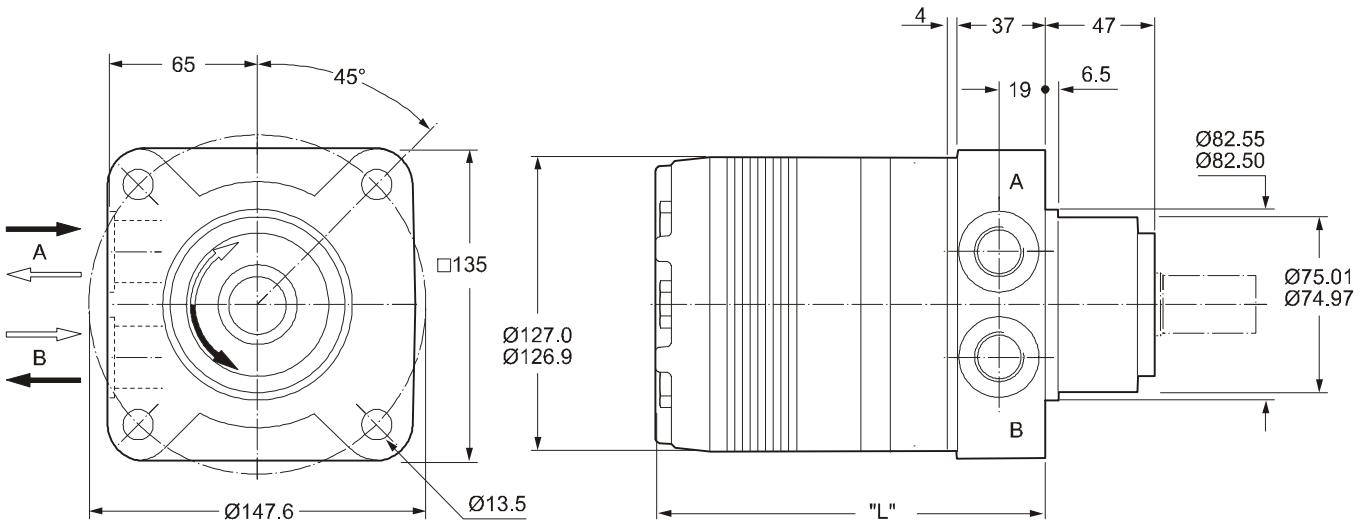


**Code M**

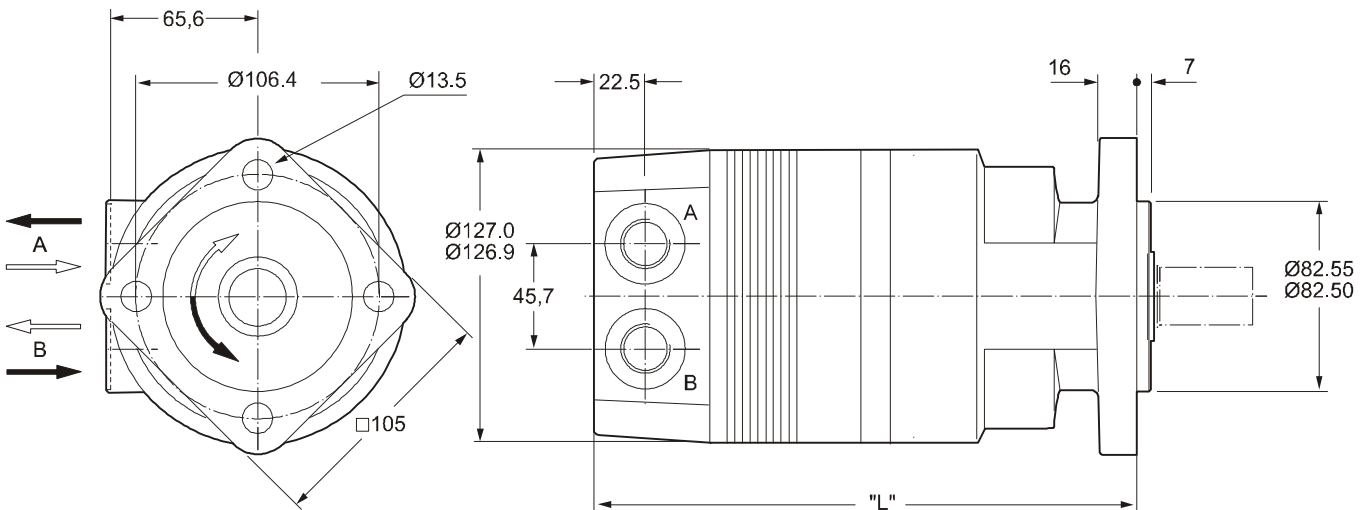


Gewicht / Weight		TF80	TF100	TF130	TF140	TF170	TF195	TF240	TF280	TF360	TF405	TF475
Poids / Peso	kg	13.6	13.7	13.9	14.0	14.2	14.7	15.0	15.5	16.0	16.5	17.5
Code E	"L" mm	186	186	189	191	194	197	202	206	215	220	229
Code M	"L" mm	191	191	194	196	199	202	207	212	220	225	234

**Code H**



**Code V**



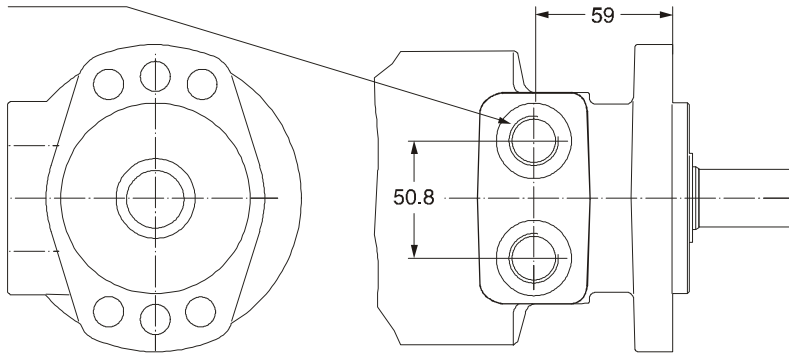
Gewicht / Weight		TF80	TF100	TF130	TF140	TF170	TF195	TF240	TF280	TF360	TF405	TF475
Poids / Peso	kg	14.0	14.0	14.2	14.3	14.6	14.9	15.3	15.6	16.3	17.0	17.5
Code H	"L" mm	146	146	149	151	154	157	162	167	175	180	189
Code V	"L" mm	213	213	216	218	221	224	229	233	242	247	256

Torqmotoren 3213.PM6.5 RH

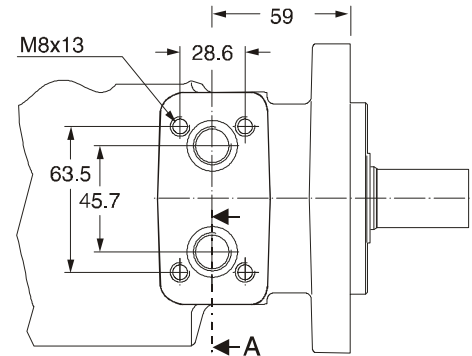


**Code W**

G1/2 x 15

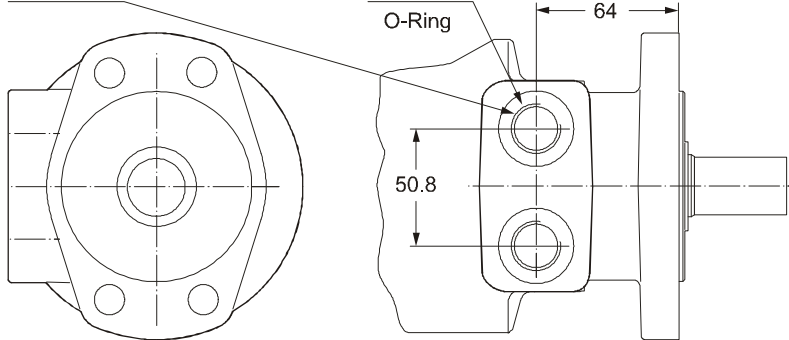


**Code N**



**Code W**

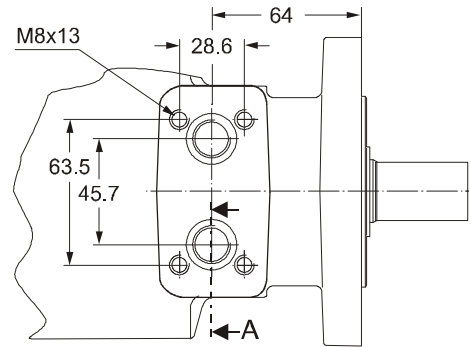
G1/2 x 15



**Code V**

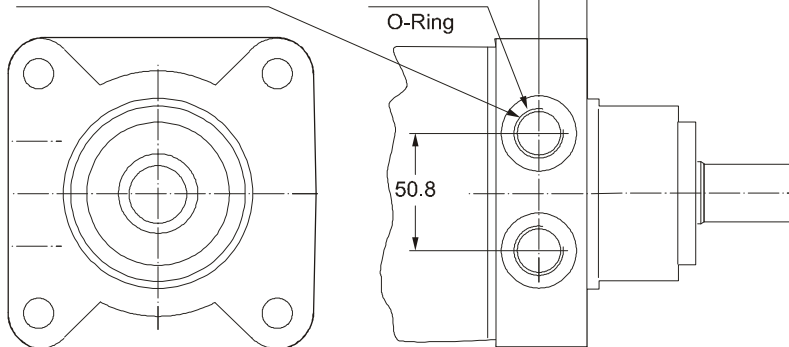
7/8-14UNF,  
O-Ring

**Code N**



**Code W**

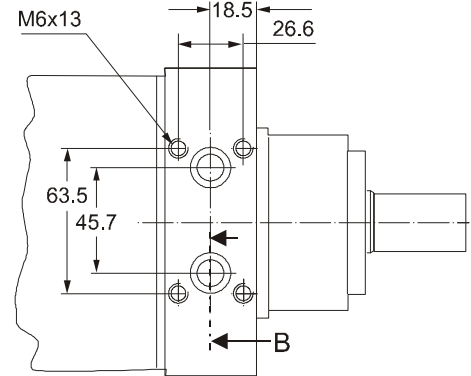
G1/2 x 15



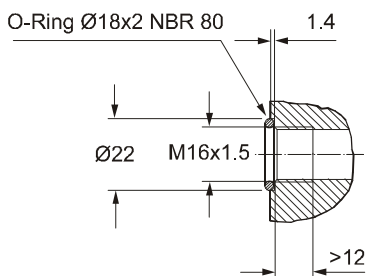
**Code V**

7/8-14UNF,  
O-Ring

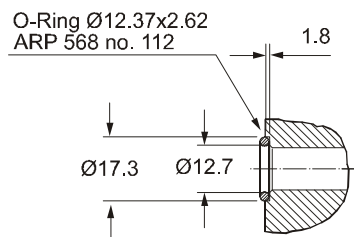
**Code K**



**Section A**



**Section B**



Zum Motor mit Universalanschluß werden 2 O-Ringe geliefert.

Motor with manifold mount is supplied with 2 O-rings.

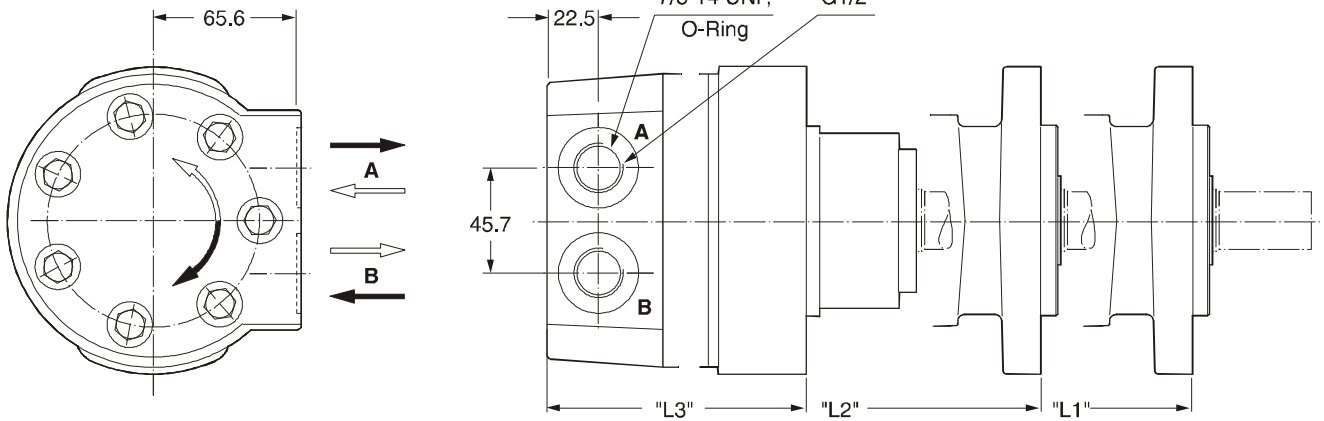
Deux joints toriques sont livrés avec les moteurs au plan de raccordement universel.

Il blocchetto connessioni è corredato da 2 OR.

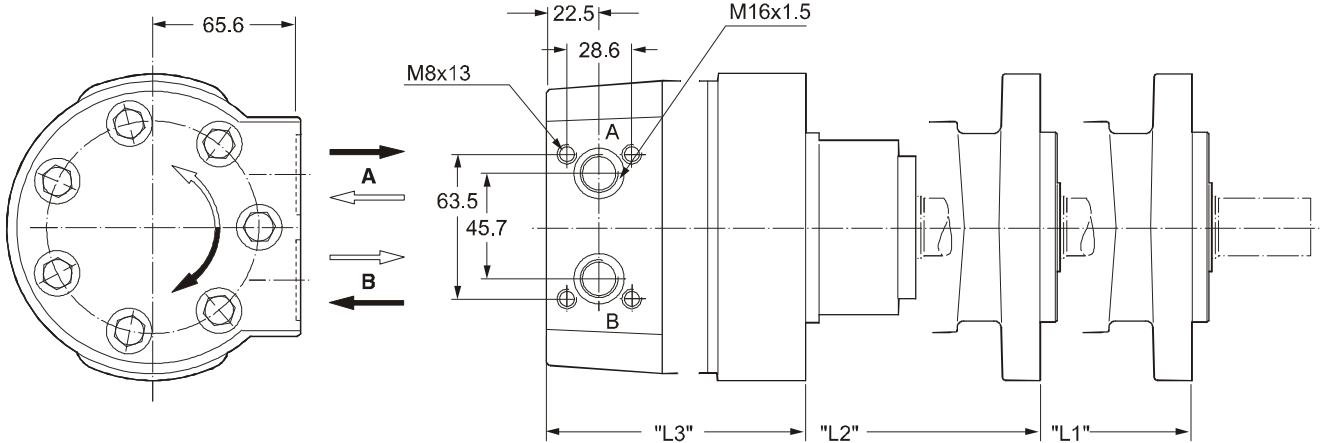


**Code B** 7/8-14UNF

**Code X** G 1/2

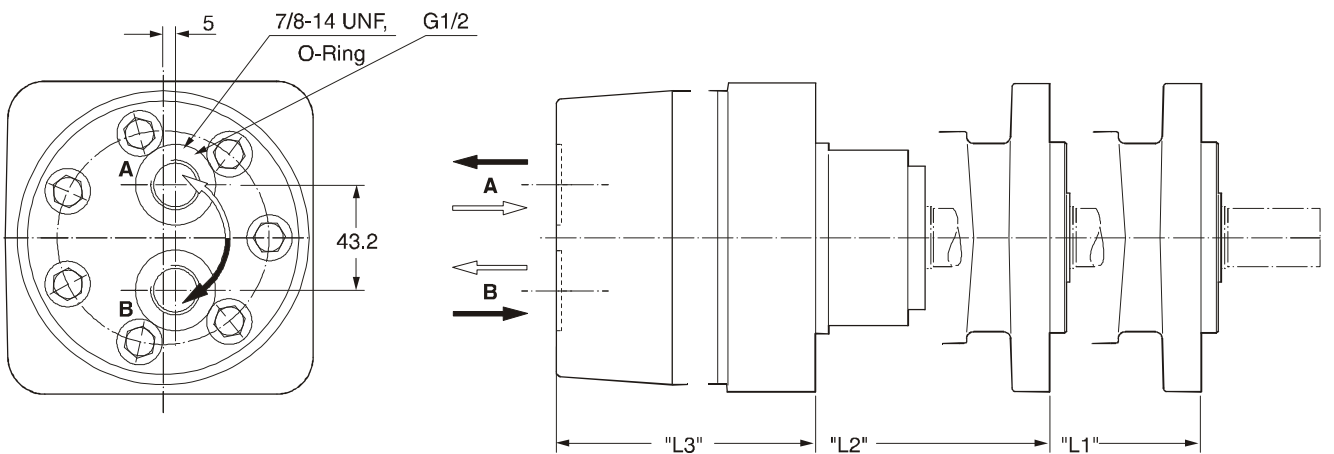


**Code L**



**Code A** 7/8-14UNF

**Code Y** G 1/2

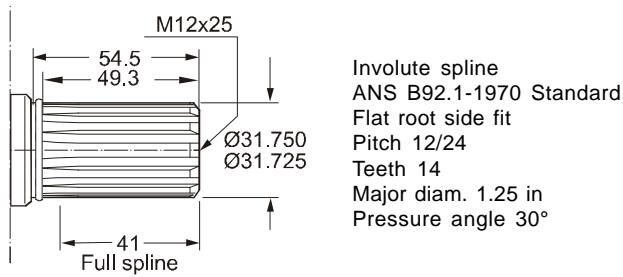


Gewicht / Weight		TF80	TF100	TF130	TF140	TF170	TF195	TF240	TF280	TF360	TF405	TF475
Poids / Peso	kg	15.3	15.4	15.6	15.7	16.0	16.3	16.7	17.0	17.8	18.3	19.0
Code	"L1" mm	211	211	214	216	219	222	227	231	240	245	254
B, X, L,	"L2" mm	216	216	219	221	224	227	232	236	246	250	259
A, Y	"L3" mm	170.2	170.2	173.3	175.1	178.1	181.4	186.0	190.8	200.5	204.5	213.2

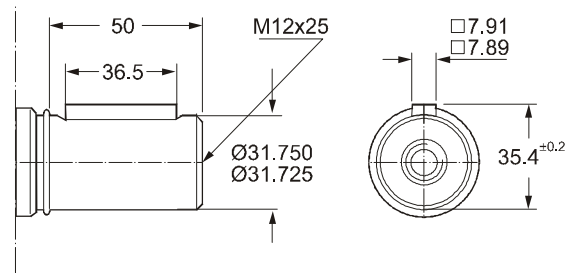
Torqmotoren 3213.PM6.5 RH



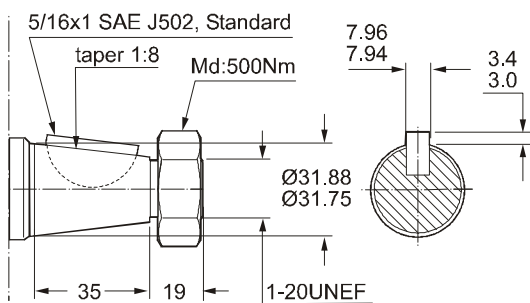
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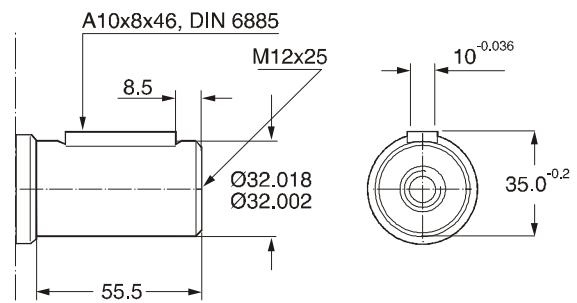
**Code 45**



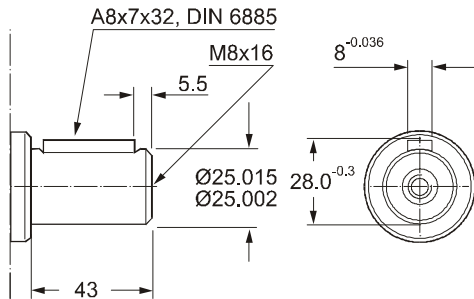
**Code 08**



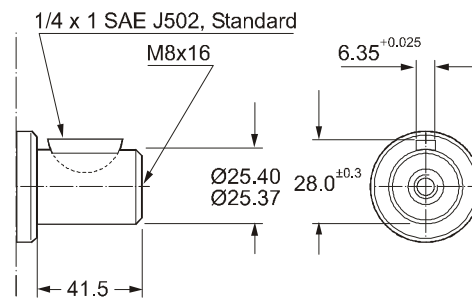
**Code 46**



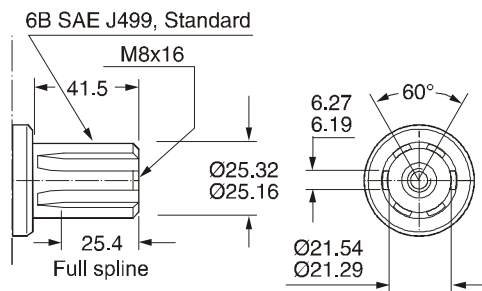
**Code 26**



**Code 47**



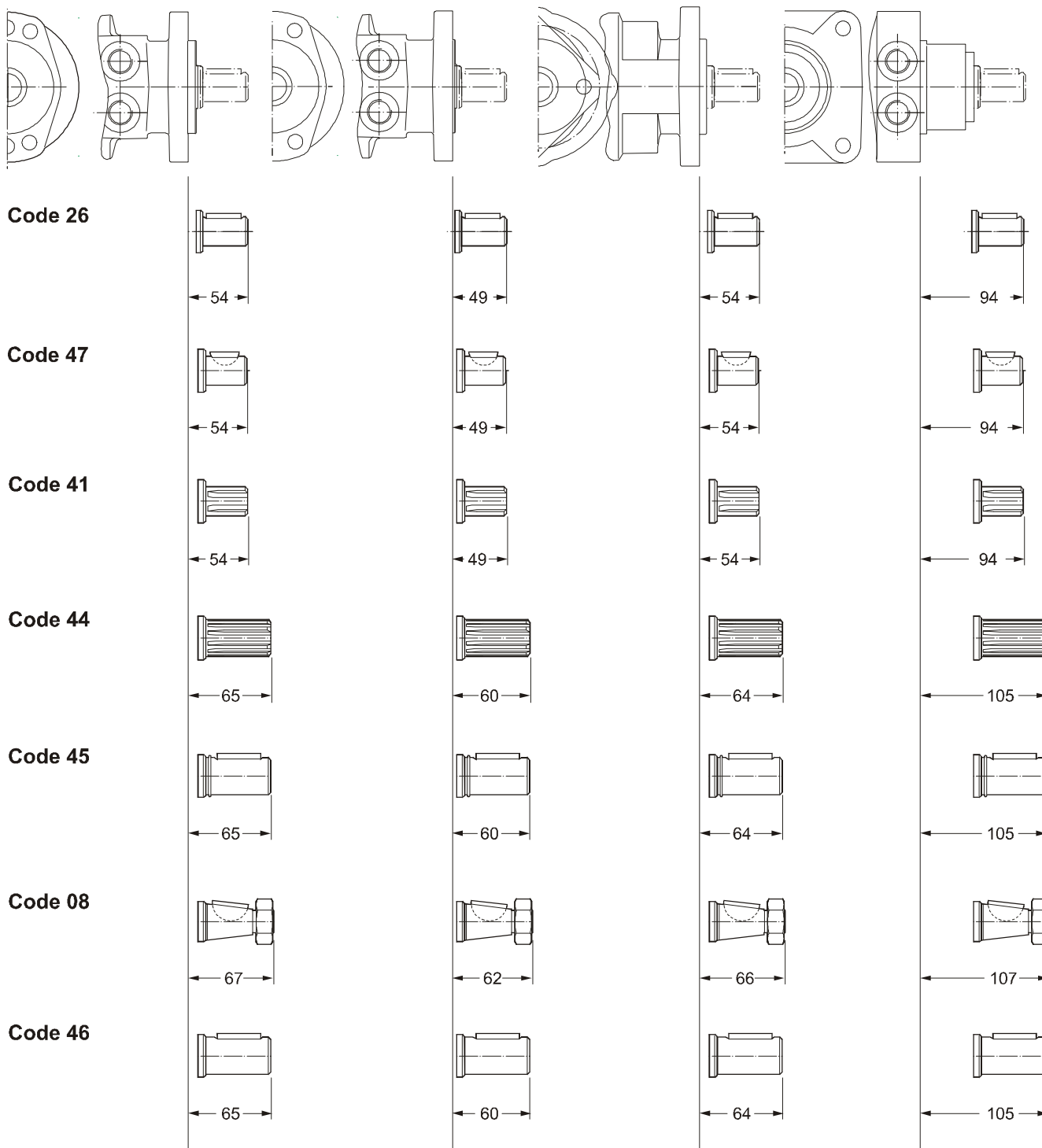
**Code 41**



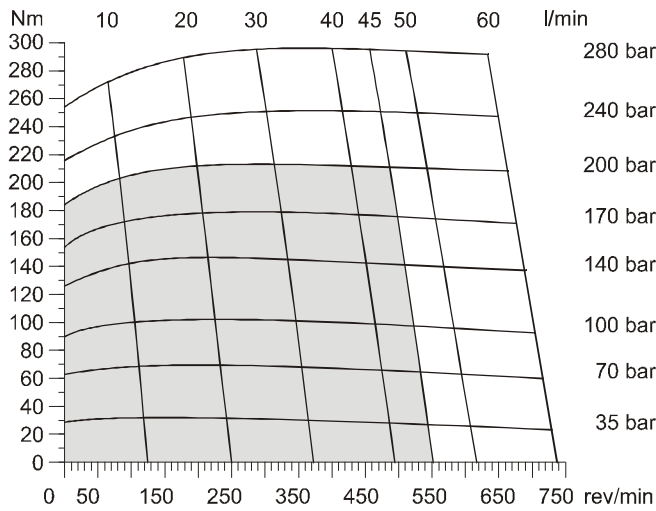
**Codes 26, 41, 47**

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

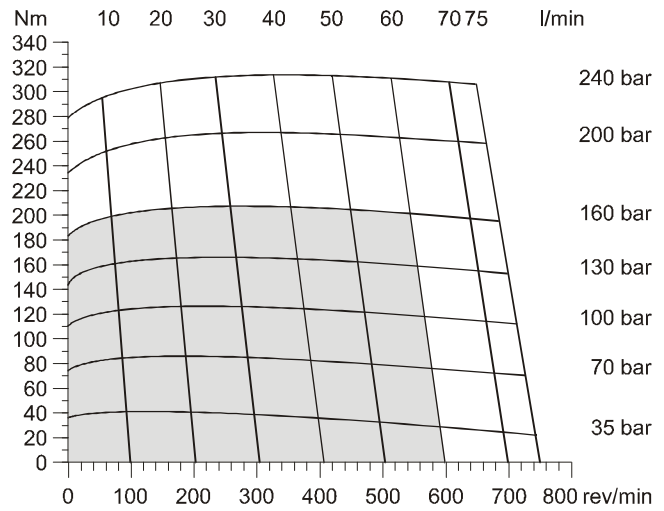
} 450/550 Nm



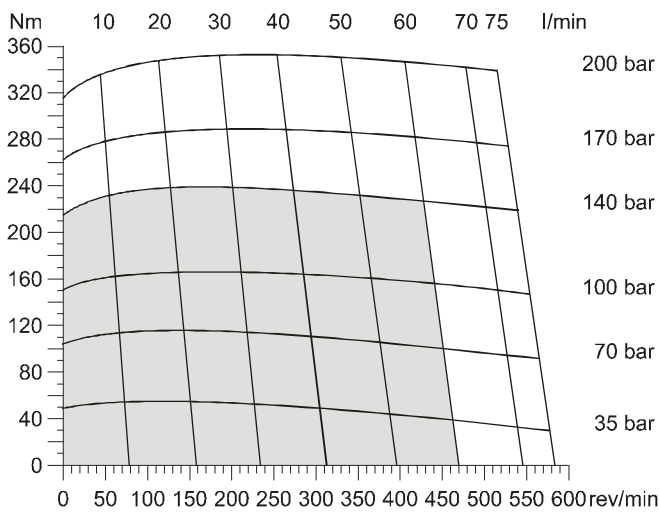
**TF 80**



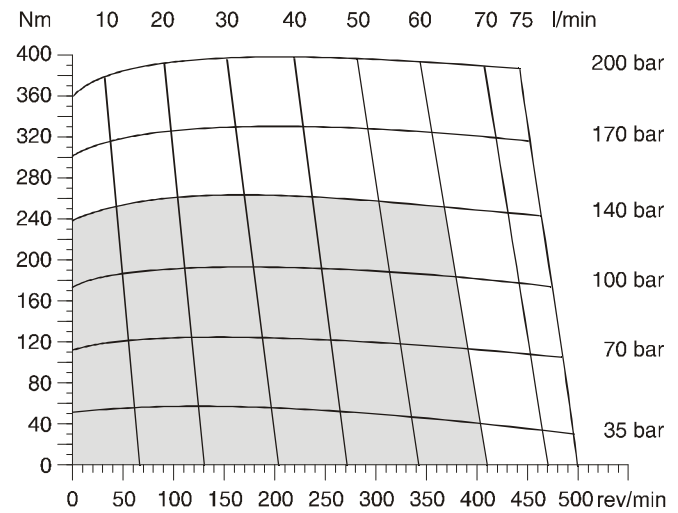
**TF 100**



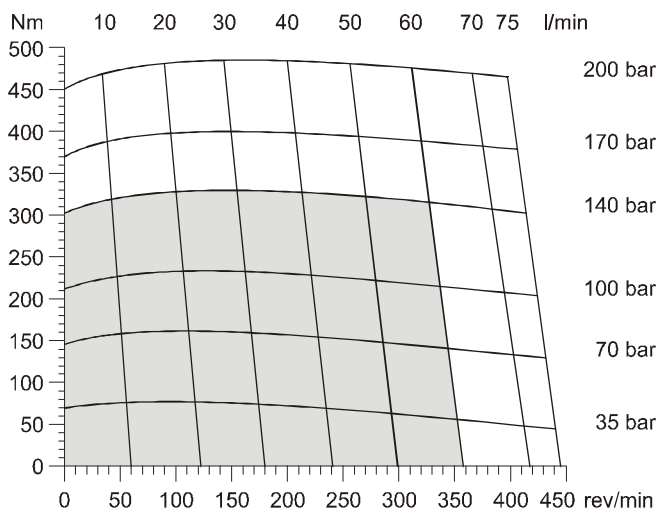
**TF 130**



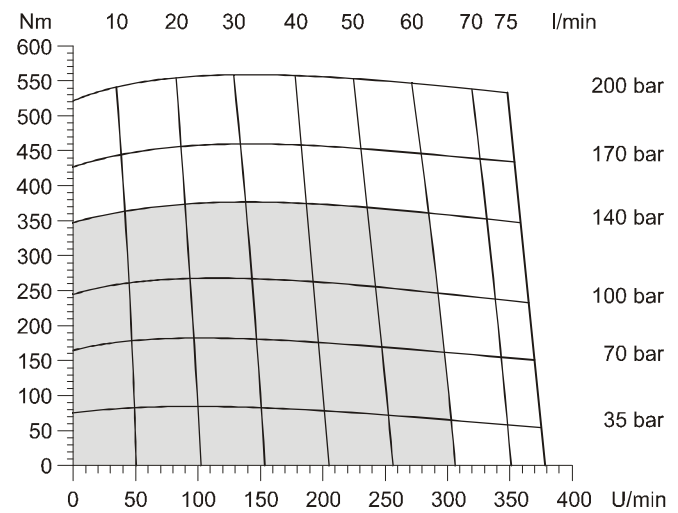
**TF 140**



**TF 170**



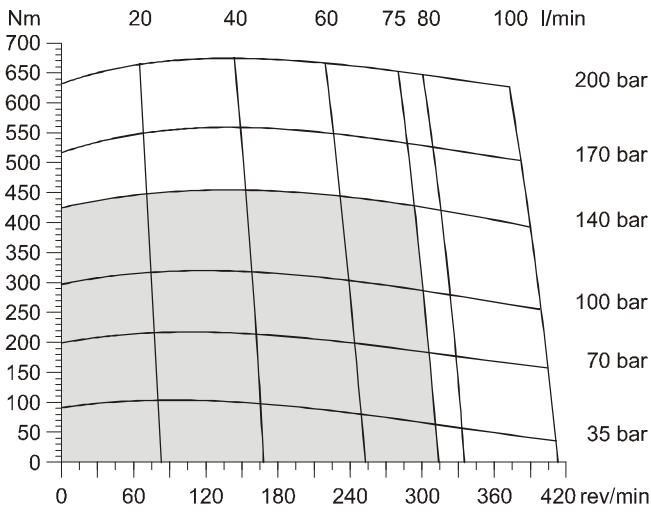
**TF 195**



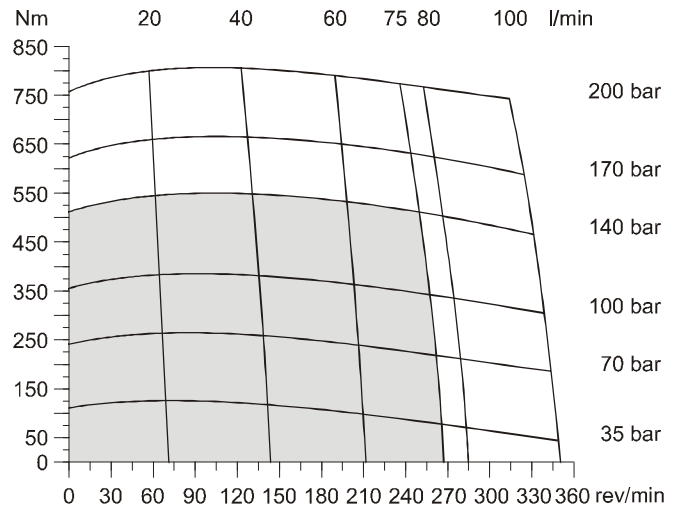
■ Cont.    □ Int.

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.

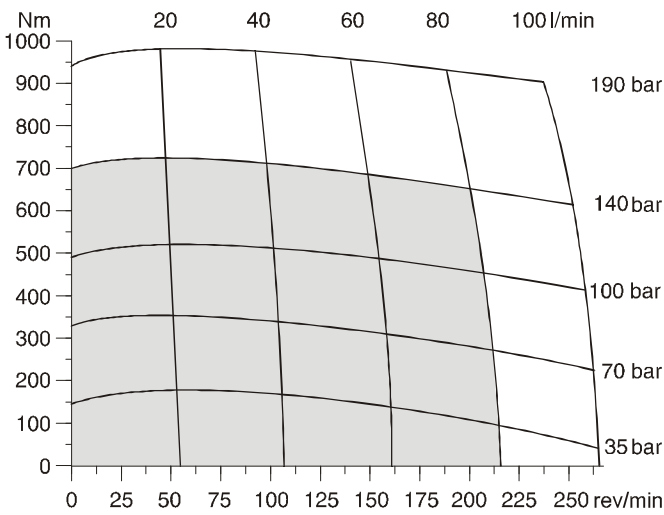
**TF 240**



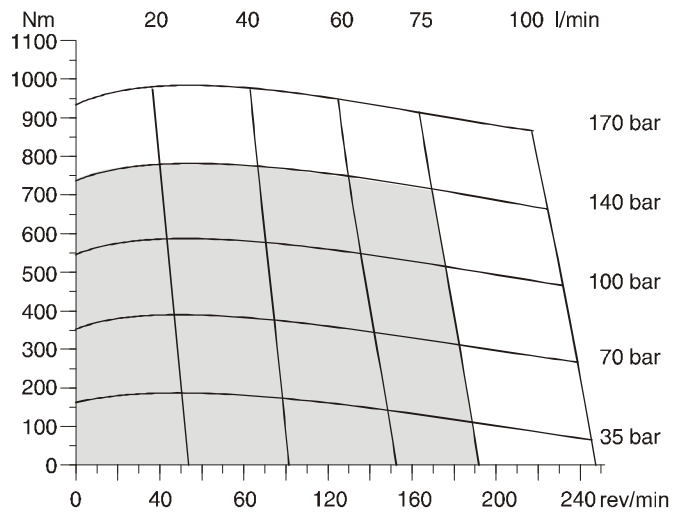
**TF 280**



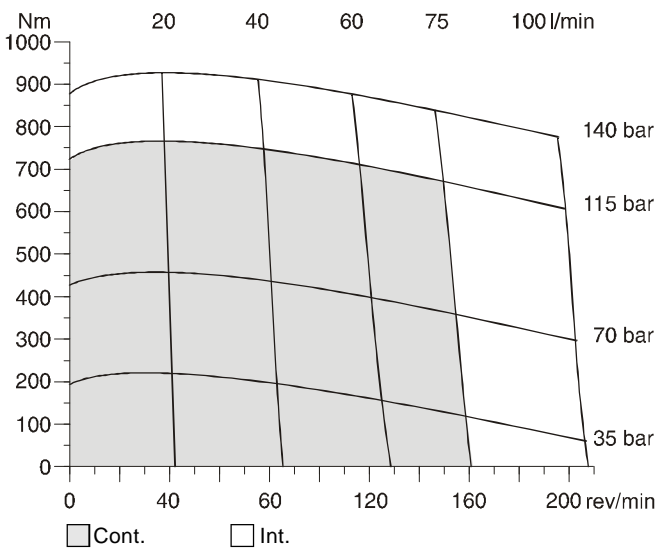
**TF 360**



**TF 405**

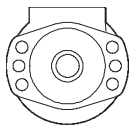


**TF475**

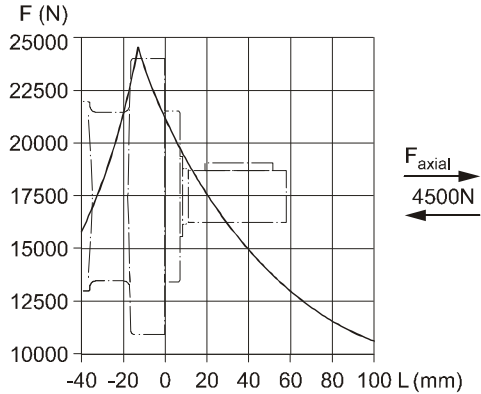


int. =  
 Intermittierende Werte maximal: 10% von jeder Betriebsminute.  
 Intermittent operation rating applies to 10% of every minute.  
 Fonctionnement interm.: 10% max. de chaque minute d'utilisation.  
 Servizio intermittente: 10% max di ogni minuto di utilizzazione.

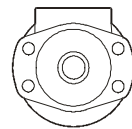
Code E



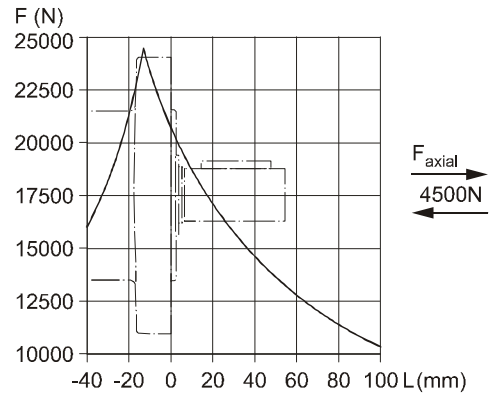
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 1.10 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



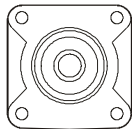
Code M



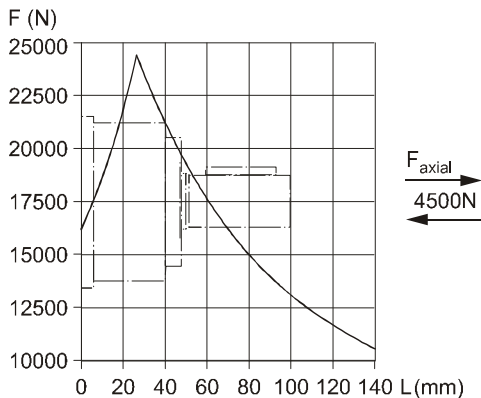
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 1.16 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



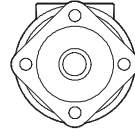
Code H



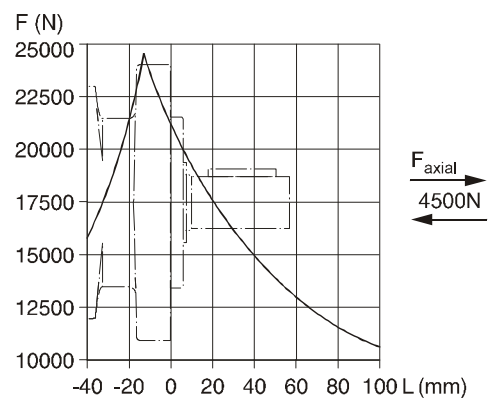
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 0.56 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



Code V



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



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  $F_R$ .

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  $F_R$ .

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 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.  
The preceding formulas are valid for a B10 duration of life.  
Les formules précédentes sont valables pour une durée de vie B10.  
Le formule precedenti sono valide per una durata della vita B10.

$L_h$  = h  
 $L$  = mm  
 $F_R$  = F (N)  
 $n$  = rev/min



**Serie** Series Série Serie  
**Schluckvolumen** Displacement Cylindrée Cilindrata  
**Gehäuse** Housing Carter Corpo motore  
**Anschluß** Ports Plan de raccordement Conessioni  
**Welle** Shaft Arbre Albero  
**Drehrichtung** Direction of rotation Direction de rotation Direzione di rotazione  
**Option code**

Code	cm <sup>3</sup> /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 <sup>1)</sup>	

Code	Front port
W	G 1/2
V	7/8-14 UNF O-Ring
N <sup>2)</sup>	Universal-M8x13
K <sup>3)</sup>	Universal-M6x12

<sup>2)</sup> Nicht verfügbar für Gehäuse "H"  
 Not possible for housing "H"  
 Pas disponible pour carter "H"  
 Non disponibile con il corpo codice "H"  
<sup>3)</sup> 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	25
47	25.4
41	6B SAE
44	Pitch 12/24
45	31.75
08	
46	32

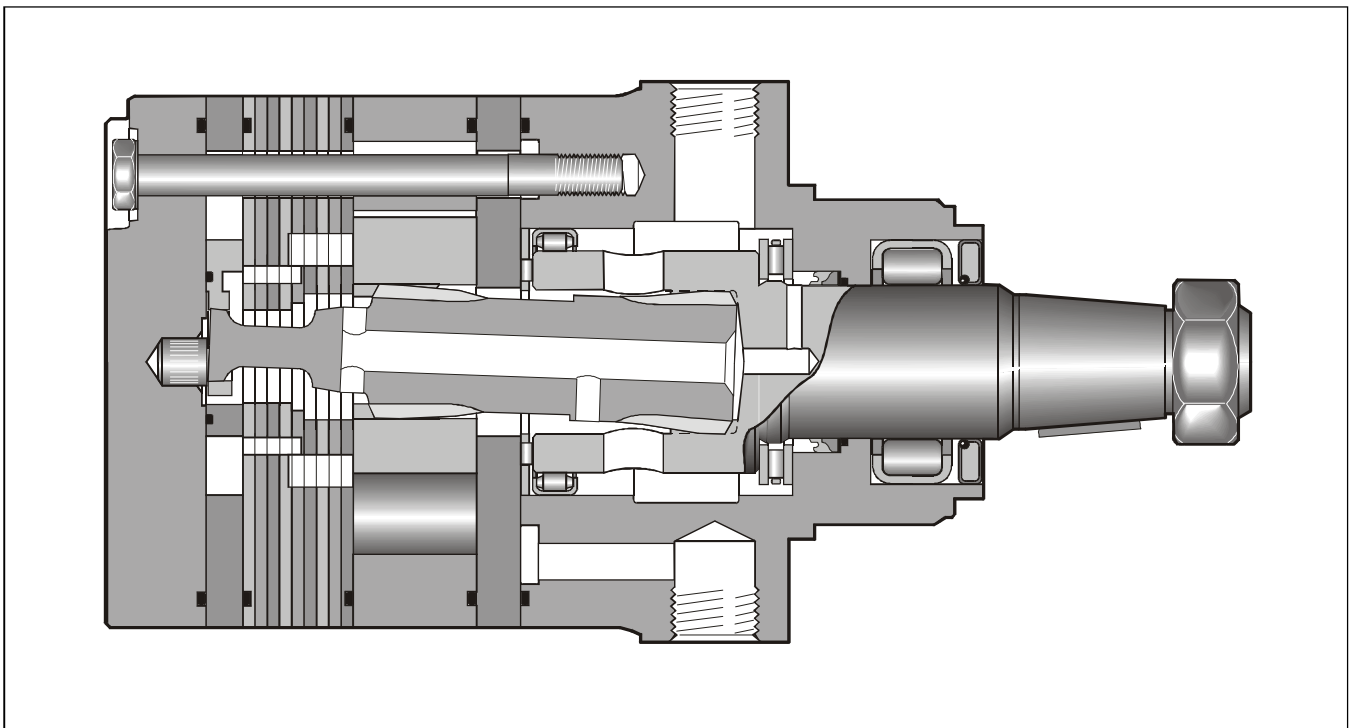
Code	Front port
0	Standard
1	

Code	Rear port
0	Standard
1	

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

<sup>1)</sup> Nur verfügbar mit Endanschluß  
 Only possible with rear port  
 Possible seulement avec orifice arrière  
 Possible solo con connessioni Posteriori

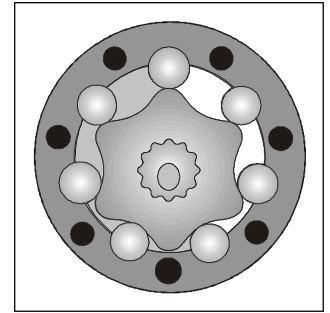
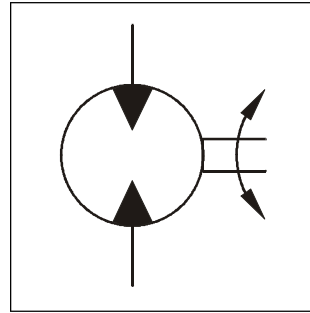
- **Langsamlaufender Gerotor-Motor**
- **Spezielle Orbital-Steuerung**  
Geringe interne Leckage  
Hoher volumetrischer Wirkungsgrad
- **Rollen im Rotorsatz**  
Reduzierte Reibung  
Lange Lebensdauer
- **Patentierte Hochdruckwellendichtung**  
Keine Leckölleitung  
Keine Rückschlagventile
- **Vielzahl von Varianten**  
Großer Einsatzbereich
  
- **Moteur lent système Gerotor**
- **Une distribution orbitale particulière assurée**  
fuites internes minimales  
rendements volumétriques élevés
- **Le rotor à rouleaux**  
réduit les frottements  
augmente la durée de vie
- **Par l'utilisation de joints d'arbre haute pression brevetés**  
pas de conduite de drainage  
pas de clapets anti-retour
- **Grâce à de nombreuses variantes**  
larges domaines d'application
  
- **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
  
- **Motore orbitale a bassa velocità**
- **Una particolare distribuzione orbitale assicurata**  
trafilamento ridotto  
elevato rendimento volumetrico
- **Con lo statore a rullini**  
si riduce l'attrito interno  
si mantiene nel tempo l'efficienza 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 cilindrata, flange ed alberi**  
consentono scelte adeguate ad ogni esigenza costruttiva



Torqmotoren 3213.PM6.5 RH



Drehzahl Speed Vitesse de rotation Velocità di rotazione	5...710 rev/min
Schluckstrom Oil flow Débit d'huile Portata	max. 115 l/min
Eingangsdruck Supply pressure Pression entrée Pressione in entrata	max. 300 bar
Drehmoment Torque Couple Coppia	max. 1490 Nm
Seitenlast Side load Charges latérales Carico radiale	max. 16.000 N



Motor series TG	cm <sup>3</sup> /U cm <sup>3</sup> /rev cm <sup>3</sup> /tr cm <sup>3</sup> /giro	cont / int U/min rev/min tr/min giri/min	cont / int l/min	cont / int bar	max bar	cont / int Nm	cont / int max. KW	cont / int Nm
TG 140	140	530/710	75/100	200/280	300	400/ 545	33	320/436
TG 170	169	440/575	75/100	200/280	300	485/ 670	33	388/536
TG 195	195	380/510	75/100	200/280	300	560/ 770	33	448/616
TG 240	237	320/420	75/100	200/280	300	685/ 945	32	548/756
TG 280	280	270/350	75/100	200/280	300	800/1100	31	640/880
TG 335	337	225/290	75/100	200/280	300	980/1350	30	784/1080
TG 405	405	185/245	75/100	170/240	300	960/1350	27	768/1080
TG 475	476	160/240	75/115	140/200	300	960/1400	28	768/1120
TG 530	529	140/215	75/115	140/170	300	1050/1280	23	840/1024
TG 625	624	120/185	75/115	120/160	300	1040/1360	20	832/1088
TG 785	786	95/145	75/115	100/140	300	1150/1490	17	920/1192
TG 960	958	78/119	75/115	70/100	300	925/1390	12	740/1112

int. =

Intermittierende Werte maximal: 10% von jeder Betriebsminute.

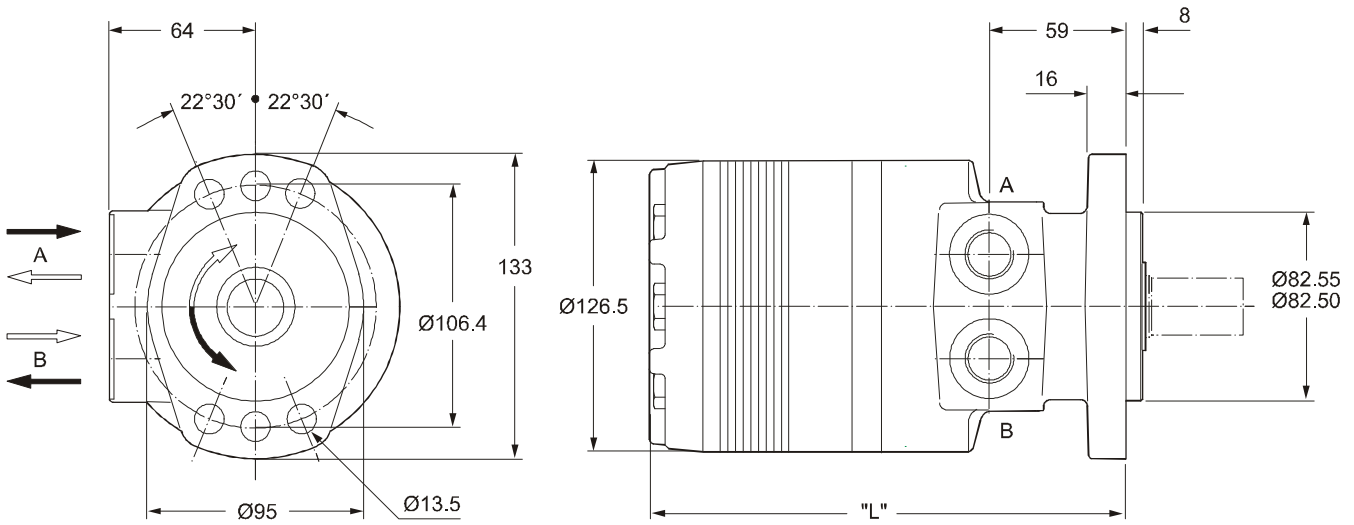
Intermittent operation rating applies to 10% of every minute.

Fonctionnement interm.: 10% max. de chaque minute d'utilisation.

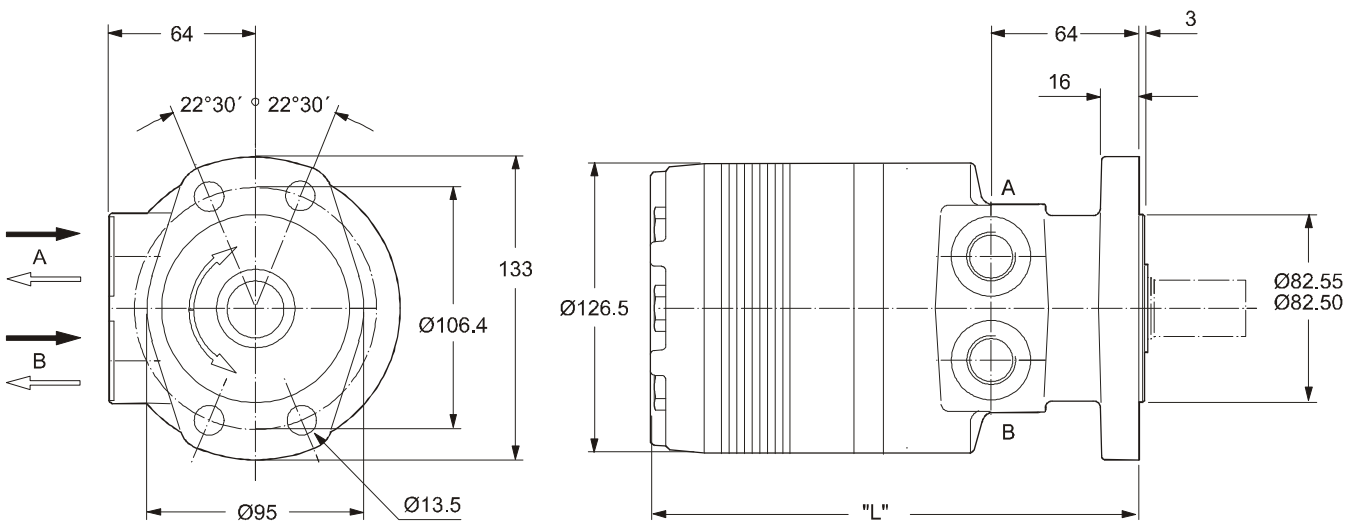
Servizio intermittente: 10% max di ogni minuto di utilizzazione.

Torqmotoren 3213.PM6.5 RH

**Code E**

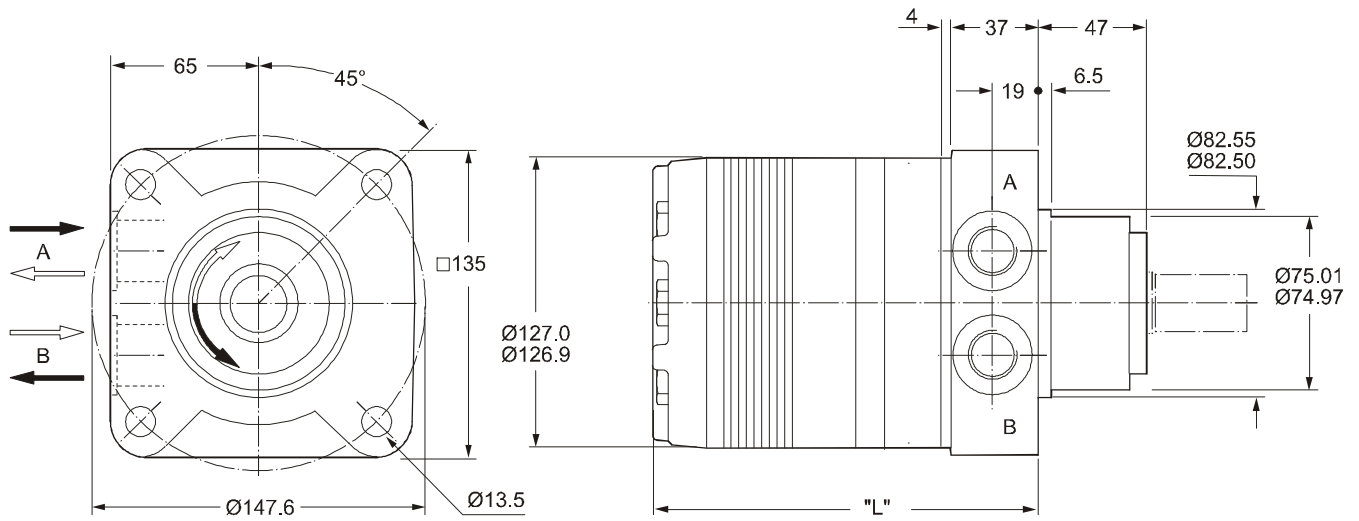


**Code M**

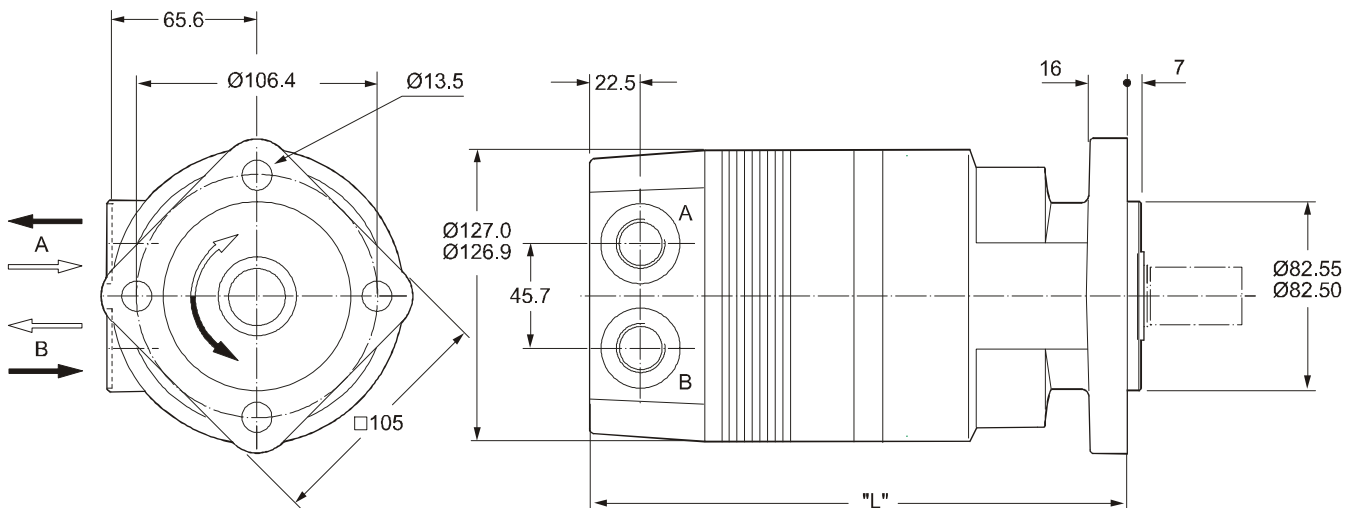


Gewicht / Weight		TG140	TG170	TG195	TG240	TG280	TG335	TG405	TG475	TG530	TG625	TG785	TG960
Poids / Peso	kg	14.2	14.5	14.7	15.1	15.5	15.9	16.5	17.2	17.9	18.6	20.2	22.0
Code E	"L" mm	191	194	197	202	207	213	220	229	235	245	264	283
Code M	"L" mm	196	199	202	208	212	218	225	234	240	250	269	288

**Code H**



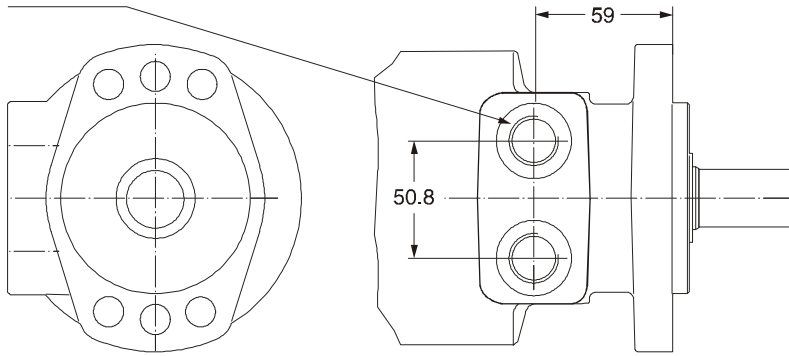
**Code V**



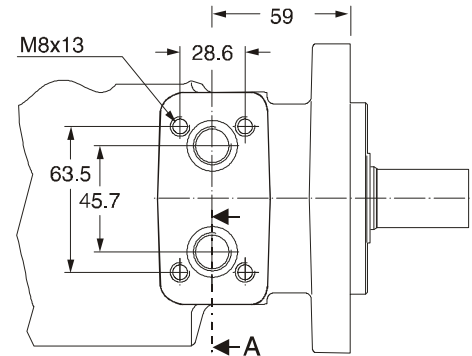
Gewicht / Weight		TG140	TG170	TG195	TG240	TG280	TG335	TG405	TG475	TG530	TG625	TG785	TG960
Poids / Peso	kg	16.1	16.3	16.6	17.0	17.4	17.8	18.4	19.0	19.8	20.5	22.0	23.7
Code H	"L" mm	150	154	157	162	166	173	180	188	195	204	223	242
Code V	"L" mm	217	220	224	228	233	238	246	255	262	272	290	309

**Code W**

G1/2 x 15

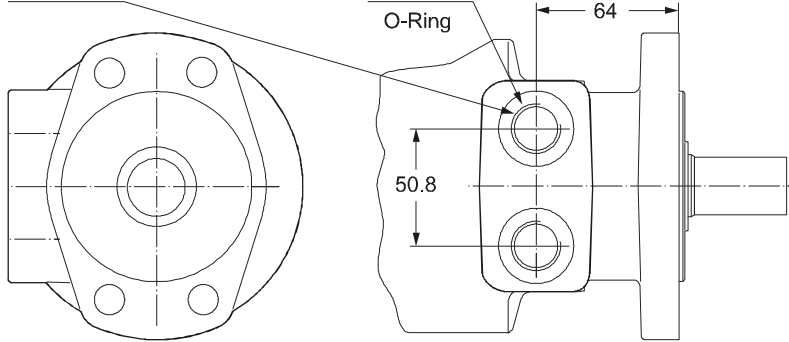


**Code: N**



**Code W**

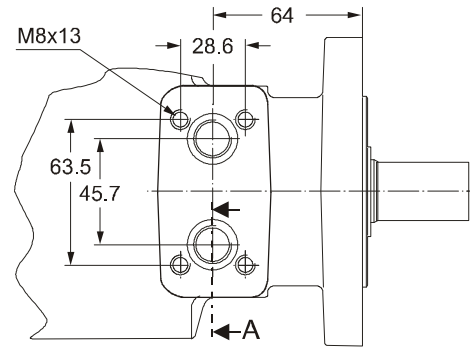
G1/2 x 15



**Code V**

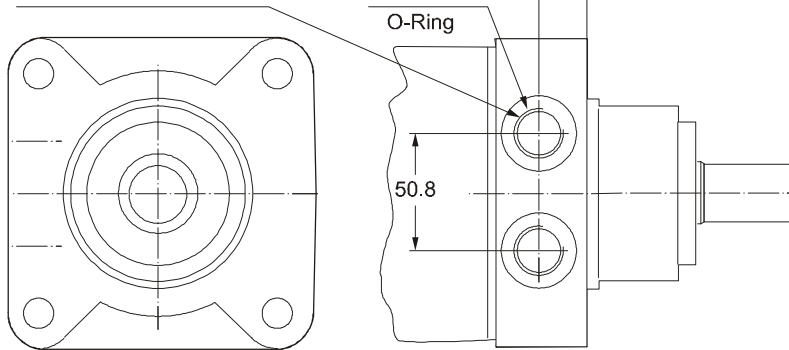
7/8-14UNF,  
O-Ring

**Code N**



**Code W**

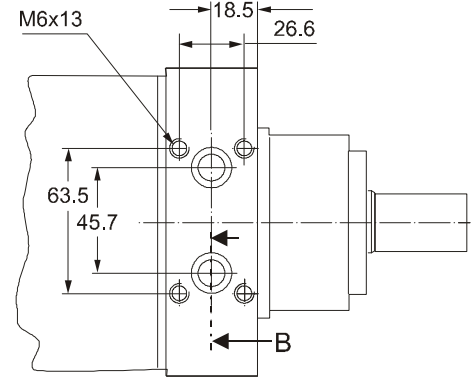
G1/2 x 15



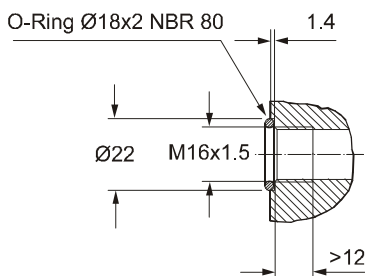
**Code V**

7/8-14UNF,  
O-Ring

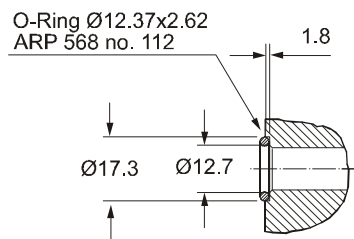
**Code K**



**Section A**



**Section B**



Zum Motor mit Universalanschluß werden 2 O-Ringe geliefert.

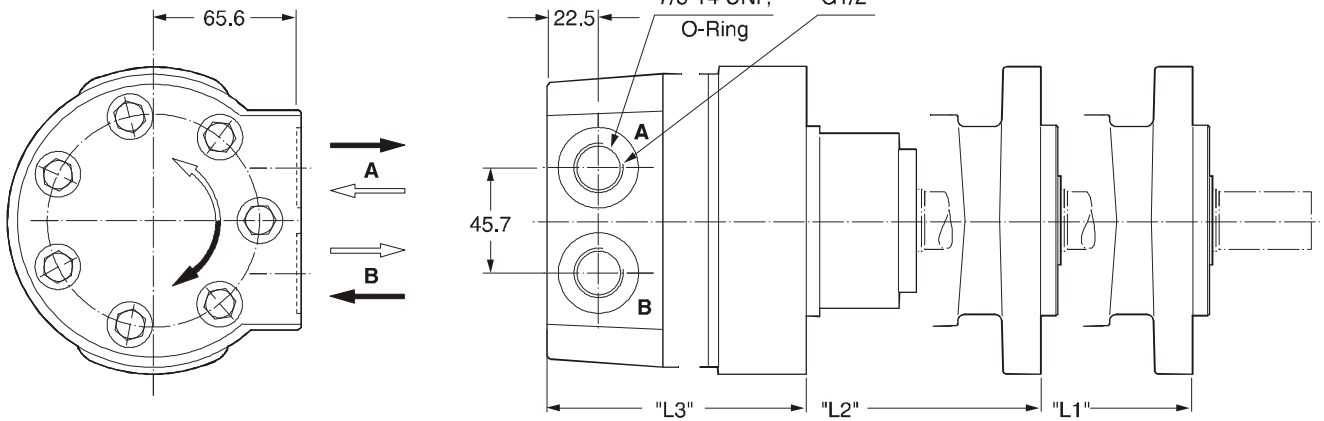
Motor with manifold mount is supplied with 2 O-rings.

Deux joints toriques sont livrés avec les moteurs au plan de raccordement universel.

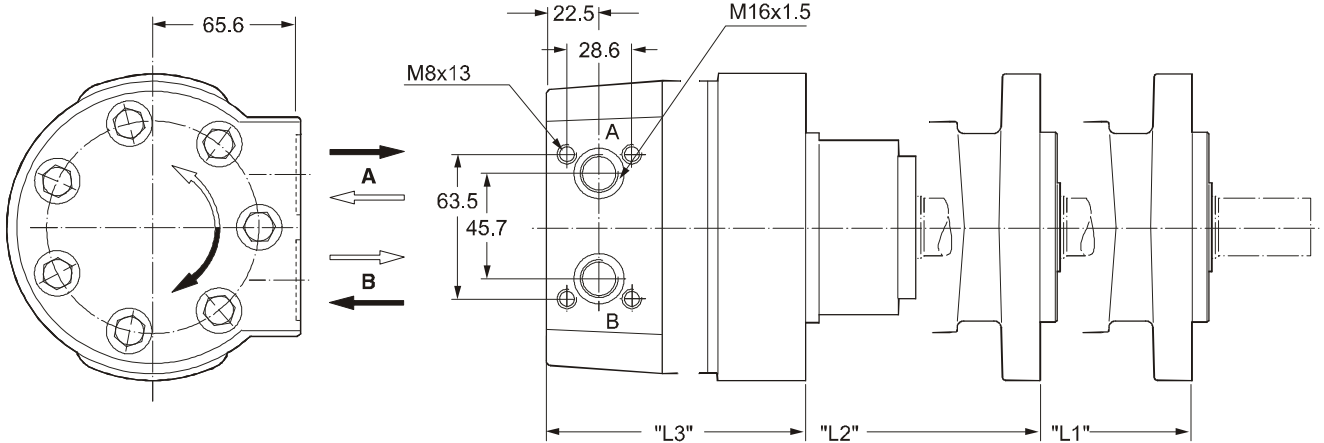
Il blocchetto connessioni è corredato da 2 OR.

**Code B 7/8-14UNF**

**Code X G 1/2**

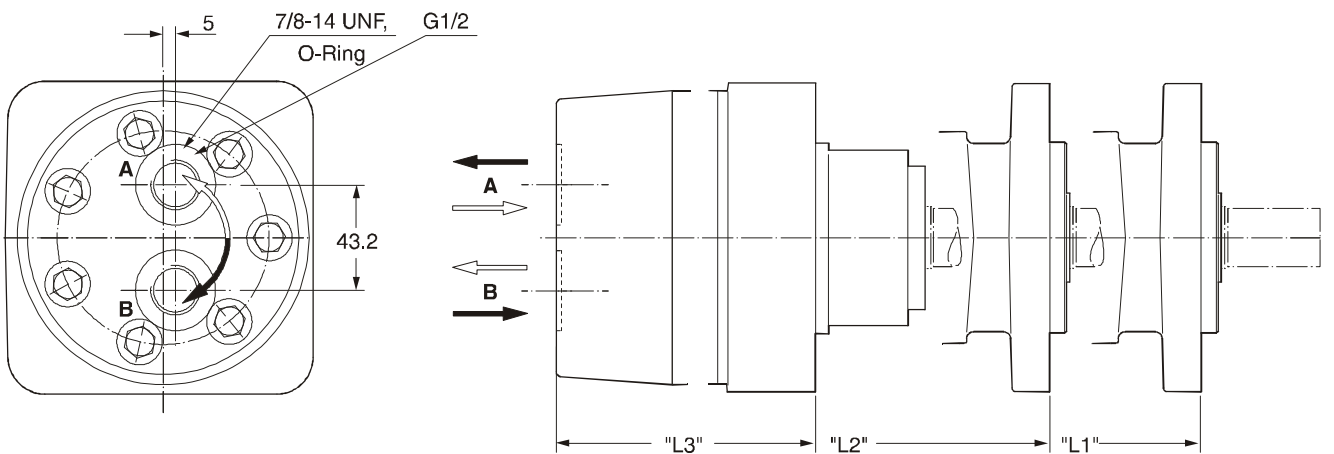


**Code L**



**Code A 7/8-14UNF**

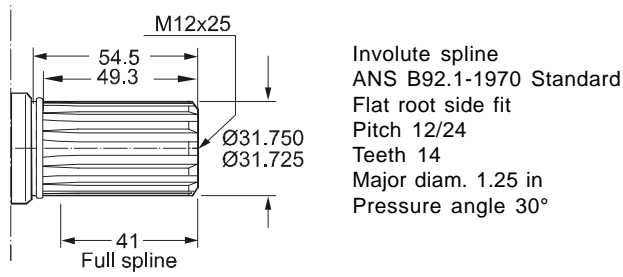
**Code Y G 1/2**



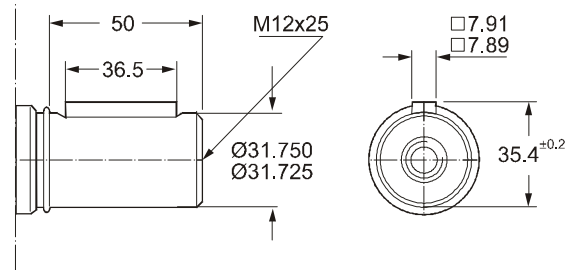
Gewicht / Weight		TG140	TG170	TG195	TG240	TG280	TG335	TG405	TG475	TG530	TG625	TG785	TG960
Poids / Peso	kg	16.1	16.3	16.6	17.0	17.4	17.8	18.4	19.0	19.8	20.5	22.0	23.7
Code	"L1" mm	216	219	222	227	232	238	245	254	260	270	289	308
	B, X, L, "L2" mm	221	224	227	232	237	243	250	259	265	275	294	313
	A, Y "L3" mm	175	179	182	187	191	198	205	213	220	229	247	267

Torqmotoren 3213.PM6.5 RH

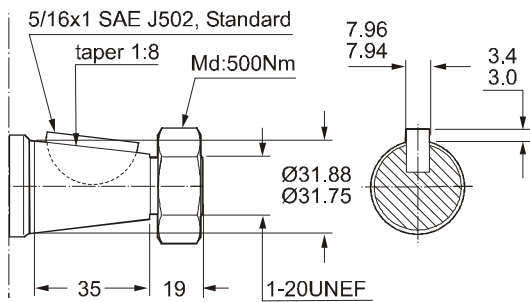
**Code 44**



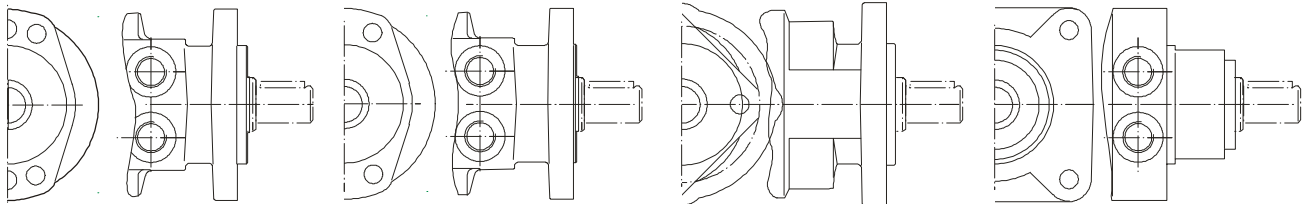
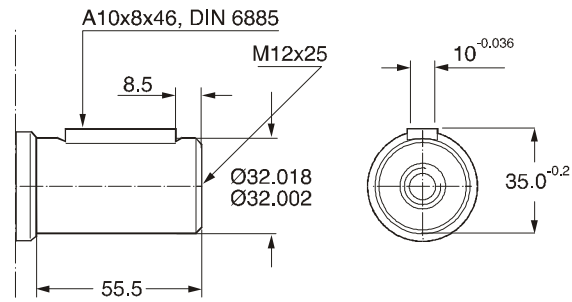
**Code 45**



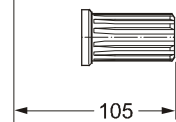
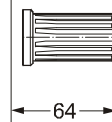
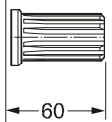
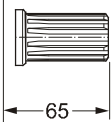
**Code 08**



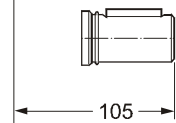
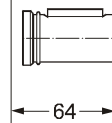
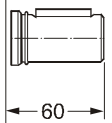
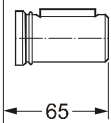
**Code 46**



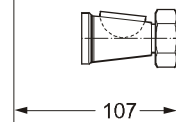
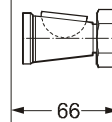
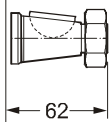
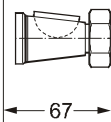
**Code 44**



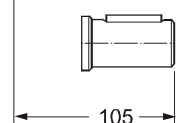
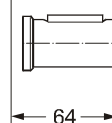
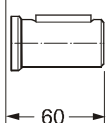
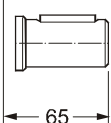
**Code 45**



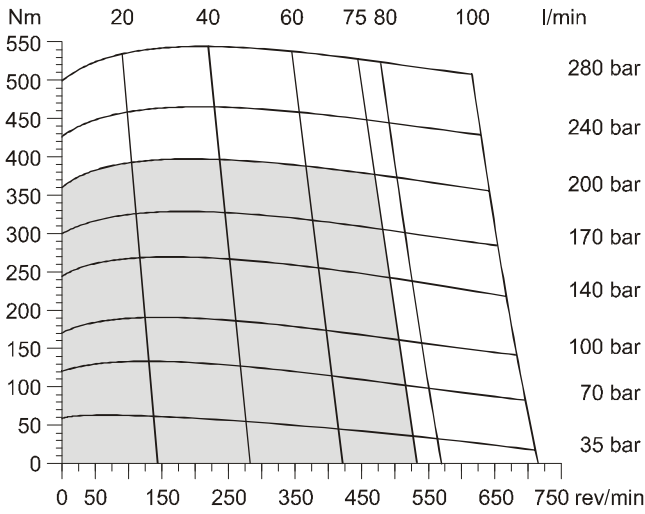
**Code 08**



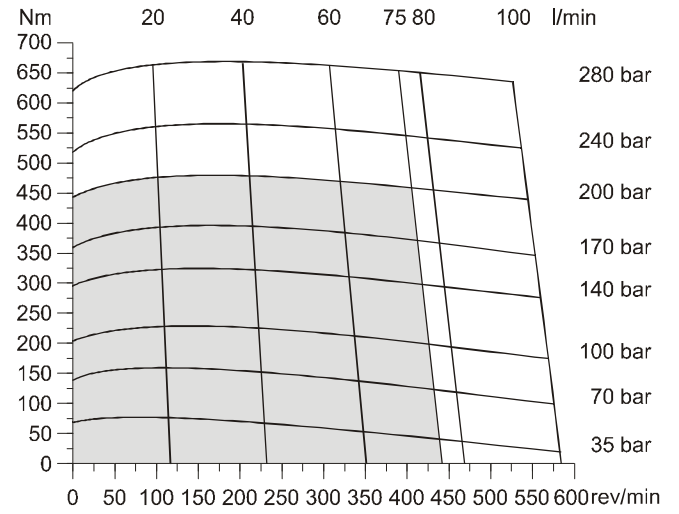
**Code 46**



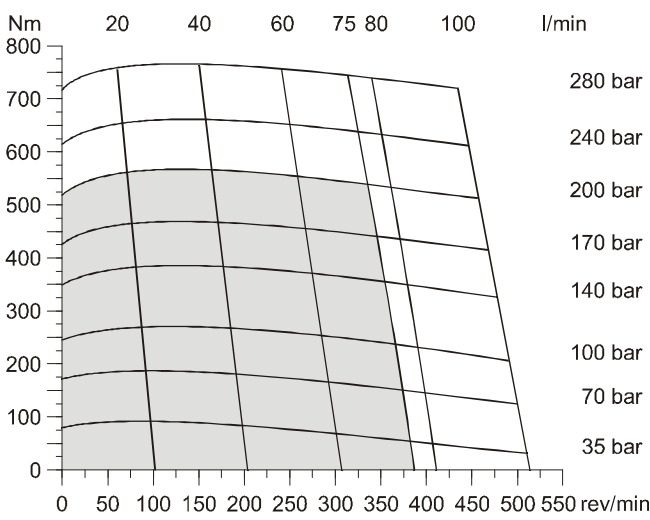
**TG 140**



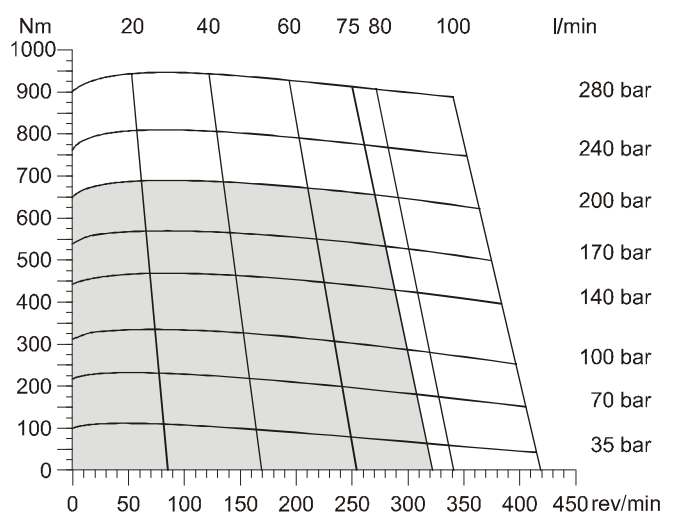
**TG 170**



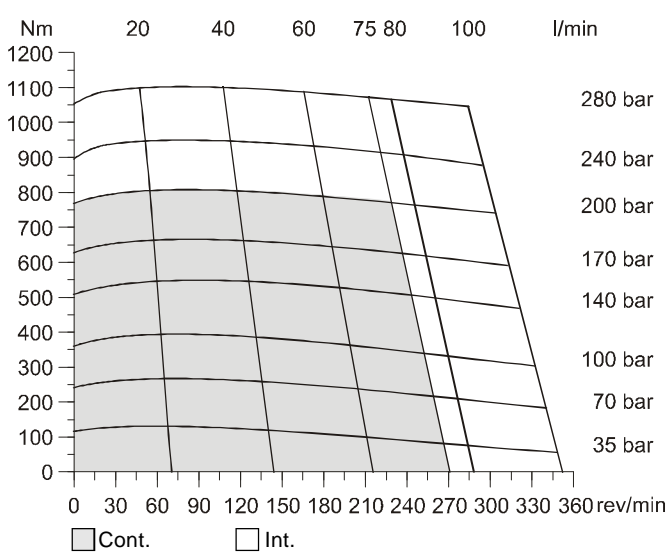
**TG 195**



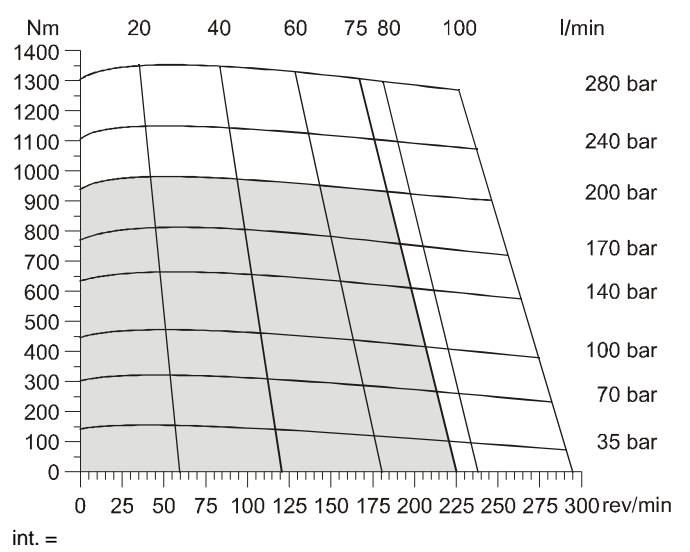
**TG 240**



**TG 280**

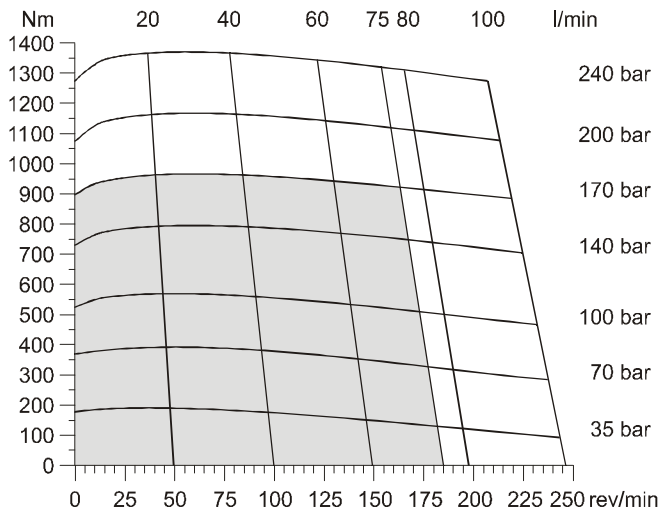


**TG 335**

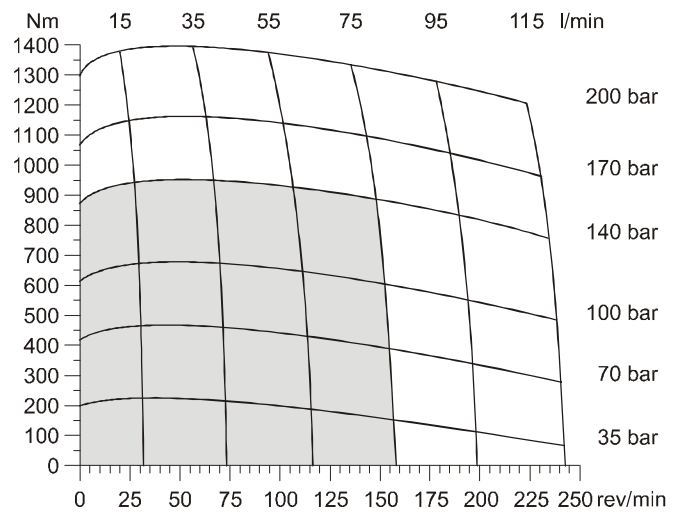


Intermittierende Werte maximal: 10% von jeder Betriebsminute.  
 Intermittent operation rating applies to 10% of every minute.  
 Fonctionnement interm.: 10% max. de chaque minute d'utilisation.  
 Servizio intermittente: 10% max di ogni minuto di utilizzazione.

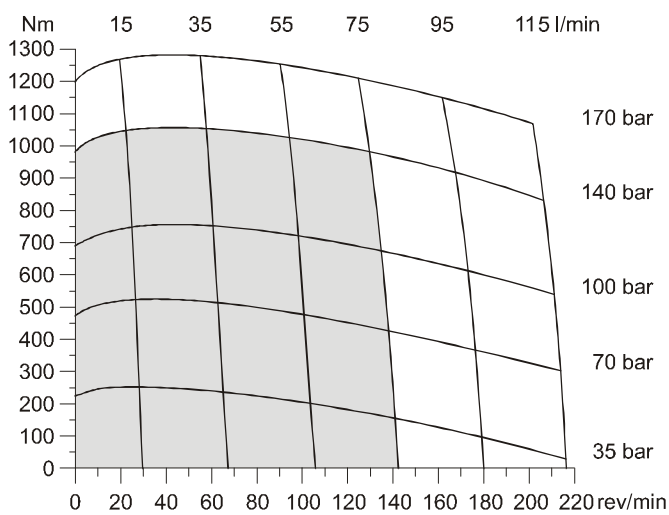
**TG 405**



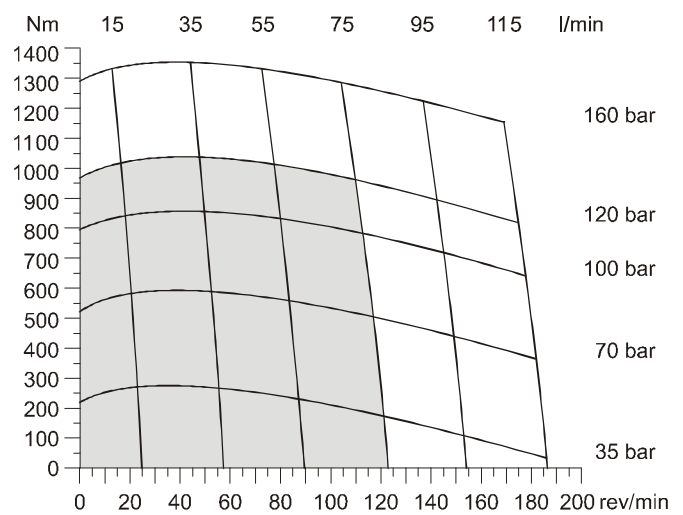
**TG 475**



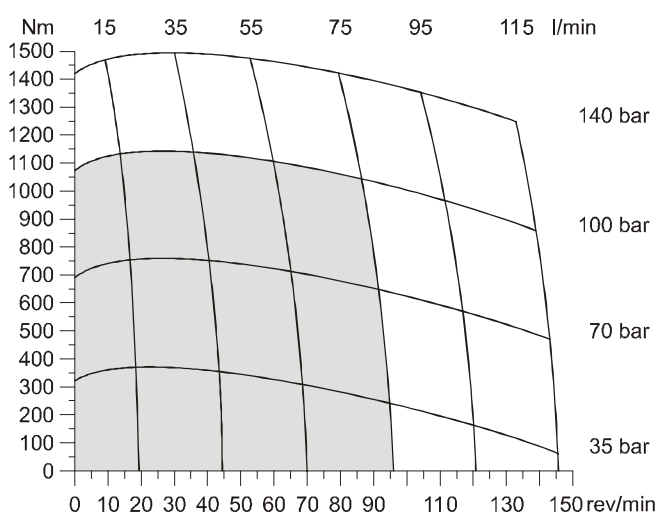
**TG 530**



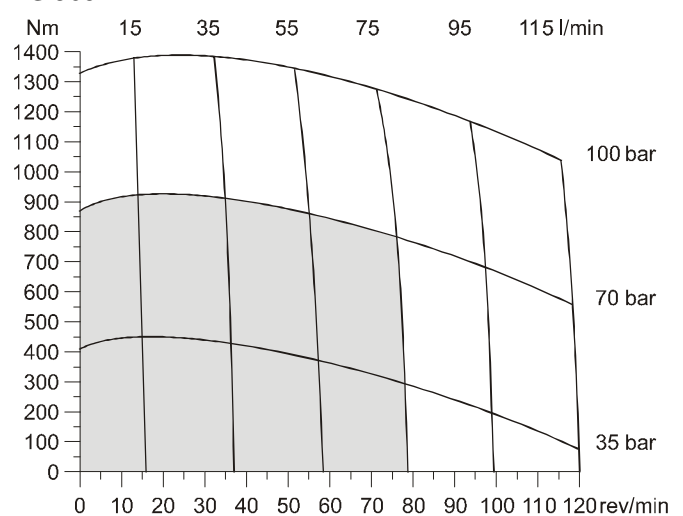
**TG 625**



**TG 785**



**TG 960**

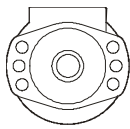


■ Cont.    □ Int.

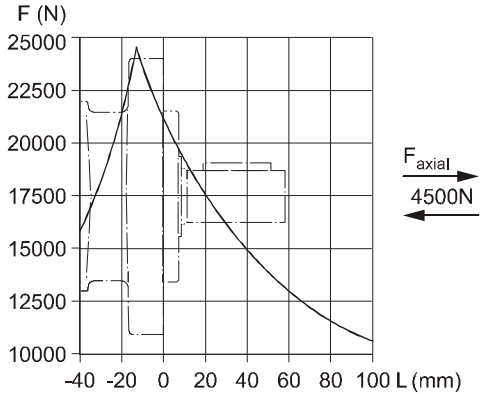
int. =  
 Intermittierende Werte maximal: 10% von jeder Betriebsminute.  
 Intermittent operation rating applies to 10% of every minute.  
 Fonctionnement interm.: 10% max. de chaque minute d'utilisation.  
 Servizio intermittente: 10% max di ogni minuto di utilizzazione.



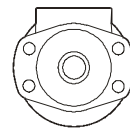
**Code E**



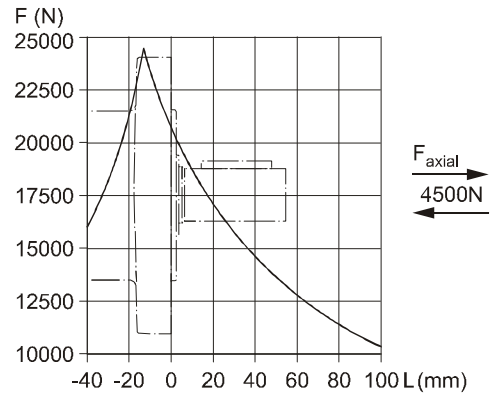
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 1.10 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



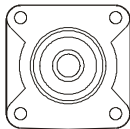
**Code M**



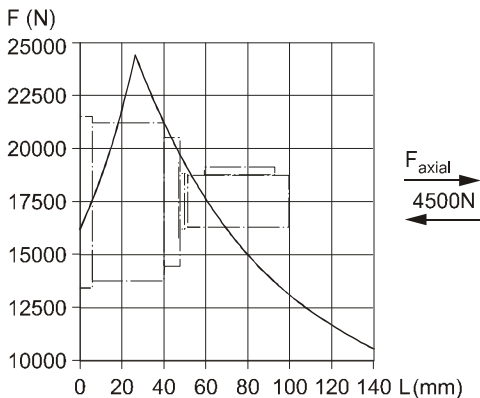
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 1.16 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



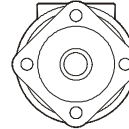
**Code H**



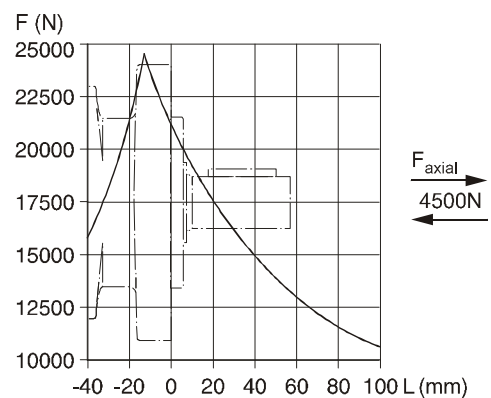
$$L_h = \frac{\left( \frac{670000}{F_R \cdot \left( 0.56 + \frac{L}{88\text{mm}} \right)} \right)^{3.3}}{n}$$



**Code V**



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



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  $F_R$ .

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  $F_R$ .

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 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.  
 The preceding formulas are valid for a B10 duration of life.  
 Les formules précédentes sont valables pour une durée de vie B10.  
 Le formule precedenti sono valide per una durata della vita B10.

$L_h$  = h  
 $L$  = mm  
 $F_R$  = F (N)  
 $n$  = rev/min

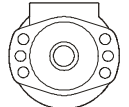
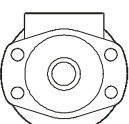
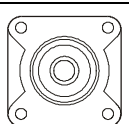
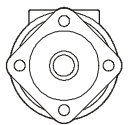
Ordering Code

<b>TG</b>								<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>
Serie Series Série Serie	Schluckvolumen Displacement Cylindrée Cilindrata			Gehäuse Housing Carter Corpo motore	Anschluß Ports Plan de raccordement Conessioni	Welle Shaft Arbre Albero	Drehrichtung Direction of rotation Direction de rotation Direzione di rotazione	Option			

Code	cm³/rev
0140	140
0170	169
0195	195
0240	237
0280	280
0335	337
0405	405
0475	476
0530	529
0625	624
0785	786
0960	958

Code	Housing
E	
M	
H	
V <sup>1)</sup>	

Code	Front port
W	G 1/2
V	7/8-14 UNF O-Ring
N <sup>2)</sup>	Universal M8x13
K <sup>3)</sup>	Universal M6x13

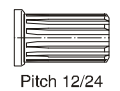
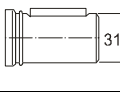
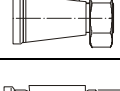
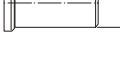
<sup>2)</sup> Nicht verfügbar für Gehäuse "H"  
Not possible for housing "H"  
Pas disponible pour carter "H"  
Non Disponibile con il corpo codice "H"

<sup>3)</sup> 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"

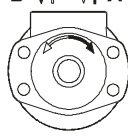
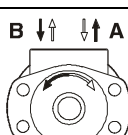
  

Code	Rear port
Y	G 1/2 Axial
A	7/8-14 UNF Axial
X	G 1/2 Radial
B	7/8-14 UNF Radial
L	Universal Radial M8x13

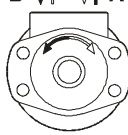
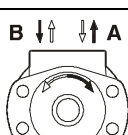
  

Code	Shaft
44	 Pitch 12/24
45	 31.75
08	
46	 32

Code	Front port
0	 Standard
1	

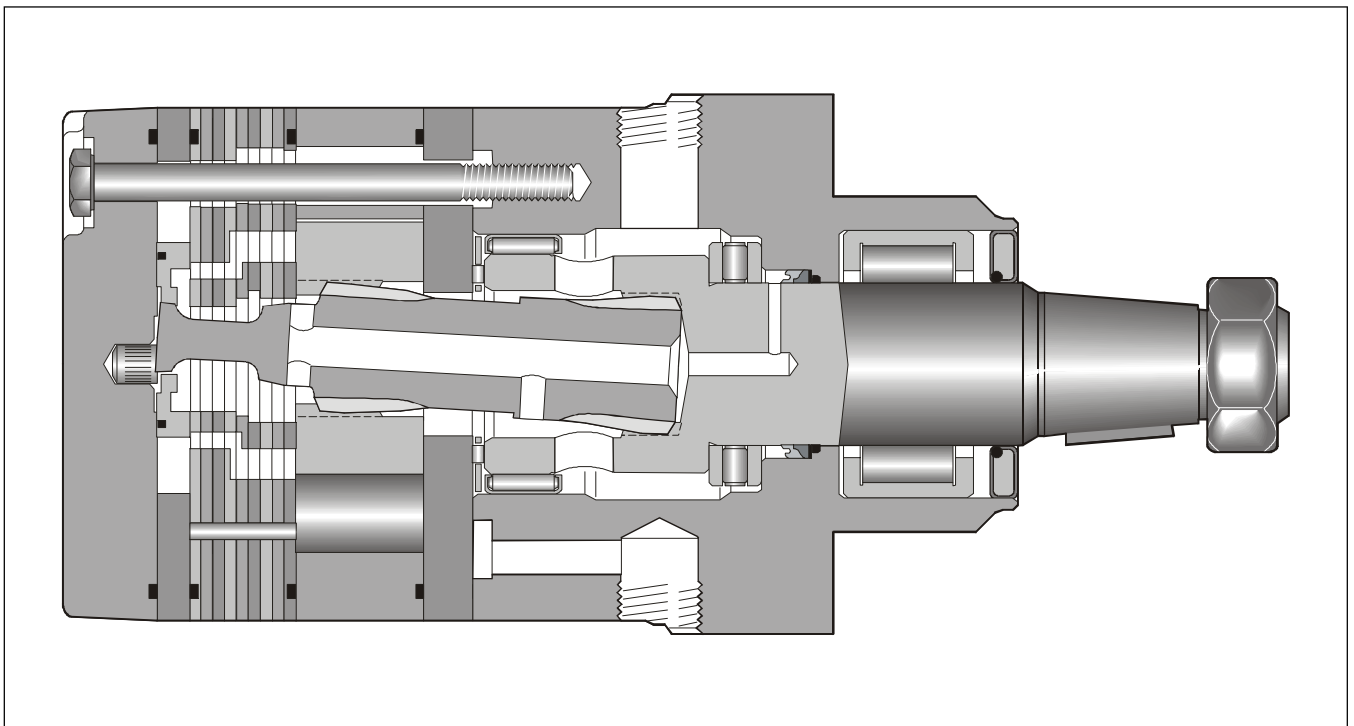
  

Code	Rear port
0	 Standard
1	

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

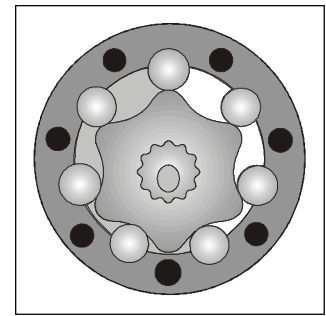
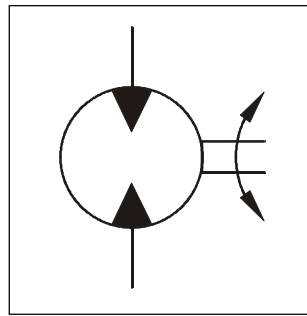
- **Langsamlaufender Gerotor-Motor**
  - **Spezielle Orbital-Steuerung**  
Geringe interne Leckage  
Hoher volumetrischer Wirkungsgrad
  - **Rollen im Rotoratz**  
Reduzierte Reibung  
Lange Lebensdauer
  - **Patentierter Hochdruckwellendichtung**  
Keine Leckölleitung  
Keine Rückschlagventile
  - **Vielzahl von Varianten**  
Großer Einsatzbereich
- 
- **Moteur lent système Gerotor**
  - **Une distribution orbitale particulière assurée**  
fuites internes minimales  
rendements volumétriques élevés
  - **Le rotor à rouleaux**  
réduit les frottements  
augmente la durée de vie
  - **Par l'utilisation de joints d'arbre haute pression brevetés**  
pas de conduite de drainage  
pas de clapets anti-retour
  - **Grâce à de nombreuses variantes**  
larges domaines d'application
- 
- **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
- 
- **Motore orbitale a bassa velocità**
  - **Una particolare distribuzione orbitale assicurata**  
trafilamento ridotto  
elevato rendimento volumetrico
  - **Con lo statore a rullini**  
si riduce l'attrito interno  
si mantiene nel tempo l'efficienza 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 cilindrata, flange ed alberi**  
consentono scelte adeguate ad ogni esigenza costruttiva



Torqmotoren 3213.PM6.5 RH

**Performance**

Drehzahl Speed Vitesse de rotation Velocità di rotazione	5...710 rev/min
Schluckstrom Oil flow Débit d'huile Portata	max. 115 l/min
Eingangsdruck Supply pressure Pression entrée Pressione in entrata	max. 300 bar
Drehmoment Torque Couple Coppia	max. 1490 Nm
Seitenlast Side load Charges latérales Carico radiale	max. 30.000 N



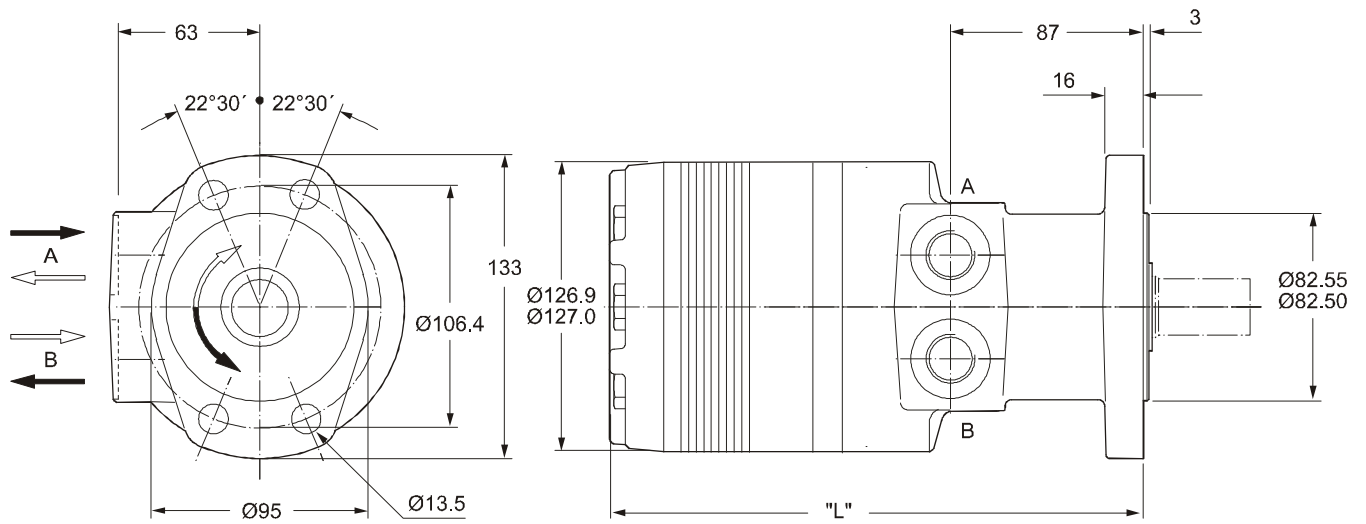
Motor series TH	Geom. Schluckvolumen Geometric displacement Cylindrée Cilindrata	Max. Drehzahl Max. speed Vitesse de rotation maxi Velocità di rotazione maxi	Max. Schluckstrom Max. oil flow Débit d'huile max Portata max	Max. Druckgefälle Max. differential pressure Chute de pression maxi Caduta di pressione maxi	Max. Eingangsdruck Max. supply pressure Pression maxi entrée Pressione max in entrata	Max. Drehmoment Max. torque Couple maxi Coppia maxi	Max. Leistungsbabe Max. performance Puissance de sortie maxi Potenza meccanica max	Min. Anlaufmoment Min. starting torque Couple min. fourni au démarrage Coppia min. di spunto
	cm <sup>3</sup> /U cm <sup>3</sup> /rev cm <sup>3</sup> /tr cm <sup>3</sup> /giro	cont / int U/min rev/min tr/min giri/min	cont / int l/min	cont / int bar	max bar	cont / int Nm	cont / int max. KW	cont / int Nm
TH 140	140	460/660	75/100	200/280	300	400/540	33	320/430
TH 170	169	400/560	75/100	200/280	300	485/650	33	380/540
TH 195	195	340/480	75/100	200/280	300	560/770	33	450/620
TH 240	237	270/400	75/100	200/280	300	685/920	32	550/740
TH 280	280	230/340	75/100	200/280	300	800/1100	31	640/880
TH 335	337	190/280	75/100	200/280	300	980/1350	30	790/1080
TH 405	405	170/240	75/100	170/240	300	960/1350	27	770/1080
TH 475	476	150/240	75/115	140/200	300	960/1400	28	770/1120
TH 530	529	130/220	75/115	140/170	300	1050/1280	23	840/1024
TH 625	624	110/190	75/115	120/160	300	1040/1360	20	830/1090
TH 785	786	90/150	75/115	100/140	300	1150/1490	17	920/1200
TH 960	958	80/120	75/115	70/100	300	925/1390	12	740/1110

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.

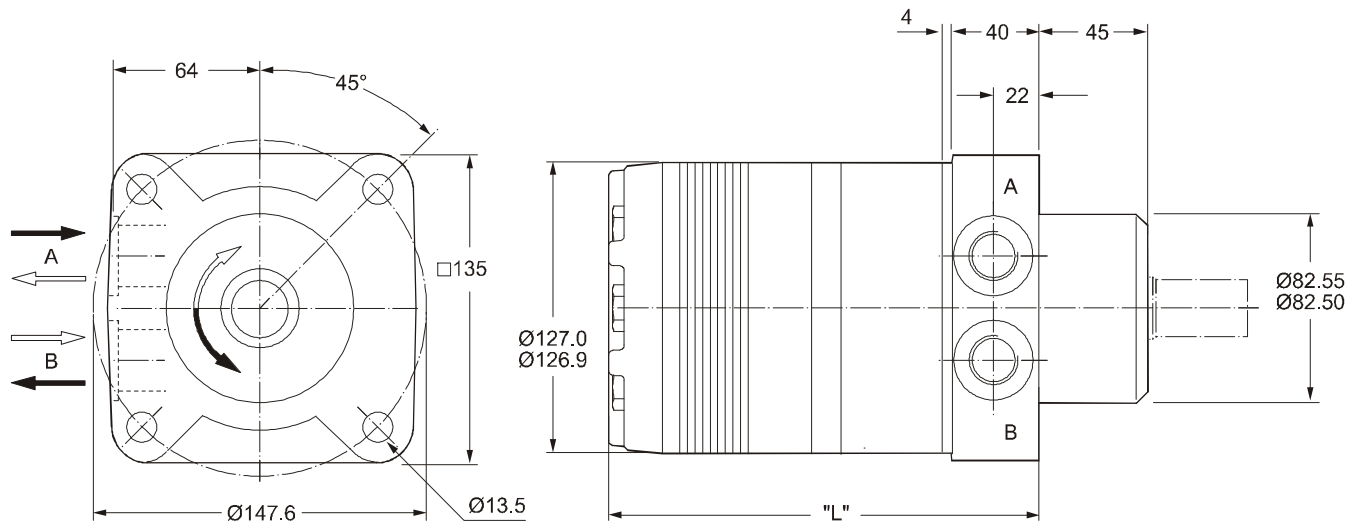
Torqmotoren 3213.PM6.5 RH



**Code M**

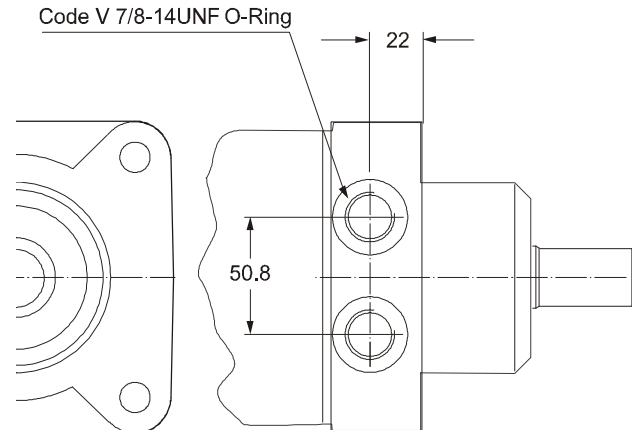
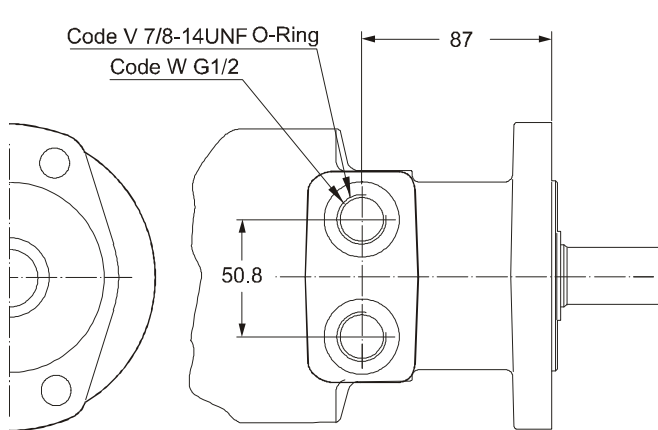


**Code U**



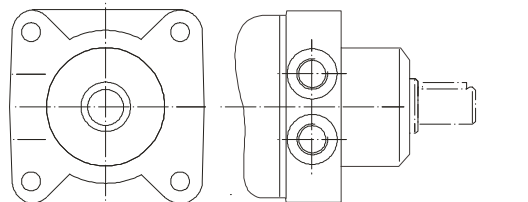
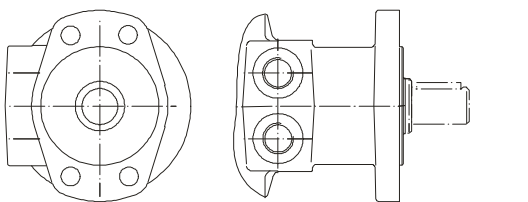
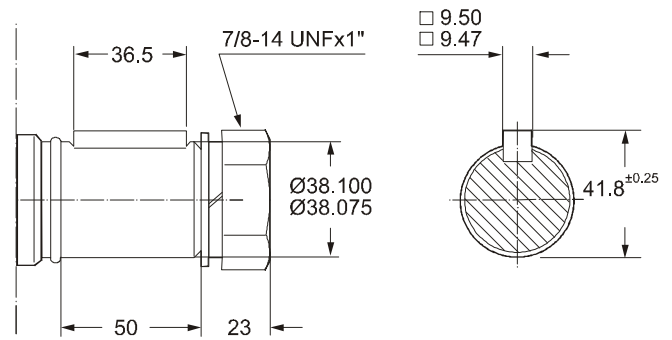
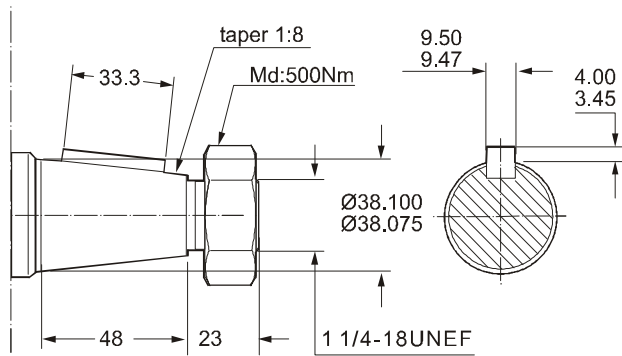
Gewicht / Weight		TH140	TH170	TH195	TH240	TH280	TH335	TH405	TH475	TH530	TH625	TH785	TH960
Poids / Peso	kg	17.0	17.2	17.4	17.8	18.2	18.6	19.2	19.8	20.6	21.3	22.9	24.5
Code M	"L" mm	216	219	222	227	232	238	245	254	260	270	289	308
Code U	"L" mm	173	177	180	184	189	196	203	212	218	227	246	265

**Ports**

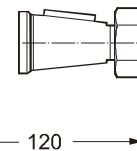
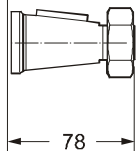


**Coupling shaft  
 Code 31**

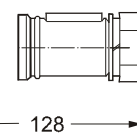
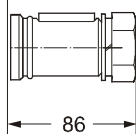
**Code 32**



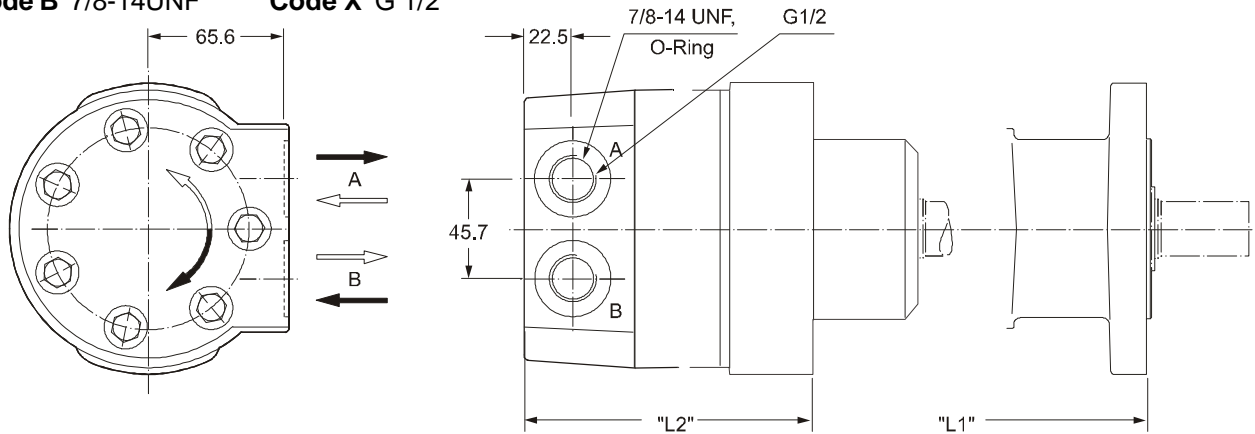
**Code 31**



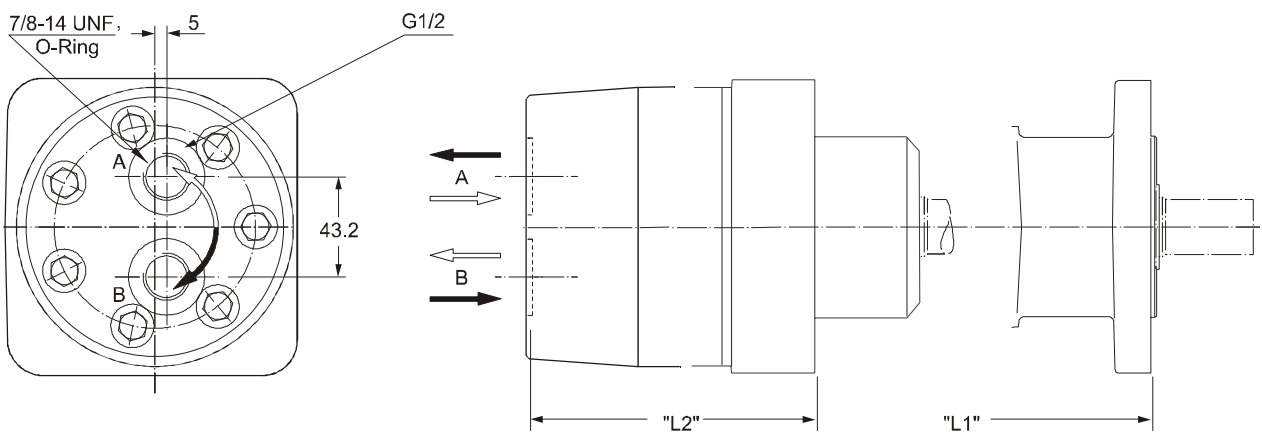
**Code 32**



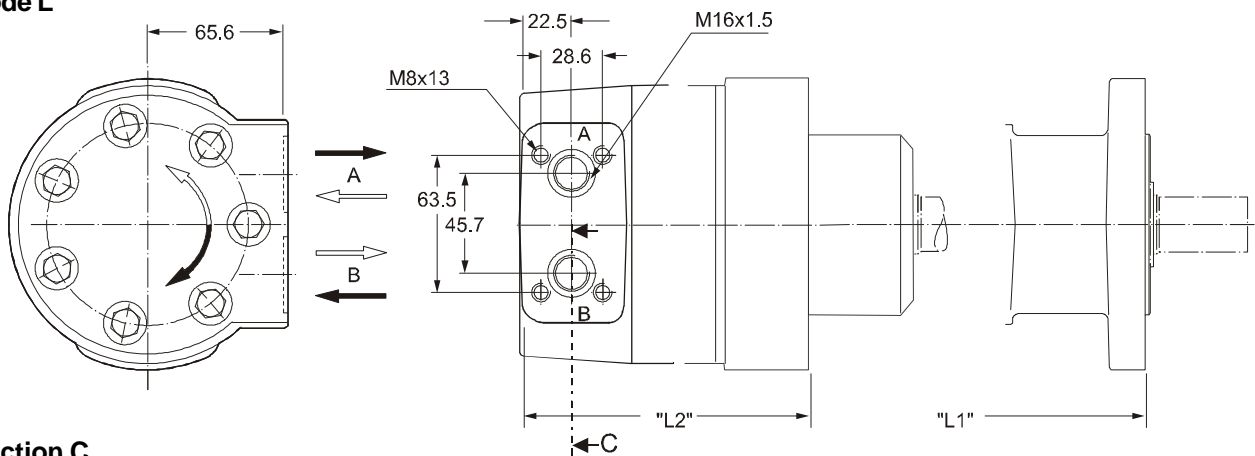
**Code B 7/8-14UNF Code X G 1/2**



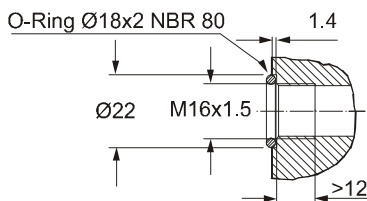
**Code A 7/8-14UNF Code Y G 1/2**



**Code L**



**Section C**

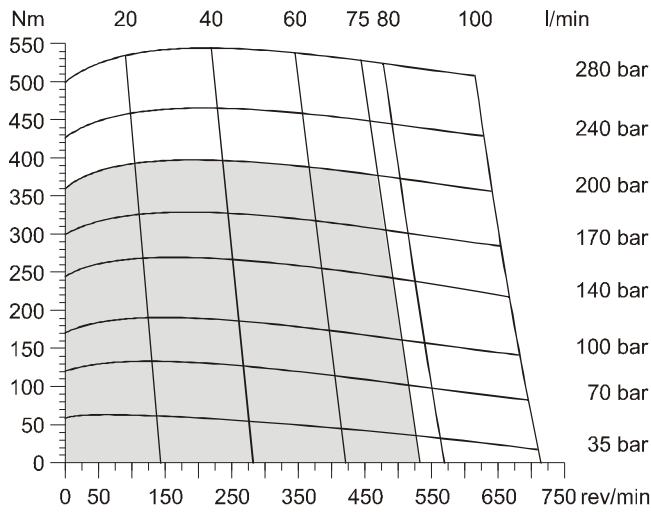


Zum Motor mit Universalanschluß werden 2 O-Ringe geliefert.  
Motor with manifold mount is supplied with 2 O-rings.  
Deux joints toriques sont livrés avec les moteurs au plan de  
raccordement universel.  
Il blocchetto connessioni è corredato da 2 OR.

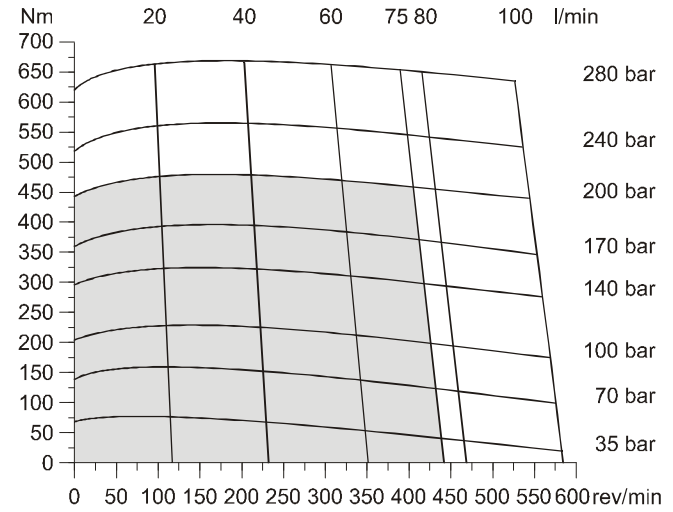
Gewicht / Weight		TH140	TH170	TH195	TH240	TH280	TH335	TH405	TH475	TH530	TH625	TH785	TH960
Poids / Peso	kg	18.6	18.8	19.0	19.4	19.8	20.2	20.8	21.4	22.2	22.9	24.5	26.1
Code	"L1" mm	241	244	247	252	257	263	270	279	285	295	314	333
B, X, L, A, Y	"L2" mm	198	202	205	209	214	221	228	237	243	252	271	290

Torqmotoren 3213.PM6.5 RH

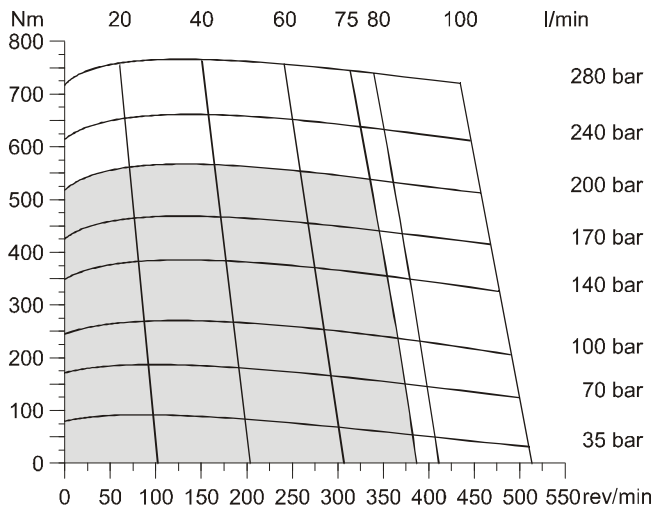
**TH 140**



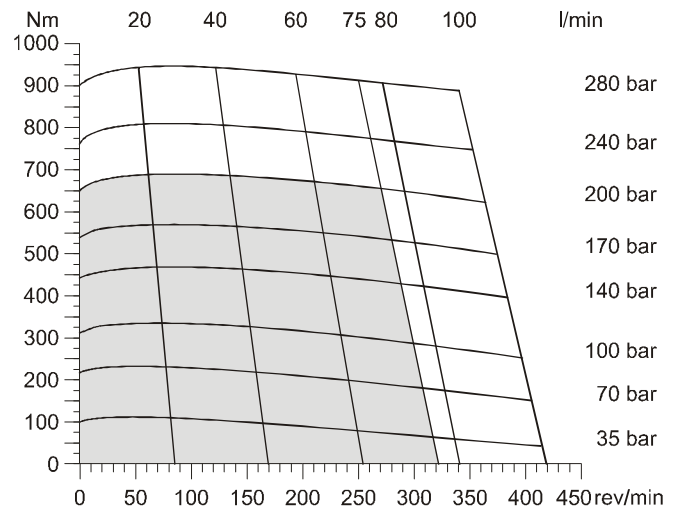
**TH 170**



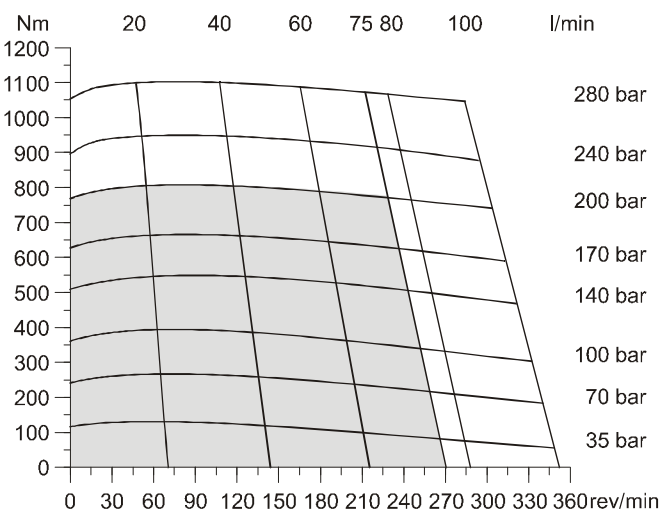
**TH 195**



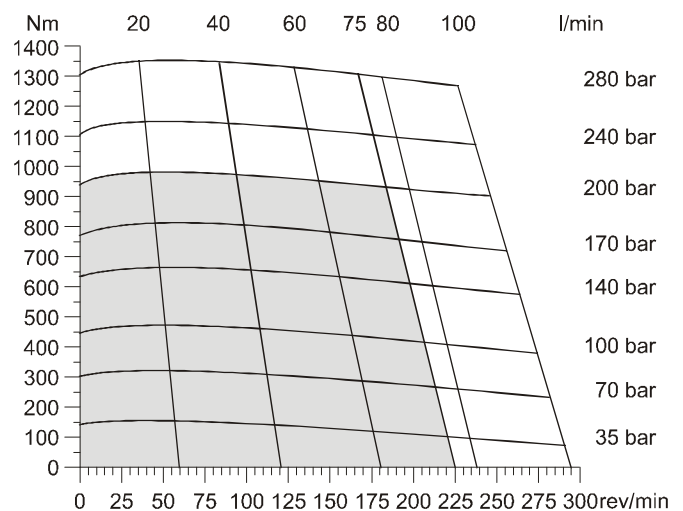
**TH 240**



**TH 280**



**TH 335**

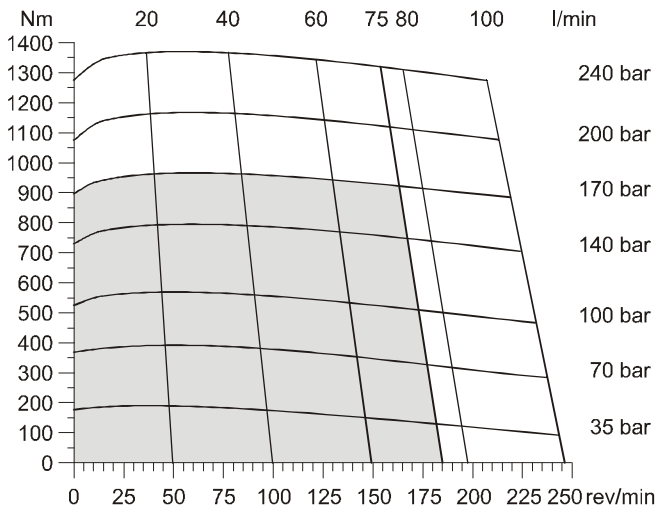


■ Cont.    □ Int.

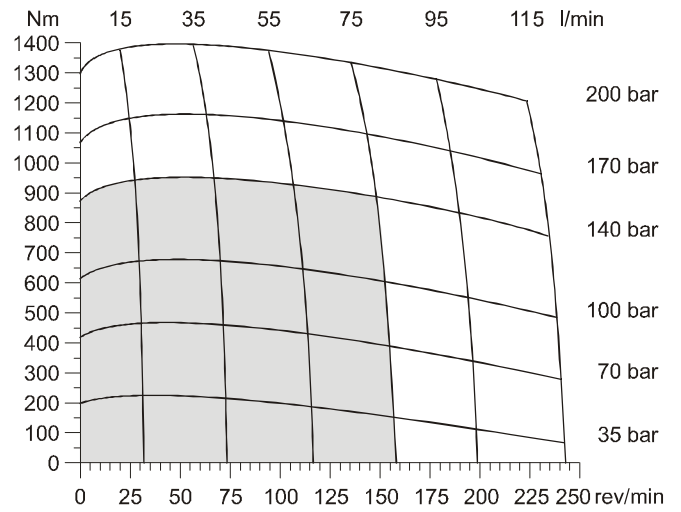
int. =  
 Intermittierende Werte maximal: 10% von jeder Betriebsminute.  
 Intermittent operation rating applies to 10% of every minute.  
 Fonctionnement interm.: 10% max. de chaque minute d'utilisation.  
 Servizio intermittente: 10% max di ogni minuto di utilizzazione.



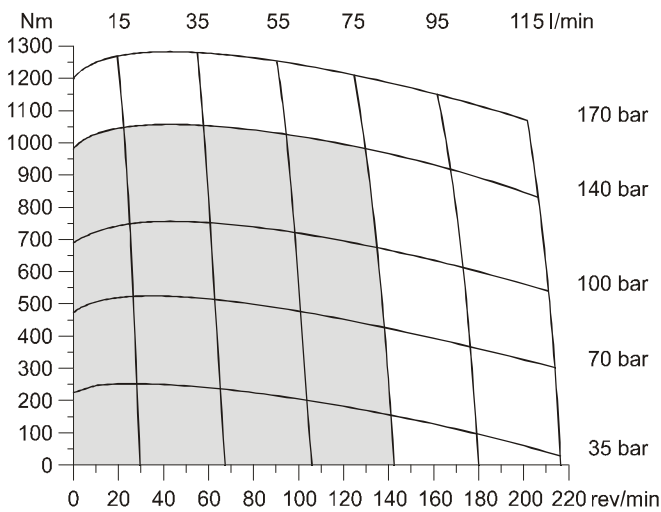
**TH 405**



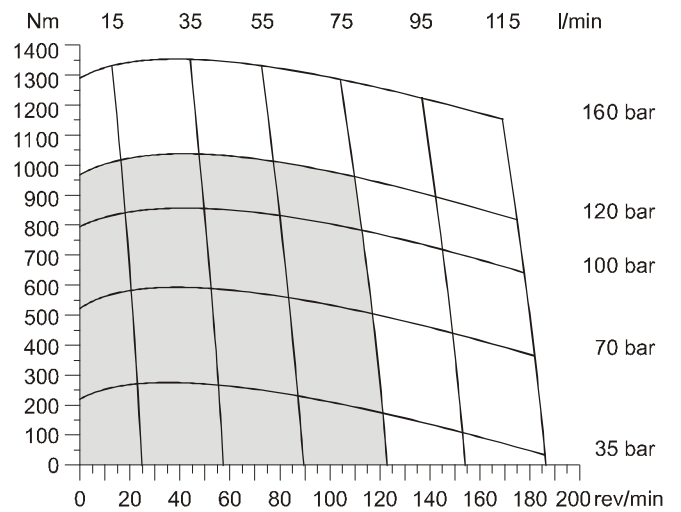
**TH 475**



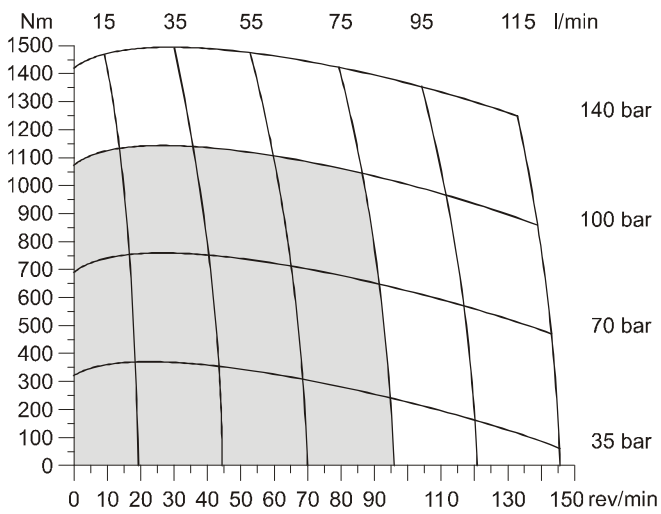
**TH 530**



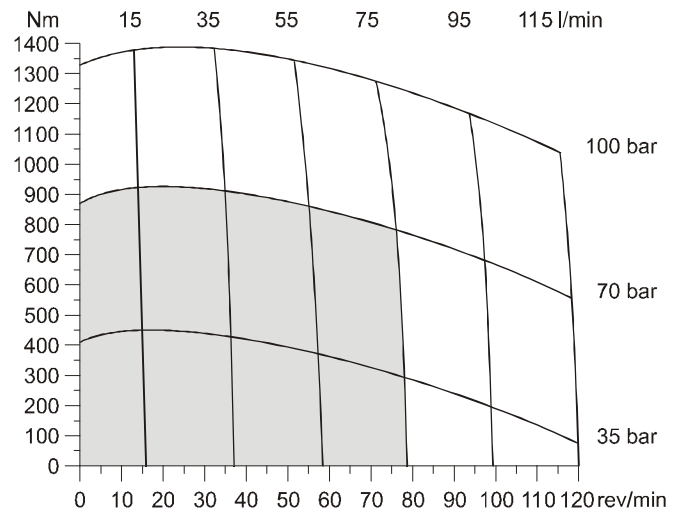
**TH 625**



**TH 785**



**TH 960**

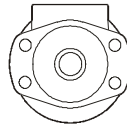
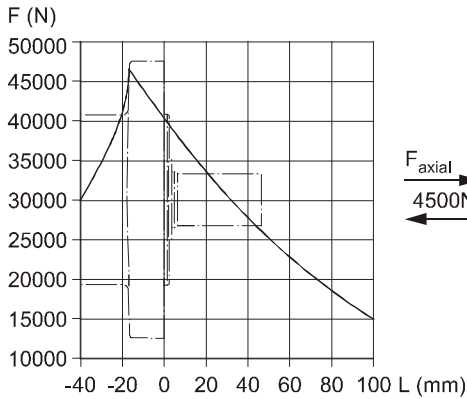


■ Cont.    □ Int.

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.

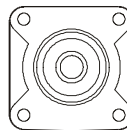
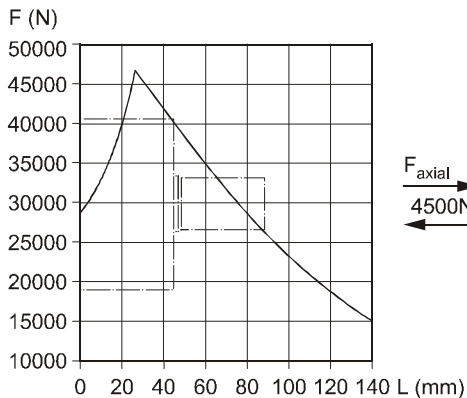
**Life Time**

**Code M**



$$L_h = \frac{\left( \frac{1500000}{F_R \cdot \left( 1.20 + \frac{L}{95\text{mm}} \right)} \right)^{3.3}}{n}$$

**Code U**



$$L_h = \frac{\left( \frac{1500000}{F_R \cdot \left( 0.76 + \frac{L}{95\text{mm}} \right)} \right)^{3.3}}{n}$$

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  $F_R$ .

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  $F_R$ .

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 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  $F_R$ .

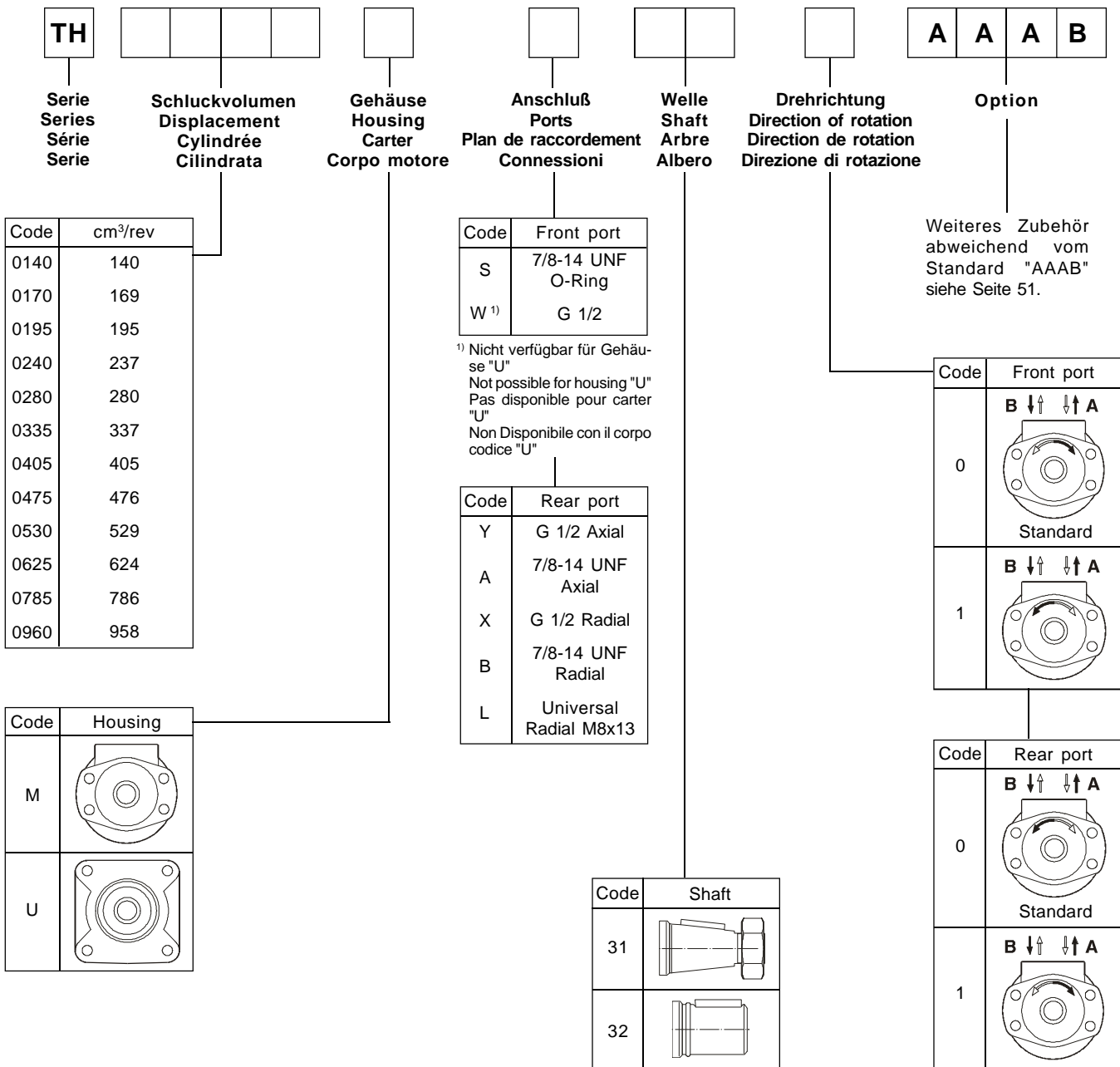
Vorstehende Formeln gelten für eine B10-Lebensdauer.

The preceding formulas are valid for a B10 duration of life.

Les formules précédentes sont valables pour une durée de vie B10.

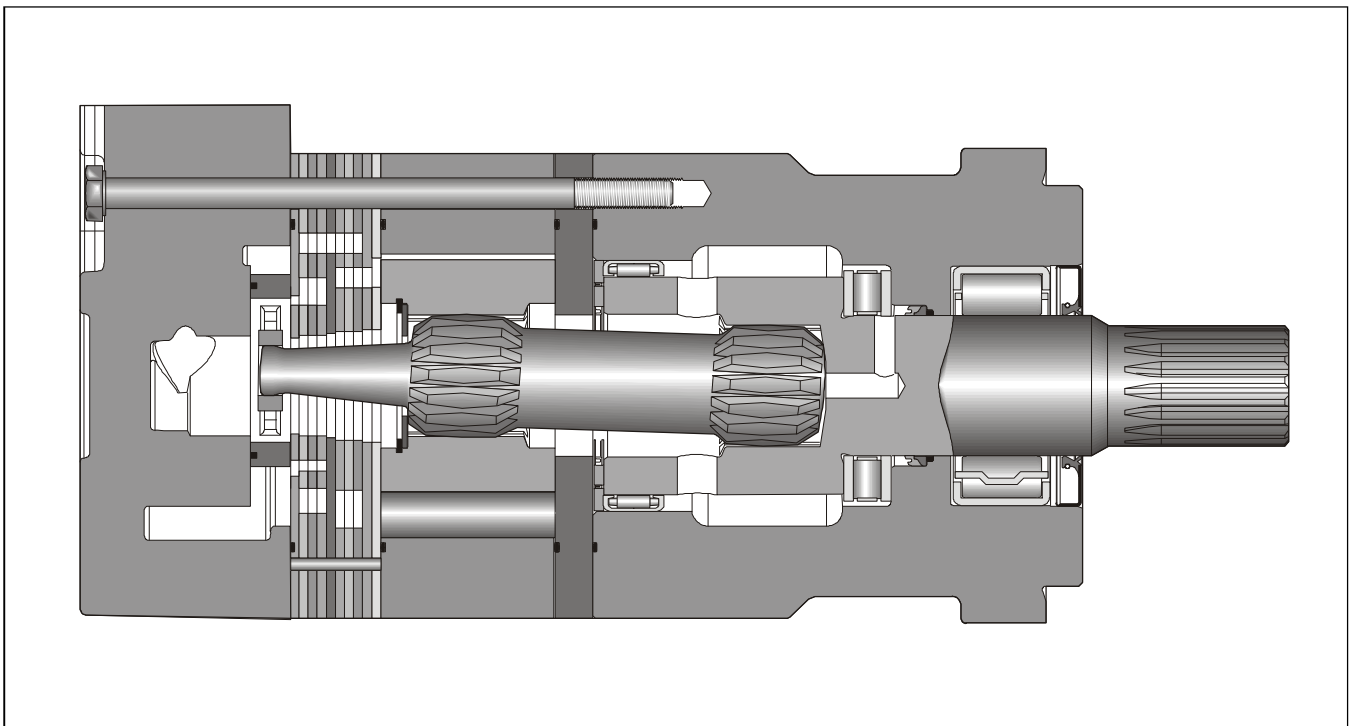
Le formule precedenti sono valide per una durata della vita B10.

$$\begin{aligned} L_h &= \text{h} \\ L &= \text{mm} \\ F_R &= \text{F (N)} \\ n &= \text{rev/min} \end{aligned}$$



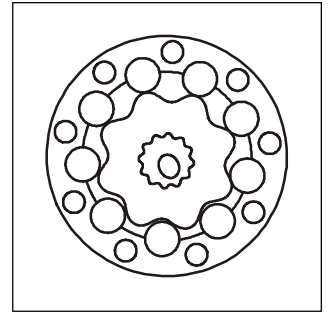
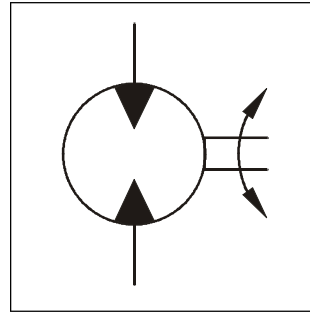
**Features**

- **Langsamlaufender Gerotor-Motor**
- **Spezielle Orbital-Steuerung**  
Geringe interne Leckage  
Hoher volumetrischer Wirkungsgrad
- **Rollen im Rotorsatz**  
Reduzierte Reibung  
Lange Lebensdauer
- **Patentierter Hochdruckwellendichtung**  
Keine Leckölleitung  
Keine Rückschlagventile
- **Vielzahl von Varianten**  
Großer Einsatzbereich
  
- **Moteur lent système Gerotor**
- **Une distribution orbitale particulière assurée**  
fuites internes minimales  
rendements volumétriques élevés
- **Le rotor à rouleaux**  
réduit les frottements  
augmente la durée de vie
- **Par l'utilisation de joints d'arbre haute pression brevetés**  
pas de conduite de drainage  
pas de clapets anti-retour
- **Grâce à de nombreuses variantes**  
larges domaines d'application
  
- **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
  
- **Motore orbitale a bassa velocità**
- **Una particolare distribuzione orbitale assicurata**  
trafilamento ridotto  
elevato rendimento volumetrico
- **Con lo statore a rullini**  
si riduce l'attrito interno  
si mantiene nel tempo l'efficienza 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 cilindrata, flange ed alberi**  
consentono scelte adeguate ad ogni esigenza costruttiva



Torqmotoren 3213.PM6.5 RH

Drehzahl Speed Vitesse de rotation Velocità di rotazione	5...520 rev/min
Schluckstrom Oil flow Débit d'huile Portata	max. 225 l/min
Eingangsdruck Supply pressure Pression entrée Pressione in entrata	max. 330 bar
Drehmoment Torque Couple Coppia	max. 2700 Nm
Seitenlast Side load Charges latérales Carico radiale	max. 26.000 N



Motor series TK	cm <sup>3</sup> /U cm <sup>3</sup> /rev cm <sup>3</sup> /tr cm <sup>3</sup> /giro	U/min rev/min tr/min giri/min	cont / int l/min	cont / int bar	max bar	cont / int Nm	cont / int max. KW	cont / int Nm
TK 250	251	520	114 / 133	240 / 310	330	815 / 1040	49	690 / 880
TK 315	315	410	114 / 133	240 / 310	330	1030 / 1315	47	950 / 1220
TK 400	400	370	114 / 151	205 / 275	290	1150 / 1525	49	1050 / 1410
TK 500	500	300	114 / 151	205 / 275	290	1440 / 1915	48	1320 / 1780
TK 630	629	240	114 / 151	205 / 225	240	1620 / 1715	34	1500 / 1620
TK 800	800	275	151 / 227	190 / 205	240	1915 / 2300	44	1740 / 1900
TK 1000	1000	220	151 / 227	175 / 190	220	2410 / 2660	35	1980 / 2180

int. =

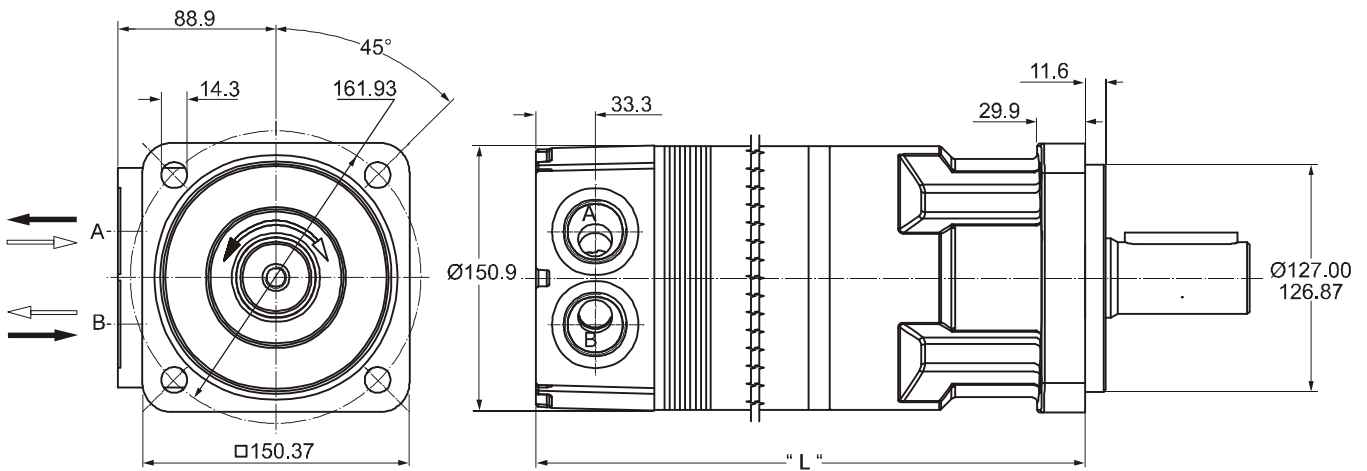
Intermittierende Werte maximal: 10% von jeder Betriebsminute.

Intermittent operation rating applies to 10% of every minute.

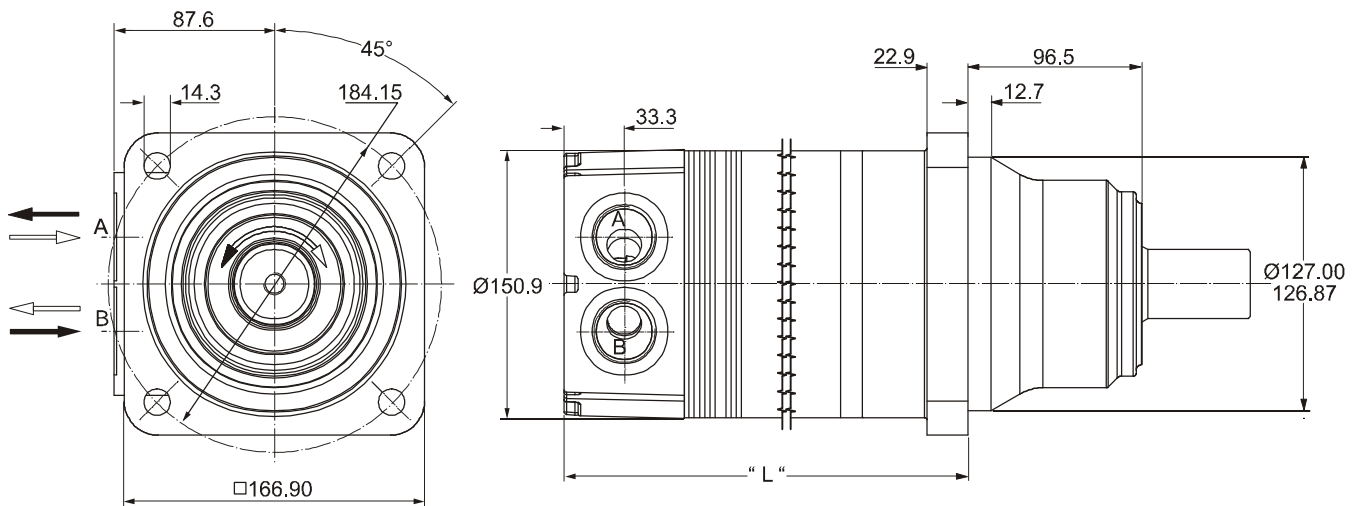
Fonctionnement interm.: 10% max. de chaque minute d'utilisation.

Servizio intermittente: 10% max di ogni minuto di utilizzazione.

**Code K**



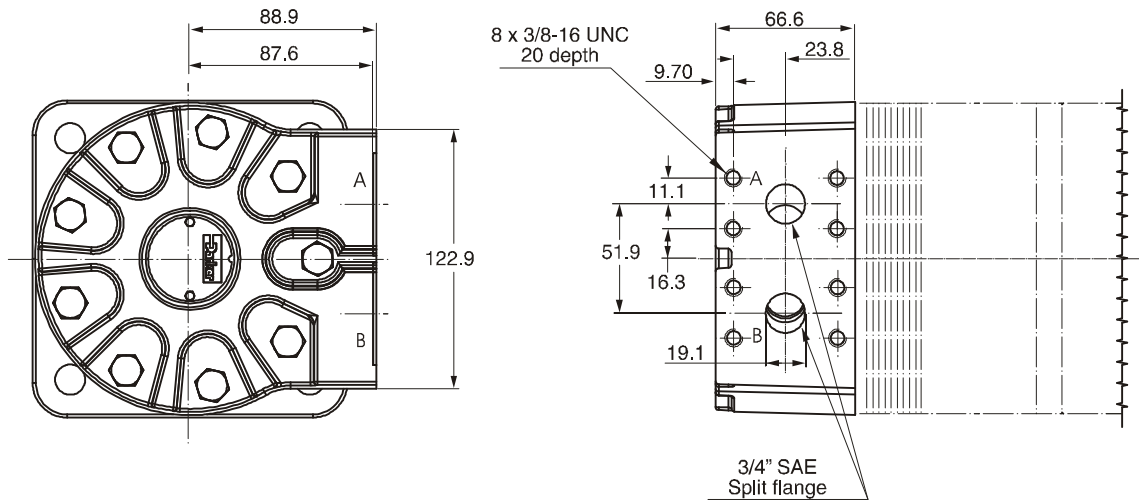
**Code T**



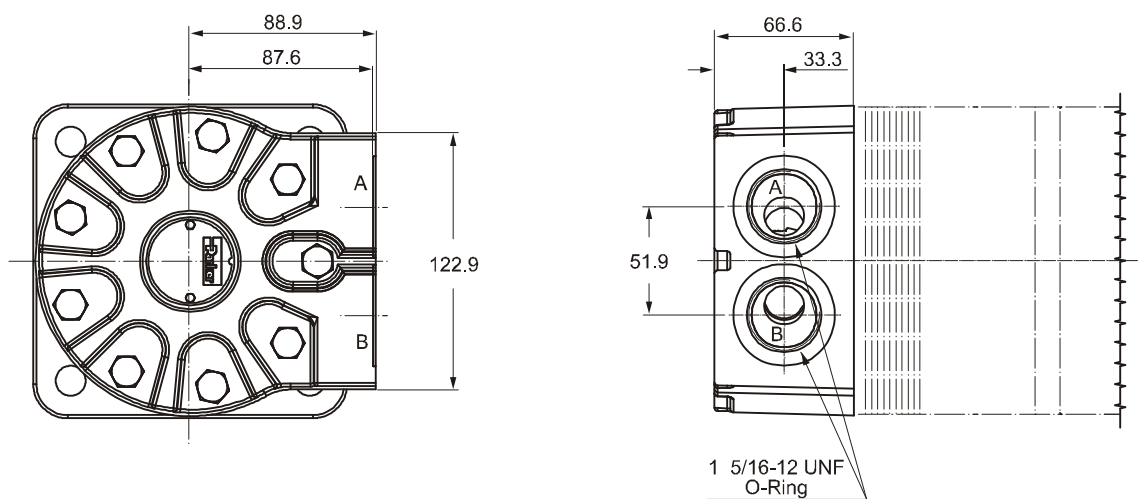
Gewicht / Weight / Poids / Peso	TK250	TK315	TK400	TK500	TK630	TK800	TK1000
Code K	32.0	32.7	33.5	34.5	35.7	37.2	39.1
Code T	30.8	31.4	32.3	33.2	34.5	36.0	37.9
Code K	277	282	290	297	310	323	340
Code T	191	196	203	213	224	239	257

Torqmotoren 3213.PM6.5 RH

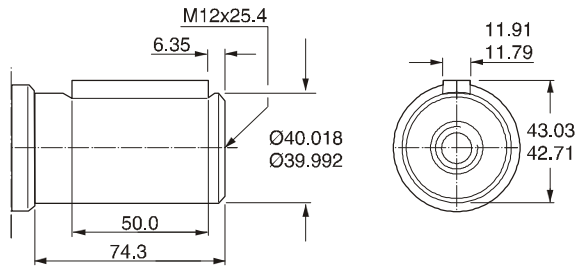
**Code 4**



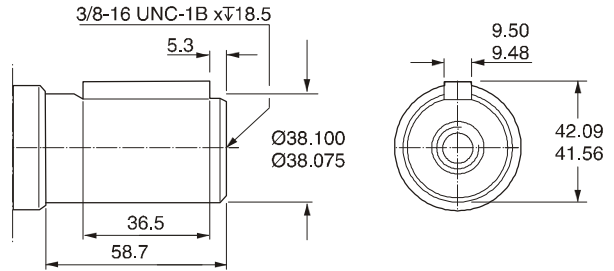
**Code 5**



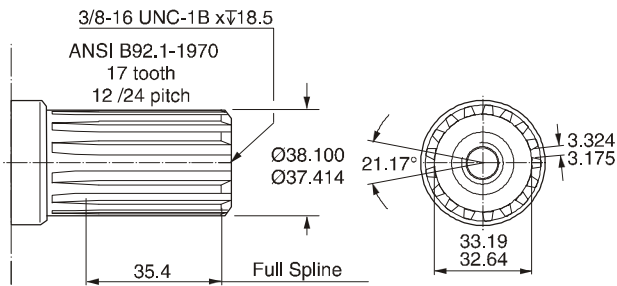
**Code 64**



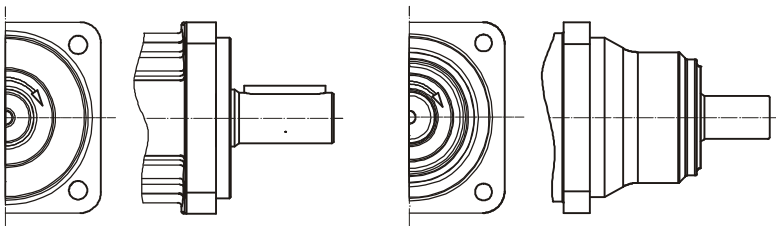
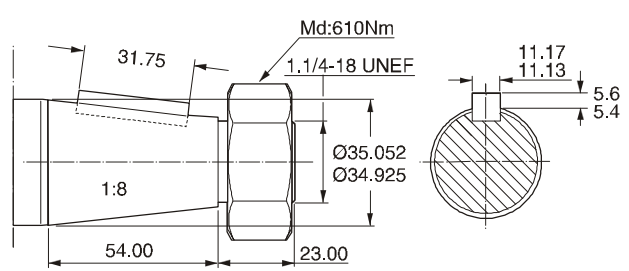
**Code 32**



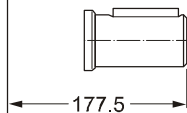
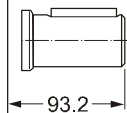
**Code 36**



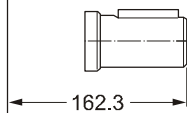
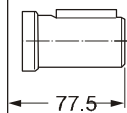
**Code 63**



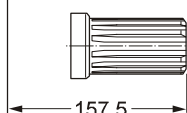
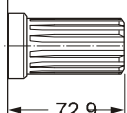
**Code 64**



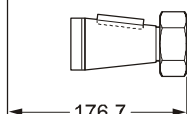
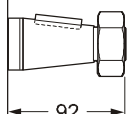
**Code 32**



**Code 36**

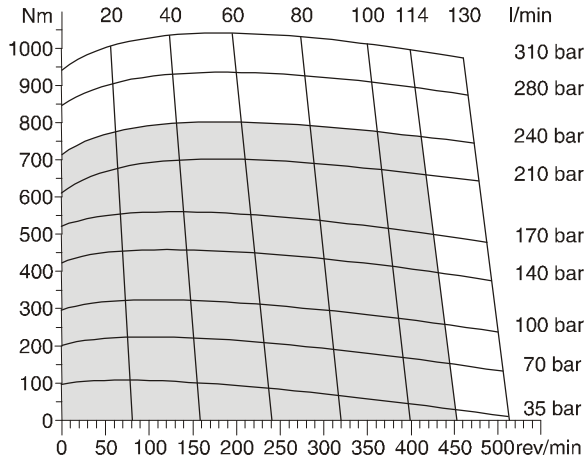


**Code 63**

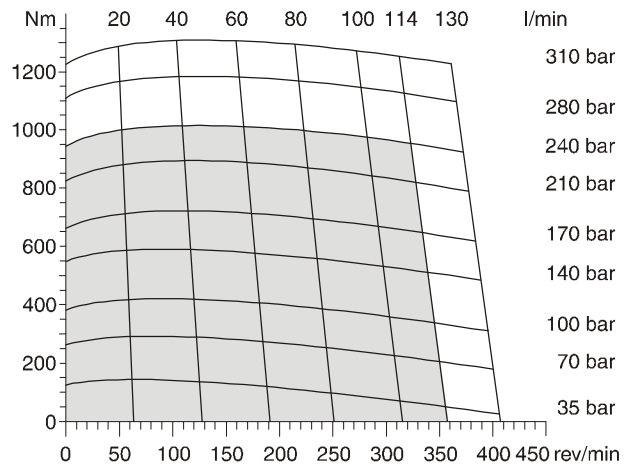




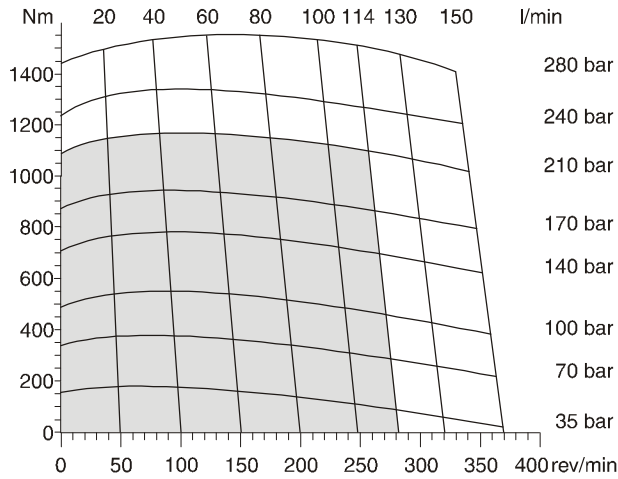
**TK 250**



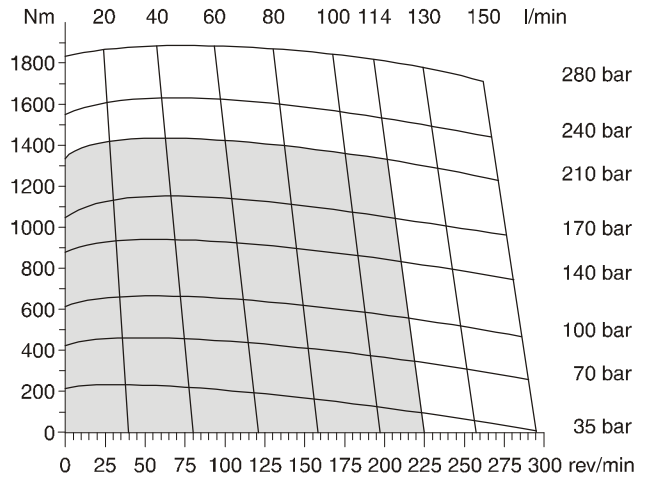
**TK 315**



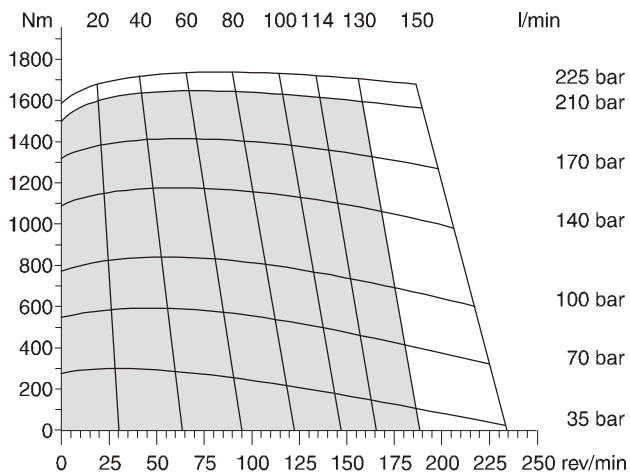
**TK 400**



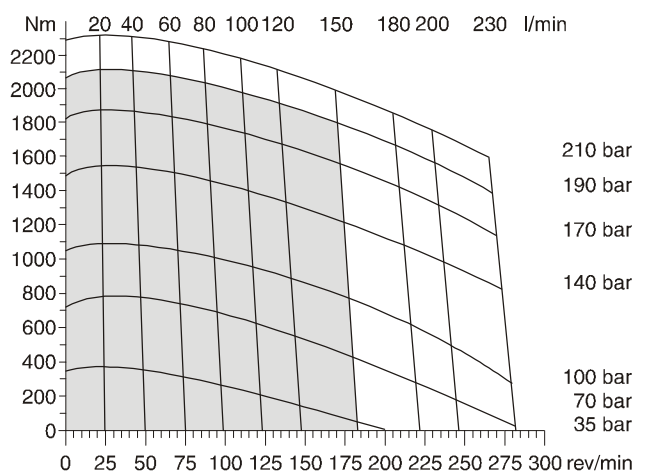
**TK 500**



**TK 630**



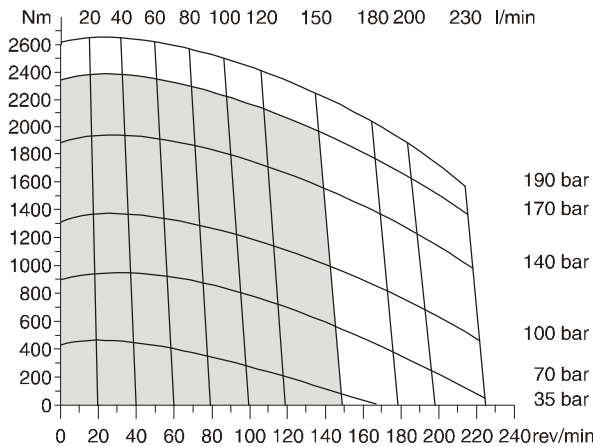
**TK 800**



■ Cont.    □ Int.

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.

**TK 1000**



**Life Time**

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  $F_R$ .

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  $F_R$ .

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  $F_R$ .

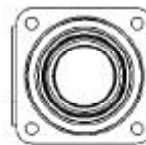
La durata dei cuscinetti ( $L_h$  in ore) può essere calcolata con la seguente formula. Il valore  $F_R$  è limitato dalla resistenza meccanica dell'albero (vedi diagramma). La quota "L" è la distanza tra la flangia del corpo ed il punto di applicazione della forza radiale  $F_R$ .

**Code K**

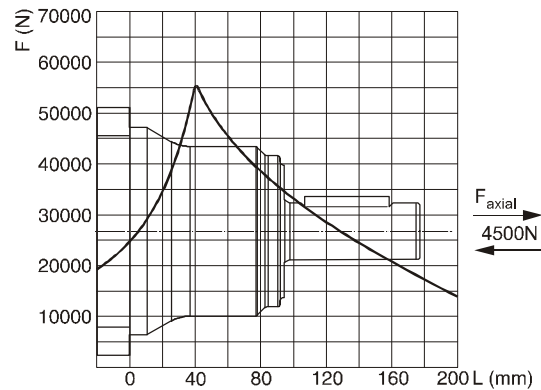
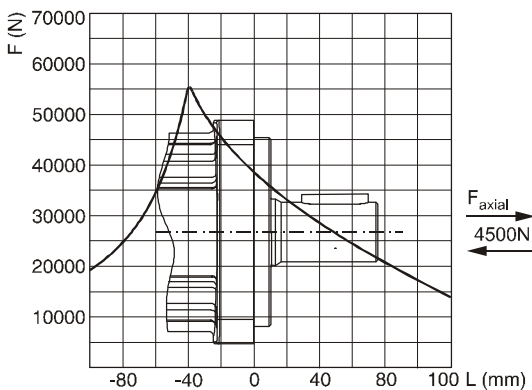


$$L_h = \frac{12 \cdot 10^6}{60 \cdot n} \left\{ \frac{F_a}{F_b} \right\}^{3.33}$$

**Code T**



$$L_h = \frac{12 \cdot 10^6}{60 \cdot n} \left\{ \frac{F_a}{F_b} \right\}^{3.33}$$



Life in hours / Lebensdauer in Stunden

Shaft speed / Abtriebswellendrehzahl

Allowable side load defined by above curve at a distance from mounting flange /

Erlaubte radiale Wellenbelastung als Funktion der Länge

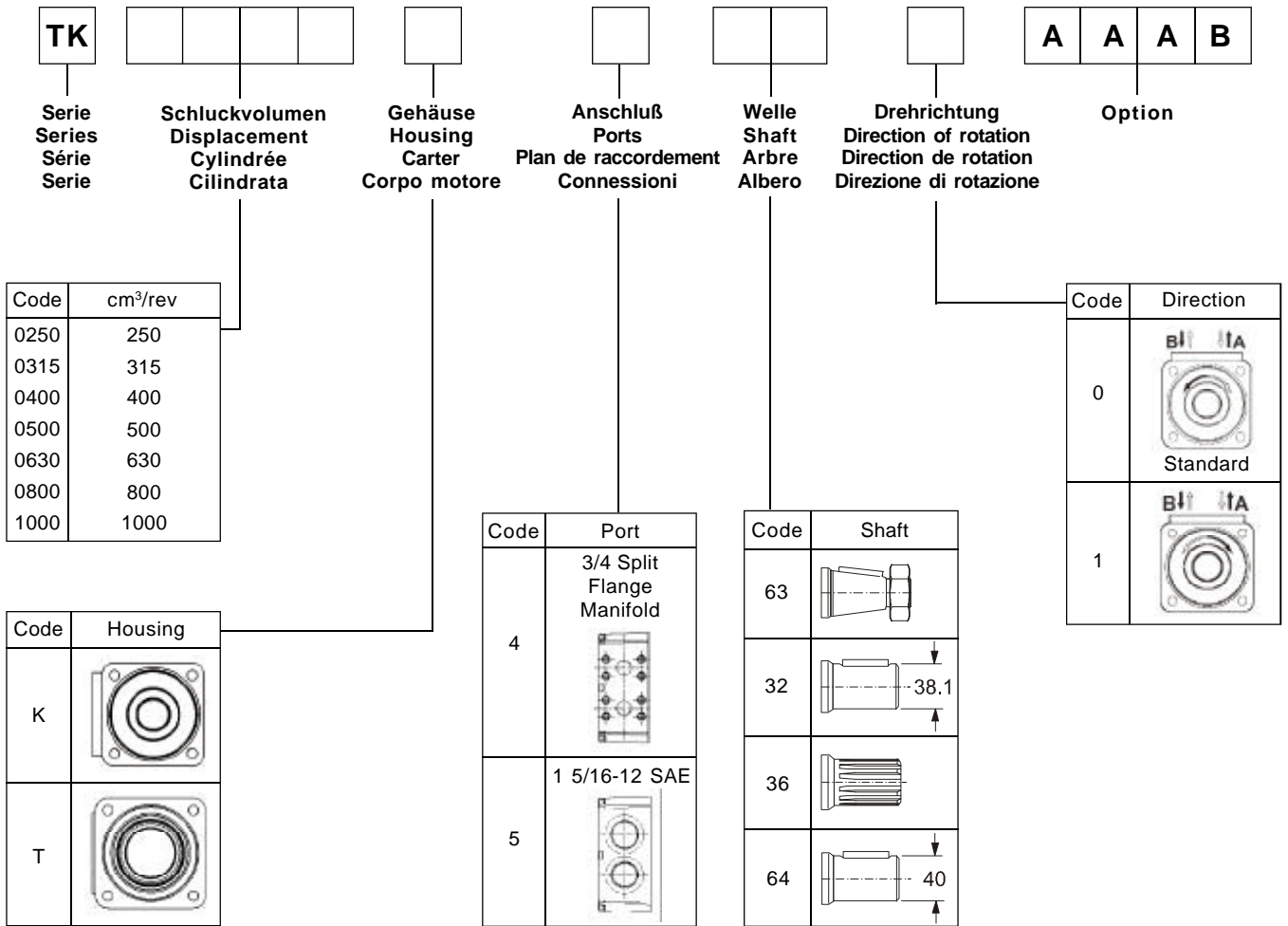
Application side load / Anwendungsseitige Wellenbelastung

$L_h = h$   
 $n = \text{rev/min}$   
 $F_a = F \text{ (N)}$   
 $F_b = F \text{ (N)}$

Vorstehende Formeln gelten für eine B10-Lebensdauer. / The preceding formulas are valid for a B10 duration of life.

Les formules précédentes sont valables pour une durée de vie B10. / Le formule precedenti sono valide per una durata della vita B10.

Torqmotoren 3213.PM6.5 RH

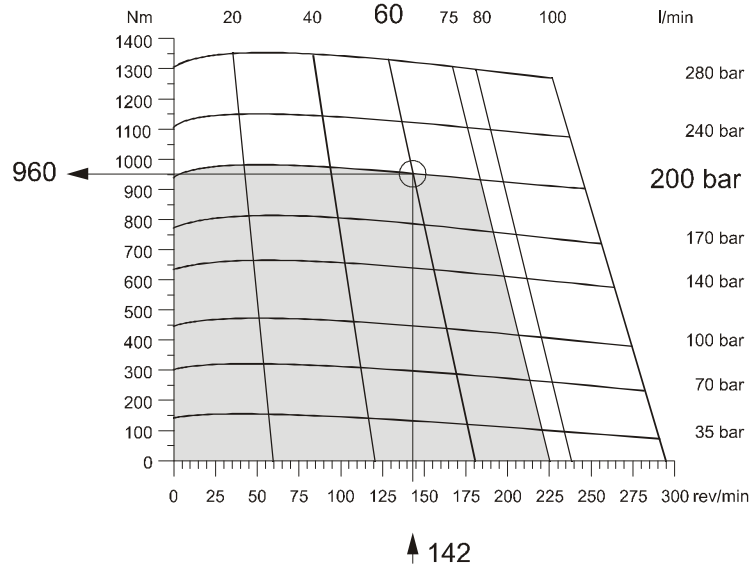


**Example**

**Berechnung von Wirkungsgrad und Leistung**  
**Calculation of efficiency and output power**  
**Dètermination du rendement et de la puissance**  
**Calcoli di rendimento e potenza utile**

**TG 335**

Md = 960 Nm  
n = 142 rev/min  
Δp = 200 bar  
V = 337 cm<sup>3</sup>/rev  
Q = 60 l/min



Hydraulisch-mechanischer Wirkungsgrad ( $\eta_{hm}$ )  
Hydraulic-mechanical efficiency  
Rendement hydro-mécanique  
Rendimento idro-meccanico

Volumetrischer Wirkungsgrad ( $\eta_{vol}$ )  
Volumetric efficiency  
Rendement volumétrique  
Rendimento volumetrico

$$\eta_{hm} = \frac{Md \cdot 20 \cdot \pi}{\Delta p \cdot V} = \frac{960 \cdot 20 \cdot \pi}{200 \cdot 337}$$

$$\eta_{hm} = 0.89$$

$$\eta_{vol} = \frac{n \cdot V}{Q \cdot 10^3} = \frac{142 \cdot 337}{60 \cdot 10^3}$$

$$\eta_{vol} = 0.80$$

Gesamtwirkungsgrad ( $\eta_{ges}$ )  
Overall efficiency  
Rendement global  
Rendimento totale

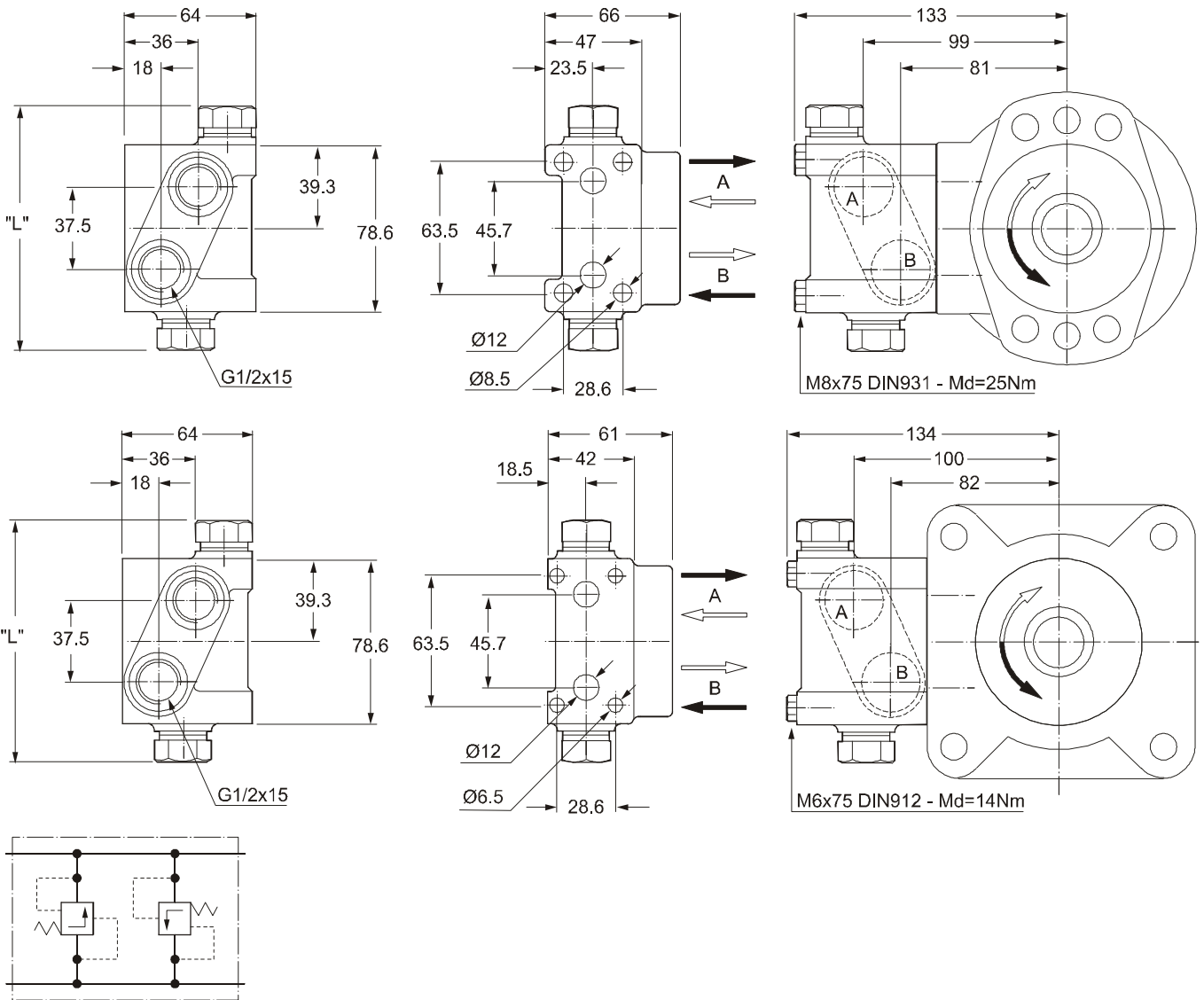
Leistung P (kW)  
Power P  
Puissance P  
Potenza P

$$\eta_{ges} = \eta_{vol} \cdot \eta_{hm} = 0.80 \cdot 0.89$$

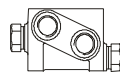
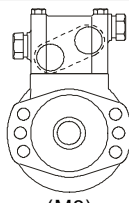
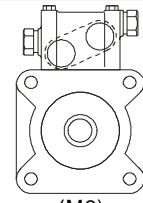
$$\eta_{ges} = 0.71$$

$$P = \frac{Md \cdot n \cdot \pi}{10^4 \cdot 3} = \frac{960 \cdot 142 \cdot \pi}{10^4 \cdot 3}$$

$$P = 14.3 \text{ kW}$$

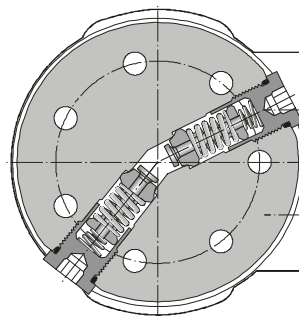
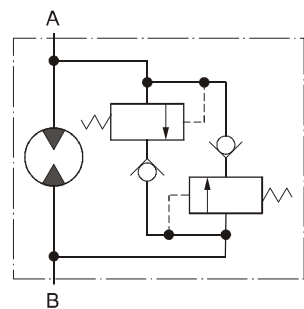
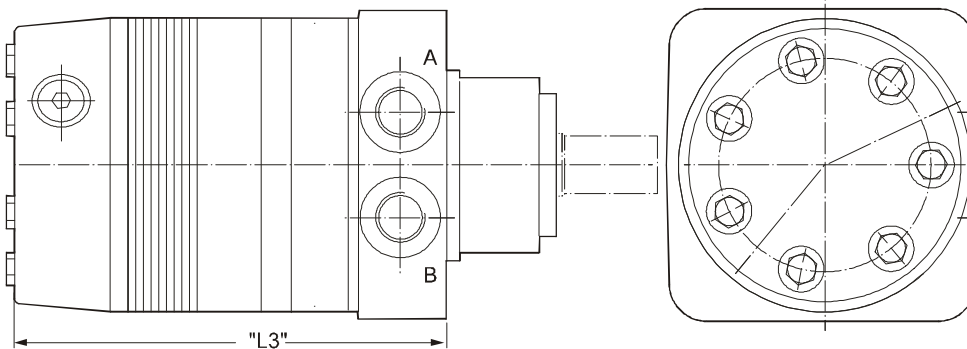
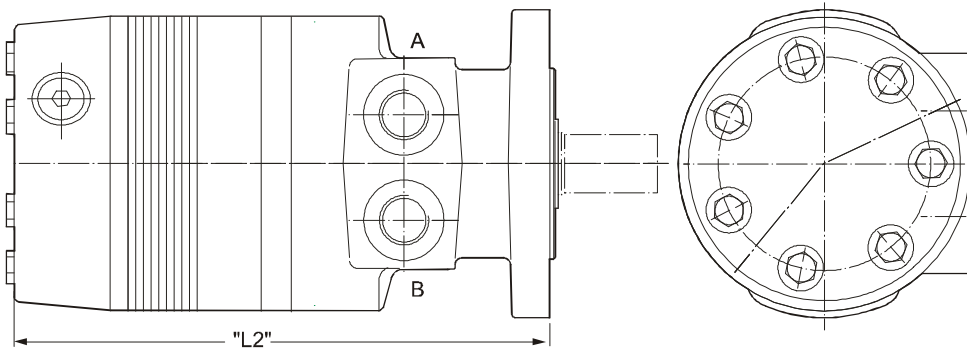
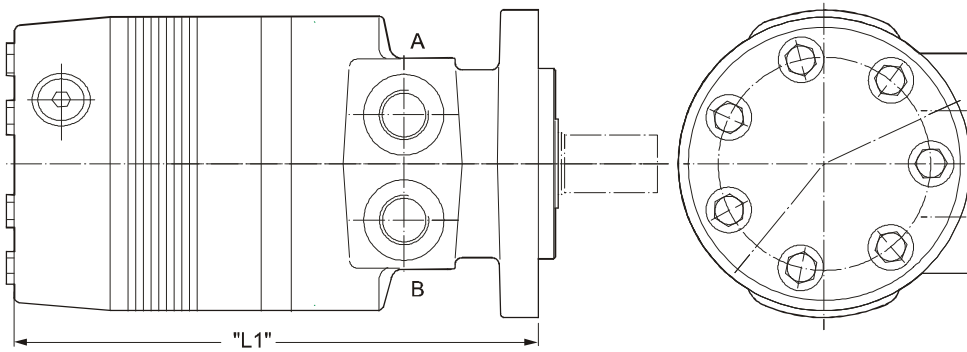


**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

Opening pressure	Single valve 		 (M8)	 (M6)	Length "L"
	Order no. (M8)	Order no. (M6)	Option code	Option code	
100 bar	410017-100	410018-100	HAAP	HAAF	110 mm
140 bar	410017-140	410018-140	HAAU	HAAH	158 mm
170 bar	410017-170	410018-170	HAAX	HAAK	158 mm
200 bar	410017-200	410018-200	HABA	HAAM	158 mm

**Zubehör / Fixtures / Fournitures / Part. di fissaggio**  
 4 x M8 ( M6 ) x 75mm ; 2 x O-Ring

Torqmotoren 3213.PM6.5 RH



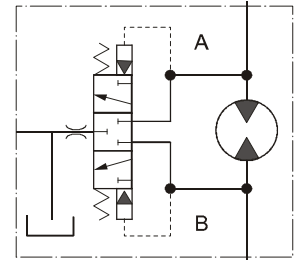
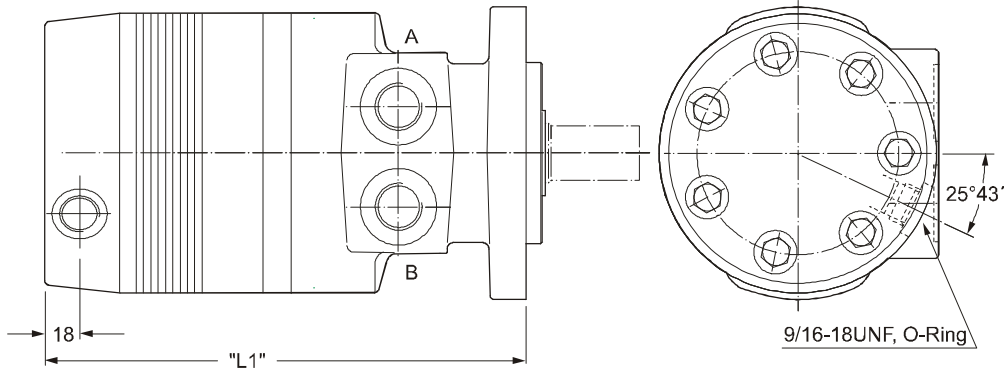
Motor Series	"L1" mm	"L2" mm	"L3" mm
TF80	213.5	218.5	173.2
TF100	213.5	218.5	173.2
TF130	216.5	221.5	176.3
TF140	218.3	223.3	178.1
TG140	218.3	223.3	178.1
TH140		243.6	201.2
TF170	221.3	226.3	181.1
TG170	221.6	226.6	180.4
TH170		246.9	204.3
TF190	224.6	229.6	184.4
TG190	224.6	229.6	184.4
TH190		250.0	207.6
TF240	229.2	234.2	189.0
TG240	229.2	234.2	189.0
TH240		254.8	212.2
TF280	234.0	239.0	193.8
TG280	234.0	239.0	193.8
TH280		259.6	217.0
TG330	240.4	245.4	200.2
TH330		266.0	223.3
TF365	243.7	248.7	203.5
TF405	247.7	252.7	207.5
TG405	247.7	252.7	207.5
TH405		275.3	230.7
TF475	256.4	261.4	216.2
TG475	256.4	261.4	216.2
TH475		281.7	239.3
TG530	262.7	267.7	222.5
TH530		288.1	245.7
TG620	272.1	277.1	231.9
TH620		297.8	255.1
TG790	291.2	296.2	251.0
TH790		316.8	274.1
TG960	310.2	315.2	270.0
TH960		335.9	293.2

**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

Option code	Opening pressure
BBBM	70 bar
BBBJ	100 bar
BBBN	140 bar
BBCG	170 bar
BBBF	210 bar

Torqmotoren 3213.PM6.5 RH

**Code AAFX**



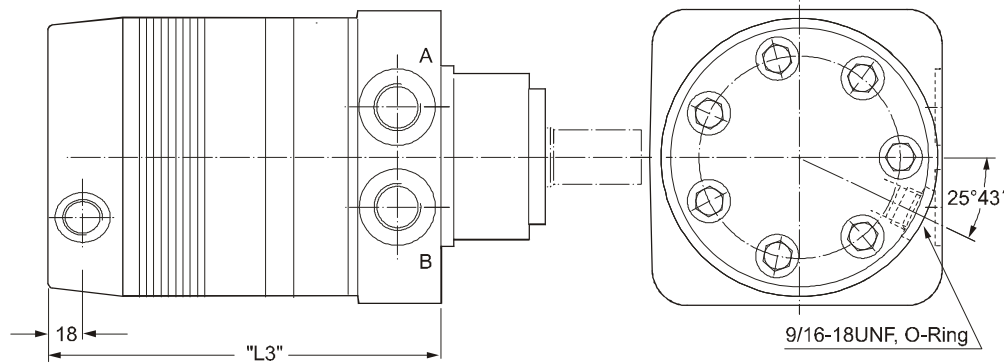
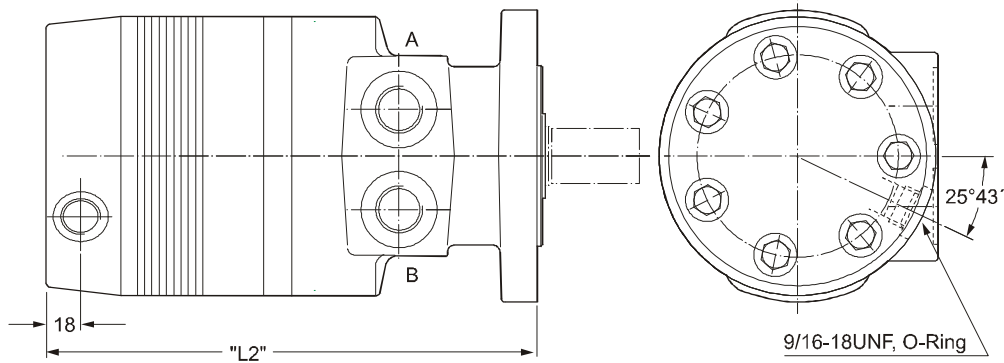
Q=3.5 l p=8 bar  $\dot{v}$ =39 mm<sup>2</sup>/s

Spülventil für geschlossene Systeme zur Rückführung einer definierten Menge des Niederdrucköls in den Tank zur Abkühlung innerhalb desselben Kreislaufs.

Hot oil shuttle valve allows for diverting of low pressure oil in closed loop applications to be returned to tank, cooler or filter for cooling in the same circuit.

Valve de rincage pour systèmes fermés pour le retour d'un volume déterminé de fluide basse pression vers le réservoir, un refroidisseur ou un filtre de réfrigération, dans le même circuit.

Una valvola selettica permette di deviare olio a bassa pressione direttamente al serbatoio o allo scambiatore di calore consentendo, nelle applicazioni a circuito chiuso, un miglior raffreddamento dell'olio.



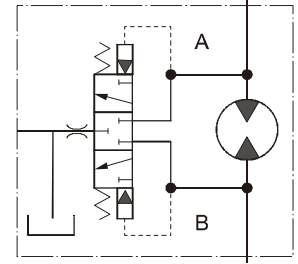
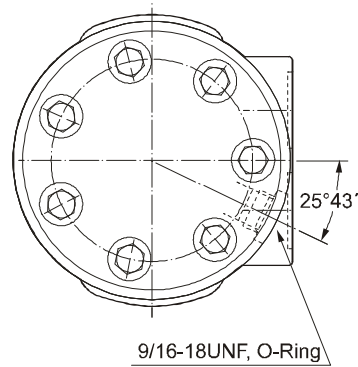
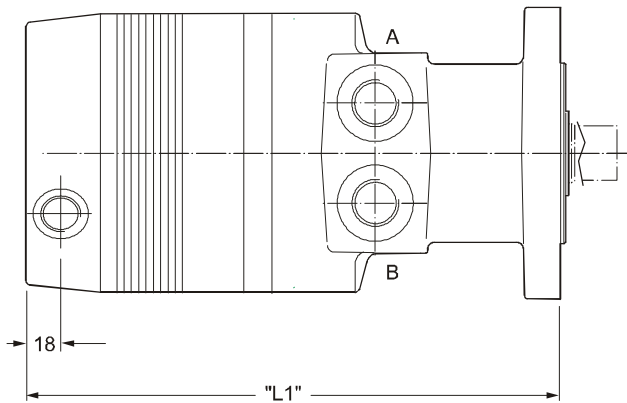
Gewicht / Weight		TG140	TG170	TG195	TG240	TG280	TG335	TG405	TG475	TG530	TG625	TG785	TG960
Poids / Peso	kg	16.0	16.3	16.5	16.9	17.3	17.7	18.3	19.0	19.7	20.4	22.0	23.7
Code AAFX	"L1" mm	210.5	213.8	216.8	221.4	226.2	232.6	239.9	248.6	254.9	264.3	283.4	302.4
Code AAFX	"L2" mm	215.5	218.8	221.8	226.4	231.2	237.6	244.9	253.6	259.9	269.3	288.4	307.4
Code AAFX	"L3" mm	170.3	173.6	176.6	181.2	186.0	192.4	199.7	208.4	214.7	224.1	243.2	262.2

Gewicht / Weight		TF80	TF100	TF130	TF140	TF170	TF195	TF240	TF280	TF360	TF405	TF475
Poids / Peso	kg	15.0	15.1	15.3	15.4	15.6	16.1	16.4	16.9	17.4	17.9	18.9
Code AAFX	"L1" mm	205.9	205.9	208.9	210.9	213.9	216.9	221.9	225.9	234.9	239.9	248.9
Code AAFX	"L2" mm	210.9	210.9	213.9	215.9	218.9	221.9	226.9	231.9	239.9	244.9	253.9
Code AAFX	"L3" mm	165.9	165.9	168.9	170.9	173.9	176.9	181.9	186.9	194.9	199.9	208.9

Torqmotoren 3213.PM6.5 RH

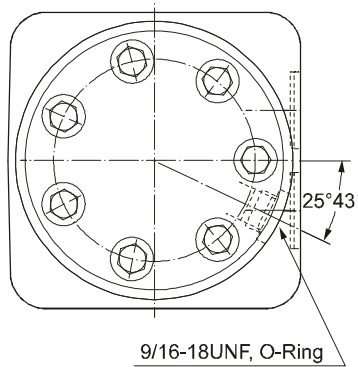
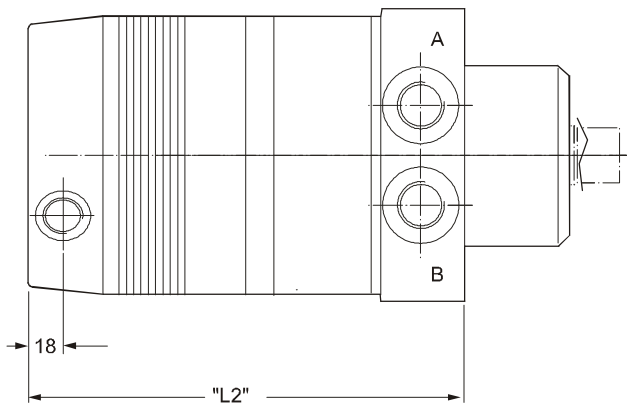


**Code AAFX**



Q=3.5l p=8bar  $\varnothing=39\text{mm}^2/\text{s}$

Spülventil für geschlossene Systeme zur Rückführung einer definierten Menge des Niederdrucköls in den Tank zur Abkühlung innerhalb desselben Kreislaufs.



Hot oil shuttle valve allows for diverting of low pressure oil in closed loop applications to be re-turned to tank, cooler or filter for cooling in the same circuit.

Valve de rincage pour systèmes fermés pour le retour d'un volume déterminé de fluide basse pression vers le réservoir, un refroidisseur ou un filtre de réfrigération, dans le même circuit.

Una valvola selettice permette di deviare olio a bassa pressione direttamente al serbatoio o allo scambiatore di calore consentendo, nelle applicazioni a circuito chiuso, un miglior raffreddamento dell'olio.

Gewicht / Weight		TH140	TH170	TH195	TH240	TH280	TH335	TH405	TH475	TH530	TH620	TH785	TH960
Poids / Peso	kg	18.4	18.6	18.9	19.2	19.6	20.0	20.6	21.3	22.0	22.7	24.3	26.0
Code AAFX	"L1" mm	235.8	239.1	242.2	247.0	251.8	258.2	265.5	273.9	280.3	290.0	309.0	328.1
Code AAFX	"L2" mm	193.4	196.5	200.0	204.4	209.2	215.5	222.9	231.5	237.9	247.3	266.3	285.4



# Speed Sensor

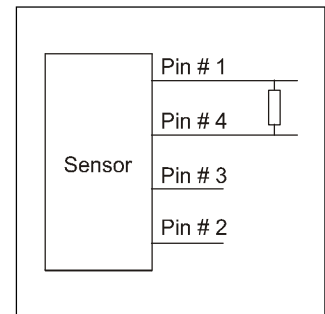
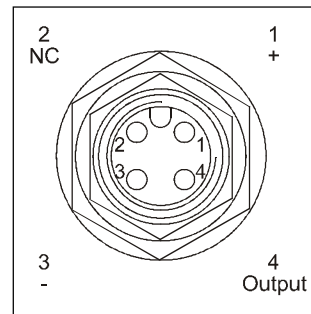
# Torqmotor Series TF / TG

Dieser robuste, wetterfeste Drehzahlaufnehmer arbeitet nach dem Halleffekt. Es werden 30 Rechteckimpulse pro Abtriebswellenumdrehung erzeugt. Durch Erfassung der positiven und negativen Wellenflanken sind 60 Impulse pro Umdrehung möglich. Der Sensor führt zu keiner Leistungsbeschränkung des Motors. Die volle Radiallastkapazität bleibt erhalten.

This rugged, weather resistant speed sensor is a Hall effect device. When externally powered, 30 square wave digital pulses per output shaft revolution are produced. By signal multiplication, 60 pulses per revolution can be obtained. The installation of this economical sensor does not affect the torque or side load capability of the motor into which it is installed.

Un capteur économique pour mesure de la vitesse. Ce capteur robuste et résistant aux intempéries est a effet Hall. Alimenté par une source externe, il fournit 30 impulsions carrées par tour. Par multiplication électronique, on obtient 60 impulsions par tour. Son montage ne modifie pas le couple ni la charge radiale du moteur qui le reçoit.

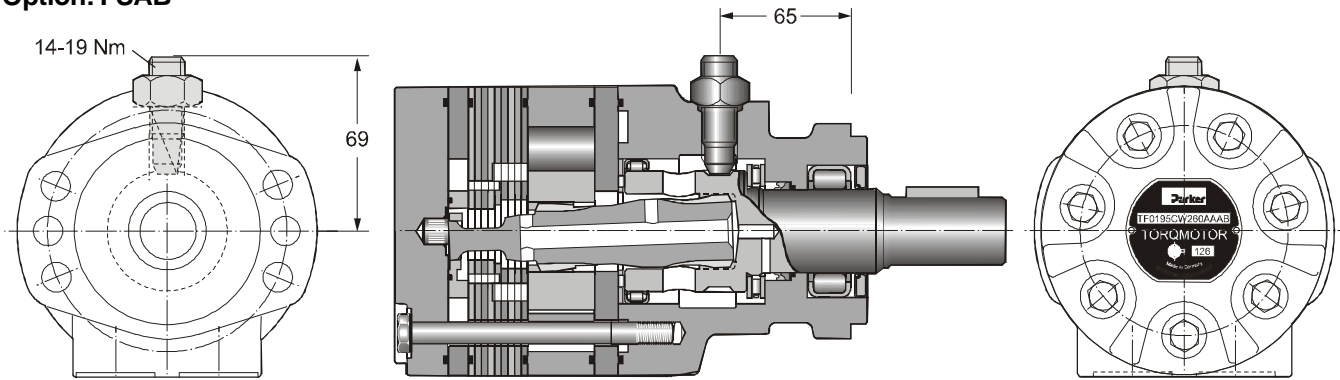
Sensore di velocità ad effetto Hall, estremamente robusto e resistente alle condizioni ambientali. Genera 30 impulsi al giro, con uscita digitale ad onda quadra. Il numero di impulsi può essere elettronicamente raddoppiato. L'utilizzo di questo sensore, non influisce sulle caratteristiche di coppia o di potenza del motore idraulico.



Versorgungsspannung Operating voltage range Courant d'alimentaion Tensione di alimentazione	4.5...24 V (DC)
Arbeitstemperatur Operating temperature Température Temperatura di funzionamento	-30°...100° C
Arbeitsfrequenz Operating frequency range Fréquence d'utilisation Frequenza di lavoro	0...10 KHZ
Erforderlicher Laststrom Sink current Courant depeau Corrente di alimentazione	0...20 mA (max.)
Anschluss Connection Raccordement Connessione elettrica	4 Pin (12mm) DIN Standard

Formel Pullup-Widerstand Formula pull-up resistor value Formule valeur pull-up resistor Calcolo resistenza di carico	(0.25 Watt, Tol. 5%) (0.25 Watt, 5% tol.) (0.25 Watt, tol. 5%) (0.25 Watt, toll. 5%)	Spannung/Voltage Courant/Tensione	4.5...24 V	=	Widerstand Resistor k Ohm
		Laststrom/Sink current Courant/Corrente	0...20 mA		Résistance Resistenze
		Status: aus/State: off Courant: off/Condizione: off (95% +V)			
		+V			Status: ein/State: on Courant: on/Condizione: on (max. 0.4 V DC)
		0 V			

**Option: FSAB**



Der Sensor ist gegen Verpolung der Versorgungsspannung, jedoch nicht gegen Kurzschluß geschützt.

Le capteur est protégé contre l'inversion de polarité la tension d'alimentation, mais pas contre les courts-circuits.

The sensor has reverse polarity protection but no short circuit protection.

Il sensore é protetto contro l'inversione della polarità della tensione di alimentazione, ma non contro corto circuito.

**Ordering Code**

Code	Schluckvolumen Displacement Cylindrée Cilindrata	Gehäuse Housing Carter Corpo motore	Anschluß Ports Plan de raccordement Conessioni	Welle Shaft Arbre Albero	Drehrichtung Direction of rotation Direction de rotation Direzione di rotazione	Option
Code						<b>F S A B</b>
Code						
TF						
TG						

Code	cm <sup>3</sup> /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	

Code	Port
W	G 1/2

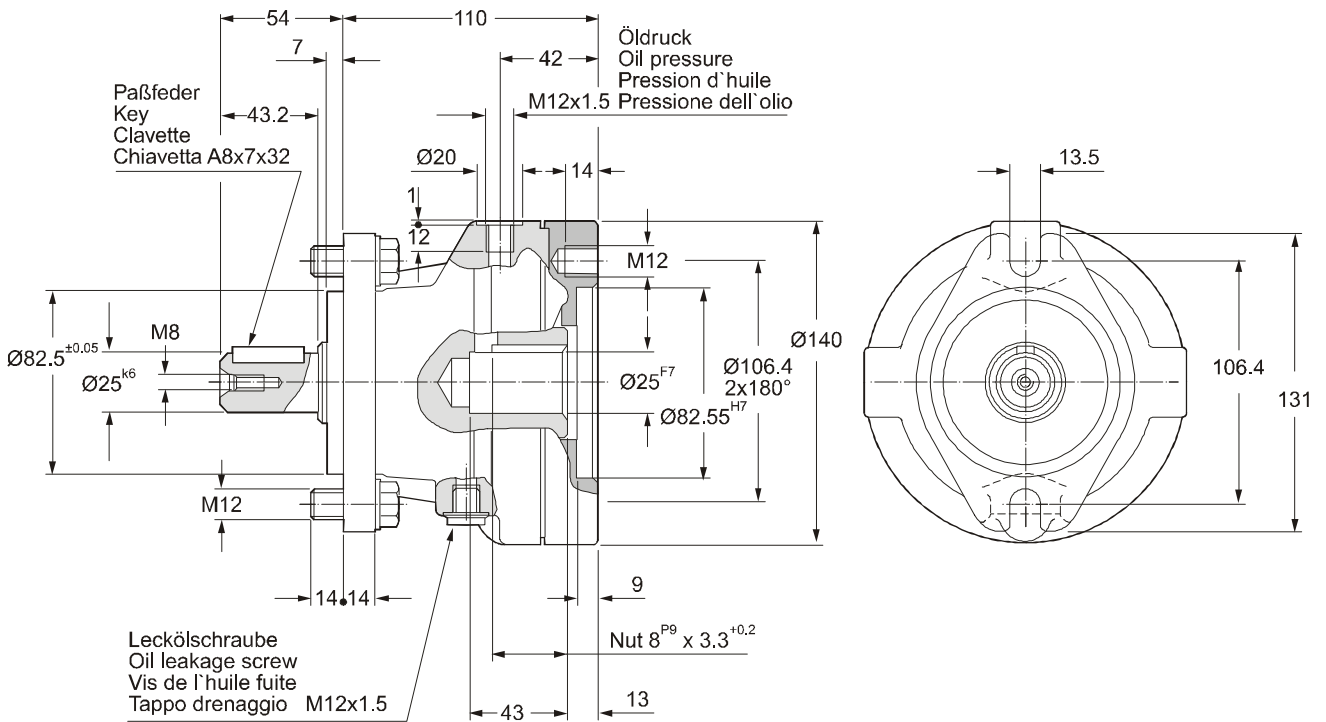
  

Code	Shaft
26 <sup>1)</sup>	
08	
46	

<sup>1)</sup> Nur für TF Motoren  
 Only possible for TF motors  
 Possible seulement avec TF moteur  
 Possible solo con motore TF

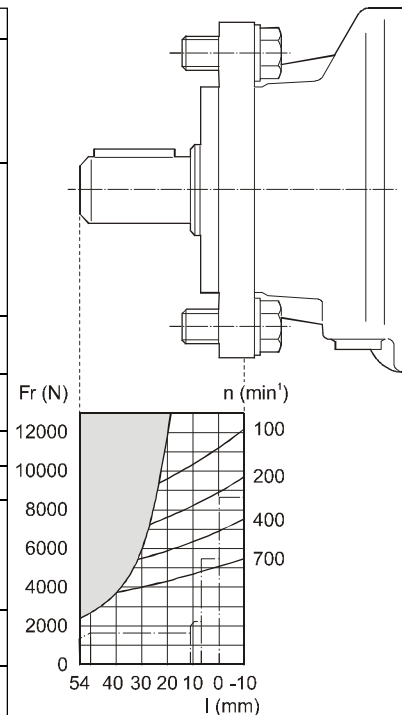
  

Code	Direction
0	<p>Standard</p>
1	



**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

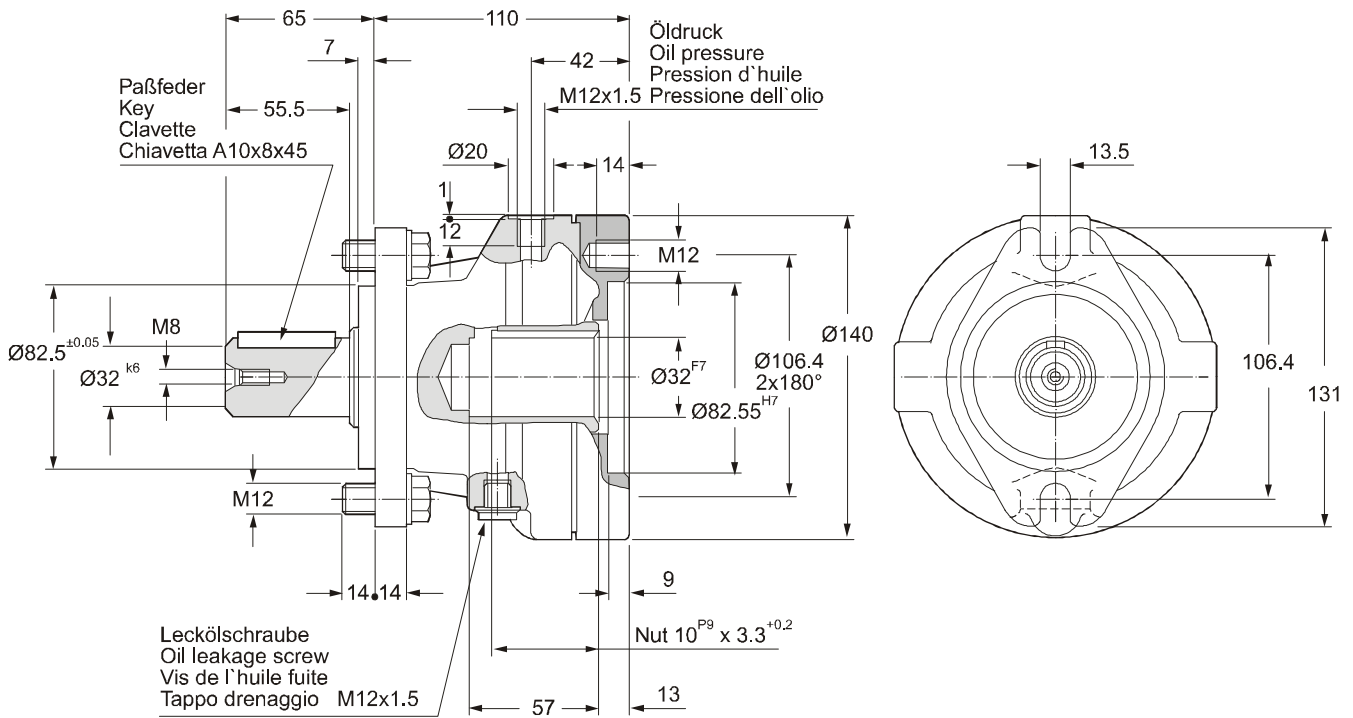
		Code		
Bremse einzeln / Single brake / Frein / Freno		490111	490112	490113
Motor-Bremse Motor-brake combination Combinaison moteur Assieme motore-freno		JAAG	JAAD	JAAB
Drehmoment (Trockenlauf)/Torque (dry operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	580 450	400 320	270 215
Drehmoment (Naßlauf)/Torque (wet operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	420 310	290 225	200 150
Luftüberdruck/Pressure rating/Pression de déblocage/Pressione sbloccaggio	p min. bar	22	16	11
	p max. bar	320		
Drehzahl/Speed Vitesse de rotation/Velocità di rotazione	n max. U/min	2000		
	n max. rev/min			
	n max tr/min			
	n maxi giri/min			
Hubvolumen/Working stroke Cylindrée/Cilindrata	cm <sup>3</sup> min.	5		
	cm <sup>3</sup> max.	14		
Massenträgheitsmoment/Mass moment of inertia/Moment m d'inertie de masse/Momento di inerzia	kgm <sup>2</sup>	0.00065		
Gewicht/Weight/Poids/Peso	kg	8		



**Zubehör / Fixtures / Fournitures / Part. di fissaggio**

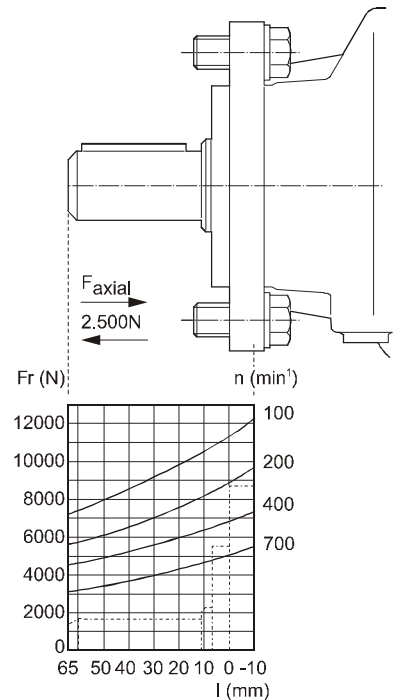
2 x M12x50 DIN 933

Torqmotoren 3213.PM6.5 RH



**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

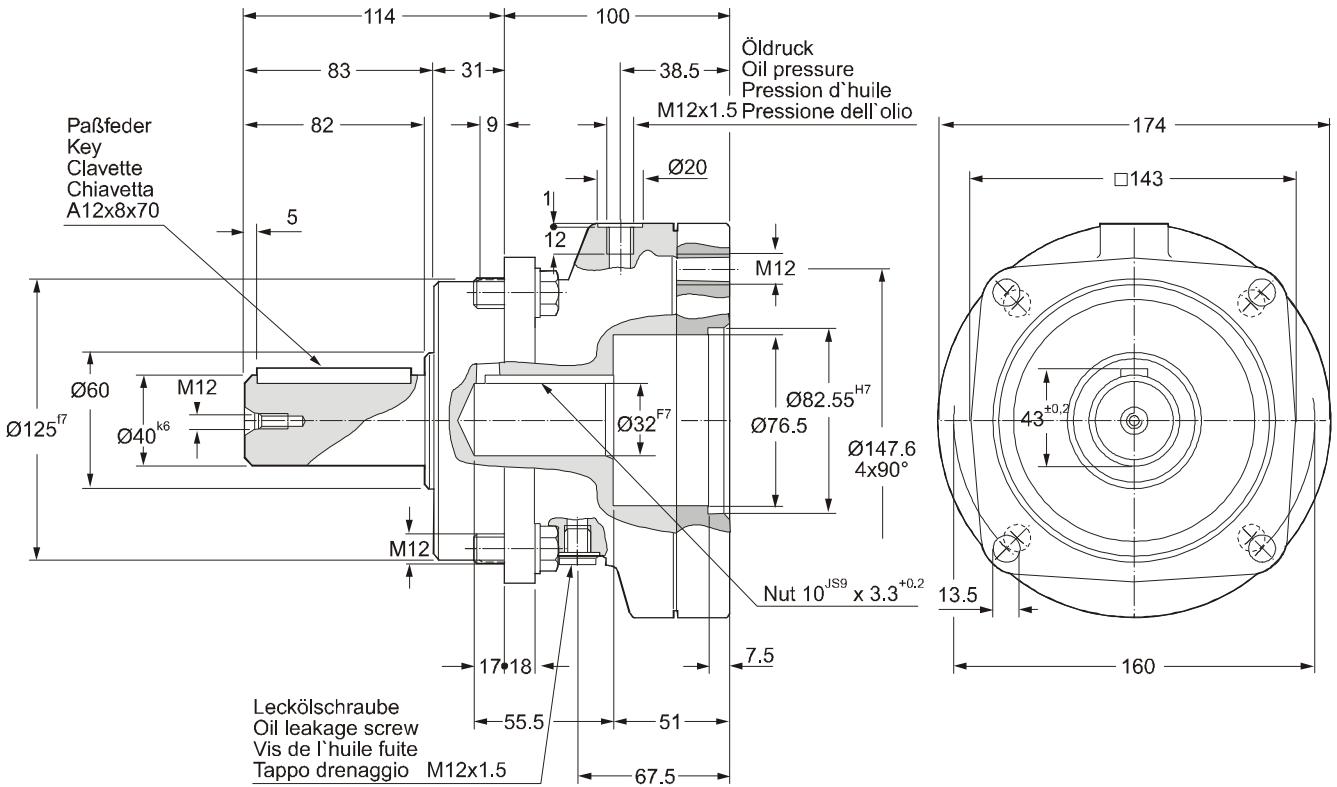
		Code		
Bremse einzeln / Single brake / Frein / Freno		490114	490115	490116
Motor-Bremse Motor-brake combination Combinaison moteur Assieme motore-freno		JAAJ	JAAL	JAAJ
Drehmoment (Trockenlauf)/Torque (dry operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	580 450	400 320	270 215
Drehmoment (Naßlauf)/Torque (wet operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	420 310	290 225	200 150
Luftüberdruck / Pressure rating / Pression de déblocage / Pressione sbloccaggio	p min. bar	22	16	11
	p max. bar	320		
Drehzahl/Speed Vitesse de rotation/Velocità di rotazione	n max. U/min	2000		
	n max. rev/min			
	n max. tr/min			
	n maxi giri/min			
Hubvolumen/Working stroke Cylindrée/Cilindrata	cm <sup>3</sup> min.	5		
	cm <sup>3</sup> max.	14		
Massenträgheitsmoment/Mass moment of inertia/Moment m d'inertie de masse/Momento di inerzia	kgm <sup>2</sup>	0.00065		
Gewicht/Weight/Poids/Peso	kg	8		



**Zubehör / Fixtures / Fournitures / Part. di fissaggio**

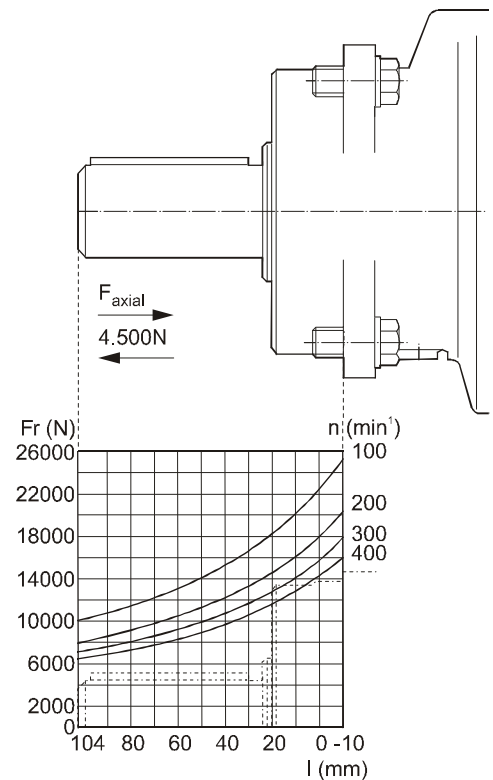
2 x M12x50 DIN 933

Torqmotoren 3213.PM6.5 RH



**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

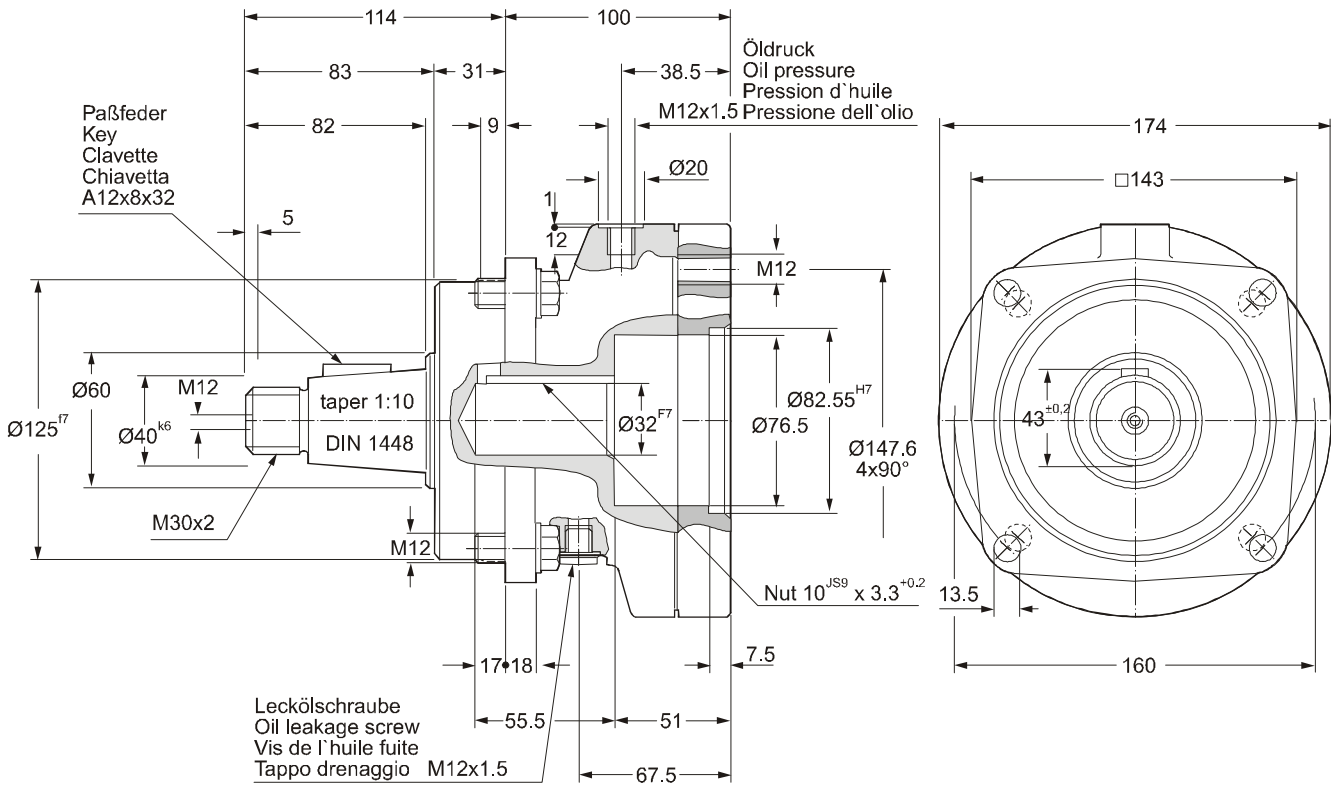
Bremse einzeln/Single brake Frein/Freno			<b>Code</b> <b>490117</b>
Motor-Bremse Motor-brake combination Combinaison moteur Assieme motore-freno			<b>JAAT</b>
Drehmoment (Trockenlauf)/Torque (dry operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	1250 980	
Drehmoment (Naßlauf)/Torque (wet operation) Couple/Coppia statica	stat. Mü Nm dyn. Ms Nm	900 680	
Luftüberdruck/Pressure rating/Pression de déblocage/Pressione sbloccaggio	p min. bar	24	
	p max. bar	320	
Drehzahl/Speed Vitesse de rotation/Velocità di rotazione	n max. U/min	4000	
	n max. rev/min		
	n max. tr/min		
	n maxi giri/min		
Hubvolumen/Working stroke Cylindrée/Cilindrata	cm <sup>3</sup> min.	11	
	cm <sup>3</sup> max.	26	
Massenträgheitsmoment/Mass moment of inertia/Moment m d'inertie de masse/Momento di inerzia	kgm <sup>2</sup>	0.00282	
Gewicht/Weight/Poids/Peso	kg	15.3	



**Zubehör / Fixtures / Fournitures / Part. di fissaggio**

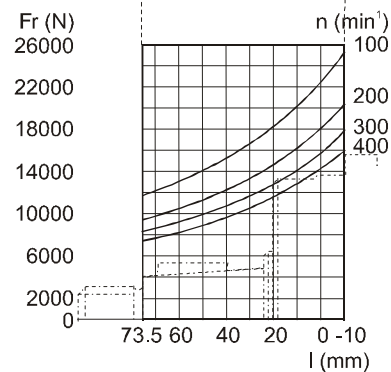
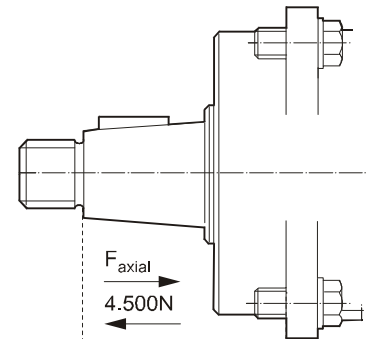
4 x M12x50 DIN 933

Torqmotoren 3213.PM6.5 RH



**Bestellschlüssel / Ordering Code / Système de commande / Sistema di ordinazione**

Bremse einzeln/Single brake Frein/Freno		<b>Code</b>	
		<b>490118</b>	
Motor-Bremse Motor-brake combination Combinaison moteur Assieme motore-freno		<b>JAAW</b>	
Drehmoment (Trockenlauf)/Torque (dry operation) Couple/Coppia statica	stat. Mü Nm	1250	
	dyn. Ms Nm	980	
Drehmoment (Naßlauf)/Torque (wet operation) Couple/Coppia statica	stat. Mü Nm	900	
	dyn. Ms Nm	680	
Luftüberdruck/Pressure rating/Pression de déblocage/Pressione sbloccaggio	p min. bar	24	
	p max. bar	320	
Drehzahl/Speed Vitesse de rotation/Velocità di rotazione	n max. U/min	4000	
	n max. rev/min		
	n max. tr/min		
	n maxi giri/min		
Hubvolumen/Working stroke Cylindrée/Cilindrata	cm <sup>3</sup> min.	11	
	cm <sup>3</sup> max.	26	
Massenträgheitsmoment/Mass Moment of inertia/Moment m d'inertie de masse/Momento di inerzia	kgm <sup>2</sup>	0.00282	
	kg	15.3	



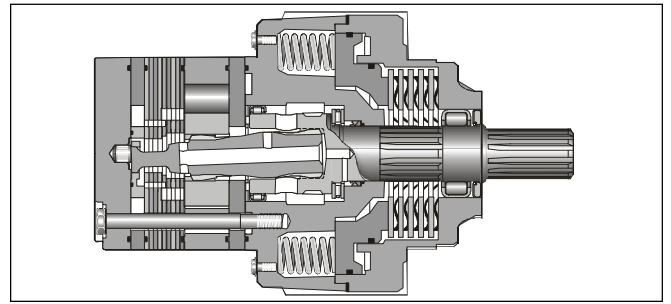
**Zubehör / Fixtures / Fournitures / Part. di fissaggio**

4 x M12x50 DIN 933

Torqmotoren 3213.PM6.5 RH

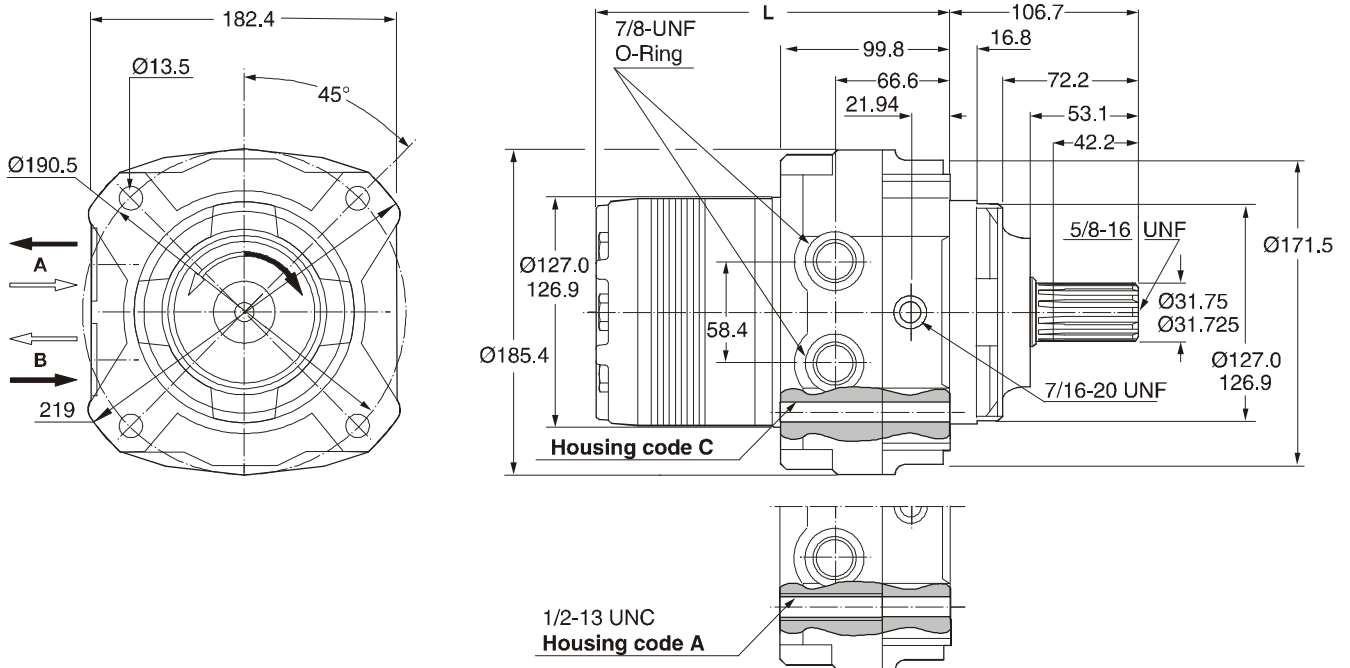
**Kenndaten / Performance / Puissance / Potenza**

Drehmoment (Naßlauf)/Torque (wet operation)/Couple/Coppia statica	dyn. Ms Nm	1000
Luftüberdruck/Pressure rating/Pression de déblocage/Pressione sbloccaggio	p min. bar	19-21
	p max. bar	210
Drehzahl/Speed/Vitesse de rotation/Velocità di rotazione	n max. U/min	710
	n max. rev/min	
	n max tr/min	
	n maxi giri/min	
Hubvolumen/Working stroke Cylindrée/Cilindrata	cm <sup>3</sup> max.	22,5

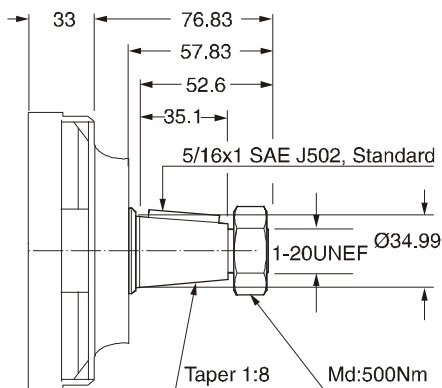


Gewicht / Weight		BG140	BG170	BG195	BG240	BG280	BG335	BG405	BG475	BG530	BG625	BG785	BG960
Poids / Peso	kg	27.3	27.5	27.8	28.1	28.5	28.9	29.5	30.2	30.9	31.7	33.2	34.9
Code A+C	"L" mm	192.3	195.3	198.6	203.2	208.0	214.4	221.7	230.4	236.7	246.1	265.2	284.2

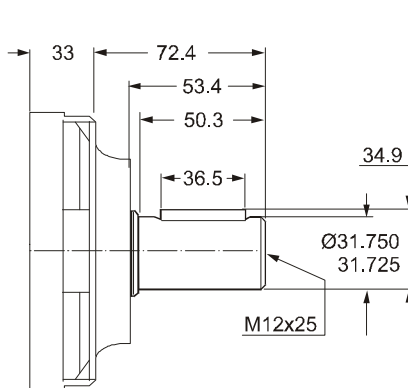
**Code 05**



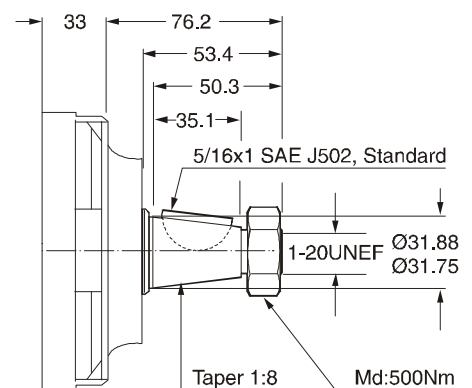
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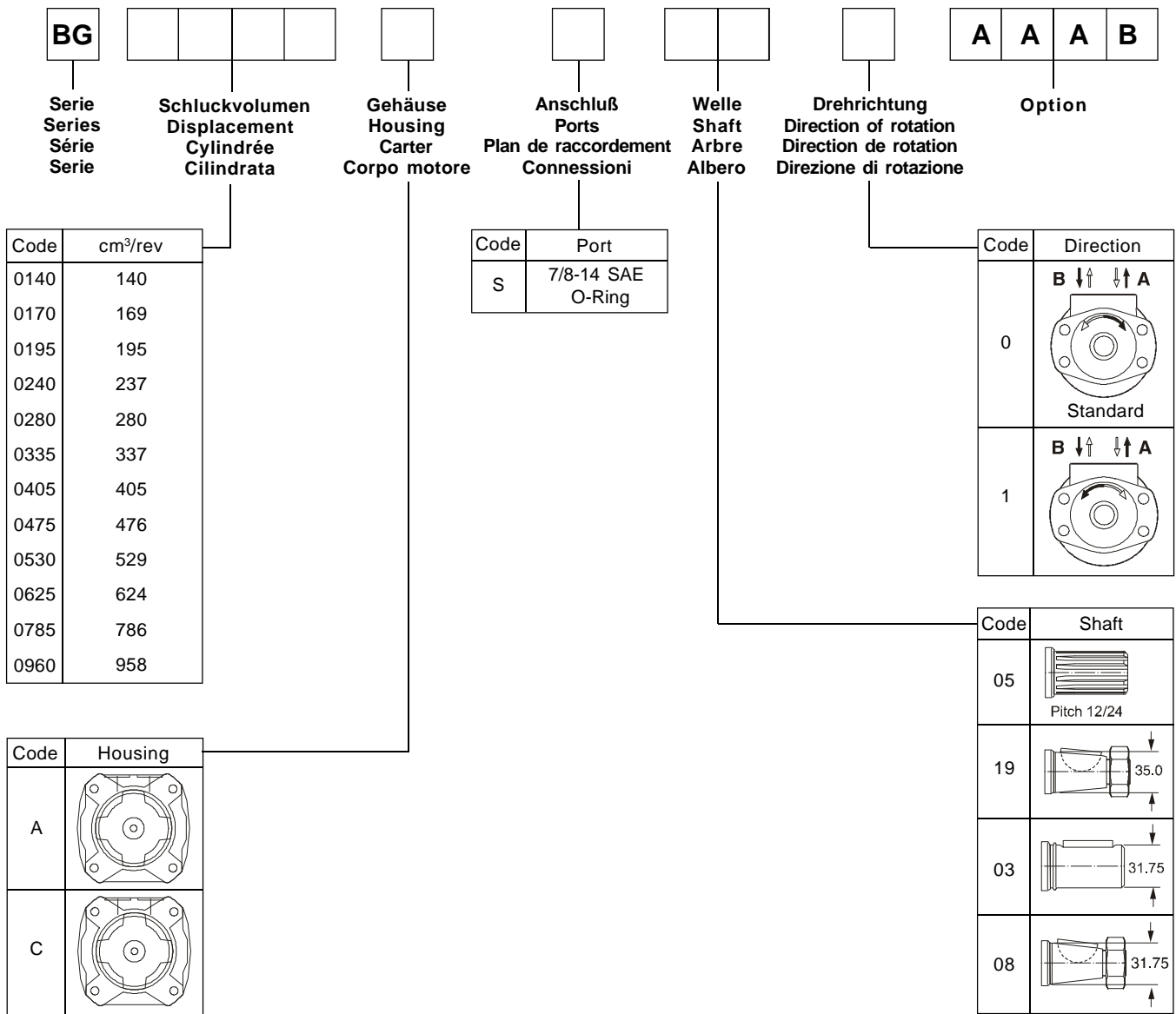


**Code 03**



**Code 08**







Option Code	Discription	Series	TF	TG	TH
AAAA	black paint		X	X	X
AAAH	FPM seals		X	X	
AABP	castle nut		X	X	X
AAFX	shuttle valve		X	X	X
BBBF	internal relief valve 200bar		X	X	X
BBBJ	internal relief valve 100bar		X	X	X
BBBM	internal relief valve 70bar		X	X	X
BBBN	internal relief valve 140bar		X	X	X
BBCG	internal relief valve 170bar		X	X	X
HAAF	external relief valve 100bar (M6)		X	X	
HAAP	external relief valve 100bar (M8)		X	X	
HAAH	external relief valve 140bar (M6)		X	X	
HAAU	external relief valve 140bar (M8)		X	X	
HAAK	external relief valve 170bar (M6)		X	X	
HAAX	external relief valve 170bar (M8)		X	X	
HAAM	external relief valve 200bar (M6)		X	X	
HABA	external relief valve 200bar (M8)		X	X	
JAAB	motor-brake combination 11bar		X		
JAAD	motor-brake combination 16bar		X		
JAAG	motor-brake combination 22bar		X		
JAAJ	motor-brake combination 11bar		X	X	
JAAL	motor-brake combination 16bar		X	X	
JAAH	motor-brake combination 22bar		X	X	
JAAT	motor-brake combination 22bar		X	X	
JAAW	motor-brake combination 22bar		X	X	

\* For further options please contact the Parker sales organisation.

Empfohlen wird die Verwendung eines Hydrauliköls auf Mineralölbasis mit mindestens 0,1% Zinkadditiv als Anti-verschleißzusatz. Vor Einsatz anderer Flüssigkeiten bitten wir um Rücksprache mit unserer Technik.

Die normale Arbeitstemperatur sollte im Bereich von +30° C bis +60° C liegen.

Die Maximaltemperatur darf +90° C nicht überschreiten, während die Mindesttemperatur auf -30° C begrenzt ist.

Wird die normale Arbeitstemperatur wesentlich überschritten, wird die Lebensdauer des Öls stark verkürzt.

Die Viskosität im Arbeitstemperaturbereich sollte 20 bis 120 mm<sup>2</sup>/s betragen.

Zweckmäßig ist eine Filtereinheit von 20 - 50 µm.

Die im Katalog angegebenen technischen Daten gelten für den Motorbetrieb.

Arbeitet der Motor als Pumpe, ist das auf die Antriebswelle wirkende Moment auf den angegebenen kontinuierlichen Maximalwert zu begrenzen. Dabei muss ein Vorspanndruck von 5 - 10 bar, abhängig vom Förderstrom, vorhanden sein (Kavitationsgefahr).

It is recommended to use a mineral based hydraulic oil with minimum 0.1% of zinc as anti-wear additive.

Before using other liquids, please consult our engineering department.

Normal working temperatures should be in the range of between +30° C and +60° C.

Maximum temperatures must not exceed +90° C while minimum temperatures should be limited to -30° C.

If normal working temperatures are substantially exceeded this will result in reduced life duration of the oil used.

Viscosity in the range of working temperatures should be 20 to 120mm<sup>2</sup>/s.

It is advisable to use a filtering fineness of 20 - 50 µm.

The technical data are applicable to motor operation. If the motor is used as a pump, the input torque on the coupling shaft must be limited to the indicated continuous maximum value. For this, an inlet pressure of 5 - 10 bar must be applied depending on oil flow (danger of cavitation).

Il est recommandé d'utiliser une huile hydraulique à base minérale contenant au minimum 0,1% d'additif zinc comme produit anti-usure.

La température normale d'utilisation devrait être située entre +30° C à +60° C.

La température maximale d'utilisation ne doit pas être supérieure à +90° C, alors que la température minimale est limitée à -30° C.

Lorsque la température de service est largement dépassée, la durée de vie de l'huile est fortement diminuée.

Dans la plage de température de service, la viscosité devrait être située entre 20 et 120 mm<sup>2</sup>/s.

Dans ce but, la filtration est de 20 à 50 µm.

Les caractéristiques techniques indiquées dans le catalogue sont considérées pour une utilisation en fonction moteur.

Si le moteur fonctionne en pompe, il faut limiter le couple à la valeur maximale indiquée. Dans ce cas, en fonction du débit, il faut créer une contre-pression de 5 à 10 bar (danger de cavitation).

Si consiglia l'impiego di olio idraulico a base di olio minerale con almeno 0,1% di zinco come additivo anti usura. Prima dell'impiego di altri liquidi si prega di contattare il nostro ufficio tecnico.

La temperatura normale di esercizio dovrebbe essere da +30° C a +60° C.

La temperatura massima non deve superare +90° C, mentre la temperatura minima è limitata a -30° C.

Se la temperatura normale di esercizio viene sostanzialmente superata, la durata dell'olio diminuisce sensibilmente.

La viscosità nel campo della temperatura di esercizio dovrebbe essere da 20 a 120 mm<sup>2</sup>/s.

Si deve prevedere un sistema filtrante per 20...50 micron.

I dati sopraesposti sono validi negli impieghi come motore. Se il motore viene usato come pompa, la coppia sull'albero deve essere limitata a quella massima ammessa. Pertanto il motore deve essere pressurizzato a 5...10 bar in funzione della portata d'olio per evitare cavitazione.

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 Débit 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		
<b>TE / TJ</b>	<b>cm<sup>3</sup>/rev</b>	<b>rev/min</b>	<b>cont / int l/min</b>	<b>cont / int bar</b>	<b>bar</b>	<b>cont / int Nm</b>	<b>max KW</b>	Radiale Wellen- belastung Side loads Charges latérales Carico radiale	
TE/TJ50	50	725 / 935	35 / 45	140 / 175	200	90 / 115	11	<b>TE 7.000 N</b> <b>TJ 14.000 N</b>	
TE/TJ65	66	705 / 940	45 / 60	140 / 175	200	125 / 160	15		
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		
<b>TF</b>	<b>cm<sup>3</sup>/rev</b>	<b>rev/min</b>	<b>cont / int l/min</b>	<b>cont / int bar</b>	<b>bar</b>	<b>cont / int Nm</b>	<b>max KW</b>	Radiale Wellen- belastung Side loads Charges latérales Carico radiale	
TF 80	81	550/730	45/60	200/280	300	215/295	19	<b>TF 16.000 N</b>	
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		
<b>TG/BG TH</b>	<b>cm<sup>3</sup>/rev</b>	<b>rev/min</b>	<b>cont / int l/min</b>	<b>cont / int bar</b>	<b>bar</b>	<b>cont / int Nm</b>	<b>max KW</b>		Radiale Wellen- belastung Side loads Charges latérales Carico radiale
TG/BG, TH140	140	530/710	75/100	200/280	300	400/ 545	33		<b>TG/BG 16.000 N</b> <b>TH 30.000 N</b>
TG/BG, TH170	169	440/575	75/100	200/280	300	485/ 670	33		
TG/BG, TH195	195	380/510	75/100	200/280	300	560/ 770	33		
TG/BG, TH240	237	320/420	75/100	200/280	300	685/ 945	32		
TG/BG, TH280	280	270/350	75/100	200/280	300	800/1100	31		
TG/BG, TH335	337	225/290	75/100	200/280	300	980/1350	30		
TG/BG, TH405	405	185/245	75/100	170/240	300	960/1350	27		
TG/BG, TH475	476	160/240	75/115	140/200	300	960/1400	28		
TG/BG, TH530	529	140/215	75/115	140/170	300	1050/1280	23		
TG/BG, TH625	624	120/185	75/115	120/160	300	1040/1360	20		
TG/BG, TH785	786	95/145	75/115	100/140	300	1150/1490	17		
TG/BG, TH960	958	78/119	75/115	70/100	300	925/1390	12		
<b>TK</b>	<b>cm<sup>3</sup>/rev</b>	<b>rev/min</b>	<b>cont / int l/min</b>	<b>cont / int bar</b>	<b>bar</b>	<b>cont / int Nm</b>	<b>max KW</b>	Radiale Wellen- belastung Side loads Charges latérales Carico radiale	
TK 250	251	520	114 / 133	240 / 310	330	815 / 1040	49	<b>TK 26.000 N</b>	
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.

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