Description:

The 4000 Series share the same architecture of the industry leading 2000 Series motor, but has a larger frame size for higher torques and flows. The 4000 Series offers up to 8600 in-lb of torque and 25 gpm (continuous ratings).



Features:

- 10 displacements, a variety of mounting flanges and output shafts
- Reliable, proven design
- High efficiency
- Environmental protection options

Benefits:

- Flexibility in designing this motor into a system
- Options that fit well into tough applications

Applications:

- Mowing
- Snow removal
- Sprayer
- Trencher
- Wood products

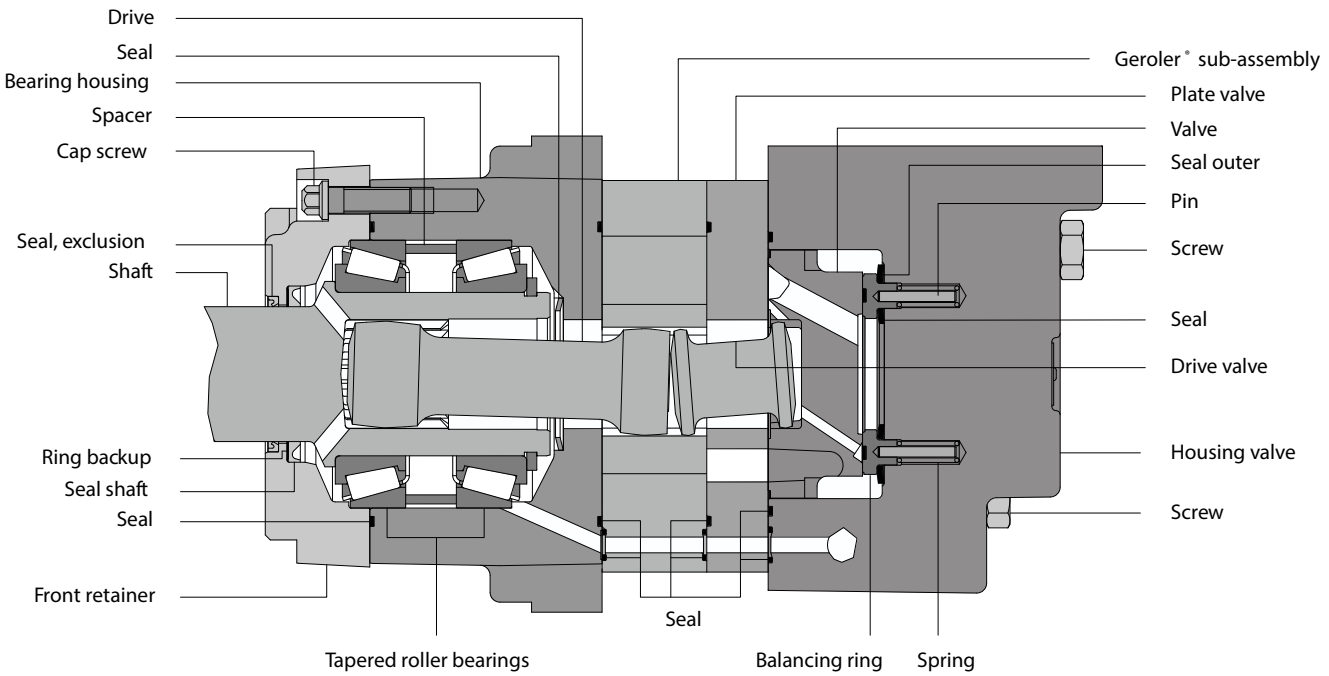
4000 Series motors

Geroler element	10 Displacements
Flow l/min [GPM]	95 [25] Continuous**
	151 [40] Intermittent*
Speed RPM	722 Cont.**
	868 Inter.*
Pressure bar [PSI]	207 [3000] Cont.**
	310 [4500] Inter.*
Torque Nm [lb-in]	972 [8600] Cont.**
	1181 [10450] Inter.*

** Continuous— (Cont.) Continuous rating, motor may be run continuously at these ratings.
* Intermittent— (Inter.) Intermittent operation, 10% of every minute.

4000 Series

Specifications



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4000 series motors

Displ. cm³/r [in³/rev]		**110 [6.7]**	**130 [7.9]**	**160 [9.9]**	**205 [12.5]**	**245 [15.0]**	**280 [17.1]**	**310 [19.0]**	**395 [24.0]**	**495 [30.0]**	**625 [38.0]**
Max speed (RPM) @ Flow	Continuous	626	722	582	459	383	336	303	239	191	151
	Intermittent	697	862	693	546	532	468	422	376	305	241
Flow l/min [GPM]	Continuous	75 [20]	95 [25]	95 [25]	95 [25]	95 [25]	95 [25]	95 [25]	95 [25]	95 [25]	95 [25]
	Intermittent	95 [25]	115 [30]	115 [30]	115 [30]	130 [35]	130 [35]	130 [35]	150 [40]	150 [40]	150 [40]
Torque* Nm [lb - in]	Continuous	322 [2850]	376 [3330]	485 [4290]	599 [5300]	705 [6240]	753 [6666]	851 [7530]	931 [8240]	946 [8375]	972 [8605]
	Intermittent	470 [4160]	558 [4940]	705 [6240]	802 [7100]	844 [7470]	957 [8471]	1064 [9420]	1183 [10470]	1169 [10350]	1181 [10450]
Pressure Δ bar [Δ PSI]	Continuous	205 [3000]	205 [3000]	205 [3000]	205 [3000]	205 [3000]	205 [3000]	205 [3000]	190 [2750]	140 [2000]	115 [1700]
	Intermittent	310 [4500]	310 [4500]	310 [4500]	310 [4500]	260 [3750]	260 [3750]	260 [3750]	240 [3500]	170 [2500]	140 [2000]
	Peak	310 [4500]	310 [4500]	310 [4500]	310 [4500]	310 [4500]	310 [4500]	310 [4500]	295 [4250]	230 [3300]	180 [2600]
Weight kg [lb]	Standard or Wheel mount	17.9 [39.5]	18.1 [40.0]	18.1 [40.0]	18.4 [40.5]	18.6 [41.0]	19.1 [42.0]	19.5 [43.0]	20.4 [45.0]	21.8 [48.0]	23.1 [51.0]
	Bearingless	14.1 [31.0]	14.1 [31.0]	14.3 [31.5]	14.5 [32.0]	14.7 [32.5]	15.2 [33.5]	15.6 [34.5]	16.6 [36.5]	17.9 [39.5]	19.3 [42.5]

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 bars (4500 PSI)
Do not exeed 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 (expect when switching direction of rotation)

4000 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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]

110 cm ³/r [6.7 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[1000] 69	[1500] 103	[2000] 138	[2500] 172	[3000] 207	[3500] 241	[4000] 276	[4500] 310
[0.5]	[150]	[390]	[850]	[1290]						
	15	45	95	145						
2	14	10	5	2						
[2]	[170]	[440]	[900]	[1380]	[1860]	[2270]	[2680]	[3110]		
	20	50	100	155	210	255	305	350		
8	34	33	31	28	25	22	18	11		
[4]	[180]	[450]	[910]	[1390]	[1860]	[2280]	[2700]	[3120]	[3450]	
	20	50	105	155	210	260	305	355	390	
15	68	67	62	56	50	44	36	28	18	
[6]	[190]	[460]	[940]	[1400]	[1870]	[2310]	[2730]	[3140]	[3560]	[3880]
	20	50	105	160	210	260	310	355	400	440
23	138	136	123	110	97	84	70	56	42	28
[8]	[200]	[470]	[960]	[1420]	[1880]	[2320]	[2760]	[3200]	[3640]	[3950]
	25	55	110	160	210	260	310	360	410	445
30	207	204	200	193	184	174	163	150	136	121
[10]	[190]	[460]	[950]	[1420]	[1880]	[2340]	[2790]	[3230]	[3670]	[4010]
	20	50	105	160	210	265	315	365	415	445
38	277	274	270	262	253	241	228	213	196	179
[12]	[180]	[460]	[950]	[1420]	[1890]	[2350]	[2820]	[3260]	[3700]	[4070]
	20	50	105	160	215	265	320	370	420	460
45	347	344	340	331	322	308	292	274	255	236
[14]	[160]	[450]	[940]	[1420]	[1880]	[2350]	[2820]	[3260]	[3710]	[4080]
	20	50	105	160	210	265	320	370	420	460
53	417	414	410	400	390	374	355	335	313	292
[16]	[140]	[440]	[930]	[1420]	[1880]	[2350]	[2830]	[3280]	[3730]	[4110]
	15	50	105	160	210	265	320	370	420	465
61	487	484	480	469	458	440	419	416	410	348
[18]	[130]	[440]	[920]	[1410]	[1870]	[2350]	[2840]	[3300]	[3750]	[4120]
	15	50	105	160	210	265	320	375	425	465
68	556	553	549	537	525	505	482	455	428	404
[20]	[100]	[440]	[910]	[1400]	[1870]	[2350]	[2840]	[3300]	[3770]	[4140]
	10	50	105	160	210	265	320	375	425	465
76	626	622	618	606	593	570	545	516	485	460
[25]	[80]	[430]	[900]	[1370]	[1860]	[2350]	[2850]	[3320]	[3790]	[4160]
	10	50	100	155	210	265	320	375	430	470
95	697	694	690	677	664	638	611	579	545	518

[430] Torque [lb-in]
50 Nm
694 Speed RPM

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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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]

130 cm ³/r [7.9 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[1000] 69	[1500] 103	[2000] 138	[2500] 172	[3000] 207	[3500] 241	[4000] 276	[4500] 310
[0.5]	[310]	[510]	[1060]	[1590]						
	35	60	120	180						
2	12	9	5	2						
[1]	[290]	[530]	[1080]	[1600]	[2110]	[2640]	[3060]	[3450]		
	35	60	120	180	240	300	345	390		
4	30	28	25	19	14	13	12	4		
[2]	[280]	[530]	[1100]	[1620]	[2140]	[2660]	[3180]	[3600]	[4020]	[4080]
	30	60	125	185	240	300	360	405	455	460
8	57	56	53	47	42	40	38	29	20	12
[4]	[260]	[520]	[1100]	[1650]	[2200]	[2700]	[3210]	[3660]	[4100]	[4560]
	30	60	125	185	250	305	365	415	465	515
15	116	114	111	105	100	95	90	70	50	37
[6]	[240]	[510]	[1100]	[1650]	[2200]	[2720]	[3240]	[3710]	[4180]	[4660]
	25	60	125	185	250	305	365	420	470	525
23	173	170	167	161	156	149	142	123	104	91
[8]	[230]	[510]	[1080]	[1640]	[2210]	[2740]	[3270]	[3770]	[4270]	[4750]
	25	60	120	185	250	310	370	425	480	535
30	228	225	222	216	210	202	194	176	158	145
[10]	[210]	[510]	[1080]	[1640]	[2210]	[2750]	[3300]	[3820]	[4350]	[4840]
	25	60	120	185	250	310	375	430	490	545
38	283	285	278	272	266	256	246	229	212	189
[12]	[200]	[500]	[1070]	[1640]	[2220]	[2750]	[3300]	[3840]	[4370]	[4870]
	25	55	120	185	250	310	375	435	495	550
45	341	338	335	329	323	312	300	282	263	237
[14]	[180]	[490]	[1060]	[1640]	[2220]	[2750]	[3310]	[3860]	[4390]	[4890]
	20	55	120	185	250	310	375	435	495	550
53	400	396	392	386	380	368	355	335	311	286
[16]	[160]	[490]	[1050]	[1630]	[2220]	[2760]	[3310]	[3860]	[4400]	[4920]
	20	55	120	185	250	310	375	435	495	555
61	457	453	449	443	437	424	410	388	366	335
[18]	[130]	[480]	[1050]	[1630]	[2220]	[2760]	[3320]	[3870]	[4420]	[4940]
	15	55	120	185	250	310	375	435	500	560
68	516	511	506	500	494	480	465	442	418	384
[20]	[110]	[470]	[1040]	[1620]	[2210]	[2760]	[3330]	[3890]	[4440]	
	10	55	120	185	250	310	375	440	500	
76	574	569	564	559	551	536	520	495	470	
[22]	[70]	[450]	[1020]	[1610]	[2190]	[2750]	[3320]	[3880]	[4440]	
	10	50	115	180	245	310	375	440	500	
83	633	628	624	615	606	590	573	547	520	
[25]	[50]	[430]	[1000]	[1580]	[2160]	[2720]	[3300]	[3860]	[4430]	
	5	50	115	180	245	305	375	435	500	
95	722	718	714	702	690	672	653	625	595	
[30]		[400]	[940]	[1500]	[2080]	[2670]	[3200]	[3740]		
		45	105	170	235	300	360	425		
114		862	855	842	827	806	783	749		

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4000 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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
160 cm ³/r [9.9 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[1000] 69	[1500] 103	[2000] 138	[2500] 172	[3000] 207	[3500] 241	[4000] 276	[4500] 310
[0.5]	[300]	[680]	[1320]	[2050]	[2750]					
	35	75	150	230	310					
2	8	7	5	3	1					
[1]	[320]	[700]	[1350]	[2070]	[2780]	[3300]	[3940]	[4410]	[4950]	
	35	80	155	235	315	375	445	500	560	
4	23	22	20	19	18	16	15	8	2	
[2]	[330]	[700]	[1360]	[2080]	[2790]	[3340]	[3970]	[4530]	[5090]	[5590]
	35	80	155	235	315	375	450	510	575	630
8	46	45	41	40	37	32	29	27	25	13
[4]	[320]	[710]	[1400]	[2100]	[2820]	[3420]	[4020]	[4620]	[5220]	[5730]
	35	80	160	240	320	385	455	520	590	645
15	93	92	90	88	84	76	73	62	51	35
[6]	[300]	[710]	[1420]	[2140]	[2850]	[3510]	[4180]	[4760]	[5340]	[5870]
	35	80	160	240	320	395	470	540	605	665
23	137	135	134	131	126	120	114	90	75	57
[8]	[280]	[720]	[1450]	[2180]	[2900]	[3560]	[4230]	[4850]	[5470]	[6010]
	30	80	165	245	330	400	480	550	620	680
30	184	182	180	176	171	163	154	138	122	100
[10]	[260]	[720]	[1480]	[2220]	[2950]	[3610]	[4290]	[4920]	[5560]	[6160]
	30	80	165	250	335	410	485	555	630	695
38	232	229	226	221	216	206	194	182	169	142
[12]	[240]	[700]	[1450]	[2190]	[2920]	[3590]	[4280]	[4920]	[5570]	[6180]
	25	80	165	245	330	405	485	555	630	700
45	277	274	272	266	260	250	238	224	209	182
[14]	[220]	[680]	[1420]	[2160]	[2890]	[3570]	[4270]	[4920]	[5580]	[6200]
	25	75	160	245	325	405	480	555	630	700
53	321	319	318	311	304	294	282	266	249	222
[16]	[200]	[670]	[1400]	[2130]	[2860]	[3550]	[4260]	[4920]	[5590]	[6220]
	25	75	160	240	325	400	480	555	630	705
61	366	364	362	356	348	338	326	308	289	262
[18]	[180]	[650]	[1360]	[2100]	[2830]	[3530]	[4250]	[4910]	[5600]	[6240]
	20	75	155	235	320	400	480	555	635	705
68	410	409	407	401	392	382	370	350	329	302
[20]	[150]	[630]	[1340]	[2070]	[2800]	[3510]	[4240]	[4910]	[5610]	
	15	70	150	235	315	395	480	555	635	
76	460	458	456	448	440	429	417	396	373	
[22]	[120]	[620]	[1330]	[2060]	[2790]	[3500]	[4220]	[4910]	[5600]	
	15	70	150	235	315	395	475	555	635	
83	509	506	502	494	484	473	461	438	413	
[25]	[70]	[600]	[1320]	[2050]	[2780]	[3480]	[4210]	[4900]	[5590]	
	10	70	150	230	315	395	475	555	630	
95	582	578	573	563	552	540	526	501	474	
[30]		[560]	[1280]	[1990]	[2700]	[3430]	[3970]	[4640]		
		65	145	225	305	390	450	525		
114		693	687	675	661	647	630	600		

[1990] Torque [lb-in]
225 Nm
675 Speed RPM

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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
205 cm ³/r [12.5 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[1000] 69	[1500] 103	[2000] 138	[2500] 172	[3000] 207	[3500] 241	[4000] 276	[4500] 310
[0.5]	[400]	[810]	[1500]							
	45	90	170							
2	8	5	1							
[1]	[410]	[830]	[1590]	[2220]	[2860]	[3860]	[4560]	[5390]	[5510]	
	45	95	180	250	325	435	515	610	625	
4	17	17	16	15	14	12	11	9	3	
[2]	[420]	[850]	[1680]	[2410]	[3140]	[4060]	[4800]	[5420]	[6000]	[6210]
	45	95	190	270	355	460	540	610	680	700
8	36	35	34	32	29	27	25	22	16	8
[4]	[430]	[870]	[1770]	[2590]	[3140]	[4260]	[5040]	[5730]	[6340]	[6740]
	50	100	200	295	355	480	570	645	715	760
15	73	73	71	70	68	61	57	45	35	23
[6]	[430]	[880]	[1800]	[2620]	[3530]	[4370]	[5170]	[5900]	[6590]	[7100]
	50	100	205	295	400	495	585	665	745	800
23	107	106	105	103	101	98	90	81	74	65
[8]	[410]	[870]	[1820]	[2660]	[3560]	[4410]	[5240]	[6020]	[6770]	
	45	100	205	300	400	500	590	680	765	
30	144	143	142	138	136	132	125	116	109	
[10]	[390]	[860]	[1820]	[2700]	[3580]	[4460]	[5300]	[6110]	[6890]	
	45	95	205	305	405	505	600	690	780	
38	182	180	179	174	170	166	160	152	143	
[12]	[350]	[850]	[1810]	[2690]	[3570]	[4440]	[5300]	[6120]		
	40	95	205	305	405	500	600	690		
45	217	216	215	211	202	200	194	185		
[14]	[330]	[840]	[1790]	[2670]	[3560]	[4430]	[5290]	[6120]		
	35	95	200	300	400	500	600	690		
53	256	254	252	248	243	237	229	219		
[16]	[290]	[820]	[1770]	[2650]	[3540]	[4410]	[5280]	[6120]		
	35	95	200	300	400	500	595	690		
61	291	290	289	284	280	272	264	253		
[18]	[270]	[810]	[1750]	[2640]	[3520]	[4400]	[5270]	[6120]		
	30	90	200	300	400	495	595	690		
68	329	327	325	321	316	308	298	287		
[20]	[230]	[800]	[1730]	[2620]	[3510]	[4380]	[5270]	[6120]		
	25	90	195	295	395	495	595	690		
76	366	364	362	358	353	345	334	321		
[22]	[190]	[780]	[1690]	[2600]	[3500]	[4370]	[5260]			
	20	90	190	295	395	495	595			
83	402	400	398	394	389	380	368			
[25]	[150]	[750]	[1640]	[2560]	[3480]	[4360]	[5240]			
	15	85	185	290	395	495	590			
95	459	456	453	448	442	434	421			
[30]		[710]	[1540]	[2510]	[3350]	[4190]	[5030]			
		80	175	285	380	475	570			
114		546	542	537	529	520	504			

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4000 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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
245 cm ³/r [15.0 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1750] 121	[2000] 138	[2250] 155	[2500] 172	[2750] 190	[3000] 207	[3250] 224	[3500] 241	[3750] 259
[0.5]	[460]	[980]													
	50	110													
2	5	2													
[1]	[480]	[990]	[1490]	[1990]	[2480]	[2970]	[3400]	[3830]	[4250]	[4680]	[5020]				
	55	110	170	225	280	335	385	435	480	530	565				
4	14	14	14	13	13	12	12	11	11	10	4				
[2]	[500]	[1000]	[1520]	[2040]	[2540]	[3050]	[3420]	[3930]	[4440]	[4900]	[5320]	[5740]	[6160]	[6640]	[7150]
	55	115	170	230	285	345	385	445	500	555	600	650	695	750	810
8	30	30	29	29	28	27	26	24	23	22	20	18	16	14	11
[4]	[510]	[1030]	[1560]	[2080]	[2600]	[3130]	[3630]	[4130]	[4630]	[5120]	[5570]	[6030]	[6480]	[6870]	[7340]
	60	115	175	235	295	355	410	465	525	580	630	680	730	775	830
15	61	61	60	60	59	59	58	56	53	49	47	44	42	39	36
[6]	[510]	[1040]	[1570]	[2100]	[2620]	[3160]	[3660]	[4200]	[4710]	[5220]	[5690]	[6140]	[6620]	[7050]	[7430]
	60	120	175	235	295	355	415	475	530	590	645	695	750	795	840
23	91	90	90	89	88	88	86	83	80	75	72	70	67	63	59
[8]	[500]	[1020]	[1560]	[2110]	[2630]	[3150]	[3680]	[4210]	[4740]	[5250]	[5720]	[6200]	[6670]	[7090]	[7470]
	55	115	176	240	295	355	415	475	535	595	645	700	755	800	845
30	121	121	120	119	118	117	115	113	111	106	103	99	96	91	87
[10]	[470]	[1000]	[1540]	[2100]	[2620]	[3150]	[3690]	[4230]	[4770]	[5290]	[5670]	[6240]	[6710]	[7140]	
	55	115	175	235	295	355	415	480	540	600	640	705	760	805	
38	152	151	150	148	148	147	145	143	141	137	133	129	125	120	
[12]	[450]	[980]	[1530]	[2080]	[2610]	[3140]	[3680]	[4220]	[4760]	[5280]	[5750]	[6230]	[6700]		
	50	110	175	235	295	355	415	475	540	595	650	705	755		
45	183	182	180	179	178	178	176	173	170	166	161	157	152		
[14]	[420]	[960]	[1520]	[2060]	[2600]	[3130]	[3670]	[4200]	[4740]	[5260]	[5740]	[6220]			
	45	110	170	235	295	355	415	475	535	595	650	705			
53	213	212	211	210	209	208	206	203	200	195	190	185			
[16]	[400]	[950]	[1500]	[2040]	[2580]	[3120]	[3660]	[4190]	[4730]	[5250]	[5730]	[6210]			
	45	105	170	230	290	355	415	475	535	595	645	700			
61	244	243	242	241	240	239	236	232	229	225	219	213			
[18]	[380]	[930]	[1480]	[2020]	[2560]	[3110]	[3650]	[4180]	[4710]	[5230]	[5720]	[6200]			
	45	105	165	230	290	350	410	470	530	590	645	700			
68	275	274	273	272	270	269	266	262	259	254	248	241			
[20]	[350]	[910]	[1460]	[2000]	[2550]	[3100]	[3640]	[4170]	[4700]	[5220]	[5710]				
	40	105	165	225	290	350	410	470	530	590	645				
76	305	305	304	303	302	300	296	292	288	283	276				
[22]	[310]	[870]	[1420]	[1970]	[2500]	[3050]	[3590]	[4140]	[4680]	[5200]	[5680]				
	35	100	160	225	280	345	405	470	530	590	640				
83	337	336	335	334	332	330	326	323	319	313	306				
[25]	[260]	[820]	[1380]	[1930]	[2460]	[2980]	[3540]	[4090]	[4640]	[5180]					
	30	95	155	220	280	335	400	460	525	585					
95	383	382	381	380	378	376	372	369	365	357					
[30]		[680]	[1250]	[1860]	[2390]	[2900]	[3430]	[3960]	[4460]	[4950]					
		75	140	210	270	330	390	445	505	560					
114		457	456	455	453	450	445	442	437	427					
[35]			[1110]	[1740]	[2270]	[2790]	[3340]	[3910]	[4400]						
			125	195	255	315	375	440	495						
132			532	531	528	525	519	515	509						

[3440] Torque [lb-in]
375 } Nm
519 Speed RPM

C-4

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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
280 cm ³/r [17.1 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1750] 121	[2000] 138	[2250] 155	[2500] 172	[2750] 190	[3000] 207	[3250] 224	[3500] 241	[3750] 259
[0.5]	[533]	[1074]													
	60	121													
2	4	2													
[1]	[553]	[1136]	[1714]	[2287]	[2841]	[3394]	[3868]	[4389]	[4895]	[5380]	[5870]	[6368]	[6811]	[7239]	[7654]
	62	128	194	258	321	384	437	496	553	608	663	720	770	818	865
4	12	12	12	11	11	11	10	10	10	8	6	6	6	5	4
[2]	[568]	[1146]	[1740]	[2328]	[2902]	[3461]	[3955]	[4524]	[4922]	[5630]	[6146]	[6666]	[7191]	[7749]	[8323]
	64	130	197	263	328	391	447	511	556	636	694	753	813	876	940
8	26	26	25	25	24	24	23	22	21	20	19	17	17	15	13
[4]	[579]	[1167]	[1771]	[2374]	[2962]	[3557]	[4139]	[4712]	[5285]	[5848]	[6395]	[6946]	[7502]	[8020]	[8471]
	65	132	200	268	335	402	468	532	597	661	722	785	848	906	957
15	53	53	52	52	51	51	50	49	47	45	44	42	41	40	38
[6]	[583]	[1177]	[1781]	[2395]	[2987]	[3601]	[4193]	[4793]	[5376]	[5959]	[6521]	[7082]	[7607]	[8097]	
	66	133	201	271	338	407	474	542	607	673	737	800	859	915	
23	79	79	78	78	77	77	76	74	72	69	67	66	65	64	
[8]	[573]	[1167]	[1780]	[2404]	[3007]	[3610]	[4218]	[4812]	[5411]	[5994]	[6556]	[7022]	[7518]		
	65	132	201	272	340	408	477	544	611	677	741	793	849		
30	106	106	105	105	104	104	102	101	99	96	94	92	90		
[10]	[547]	[1146]	[1765]	[2395]	[2997]	[3629]	[4238]	[4837]	[5442]	[6035]	[6601]	[7022]	[7518]		
	62	130	199	271	339	410	479	547	615	682	746	793	849		
38	134	133	133	131	131	130	129	127	126	122	119	115	111		
[12]	[527]	[1126]	[1745]	[2369]	[2991]	[3609]	[4228]	[4832]	[5441]	[6034]	[6586]	[6940]			
	60	127	197	268	338	408	478	546	615	682	744	784			
45	161	160	166	158	157	157	156	154	152	148	144	141			
[14]	[497]	[1106]	[1730]	[2344]	[2972]	[3585]	[4213]	[4816]	[5430]	[6028]	[6511]	[6940]			
	56	125	195	265	336	405	476	544	614	681	736	784			
53	187	187	186	186	185	184	182	180	178	174	170	166			
[16]	[472]	[1096]	[1715]	[2324]	[2947]	[3565]	[4203]	[4811]	[5420]	[5919]	[6436]				
	53	124	194	263	333	403	475	544	612	669	727				
61	214	214	213	212	211	210	208	206	203	199	195				
[18]	[437]	[1075]	[1690]	[2299]	[2917]	[3541]	[4188]	[4801]	[5400]	[5919]	[6362]				
	49	121	191	260	330	400	473	542	610	669	719				
68	241	241	240	239	237	236	234	231	229	224	219				
[20]	[402]	[1055]	[1669]	[2274]	[2898]	[3521]	[4178]	[4791]	[5394]	[5851]					
	45	119	189	257	327	398	472	541	609	661					
76	268	268	268	267	266	264	261	258	255	249					
[22]	[366]	[1005]	[1629]	[2257]	[2856]	[3480]	[4136]	[4756]	[5205]						
	41	114	184	255	323	393	467	537	588						
83	296	295	295	294	292	290	288	285	279						
[25]	[301]	[940]	[1588]	[2231]	[2825]	[3419]	[4086]	[4710]	[5205]						
	34	106	179	252	319	386	462	532	588						
95	336	336	335	334	333	331	328	325	314						
[30]		[845]	[1480]	[2151]	[2759]	[3328]	[3984]	[4573]	[5021]						
		96	167	243	312	376	450	517	567						
114		402	401	400	398	396	392	389	377						
[35]			[1348]	[2057]	[2623]	[3183]	[3883]	[4354]							
			152	232	296	360	439	492							
132			468	466	464	463	457	449							

C-4

4000 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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
310 cm ³/r [19.0 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1750] 121	[2000] 138	[2250] 155	[2500] 172	[2750] 190	[3000] 207	[3250] 224	[3500] 241	[3750] 259
[0.5]	[600]	[1150]													
2	70 4	130 2													
[1]	[620]	[1270]	[1920]	[2560]	[3170]	[3780]	[4290]	[4900]	[5490]	[6080]	[6670]	[7270]	[7880]	[8490]	[9080]
4	70 11	145 11	215 11	290 10	360 10	425 10	485 9	555 9	620 9	685 8	755 8	820 7	890 7	960 6	1025 5
[2]	[630]	[1280]	[1940]	[2590]	[3230]	[3830]	[4450]	[5070]	[5680]	[6300]	[6910]	[7530]	[8160]	[8790]	[9420]
8	70 23	145 23	220 22	295 22	365 21	435 21	505 20	575 20	640 19	710 18	780 18	850 17	920 17	995 16	1065 15
[4]	[640]	[1290]	[1960]	[2640]	[3290]	[3940]	[4600]	[5240]	[5880]	[6510]	[7150]	[7790]	[8450]	[9100]	
15	70 47	145 47	220 46	300 46	370 45	445 45	520 44	590 44	665 43	735 42	810 42	880 41	955 41	1030 40	
[6]	[650]	[1300]	[1970]	[2660]	[3320]	[4000]	[4680]	[5330]	[5980]	[6630]	[7280]	[7940]			
23	75 71	145 71	225 70	300 70	375 69	450 69	530 68	600 67	675 66	750 64	825 64	895 63			
[8]	[640]	[1300]	[1980]	[2670]	[3350]	[4030]	[4710]	[5360]	[6020]	[6670]	[7320]				
30	70 96	145 96	225 95	300 95	380 94	455 94	530 93	605 92	680 91	755 89	825 88				
[10]	[620]	[1280]	[1970]	[2660]	[3340]	[4070]	[4740]	[5390]	[6050]	[6710]	[7370]				
38	70 121	145 120	225 120	300 119	375 119	460 118	535 117	610 116	685 115	760 112	835 109				
[12]	[600]	[1260]	[1940]	[2630]	[3340]	[4040]	[4730]	[5390]	[6060]	[6720]					
45	70 145	140 144	220 144	295 143	375 142	455 142	535 141	610 140	685 139	760 135					
[14]	[570]	[1240]	[1920]	[2600]	[3310]	[4000]	[4710]	[5380]	[6060]	[6730]					
53	65 169	140 169	215 168	295 168	375 167	450 167	530 165	610 164	685 163	760 159					
[16]	[540]	[1230]	[1900]	[2580]	[3280]	[3970]	[4700]	[5380]	[6050]						
61	60 193	140 193	215 192	290 192	370 190	450 189	530 188	610 187	685 185						
[18]	[490]	[1210]	[1880]	[2550]	[3240]	[3930]	[4680]	[5370]	[6040]						
68	55 217	135 217	210 216	290 216	365 214	445 213	530 211	605 209	680 207						
[20]	[450]	[1190]	[1860]	[2520]	[3210]	[3900]	[4670]	[5360]	[6030]						
76	50 242	135 242	210 242	285 241	365 240	440 238	530 236	605 234	680 232						
[22]	[420]	[1130]	[1820]	[2520]	[3180]	[3870]	[4640]	[5320]							
83	45 267	130 266	205 266	285 265	360 264	435 262	525 260	600 258							
[25]	[340]	[1050]	[1780]	[2510]	[3160]	[3820]	[4590]	[5280]							
95	40 303	120 303	200 302	285 301	355 300	430 299	520 296	595 293							
[30]		[1010]	[1700]	[2420]	[3100]	[3720]	[4500]	[5140]							
114		115 363	190 362	275 360	350 359	420 358	510 354	580 351							
[35]			[1580]	[2360]	[2950]	[3540]	[4390]								
132			180 422	265 420	335 419	400 418	495 413								

[4390] } Torque [lb-in]
495 } Nm
413 } Speed RPM

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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]

395 cm³/r [24.0 in³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1750] 121	[2000] 138	[2250] 155	[2500] 172	[2750] 190	[3000] 207	[3250] 224	[3500] 241
[0.5]	[700] 80 4	[1340] 150 2												
[1] 4	[750] 85 9	[1430] 160 9	[2110] 240 8	[2770] 315 8	[3460] 390 8	[4170] 470 7	[4890] 550 7	[5610] 635 7	[6310] 715 5	[7010] 790 4	[7700] 870 2			
[2] 8	[800] 90 18	[1550] 175 18	[2290] 260 17	[3030] 340 16	[3850] 435 16	[4620] 520 15	[5310] 600 15	[6000] 680 14	[6750] 765 13	[7010] 790 4	[7700] 870 2			
[4] 15	[860] 95 38	[1630] 185 38	[2470] 280 37	[3310] 375 36	[4120] 465 36	[4900] 555 35	[5640] 635 35	[6390] 720 34	[7190] 810 34	[7490] 845 13	[8240] 930 12	[8990] 1015 11	[9730] 1100 10	[10470] 1185 8
[6] 23	[860] 95 57	[1690] 190 57	[2540] 285 56	[3410] 385 55	[4180] 470 54	[4980] 565 53	[5780] 655 52	[6580] 745 50	[7400] 835 49	[7890] 890 33	[8780] 990 32			
[8] 30	[840] 95 76	[1680] 190 76	[2550] 290 75	[3400] 385 74	[4260] 480 73	[5090] 575 72	[5870] 665 70	[6650] 750 68	[7480] 845 66	[8220] 930 47				
[10] 38	[800] 90 95	[1680] 190 95	[2550] 290 94	[3400] 385 93	[4260] 480 92	[5100] 575 91	[5920] 670 89	[6730] 760 86	[7560] 855 84					
[12] 45	[760] 85 114	[1660] 190 114	[2520] 285 113	[3380] 380 112	[4270] 480 111	[5110] 575 110	[5900] 665 108	[6690] 755 105						
[14] 53	[740] 85 133	[1640] 185 133	[2490] 280 132	[3370] 380 131	[4260] 480 130	[5100] 575 129	[5880] 665 127	[6650] 750 124						
[16] 61	[710] 80 153	[1620] 185 153	[2460] 280 152	[3350] 380 151	[4240] 480 149	[5080] 575 147	[5840] 660 145							
[18] 68	[680] 75 172	[1600] 180 172	[2430] 275 171	[3340] 375 170	[4220] 475 168	[5060] 570 166	[5810] 655 164							
[20] 76	[610] 70 192	[1580] 180 191	[2400] 270 190	[3320] 375 189	[4210] 475 187	[5040] 570 185	[5780] 655 183							
[22] 83	[570] 65 211	[1490] 170 210	[2340] 265 209	[3220] 365 208	[4160] 470 206	[5010] 565 204	[5740] 650 201							
[25] 95	[490] 55 239	[1350] 155 238	[2250] 255 237	[3080] 350 236	[4070] 460 235	[4960] 560 233	[5700] 645 230							
[30] 114		[1080] 120 285	[1650] 185 284	[2270] 255 282	[3020] 340 281	[3850] 435 279								
[35] 132			[1520] 170 331	[2120] 240 330	[2870] 325 328	[3760] 425 325								
[40] 151				[2050] 230 376	[2790] 315 374	[3620] 410 371								

C-4

4000 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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
495 cm ^{3}/r [30 in ^{3}/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1750] 121	[2000] 138	[2250] 155	[2500] 172
[0.5]	[800]	[1750]	[1750]							
	90	200	200							
2	3	1	1							
[1]	[880]	[1875]	[2875]	[3825]	[4775]	[5720]	[6670]	[7600]		
	100	210	325	430	540	645	755	860		
4	7	6	6	5	4	3	2	1		
[2]	[905]	[1940]	[2975]	[3990]	[5010]	[6010]	[7010]	[8000]	[8980]	
	100	220	335	450	565	680	790	905	1015	
8	18	17	17	16	15	12	11	10	8	
[4]	[935]	[2005]	[3075]	[4160]	[5245]	[6300]	[7355]	[8375]	[9400]	[10350]
	105	225	345	470	595	710	830	945	1060	1170
15	30	29	28	27	26	23	21	19	17	14
[6]	[920]	[2010]	[3100]	[4185]	[5265]	[6345]	[7420]	[8445]	[9465]	
	105	225	350	475	595	715	840	955	1070	
23	45	44	43	42	40	37	35	32	30	
[8]	[905]	[2015]	[3125]	[4205]	[5290]	[6385]	[7485]	[8510]		
	100	230	355	475	600	720	845	960		
30	61	60	59	57	55	52	49	46		
[10]	[880]	[1995]	[3095]	[4205]	[5295]	[6390]	[7480]	[8525]		
	100	225	350	475	600	720	845	960		
38	76	75	74	72	70	66	63	59		
[12]	[860]	[1975]	[3095]	[4200]	[5305]	[6390]	[7475]			
	95	225	350	475	600	720	845			
45	91	90	89	87	85	81	77			
[14]	[830]	[1945]	[3055]	[4165]	[5275]	[6360]	[7445]			
	95	220	345	470	595	720	840			
53	106	105	104	102	100	96	92			
[16]	[805]	[1910]	[3020]	[4130]	[5245]	[6330]	[7420]			
	90	215	340	465	595	715	840			
61	122	120	119	117	115	111	107			
[18]	[740]	[1860]	[2980]	[4105]	[5235]	[6305]	[7380]			
	85	210	335	465	590	715	835			
68	137	136	134	132	130	125	121			
[20]	[680]	[1810]	[2940]	[4085]	[5225]	[6285]				
	75	205	330	460	590	710				
76	153	152	150	147	145	140				
[25]	[570]	[1665]	[2800]	[4005]	[5210]	[6135]				
	65	190	315	455	590	695				
95	191	189	187	184	182	177				
[30]		[1520]	[2645]	[3765]	[4885]	[5985]				
		170	300	425	550	675				
114		228	226	223	220	215				
[35]			[2400]	[3510]						
			270	395						
132			265	263						
[40]			[2155]	[3260]						
			245	370						
151			305	303						

[2155] Torque [lb-in]
245 Nm
305 Speed RPM

C-4

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.

Continuous

Peak

Intermittent

No operation

Δ Pressure bar [PSI]
625 cm ³/r [38 in ³/r]

Flow LPM [GPM]

	[250] 17	[500] 34	[750] 52	[1000] 69	[1250] 86	[1500] 103	[1600] 110	[1700] 117	[1800] 124	[2000] 138
[0.5] 2	[1000] 115 2									
[1] 4	[1080] 120 5	[2340] 265 5	[3600] 405 5	[4850] 550 4	[6100] 690 4	[7350] 830 3	[7820] 885 3	[8290] 935 2	[8760] 990 2	
[2] 8	[1085] 125 14	[2380] 270 14	[3675] 415 14	[5010] 565 13	[6350] 715 12	[7625] 860 11	[8115] 915 10	[8605] 970 9	[9095] 1030 8	[10075] 1140 7
[4] 15	[1090] 125 23	[2420] 275 23	[3750] 425 23	[5175] 585 22	[6600] 745 21	[7900] 895 19	[8410] 950 18	[9000] 1015 17	[9590] 1085 16	[10450] 1180 14
[6] 23	[1095] 125 35	[2460] 280 35	[3825] 430 35	[5220] 590 34	[6620] 750 33	[7950] 900 31	[8430] 950 30	[8910] 1005 29	[9490] 1070 28	
[8] 30	[1100] 125 48	[2500] 280 48	[3900] 440 47	[5270] 595 46	[6640] 750 45	[7990] 905 43	[8460] 955 43	[8925] 1010 42		
[10] 38	[1130] 130 60	[2550] 290 60	[3975] 450 59	[5320] 600 58	[6670] 755 57	[8045] 910 54	[8595] 970 53	[9150] 1035 52		
[12] 45	[1160] 130 72	[2600] 295 72	[4050] 460 71	[5375] 605 70	[6700] 755 69	[8100] 915 65	[8660] 980 64			
[14] 53	[1105] 125 84	[2535] 285 84	[3965] 450 83	[5325] 600 82	[6685] 755 81	[8065] 910 77	[8620] 975 76			
[16] 61	[1050] 120 96	[2465] 280 95	[3880] 440 95	[5275] 595 94	[6670] 755 93	[8035] 910 89	[8580] 970 88			
[18] 68	[990] 110 108	[2405] 270 107	[3825] 430 107	[5240] 590 105	[6655] 750 104	[7345] 830 100				
[20] 76	[930] 105 121	[2350] 265 120	[3770] 425 120	[5205] 590 118	[6640] 750 116					
[25] 95	[750] 85 151	[2175] 245 150	[3600] 405 149	[5000] 565 147	[6400] 725 146					
[30] 114	[550] 60 181	[1975] 225 180	[3400] 385 179	[4800] 542 177	[6200] 700 176					
[35] 132			[3125] 355 210	[4545] 515 208						
[40] 151			[2850] 320 241	[4295] 485 239						

C-4

Standard mount

Ports

1 1/16 -12 UN-2B SAE O-ring staggered ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

4 Bolt 3/4 inch split flange ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

G 3/4 (BSP) Staggered ports (2)
G 1/4 (BSP) Case drain port (1)

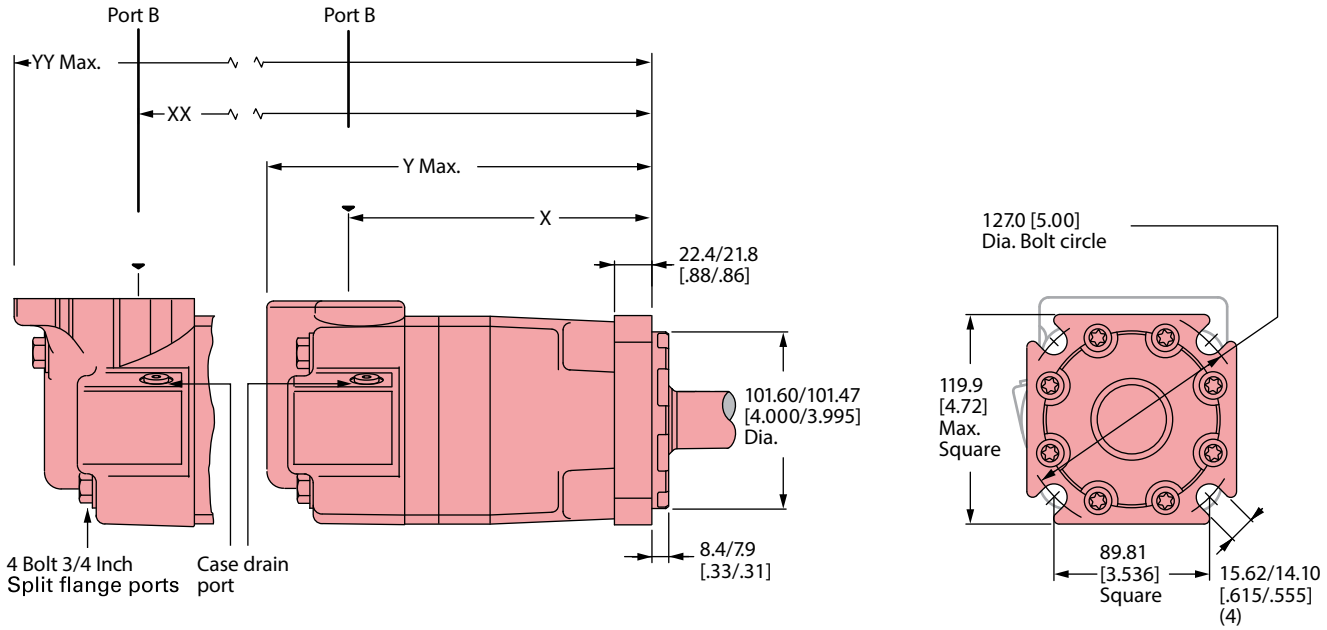
Standard rotation viewed from shaft end

Port A pressurized — CW
Port B pressurized — CCW

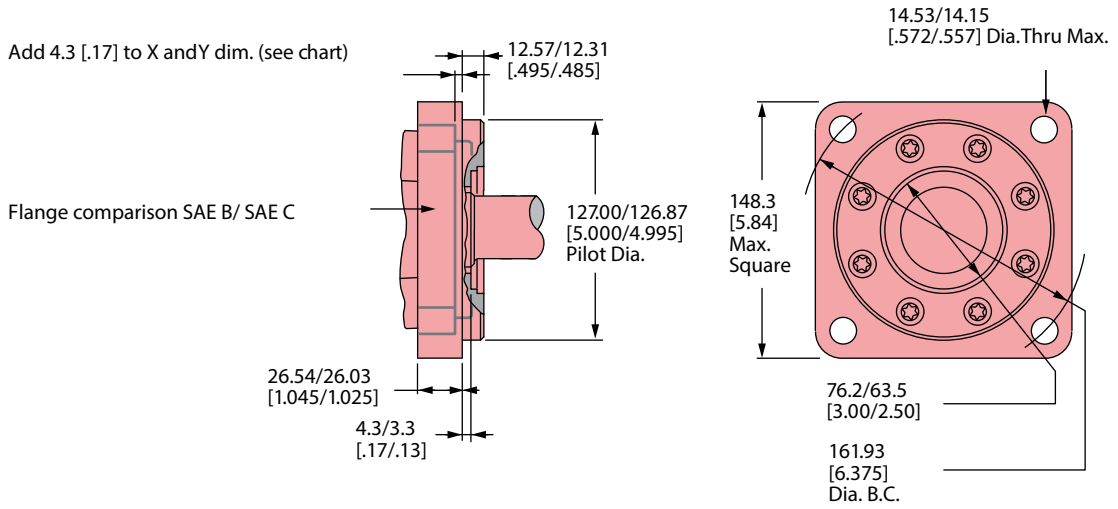
Standard mount motor dimensions

Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]	XX mm [inch]	YY mm [inch]
110 [6.7]	158.3 [6.23]	214.4 [8.44]	167.3 [6.59]	246.3 [9.70]
130 [7.9]	162.3 [6.39]	218.4 [8.60]	171.5 [6.75]	250.4 [9.86]
160 [9.9]	168.7 [6.64]	224.7 [8.85]	177.7 [7.00]	256.7 [10.11]
205 [12.5]	177.2 [6.98]	233.2 [9.18]	186.2 [7.33]	265.2 [10.44]
245 [15.0]	168.7 [6.64]	224.7 [8.85]	177.7 [7.00]	256.7 [10.11]
310 [19.0]	177.2 [6.98]	233.2 [9.18]	186.2 [7.33]	265.2 [10.44]
395 [24.0]	187.9 [7.40]	243.9 [9.60]	196.9 [7.75]	275.9 [10.86]
495 [30.0]	200.7 [7.90]	256.8 [10.11]	209.7 [8.26]	288.8 [11.37]
625 [38.0]	217.8 [8.58]	273.9 [10.78]	226.7 [8.93]	305.9 [12.04]

Standard mount



SAE C Flange



Wheel mount

Ports

1 1/16 -12 UN-2B SAE O-ring staggered ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

4 Bolt 3/4 inch split flange ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

G 3/4 (BSP) staggered ports (2)
G 1/4 (BSP) case drain port (1)

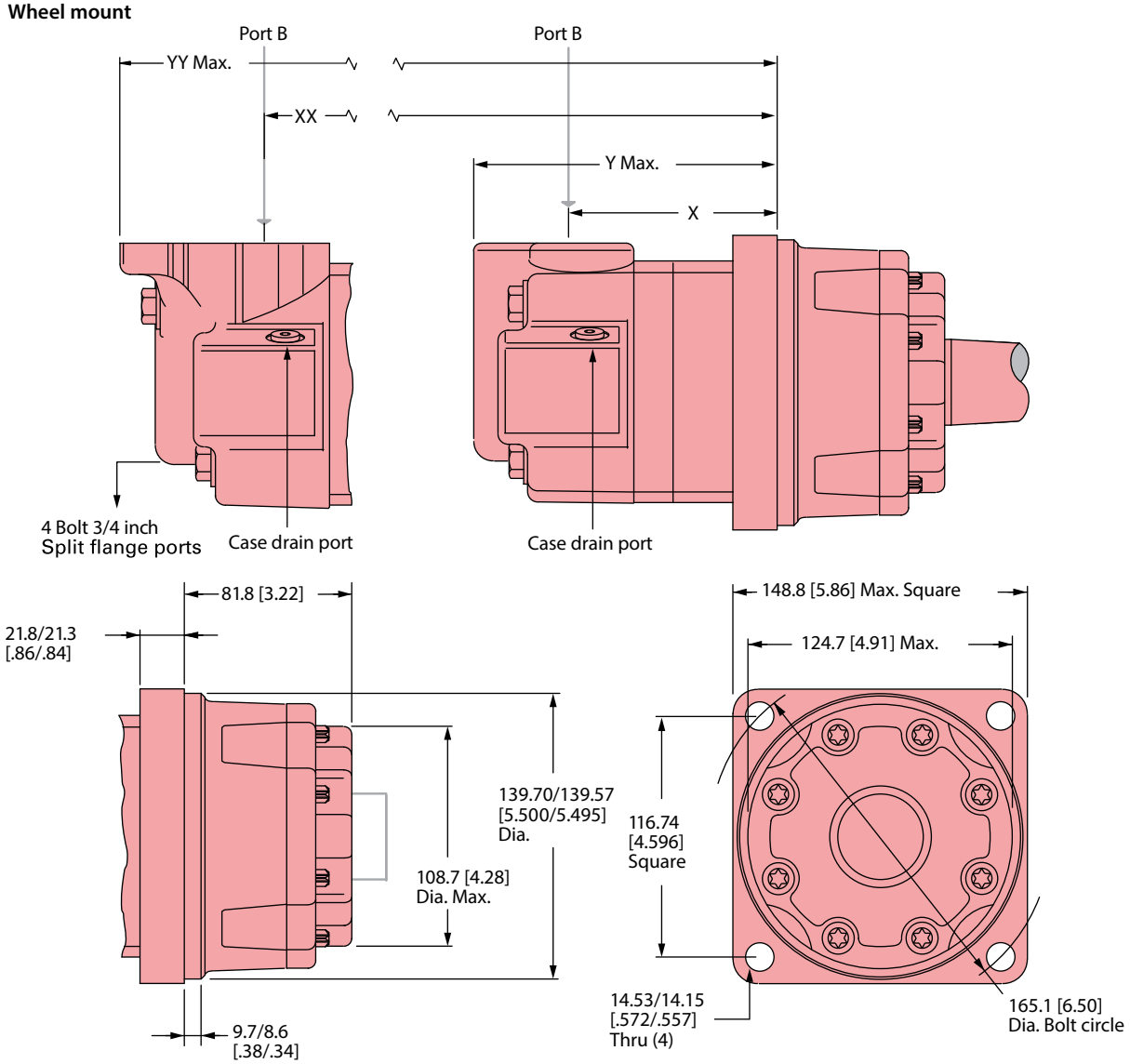
Standard rotation viewed from shaft end

Port A pressurized — CW
Port B pressurized — CCW

Wheel mount motor dimensions

Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]	XX mm [inch]	YY mm [inch]
110 [6.7]	87.5 [3.45]	143.3 [5.64]	96.4 [3.80]	175.3 [6.90]
130 [7.9]	91.6 [3.61]	147.3 [5.80]	100.5 [3.96]	179.3 [7.06]
160 [9.9]	97.8 [3.85]	153.7 [6.05]	106.8 [4.21]	185.7 [7.31]
205 [12.5]	106.4 [4.19]	162.3 [6.39]	115.6 [4.55]	194.3 [7.65]
245 [15.0]	97.8 [3.85]	153.7 [6.05]	106.8 [4.21]	185.7 [7.31]
310 [19.0]	106.4 [4.19]	162.3 [6.39]	115.6 [4.55]	194.3 [7.65]
395 [24.0]	117.1 [4.61]	172.8 [6.81]	126.1 [4.97]	205.0 [8.07]
495 [30.0]	129.9 [5.12]	185.7 [7.31]	138.8 [5.47]	217.7 [8.57]
625 [38.0]	147.1 [5.79]	202.9 [7.99]	156.0 [6.14]	235.0 [9.25]

Wheel mount



C-4

Dimensions

Bearingless

Ports

1 1/16 -12 UN-2B SAE O-ring staggered ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

4 Bolt 3/4 inch split flange ports (2)
7/16 -20 UNF-2B SAE O-ring case drain port (1)

G 3/4 (BSP) staggered ports (2)
G 1/4 (BSP) case drain port (1)

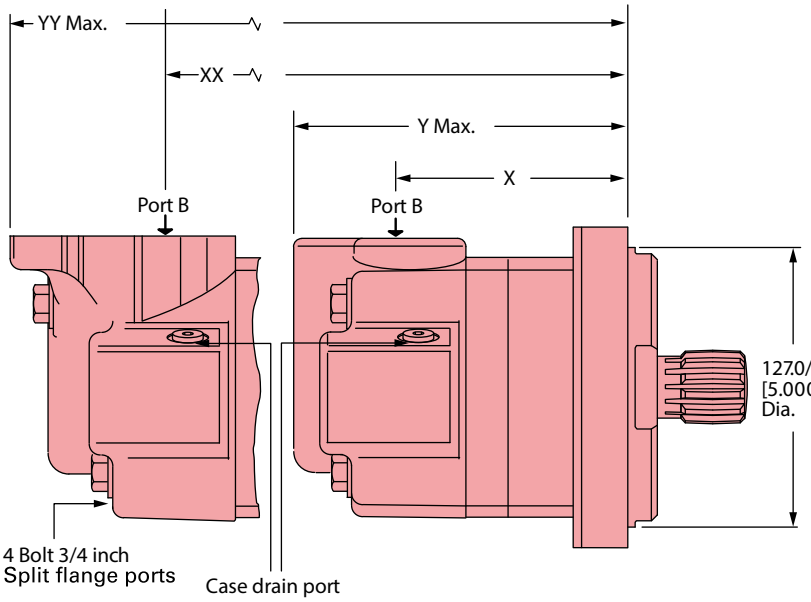
Standard rotation viewed from drive end

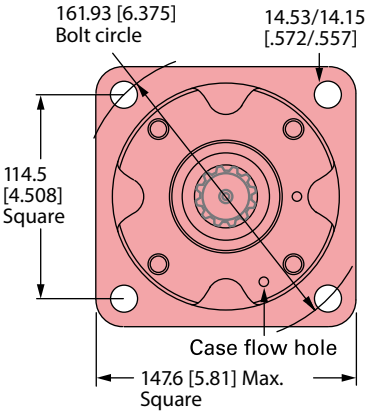
Port A pressurized — CW
Port B pressurized — CCW

Wheel mount motor dimensions

Displacement cm³/r [in³/r]	X mm [inch]	Y mm [inch]	XX mm [inch]	YY mm [inch]
110 [6.7]	91.0 [3.58]	146.8 [5.78]	100.1 [3.94]	178.8 [7.04]
130 [7.9]	95.0 [3.74]	150.8 [5.94]	104.1 [4.10]	182.9 [7.20]
160 [9.9]	101.6 [4.00]	157.1 [6.19]	110.5 [4.35]	189.2 [7.45]
205 [12.5]	109.9 [4.33]	165.7 [6.52]	118.9 [4.68]	197.6 [7.78]
245 [15.0]	101.6 [4.00]	157.1 [6.19]	110.5 [4.35]	189.2 [7.45]
310 [19.0]	109.9 [4.33]	165.7 [6.52]	118.9 [4.68]	197.6 [7.78]
395 [24.0]	120.6 [4.75]	176.3 [6.94]	129.5 [5.10]	208.3 [8.20]
495 [30.0]	133.5 [5.26]	189.2 [7.45]	142.5 [5.61]	221.2 [8.71]
625 [38.0]	150.5 [5.93]	206.3 [8.12]	159.5 [6.28]	238.3 [9.38]

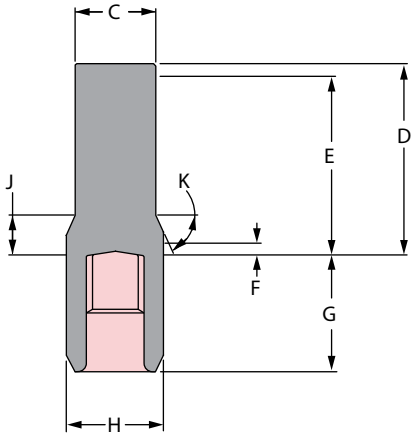
Bearingless

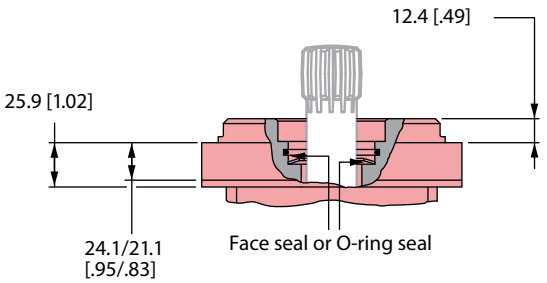




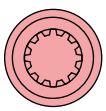
Shaft blank dimensions

C 47.2 [1.86] Dia.
D 112.5 [4.43] Max.
E 107.4 [4.23]
Full form dia.
F 7.4 [.29] Min.
Full form dia.
G 68.8 [2.71] Max.
H 56.9 [2.24] Dia.
J 18.29 [.720]
K 38 °





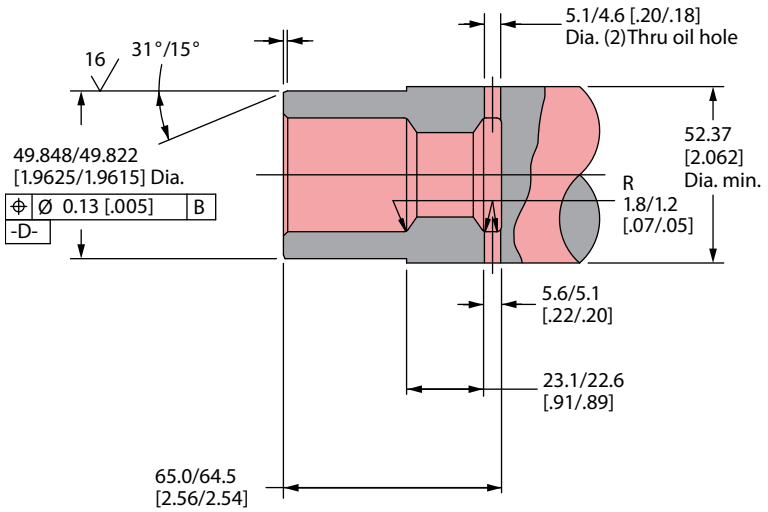
Mating coupling blank
Danfoss Part no. 12745-003

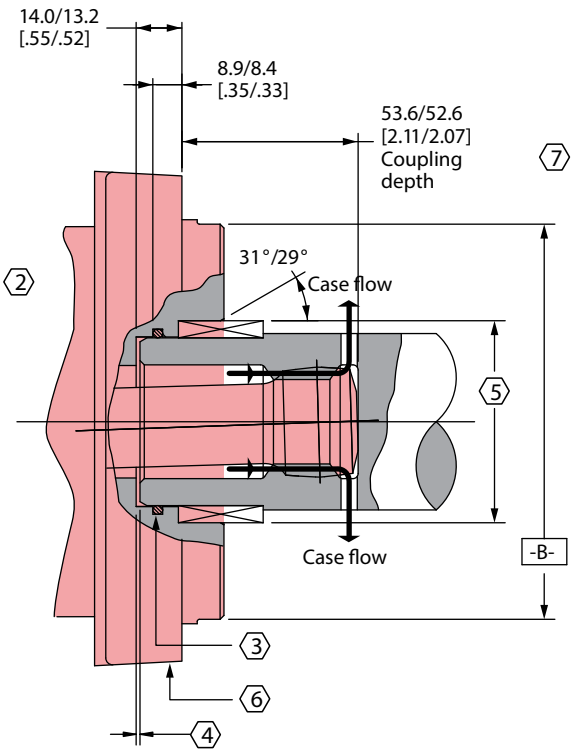


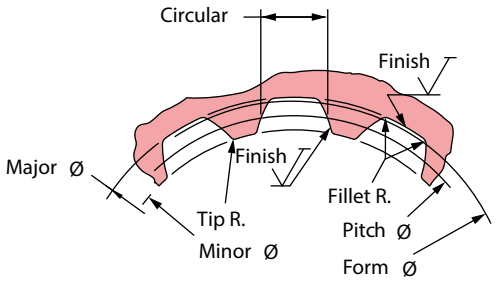
For 4000 Series bearingless motor application information contact your Danfoss representative (mating coupling blanks available from Danfoss).

Bearingless

1. Internal spline in mating part to be as follows: Material to be ASTM A304, 8620H. Carbonize to a hardness of 60-64 HRc with case depth (to 50HRc) of 0.076 - 1.27 [.030 - .050] (dimensions apply after heat treat).
2. Mating part to have critical dimensions as shown. Oil holes must be provided and open for proper oil circulation.
3. Seal to be furnished with motor for proper oil circulation thru splines.
4. Some means of maintaining clearance between shaft and mounting flange must be provided.
5. Counterbore designed to adapt to a standard sleeve bearing 50.010 - 50.040 [1.9689 - 1.9700] ID by 60.050 - 60.080 [2.3642 - 2.3653] (Oilite bronze sleeve bearing).
6. Similar to SAE "C" Four Bolt Flange.
7. 52.8 [2.08] Max. dimension to be maintained when assembling shipping and installing unit to insure valve drive engagement with valve (this is required on displacement code number 24 only).







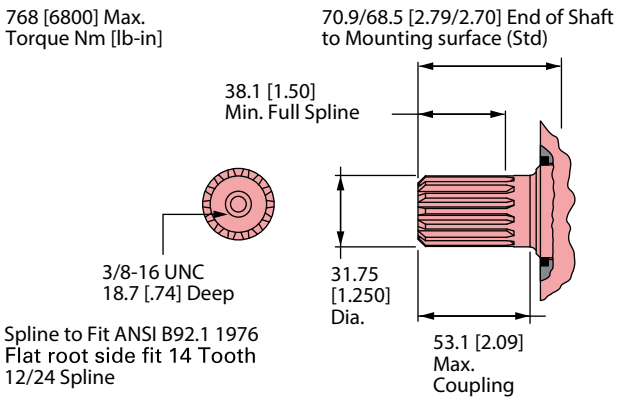
Spline pitch	10/20
Pressure angle	30°
Number of teeth	12
Class of fit	Ref. 5
Type of fit	Side
Pitch diameter	Ref. 30.480000 [1.2000000]
Base diameter	Ref. 26.396455 [1.0392302] ⌀ 0,21 [.008] D
Major diameter	33.43 [1.316] Max. 33.23 [1.308] Min.
Minor diameter	28.40 - 25.58 [1.118 - 1.125]
Form diameter, Min	32.59 [1.283]
Fillet radius	0.63 - 0.76 [.025 - .030]
Tip radius	0.26 - 0.51 [.010 - .020]

Finish	1.6 (63)
Involute profile variation	+0.000 -0.025 [+.0000 -.0010]
Total index variation	0.038 [.0015]
Lead variation	0.013 [.0005]
Circular space width:	
Maximum actual	5.045 [.1986]
Minimum effective	4.995 [.1951]
Maximum effective	Ref. 5.009 [.1972]
Minimum actual	Ref. 4.986 [.1963]
Dimension between two pins	Ref. 22.783 - 22.929 [.8970 - .9027]
Pin diameter	5.334 [.2100] Pins to Have 3.73 [.147] Wide flat for root clearance

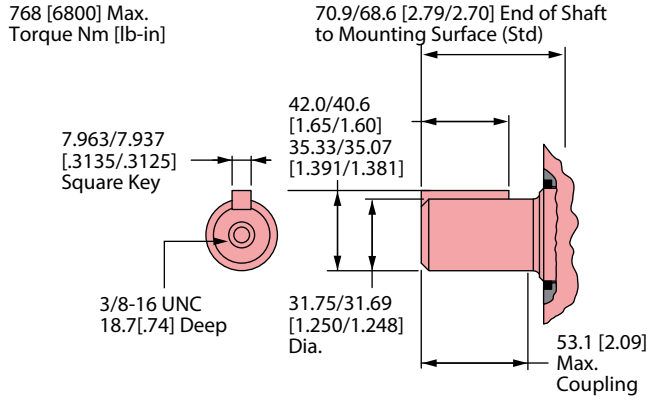
Dimensions

Shafts

Code: 03 1 1/4 -14 Tooth splined

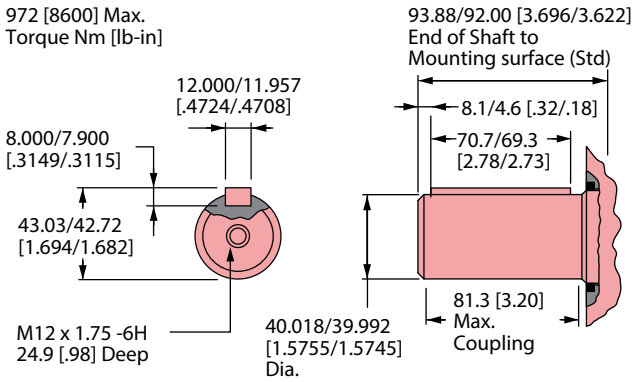


Code: 01 1 1/4 Inch straight

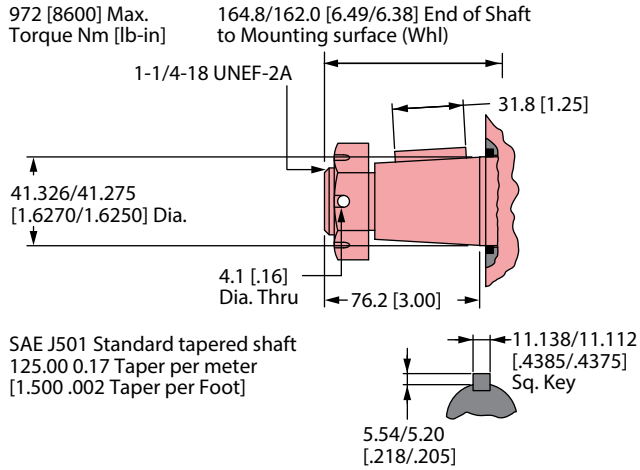


C-4

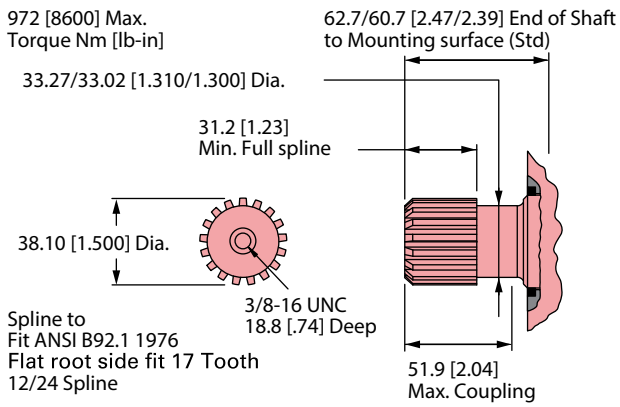
Code: 11 40 mm Straight



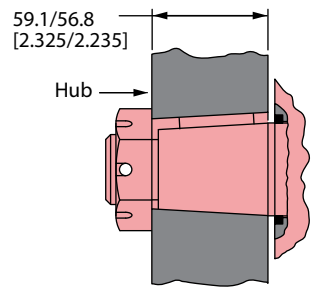
Code: 02 1 5/8 Tapered



Code: 10 1 1/2 Inch 17-Tooth splined



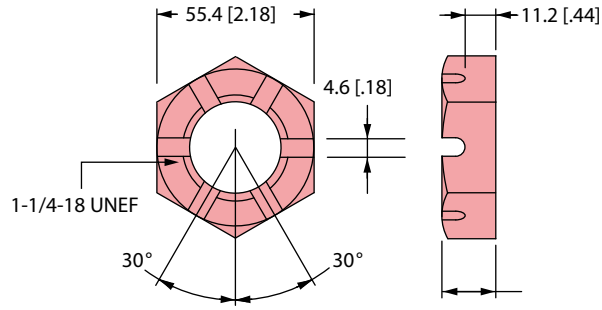
Tapered shaft hub data



Recommended torque :
(645 Nm [475 lb-ft] Dry)
(510 Nm [375 lb-ft] Lub)

Plus Torque required t o
align the slotted nut with
the Shaft crosshole.

Slotted hexagon nut

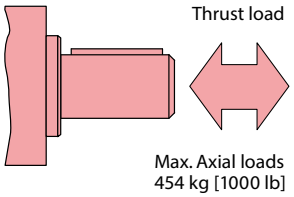


These curves indicate the radial load capacity on the motor shaft(s) at various locations with an allowable external thrust load of 454 kg [1000 lb].

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 94 kg/7 Bar [208lb/100 PSI].

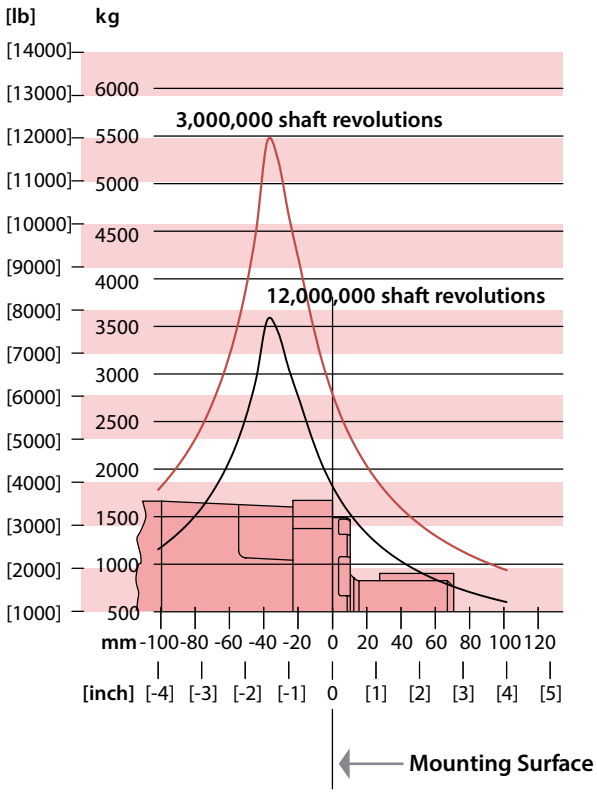
Each curve is based on B10 bearing life (2000 hours of 12,000,000 shaft revolutions at 100 RPM) at rated output torque.

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.

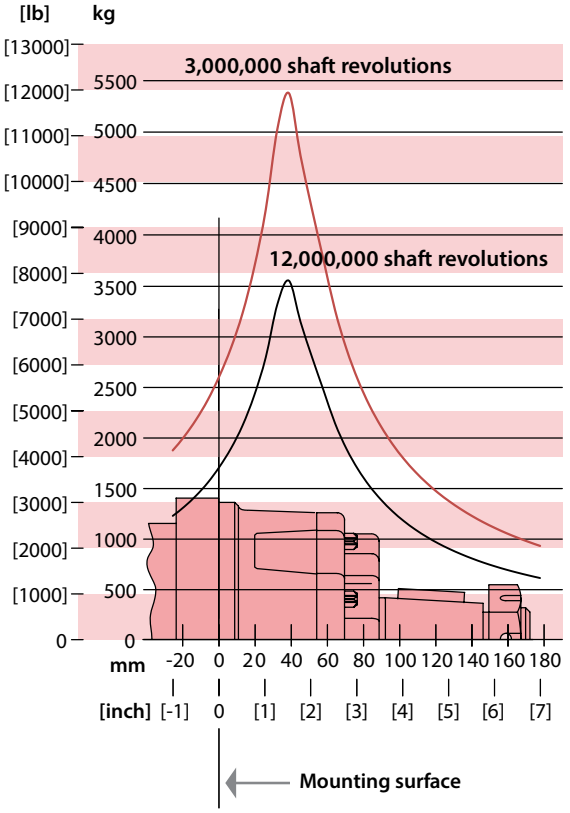


RPM	Multiplication factor
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.54

Standard Motor Straight and Splined Shafts



Wheel motor tapered shaft



C-4

4000 Series

Case pressure and case port

Char-Lynn 4000 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 advantage

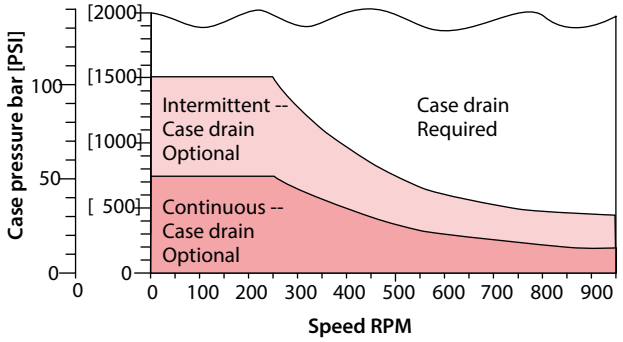
Contamination control — flushing the motor case.

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.

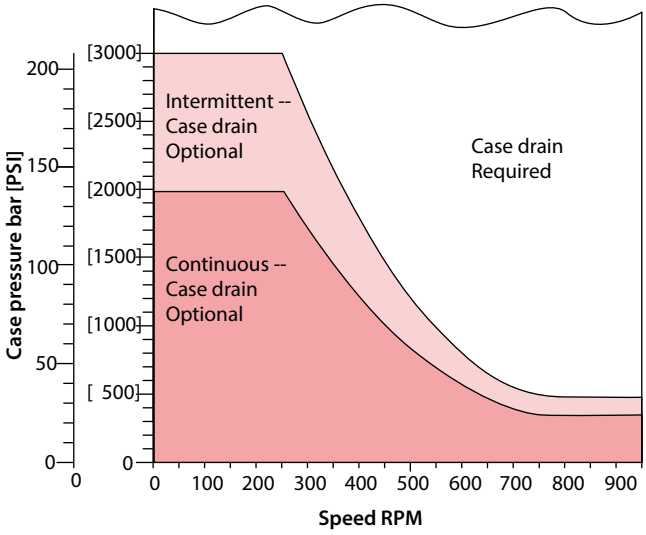
Standard shaft seal

Case pressure seal limitation

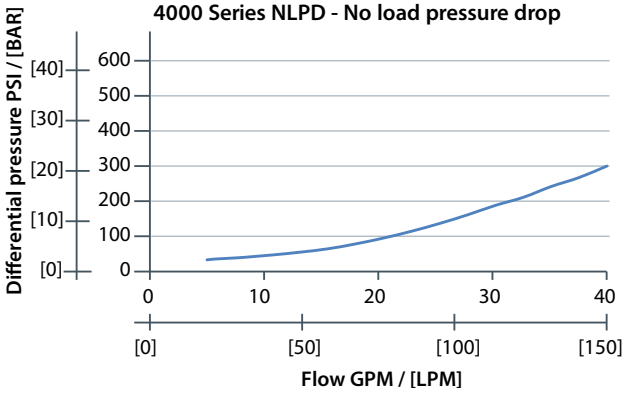


High pressure shaft seal

Case pressure seal limitation

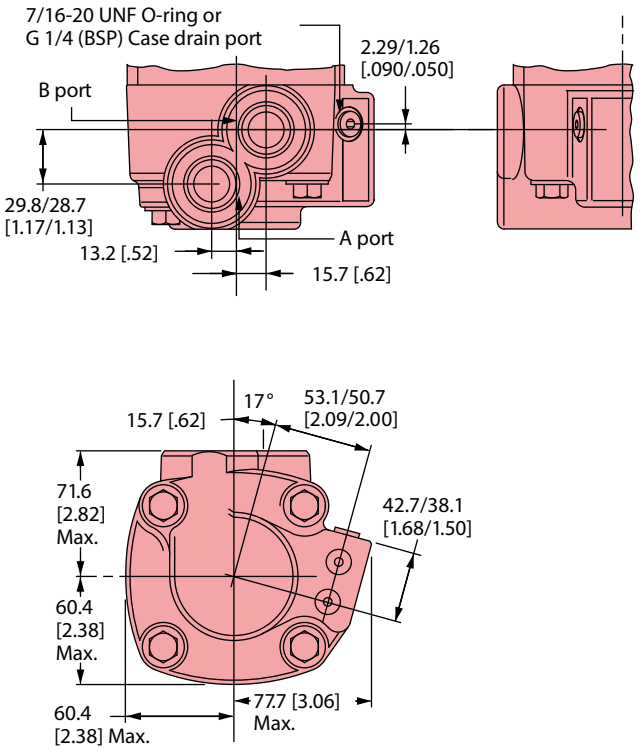


4000 Series NLPD - No load pressure drop

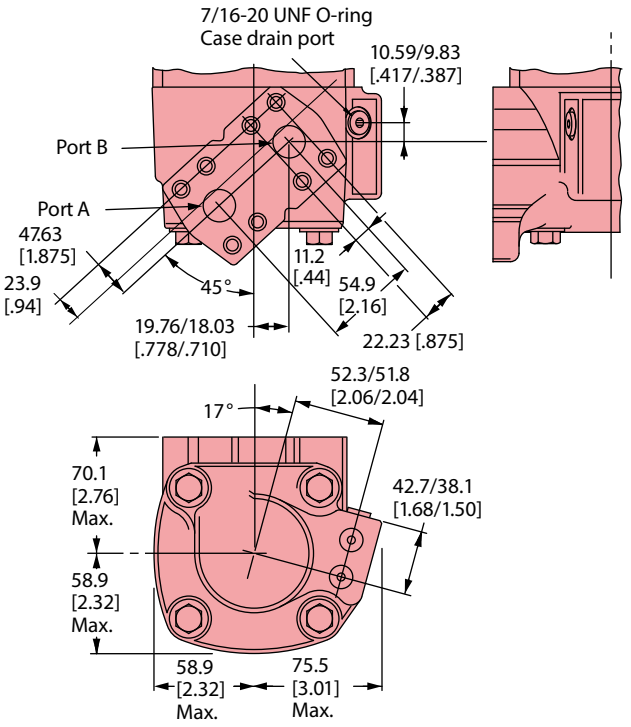


Ports

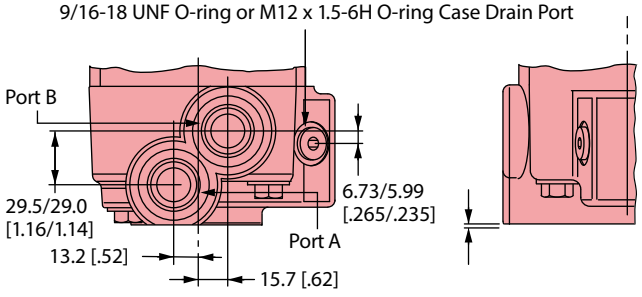
Code: AB 1-1/16-12 O-ring ports
Code: AC G 3/4 (BSP) ports



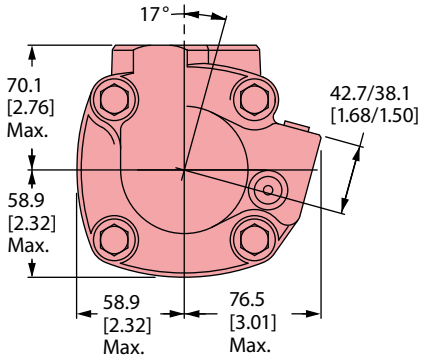
Code: AD Four Bolt 3/4 inch split flange SAE J518c (code 61)



Code: AA 7/8-14 O-ring ports
Code: AE M22 x 1.5-6H ports



6.9 [.27] Material Removed from this Housing for 7/8-14 O-ring Ports and M22 x 1.5-6H Ports



C-4

4000 Series

Product numbers

Note: For 4000 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 —109-, 110-, or 111- plus four digit number from charts for complete product number— Example 111-1057.

Orders will not be accepted without three digit prefix.

Mounting		Shaft	Port size	Port size displ. cm³/r [in³/r] / product number								
			110 [6.7]	**130 [7.9]**	**160 [9.9]**	**205 [12.5]**	**245 [15.0]**	**280* [17.1]**	**310 [19.0]**	**395 [24.0]**	**495 [30.0]**	**625 [38.0]**
Standard SAE B-Mount	1 1/4 Inch Straight	1 1/16 O-ring	109-1100	-1101	-1102	-1103	-1103	-1094	-1105	-1106	-1212	-1215
		3/4 inch Split flange	109-1001	-1054	-1002	-1003	-1055	—	-1056	-1057	—	—
	1 5/8 Inch Tapered	1 1/16 O-ring	109-1107	-1108	-1109	-1110	-1111	—	-1112	-1113	-1479	-1455
		3/4 inch Split flange	109-1006	—	—	-1008	-1059	—	-1402	-1061	—	—
	1 1/4 Inch 14 T Splined	1 1/16 O-ring	109-1114	-1115	-1116	-1117	-1118	—	-1119	-1120	—	—
		3/4 inch Split flange	109-1011	-1062	-1012	-1013	-1063	—	-1064	-1065	—	—
Standard SAE C-Mount	40 mm Straight	G 3/4 (BSP)	109-1184	-1185	-1227	-1224	-1225	—	-1189	-1190	—	—
	1 1/4 Inch 17 T Splined	G 3/4 (BSP)	109-1191	-1192	-1193	-1194	-1195	—	-1196	—	—	—
Wheel motor	1 1/4 Inch straight	1 1/16 O-ring	110-1074	-1075	-1076	-1077	-1078	—	-1079	-1080	—	-1122
		3/4 inch Split flange	—	—	-1002	—	—	—	—	—	—	—
	40 mm Straight	G 3/4 (BSP)	—	-1109	-1110	-1111	-1112	—	-1113	-1125	—	—
	1 5/8 Inch Tapered	1 1/16 O-ring	110-1081	-1082	-1083	-1084	-1085	—	-1086	-1087	1116	-1117
		3/4 inch Split flange	110-1006	-1044	-1007	—	—	—	—	-1047	—	—
	1 1/4 Inch 14 T Splined	1 1/16 O-ring	110-1088	-1089	-1090	-1091	-1092	—	-1093	-1094	—	—
		3/4 inch Split flange	—	—	—	—	—	—	—	—	—	—
Bearingless		1 1/16 O-ring	111-1033	-1034	-1035	-1036	-1037	—	-1038	-1039	-1062	-1063
		3/4 inch Split flange	111-1044	-1015	-1045	-1046	-1016	—	-1017	-1018	—	—
		G 3/4 (BSP)	111-1052	-1053	-1054	-1055	-1056	—	-1057	-1058	—	—

111-1057

C-4

The following 30-digit coding system has been developed to identify all of the configuration options for the 4000 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.

M	04	***	**	**	**	**	*	00	0	*	**	**	00	**	00	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

1 Product

M Motor

2 3 Series

04 4000 Series

4 5 6 Displacement cm ³/r [in ³/r]

067 109.8 cm ³/r[6.70 in ³/r]
080 130.3 cm ³/r [7.95 in ³/r]
099 162.2 cm ³/r [9.90 in ³/r]
125 205.5 cm ³/r [12.54 in ³/r]
150 246.3 cm ³/r [15.03 in ³/r]
171 280.1 cm ³/r [17.09 in ³/r]
190 311.8 cm ³/r [19.03 in ³/r]
225 369.0 cm ³/r [22.52 in ³/r]
240 393.9 cm ³/r [24.04 in ³/r]
301 492.6 cm ³/r [30.06 in ³/r]
342 560.2 cm ³/r [34.18 in ³/r]
381 623.9 cm ³/r [38.07 in ³/r]

7 8 Mounting type

AA Bearingless, 4 Bolt: 127.00 [5.000] Pilot Dia. 14.27 [.562] Dia. Holes on 161.92 [6.375] Dia. Bolt circle
AB Standard, 4 Bolt: 101.60 [4.000] Pilot Dia. 14.7 [.58] Slots on 127.00 [5.000] Dia. Bolt Circle. (SAE B)
AC Wheel, 4 Bolt: 139.70 [5.500] Pilot Dia. 14.27 [.562] Dia. Holes on 165.10 [6.500] Dia. Bolt circle.
AD Wheel, 4 Bolt: 127.00 [5.000] Pilot Dia. .500-13 UNC-2B Threaded Holes on 147.62 [5.812] Dia. Bolt circle.
AF Standard, 4 Bolt: 127.00 [5.000] Pilot Dia. 14.27 [.562] Dia. Holes on 161.92 [6.375] Dia. Bolt circle. (SAE C)
AH Standard: ISO Flange 125 B4hw (ISO 3019/2) 124.97 [4.920] Pilot Dia. 14.27 [.562] Dia. Holes on 160.00 [6.299] Dia. Bolt circle

9 10 Output shaft

00 None (Bearingless)
01 31.75 [1.250] Dia. Straight With .375-16UNC- 2B Thread, 53.1 [2.09] Max Coupling Length, 7.938 [.3125] Sq x 41.27 [1.625] Straight Key
02 41.28 [1.625] Dia. Tapered with 11.112 [.4375] Sq x 31.75 [1.250] Straight Key, 1.250-18UNEF-2A Thread with Slotted Hex Nut
03 31.75 [1.250] Dia. Flat root side fit, 14 tooth, 12/24 DP 30° involute spline, 38.1 [1.50] minimum full spline length with .375-16UNC-2B thread
10 38.10 [1.500] Dia. Flat root side fit, 17 tooth, 12/24 DP 30°. Involute spline, 31.2 [1.23] minimum full spline length, with .375-16 UNC-2B thread in end
11 40.00 [1.575] Dia. Straight with M12 x 1.75-6H Thread, 7.955 [.3132] x 11.979 [.4716] Wide X 69.98 [2.755] straight key

11 12 Ports

AA .875-14 UNF-2B SAE O-Ring ports - staggered ports
AB 1.0625-12 UN-2B SAE O-Ring ports - staggered ports
AC G 3/4 Ports - Staggered ports
AD 19.05 [.750] 4 bolt split flange staggered ports standard pressure series (Code 61)

13 14 Case flow options

00 None
01 .5625-18 UNF-2B SAE O-Ring port with shuttle
02 .4375-20 UNF-2B SAE O-Ring port with check valve
03 G 1/4 BSP Straight thread with check valve
06 .4375-20 UNF-2B SAE O-ring port with reverse flow shuttle

15 Low pressure relief

0 None
A Set at 4.5 Bar [65 lbf/in ²]
B Set at 15.2 Bar [220 lbf/in ²]

16 17 Pressure/Flow option

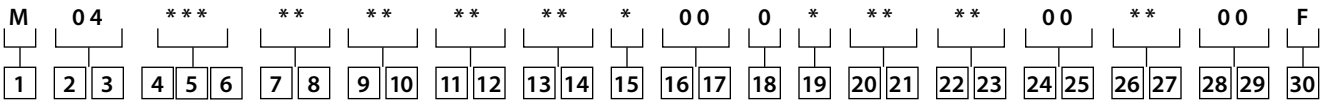
00 None

18 Geroler option

0 Standard

4000 Series

Model code



19 **Seal option**

0	Standard
1	Viton
3	Viton Shaft Seal
7	Extreme Duty Seal guard
B	High pressure Shaft Seal

20 21 **Accessories**

00	None
AC	M12 threaded connector, long body digital speed and direction pickup (two 36 pulse signals in quadrature per revolution pin 1=power supply, pin 2=output signal 1, pin 3=common, pin 4=output signal 2)
AD	M12 Threaded connector, digital speed and direction pickup (one 72 pulse per rev speed signal and one directional signal (pin 1=power, pin 2=direction, pin 2=common, pin 4=speed)

22 23 **Special features (hardware)**

00	None
17	Low noise valve plate

24 25 **Special features (assembly)**

00	None

26 27 **Paint/packaging**

00	No paint, individual box
AA	Low gloss black primer, individual box
AB	Epoxy coated (frost gray), individual box

28 29 **Customer Identification**

00	None

30 **Design code**

F	Sixth