

Danfoss Char-Lynn 2000 Series orbital motor

104-1024-006

Manufacturer: Danfoss

Manufacturer part number / published order designation: 104-1024-006

Published model: M02080AC02AA0100010000000AAAAF

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

Manufacturer card proves the complete factory PN and full type code. Ordering diagrams only decode that existing execution.

Typical performance envelopes are conditioned on 25 cSt and joint pressure/flow/duty limits; family maxima are not promoted to unconstrained full-execution ratings.

Applicable source components are AC flange, shaft 02, AA staggered ports and standard single-speed 2000 motor; no sensor/brake/two-speed/relief extras assigned.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

Source A: Danfoss Char Lynn Orbital Motors Technical Information

Original pages	Compiled pages	Relevant content
110-112	2-4	2000 Series construction and operating principle for standard single-speed Geroler disc-valve motors.; Exact size-family specification row with distinct continuous/intermittent/peak limits and shaft/case limitations; not a new full SKU-specific test rating.; Duty definitions, break-in, fluid/viscosity/temperature/filtration, thermal shock and minimum differential requirements.
115	5	Actual motor size 130 typical torque/speed/pressure/flow envelope at 25 cSt; retain duty-region legend.
122	6	Standard-mount general body-length size row and rotation definition. Illustrated AF/AD port arrangements are not assigned; actual AA staggered ports are documented separately on physical page 134.
129-130	7-8	Actual AC SAE A two-bolt flange tolerances and mounting pattern; neighbouring flange choices not assigned.; Actual output shaft code 02 dimensional view, end-thread/key/spline and torque-capacity limits.
132-134	9-11	Tapered-bearing shaft side-load/life curves and load-position conditions.; Standard shaft-seal case-pressure speed limits and required/optional drain conditions.; Actual AA7/8-14 UNF-2B staggered main ports and 7/16-20 UNF-2B case-drain geometry.
137-139	12-14	Published base article-number table where listed; fullPN design suffix006 identity comes from exactcurrent factorycard, not manufactured from this table.; Decode already published M02 displacement/AC flange/shaft02 execution; no option-code generation.; Decode already published AA ports/defaultseal/check-valve/noaccessory configuration; optional features not included.

Description:

The popular 2000 Series provides torque up to 850 Nm. [7,500 lb-in]. This proven design is reliable and durable. Danfoss has added options that make the motor more flexible to use in a wide variety of applications. The expanded displacement range using patented "Drive in Drive" technology is the latest innovation in the 2000 series of motors.



Features:

- Three zone design for longer life and true bi-directionality
- Bearings that meet the highest standards of the industry
- Options to optimize performance in every application
- Integrated cross-over relief valve option

Benefits:

- Easy to design in a system
- Proven reliability and performance in tough applications
- Compact design that maximizes power density

Applications:

- Skid steer attachments
- Swing motor
- Brush cutters & mowers
- Harvesting equipment
- Directional Boring any place pressure relief protection is optimal for system or motor performance and life
- Turf equipment

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2000 Series

Geroler element	13 Displacements
Flow l/min [GPM]	75 [20] Continuous** 115 [30] Intermittent*
Speed RPM	1215 Cont.** 1215 Inter.*
Pressure bar [PSI]	205 [3000] Cont.** 310 [4500] Inter.*
Torque Nm [lb-in]	845 [7470] Cont.** 930 [8225] Inter.*

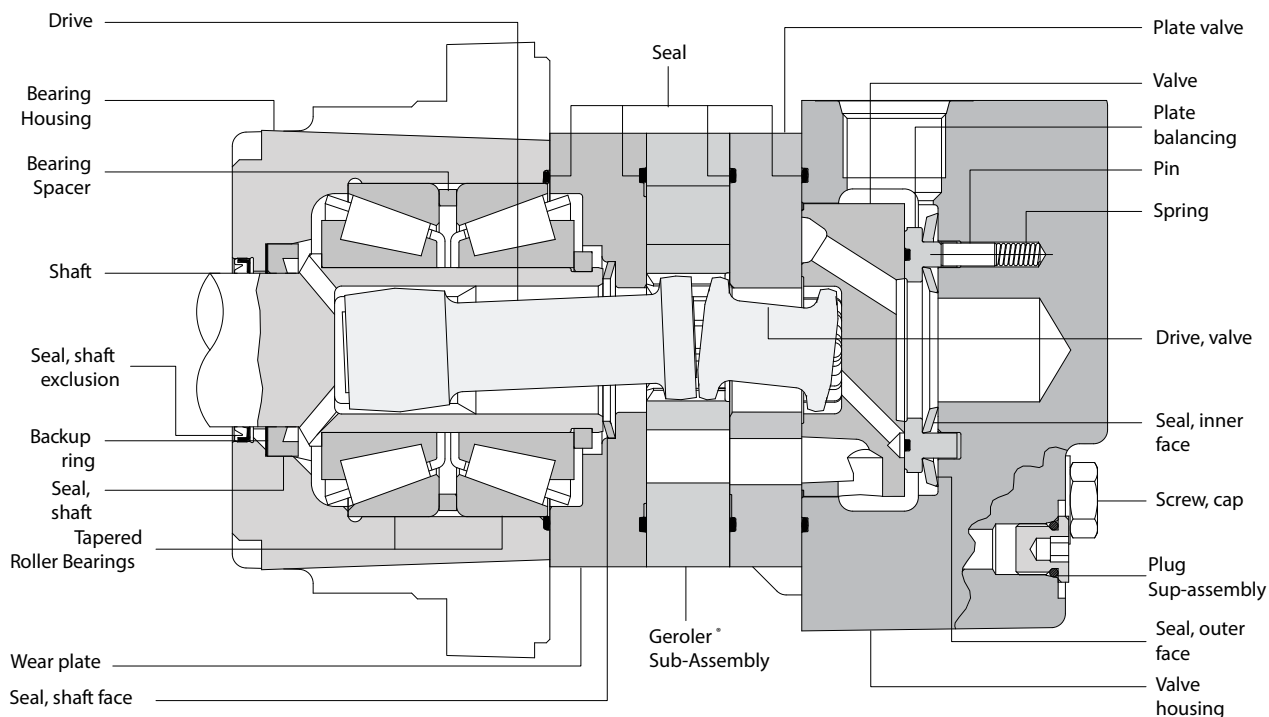
** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.

* Intermittent— (Inter.) Intermittent operation, 10% of every minute.

2000 Series

Specifications

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Specification data — 2000 series motors

Displ. cm ³ /r [in ³ /r]	34	41	66	80	90	100	130	160	195	245	305	395	490
	[2.1]	[2.5]	[4.0]	[4.9]	[5.5]	[6.2]	[8.0]	[9.6]	[11.9]	[14.9]	[18.7]	[24.0]	[29.8]
Max. Speed (RPM) @ Flow	Continuous	1215	1104	1075	908	836	742	576	477	385	308	246	153
	Intermittent	1215	1216	1214	908	1042	924	720	713	577	462	365	230
Flow l/min [GPM]	Continuous	42	45	72	75	75	75	75	75	75	75	75	75
		[11]	[12]	[19]	[20]	[20]	[20]	[20]	[20]	[20]	[20]	[20]	[20]
	Intermittent	42	53	87	75	95	95	95	115	115	115	115	115
		[11]	[14]	[23]	[20]	[25]	[25]	[25]	[30]	[30]	[30]	[30]	[30]
Torque* Nm [lb - in]	Continuous	98	112	186	235	265	295	385	455	540	660	765	845
		[864]	[988]	[1643]	[2065]	[2326]	[2630]	[3420]	[4040]	[4780]	[5850]	[6750]	[7470]
	Intermittent	142	169	276	345	390	445	560	570	665	820	885	930
		[1261]	[1497]	[2446]	[3035]	[3458]	[3950]	[4970]	[5040]	[5890]	[7250]	[7820]	[8225]
Pressure Δ bar [Δ PSI]	Continuous	205	205	205	205	205	205	205	205	205	205	155	120
		[3000]	[3000]	[3000]	[3000]	[3000]	[3000]	[3000]	[3000]	[3000]	[3000]	[2250]	[1750]
	Intermittent	310	310	310	310	310	310	310	260	260	260	240	190
		[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[3750]	[3750]	[3750]	[3500]	[2750]
	Peak	310	310	310	310	310	310	310	310	310	310	310	225
		[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[4500]	[3250]
Weight kg [lb]	Standard or Wheel mount	8.8	8.8	8.8	9.3	9.3	9.5	9.8	10.0	10.4	11.3	11.3	12.2
		[19.4]	[19.4]	[19.4]	[20.5]	[20.5]	[21.0]	[21.5]	[22.0]	[23.0]	[25.0]	[25.0]	[27.0]
	Bearingless	6.8	6.8	6.8	7.3	7.3	7.5	7.7	7.9	8.4	9.3	9.3	10.2
		[15.0]	[15.0]	[15.0]	[16.0]	[16.0]	[16.5]	[17.0]	[17.5]	[18.5]	[20.5]	[20.5]	[22.5]

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

Note: To assure best motor life, run motor in low speed high torque mode at approximately 30% of continuous pressure and 50% of continuous flow for 30 minutes in each direction before application of full load. Ensure that motor is filled with fluid prior to operation.

Maximum inlet pressure:

310 bar [4500 PSI]

Do not exceed Δ pressure rating (see chart above).

Maximum return pressure:

310 bar [4500 PSI] with case drain line installed.

Do not exceed Δ pressure rating (see chart above).

Δ bar [Δ PSI]

The true pressure difference between inlet port and outlet port

Continuous rating:

Motor may be run continuously at these ratings

Intermittent operation:

10% of every minute

Peak operation:

1% of every minute

Recommended fluids:

Premium quality, anti-wear type hydraulic oil with a viscosity of not less than 13 cSt [70 SUS] at operating temperature.

Recommended system operating temp:

-34°C to 82°C [-30°F to 180°F]

Recommended filtration:

per ISO Cleanliness Code, 4406: 20/18/13

Thermal shock warning:

Do not operate the motor with fluid that is 70F or more above the motor temperature.

Minimum delta pressure warning:

Motors must not run with equal inlet and outlet pressure 50 PSID minimum delta pressure between motor ports is required at all times (except when switching direction of rotation)

2000 Series

Performance data

Motors run with high efficiency in all areas designated with a number for torque and speed. For best motor life select a motor to run with a torque and speed range shown in the light shaded area.

Performance data is typical at 25 cSt [120 SUS]. Actual data may vary slightly from unit to unit in production.



Δ Pressure bar [PSI]
100 cm³/r [6.2 in³/r]

[250]	[500]	[1000]	[1500]	[2000]	[2500]	[3000]	[3500]	[4000]	[4500]
17	34	69	103	138	172	207	241	276	310

Δ Pressure bar [PSI]
130 cm³/r [8.0 in³/r]

[250]	[500]	[1000]	[1500]	[2000]	[2500]	[3000]	[3500]	[4000]	[4500]
17	34	69	103	138	172	207	241	276	310

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Flow LPM [GPM]	[0.25]	[0.5]	[1]	[2]	[4]	[6]	[8]	[10]	[12]	[14]	[16]	[18]	[20]	[22]	[24]	[25]
0.95	[140] 15 4	[260] 30 2														
1.9	[150] 15 13	[300] 35 9	[620] 70 5	[940] 105 2												
4	[170] 20 35	[390] 45 34	[830] 95 31	[1210] 135 28	[1570] 175 23	[1870] 210 15	[2130] 240 6									
8	[170] 20 73	[390] 45 71	[830] 95 68	[1220] 140 63	[1590] 180 59	[1920] 215 51	[2220] 250 38	[2520] 285 24	[2810] 315 14	[3120] 355 4						
15	[170] 20 148	[380] 45 145	[820] 90 141	[1240] 140 136	[1640] 185 131	[2010] 225 121	[2380] 270 104	[2750] 310 94	[3120] 355 80	[3490] 395 69						
23	[160] 20 222	[380] 45 219	[820] 90 215	[1260] 140 209	[1670] 190 202	[2080] 235 192	[2480] 280 172	[2880] 325 163	[3280] 370 149	[3680] 415 134						
30	[150] 15 297	[370] 40 294	[810] 90 288	[1260] 140 281	[1700] 190 273	[2130] 240 261	[2560] 290 243	[2990] 340 231	[3420] 385 216	[3840] 435 200						
38	[140] 15 371	[368] 40 367	[810] 90 362	[1270] 145 354	[1720] 195 344	[2160] 245 330	[2610] 295 316	[3020] 340 300	[3440] 390 283	[3850] 435 266						
45	[120] 15 445	[350] 40 442	[800] 90 436	[1270] 145 427	[1730] 195 415	[2180] 245 399	[2630] 295 389	[3070] 345 369	[3510] 395 350	[3950] 445 332						
53	[110] 10 519	[330] 35 516	[800] 90 509	[1260] 140 500	[1740] 195 486	[2180] 245 469	[2630] 295 463	[3070] 345 437	[3500] 395 417	[3940] 445 378						
61	[90] 10 594	[320] 35 591	[780] 90 583	[1260] 140 573	[1720] 195 558	[2160] 245 540	[2610] 295 537	[3060] 345 506	[3500] 395 485	[3940] 445 463						
68	[70] 10 668	[300] 35 665	[770] 85 657	[1240] 140 646	[1700] 190 630	[2140] 240 611	[2580] 290 609	[3020] 340 574	[3460] 390 552	[3900] 440 529						
76	[60] 5 742	[280] 30 739	[730] 80 731	[1180] 135 715	[1630] 185 703	[2090] 235 684	[2550] 290 662	[2980] 335 643	[3440] 390 619	[3830] 435 595						
83	[40] 5 816	[260] 30 813	[720] 80 805	[1180] 135 794	[1620] 185 777	[2070] 235 758	[2500] 280 749	[2930] 330 712	[3360] 380 687							
91	[20] 1 890	[230] 23 887	[690] 80 879	[1140] 130 868	[1540] 175 852	[2020] 230 834	[2460] 280 814	[2900] 330 782	[3340] 375 754							
95		[220] 25 924	[670] 75 916	[1120] 125 905	[1560] 175 890	[1990] 225 873	[2450] 275 846	[2890] 325 817								

Flow LPM [GPM]	[0.25]	[0.5]	[1]	[2]	[4]	[6]	[8]	[10]	[12]	[14]	[16]	[18]	[20]	[22]	[24]	[25]
0.95	[170] 20 3															
1.9	[190] 20 12	[410] 45 8	[870] 100 2													
4	[230] 25 28	[510] 60 27	[1070] 120 23	[1580] 180 19	[2050] 230 16	[2520] 285 13	[2920] 309 9	[3310] 375 3								
8	[230] 25 56	[510] 60 56	[1080] 120 53	[1600] 180 47	[2090] 235 42	[2580] 290 39	[2930] 330 36	[3320] 375 28	[3640] 410 21	[3990] 450 13						
15	[220] 25 114	[500] 55 113	[1080] 120 111	[1620] 185 104	[2150] 245 97	[2660] 300 95	[3100] 350 92	[3540] 400 85	[3980] 450 77	[4420] 500 70						
23	[220] 25 172	[490] 55 171	[1080] 120 169	[1640] 185 161	[2190] 245 153	[2740] 310 149	[3260] 370 146	[3770] 425 132	[4280] 485 118	[4800] 540 104						
30	[200] 25 230	[480] 55 224	[1080] 120 222	[1650] 185 219	[2220] 250 210	[2780] 315 204	[3310] 375 201	[3840] 435 192	[4360] 495 184	[4890] 550 175						
38	[180] 20 287	[470] 55 286	[1070] 120 282	[1650] 185 276	[2230] 250 269	[2800] 315 261	[3420] 385 255	[3940] 445 243	[4450] 505 231	[4970] 560 219						
45	[160] 20 345	[460] 50 344	[1060] 120 338	[1640] 185 333	[2230] 250 327	[2800] 315 317	[3350] 380 307	[3910] 440 295	[4440] 500 284	[4960] 560 272						
53	[150] 15 403	[440] 50 402	[1030] 115 395	[1620] 185 391	[2220] 250 385	[3000] 340 373	[3350] 380 360	[3910] 440 348	[4440] 500 336							
61	[130] 15 461	[420] 45 460	[1010] 115 452	[1600] 180 447	[2200] 250 443	[2780] 315 430	[3330] 375 411	[3890] 440 397	[4440] 500 384							
68	[110] 10 518	[400] 45 517	[990] 110 509	[1580] 180 504	[2160] 245 500	[2750] 310 484	[3300] 375 471	[3860] 435 456	[4410] 500 440							
76	[90] 10 576	[380] 45 575	[960] 110 568	[1550] 175 560	[2130] 240 551	[2710] 305 539	[3280] 370 524	[3840] 435 508								
83	[60] 5 634	[350] 40 633	[940] 105 624	[1520] 170 619	[2100] 235 604	[2680] 305 597	[3250] 365 579	[3820] 430 560								
91	[40] 5 692	[325] 35 691	[920] 105 682	[1490] 170 676	[2070] 235 665	[2650] 300 651	[3220] 360 633	[3780] 425 616								
95	[20] 1 720	[310] 35 719	[900] 100 712	[1480] 165 705	[2050] 230 692	[2630] 295 679	[3200] 360 682	[3700] 420 656								

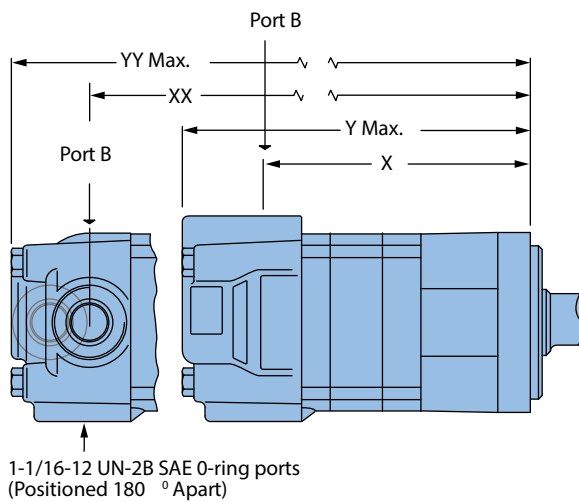
[1560]
175
890 } Torque [lb-in]
Nm
Speed RPM

Standard mount

Ports

7/8 -14 UNF-2B SAE O-ring staggered ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)
1 1/16 -12 UN-2B SAE O-ring ports (positioned 180° apart) (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)
7/8 -14 UNF-2B SAE O-ring end ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1) or
G 1/2 (BSP) staggered ports (2)
G 1/4 (BSP) case drain port (1)

Standard mount

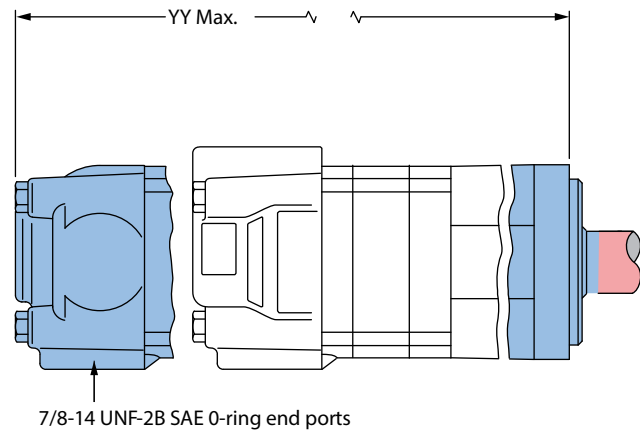


Manifold mount

7/16 -20 UNF-2B SAE O-ring case drain port (1)

Standard rotation viewed from shaft end

Port A Pressurized — CW
Port B Pressurized — CCW



Standard mount motor dimensions

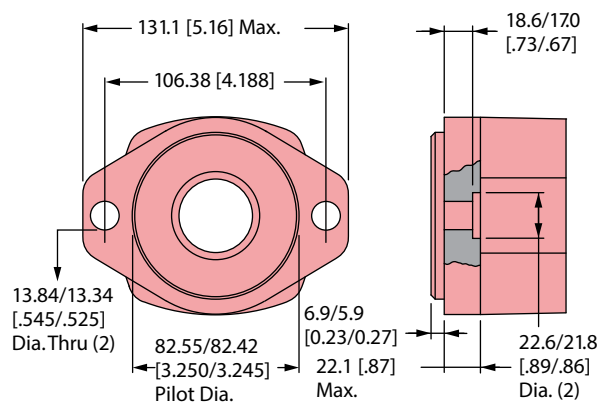
Displacement cm ³ /r [in ³ /r]	X mm [inch]	Y mm [inch]	XX mm [inch]	YY mm [inch]
34 [2.1]	126.7 [4.99]	1740 [6.85]	1290 [5.08]	175.3 [6.90]
41 [2.5]	128.0 [5.04]	175.3 [6.90]	130.5 [5.14]	176.8 [6.96]
66 [4.0]	133.9 [5.27]	181.1 [7.13]	136.1 [5.36]	182.4 [7.18]
80 [4.9]	136.9 [5.39]	184.2 [7.25]	139.2 [5.48]	185.4 [7.30]
100 [6.2]	141.5 [5.57]	189.0 [7.44]	143.8 [5.66]	190.3 [7.49]
130 [8.0]	147.9 [5.83]	195.4 [7.69]	150.2 [5.92]	196.6 [7.74]
160 [9.6]	147.9 [5.83]	195.4 [7.69]	150.2 [5.92]	196.6 [7.74]
195 [11.9]	154.7 [6.09]	202.2 [7.96]	157.0 [6.18]	203.2 [8.00]
245 [14.9]	163.7 [6.45]	211.1 [8.31]	166.0 [6.54]	212.4 [8.36]
305 [18.7]	175.1 [6.90]	222.3 [8.75]	177.4 [6.99]	223.5 [8.80]
395 [24.0]	191.0 [7.52]	238.6 [9.39]	193.3 [7.61]	239.8 [9.44]
490 [29.8]	208.4 [8.21]	255.8 [10.07]	210.7 [8.30]	257.0 [10.12]

2000 Series

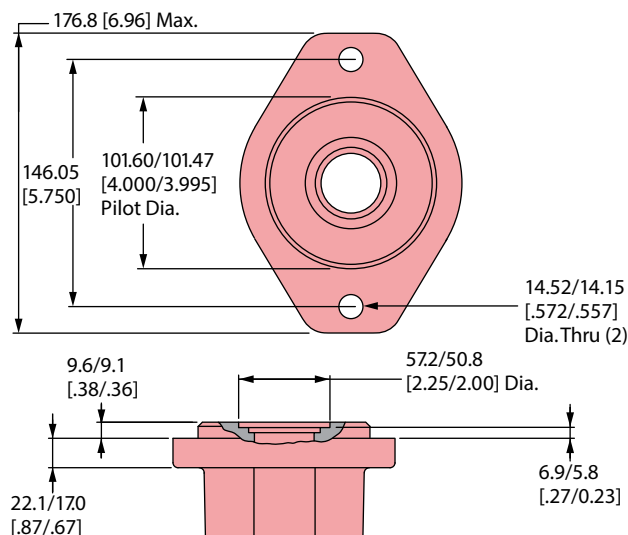
Dimensions

Mounting options

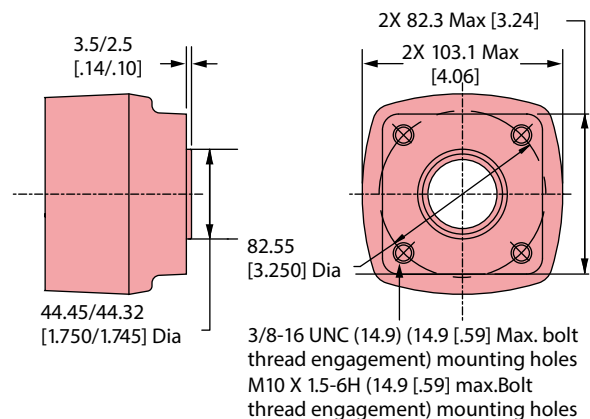
Code:AC SAE A - Two bolt (Standard motor)



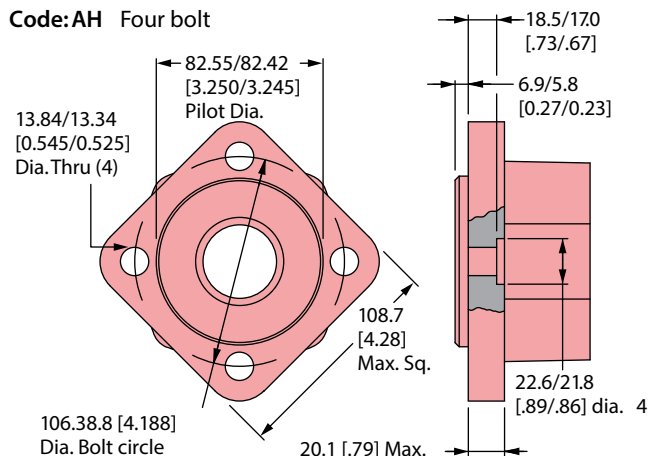
Code:AF SAE B - Two bolt



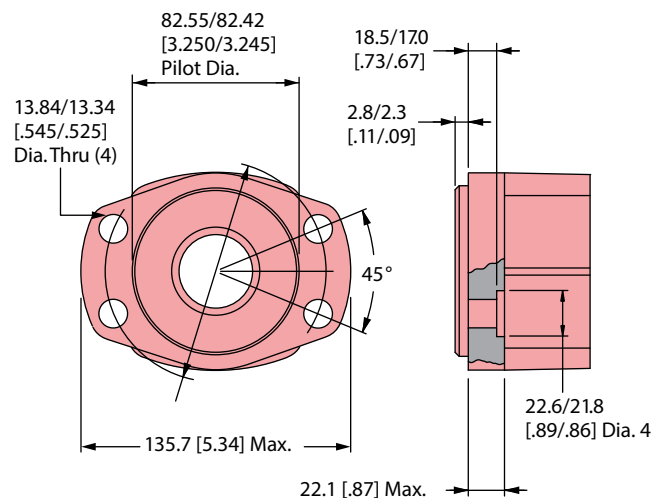
Code:BY Four bolt (Standard motor)



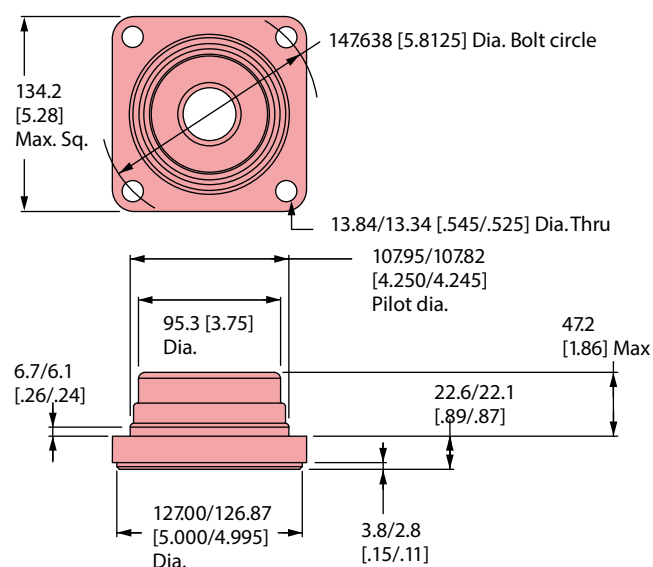
Code:AH Four bolt



Code:AJ Four bolt magneto



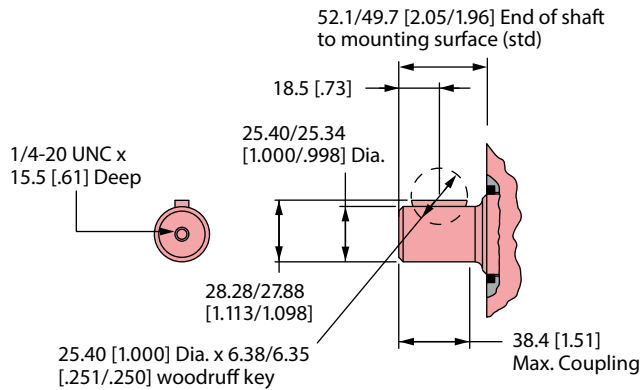
Code:AB Four bolt (Wheel motor)



Shafts

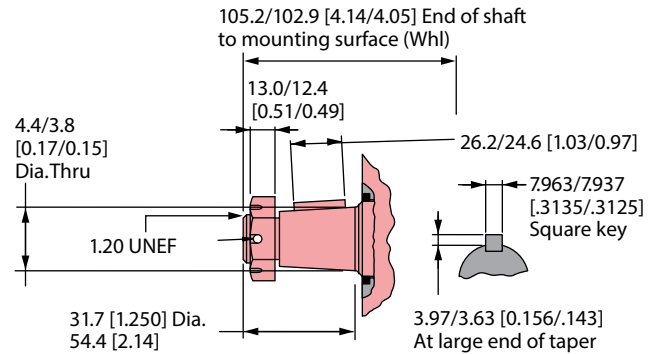
Code: 01 1 Inch straight

395 [3500] Max.Torque Nm [lb-in]

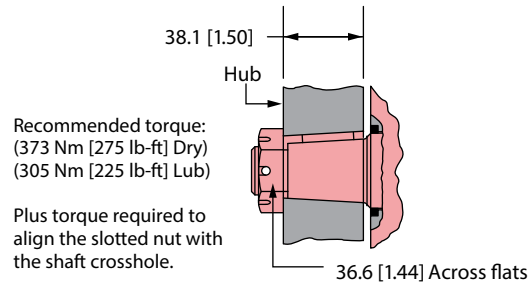


Code: 03 1 1/4 Inch tapered

768 [6800] Max.Torque Nm [lb-in]

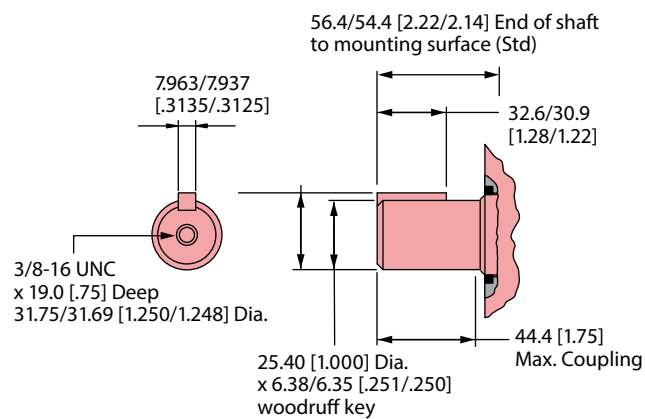


SAE J501 Standard tapered shaft 125.00±0.17Taper per meter [1.500±.002Taper per foot]



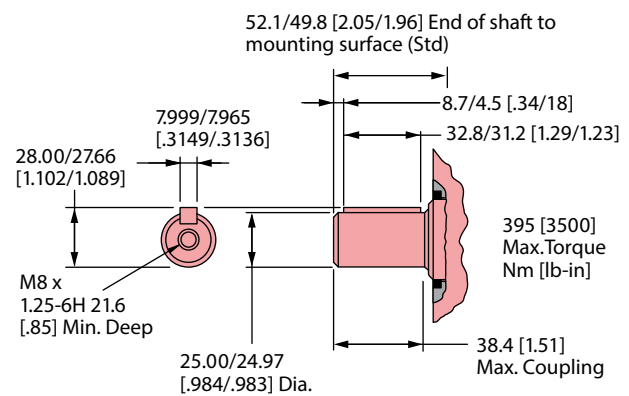
Code: 02 1 1/4 Inch straight

768 [6800] Max.Torque Nm [lb-in]



Code: 19 25 mm straight

395 [3500] Max.Torque Nm [lb-in]

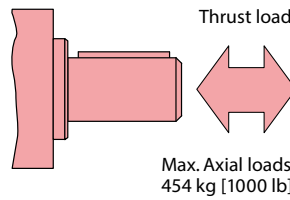


These curves indicate the radial load capacity on the motor shaft at various locations with an allowable external thrust load of 454 kg [1000 lb].

Note: Case pressure will increase the allowable inward thrust load and decrease the allowable outward thrust load. Case pressure will push outward on the shaft at 61 kg/7 Bar [135 lb/100 PSI].

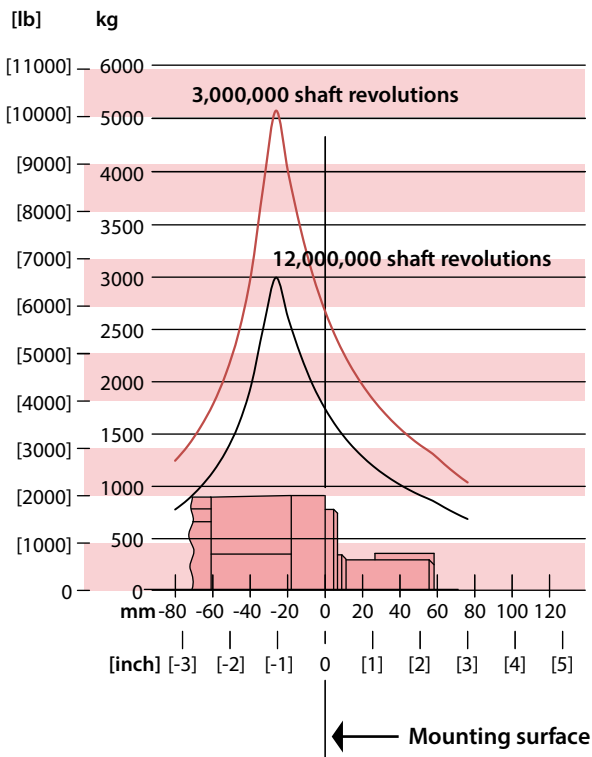
Each curve is based on B 10 bearing life (2000 Hours of 12,000,000 shaft revolutions at 100 RPM) at rated output torque.

To determine radial load at speeds other than 100 RPM, multiply the load values given on the bearing curve by the factors in the chart below.

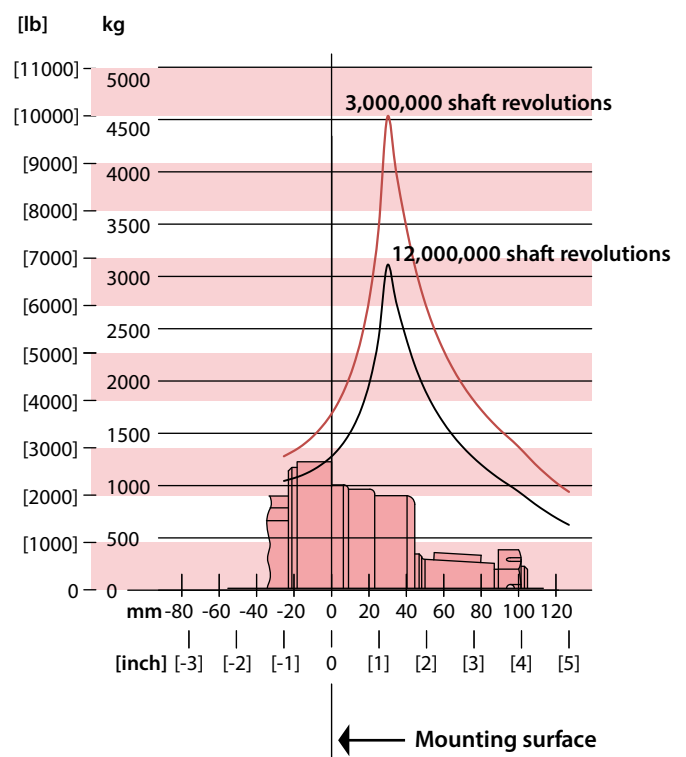


RPM	Multiplication factor
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.54

Standard motor straight and splined shafts



Wheel motor Tapered shaft



2000 Series

Case pressure and case porting

Char-Lynn 2000 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.

Case porting advantages:

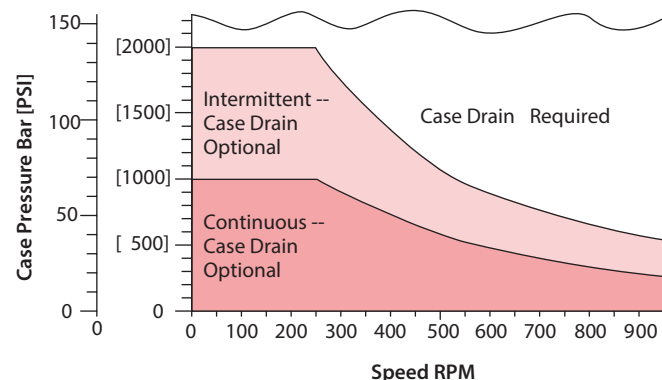
Contamination control — flushing the motor case.

Cooler motor — exiting oil draws motor heat away.

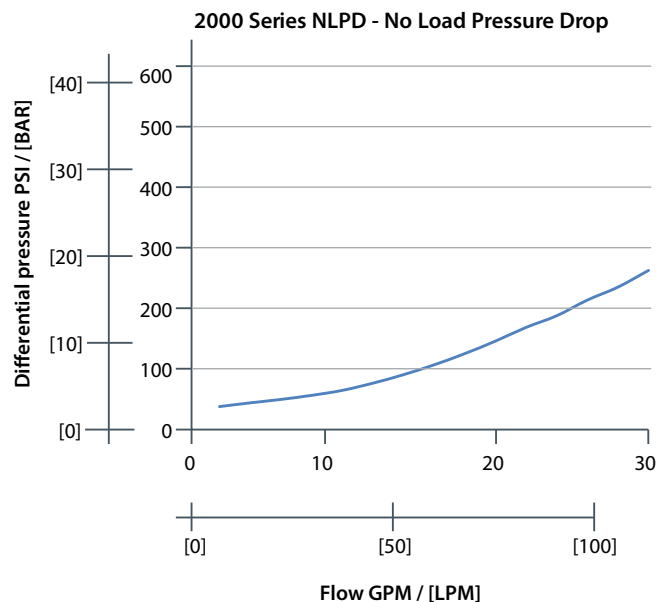
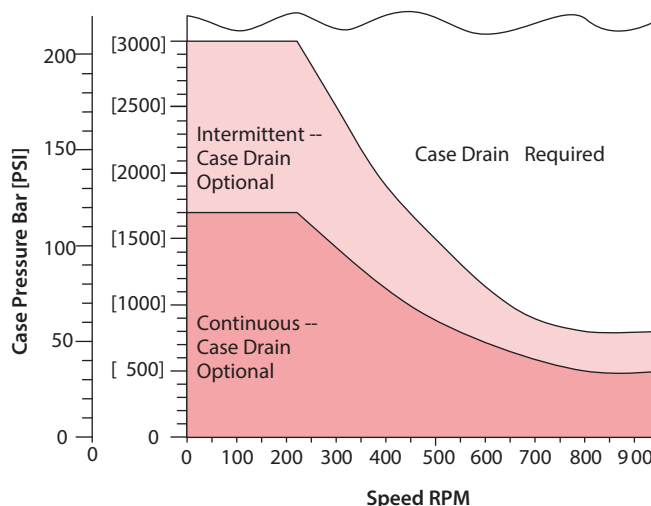
Extend motor seal life — maintain low case pressure with a preset restriction in the case drain line.

Case pressure seal limitation

Standard shaft seal



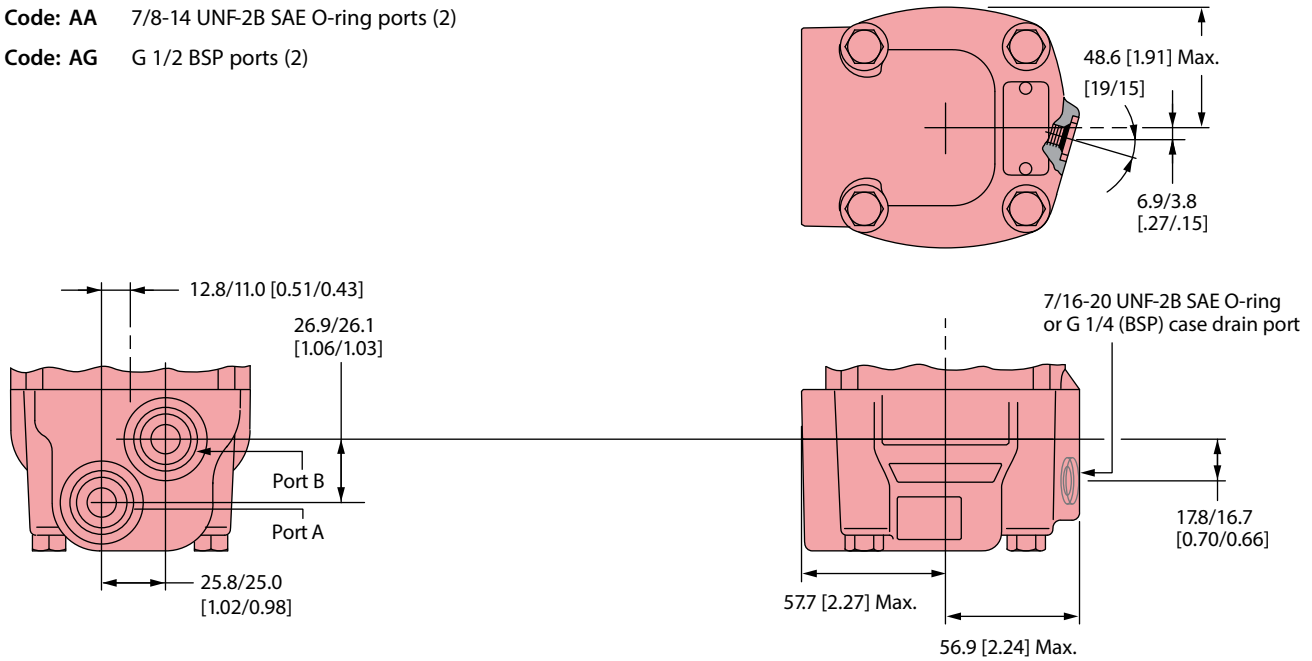
High pressure shaft seal



Ports

Code: AA 7/8-14 UNF-2B SAE O-ring ports (2)

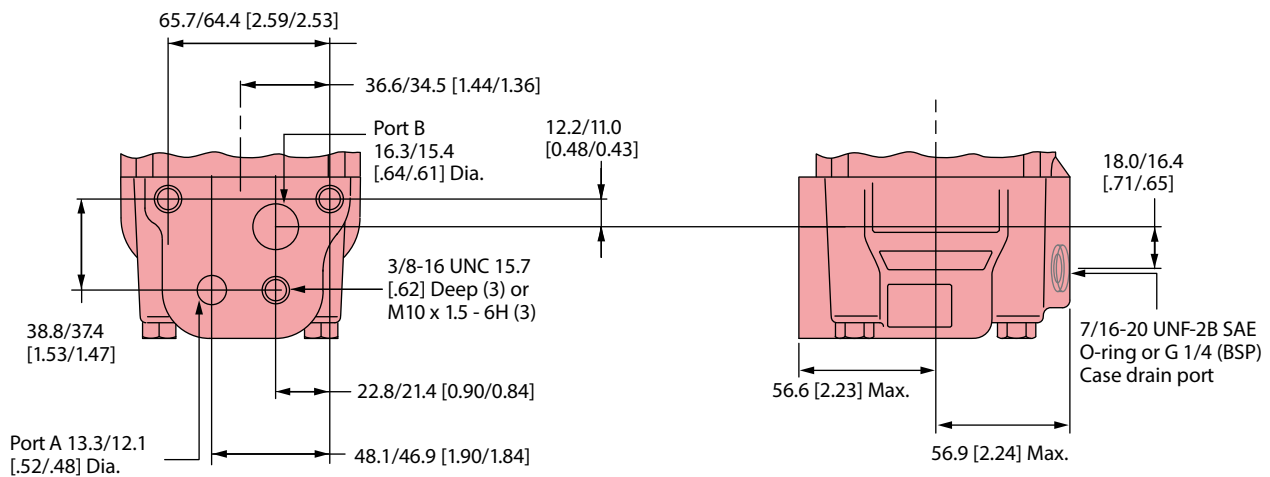
Code: AG G 1/2 BSP ports (2)



C-1

Code: AB 3/8-16 UNC threaded holes

Code: AE M10x1.5 -6H threaded holes



2000 Series

Product numbers

Note: For 2000 Series Motors with a configuration **Not Shown** in the charts below: Use model code number system on the next page to specify product in detail.

Use digit prefix — 104-, 105-, or 106- plus four digit number from charts for complete product number— Example 106-1043.

Orders will not be accepted without three digit prefix.

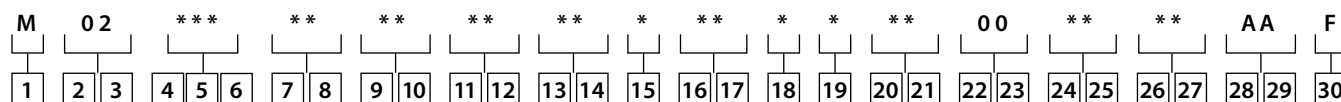
C-1

Mounting	Shaft	Port size	Displ. cm ³ / r [in ³ /r] / product number											
			41	80	90	100	130	160	195	245	305	395	490	
			[2.5]	[4.9]	[5.5]	[6.2]	[8.0]	[9.6]	[11.9]	[14.9]	[18.7]	[24.0]	[29.8]	
2 Bolt sae A flange	1 Inch straight	7/8 -14 O-ring staggered	104-4708	-1001	—	-1002	-1003	-1004	-1005	-1006	-1007	-1143	—	
		1 1/16 -12 O-ring 180° apart	104-----	-1037	—	-1038	-1039	-1040	-1041	-1042	-1043	-1044	—	
	1 ¼ Inch straight	7/8 -14 O-ring staggered	104-4774	-1022	—	-1023	-1024	-1025	-1026	-1027	-1028	-1228	-1420	
		1 1/16 -12 O-ring 180° apart	104-----	-1061	—	-1062	-1063	-1064	-1065	-1066	-1067	-1068	-1421	
	1 ¼ Inch - 14 T splined	7/8 -14 O-ring staggered	104-4764	-1029	—	-1030	-1031	-1032	-1033	-1034	-1035	-1229	-1422	
		1 1/16 -12 O-ring 180° apart	104-----	-1087	—	-1088	-1089	-1090	-1091	-1092	-1093	-1094	-1423	
2 Bolt SAE B flange	1 ¼ Inch straight	7/8-14 O-ring staggered	104-----	-1200	—	1201	-1202	-1203	-1204	-1205	-1206	-1207	—	
	1 ¼ Inch involute SAE C splined	7/8 -14 O-ring staggered	104-----	-1208	—	-1209	-1210	-1211	-1212	-1213	-1214	-1215	—	
	1 Inch SAE 6B splined	7/8 -14 O-ring staggered	104-----	-1193	—	-1194	-1195	-1196	-1197	-1198	-1199	—	—	
	7/8 Inch SAE B splined	7/8 -14 O-ring staggered	104-----	-1216	—	-1217	-1218	-1219	-1220	—	—	—	—	
Standard with 4 bolt flange	32 mm Straight	G 1/2 (BSP))	104-4672	-1384	—	-1385	-1386	-1387	-1388	-1389	-1390	-1391	—	
	1 ¼ Inch 14 T splined	G 1/2 (BSP)	104-----	-1376	—	-1377	-1378	-1379	-1380	-1381	-1382	-1383	—	
Wheel motor	1 ¼ Inch straight	7/8 -14 O-ring staggered	105-----	—	—	—	—	—	—	—	—	—	-1148	
		1 1/16 -12 O-ring 180° Apart	105-----	—	—	—	—	—	—	—	—	—	-1149	
	32 mm straight	G 1/2 (BSP)	105-----	-1134	—	-1135	-1136	-1137	-1138	-1139	-1140	-1141	—	
	1 ¼ Inch tapered	7/8 -14 O-ring staggered	105-----	-1001	—	-1002	-1003	-1004	-1005	-1006	-1007	-1060	-1152	
		1 1/16 -12 O-ring 180° apart	105-----	-1071	—	-1072	-1073	-1074	-1075	-1076	-1077	-1078	—	
	1 ¼ Inch 14 T splined	7/8 -14 O-ring staggered	105-----	-1029	—	-1030	-1031	-1032	-1033	-1034	-1035	-1096	—	
		1 1/16 -12 O-ring 180° apart	105-----	-1079	—	—	—	-1082	-1083	-1084	-1085	-1086	—	
Bearingless	7/8 -14 O-ring staggered		106-----	-1008	—	-1009	-1010	-1011	-1012	-1013	-1014	-1015	-1047	
	G 1/2 (BSP)		106-----	-1038	—	-1039	-1040	-1041	-1042	-1043	-1044	-1045	—	

↑
106-1044

Mounting	Shaft	Port size	Displ. cm ³ / r [in ³ /r] / product number										
			41	80	90	100	130	160	195	245	305	395	490
			[2.5]	[4.9]	[5.5]	[6.2]	[8.0]	[9.6]	[11.9]	[14.9]	[18.7]	[24.0]	[29.8]
2 Bolt SAE A flange	1 Inch straight	7/8 -14 O-ring Staggered	04-----	-1528	—	-1529	-1530	-1531	-1532	-1533	-1534	-1519	-1535
	1 1/4 Inch straight	7/8 -14 O-ring	104-----	-3615	—	-1536	-1537	-1568	-1539	-1452	-1479	-1509	-1489

The following 30-digit coding system has been developed to identify all of the configuration options for the 2000 Series motor. Use this model code to specify a motor with the desired features. All 30 digits of the code must be present when ordering.



1	Product	9 10	Output shaft
M	2000 Series motor	00	None (Bearingless)
2 3	Product series	01	25.40 [1.000] Dia. Straight shaft with 1/4-20UNC-2B Thread in End, 6.35 [.250] wide x 25.40 [1.000] Dia. Woodruff key
02	2000 Series Motor	02	31.75 [1.250] Dia. Straight shaft with .375-16UNC-2B Thread in end, 7.938 [.3125] Sq x 31.75 [1.250] straight key
4 5 6	Displacement	03	31.75 [1.250] Dia. 0.125:1 tapered shaft per SAE J501 with /1.000-20 UNEF-2A Threaded shaft end and slotted hex nut, 7.938 [.3125] Sq x 25.40 [1.0] straight key
021	34.0 cm ³ /r [in ³ /r]	04	31.75 [1.250] Dia. Flat root side fit, 14 tooth, 12/24 DP 30° involute spline w/ .375-16UNC-2B Thread in end, 33.0 [1.30] Min. Full spline length
025	40.8 cm ³ /r [in ³ /r]	05	25.40 [1.000] Dia. 6B spline per SAE J499 with .250-20UNC-2B thread in end, 22.76 [.896] Min. Full spline length
040	66.5 cm ³ /r [in ³ /r]	07	22.22 [.875] Dia. Flat root side fit, 13 tooth, 16/32 DP 30° SAE B Involute Spline, 15.2 [.60] Min. Full Spline Length
049	80.6 cm ³ /r [4.92 in ³ /r]	16	32.00 [1.260] Dia. Straight Shaft with M8 x 1.25-6H Thread in End, 9.982 [.3930] W x 7.995 [.3132] H x 45.00 [1.772] L Key
055	90.6 cm ³ /r [5.53 in ³ /r]	17	31.75 [1.250] Dia. Straight shaft with 3/8 -16 UNC-2B Thread in end, 7.938 [.3125] Sq x 31.75 [1.250] straight key, corrosion resistant (seal area to shaft end)
062	101.6 cm ³ /r [6.20 in ³ /r]	19	25.00 [.984] Dia. Straight shaft with M8 x 1.25-6h thread in end, 7.982 [.3142] W x 6.954 [.2738] H x 31.82 [1.254] L key
080	130.6 cm ³ /r [7.97 in ³ /r]	41	35.00 [1.378] Dia. 10:1 Tapered shaft per ISO R775 with M20 x 1.5-6g threaded shaft end and slotted hex nut, 6.00 [.236] Sq. X 20.00 [.787] Key
096	158.1 cm ³ /r [9.65 in ³ /r]	42	35.00 [1.378] Dia. Straight shaft with M8 x 1.25-6h thread in end, 9.982 [.3930] W x 7.995 [.3132] H x 45.00 [1.772] L key
119	194.8 cm ³ /r [11.89 in ³ /r]		
149	244.3 cm ³ /r [14.91 in ³ /r]		
187	306.6 cm ³ /r [18.71 in ³ /r]		
240	393.8 cm ³ /r [24.03 in ³ /r]		
298	489.0 cm ³ /r [29.84 in ³ /r]		
7 8	Mounting type		
AB	Wheel, 4 Bolt: 108.0 [4.25] Pilot Dia. 13.59 [.535] Dia. Holes on 147.6 [5.81] Dia. Bolt circle. 127.0 [5.00] Dia. Rear mount pilot		
AC	Standard, 2 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes on 106.4 [4.19] Dia. Bolt circle. SAE A		
AD	Bearingless (w/ leakage slots), 4 Bolt: 101.6 [4.00] Pilot Dia. 13.59 [.535] Dia. Holes on 127.0 [5.00] Dia. Bolt circle		
AF	Standard, 2 Bolt: 101.6 [4.00] Pilot dia. 14.35 [.565] Dia. Holes on 146.0 [5.75] Dia. Bolt circle. SAE B		
AH	Standard, 4 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes on 106.4 [4.19] Dia. Bolt circle		
AJ	Standard (Magnet), 4 Bolt: 82.6 [3.25] Pilot Dia. 13.59 [.535] Dia. Holes on 106.4 [4.19] Dia. Bolt Circle. 2.79 [.110] Pilot Length		
AL	Wheel (European), 4 Bolt: 125 [4.92] Pilot Dia. 13.79 [.543] Dia. Holes on 159.99 [6.299] Dia. Bolt Circle		
AP	Wheel, 4 Bolt: 108.0 [4.25] Pilot Dia. 13.59 [.535] Dia. Holes on 147.6 [5.81] Dia. Bolt Circle. 127.0 [5.00] Dia. Rear mount pilot. Spigot reduced to 88.9 [3.50] Dia. by 25.4 [1.00] Depth.		
AZ	Bearingless (w/ leakage slots), 4 Bolt: 100.0 [3.94] Pilot Dia. 11.0 [.43] Dia. Holes on 125.0 [4.92] Dia bolt circle (european)		

2000 Series

Model code

M	02		***			**		**		**		**		*	**		*	*	**		00		**		**		AA		F
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

11 12

Ports

- AA** .875-14 UNF-2B SAE O-ring Ports - Staggered Ports
- AB** 12.70 [.500] and 15.88 [.625] Dia. Manifold ports with 3 x .375-16 UNC-2B port block mounting holes
- AC** .875-14 UNF-2B SAE O-ring ports - ports oriented 180° to each other
- AE** 12.70 [.500] and 15.88 [.625] Dia. Manifold ports with 3 x M10 x 1.5-6H Port block mounting holes
- AF** 1.0625-12 UN-2B SAE O-ring ports - ports oriented 180° to each other
- AG** G-1/2 BSP straight THD ports - staggered ports
- AN** G-1/2 BSP Straight THD Ports - end ported
- AS** G-1/2 Bsp Straight THD ports - staggered port with 2 x M10 x 1.5-6H port block mounting holes - european

13 14

Case flow options

(Shuttles available with port code AA only)

- 01** .4375-20 UNF-2B SAE O-Ring Port
- 02** G 1/4 BSP Straight THD Port
- 13** Reverse flow shuttle valve w/ .4375-20 UNF-2B SAE O-Ring port, .062 Dia. Shuttle flow orifice

15

Low pressure relief

- 0** None
- A** Set at 4.5 bar [65 lbf/in²]
- B** Set at 15.2 bar [220 lbf/in²]
- C** Set at 20.7 bar [300 lbf/in²]
- E** Set at 11.03 bar [160 lbf/in²]

16 17

Pressure/flow option

- 0** None
- Integral cross-over relief valve:
- 30** Set at 103.4 bar [1500 lbf/in²]
- 31** Set at 120.6 bar [1750 lbf/in²]
- 32** Set at 137.9 bar [2000 lbf/in²]
- 33** Set at 155.1 bar [2250 lbf/in²]
- 34** Set at 172.4 bar [2500 lbf/in²]
- 35** Set at 189.6 bar [2750 lbf/in²]
- 36** Set at 206.8 bar [3000 lbf/in²]
- 37** Set at 234.4 bar [3400 lbf/in²]

18

Geroler option

- 1** Standard
- 2** Free running
- 6** Reduced side clearance, no warranty for galling

19

Seal option

- 0** Standard
- 1** Viton
- 2** Viton shaft seal
- 3** High pressure shaft seal
- 4** Seal guard
- 5** Extreme duty seal guard
- 6** High pressure shaft seal, seal guard

20 21

Accessories

- 00** None
- AA** Digital speed pickup (30 pulse), 127 [5.0] lead wire with weather pack shroud connector (A=Power, B=Signal, C=Common)
- AD** Digital speed pickup (30 pulse), M12 connector (A=Power, B=Common, C=Signal)
- AG** M12 connector (60 pulse per rev speed signal and one directional signal, (Pin 1=Power, Pin 2= Direction, Pin 3=Common, Pin 4=Speed)

22 23

Special features (hardware)

- 00** None

24 25

Special features (assembly)

- 00** None
- AA** Flange rotated 90 degrees
- AB** Reverse rotation
- AE** Flange rotated 45 degrees

26 27

Paint/packageing

- AA** No paint, indiv. Box
- AB** Low gloss black primer, indiv. Box
- AT** Epoxy coated black, individual box
- BJ** Nickel plated motor (excluding shaft), individual box

28 29

Customer ID

- AA** None

30

Design code

- F** Sixth

C-1