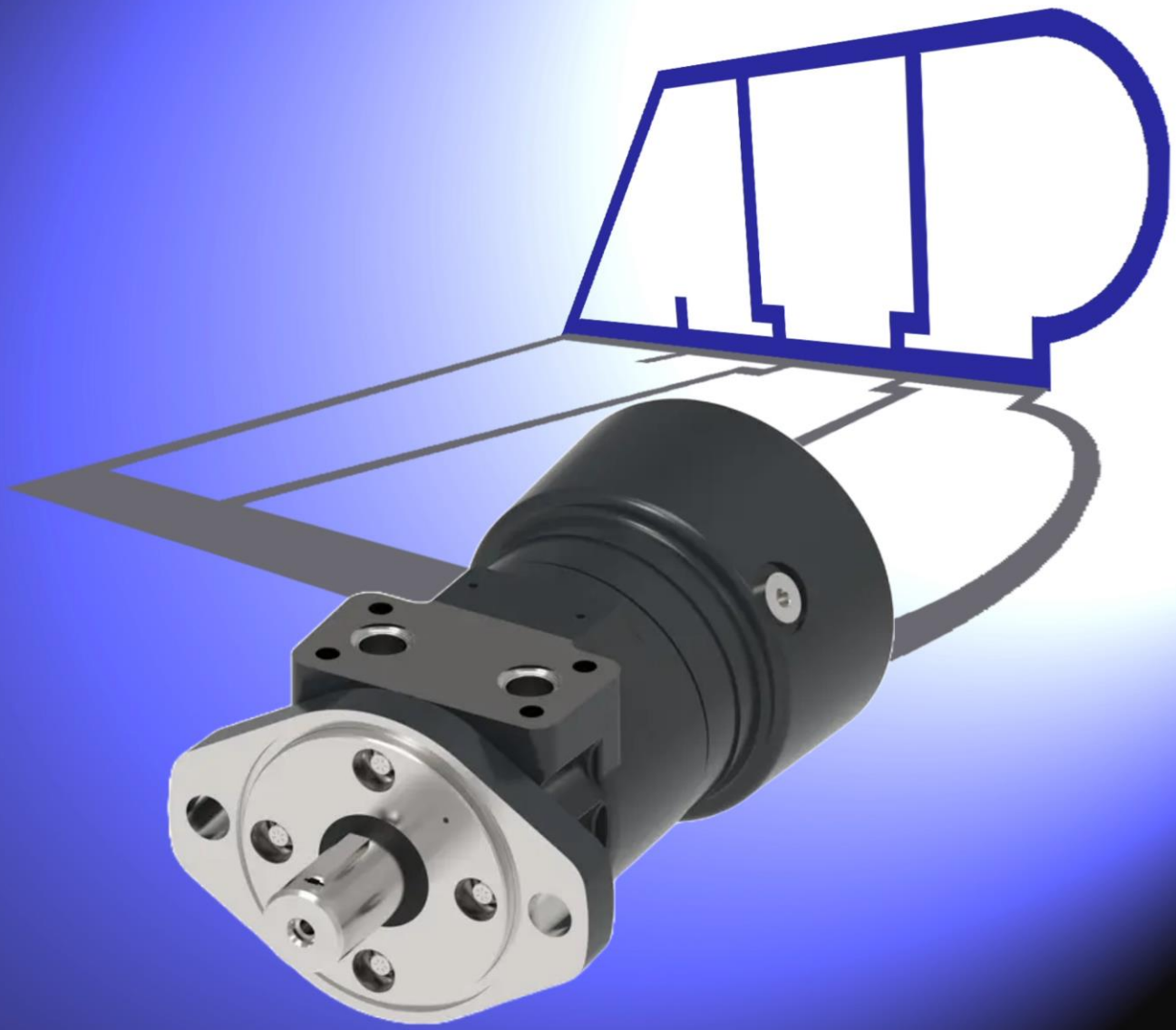
ATP HYDRAULIK

Hydraulikmotor
T-Brake Series



Ein Produkt von

Danfoss
Char-Lynn®

B003-01 2025-07

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T-Brake Serie

Features and Benefits

Description

The T Series features the latest innovations in Geroler technology. These innovations include optimized Geroler geometry with lower drive running angle for improved life and improved low speed performance. In addition, the improved housing and smaller diameter end cap results in increased envelope rigidity which improves efficiency under high pressure loads. All of these innovations come together to make the T Series motor the highest performing motor in its class.

Specifications

Geroler element	11 Displacements
Flow l/min [GPM]	61[16] Continuous***
	75 [20] Intermittent**
Speed	Up to 1021 RPM
Pressure bar [PSI]	177[2565] Cont.***
	202[2930] Inter.**
Torque Nm [lb-in]	441 [3905] Cont.***
	486 [4300] Inter.**

Features:

- Constant clearance Geroler geometry
- Optimized drive system with reduced running angle
- Three-pressure zone design (ability to reduce case pressure)
- Variety of displacements, shafts and mounts
- Special options to meet customer needs

Benefits:

- High efficiency
- Smooth low-speed operation
- Extended motor life (especially at low speed conditions)
- Design flexibility
- Ability to optimize designs for your application needs
- Extends leak-free performance

Applications:

- Agricultural augers, harvesters, seeders
- Car wash brushes
- Food processing
- Railroad maintenance equipment
- Machine tools
- Conveyors
- Industrial sweepers and floor polishers
- Saw mills
- Turf equipment
- Concrete and asphalt equipment
- Skid steer attachments

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Application Information

Principle of operation

The wet brake is a spring applied / pressure release design. Load holding is applied by a mechanical spring and released by hydraulic pressure. The spring force holds the brake on when hydraulic pressure is absent.

Release pressure

Release pressure is defined as the amount of pressure required to fully release the brake. The brake pressure cavity is common (shared) with the motor case. As a result, maximum release pressure is constrained by the motor case-pressure capability. The T Series Motor with Parking Brake incorporates a shaft seal capable up to 1500 psi (see page B-4-70). However, seal life is reduced at higher case pressure.

Residual pressure

Residual pressure is the pressure trapped in the system by restrictions or long return lines. Residual pressure in the motor case will lower the rated load holding torque of the brake. Therefore, special attention needs to be given when applying this product. Keep in mind that long return lines create higher pressure that will reduce brake holding torque. In applications with high system pressures, the use of a pressure reducing valve to limit case and release pressure is recommended.

Holding torque and motor output torque

Holding torque is based on grade holding requirements for a vehicle or other load holding requirements in the application. System pressure and motor displacement are the factors in determining motor output torque. Motor displacement, measured in cubic centimeters or cubic inches, is the volume of fluid required to make one revolution. Motor output torque is the rotary force and is usually measured in inch pounds, newton meters or foot pounds. Maximum motor torque depends on pressure and motor displacement. Both output shaft size and shaft type can also affect motor torque. The T Series Motor with Parking Brake load holding capacity is factory set to match any limiting factor in each specific motor configuration (e.g. displacement, output shaft, etc).

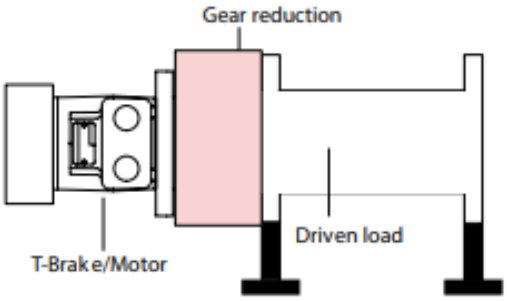
Note: Danfoss does not approve any products for customer applications. It is the sole responsibility of the customer to qualify and verify the correct operation of products in their systems.

Note: Special attention should be given to system back pressure. System back pressure directly affects brake release pressure and can cause the brake to release at undesired conditions.

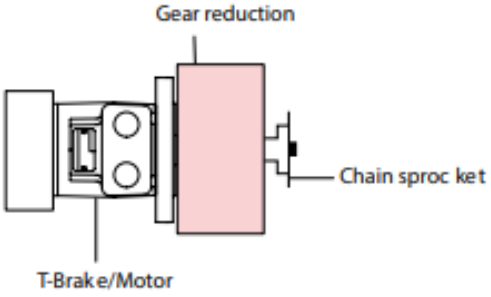
Note: The T Series with parking brake is not compatible with water based fluids.

Typical applications

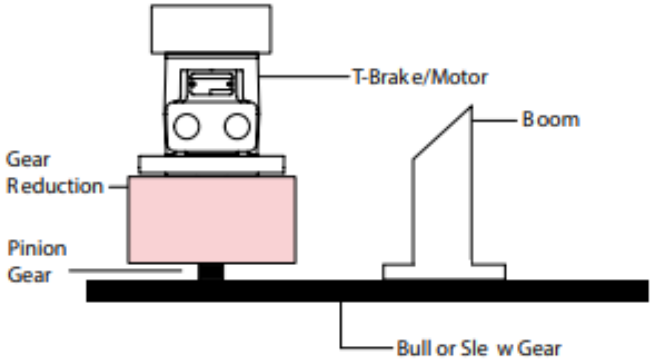
Winch



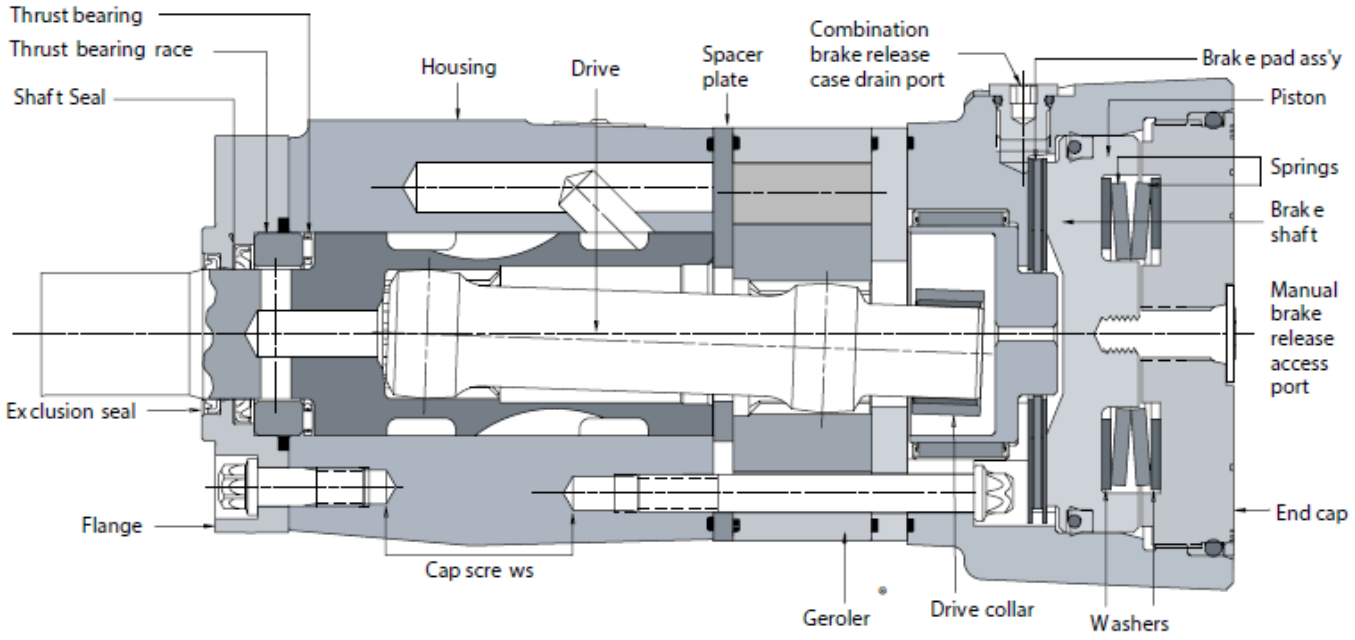
Machine drive



Swing boom



Specifications



Specification Data — T Series with parking brake motors

Shaft

Displ. cm³/r [in³/r]		36 [2.2]	49 [3.0]	66 [4.0]	80 [4.9]	102 [6.2]	131 [8.0]	157 [9.6]	195 [11.9]	244 [14.9]	306 [18.7]	370 [22.6]
Max. Speed (RPM) @ continuous flow		1021	906	898	694	550	426	355	287	229	183	152
Flow LPM [GPM]	Continuous	38 [10]	45 [12]	61 [16]	61 [16]	61 [16]	61 [16]	61 [16]	61 [16]	61 [16]	61 [16]	61 [16]
	Intermittent	38 [10]	57 [15]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]	76 [20]
Torque Nm [lb-in]	Continuous	76 [672]	105 [928]	138 [1222]	174 [1541]	219 [1936]	251 [2226]	297 [2628]	359 [3178]	410 [3633]	441 [3905]	430 [3811]
	Intermittent **	93 [824]	118 [1131]	168 [1488]	212 [1872]	264 [2339]	307 [2718]	359 [3178]	437 [3864]	485 [4290]	483 [4275]	486 [4300]
Pressure ΔBar [ΔPSI]	Continuous	177 [2565]	177 [2565]	177 [2565]	177 [2565]	177 [2565]	177 [2565]	167 [2415]	138 [2000]	127 [1850]	110 [1600]	90 [1300]
	Intermittent***	202 [2930]	202 [2930]	202 [2930]	202 [2930]	202 [2930]	202 [2930]	202 [2930]	177 [2565]	155 [2250]	124 [1800]	103 [1500]
Weight kg [lbs]		8.5 [18.7]	8.6 [19.0]	8.8 [19.4]	8.9 [19.6]	9.0 [19.8]	9.3 [20.5]	9.5 [20.9]	9.7 [21.4]	10.1 [22.3]	10.5 [23.1]	11.1 [24.5]

Maximum case pressure: See case pressure seal limitation graph. *See shaft torque ratings for limitations.

Note: See page B-4-51 for additional motor specification notes and definitions. The T Series with Parking Brake performance is similar to the standard T Series motor. High speed conditions may reduce performance on T Series with Parking Brake.

T Series brake holding torque settings:

Shaft code	Output shaft description [In ³/r]	2.2	3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
18	1 Tapered w/key and nut	2,000	2,000	2,000	3,500	3,500	3,500	5,000	5,000	5,000	5,000	5,000
02	1 SAE 6B Splined	2,000	2,000	2,000	3,500	3,500	3,500	5,000	5,000	5,000	5,000	5,000
24	25mm Straight w/key	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
01	1 Straight w/key	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
07	1 Straight w/.31 Dia. crosshole	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
08	1 Straight w/.40 Dia. crosshole	2,000	2,000	2,000	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
16	7/8 SAE B 13T Splined	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
17	7/8 SAE B Straight w/key	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000

Note: The factory setting values are used for each motor based on motor displacement and shaft type. Average Static torque may vary +/- 14% from rated values.

in-lbs Full capacity brake

in-lbs Limited capacity brake

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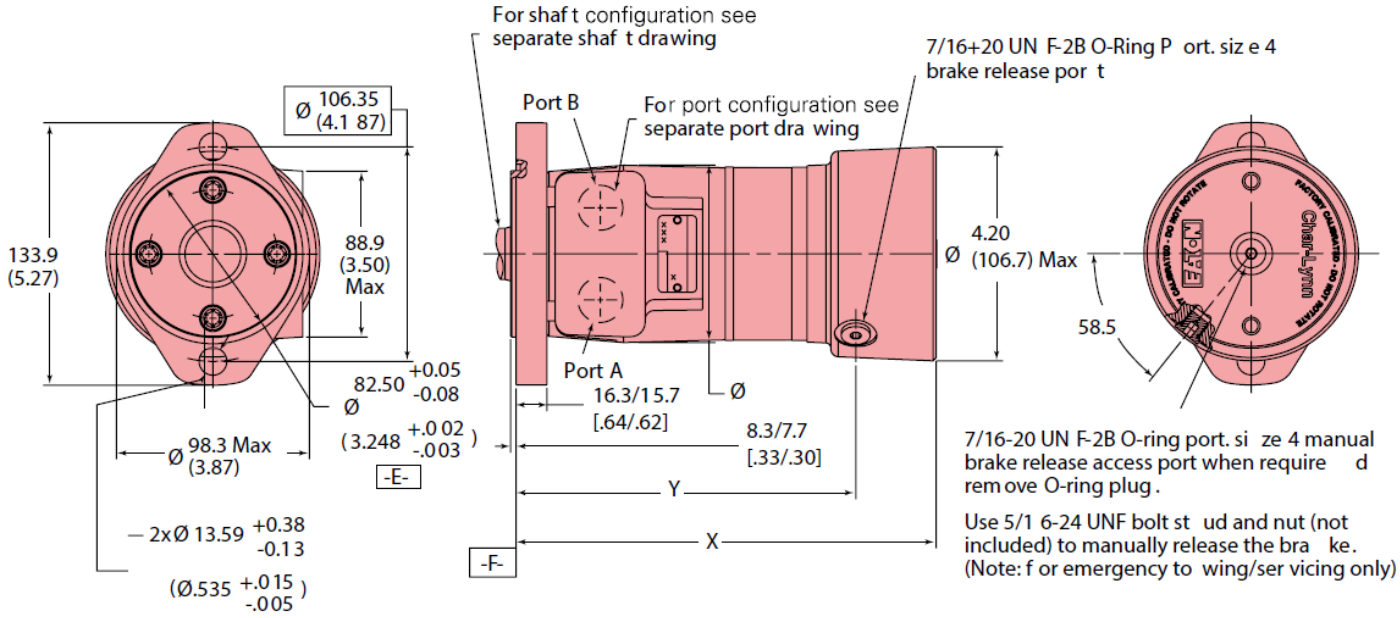
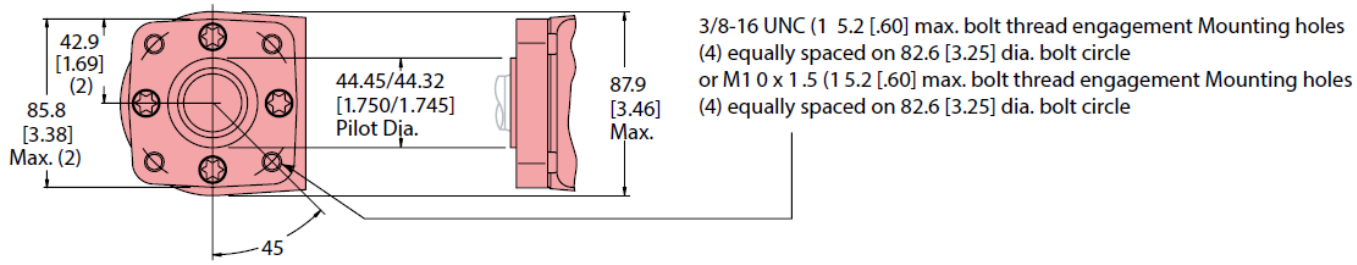
Dimensions



Code: BA 4 Bolt Flange



T-Series with parking brake dimensions

Displacement	X	Y
cm³/r [in³/r]	mm [inch]	mm [inch]
36 [2.2]	190.2 [7.49]	143.9±0.9 [5.66±0.3]
41 [2.5]	190.8 [7.51]	144.5±0.9 [5.69±0.3]
49 [3.0]	192.5 [7.58]	146.3±0.9 [5.76±0.3]
59 [3.6]	194.3 [7.65]	148.1±0.9 [5.83±0.3]
66 [4.0]	195.6 [7.70]	149.3±0.9 [5.88±0.3]
80 [4.9]	198.4 [7.81]	152.0±0.9 [5.98±0.3]
102 [6.2]	202.2 [7.96]	155.9±0.9 [6.14±0.3]
131 [8.0]	207.5 [8.17]	161.3±0.9 [6.35±0.3]
157 [9.6]	212.6 [8.37]	166.2±0.9 [6.54±0.3]
195 [11.9]	219.2 [8.63]	172.9±0.9 [6.81±0.3]
244 [14.9]	228.3 [8.99]	181.9±0.9 [7.16±0.3]
306 [18.7]	239.5 [9.43]	193.3±0.9 [7.61±0.3]
370 [22.6]	251.2 [9.89]	205.0±0.9 [8.07±0.3]

Product Numbers

Standard valving

Mounting	Shaft	Port size	Displ. cm ³/r [In ³/r] / product number									
			3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
2 Bolt	1 Keyed	7/8-14 O-Ring	185-2000	—	2002	2003	2004	2005	2006	2007	2008	2009
		Manifold	185-2010	—	2012	—	2014	2015	2016	—	2018	2019
	6B Splined	7/8-14 O-Ring	185-2020	—	2022	2023	2024	2025	—	2027	2028	2029
		Manifold	185-2030	2031	2032	2033	—	2035	2036	2037	2038	2039
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2040	—	—	2043	2044	2045	—	2047	2048	—
		Manifold	185-2050	2051	—	—	2054	2055	2056	2057	2058	2059
4-Bolt	1 Keyed	7/8-14 O-Ring	—	—	2062	—	2064	2065	—	2067	—	2069
		Manifold	—	—	2072	2073	2074	—	—	2077	2078	—
	6B Splined	7/8-14 O-Ring	185-2080	2081	2082	—	2084	—	2086	—	2088	—
		Manifold	185-2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2100	2101	2102	2103	2104	2105	2106	2107	2108	2109
		Manifold	185-2110	2111	2112	2113	2114	2115	—	2117	2118	2119
2-Bolt SAE B	1 Keyed	7/8-14 O-Ring	—	2121	—	2123	—	2125	2126	2127	2128	—
		Manifold	185-2130	2131	2132	2133	2134	2135	2136	2137	2138	2139
	6B Splined	7/8-14 O-Ring	185-2140	2141	2142	2143	2144	—	2146	2147	2148	—
		Manifold	185-2150	2151	2152	2153	2154	2155	2156	2157	2158	2159
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2160	—	—	—	2164	2165	2166	2167	—	2169
		Manifold	—	2171	—	2173	2174	—	2176	2177	2178	2179

Low speed valving

Mounting	Shaft	Port size	Displ. cm ³/r [In ³/r] / product number									
			3.0	4.0	4.9	6.2	8.0	9.6	11.9	14.9	18.7	22.6
2 Bolt	1 Keyed	7/8-14 O-Ring	—	2181	2182	—	—	2185	2186	—	—	2189
		Manifold	185-2190	2191	2192	2193	2194	2195	2196	2197	—	2199
	6B Splined	7/8-14 O-Ring	185-2200	2201	2202	—	—	2205	—	—	—	—
		Manifold	185-2210	2211	2212	2213	—	2215	2216	2217	2218	2219
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2220	2221	2222	2223	2224	—	—	2227	2228	2229
		Manifold	185-2230	2231	2232	2233	—	2235	2236	2237	2238	2239
4-Bolt	1 Keyed	7/8-14 O-Ring	—	2241	2242	2243	—	2245	2246	—	2248	—
		Manifold	—	2251	2252	2253	2254	—	2256	2257	2258	2259
	6B Splined	7/8-14 O-Ring	185-2260	2261	2262	—	2264	2265	—	2267	2268	2269
		Manifold	185-2270	2271	2272	2273	2274	2275	2276	2277	2278	2279
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2280	2281	2282	—	2284	2285	2286	2287	2288	2289
		Manifold	185-2290	2291	2292	2293	2294	2295	2296	2297	2298	2299
2-Bolt SAE B	1 Keyed	7/8-14 O-Ring	185-2300	2301	2302	2303	2304	2305	2306	—	2308	2309
		Manifold	185-2310	2311	2312	2313	2314	2315	2316	2317	2318	2319
	6B Splined	7/8-14 O-Ring	185-2320	2321	2322	2323	2324	2325	2326	2327	2328	—
		Manifold	185-2330	2331	2332	2333	2334	2335	2336	2337	2338	2339
	13T Splined 16/32 pitch	7/8-14 O-Ring	185-2340	2341	2342	2343	2344	2345	2346	2347	2348	2349
		Manifold	185-2350	2351	2352	2353	2354	2355	2356	2357	2358	2359

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Model Code

T Series with Parking Brake

The following 25-digit coding system has been developed to
Identify all off the configuration options for the T Series Motor with Parking Brake.
Use this model code to specify a motor with the desired features.
All 25-digits of the code must be present when ordering.

M	TB	***	**	**	**	**	*	*	**	**	00	**	*	**	00	B
1	2 3	4 5 6	7 8	9 10	11 12	13 14	15	16	17 18	19 20	21 22	23 24	25	26 27	28 29	30

1 Product

M	Motor

2 3 Series

TB	T Series motor with parking brake

4 5 6 Displacement cm ³/r [in ³/r]

022	36 [2.2]
030	49 [3.0]
040	66 [4.0]
049	80 [4.9]
062	102 [6.2]
080	131 [8.0]
096	157 [9.6]
119	195 [11.9]
149	244 [14.9]
187	306 [18.7]
226	370 [22.6]

7 8 Mounting type

AA	2 Bolt (Standard) 82,5 [3.248] Dia. and 3,05 [.120] pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.
BA	4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, .375-16 UNC-2B Mounting Holes 82,55 [3.250] Dia. B.C.
DA	2 Bolt (Std.) 101,60 [4.000] Dia. x 6.10 [.240] pilot, 14,35 [.565] Dia. Mounting Holes 146,05 [5.750] Dia. B.C. (SAE B)
EA	4 Bolt Magneto 82,50 [3.248] Dia. x 3,05 [.120] Pilot, 13,59 [.535] Dia. Mounting Holes 106,35 [4.187] Dia. B.C.
FA	4 Bolt (Standard) 44,40 [1.748] Dia. x 3,05 [.120] pilot, M10 x 1.5-6H Mounting Holes on 82,55 [3.250] Dia. B.C.

9 10 Output shaft description

01	25,4 [1.00] Dia. Straight, Woodruff Key, .250-20 UNC-2B Hole in Shaft End
02	25,4 [1.00] Dia. SAE 6B Spline, .25-20 UNC-2B Hole in Shaft End
16	SAE 13 Tooth Spline, 16/32 Pitch, 21,74 (.856) Dia. (SAE B)
18	25,4 [1.00] Dia. Tapered, Woodruff Key and Nut, 34,92 [1.375] Taper Length
24	25.00 [.984] Dia. Straight, 8.0 [.315] Key, MB x 1.25-6H Hole in Shaft End

11 12 Port type

AA	.875-14 UNF-2B SAE O-Ring Ports
AB	.500-14 NPTF Dryseal Pipe Thread Ports
AC	Manifold (.3125-18 UNC-2B Mounting Holes)
AD	Manifold Ports (MB x 1.25-6H Mounting Holes)

13 14 Case flow options

00	None specified
03	Manifold case drain

15 Geroler options

A	Standard
B	Free running

16 Shaft options

0	None
N	Electroless nickel plated

17 18 Seal options

00	Standard seals
03	Viton seals
07	High pressure shaft seal

19 20 Speed sensor options

00	None
AA	Digital speed pickup (15 pulse), M12 connector (A=Power, B=Common, C=Signal)

21 22 Valve options

00	**None**

23 24 Special features (hardware)

00	None specified
AB	Low speed valving

25 Special assembly instructions

0	None
2	Flange rotation 90°

26 27 Paint/packaging options

00	No paint
AA	Low gloss black primer

28 29 Danfoss assigned code when applicable

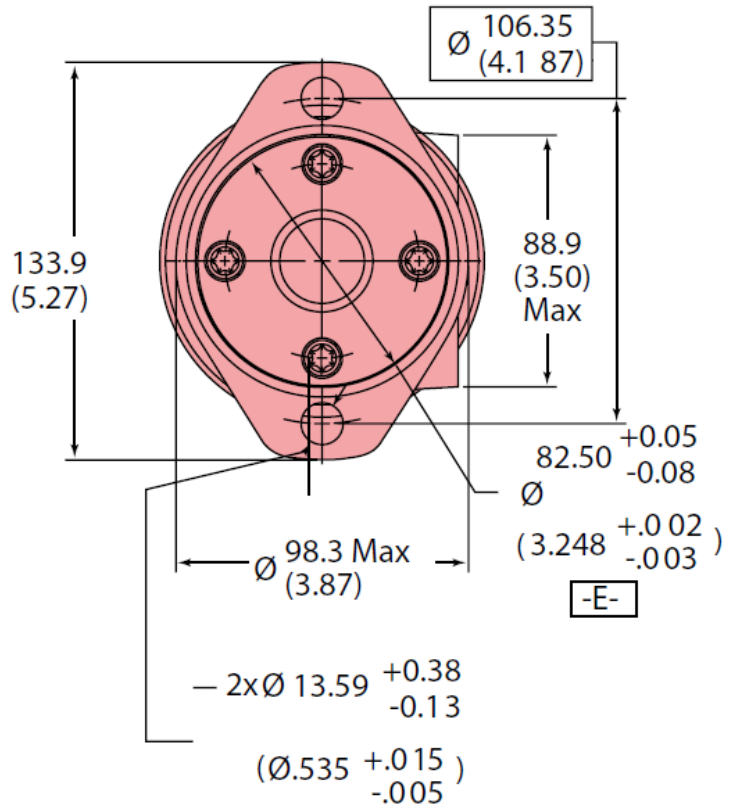
00	None

30 Design code

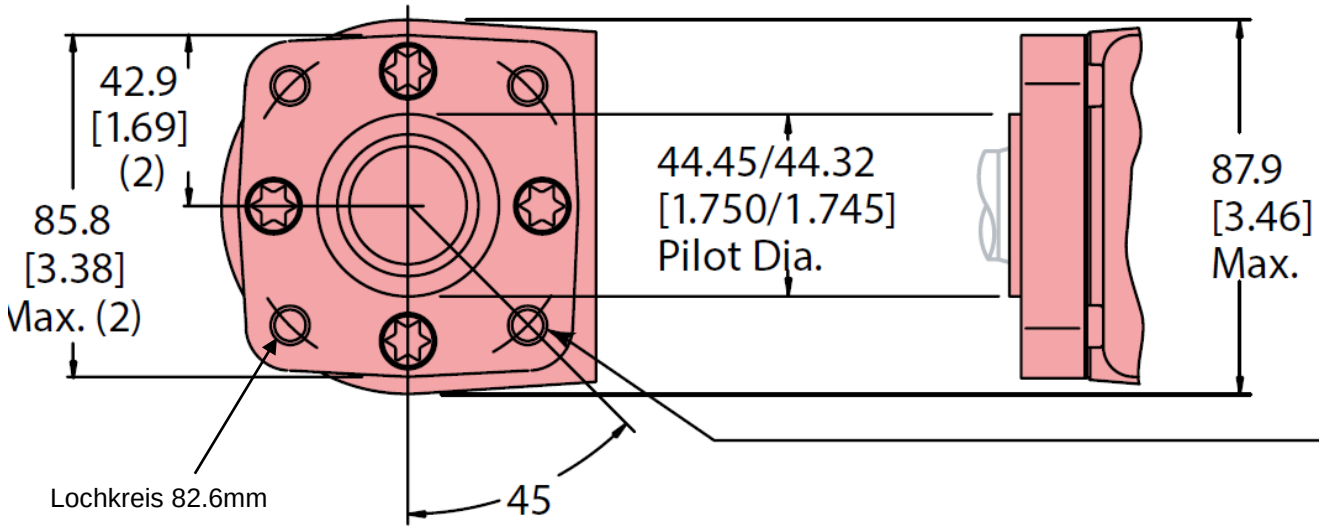
B	**Two**

Mounting Type (Model Code Pos. 8 and 9)

AA



BA



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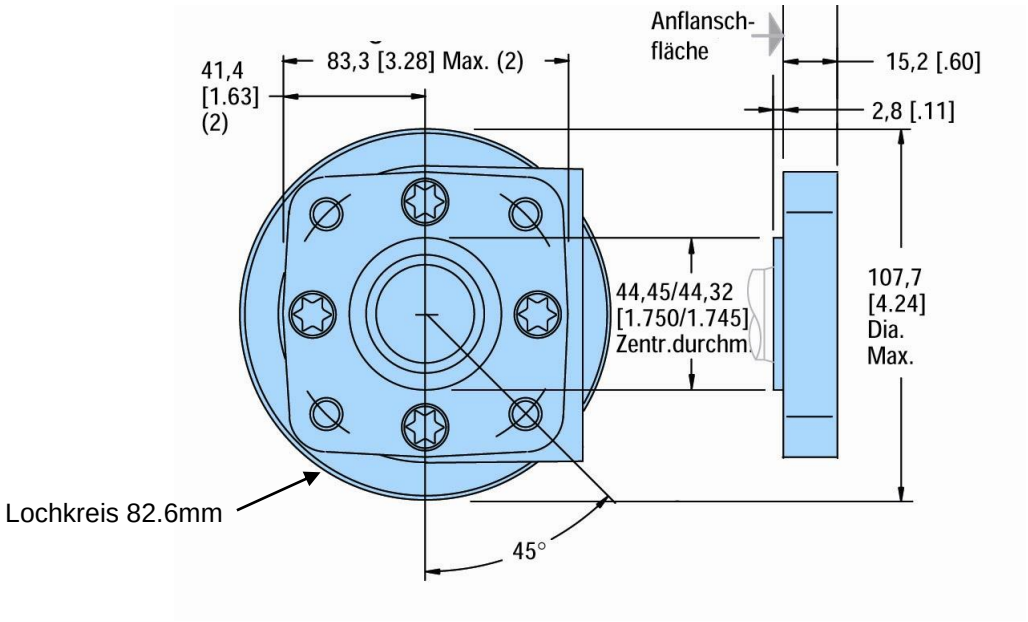
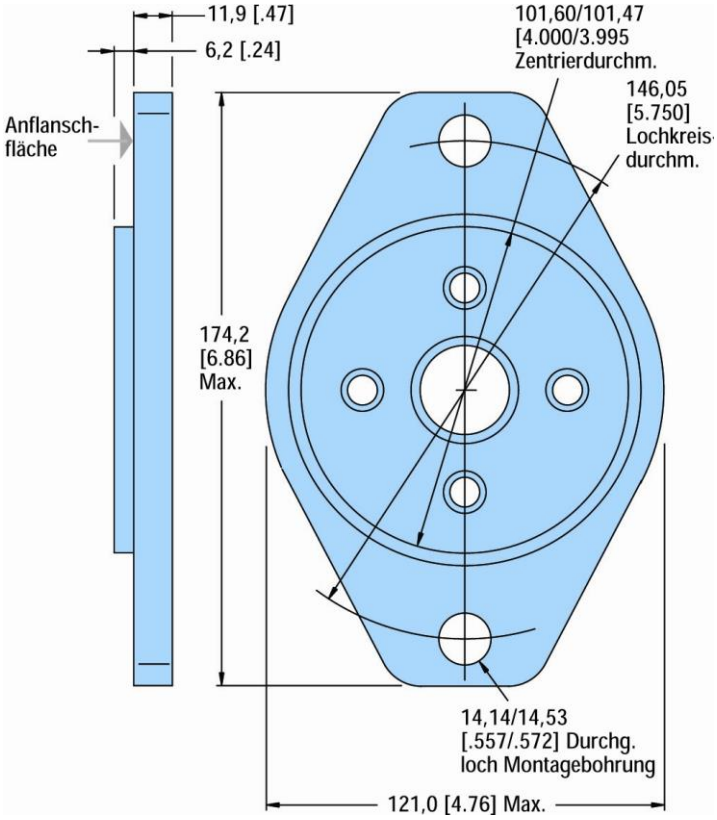
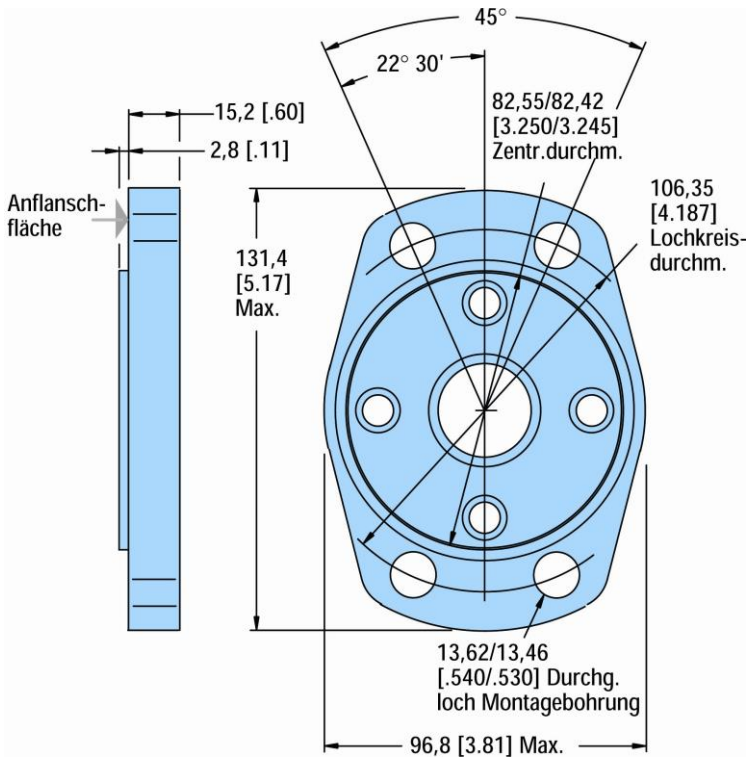
FA


Anflansch-
fläche
41,4
[1.63]
(2)
83,3 [3.28] Max. (2)
15,2 [.60]
2,8 [.11]
44,45/44,32
[1.750/1.745]
Zentr.durchm.
107,7
[4.24]
Dia.
Max.
Lochkreis 82.6mm
45°

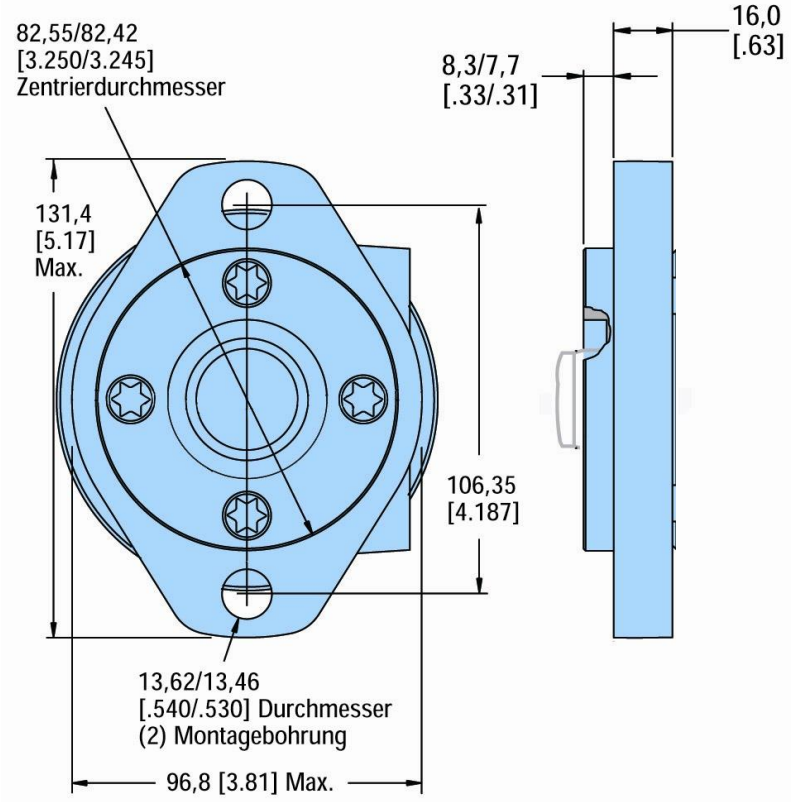
DA


11,9 [.47]
6,2 [.24]
101,60/101,47
[4.000/3.995
Zentrierdurchm.
146,05
[5.750]
Lochkreis-
durchm.
Anflansch-
fläche
174,2
[6.86]
Max.
14,14/14,53
[.557/.572] Durchg.
loch Montagebohrung
121,0 [4.76] Max.

EA



MA



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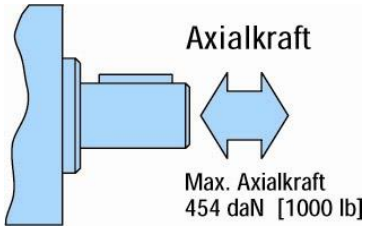
Shaft Side Load Capacity

The hydrodynamic journal bearings have infinite life when shaft load ratings are not exceeded. As a result, the shaft side load capacity is more than adequate to handle most application requirements provided the motor is applied within its torque rating.

Side load curves (below) are based on the side/radial loads being applied to the shaft at locations A, B, and C. To determine the shaft side load capacity at locations other than those shown use the formula below: For more information about shaft side loads on Char-Lynn motors contact your Eaton representative.

Note

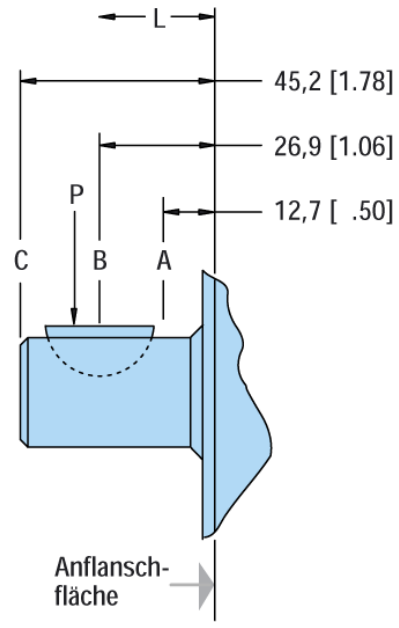
When the speed sensor option is used, the side load ratings are reduced 25%.

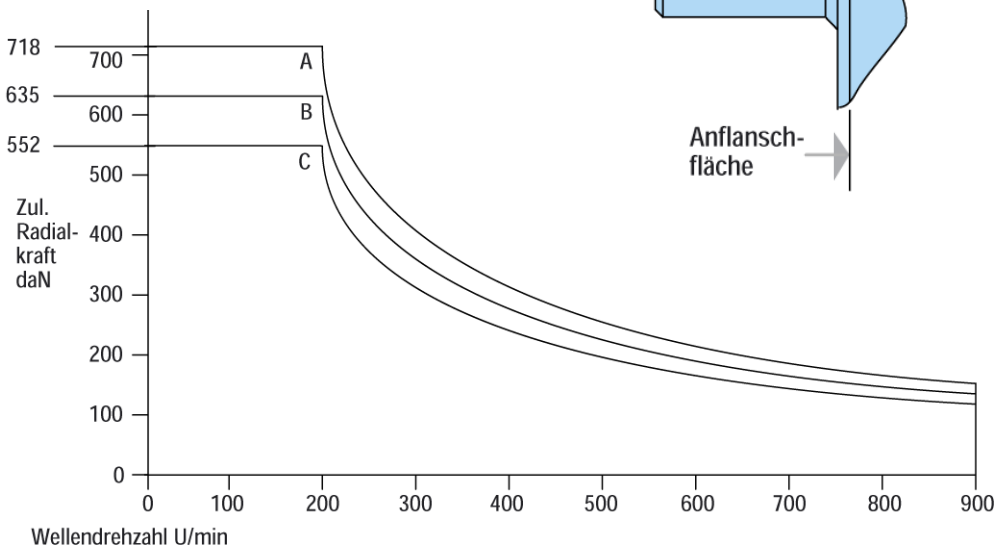


Zul. Radialkraft P in N $$P = \frac{9000}{n} \times \left(\frac{16800}{L + 96.3} \right)$$

n = Wellendrehzahl in 1/min
L = Abstand von der Anflanschfläche in mm [in]

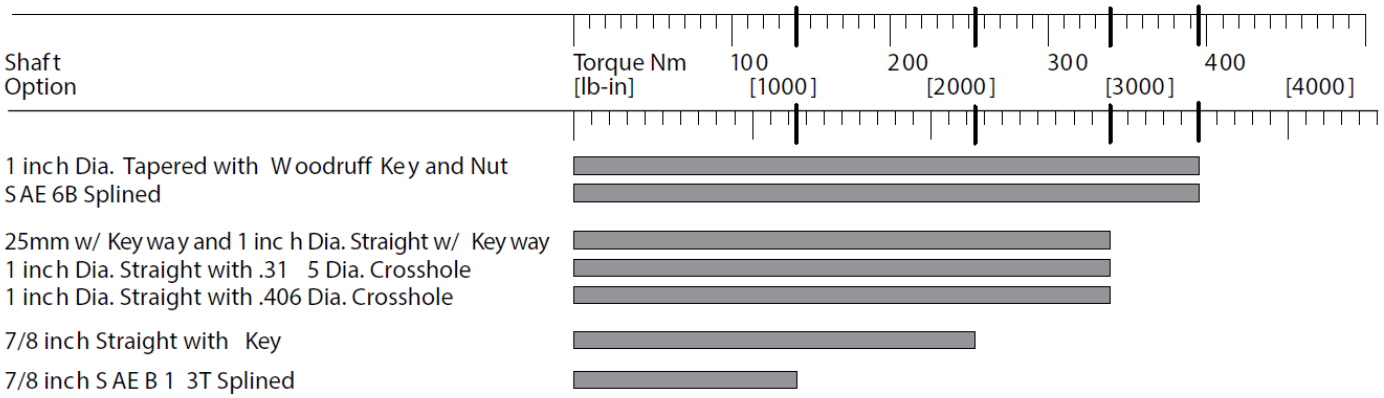
	Zul. Radialkraft daN [lb]					
1/min	A		B		C	
900	154	[339]	136	[300]	118	[261]
625	205	[452]	181	[400]	158	[348]
500	256	[565]	227	[500]	197	[435]
400	307	[678]	272	[600]	237	[522]
300	410	[904]	363	[800]	316	[696]
200	718	[1582]	635	[1400]	552	[1216]





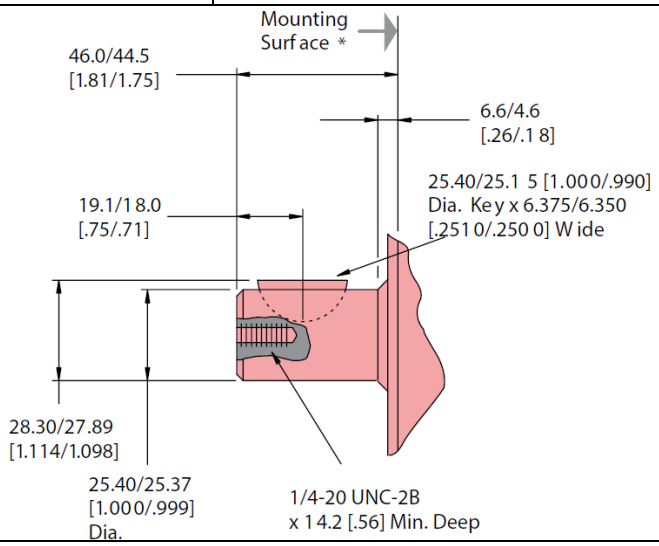
Shaft Dimension

Shaft size motor torque combination limit guide



Output Shaft (Model Code Pos. 10 and 11)

01



Max. Drehmoment 350Nm

02

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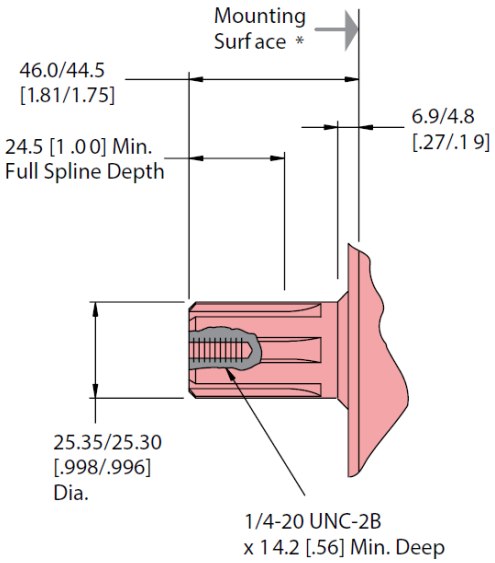
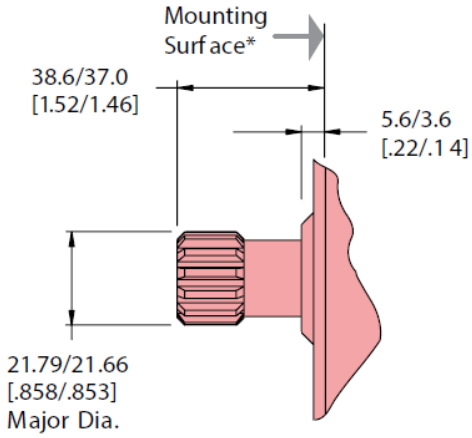


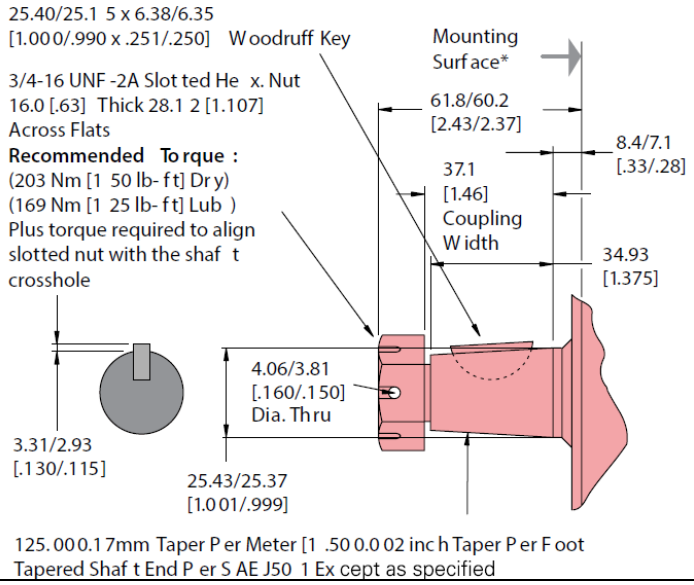
Max. Drehmoment 400Nm

16



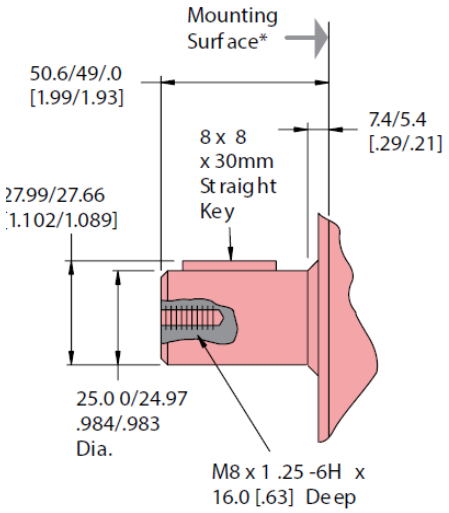
Max. Drehmoment 150Nm

18



Max. Drehmoment 350Nm
Max. Drehmoment 350Nm
Max. Drehmoment 400Nm

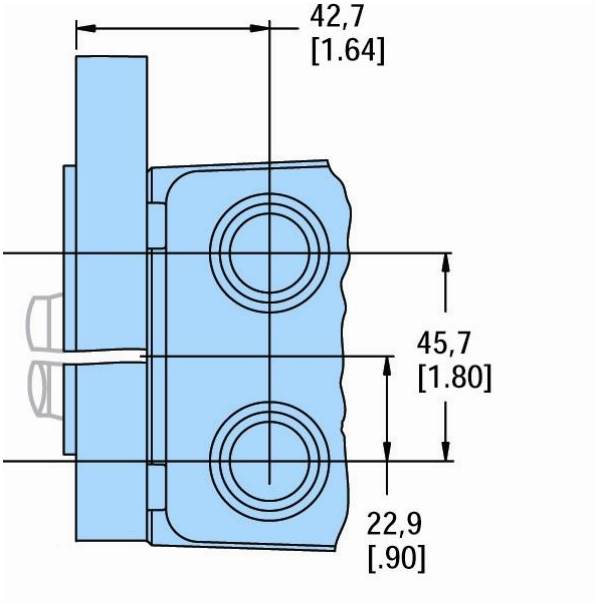
24	



Max. Drehmoment 350Nm
Max. Drehmoment 350Nm

Port Type (Model Code Pos. 12 and 13)

AA	7/8’’-14 UNF O-Ring



AC	Flansch mit Montagegewinde 5/16’’-18 UNC

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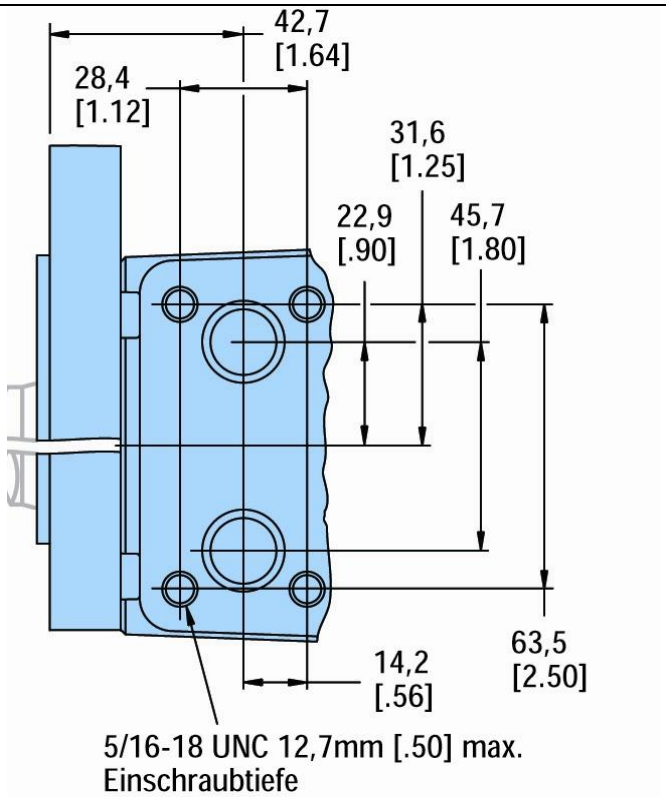
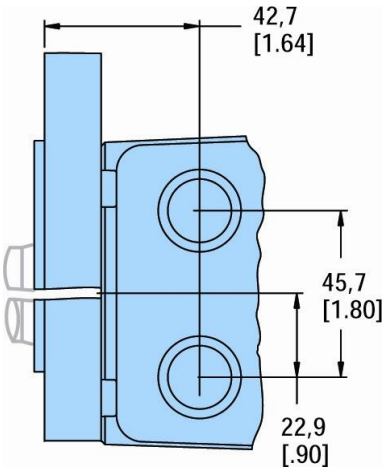
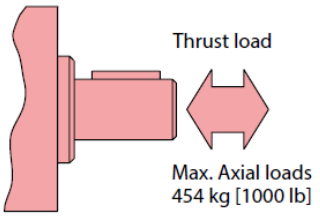

42,7
[1.64]
28,4
[1.12]
31,6
[1.25]
22,9
[.90]
45,7
[1.80]
63,5
[2.50]
14,2
[.56]
5/16-18 UNC 12,7mm [.50] max.
Einschraubtiefe

AE	G 1/2'' BSP


42,7
[1.64]
45,7
[1.80]
22,9
[.90]

Case Pressure, Release Pressure and Case Drain

Char-Lynn H Series, S Series and T Series motors are durable and have long life as long as the recommended case pressure is not exceeded. Allowable case pressure is highest at low shaft speeds. Consequently, motor life will be shortened if case pressure exceeds these ratings (acceptability may vary with application). Determine if an external case drain is required from the case pressure seal limitation chart below — chart based on case pressure and shaft speed. If a case drain line is needed, connect drain line to assure that the motor will always remain full of fluid.



$PC \approx 6\ \Delta P + P_2$

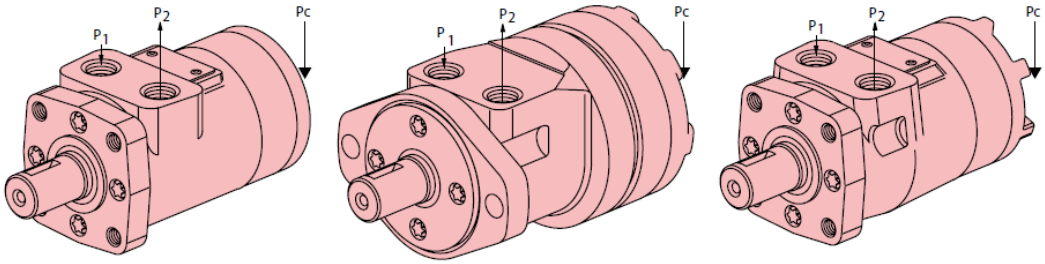
PC = Case Pressure

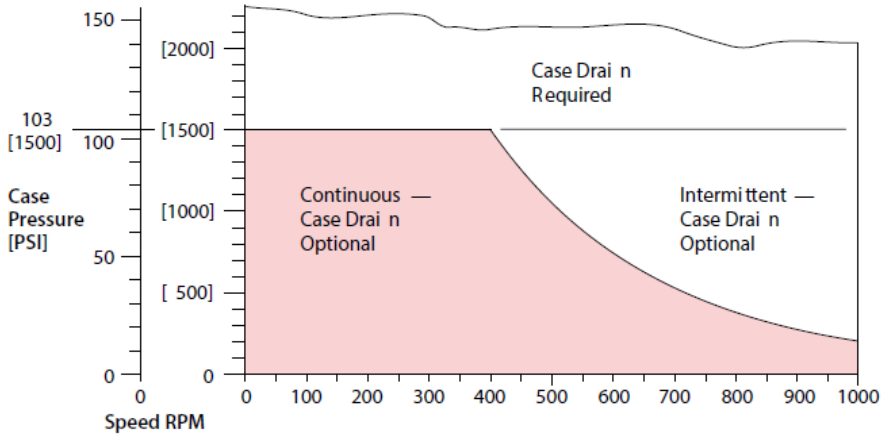
P_1 = Inlet Line Pressure

P_2 = Back Pressure

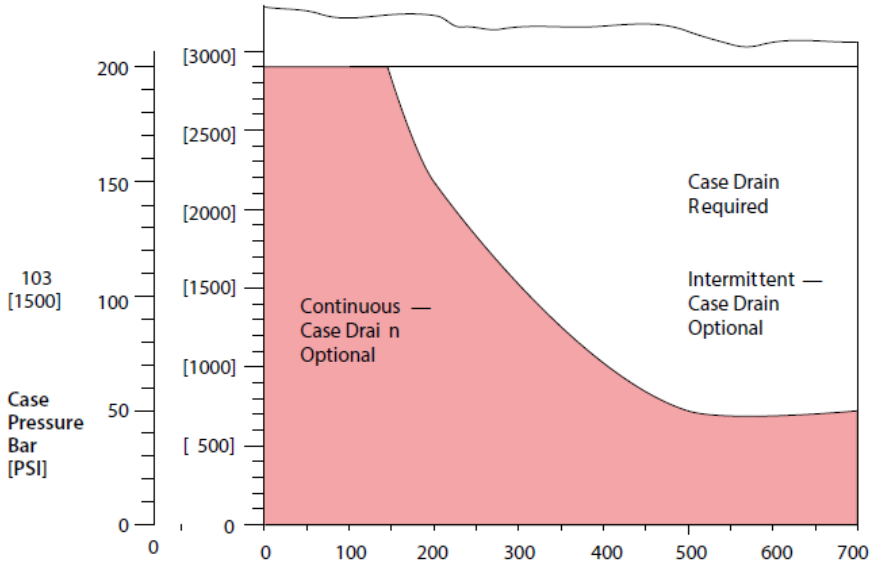
$\Delta P = P_1 - P_2$

H Series **S Series** **T Series**





High pressure shaft seal



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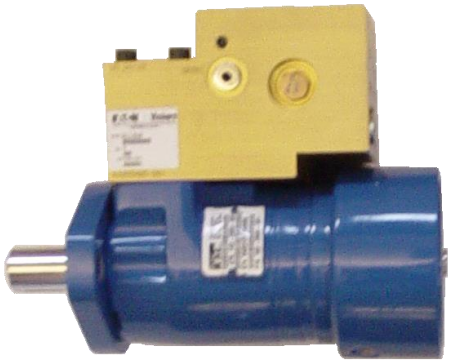
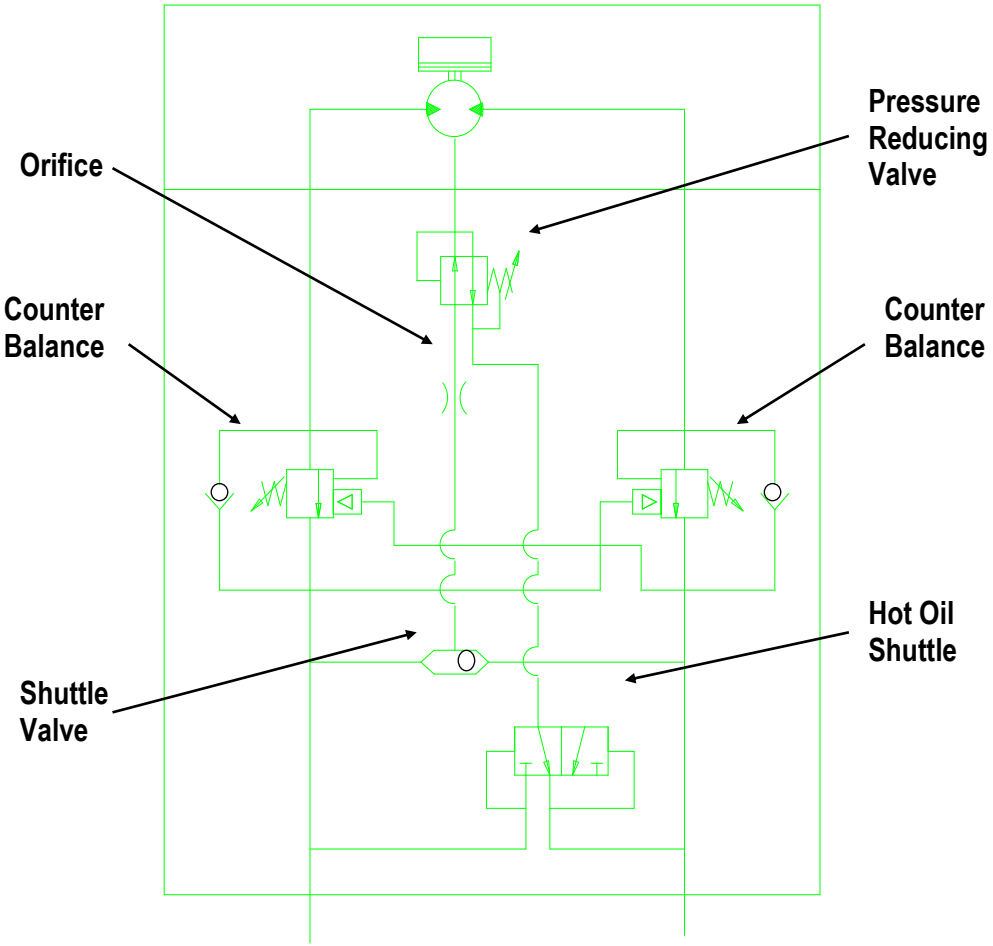
Brake Circuit with Dual Counter-Balance

New manifold mounted cartridge valve assembly immediately releases the brake with a small shuttle valve when pressure is applied to either work port. This shuttle feeds through a pressure reducing valve so as not to damage the integrity of the shaft seal. This valve also comes with a counter balance option.





Fluid Recommendations

Performance data

Product line	Viscosity minimum	Recommended Viscosity range	ISO Cleanliness requirements
H Series	100 SUS	100-200 SUS	20/18/13
	20 cst	20-43 cst	
J, S, T Series	70 SUS	100-200 SUS	20/18/13
	13 cst	20-43 cst	
Disc Valve Series	70 SUS	100-200 SUS	20/18/13
	13 cst	20-43 cst	

Introduction:

Hydraulic fluids are one of the vital components of hydraulic system. Proper selection of oil assures satisfactory life and operation of system components. The purpose of this section is to provide readers with the knowledge required to select the appropriate fluids for use in systems that employDanfoss hydraulic components.

Viscosity and temperature:

Viscosity is the measure of a fluid's resistance to flow. The most important characteristic to consider when choosing a fluid to be used in a hydraulic system is viscosity. The fluid must be thin enough to flow easily but thick enough to maintain adequate lubricating film between component and to maintain proper sealing at the operating temperatures of the hydraulic system. For viscosity requirements see table. Viscosity of any fluid is relative to temperature, as the fluid warms the viscosity decreases and vice versa. When choosing a fluid it is important to consider the start-up and operating temperatures of the hydraulic system. A high Viscosity Index (VI) fluid shows relatively small change of viscosity with temperature. Lubricants used for hydraulic applications may contain viscosity index improvers. They refer to these fluids as viscosity index improved, or multi-viscosity fluids. The viscosity of these fluids may drop down in use due to the shearing of VI improvers used in the formulations. Anti-wear hydraulic oils containing polymeric thickeners viscosity index improvers are generally used for wide band operating temperature applications. These fluids experience temporary and permanent viscosity loss during use in hydraulic system. Check the extent of viscosity loss (shear stability) to avoid hydraulic service below the recommended minimum viscosity. Oil with good shear stability is recommended for wide band temperature applications. Multi-grade engine oils, ATFs, UTTOs, etc., also contain VIIs, and viscosity loss will be encountered during use.

Fluid maintenance:

The condition of a fluid has a direct effect on the performance and reliability of the system. Maintaining proper fluid viscosity, cleanliness level, water content, and additive level is essential for excellent hydraulic system performance. Routine fluid condition monitoring is recommended.

Fluid selection:

Premium grade anti-wear (AW) petroleum based hydraulic fluids will provide the best performance inDanfosshydraulic components. Lubricants that pass Vickers® by Danfoss 35VQ25A high-pressure vane pump test (Danfoss ATS-373 test procedure, ASTM Specification D-6973) are considered good quality, anti-wear hydraulic fluids. Automotive crankcase oils with American Petroleum Institute (API) letter designation SE, SF, SG, SH, or higher per SAE J183 classes of oils are recommended for applications using Danfoss GG motors. Automotive crankcase oils generally exhibit less shear stability compared to industrial anti-wear hydraulic fluids, which can result in higher loss of viscosity during service life. Other mineral oil-based lubricants commonly used in hydraulic systems are automatic transmission fluids (ATFs) and universal tractor transmission oils (UTTOs). Synthetic hydrocarbon base stocks, such as polyalphaolefins (PAOs), are also used to formulate hydraulic fluids, engine oils, ATFs and UTTOs. Alternative fluids are recommended when specific properties, such as fire resistance, biodegradability, etc., are necessary for the application. Keep in mind that alternative fluids may differ from AW petroleum fluids in properties such as pressure viscosity coefficient, specific gravity, lubricity, etc. Hence, Geroler/Gerotor motors may need to be derated, some can be operated under full ratings, and other are not rated.

Additional notes:

When choosing a hydraulic fluid, all the components in the system must be considered. Viscosity limitations has to meet the most stringent components requirements. For any system where the fluid is non petroleum oil, set the target one ISO range code cleaner for each particle size, than that of petroleum fluids. Keep adequate fluid level in the reservoir. Take fluid level reading when the system is cold. For more details, refer to Danfoss Fluid Recommendation Document # 03-401-2010 Contact your Danfoss representative if you have specific questions about the fluid requirements of Danfoss hydraulic components.

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Cleanliness:

Cleanliness of the fluid in a hydraulic system is extremely important. More than 70% of all failures are caused by contamination.Danfossrecommends that the fluids used in its hydraulic components be maintained per ISO 4406. Cleanliness level requirements varies with the hydraulic components. The cleanliness of a hydraulic system is dictated by the cleanliness requirement of the most stringent component in the system. Cleanliness requirements for specific products are given in the table. OEMs and distributors who use Danfoss hydraulic components in their products should provide for these requirements in their design. A reputable filter supplier can supply filter information.