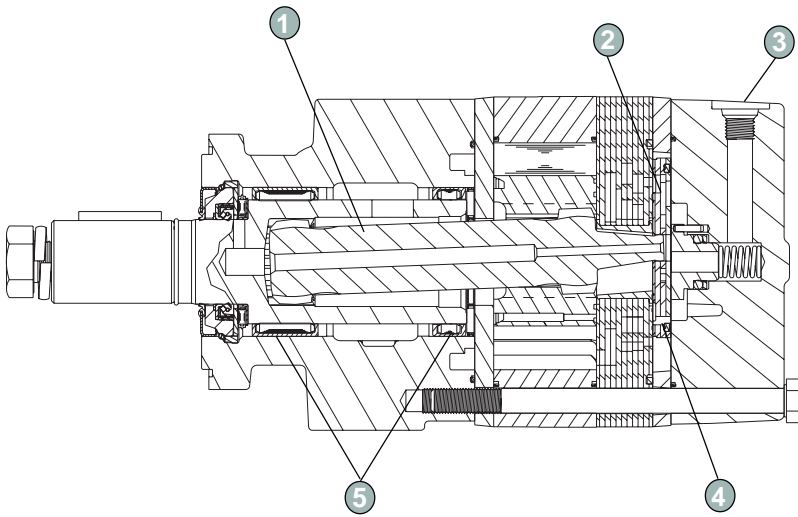


FEATURES



- ① **Heavy-Duty Drive Link** is the most durable in its class and receives case flow lubrication for reduced wear and increased life.
- ② **Three-Zone Orbiting Valve** precisely meters oil to produce exceptional volumetric efficiency.
- ③ **Standard Case Drain** increases shaft seal life by reducing pressure on seal.
- ④ **Rubber Energized Steel Face Seal** does not extrude or melt under high pressure or high temperature.
- ⑤ **Four Bearing Options** allow load carrying capabilities of motor to be matched to application.

Due to its case drain design, the DR Series motor is an excellent medium size motor for applications with high-duty cycles or frequent direction reversal. The case drain design produces a number of benefits including reduction of pressure on the shaft seal and the ability to provide a cooling loop for the system. The case flow also lubricates the vital drive components, extending motor life. An internal drain option is also available. A laminated manifold and three-zone orbiting valve are used to produce higher overall efficiencies and more usable power. A steel faced seal in the orbiting valve also reduces the risk of the seal extruding or melting, which is possible in competitive designs.



SPECIFICATIONS

Code	Displacement (in ³ /rev)	Max. Speed (RPM) - 1)Cont 2)Inter.		Max. Flow (GPM) - 1)Cont 2)Inter.		Max. Torque (lb-in) - 1)Cont 2)Inter.		Max. Pressure (PSI) - 1)Cont 2)Inter. 3)Peak		
		1	2	1	2	1	2	1	2	3
200	12.4	470	560	25	30	4900	5700	3000	3500	4000
260	15.9	360	440	25	30	6590	7600	3000	3500	4000
300	18.3	320	380	25	30	7450	8600	3000	3500	4000
350	21.2	270	320	25	30	8600	9800	3000	3500	4000
375	22.8	250	300	25	30	9600	11000	3000	3500	4000
470	28.3	200	240	25	30	9800	11650	2500	3000	3500
540	32.7	180	210	25	30	9150	11300	2000	2500	3000
750	45.6	130	150	25	30	9200	12300	1500	2000	2500

DR



PERFORMANCE

200 12.4 in³/rev

Flow GPM (LPM)	Pressure psi (bars)								Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)	3500 (242)			
0.5 (2)	335 (38)	683 (77)									10
1 (4)	342 (39)	748 (85)	1543 (174)	2284 (258)	2913 (329)						19
2 (8)	339 (38)	795 (90)	1579 (178)	2396 (271)	3192 (361)	4016 (454)	4594 (519)	4977 (562)			38
4 (15)	323 (36)	749 (85)	1576 (178)	2506 (283)	3346 (378)	4059 (459)	4909 (555)	5625 (636)			75
6 (23)		690 (78)	1562 (177)	2413 (273)	3202 (362)	4085 (462)	4880 (551)	5711 (645)			112
8 (30)		654 (74)	1518 (172)	2368 (268)	3156 (357)	4154 (469)	4936 (558)	5778 (653)			150
10 (38)			1491 (168)	2301 (260)	3091 (349)	3933 (444)	4783 (541)	5646 (638)			187
12 (45)			1381 (156)	2256 (255)	3096 (350)	3985 (450)	4793 (542)	5607 (634)			224
14 (53)			1332 (150)	2219 (251)	2919 (330)	3850 (435)	4653 (526)	5643 (638)			261
16 (61)			1180 (133)	2129 (241)	2970 (336)	3803 (430)	4616 (522)	5423 (613)			299
18 (68)			1082 (122)	2012 (227)	2899 (328)	3692 (417)	4510 (510)	5329 (602)			336
20 (76)			993 (112)	1897 (214)	2732 (309)	3547 (401)	4391 (496)	5198 (587)			373
22 (83)				1757 (199)	2680 (303)	3401 (384)	4358 (493)	5121 (579)			410
24 (91)				1625 (184)	2526 (285)	3366 (380)	4192 (474)	4970 (562)			448
Max. Cont.				1472 (166)	2453 (277)	3244 (367)	4101 (463)	4953 (560)			466
Max. Inter.					1935 (219)	2934 (332)					559
Theo. Torque 494 (56) 987 (112) 1975 (223) 2962 (335) 3949 (446) 4936 (558) 5924 (669) 6911 (781)											

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

260 15.9 in³/rev

Flow GPM (LPM)	Pressure psi (bars)								Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)	3500 (242)			
0.5 (2)	417 (47)	962 (109)									8
1 (4)	454 (51)	972 (110)	2104 (238)	3139 (355)	4074 (460)						15
2 (8)	462 (52)	1004 (113)	2145 (242)	3244 (367)	4292 (485)	5334 (603)	6323 (715)				30
4 (15)	430 (49)	985 (111)	2115 (239)	3247 (367)	4343 (491)	5474 (619)	6598 (746)	7600 (859)			59
6 (23)	391 (44)	950 (107)	2067 (234)	3225 (364)	4311 (487)	5458 (617)	6530 (738)	7557 (854)			88
8 (30)		884 (100)	2016 (228)	3146 (355)	4230 (478)	5418 (612)	6487 (733)	7677 (868)			117
10 (38)		797 (90)	1947 (220)	3080 (348)	4143 (468)	5351 (605)	6498 (734)	7541 (852)			146
12 (45)		748 (84)	1877 (212)	3011 (340)	4094 (463)	5272 (596)	6390 (722)	7481 (845)			175
14 (53)		631 (71)	1813 (205)	2921 (330)	4004 (452)	5195 (587)	6244 (706)	7491 (846)			204
16 (61)			1688 (191)	2807 (317)	3927 (444)	5077 (574)	6221 (703)	7291 (824)			233
18 (68)			1540 (174)	2698 (305)	3798 (429)	4952 (560)	6111 (690)	7214 (815)			262
20 (76)			1383 (156)	2558 (289)	3700 (418)	4817 (544)	5977 (675)	7166 (810)			291
22 (83)			1270 (143)	2431 (275)	3585 (405)	4717 (533)	5828 (659)	6961 (787)			320
24 (91)			1158 (131)	2253 (255)	3421 (387)	4554 (515)	5421 (613)	6805 (769)			349
Max. Cont.				2115 (239)	3301 (373)	4471 (505)	5559 (628)	6832 (772)			364
Max. Inter.				1388 (157)	2637 (298)	3768 (426)					436
Theo. Torque 633 (72) 1266 (143) 2532 (286) 3798 (429) 5064 (572) 6330 (715) 7596 (858) 8861 (1001)											

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

300 18.3 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
0.5 (2)	509 (58)	1039 (117)	2236 (253)						7
1 (4)	517 (58)	1081 (122)	2353 (266)	3396 (384)	4501 (509)	5599 (633)			13
2 (8)	516 (58)	1134 (128)	2360 (267)	3572 (404)	4893 (553)	6045 (683)	7198 (813)	8112 (917)	26
4 (15)	491 (56)	1173 (132)	2425 (274)	3691 (417)	4890 (553)	6225 (703)	7397 (836)	8513 (962)	51
6 (23)	466 (53)	1092 (123)	2384 (269)	3590 (406)	4949 (559)	6207 (701)	7356 (831)	8445 (954)	76
8 (30)	386 (44)	1036 (117)	2263 (256)	3710 (419)	4847 (548)	6256 (707)	7485 (846)	8619 (974)	101
10 (38)		947 (107)	2222 (251)	3448 (390)	4961 (561)	6119 (691)	7396 (836)	8637 (976)	127
12 (45)		841 (95)	2108 (238)	3538 (400)	4685 (529)	6160 (696)	7371 (833)	8573 (969)	152
14 (53)		748 (84)	2053 (232)	3237 (366)	4688 (530)	5978 (676)	7302 (825)	8533 (964)	177
16 (61)		629 (71)	1920 (217)	3277 (370)	4494 (508)	5786 (654)	7104 (803)	8428 (952)	202
18 (68)			1792 (202)	2996 (339)	4448 (503)	5712 (645)	6914 (781)	8253 (933)	228
20 (76)			1631 (184)	2887 (326)	4129 (467)	5619 (635)	6831 (772)	8205 (927)	253
22 (83)			1449 (164)	2726 (308)	3943 (446)	5346 (604)	6592 (745)	7926 (896)	278
24 (91)			1304 (147)	2535 (286)	3871 (437)	5137 (580)	6401 (723)	7620 (861)	303
Max. Cont.			1024 (116)	2574 (291)	3902 (441)	5085 (575)	6255 (707)	7500 (848)	316
Inter.			315	314	312	310	309	302	316
				1805 (204)	3067 (347)	4416 (499)			379
				378	376	370			
Theo. Torque	729 (82)	1457 (165)	2914 (329)	4371 (494)	5828 (659)	7285 (823)	8742 (988)	10199 (1152)	

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

350 21.2 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
0.5 (2)	606 (69)	1243 (140)	2318 (262)						6
1 (4)	660 (75)	1350 (153)	2733 (309)	4014 (454)					11
2 (8)	667 (75)	1395 (158)	2880 (325)	4326 (489)	5727 (647)	6937 (784)	8119 (917)		22
4 (15)	648 (73)	1405 (159)	2943 (333)	4443 (502)	5988 (677)	7342 (830)	8704 (984)	9935 (1123)	44
6 (23)	594 (67)	1346 (152)	2901 (328)	4439 (502)	5926 (670)	7444 (841)	8940 (1010)	10220 (1155)	66
8 (30)	494 (56)	1268 (143)	2808 (317)	4368 (494)	6002 (678)	7376 (833)	9010 (1018)	10367 (1172)	88
10 (38)		1141 (129)	2700 (305)	4219 (477)	5798 (655)	7345 (830)	8801 (994)	10260 (1159)	109
12 (45)		1068 (121)	2578 (291)	4113 (465)	5672 (641)	7231 (817)	8766 (991)	10342 (1169)	131
14 (53)		907 (103)	2437 (275)	4001 (452)	5572 (630)	7212 (815)	8604 (972)	10284 (1162)	153
16 (61)		755 (85)	2281 (258)	3818 (431)	5390 (609)	6991 (790)	8696 (983)	10099 (1141)	175
18 (68)		587 (66)	2174 (246)	3823 (432)	5161 (583)	6800 (768)	8355 (944)	10012 (1131)	197
20 (76)		196	193	190	185	171	164	159	218
22 (83)			1969 (223)	3459 (391)	5026 (568)	6637 (750)	8186 (925)	9742 (1101)	240
24 (91)			217	211	206	196	185	176	262
Max. Cont.			1704 (193)	3293 (372)	4825 (545)	6408 (724)	8049 (909)	9666 (1092)	273
Inter.			239	236	230	219	209	198	327
			1492 (169)	3085 (349)	4755 (537)	6179 (698)			
			261	257	253	243			
				2874 (325)	4491 (507)	6082 (687)			
				272	265	254			
				2258 (255)	3796 (429)	5354 (605)			
				326	320	315			
Theo. Torque	844 (95)	1688 (191)	3376 (381)	5064 (572)	6752 (763)	8439 (954)	10127 (1144)	11815 (1335)	

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

DR



PERFORMANCE

375 22.8 in³/rev

		Pressure psi (bars)						Max. Cont.	Inter.		
		250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)	3500 (242)		
Flow GPM (LPM)		611 (69)									Theo. RPM
0.5 (2)	4										6
1 (4)	9	1425 (161)	2920 (330)	4369 (494)	5783 (653)	7283 (823)					11
2 (8)	20	1527 (173)	3133 (354)	4582 (518)	6065 (685)	7611 (860)	9038 (1021)				21
4 (15)	40	1399 (158)	3098 (350)	4731 (535)	6250 (706)	7814 (883)	9130 (1032)	10541 (1191)			41
6 (23)	60	1407 (159)	3058 (346)	4841 (547)	6300 (712)	7956 (899)	9561 (1080)	10898 (1231)			61
8 (30)	81	1301 (147)	2980 (337)	4749 (537)	6192 (700)	7948 (898)	9628 (1088)	10941 (1236)			82
10 (38)	101	1190 (134)	2856 (323)	4512 (510)	6139 (694)	7849 (887)	9437 (1066)	11029 (1246)			102
12 (45)	121	1097 (124)	2730 (309)	4385 (496)	6009 (679)	7817 (883)	9493 (1073)	11010 (1244)			122
14 (53)	141	961 (109)	2563 (290)	4217 (477)	6016 (680)	7556 (854)	9214 (1041)	10888 (1230)			142
16 (61)	162	728 (82)	2362 (267)	4005 (453)	5641 (637)	7489 (846)	9209 (1041)	10702 (1209)			163
18 (68)	182		2198 (248)	3842 (434)	5474 (619)	7190 (812)	8864 (1002)	10161 (1148)			183
20 (76)	202		2026 (229)	3685 (416)	5309 (600)	6994 (790)	8664 (979)	10137 (1145)			203
22 (83)	222		1764 (199)	3406 (385)	5065 (572)	6738 (761)	8435 (953)	9834 (1111)			223
24 (91)	243		1490 (168)	3204 (362)	5007 (566)	6471 (731)					244
Max. Cont.	25 (95)			3073 (347)	4905 (554)	6384 (721)					254
Inter.	30 (114)			2314 (261)	3891 (440)	5514 (623)					304
				303	301	300					
Theo. Torque		908 (103)	1815 (205)	3631 (410)	5446 (615)	7261 (821)	9076 (1026)	10892 (1231)	12707 (1436)		

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

470 28.3 in³/rev

		Pressure psi (bars)						Max. Cont.	Inter.		
		250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
Flow GPM (LPM)		815 (92)	1723 (195)	3306 (374)							Theo. RPM
0.5 (2)	3										5
1 (4)	7	967 (109)	1661 (188)	3701 (418)	5447 (615)						9
2 (8)	15	875 (99)	1924 (217)	3892 (440)	5910 (668)	7709 (871)	9436 (1066)	10855 (1227)			17
4 (15)	32	825 (93)	1887 (213)	3906 (441)	6086 (688)	8027 (907)	10008 (1131)	11886 (1343)			33
6 (23)	48	751 (85)	1771 (200)	3841 (434)	6074 (686)	8017 (906)	10098 (1141)	12056 (1362)			49
8 (30)	65	635 (72)	1645 (186)	3738 (422)	5834 (659)	7871 (889)	10106 (1142)	11963 (1352)			66
10 (38)	81	472 (53)	1493 (169)	3579 (404)	5657 (639)	7734 (874)	9871 (1115)	11958 (1351)			82
12 (45)	97		1348 (152)	3561 (402)	5377 (608)	7563 (855)	9836 (1111)	11861 (1340)			98
14 (53)	114		1175 (133)	3221 (364)	5292 (598)	7374 (833)	9643 (1090)	11673 (1319)			115
16 (61)	130		910 (103)	2947 (333)	5037 (569)	7110 (803)	9410 (1063)	11450 (1294)			131
18 (68)	146		661 (75)	2701 (305)	4908 (555)	6765 (764)	9033 (1021)	11214 (1267)			147
20 (76)	163			2489 (281)	4490 (507)	6597 (745)	8719 (985)	10940 (1236)			164
22 (83)	179			2011 (227)	4189 (473)	6322 (714)	8391 (948)	10462 (1182)			180
24 (91)	194			1705 (193)	3827 (432)	6079 (687)	8093 (915)				196
Max. Cont.	25 (95)				3743 (423)	5759 (651)	7928 (896)				205
Inter.	30 (114)				2840 (321)	4761 (538)	6938 (784)				245
					244	242	238				
Theo. Torque		1127 (127)	2253 (255)	4506 (509)	6760 (764)	9013 (1018)	11266 (1273)	13519 (1528)			

Torque, lb-in (Nm)
Speed, RPM

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

540 32.7 in³/rev

Flow GPM (LPM)	Pressure psi (bars)				Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	
0.5 (2)	953 (108) 3	1900 (215) 2					4
1 (4)	946 (107) 6	1995 (225) 6	4212 (476) 5	6284 (710) 5	8138 (920) 3		8
2 (8)	998 (113) 13	2133 (241) 12	4403 (498) 11	6620 (748) 11	8674 (980) 9	10798 (1220) 8	15
4 (15)	1014 (115) 28	2137 (242) 27	4491 (508) 26	6893 (779) 25	9188 (1038) 24	11201 (1266) 20	29
6 (23)	902 (102) 42	2067 (234) 42	4465 (505) 40	6821 (771) 38	9022 (1019) 36	11275 (1274) 32	43
8 (30)	792 (89) 56	1962 (222) 56	4373 (494) 55	6759 (764) 52	9029 (1020) 48	11325 (1280) 43	57
10 (38)	630 (71) 70	1782 (201) 70	4224 (477) 68	6639 (750) 66	8994 (1016) 62	11299 (1277) 57	71
12 (45)	417 (47) 84	1661 (188) 84	4027 (455) 84	6455 (729) 81	8858 (1001) 76	11394 (1288) 69	85
14 (53)		1397 (158) 98	3803 (430) 97	6214 (702) 96	8803 (995) 89	11184 (1264) 82	99
16 (61)		1170 (132) 113	3564 (403) 112	5930 (670) 110	8353 (944) 106	10970 (1240) 98	114
18 (68)		856 (97) 127	3236 (366) 127	5664 (640) 126	8276 (935) 120	10557 (1193) 113	128
20 (76)		554 (63) 141	2962 (335) 140	5345 (604) 139	7767 (878) 135	10228 (1156) 129	142
22 (83)			2680 (303) 155	4972 (562) 153	7420 (838) 152	9868 (1115) 145	156
24 (91)			2141 (242) 169	4622 (522) 167	7194 (813) 164	9517 (1075) 161	170
Max. Cont.			1998 (226) 176	4338 (490) 175	6832 (772) 174	9514 (1075) 165	177
Inter.			864 (98) 211	3365 (380) 210	5834 (659) 209		212
Theo. Torque	1302 (147)	2604 (294)	5207 (588)	7811 (883)	10414 (1177)	13018 (1471)	

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

750 45.6 in³/rev

Flow GPM (LPM)	Pressure psi (bars)				Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)		
0.5 (2)	1118 (126) 1	2450 (277) 1					3
1 (4)	1378 (156) 4	2537 (287) 3	5552 (627) 3	8155 (922) 2			6
2 (8)	1357 (153) 9	2853 (322) 9	5873 (664) 8	8722 (986) 7	11579 (1308) 6		11
4 (15)	1312 (148) 20	2898 (327) 19	6071 (686) 18	9085 (1027) 17	12161 (1374) 16		21
6 (23)	1230 (139) 30	2860 (323) 29	6113 (691) 28	9200 (1040) 27	12328 (1393) 25		31
8 (30)	1085 (123) 40	2712 (306) 40	6026 (681) 39	9207 (1040) 36	12211 (1380) 34		41
10 (38)	874 (99) 50	2571 (291) 49	5897 (666) 48	9162 (1035) 47	12382 (1399) 45		51
12 (45)	664 (75) 60	2423 (274) 59	5688 (643) 58	9012 (1018) 57	12318 (1392) 55		61
14 (53)	408 (46) 70	2113 (239) 70	5451 (616) 69	8814 (996) 68	12146 (1372) 64		71
16 (61)		1682 (190) 81	5089 (575) 80	8479 (958) 78	11742 (1327) 76		82
18 (68)		1325 (150) 91	4738 (535) 90	8150 (921) 88	11494 (1299) 86		92
20 (76)		949 (107) 101	4298 (486) 100	7771 (878) 100	11090 (1253) 97		102
22 (83)			3978 (449) 111	7273 (822) 110	10598 (1198) 108		112
24 (91)			3401 (384) 121	6736 (761) 120	10117 (1143) 117		122
Max. Cont.			3268 (369) 126	6523 (737) 125	9830 (1111) 124		127
Inter.			1025 (116) 151	4374 (494) 149			152
Theo. Torque	1815 (205)	3631 (410)	7261 (821)	10892 (1231)	14522 (1641)		

Tested at 129°F with an oil viscosity of 213 SUS

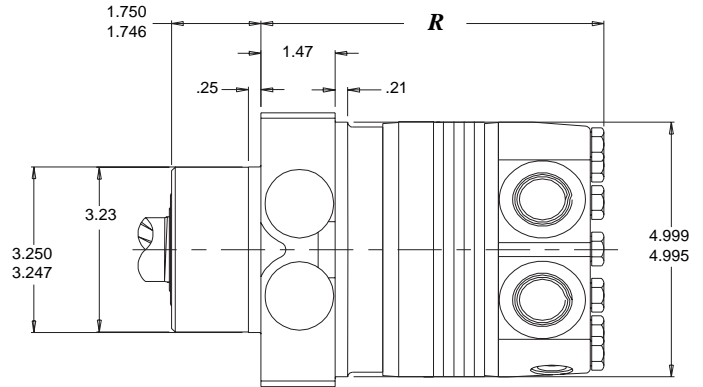
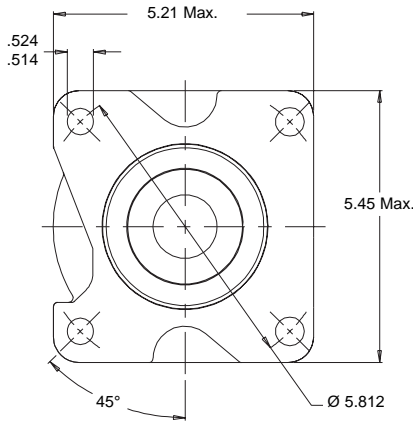
Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

HOUSING

WHEEL MOUNT, SAE A FLANGE

W2 4-Hole End Ports

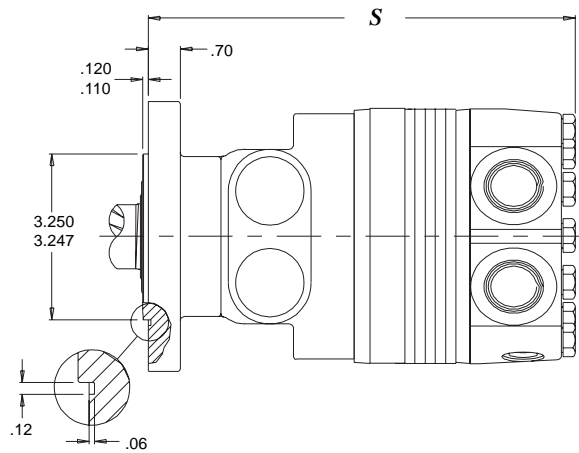
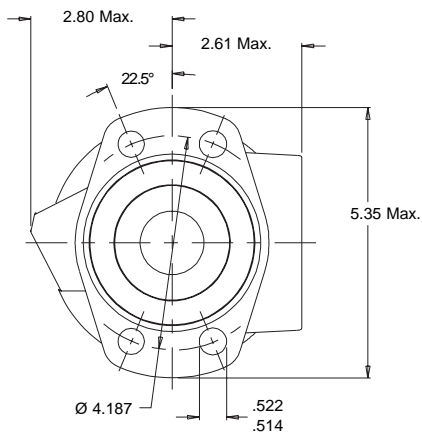
W8 4-Hole Side Ports



R is on page 93

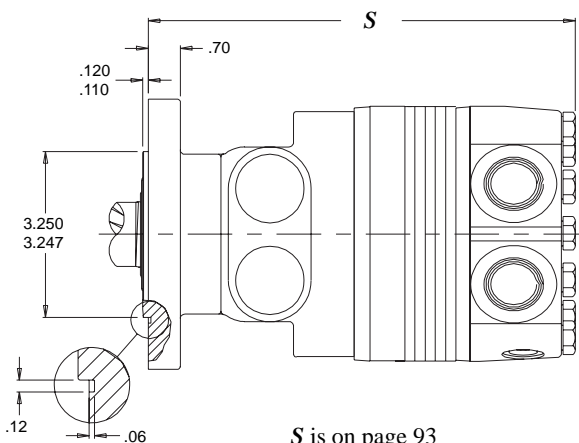
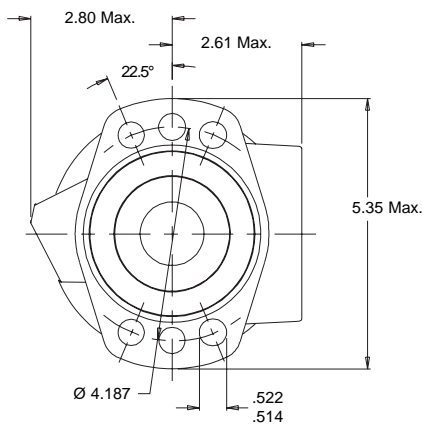
A2 4-Hole End Ports

A8 4-Hole Side Ports



A4 6-Hole End Ports

A9 6-Hole Side Ports

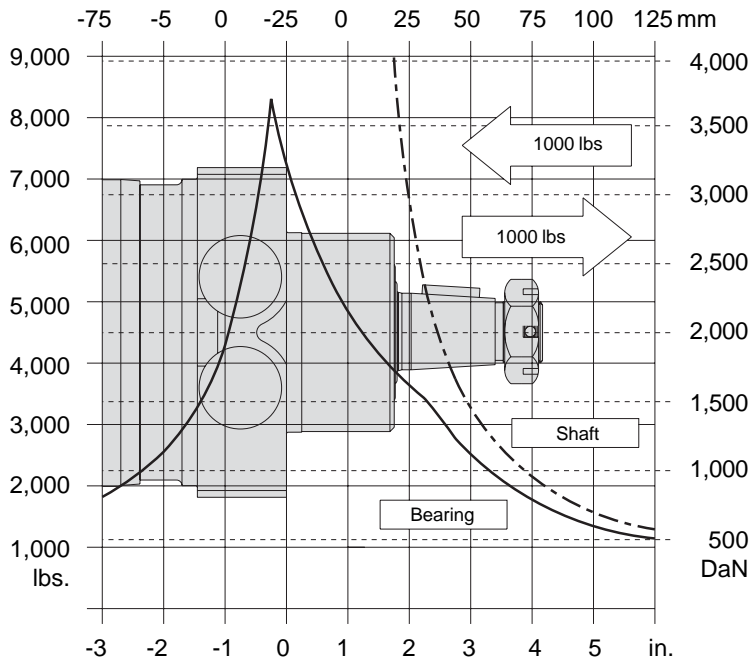


S is on page 93

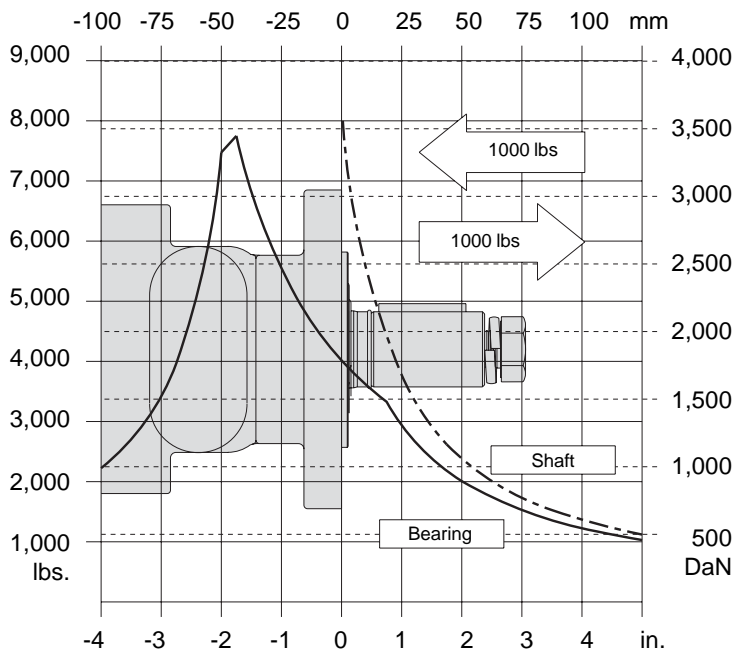
ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.

WHEEL MOUNT



SAE A FLANGE



LENGTH AND WEIGHT TABLES

Wheel Mount		
Code	R in	Weight lbs
200	6.53	29.6
260	6.72	30.6
300	6.85	32.2
350	7.40	34.7
375	7.10	33.4
470	7.40	34.7
540	7.64	35.8
750	8.35	39.1

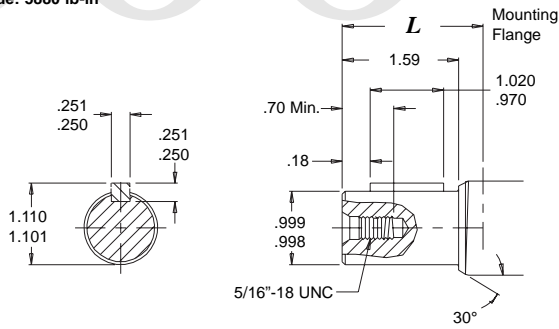
SAE A Flange		
Code	S in	Weight lbs
200	8.19	35.0
260	8.37	36.0
300	8.50	36.6
350	9.06	39.2
375	8.75	37.8
470	9.06	39.2
540	9.29	40.3
750	10.00	43.5

DR motor weights vary ± 2 lbs depending upon motor configuration. Subtract .11 in. from S & R for motors using the 1,2 or 5 Endcover.

SHAFTS

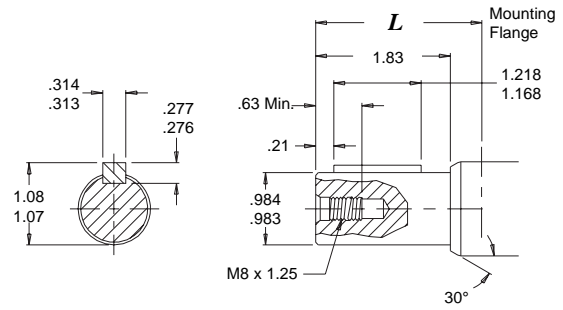
10 1" Straight

Max. Torque: 5880 lb-in



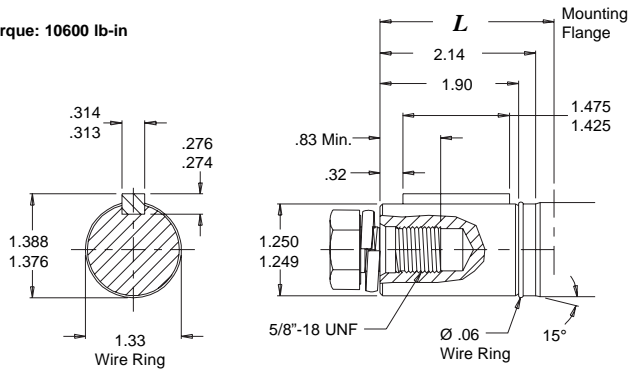
12 25mm Straight

Max. Torque: 5617 lb-in



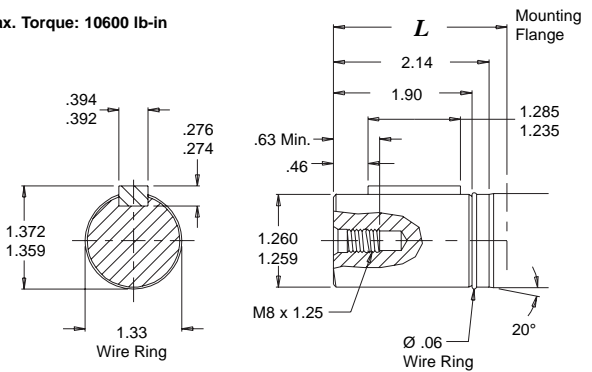
20 1 1/4" Straight

Max. Torque: 10600 lb-in



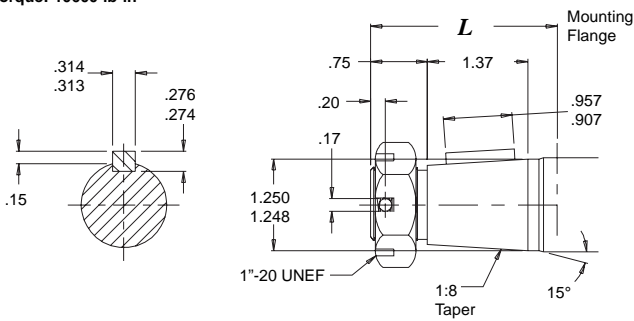
21 32mm Straight

Max. Torque: 10600 lb-in



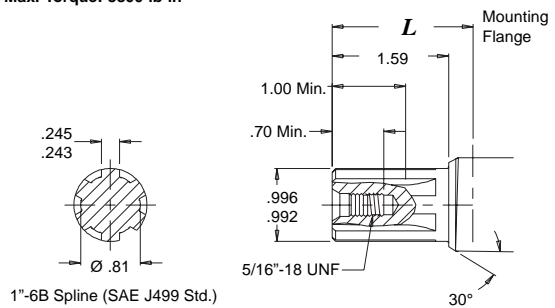
22 1 1/4" Tapered

Max. Torque: 10600 lb-in



02 6B Spline

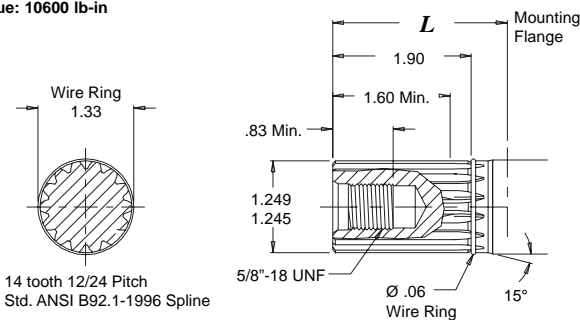
Max. Torque: 3800 lb-in



Note: A slotted nut is standard on this shaft.

23 14 Tooth Spline

Max. Torque: 10600 lb-in



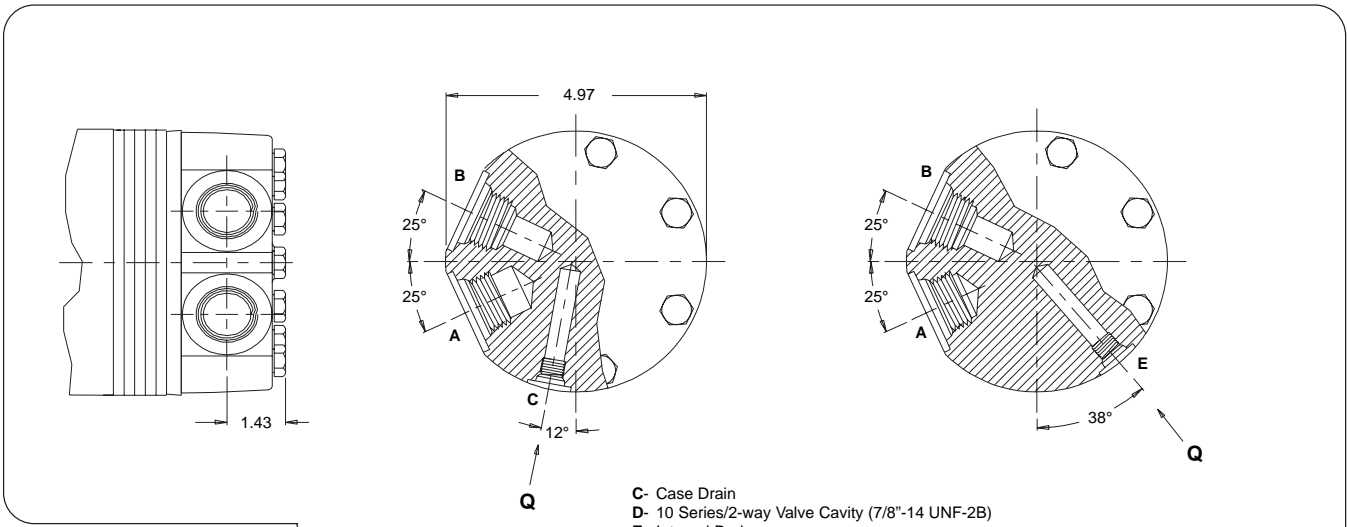
14 tooth 12/24 Pitch
Std. ANSI B92.1-1996 Spline

SHAFT LENGTHS

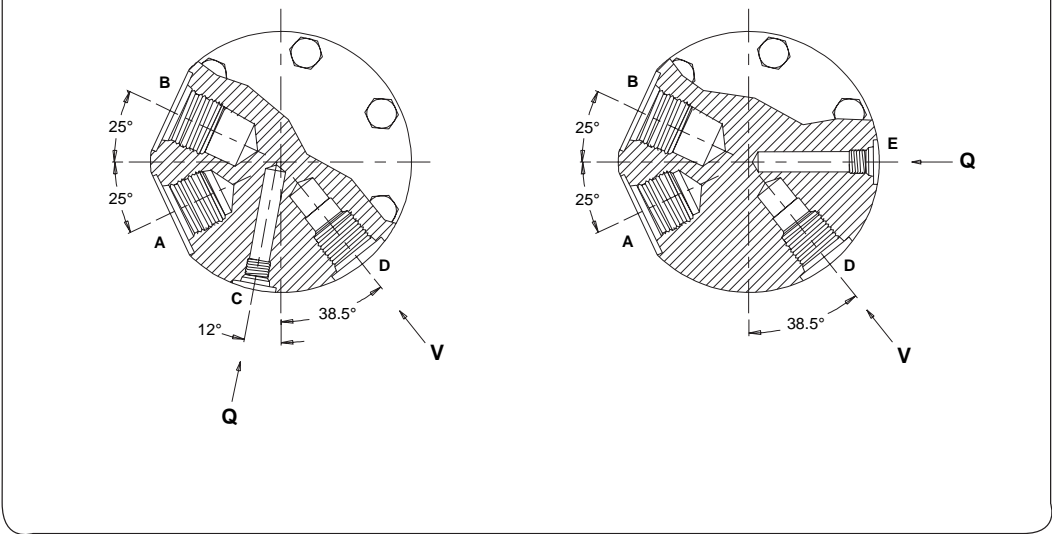
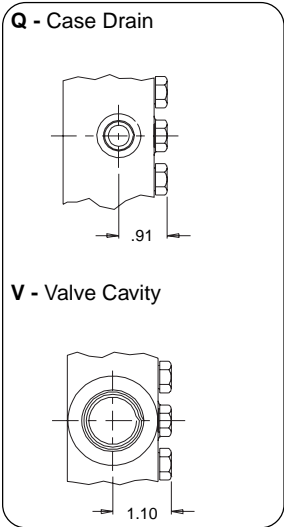
L	Code	SAE A Flange in.	Wheel Mount in.
	02	1.97	3.60
	22	2.58	4.22
	20	2.41	4.05
	23	2.42	4.06
	10	1.97	3.60
	21	2.41	4.05
	12	2.21	3.84

Shaft lengths vary ± .030 inches

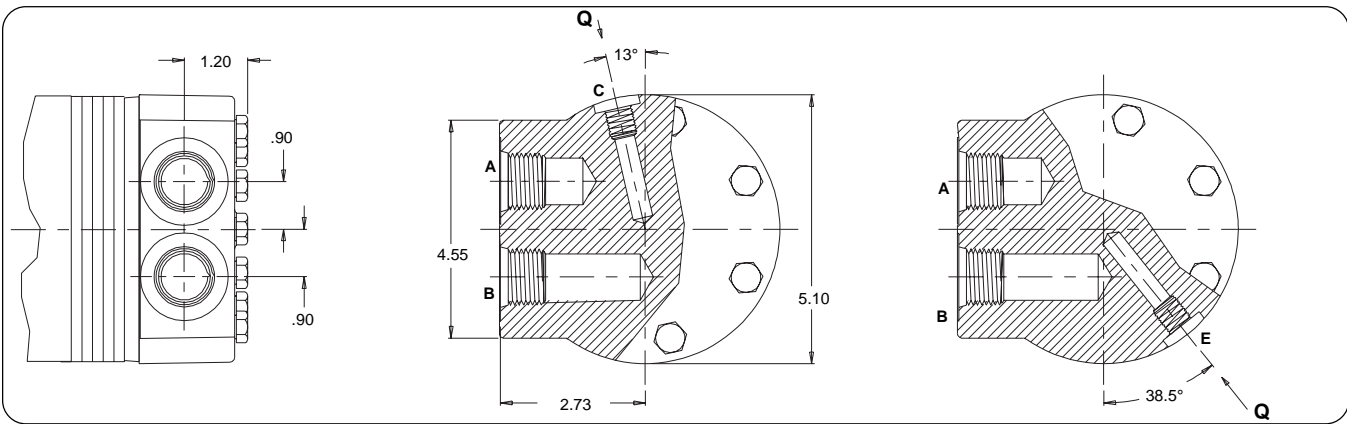
- | | |
|---|--|
| 5 | 1-1/16" O-Ring with 7/16" O-Ring Drain |
| 2 | 3/4" BSP.F with 1/4" BSP.F Drain |



Q and V



- | | |
|---|---------------------------------|
| 6 | 1-1/16" O-Ring with 7/16" Drain |
| 7 | 3/4" BSP.F with 1/4" Drain |

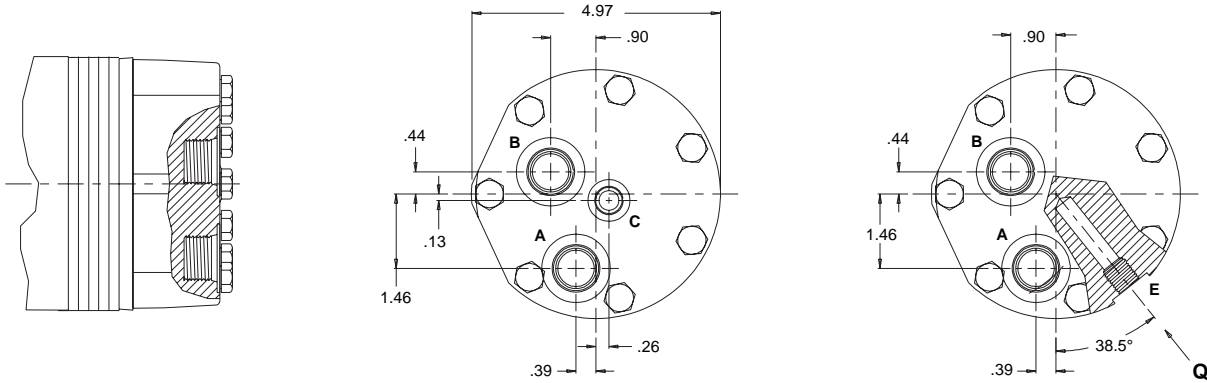


6000

PORTING

1 7/8" O-Ring with 7/16" Drain

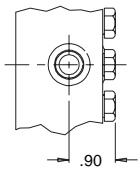
END PORTS



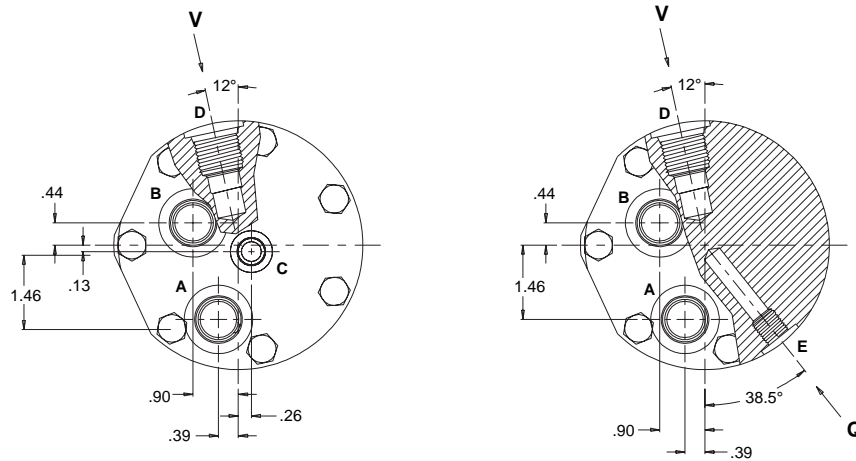
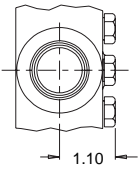
C- Case Drain
 D- 10 Series/2-way Valve Cavity (7/8"-14 UNF-2B)
 E- Internal Drain

Q and V

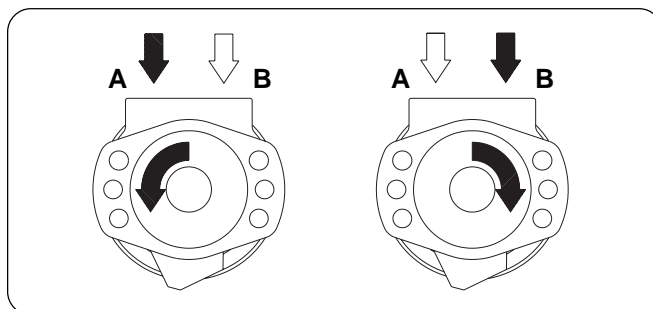
Q - Case Drain



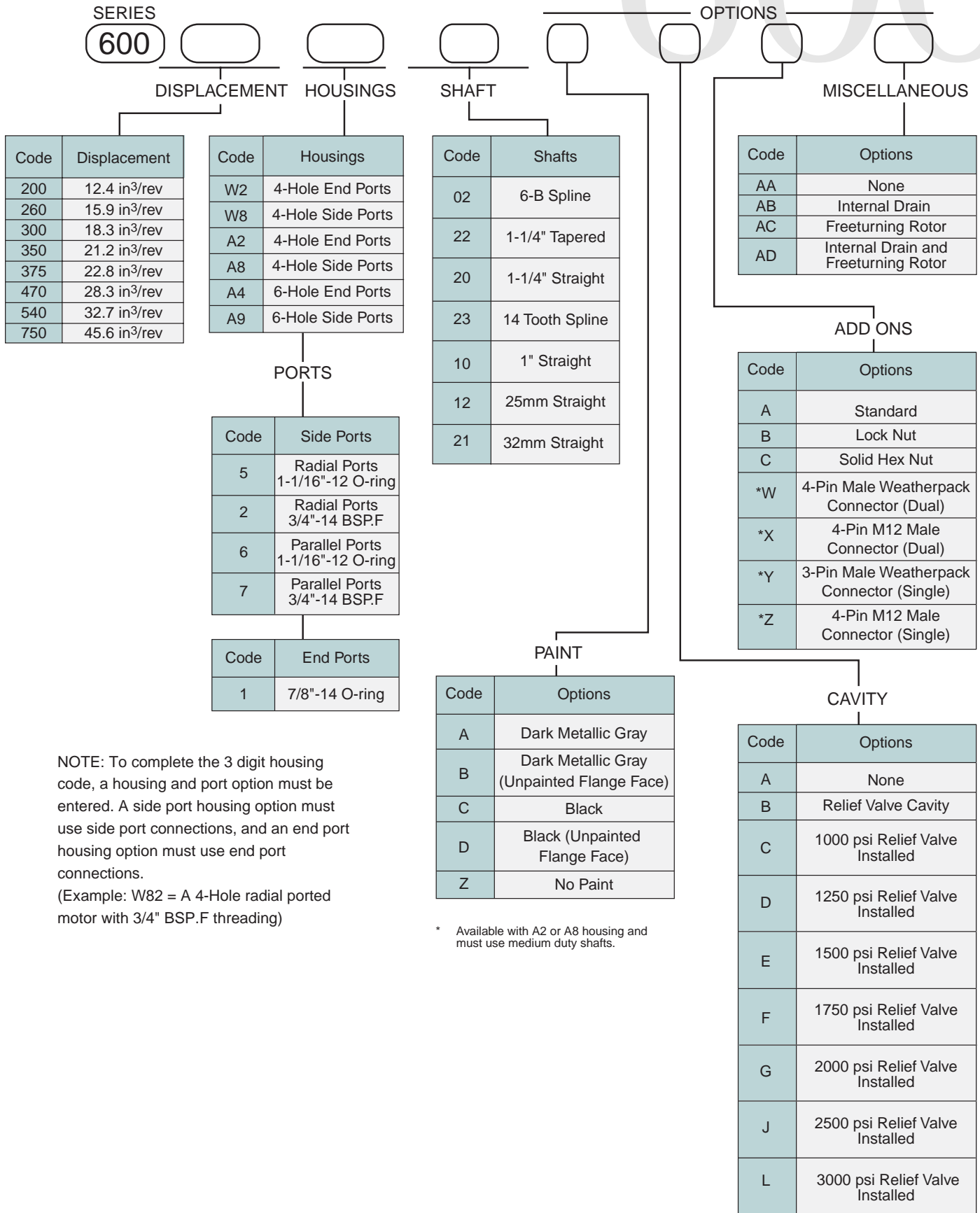
V - Valve Cavity



DR ROTATION SELECTION



ORDERING INFORMATION



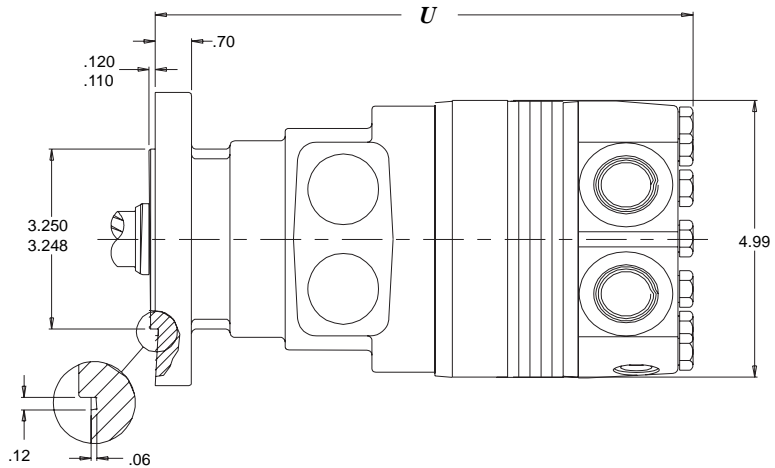
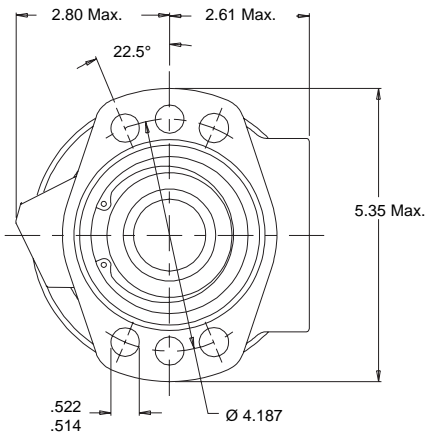
NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.
 (Example: W82 = A 4-Hole radial ported motor with 3/4" BSP.F threading)

* Available with A2 or A8 housing and must use medium duty shafts.

TECHNICAL

A4 6-Hole End Ports

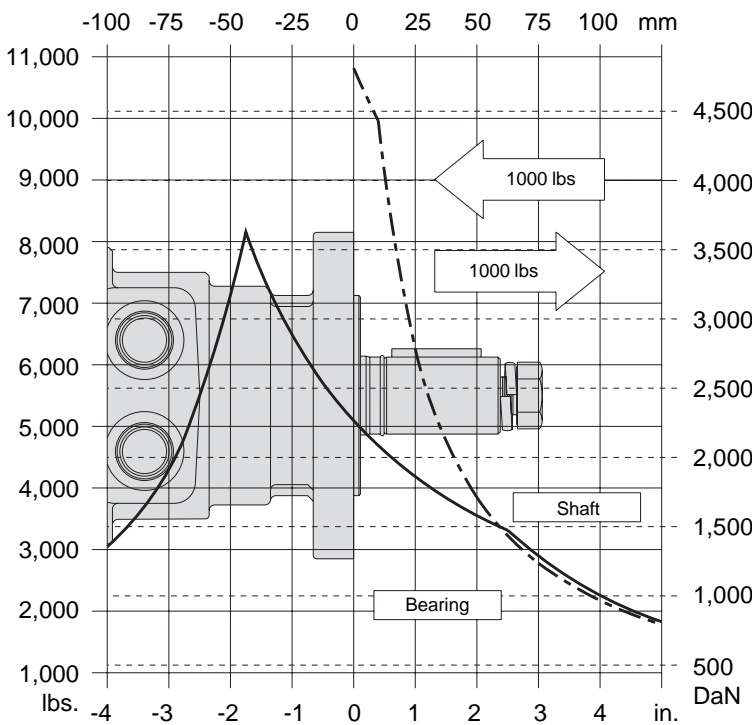
A9 6-Hole Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.

SAE A FLANGE



LENGTH AND WEIGHT TABLES

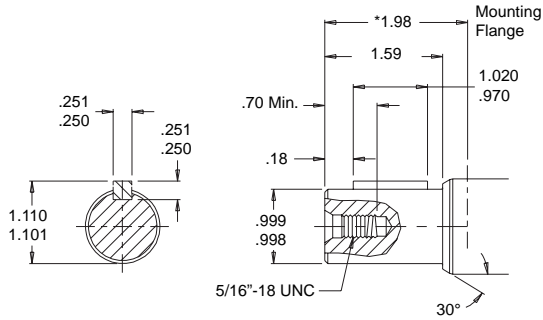
SAE A Flange

Code	U in	Weight lbs
200	9.19	34.6
260	9.38	35.6
300	9.51	37.2
350	10.06	39.7
375	9.76	38.4
470	10.06	39.7
540	10.30	40.8
750	11.01	44.1

DR motor weights vary ± 2 lbs depending upon motor configuration. Subtract .11 in. from U for motors using the 1, 2 or 5 Endcover.

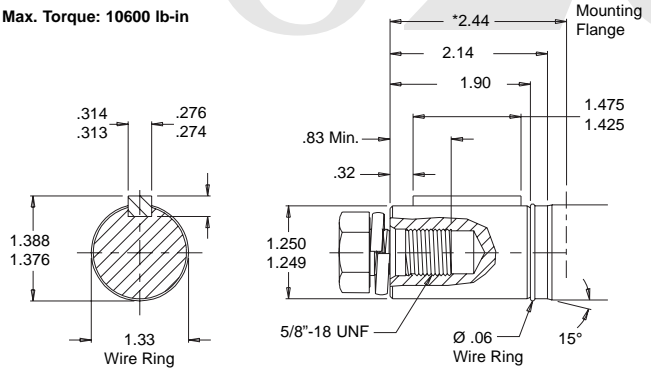
15 1" Straight

Max. Torque: 5800 lb-in



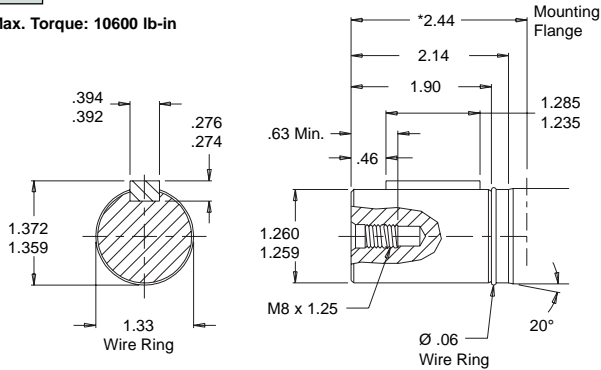
07 1/4" Straight

Max. Torque: 10600 lb-in



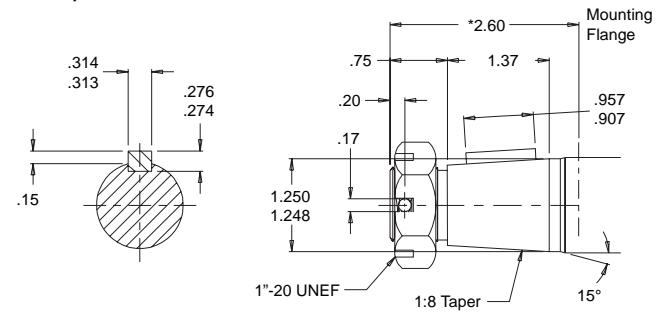
08 32mm Straight

Max. Torque: 10600 lb-in



25 1/4" Tapered

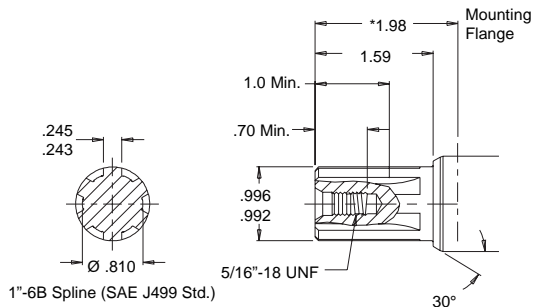
Max. Torque: 10600 lb-in



Note: A slotted nut is standard on this shaft.

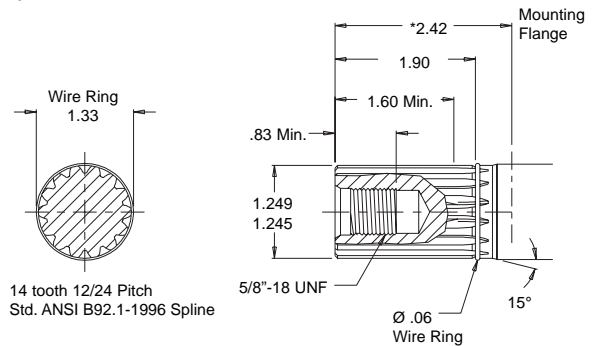
03 6B Spline

Max. Torque: 3800 lb-in



09 14 Tooth Spline

Max. Torque: 10600 lb-in



*Shaft lengths vary ± .030 inches

ORDERING INFORMATION

SERIES

620

DISPLACEMENT

HOUSINGS

SHAFT

OPTIONS

MISCELLANEOUS

Code	Displacement
200	12.4 in ³ /rev
260	15.9 in ³ /rev
300	18.3 in ³ /rev
350	21.2 in ³ /rev
375	22.8 in ³ /rev
470	28.3 in ³ /rev
540	32.7 in ³ /rev
750	45.6 in ³ /rev

Code	Housings
A4	6-Hole End Ports
A9	6-Hole Side Ports

PORTS

Code	Side Ports
5	Radial Ports 1-1/16"-12 O-ring
2	Radial Ports 3/4"-14 BSP.F
6	Parallel Ports 1-1/16"-12 O-ring
7	Parallel Ports 3/4"-14 BSP.F

Code	End Ports
1	7/8"-14 O-ring

Code	Shafts
25	1-1/4" Tapered
07	1-1/4" Straight
09	14 Tooth Spline
08	32mm Straight
03	6-B Spline
15	1" Straight

PAINT

Code	Options
A	Dark Metallic Gray
B	Dark Metallic Gray (Unpainted Flange Face)
C	Black
D	Black (Unpainted Flange Face)
Z	No Paint

Code	Options
AA	None
AB	Internal Drain
AC	Freeturning Rotor
AD	Internal Drain and Freeturning Rotor

ADD ONS

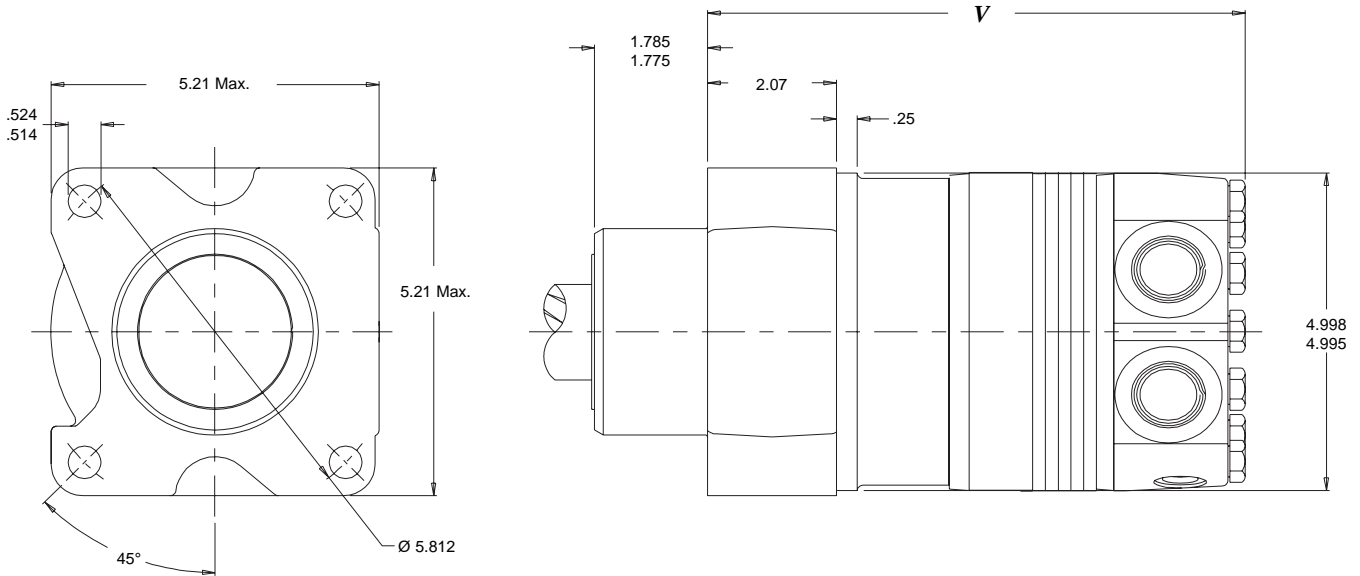
Code	Options
A	Standard
B	Lock Nut
C	Solid Hex Nut

CAVITY

Code	Options
A	None
B	Relief Valve Cavity
C	1000 psi Relief Valve Installed
D	1250 psi Relief Valve Installed
E	1500 psi Relief Valve Installed
F	1750 psi Relief Valve Installed
G	2000 psi Relief Valve Installed
J	2500 psi Relief Valve Installed
L	3000 psi Relief Valve Installed

NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.
(Example: A92 = A 6-Hole radial ported motor with 3/4" BSPF threading)

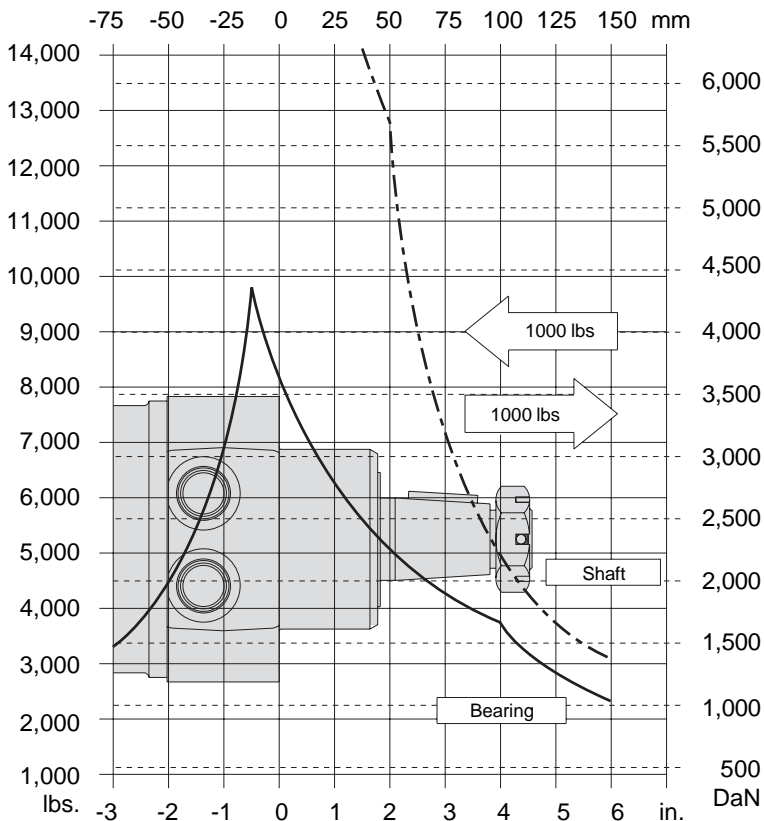
- W2 4-Hole End Ports
- W8 4-Hole Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.

WHEEL MOUNT



LENGTH AND WEIGHT TABLES

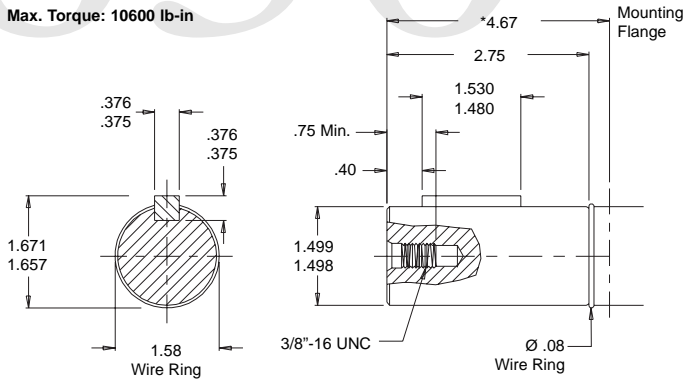
Wheel Mount		
Code	V in	Weight lbs
200	7.96	38.5
260	8.15	39.5
300	8.28	40.1
350	8.83	42.6
375	8.53	41.2
470	8.83	42.6
540	9.07	43.7
750	9.78	47.0

DR motor weights vary ± 2 lbs depending upon motor configuration. Subtract .11 in. from V for motors using the 1, 2 or 5 Endcover.

SHAFTS

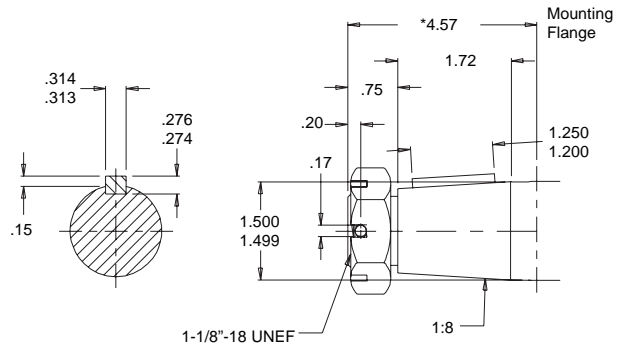
30 1/2" Straight

Max. Torque: 10600 lb-in



31 1/2" Tapered

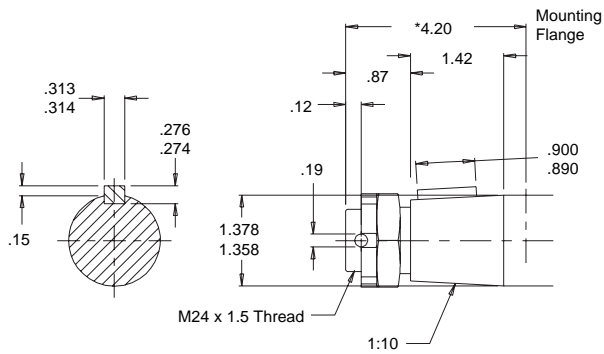
Max. Torque: 10600 lb-in



Note: A slotted nut is standard on this shaft.

28 35mm Tapered

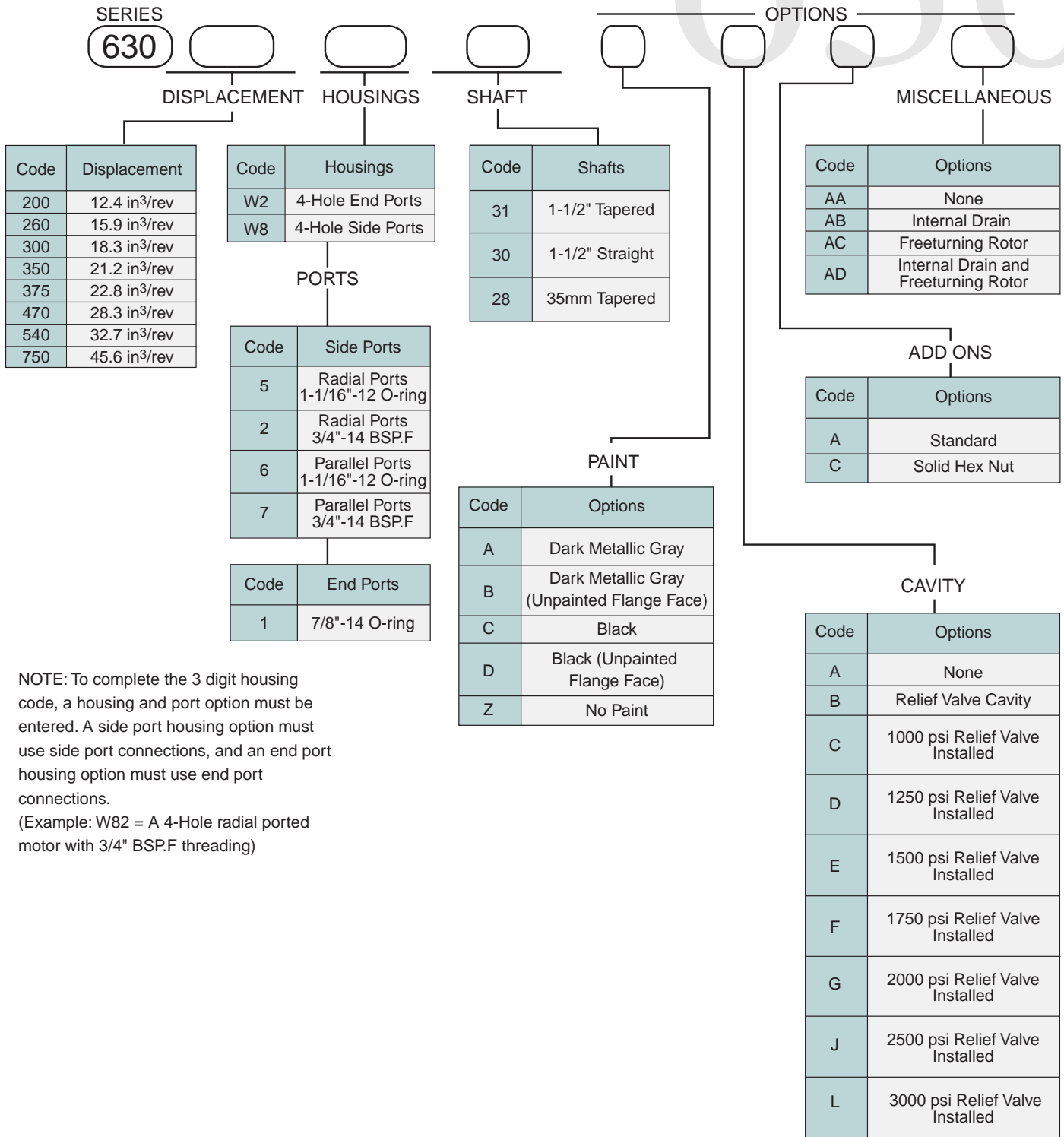
Max. Torque: 10600 lb-in



*Shaft lengths vary ± .030 inches

Note: A slotted nut is standard on this shaft.

ORDERING INFORMATION



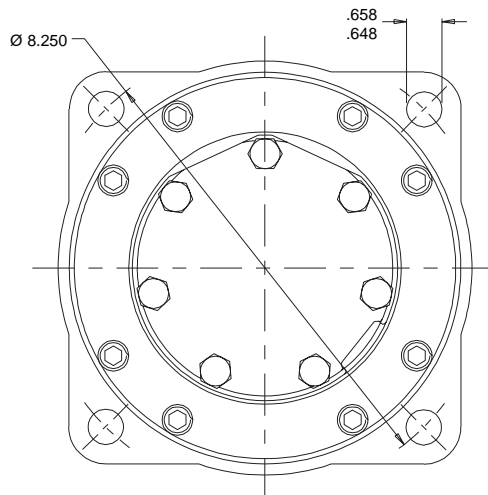
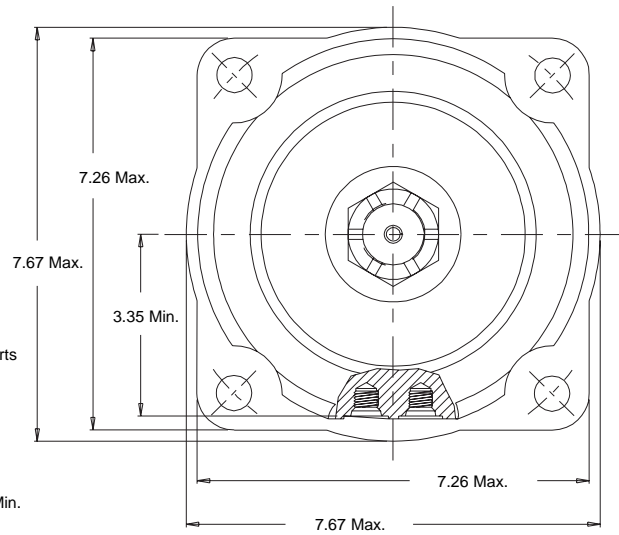
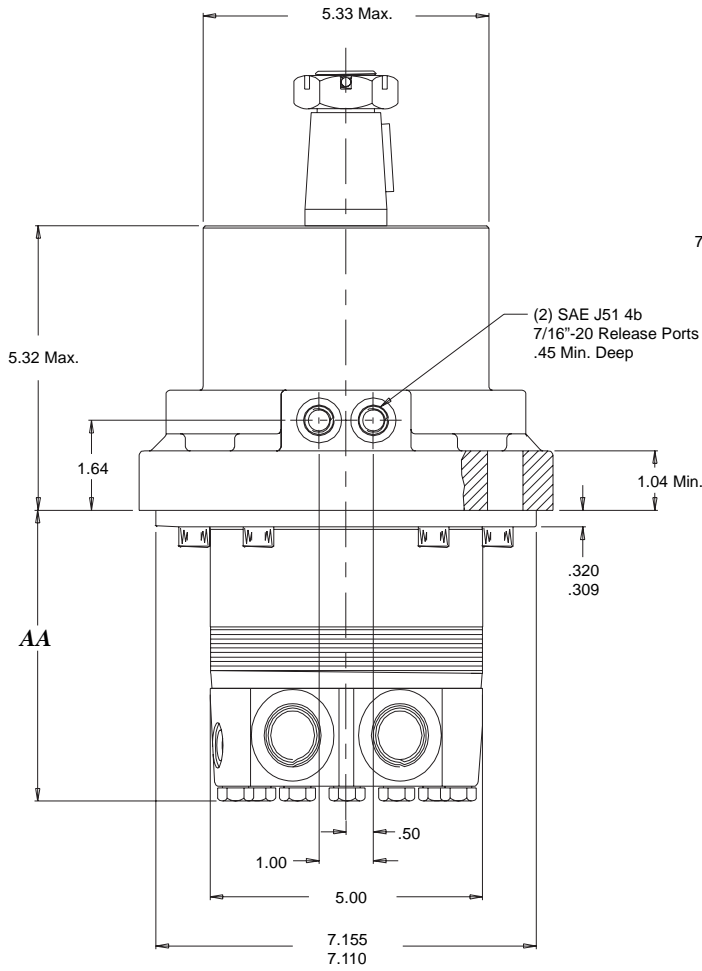
NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.
 (Example: W82 = A 4-Hole radial ported motor with 3/4" BSP.F threading)

612

HOUSING



- W2** 4-Hole End Ports
- W8** 4-Hole Side Ports



LENGTH AND WEIGHT TABLES

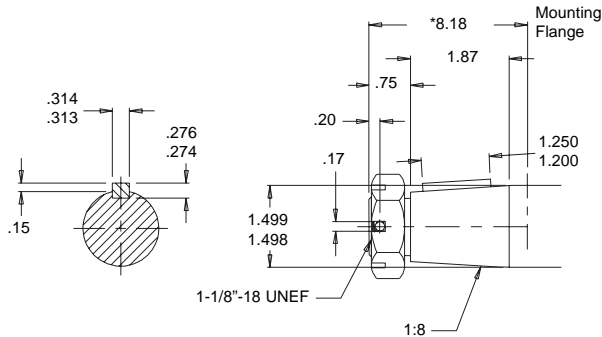
Wheel Mount		
Code	AA in	Weight lbs
200	4.22	58.4
260	4.41	59.4
300	4.54	60.0
350	5.09	62.5
375	4.79	61.1
470	5.09	62.5
540	5.33	63.6
750	6.04	66.9

DR motor weights vary ± 2 lbs depending upon motor configuration. Subtract .11 in. from AA for motors using the 1,2 or 5 Endcover.

CAUTION: It is vital that all operating recommendations on page 43 be followed. Failure to do so could result in injury or death.

31 1½" Tapered

Max. Torque: 10600 lb-in



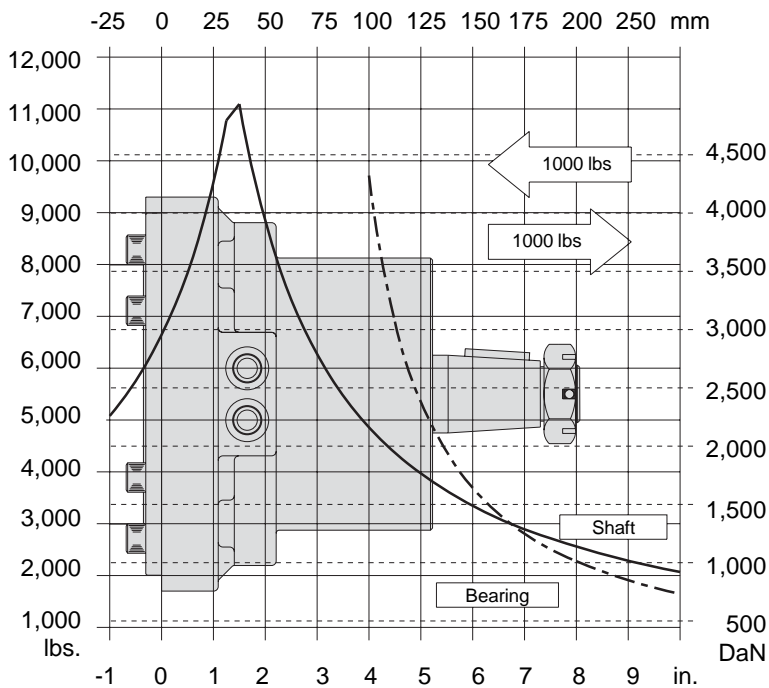
Note: A slotted nut is standard on this shaft.

*Shaft lengths vary ± .030 inches.

Rated brake torque	14,000 lb-in
Initial release pressure	275 psi
Full release pressure	475 psi
Maximum release pressure	3,000 psi
Release volume	0.8-1.0 cu.in.

ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L₁₀ life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



ORDERING INFORMATION

SERIES

612

DISPLACEMENT

HOUSINGS

SHAFT

OPTIONS

MISCELLANEOUS

Code	Displacement
200	12.4 in ³ /rev
260	15.9 in ³ /rev
300	18.3 in ³ /rev
350	21.2 in ³ /rev
375	22.8 in ³ /rev
470	28.3 in ³ /rev
540	32.7 in ³ /rev
750	45.6 in ³ /rev

Code	Housings
W2	4-Hole End Ports
W8	4-Hole Side Ports

PORTS

Code	Side Ports
5	Radial Ports 1-1/16" O-ring
2	Radial Ports 3/4" BSP.F
6	Parallel Ports 1-1/16" O-ring
7	Parallel Ports 3/4" BSP.F

Code	End Ports
1	7/8" O-ring

Code	Shafts
31	1-1/2" Tapered

PAINT

Code	Options
A	Dark Metallic Gray
C	Black
Z	No Paint

Code	Options
AA	None
AC	Freeturning Rotor

ADD ONS

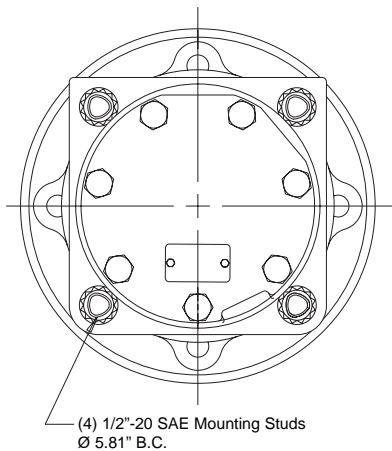
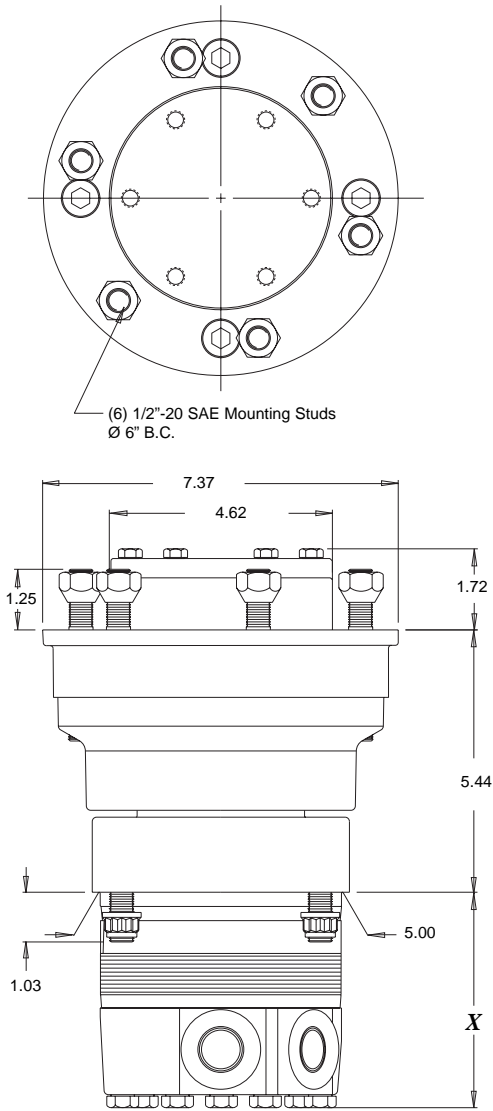
Code	Options
A	Standard
C	Solid Hex Nut

CAVITY

Code	Options
A	None
B	Relief Valve Cavity
C	1000 psi Relief Valve Installed
D	1250 psi Relief Valve Installed
E	1500 psi Relief Valve Installed
F	1750 psi Relief Valve Installed
G	2000 psi Relief Valve Installed
J	2500 psi Relief Valve Installed
L	3000 psi Relief Valve Installed

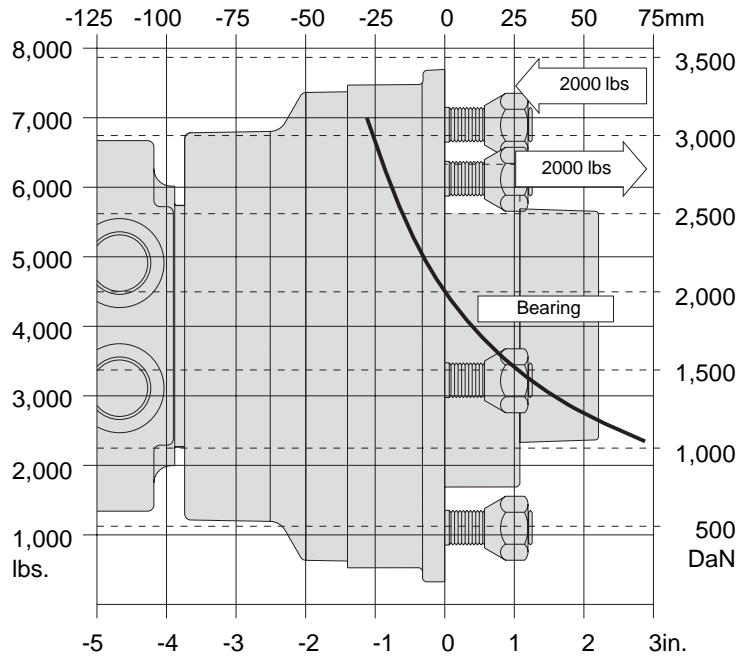
NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.
(Example: W82 = A 4-Hole radial ported motor with 3/4" BSP.F threading)

- W2** 4-Hole End Ports
- W8** 4-Hole Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



LENGTH AND WEIGHT TABLES

Wheel Mount

Code	X in	Weight lbs
200	4.42	53.9
260	4.61	54.7
300	4.74	55.5
350	5.29	57.9
375	4.99	56.7
470	5.29	57.9
540	5.53	59.1
750	6.24	62.2

DR motor weights vary ± 2 lbs depending upon motor configuration. Subtract .11 in. from X for motors using the 1,2 or 5 Endcover.

ORDERING INFORMATION

SERIES

640

DISPLACEMENT

HOUSINGS

SHAFT

OPTIONS

MISCELLANEOUS

Code	Displacement
200	12.4 in ³ /rev
260	15.9 in ³ /rev
300	18.3 in ³ /rev
350	21.2 in ³ /rev
375	22.8 in ³ /rev
470	28.3 in ³ /rev
540	32.7 in ³ /rev
750	45.6 in ³ /rev

Code	Housings
W2	4-Hole End Ports
W8	4-Hole Side Ports

Code	Shafts
61	6-Bolt Wheel Flange

Code	Options
AA	None
AB	Internal Drain
AC	Freeturning Rotor
AD	Internal Drain with Freeturning Rotor

PORTS

Code	Side Ports
5	Radial Ports 1-1/16"-12 O-ring
2	Radial Ports 3/4"-14 BSP.F
6	Parallel Ports 1-1/16"-12 O-ring
7	Parallel Ports 3/4"-14 BSP.F

Code	End Ports
1	7/8"-14 O-ring

PAINT

Code	Options
A	Dark Metallic Gray
C	Black
Z	No Paint

ADD ONS

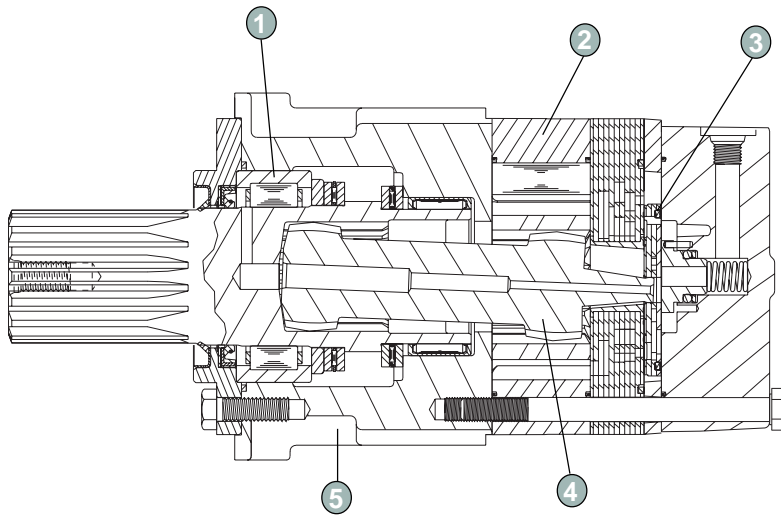
Code	Options
A	Standard
H	Locking Hub

CAVITY

Code	Options
A	None
B	Relief Valve Cavity
C	1000 psi Relief Valve Installed
D	1250 psi Relief Valve Installed
E	1500 psi Relief Valve Installed
F	1750 psi Relief Valve Installed
G	2000 psi Relief Valve Installed
J	2500 psi Relief Valve Installed
L	3000 psi Relief Valve Installed

NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.

(Example: W82 = A 4-Hole radial ported motor with 3/4" BSP.F threading)



- ① **Heavy-Duty Roller Bearing** supports high side loads and receives forced lubrication for cooling and increased life.
- ② **Roller Stator® Motor** available in displacements up to 127.7 cid for high torque output.
- ③ **Three-Zone Orbiting Valve** precisely meters oil to produce exceptional volumetric efficiencies.
- ④ **Heavy-Duty Drive Link** receives forced lubrication for long life and is capable of extreme duty cycles.
- ⑤ **Compact Housing** contributes to high power-to-weight ratio of motor and offers front and rear mounting flanges.

The most amazing aspect of the DT Series motor is its huge torque potential from its relatively small size. The DT Series motor is capable of producing output torque comparable to competitive designs, but from a package that is both shorter and lighter. The savings in space and weight in no way compromises durability, as the motor uses massive shafts, bearings and drive links to transmit the torque produced by this powerful package. The use of a case drain allows reduced pressure on the shaft seal while maintaining driveline lubrication for maximum motor life. Standard mounting and shaft options offer interchangeability with competitive designs. An internal drain option is also available.



SPECIFICATIONS

Code	Displacement (in ³ /rev)	Max. Speed (RPM) - 1)Cont 2)Inter.		Max. Flow (GPM) - 1)Cont 2)Inter.		Max. Torque (lb-in) - 1)Cont 2)Inter.		Max. Pressure (PSI) - 1)Cont 2)Inter. 3)Peak		
		1	2	1	2	1	2	1	2	3
300	18.3	320	380	25	30	7250	8450	3000	3500	3750
375	22.8	250	300	25	30	9250	9975	3000	3250	3500
470	28.3	200	240	25	30	9475	12300	2500	3250	3500
540	32.7	180	210	25	30	11300	13500	2500	3000	3500
750	45.6	130	150	25	30	15750	18500	2500	3000	3500
930	56.7	100	120	25	30	15750	18950	2000	2500	3000
1K1	63.9	90	110	25	30	16950	20500	2000	2500	3000
1K5	91.2	60	70	25	30	18500	20500	1500	1750	2000
2K1	127.7	40	50	25	30	23550	29580	1500	1750	2000

PERFORMANCE

300 18.3 in³/rev

Flow GPM (LPM)	Pressure psi (bars)								Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)	3500 (242)			
0.5 (2)	476 (54) 4	1014 (115) 3	2100 (237) 2								7
1 (4)	415 (47) 11	952 (108) 9	2256 (255) 7	3363 (380) 5	4304 (486) 3						13
2 (8)	435 (49) 24	1057 (119) 23	2278 (257) 21	3628 (410) 19	4801 (543) 15	5942 (671) 12	6983 (789) 9	7959 (899) 7			26
4 (15)	430 (49) 50	1064 (120) 49	2336 (264) 46	3616 (409) 43	4904 (554) 37	6202 (701) 32	7424 (839) 28	8595 (971) 26			51
6 (23)		1025 (116) 75	2462 (278) 69	3719 (420) 65	5019 (567) 58	6297 (712) 54	7554 (854) 51	8701 (983) 48			76
8 (30)		929 (105) 100	2222 (251) 97	3506 (396) 93	4793 (542) 86	6122 (692) 78	7353 (831) 70	8621 (974) 69			101
10 (38)		877 (99) 126	2099 (237) 122	3438 (388) 115	4857 (549) 113	6081 (687) 107	7369 (833) 96	8588 (970) 90			127
12 (45)		762 (86) 151	2094 (237) 150	3342 (378) 140	4666 (527) 135	5893 (666) 129	7281 (823) 119	8523 (963) 113			152
14 (53)		679 (77) 176	1864 (211) 175	3191 (361) 172	4478 (506) 164	5802 (656) 156	7121 (805) 151	8420 (951) 140			177
16 (61)		528 (60) 201	1845 (208) 200	3179 (359) 189	4378 (495) 185	5731 (648) 178	6999 (791) 172	8213 (928) 165			202
18 (68)			1694 (191) 225	2961 (335) 222	4402 (497) 211	5592 (632) 206	6871 (776) 196	8093 (914) 189			228
20 (76)			1489 (168) 251	2835 (320) 247	4083 (461) 240	5401 (610) 233	6762 (764) 228	7934 (897) 216			253
22 (83)			1298 (147) 276	2675 (302) 272	3926 (444) 269	5205 (588) 258	6570 (742) 249	7810 (883) 234			278
24 (91)			1086 (123) 300	2409 (272) 298	3666 (414) 296	4934 (558) 290	6264 (708) 281	7535 (851) 272			303
Max. Cont.			958 (108) 315	2278 (257) 313	3482 (393) 308	4857 (549) 300	6139 (694) 289	7421 (839) 280			316
Inter.				1642 (186) 376	2945 (333) 372	4189 (473) 369					379
Theo. Torque 729 (82) 1457 (165) 2914 (329) 4371 (494) 5828 (659) 7285 (823) 8742 (988) 10199 (1152)											

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

375 22.8 in³/rev

Flow GPM (LPM)	Pressure psi (bars)								Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)	3250 (224)			
0.5 (2)	574 (65) 4	1272 (144) 3	2670 (302) 2	3970 (449) 1							6
1 (4)	583 (66) 9	1345 (152) 8	2757 (312) 7	4208 (475) 5	5535 (625) 4						11
2 (8)	596 (67) 19	1365 (154) 18	2907 (329) 17	4388 (496) 14	5695 (644) 12	7122 (805) 10	8524 (963) 8	9288 (1050) 7			21
4 (15)	627 (71) 40	1400 (158) 39	2982 (337) 37	4536 (513) 34	6020 (680) 30	7596 (858) 27	8962 (1013) 25	9723 (1099) 23			41
6 (23)	570 (64) 60	1334 (151) 60	2969 (336) 58	4598 (520) 54	6141 (694) 49	7704 (871) 45	9275 (1048) 41	9867 (1115) 41			61
8 (30)	467 (53) 81	1337 (151) 80	2876 (325) 78	4532 (512) 73	6113 (691) 69	7724 (873) 63	9304 (1051) 60	9964 (1126) 59			82
10 (38)		1161 (131) 101	2768 (313) 99	4439 (502) 95	6075 (686) 89	7824 (884) 82	9281 (1049) 79	10011 (1131) 77			102
12 (45)		995 (112) 121	2725 (308) 120	4375 (494) 116	6059 (685) 109	7626 (862) 103	9321 (1053) 98	10066 (1137) 97			122
14 (53)		878 (99) 141	2508 (283) 140	4149 (469) 136	5705 (645) 131	7467 (844) 125	8965 (1013) 117	9877 (1116) 115			142
16 (61)		662 (75) 162	2319 (262) 161	3923 (443) 160	5587 (631) 155	7283 (823) 148	8930 (1009) 143	9859 (1114) 136			163
18 (68)			2198 (248) 181	3779 (427) 178	5416 (612) 175	7119 (804) 167	8895 (1005) 160	9653 (1091) 156			183
20 (76)			1925 (218) 202	3568 (403) 200	5161 (583) 195	6886 (778) 189	8549 (966) 178	9474 (1071) 173			203
22 (83)			1676 (189) 222	3318 (375) 221	4967 (561) 217	6669 (754) 211	8335 (942) 201	9171 (1036) 196			223
24 (91)			1374 (155) 242	3041 (344) 240	4732 (535) 237	6410 (724) 229					244
Max. Cont.				2839 (321) 252	4596 (519) 249	6283 (710) 241					254
Inter.				2110 (238) 303	3820 (432) 301	5503 (622) 296					304
Theo. Torque 908 (103) 1815 (205) 3631 (410) 5446 (615) 7261 (821) 9076 (1026) 10892 (1231) 11799 (1333)											

Torque, lb-in (Nm)
Speed, RPM

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

470 28.3 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
0.5 (2)	762 (86) 3	1780 (201) 2	3553 (401) 2							5
1 (4)	817 (92) 7	1728 (195) 7	3597 (406) 6	5395 (610) 5	7137 (806) 4					9
2 (8)	835 (94) 15	1761 (199) 15	3702 (418) 14	5580 (631) 13	7365 (832) 11	9226 (1042) 9	10961 (1239) 8			17
4 (15)	815 (92) 32	1784 (202) 32	3769 (426) 30	5717 (646) 28	7513 (849) 24	9430 (1066) 23	11256 (1272) 21	12217 (1381) 19		33
6 (23)	729 (82) 48	1799 (203) 47	3744 (423) 46	5725 (647) 43	7565 (855) 39	9473 (1070) 36	11287 (1275) 34	12083 (1365) 32		49
8 (30)	595 (67) 65	1641 (185) 64	3663 (414) 63	5683 (642) 60	7671 (867) 54	9538 (1078) 47	11508 (1300) 46	12367 (1398) 44		66
10 (38)	459 (52) 81	1506 (170) 80	3532 (399) 79	5573 (630) 76	7584 (857) 69	9531 (1077) 63	11352 (1283) 61	12323 (1393) 58		82
12 (45)		1354 (153) 97	3366 (380) 96	5422 (613) 93	7454 (842) 88	9488 (1072) 77	11523 (1302) 74	12334 (1394) 68		98
14 (53)		1121 (127) 114	3173 (359) 113	5229 (591) 110	7282 (823) 104	9350 (1057) 97	11242 (1270) 89	12318 (1392) 85		115
16 (61)		888 (100) 130	2964 (335) 129	4993 (564) 127	7061 (798) 119	9118 (1030) 114	11101 (1254) 108	12118 (1369) 102		131
18 (68)		595 (67) 146	2689 (304) 145	4734 (535) 143	6772 (765) 137	8875 (1003) 132	10877 (1229) 120	11926 (1348) 114		147
20 (76)			2428 (274) 162	4458 (504) 160	6485 (733) 155	8536 (965) 148	10592 (1197) 139	11668 (1318) 136		164
22 (83)			2003 (226) 178	4050 (458) 175	6118 (691) 172	8215 (928) 165	10181 (1150) 156	11200 (1266) 154		180
24 (91)			1554 (176) 194	3670 (415) 192	5917 (669) 190	7833 (885) 183				196
Max. Cont.				3442 (389) 203	5589 (632) 198	7676 (867) 190				205
Inter.				2451 (277) 243	4549 (514) 240	6684 (755) 235				245
Theo. Torque 1127 (127) 2253 (255) 4506 (509) 6760 (764) 9013 (1018) 11266 (1273) 13519 (1528) 14646 (1655)										

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

540 32.7 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
0.5 (2)	908 (103) 2	1907 (215) 2	3722 (421) 1							4
1 (4)	917 (104) 6	2016 (228) 5	4015 (454) 4	5897 (666) 3	7730 (874) 1					8
2 (8)	954 (108) 13	2043 (231) 12	4191 (474) 11	6231 (704) 9	8190 (925) 5	10201 (1153) 4				15
4 (15)	906 (102) 27	2052 (232) 26	4448 (503) 24	6692 (756) 21	8799 (994) 18	10806 (1221) 15	12930 (1461) 13			29
6 (23)	866 (98) 42	2038 (230) 41	4404 (498) 39	6774 (766) 36	9049 (1023) 30	11225 (1268) 27	13219 (1494) 24			43
8 (30)	744 (84) 56	1883 (213) 55	4280 (484) 53	6669 (754) 49	9130 (1032) 42	11262 (1273) 38	13486 (1524) 34			57
10 (38)	561 (63) 70	1727 (195) 69	4122 (466) 68	6519 (737) 64	8903 (1006) 57	11374 (1285) 49	13556 (1532) 46			71
12 (45)	373 (42) 84	1586 (179) 83	3928 (444) 82	6349 (717) 79	8710 (984) 72	11277 (1274) 65	13436 (1518) 57			85
14 (53)		1295 (146) 97	3722 (421) 95	6139 (694) 93	8529 (964) 87	11091 (1253) 80	13381 (1512) 70			99
16 (61)		1025 (116) 113	3460 (391) 111	5865 (663) 108	8230 (930) 103	10675 (1206) 97	13086 (1479) 84			114
18 (68)		798 (90) 127	3153 (356) 125	5563 (629) 123	7969 (900) 116	10550 (1192) 107	12841 (1451) 100			128
20 (76)		498 (56) 141	2923 (330) 139	5265 (595) 137	7850 (887) 133	10250 (1158) 123	12578 (1421) 114			142
22 (83)			2464 (278) 155	4859 (549) 153	7271 (822) 148	9919 (1121) 136	12283 (1388) 133			156
24 (91)			2154 (243) 169	4494 (508) 166	7024 (794) 164	9325 (1054) 156				170
Max. Cont.			1948 (220) 176	4299 (486) 174	6741 (762) 169	9075 (1025) 163				177
Inter.			800 (90) 211	3237 (366) 210	5649 (638) 207	8144 (920) 203				212
Theo. Torque 1302 (147) 2604 (294) 5207 (588) 7811 (883) 10414 (1177) 13018 (1471) 15621 (1765)										

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

PERFORMANCE

750 45.6 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
0.5 (2)	1276 (144)	2566 (290)							3
1 (4)	1367 (154)	2863 (323)	5917 (669)	8242 (931)					6
2 (8)	1435 (162)	3015 (341)	6302 (712)	9038 (1021)	11550 (1305)				11
4 (15)	1400 (158)	3080 (348)	6399 (723)	9578 (1082)	12410 (1402)				21
6 (23)	1273 (144)	2927 (331)	6317 (714)	9583 (1083)	12678 (1433)	15430 (1744)			31
8 (30)	1116 (126)	2900 (328)	6167 (697)	9486 (1072)	12843 (1451)	15658 (1769)			41
10 (38)	922 (104)	2574 (291)	5976 (675)	9334 (1055)	12785 (1445)	15805 (1786)	18373 (2076)		51
12 (45)	682 (77)	2382 (269)	5792 (655)	9136 (1032)	12668 (1431)	15801 (1786)	18528 (2094)		61
14 (53)	410 (46)	2116 (239)	5545 (627)	8880 (1003)	12451 (1407)	15634 (1767)	18578 (2099)		71
16 (61)		1780 (201)	5164 (584)	8592 (971)	11907 (1345)	15422 (1743)	18271 (2065)		82
18 (68)		1421 (161)	4819 (545)	8209 (928)	11556 (1306)	15120 (1709)			92
20 (76)		1058 (120)	4395 (497)	7635 (863)	11154 (1260)				102
22 (83)			3926 (444)	7351 (831)	10737 (1213)				112
24 (91)			3447 (389)	6947 (785)	10581 (1196)				122
Max. Cont.			3255 (368)	6697 (757)	10126 (1144)				127
Inter.			1813 (205)	5428 (613)	8665 (979)				152
	Theo. Torque	1815 (205)	3631 (410)	7261 (821)	10892 (1231)	14522 (1641)	18153 (2051)	21783 (2462)	

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

Torque, lb-in (Nm)
Speed, RPM

930 56.7 in³/rev

Flow GPM (LPM)	Pressure psi (bars)									Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	750 (52)	1000(69)	1250(86)	1500(104)	1750(121)	2000(138)	2250(155)			
0.5 (2)	1590(180)	3423(387)	5368(607)	7089(801)								3
1 (4)	1734(196)	3696(418)	5780(653)	7649(864)	9447(1067)	11451(1294)						5
2 (8)	1816(205)	3907(442)	6015(680)	7764(877)	9886(1117)	11501(1300)	13365(1510)					9
4 (15)	1753(198)	3825(432)	5878(664)	8021(906)	9924(1121)	11840(1338)	13769(1556)	15306(1730)				17
6 (23)	1633(185)	3719(420)	5765(651)	8034(908)	9935(1123)	11991(1355)	13651(1543)	15873(1794)	17532(1981)			25
8 (30)	1438(162)	3576(404)	5624(636)	7900(893)	9800(1107)	11854(1340)	13988(1581)	15716(1776)	17570(1985)	18632(2105)		33
10 (38)	1109(125)	3253(368)	5536(626)	7476(845)	9620(1087)	11625(1314)	1325(1497)	15364(1736)	17306(1956)	19054(2153)		41
12 (45)	807(91)	3018(341)	5111(578)	7213(815)	9487(1072)	11630(1314)	13492(1525)	15159(1713)	17222(1946)	18873(2133)		49
14 (53)	310(35)	2565(290)	4715(533)	6772(765)	9059(1024)	10974(1240)	13155(1487)	15287(1727)	17216(1945)	19188(2168)		58
16 (61)		2118(239)	4281(484)	6429(726)	8488(959)	10708(1210)	12830(1450)	15008(1696)	17039(1925)	18934(2140)		66
18 (68)		1811(205)	3891(440)	6202(701)	8143(920)	10418(1177)	12580(1422)	14538(1643)	16741(1892)	18625(2105)		74
20 (76)		1325(150)	3616(409)	5590(632)	7091(801)	9733(1100)	12135(1505)	14148(1599)	16454(1859)	18230(2060)		82
22 (83)		875(99)	2977(336)	5139(581)	7403(837)	9342(1056)	11553(1305)	13816(1561)	15918(1799)	17925(2025)		90
24 (91)			2497(282)	4438(501)	6778(766)	9038(1021)	11201(1266)	13179(1489)	15505(1752)	17427(1969)		98
Max. Cont.			2137(241)	4389(496)	6390(722)	862(974)	10743(1214)	12863(1454)	15286(1727)	17309(1956)		102
Inter.			582(66)	2652(300)	4711(532)	6914(781)	9235(1044)	11248(1271)				123
	Theo. Torque	2257(255)	4514(510)	6771(765)	9029(1020)	11286(1275)	13543(1530)	15800(1785)	18057(2040)	20314(2296)	22572(2551)	

1K1 63.9 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	750 (52)	1000 (69)	1250 (86)	1500 (104)	1750 (121)			
0.5 (2)	1918(217)	4026(455)	5940(671)	7879(890)						2
1 (4)	1821(206)	4410(498)	6251(706)	8273(935)	10518(1189)					4
2 (8)	1985(224)	4407(498)	6672(754)	8700(983)	10810(1222)	12635(1428)				8
4 (15)	1980(224)	4180(472)	6669(754)	8946(1011)	11169(1262)	13147(1486)	15014(1697)			15
6 (23)	1500(170)	4314(487)	6538(739)	9023(1020)	10956(1238)	13286(1501)	14998(1695)	16936(1914)		22
8 (30)	1451(164)	3814(431)	6270(709)	8580(970)	10986(1241)	13106(1481)	15280(1727)	17185(1942)	18971(2144)	29
10(38)	1143(129)	3546(401)	5975(675)	8356(944)	10688(1208)	12879(1455)	15168(1714)	16982(1919)	18983(2145)	37
12(45)	871(98)	3176(359)	5526(624)	7915(894)	10163(1148)	12569(1420)	14981(1693)	16756(1893)	18879(2133)	44
14(53)	390(44)	2761(312)	5129(580)	7535(851)	9933(1122)	12237(1383)	14263(1612)	16424(1856)	18569(2098)	51
16(61)		2220(251)	4569(516)	6871(776)	9402(1062)	11678(1320)	14045(1587)	16261(1837)	18426(2082)	58
18(68)		1678(190)	4053(458)	6252(706)	8869(1002)	11252(1272)	13738(1552)	15877(1794)	18147(2051)	66
20(76)		1033(117)	3453(390)	5774(652)	8227(930)	10502(1187)	12874(1596)	15246(1723)	17705(2001)	73
22(83)		444(50)	2741(310)	5034(569)	7493(847)	9846(1113)	12214(1380)	14599(1650)	17055(1927)	80
24(91)		79	1862(210)	4346(491)	6677(755)	9007(1018)	11398(1288)	13777(1557)	16164(1827)	87
Max. Cont. 25(95)			1635(185)	4096(463)	6281(710)	8519(963)	10901(1232)	13247(1497)	15844(1790)	91
Inter. 30(114)			90	2179(202)	4217(477)	6460(730)	8962(1013)	10947(1237)	17950(2028)	109
			108	107	106	105	104			
Theo. Torque	2544(287)	5088(575)	7631(862)	10175(1150)	12719(1437)	15263(1725)	17807(2012)	20350(2300)	22894(2587)	25438(2874)

Torque, lb-in (Nm)
Speed, RPM

1K5 91.2 in³/rev

Flow GPM (LPM)	Pressure psi (bars)					Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	750 (52)	1000 (69)	1250 (86)			
0.5 (2)	2703(305)	5736(648)						2
1 (4)	2978(336)	6128(693)	8942(1011)					3
2 (8)	3106(351)	6454(729)	9597(1085)	12072(1364)				6
4 (15)	2925(331)	6304(712)	9879(1116)	13191(1491)	15668(1771)			11
6 (23)	2629(297)	6023(681)	9632(1088)	12952(1464)	15662(1770)			16
8 (30)	2183(247)	5662(640)	9188(1038)	12655(1430)	15864(1793)	18786(2123)		21
10(38)	1740(197)	5159(583)	8860(1001)	12189(1377)	15479(1749)	18498(2090)		26
12(45)	1157(131)	4695(531)	8315(940)	11770(1330)	15066(1702)	18059(2041)	20613(2329)	31
14(53)	594(67)	4282(484)	7689(869)	11217(1267)	14532(1642)	17612(1990)	20353(2300)	36
16(61)		3457(391)	6805(769)	10374(1172)	13866(1567)	16941(1914)	19986(2258)	41
18(68)		2602(294)	6072(686)	9523(1076)	13177(1489)	16334(1846)	19366(2188)	46
20(76)		1607(182)	5435(614)	8746(988)	12320(1392)	15429(1743)	18553(2301)	51
22(83)		770(87)	4310(487)	7720(872)	11356(1283)	14442(1632)	17883(2021)	56
24(91)			4032(456)	6632(749)	10143(1146)	13570(1533)	16568(1872)	61
Max. Cont. 25(95)			60	60	58	58	50	64
Inter. 30(114)			2589(293)	6232(704)	9313(1052)	12961(1465)	16306(1843)	76
			63	62	62	59	53	
				2174(246)	5711(645)	9265(1047)		
			75	74	73			
Theo. Torque	3631(410)	7261(821)	10892(1231)	14522(1641)	18153(2051)	21783(2462)	25414(2872)	

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

DT

PERFORMANCE



2K1 127.7 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	750 (52)	1000 (69)	1250 (86)	1500 (104)			
0.5 (2)	3878 (438) 0.8	7894 (892) 0.8							1
1 (4)	3891 (440) 1	8162 (922) 1	12375 (1398) 1						2
2 (8)	4073 (460) 3	8458 (956) 3	12923 (1460) 3						4
4 (15)	3920 (443) 7	8525 (963) 7	13192 (1491) 6	17520 (1980) 6					8
6 (23)	3560 (402) 10	8179 (924) 10	13012 (1470) 10	17370 (1963) 9					11
8 (30)	2985 (337) 14	7824 (884) 14	12613 (1425) 14	16995 (1920) 13	21152 (2390) 9	23613 (2668) 8			15
10 (38)	2431 (275) 17	7205 (814) 17	11944 (1350) 16	16538 (1869) 16	20733 (2343) 13	23564 (2663) 8			19
12 (45)	1535 (173) 21	6398 (723) 21	11171 (1262) 21	15886 (1795) 20	20232 (2286) 17	23588 (2665) 12			22
14 (53)	587 (66) 24	5479 (619) 24	10221 (1155) 24	15063 (1702) 23	19519 (2206) 21	23333 (2637) 13			26
16 (61)		4391 (496) 28	9009 (1018) 28	14046 (1587) 27	18645 (2107) 26	22777 (2574) 20			29
18 (68)		3257 (368) 32	8052 (910) 32	12973 (1466) 31	17527 (1980) 30	21866 (2471) 26			33
20 (76)		1991 (225) 36	6686 (755) 36	11537 (1304) 36	16449 (1859) 35	20878 (2359) 30			37
22 (83)		628 (71) 39	5507 (622) 39	10367 (1171) 39	14885 (1682) 38	19575 (2212) 36			40
24 (91)			3794 (429) 43	8704 (984) 43	13665 (1544) 42	18291 (2067) 40			44
Max. Cont.			3129 (354) 45	7883 (891) 45	12636 (1428) 45	17445 (1971) 43			46
Inter.				3803 (430) 54	8485 (959) 54	13207 (1492) 53			55
Theo. Torque	5084 (574)	10167 (1149)	15251 (1723)	20334 (2298)	25418 (2872)	30502 (3447)	35585 (4021)		

Areas within white represent maximum motor efficiencies.

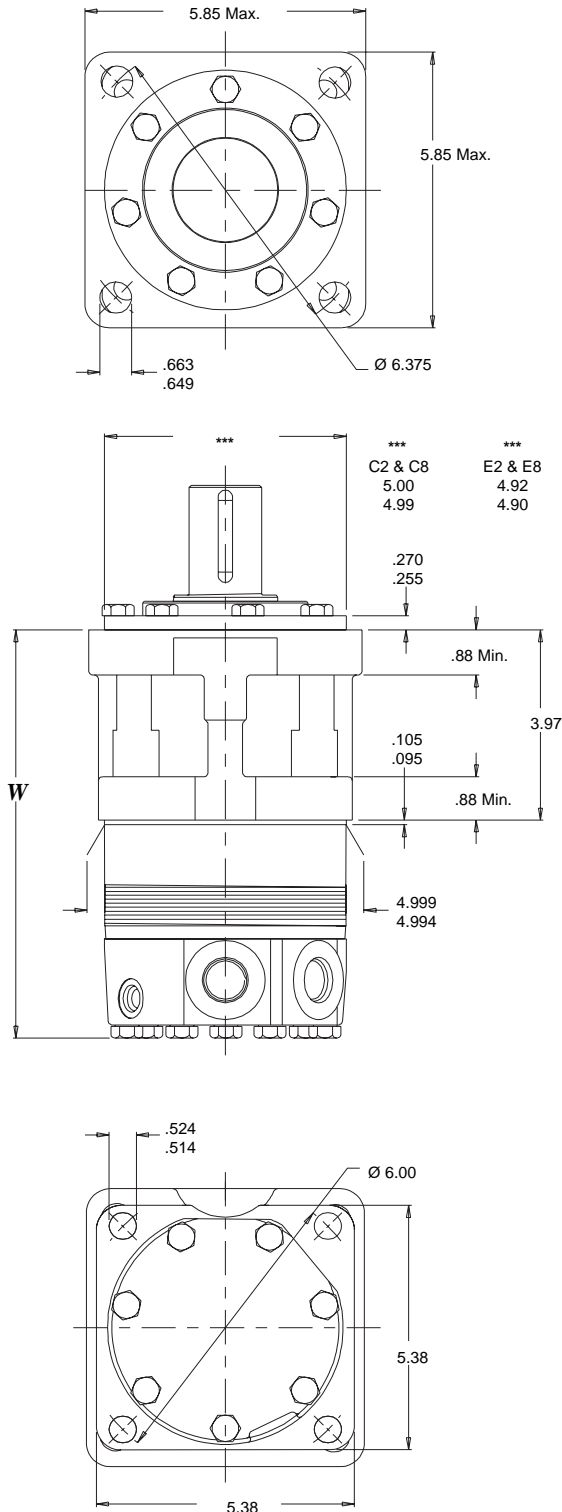
DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

Tested at 129°F with an oil viscosity of 213 SUS

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

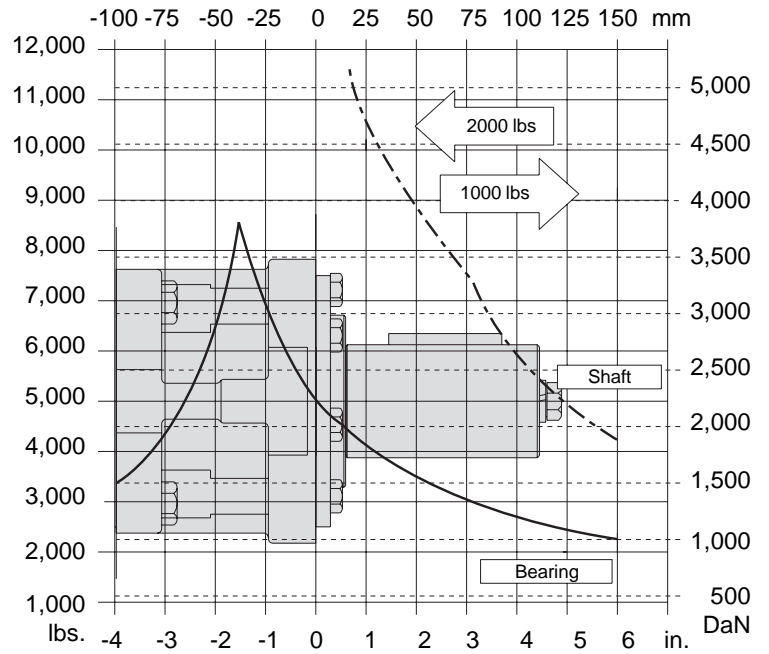
- C2** Standard Mount 5" Pilot End Ports
- E2** Standard Mount 125mm Pilot End Ports
- C8** Standard Mount 5" Pilot Side Ports
- E8** Standard Mount 125mm Pilot Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.

STANDARD



LENGTH AND WEIGHT TABLES

Wheel Mount

Code	W in	Weight lbs
300	8.25	44.6
375	8.50	45.8
470	8.80	47.1
540	9.04	48.2
750	9.75	51.3
930	10.35	53.8
1K1	10.75	55.7
1K5	12.25	62.5
2K1	14.25	71.3

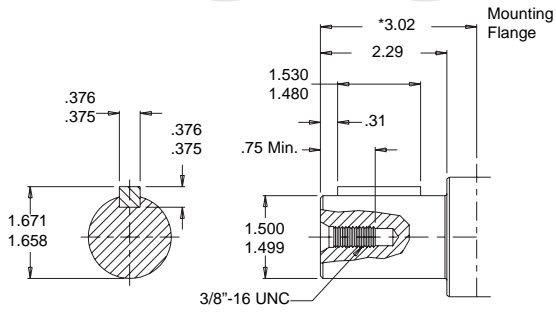
DT motor weights vary ± 3 lbs depending upon motor configuration. Subtract .11 in. from W for motors using the 1, 2 or 5 Endcover.

700

SHAFTS

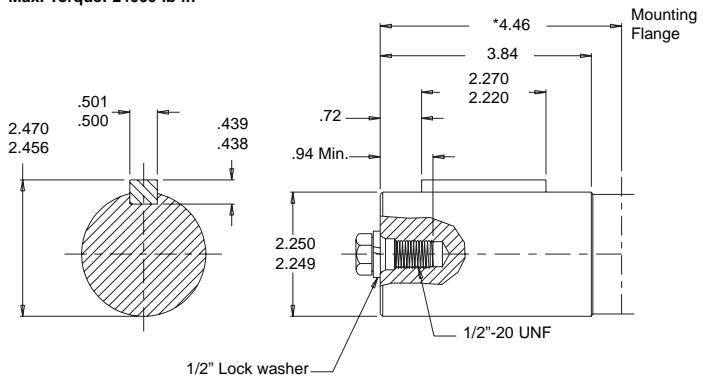
30 1 1/2" Straight

Max. Torque: 19800 lb-in



40 2 1/4" Straight

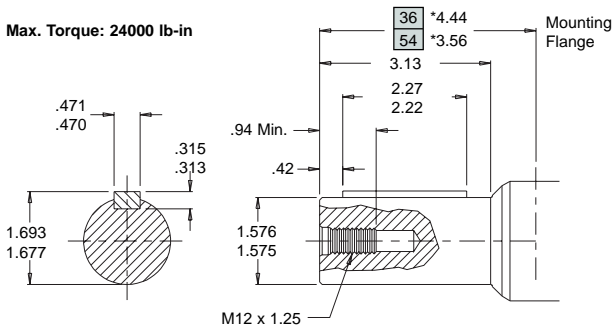
Max. Torque: 24000 lb-in



36 40mm Straight

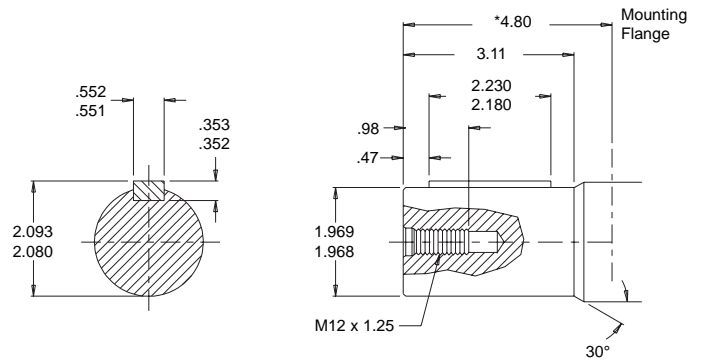
54 40mm Straight Extended

Max. Torque: 24000 lb-in



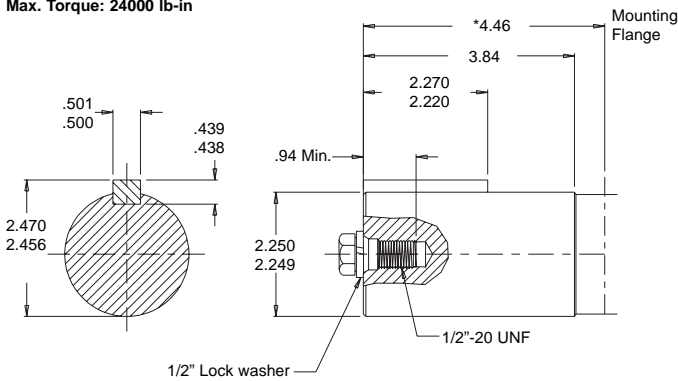
41 50mm Straight

Max. Torque: 24000 lb-in



47 2 1/4" Straight with Modified Keyway

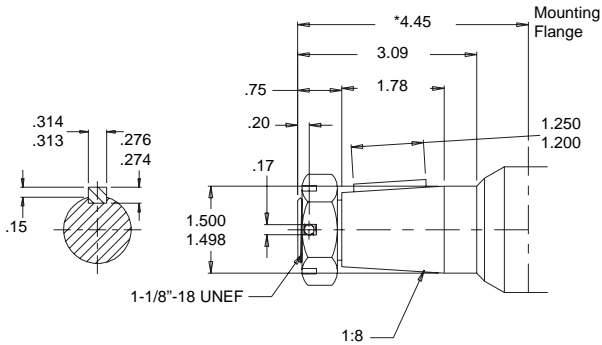
Max. Torque: 24000 lb-in



*Shaft Lengths vary $\pm .030$ inches.
 †For Speed Sensor Motors Only

31 1 1/2" Tapered

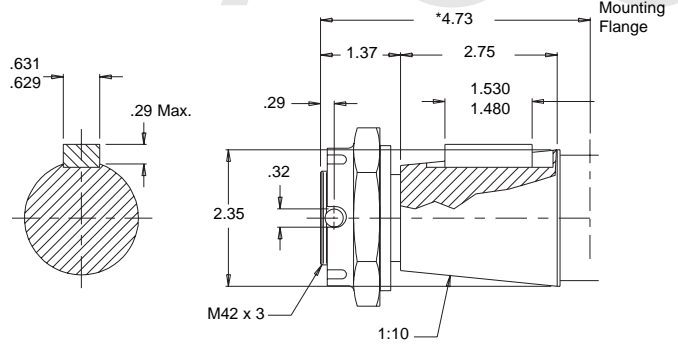
Max. Torque: 19900 lb-in



Note: A slotted nut is standard on this shaft.

45 60mm Tapered

Max. Torque: 24000 lb-in



Note: A slotted nut is standard on this shaft.

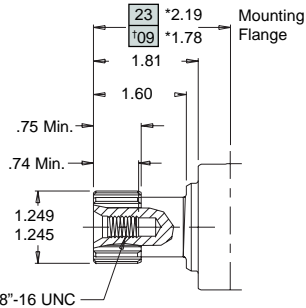
23 14 Tooth Spline

U09 14 Tooth Spline Extended

Max. Torque: 18400 lb-in



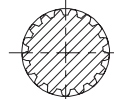
14 tooth 12/24 Pitch
Std. ANSI B92.1-1996 Spline



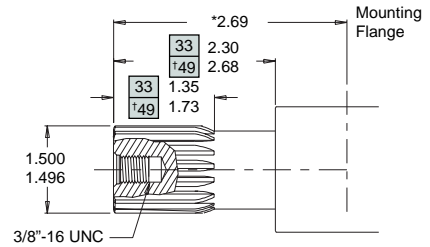
33 17 Tooth Spline

U49 17 Tooth Spline Extended

Max. Torque: 19900 lb-in



17 tooth 12/24 Pitch
SAE Std. Spline

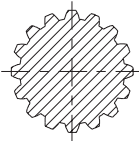


42 16 Tooth Spline

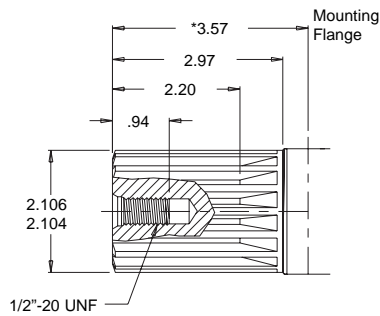
U48 16 Tooth Spline Extended

Max. Torque: 24000 lb-in

**16 tooth 8/16 Pitch
Std. ANSI B92.1-1996 Spline



**Deviates From Standard



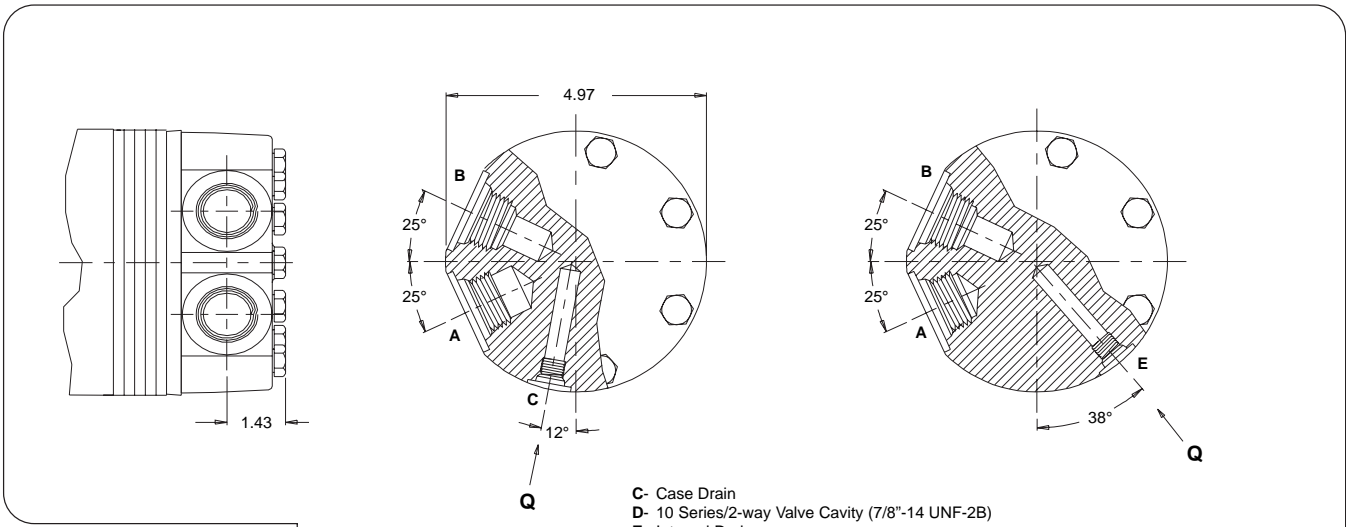
*Shaft Lengths vary ± .030 inches.
†For Speed Sensor Motors Only

7000

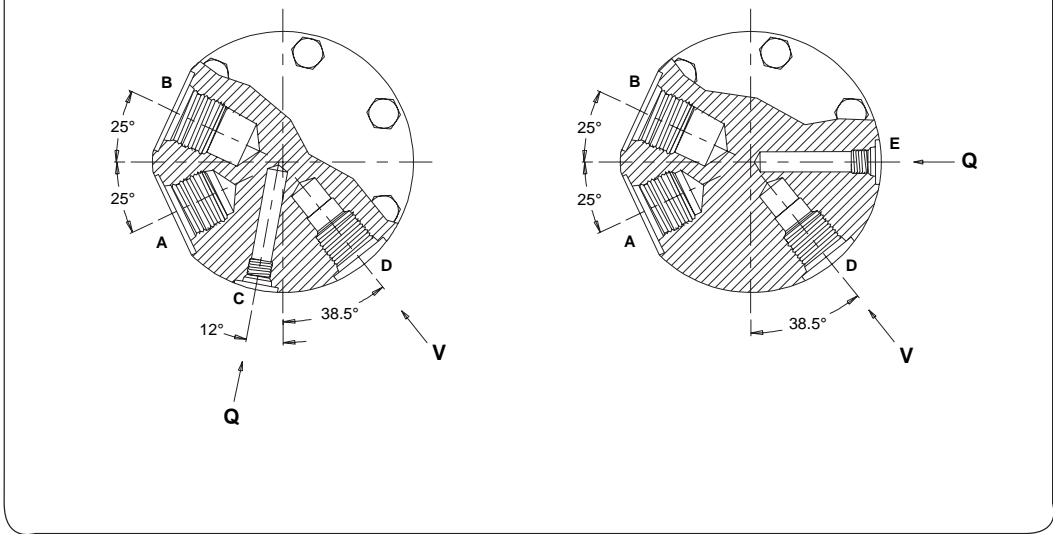
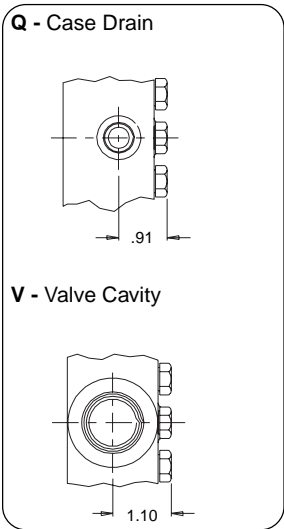
PORTING

- 5 1-1/16" O-Ring with 7/16" Drain
- 2 3/4" BSP.F with 1/4" Drain

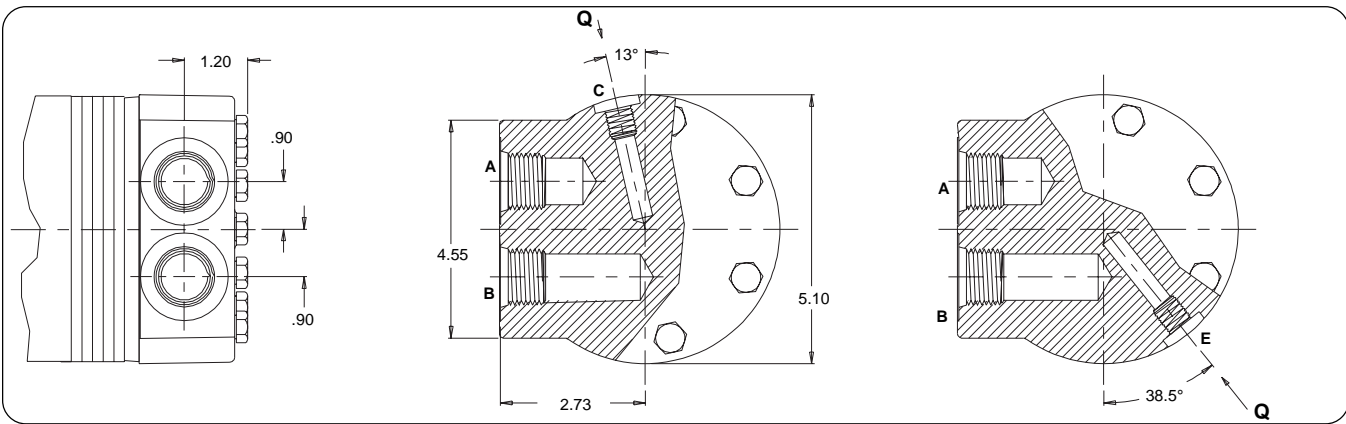
SIDE PORTS



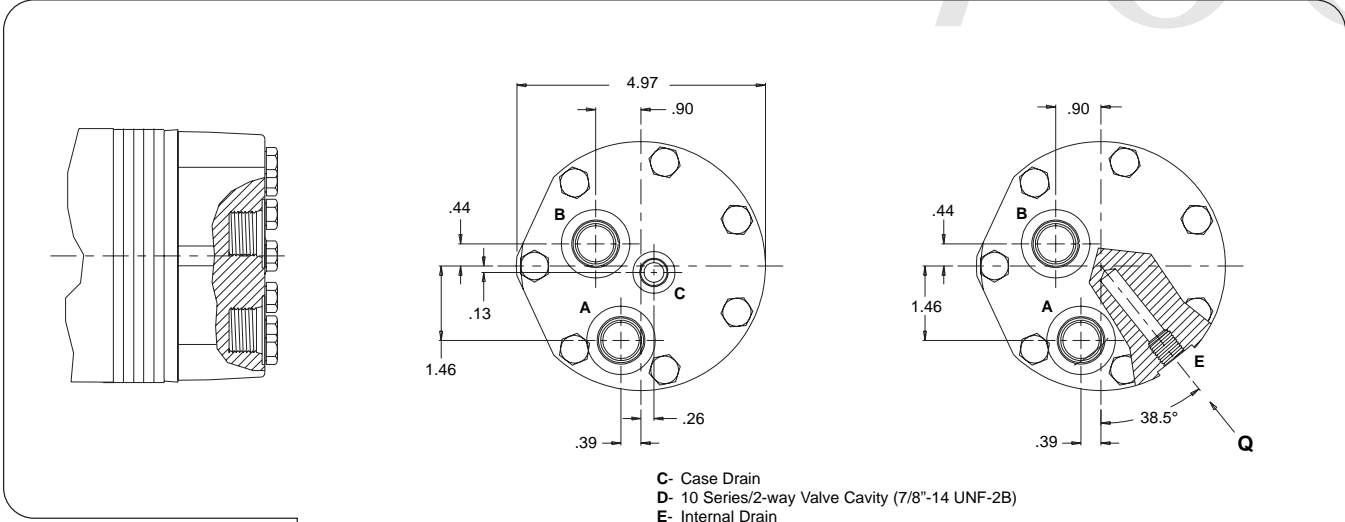
Q and V



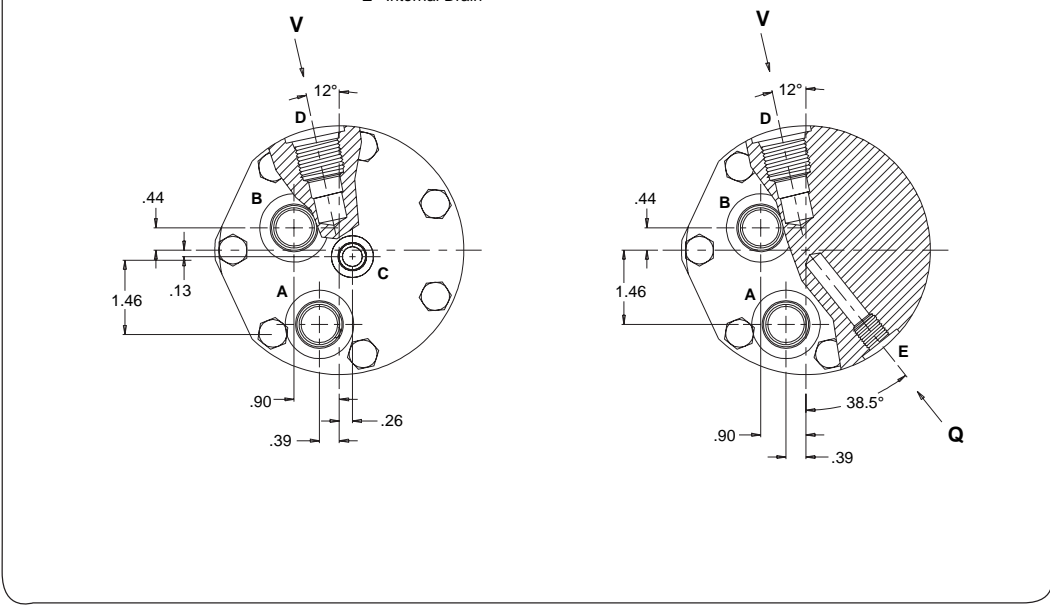
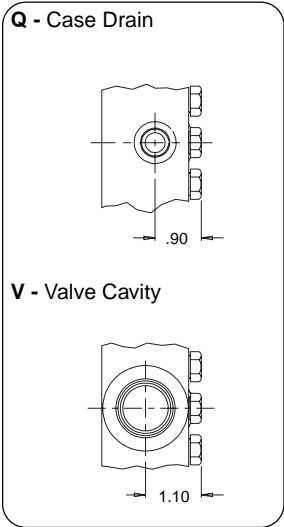
- 6 1-1/16" O-Ring with 7/16" Drain
- 7 3/4" BSP.F with 1/4" Drain



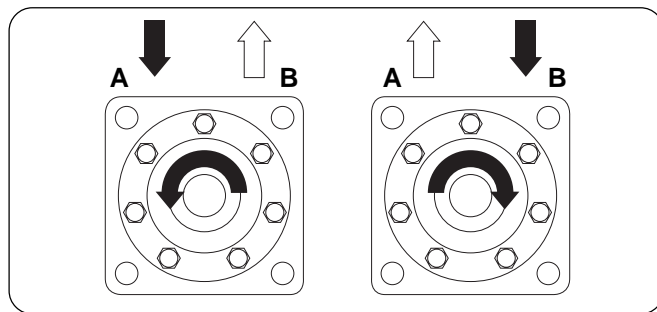
1 7/8" O-Ring with 7/16" Drain



Q and V

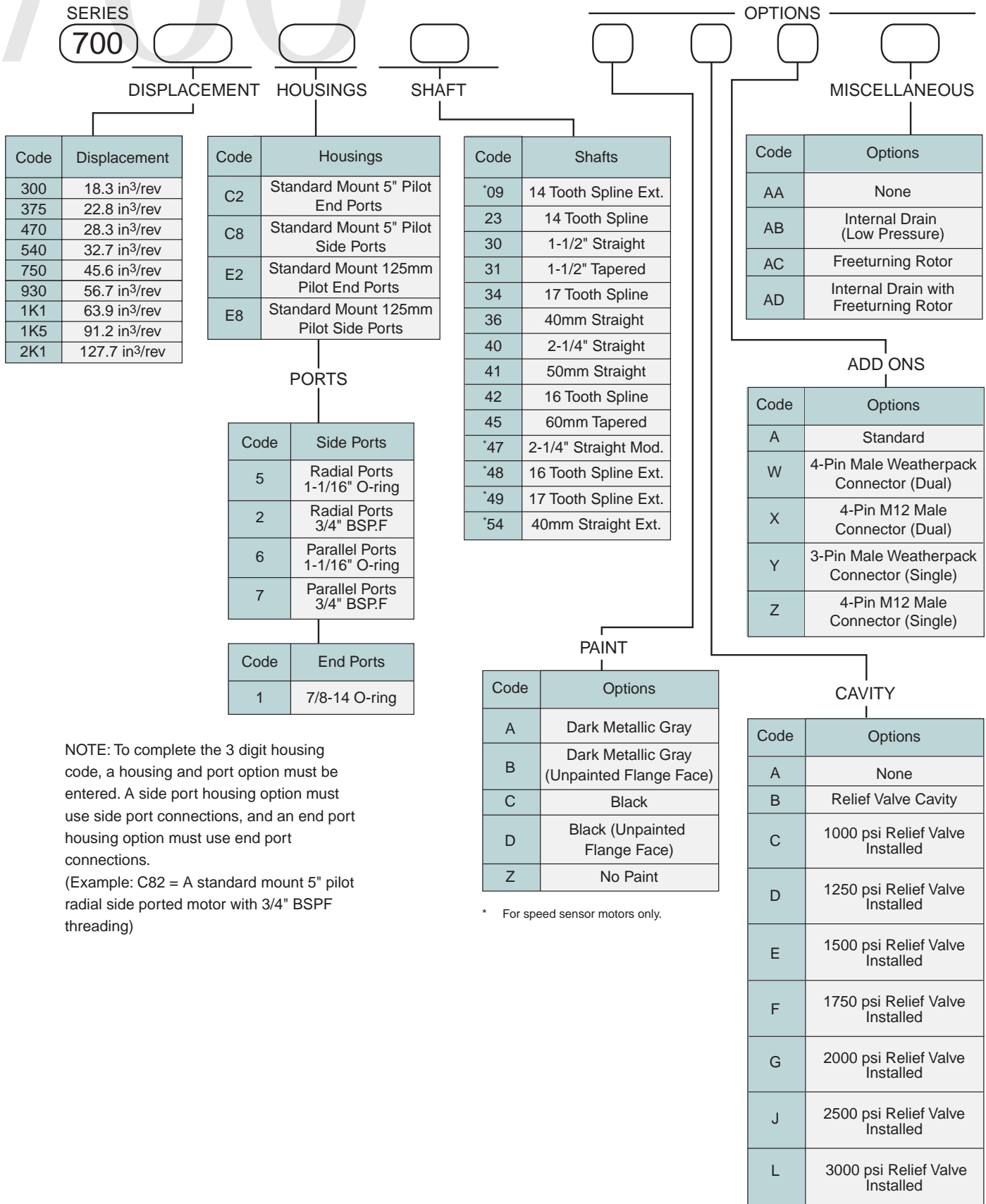


DT ROTATION SELECTION



7000

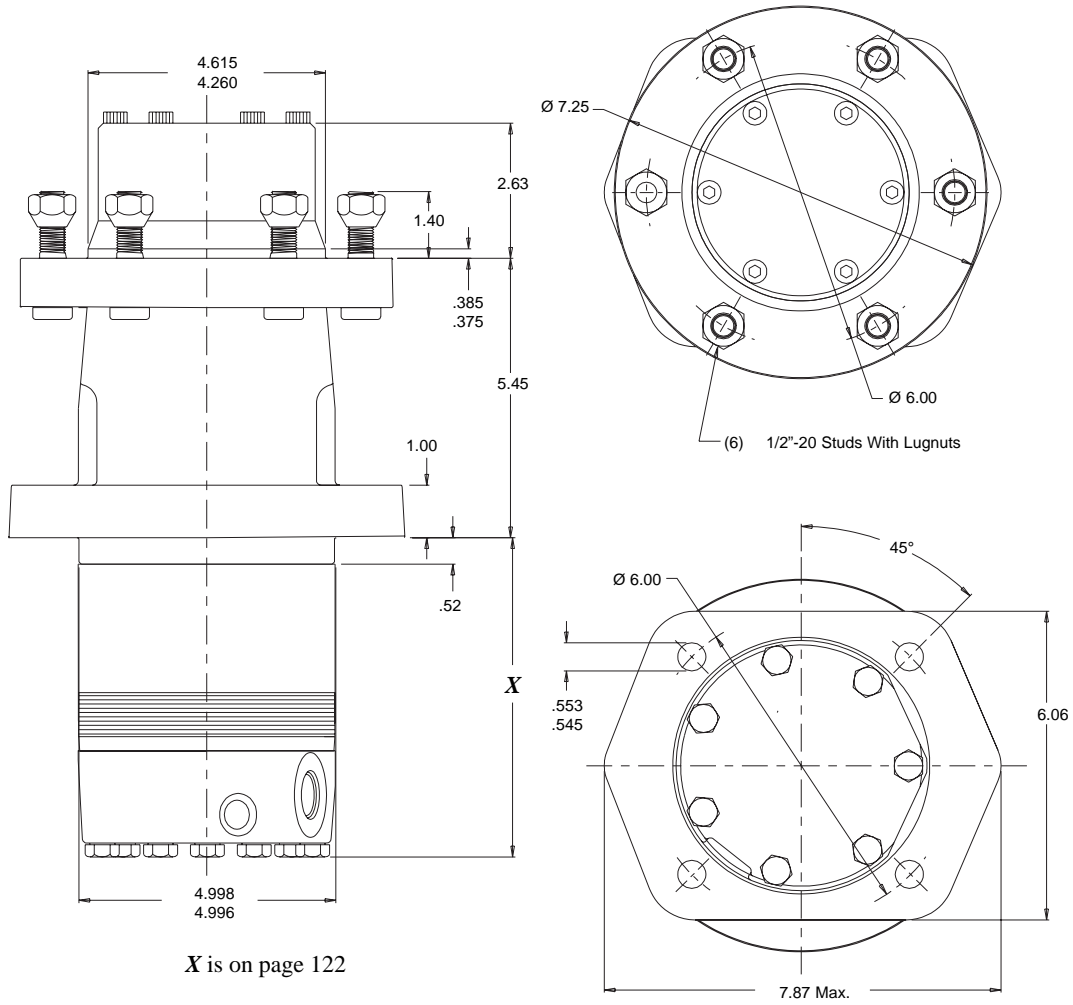
ORDERING INFORMATION



NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.
 (Example: C82 = A standard mount 5" pilot radial side ported motor with 3/4" BSPF threading)

* For speed sensor motors only.

- W2** 4-Hole End Ports
- W8** 4-Hole Side Ports



X is on page 122

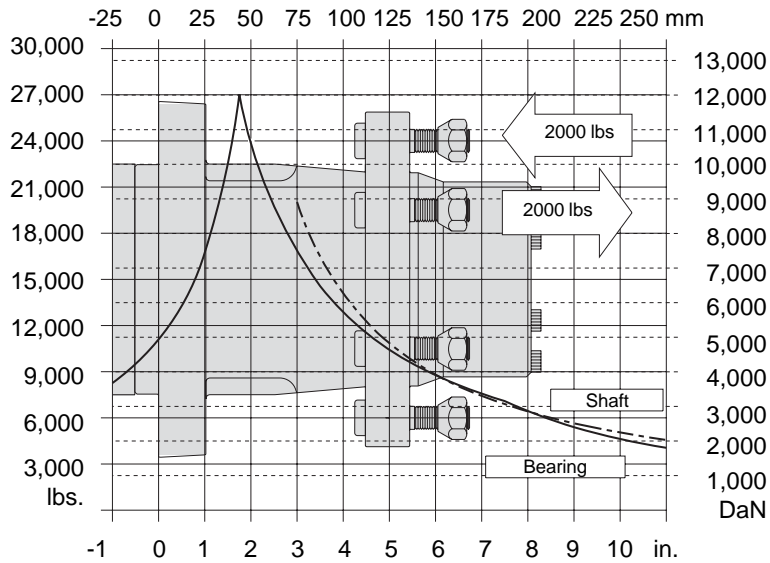
Note: The DT40 Series motor is not available with the internal drain option. Drain line pressure must be maintained below 25 psi. A dedicated line from the motor drain port to the reservoir is recommended.

740

TECHNICAL ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.

DT40



LENGTH AND WEIGHT TABLES

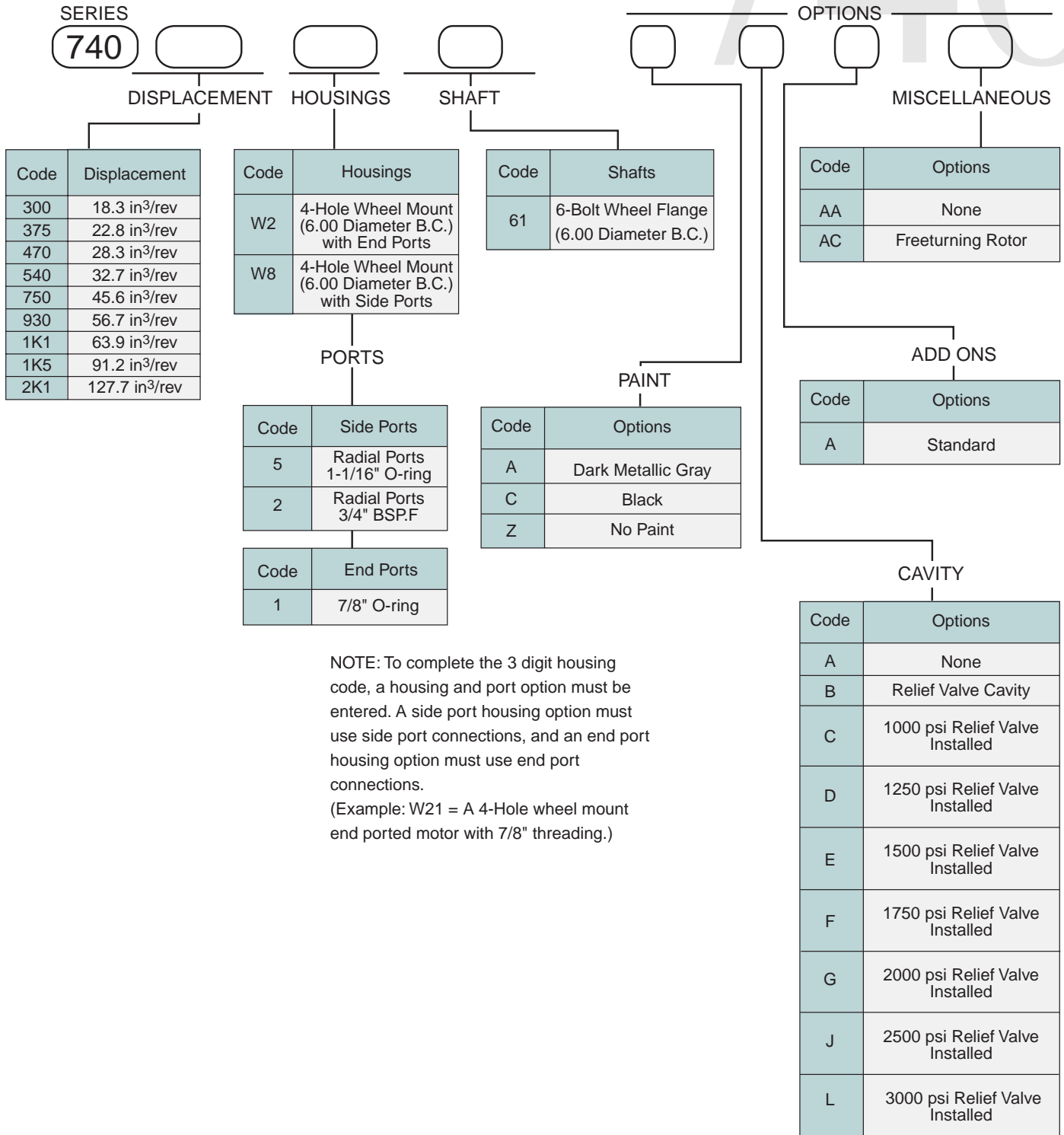
Wheel Mount

Code	X in	Weight lbs
300	4.74	62.6
375	4.99	63.8
470	5.29	65.1
540	5.53	66.2
750	6.24	69.2
930	6.84	71.8
1K1	7.24	73.7
1K5	8.74	80.5
2K1	10.74	89.3

DT motor weights vary ± 3 lbs depending upon motor configuration. Subtract .11 in. from X for motors using the 1, 2 or 5 Endcover.

740

ORDERING INFORMATION

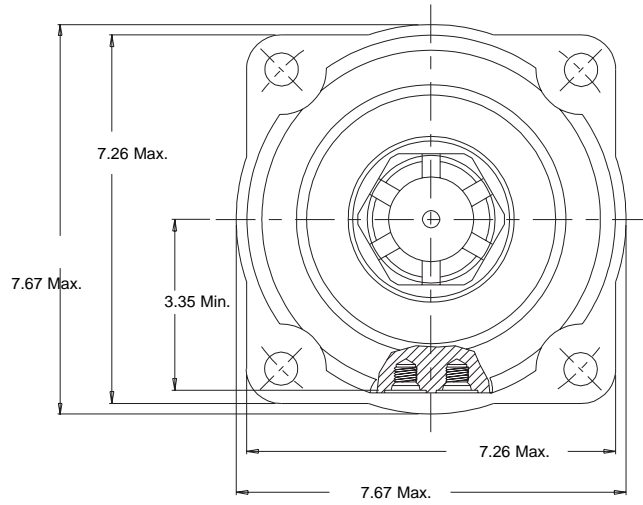
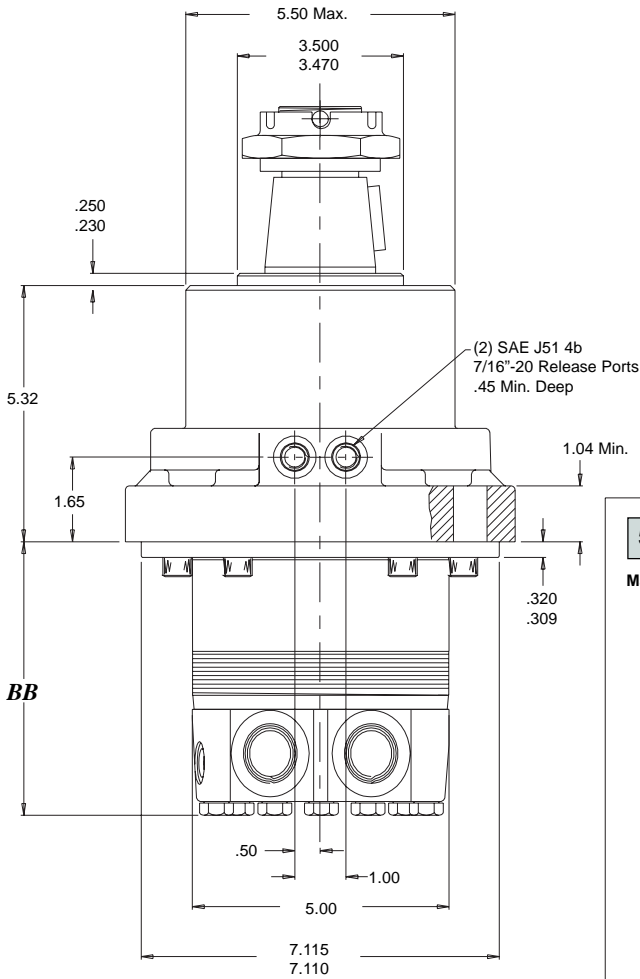


712

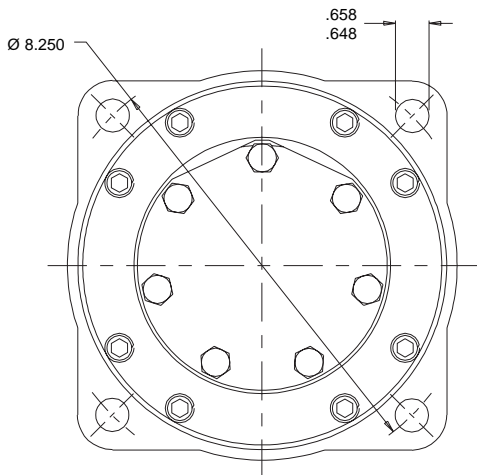
HOUSING



- W2** 4-Hole End Ports
- W8** 4-Hole Side Ports



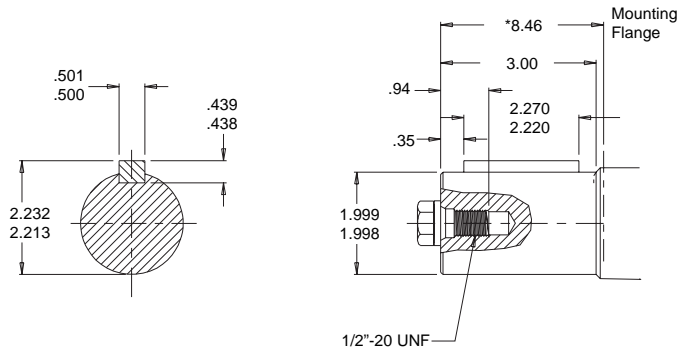
BB



BB is on page 125

50 2" Straight

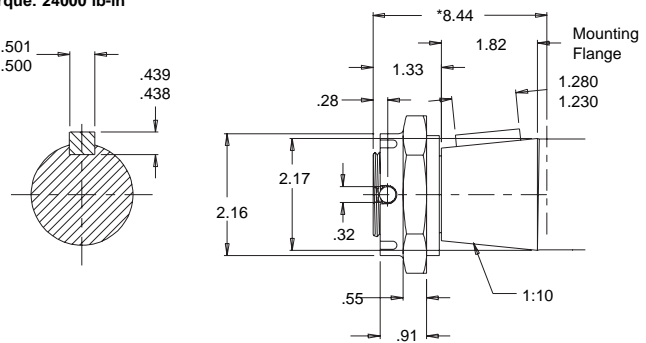
Max. Torque: 24000 lb-in



SHAFTS

51 55mm Tapered

Max. Torque: 24000 lb-in

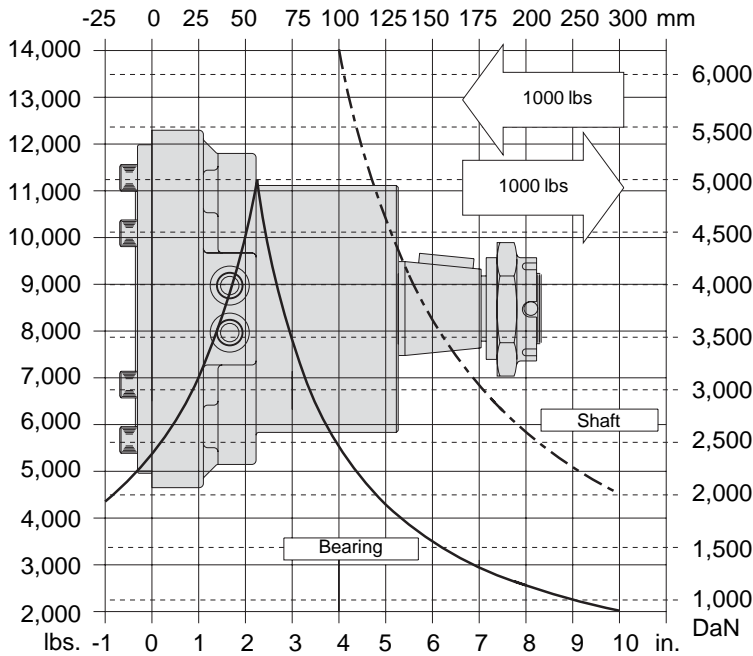


Shaft Lengths vary \pm .030 inches
 Note: A slotted nut is standard on this shaft.

CAUTION: It is vital that all operating recommendations on page 43 be followed. Failure to do so could result in injury or death.

ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



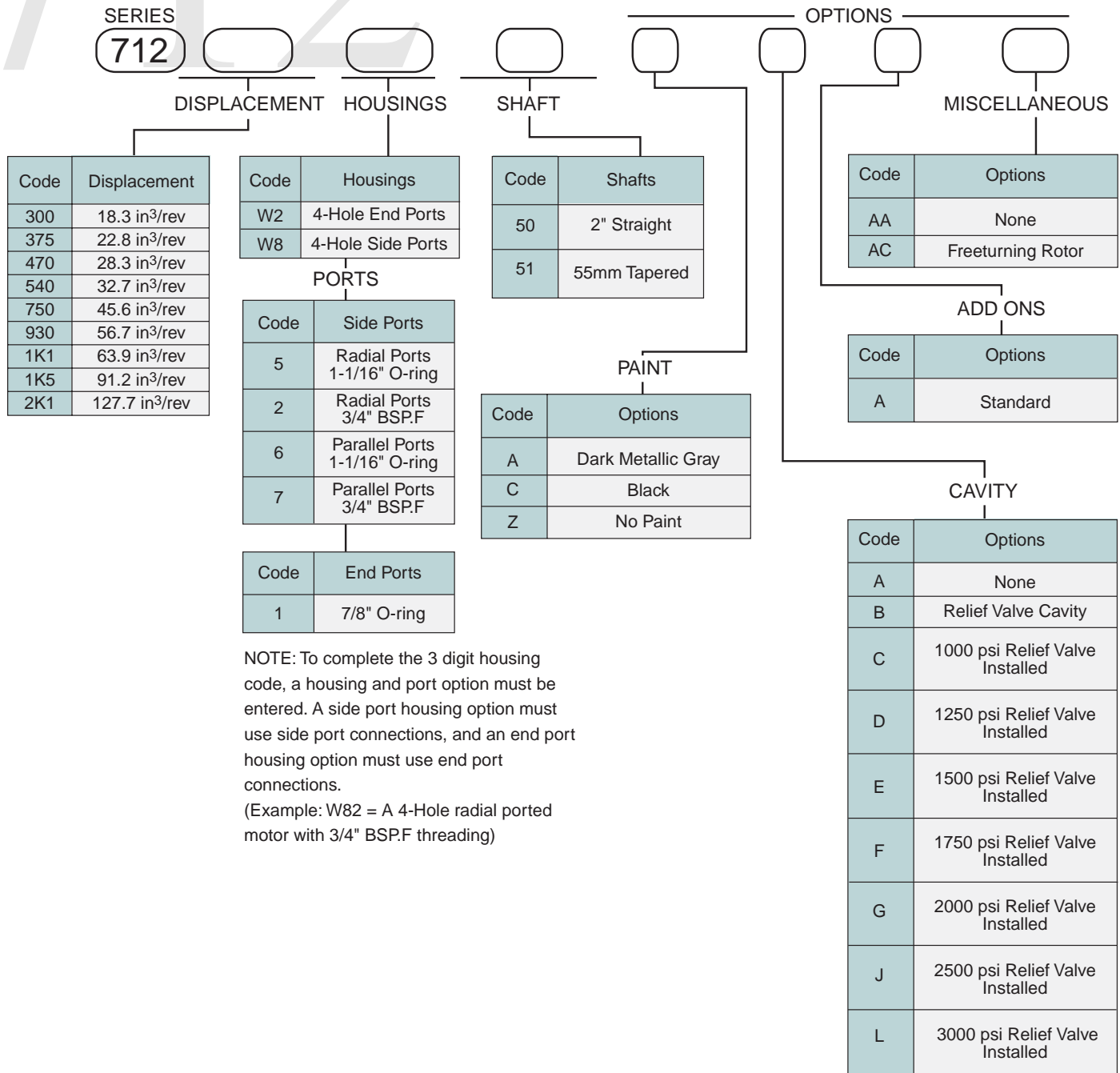
LENGTH AND WEIGHT TABLES

Wheel Mount		
Code	BB in	Weight lbs
300	4.54	60.0
375	4.79	61.2
470	5.09	62.5
540	5.33	63.6
750	6.04	66.7
930	6.64	69.2
1K1	7.04	71.1
1K5	8.54	77.9
2K1	10.54	86.7

DT motor weights vary ± 3 lbs depending upon motor configuration. Subtract .11 in. from BB for motors using the 1, 2 or 5 Endcover.

Rated brake torque	14,000 lb-in
Initial release pressure	275 psi
Full release pressure	475 psi
Maximum release pressure	3,000 psi
Release volume	0.8-1.0 cu.in.

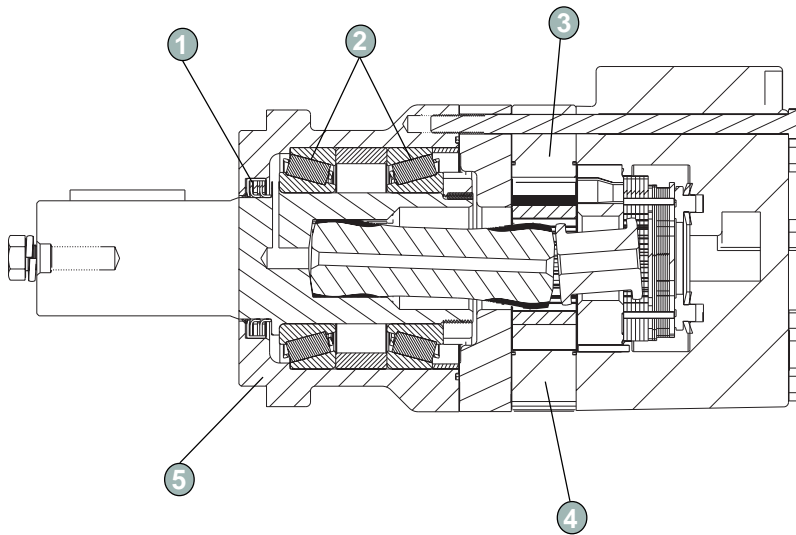
ORDERING INFORMATION



NOTE: To complete the 3 digit housing code, a housing and port option must be entered. A side port housing option must use side port connections, and an end port housing option must use end port connections.

(Example: W82 = A 4-Hole radial ported motor with 3/4" BSP.F threading)

D9 FEATURES



- ① **Dual Lipped Teflon Shaft Seal** improves seal life at higher operating pressures.
- ② **Dual Tapered Roller Bearings** improve load carrying capability.
- ③ **Nine Displacement Options** provide industry leading design flexibility.
- ④ **Roller Stator® Design** incorporates 8 lobe rotor and 9 pocket stator technology.
- ⑤ **Industry Standard Mounting Flanges** that satisfy the global market place.

The D9 Series of motor is the newest and largest member of the White Hydraulics product family. The product is capable of producing torque values comparable to competitive motors, but with an industry leading breadth of displacements and shaft and porting options. In addition, the product incorporates innovative technological advances including dual tapered roller bearings, which improve load carrying capability and a dual lipped Teflon shaft seal that improves seal life at higher operating pressures. The motor is designed for use with a case-drain, which reduces pressure on the shaft seal and maintains lubrication to internal drive components, maximizing motor life. The series is available with industry standard mounting flanges found throughout the global market place.



SPECIFICATIONS

Code	Displacement (in ³ /rev)	Max. Speed (RPM) - 1)Cont 2)Inter.		Max. Flow (GPM) - 1)Cont 2)Inter.		Max. Torque (lb-in) - 1)Cont 2)Inter.		Max. Pressure (PSI) - 1)Cont 2)Inter. 3)Peak		
		1	2	1	2	1	2	1	2	3
260	15.6	520	700	36	48	6750	7885	3000	3500	3750
300	17.9	530	688	42	54	7700	9000	3000	3500	3750
375	22.4	550	613	54	60	9725	11365	3000	3500	3750
450	27.8	445	496	54	60	11934	13907	3000	3500	3750
525	32.1	385	430	54	60	13888	16143	3000	3500	3750
625	38.1	325	361	54	60	16660	19317	3000	3500	3750
735	44.8	276	308	54	60	16063	19156	2500	3000	3500
910	55.6	223	250	54	60	20265	24008	2500	3000	3500
1K0	62.7	197	220	54	60	18186	22434	2000	2500	3000

PERFORMANCE

260 15.6 in³/rev

Flow GPM (LPM)	Pressure, psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	341 (39) 27	858 (97) 26	1883 (213) 24	2900 (328) 21	3903 (441) 19	4886 (552) 15	5848 (661) 12			30
6 (23)		958 (108) 84	2058 (233) 81	3169 (358) 78	4263 (482) 74	5322 (601) 70	6351 (718) 66	7349 (830) 62		89
12 (45)		992 (112) 171	2134 (241) 168	3289 (372) 164	4439 (502) 159	5572 (630) 153	6679 (755) 146	7761 (877) 139		178
18 (68)		976 (110) 258	2132 (241) 255	3297 (373) 250	4477 (506) 245	5617 (635) 237	6760 (764) 230	7885 (891) 222		267
24 (91)		929 (105) 346	2091 (236) 342	3270 (370) 338	4441 (502) 331	5587 (631) 324	6738 (761) 315	7878 (890) 306		355
30 (114)		855 (97) 434	2024 (229) 430	3178 (359) 425	4374 (494) 419	5544 (627) 412	6700 (757) 402	7818 (883) 388		444
Max. Cont. 36 (136)		768 (87) 522	1933 (218) 518	3115 (352) 512	4271 (483) 505	5463 (617) 497	6633 (750) 488	7766 (878) 477		533
42 (159)		669 (76) 611	1827 (206) 607	3009 (340) 601	4194 (474) 594	5376 (608) 585	6535 (738) 576	7682 (868) 566		622
Max. Inter. 48 (182)		546 (62) 701	1712 (193) 696	2891 (327) 690	4070 (460) 683	5257 (594) 674	6426 (726) 664	7578 (856) 651		710
Theo. Torque	622 (70)	1243 (140)	2486 (281)	3729 (421)	4972 (562)	6215 (702)	7458 (843)	8701 (983)		

Areas within white represent maximum motor efficiencies.

Torque, lb-in (Nm)
Speed, RPM

300 17.9 in³/rev

Flow GPM (LPM)	Pressure, psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	458 (52) 23	1053 (119) 21	2234 (252) 19	3379 (382) 16	4521 (511) 12	5633 (636) 9				26
6 (23)		1124 (127) 72	2376 (268) 68	3625 (410) 65	4854 (549) 60	6069 (686) 55	7250 (819) 50	8398 (949) 45		78
12 (45)		1152 (130) 147	2434 (275) 143	3731 (422) 138	5025 (568) 132	6313 (713) 125	7578 (856) 119	8815 (996) 113		155
18 (68)		1141 (129) 222	2452 (277) 218	3777 (427) 213	5092 (575) 206	6392 (722) 199	7690 (869) 191	8961 (1013) 183		232
24 (91)		1097 (124) 298	2422 (274) 294	3753 (424) 288	5074 (573) 281	6390 (722) 272	7707 (871) 264	9014 (1019) 255		310
30 (114)		1022 (115) 375	2356 (266) 371	3700 (418) 364	5032 (569) 357	6362 (719) 348	7673 (867) 339	8987 (1016) 330		387
Max. Cont. 36 (136)		924 (104) 453	2256 (255) 448	3601 (407) 442	4947 (559) 434	6279 (710) 426	7615 (860) 416	8925 (1009) 405		464
42 (159)		814 (92) 530	2144 (242) 525	3498 (395) 517	4845 (547) 509	6183 (699) 500	7506 (848) 490	8837 (999) 480		541
48 (182)		686 (78) 608	2011 (227) 602	3357 (379) 595	4715 (533) 586	6062 (685) 577	7414 (838) 566	8732 (987) 555		619
Max. Inter. 54 (204)		543 (61) 688	1872 (212) 682	3219 (364) 674	4582 (518) 665	5932 (670) 655	7272 (822) 644			696
Theo. Torque	714 (81)	1428 (161)	2855 (323)	4283 (484)	5710 (645)	7138 (807)	8566 (968)	9993 (1129)		

DO NOT operate at maximum pressure and maximum flow simultaneously.

Tested at 129°F with an oil viscosity of 213 SUS

375 22.4 in³/rev

Flow GPM (LPM)	Pressure, psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	546 (62) 18	1297 (147) 17	2752 (311) 14	4197 (474) 11	5609 (634) 8	7010 (792) 5				21
6 (23)		1431 (162) 57	3011 (340) 54	4585 (518) 50	6118 (691) 46	7612 (860) 42	9065 (1024) 38	10495 (1186) 34		62
12 (45)		1474 (167) 117	3100 (350) 114	4729 (534) 109	6365 (719) 103	7963 (900) 98	9510 (1075) 92	11026 (1246) 86		124
18 (68)		1454 (164) 177	3107 (351) 173	4761 (538) 168	6432 (727) 162	8084 (914) 155	9706 (1097) 147	11312 (1278) 140		186
24 (91)		1400 (158) 238	3075 (347) 234	4740 (536) 229	6413 (725) 222	8080 (913) 214	9726 (1099) 205	11365 (1284) 196		248
30 (114)		1308 (148) 300	2992 (338) 295	4672 (528) 290	6348 (717) 282	8018 (906) 274	9672 (1093) 264	11331 (1280) 254		310
Max. Cont. 36 (136)		1191 (135) 362	2891 (327) 358	4583 (518) 353	6264 (708) 345	7948 (898) 336	9628 (1088) 326	11298 (1277) 315		371
42 (159)		1065 (120) 424	2758 (312) 420	4463 (504) 414	6134 (693) 406	7815 (883) 396	9500 (1074) 385	11174 (1263) 373		433
48 (182)		912 (103) 486	2601 (294) 481	4308 (487) 475	5968 (674) 468	7661 (866) 458	9354 (1057) 444	11017 (1245) 432		495
Max. Cont. 54 (204)		747 (84) 549	2429 (274) 544	4127 (466) 538	5808 (656) 530	7471 (844) 521	9194 (1039) 510	10906 (1232) 490		557
Max. Inter. 60 (227)		567 (64) 613	2241 (253) 607	3940 (445) 600	5608 (634) 592	7317 (827) 582	8998 (1017) 572			619
Theo. Torque	892 (101)	1784 (202)	3568 (403)	5352 (605)	7137 (806)	8921 (1008)	10705 (1210)	12489 (1411)		

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

450 27.8 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	722 (82) 15	1674 (189) 14	3538 (400) 12	5384 (608) 11	7224 (816) 9				17	
6 (23)	780 (88) 47	1782 (201) 46	3764 (425) 44	5718 (646) 40	7639 (863) 37	9473 (1070) 34	11292 (1276) 31		50	
12 (45)	803 (91) 96	1813 (205) 95	3841 (434) 92	5871 (663) 87	7883 (891) 82	9849 (1113) 77	11747 (1327) 72	13605 (1537) 69	100	
18 (68)	757 (86) 145	1770 (200) 144	3807 (430) 141	5861 (662) 136	7916 (894) 130	9950 (1124) 123	11934 (1349) 117	13853 (1565) 111	150	
24 (91)	678 (77) 194	1692 (191) 193	3747 (423) 190	5807 (656) 185	7859 (888) 179	9910 (1120) 171	11923 (1347) 163	13884 (1569) 154	200	
30 (114)	567 (64) 244	1583 (179) 243	3652 (413) 239	5718 (646) 234	7779 (879) 227	9854 (1113) 220	11896 (1344) 211	13907 (1571) 202	250	
36 (136)		1434 (162) 293	3516 (397) 289	5583 (631) 284	7654 (865) 277	9713 (1098) 269	11764 (1329) 259	13799 (1559) 249	300	
42 (159)		1266 (143) 343	3347 (378) 340	5425 (613) 334	7498 (847) 327	9558 (1080) 318	11620 (1313) 309	13657 (1543) 298	349	
48 (182)		1081 (122) 393	3155 (357) 390	5238 (592) 384	7306 (826) 377	9363 (1058) 368	11427 (1291) 357	13471 (1522) 345	399	
Max. Cont.		859 (97) 445	2947 (333) 440	5029 (568) 434	7108 (803) 426	9148 (1034) 417	11206 (1266) 406	13255 (1498) 393	449	
Inter.		642 (73) 496	2698 (305) 491	4781 (540) 484	6862 (775) 477	8899 (1006) 467	10994 (1242) 458		499	
Theo. Torque		1106 (125)	2212 (250)	4425 (500)	6637 (750)	8849 (1000)	11061 (1250)	13274 (1500)	15486 (1750)	

Areas within white represent maximum motor efficiencies.

DO NOT operate at maximum pressure and maximum flow simultaneously.

Torque, lb-in (Nm)
Speed, RPM

525 32.1 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	929 (105) 13	2031 (230) 12	4175 (472) 10	6257 (707) 8	8317 (940) 6				15	
6 (23)	995 (112) 41	2148 (243) 39	4460 (504) 36	6683 (755) 33	8886 (1004) 29	10976 (1240) 25	13087 (1479) 17		44	
12 (45)	989 (112) 83	2165 (245) 82	4529 (512) 78	6887 (778) 74	9212 (1041) 68	11468 (1296) 63	13653 (1543) 59		87	
18 (68)	927 (105) 125	2107 (238) 124	4497 (508) 120	6890 (779) 115	9251 (1045) 109	11560 (1306) 102	13804 (1560) 95	15869 (1793) 89	130	
24 (91)	824 (93) 168	2002 (226) 166	4394 (496) 163	6789 (767) 158	9189 (1038) 151	11558 (1306) 144	13888 (1569) 136	16143 (1824) 128	173	
30 (114)	696 (79) 211	1874 (212) 209	4283 (484) 205	6683 (755) 200	9079 (1026) 193	11457 (1295) 185	13809 (1560) 177	16097 (1819) 167	217	
36 (136)		1710 (193) 253	4114 (465) 249	6513 (736) 243	8912 (1007) 236	11318 (1279) 228	13706 (1549) 219	16023 (1811) 210	260	
42 (159)		1504 (170) 296	3925 (444) 292	6330 (715) 287	8726 (986) 280	11125 (1257) 272	13507 (1526) 262	15864 (1793) 252	303	
48 (182)		1305 (147) 339	3716 (420) 335	6120 (692) 328	8509 (961) 321	10914 (1233) 314	13321 (1505) 303	15682 (1772) 294	346	
Max. Cont.		1041 (118) 384	3450 (390) 379	5850 (661) 374	8269 (934) 366	10660 (1205) 358	13050 (1475) 348	15411 (1741) 338	389	
Inter.		778 (88) 429	3181 (359) 423	5582 (631) 417	7980 (902) 409	10386 (1174) 400	12768 (1443) 391		433	
Theo. Torque		1276 (144)	2553 (288)	5106 (577)	7659 (865)	10211 (1154)	12764 (1442)	15317 (1731)	17870 (2019)	

Tested at 129°F with an oil viscosity of 213 SUS

625 38.1 in³/rev

Flow GPM (LPM)	Pressure psi (bars)							Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)	3000 (207)			
2 (8)	1169 (132) 10	2419 (273) 10	4896 (553) 8	7365 (832) 7	9778 (1105) 6				13	
6 (23)	1273 (144) 34	2656 (300) 34	5393 (609) 32	8102 (916) 31	10655 (1204) 28	13090 (1479) 21			37	
12 (45)	1247 (141) 70	2682 (303) 69	5521 (624) 67	8362 (945) 66	11049 (1249) 56	13797 (1559) 58	16339 (1846) 53		73	
18 (68)	1179 (133) 106	2613 (295) 105	5478 (619) 104	8340 (942) 101	11180 (1263) 98	13949 (1576) 93	16607 (1877) 86	19168 (2166) 79	110	
24 (91)	1061 (120) 142	2486 (281) 141	5368 (607) 140	8251 (932) 137	11102 (1255) 133	13913 (1572) 128	16659 (1882) 121	19317 (2183) 113	146	
30 (114)	886 (100) 178	2309 (261) 177	5183 (586) 175	8053 (910) 172	10916 (1234) 167	13738 (1552) 161	16456 (1860) 155	19220 (2172) 148	183	
36 (136)	694 (78) 214	2106 (238) 213	4971 (562) 211	7859 (888) 208	10731 (1213) 203	13571 (1533) 197	16274 (1839) 190	19369 (2189) 181	219	
42 (159)	469 (53) 251	1855 (210) 250	4711 (532) 248	7585 (857) 245	10471 (1183) 240	13325 (1506) 234	16171 (1827) 227	18968 (2143) 219	255	
48 (182)		1591 (180) 287	4453 (503) 285	7315 (827) 281	10189 (1151) 277	13050 (1475) 270	15888 (1795) 262	18706 (2114) 254	292	
Max. Cont.		1295 (146) 324	4155 (470) 322	7021 (793) 318	9898 (1118) 313	12742 (1440) 306	15558 (1758) 299	18392 (2078) 291	328	
Inter.		982 (111) 361	3829 (433) 359	6693 (756) 355	9555 (1080) 349	12401 (1401) 343	15238 (1722) 335		365	
Theo. Torque		1514 (171)	3029 (342)	6057 (684)	9086 (1027)	12115 (1369)	15144 (1711)	18172 (2053)	21201 (2396)	

Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

PERFORMANCE

735 44.8 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
2 (8)	1395 (158)	2900 (328)	5904 (667)	8902 (1006)	11890 (1344)				11
6 (23)	1460 (165)	3074 (347)	6282 (710)	9389 (1061)	12397 (1401)	15391 (1739)			31
12 (45)	1445 (163)	3095 (350)	6387 (722)	9635 (1089)	12747 (1440)	15711 (1775)			62
18 (68)	1374 (155)	3036 (343)	6377 (721)	9675 (1093)	12900 (1458)	16045 (1813)	19136 (2162)		93
24 (91)	1245 (141)	2914 (329)	6267 (708)	9606 (1085)	12872 (1455)	16063 (1815)	19156 (2165)		124
30 (114)	1050 (119)	2714 (307)	6065 (685)	9409 (1063)	12699 (1435)	15917 (1799)	19051 (2153)		155
36 (136)	823 (93)	2491 (282)	5841 (660)	9191 (1039)	12504 (1413)	15740 (1779)	18897 (2135)		186
42 (159)		2193 (248)	5562 (629)	8934 (1010)	12280 (1388)	15574 (1760)	18778 (2122)		217
48 (182)		1905 (215)	5263 (595)	8626 (975)	11998 (1356)	15330 (1732)	18570 (2098)		248
Max. Cont. 54 (204)		1558 (176)	4913 (555)	8286 (936)	11671 (1319)	14992 (1694)	18274 (2065)		279
Inter. 60 (227)		1171 (132)	4521 (511)	7892 (892)	11267 (1273)	14589 (1649)	17869 (2019)		310
Theo. Torque	1783 (201)	3565 (403)	7130 (806)	10695 (1209)	14260 (1611)	17825 (2014)	21390 (2417)		

Areas within white represent maximum motor efficiencies.

910 55.6 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
2 (8)	1860 (210)	3761 (425)	7455 (842)	11022 (1245)					9
6 (23)	1955 (221)	3989 (451)	8005 (905)	11807 (1334)	15368 (1737)				25
12 (45)	1931 (218)	4036 (456)	8223 (929)	12295 (1389)	16161 (1826)	19682 (2224)			50
18 (68)	1812 (205)	3937 (445)	8174 (924)	12346 (1395)	16415 (1855)	20148 (2277)	23835 (2693)		75
24 (91)	1607 (182)	3728 (421)	7969 (901)	12174 (1376)	16295 (1841)	20265 (2290)	24008 (2713)		100
30 (114)	1282 (145)	3376 (381)	7591 (858)	11766 (1330)	15881 (1795)	19895 (2248)	23720 (2680)		125
36 (136)	797 (90)	2813 (318)	6938 (784)	11010 (1244)	15056 (1701)	18995 (2146)	22758 (2572)		150
42 (159)	478 (54)	2465 (279)	6553 (740)	10633 (1202)	14668 (1658)	18629 (2105)	22461 (2538)		175
48 (182)		2061 (233)	6115 (691)	10173 (1150)	14220 (1607)	18230 (2060)	22119 (2500)		200
Max. Cont. 54 (204)		1527 (173)	5569 (629)	9628 (1088)	13682 (1546)	17705 (2001)	21656 (2447)		225
Inter. 60 (227)		998 (113)	5056 (571)	9095 (1028)	13145 (1485)	17223 (1946)	21224 (2398)		250
Theo. Torque	2213 (250)	4426 (500)	8852 (1000)	13278 (1500)	17704 (2001)	22130 (2501)	26557 (3001)		

Torque, lb-in (Nm)
Speed, RPM

DO NOT operate at maximum pressure and maximum flow simultaneously.

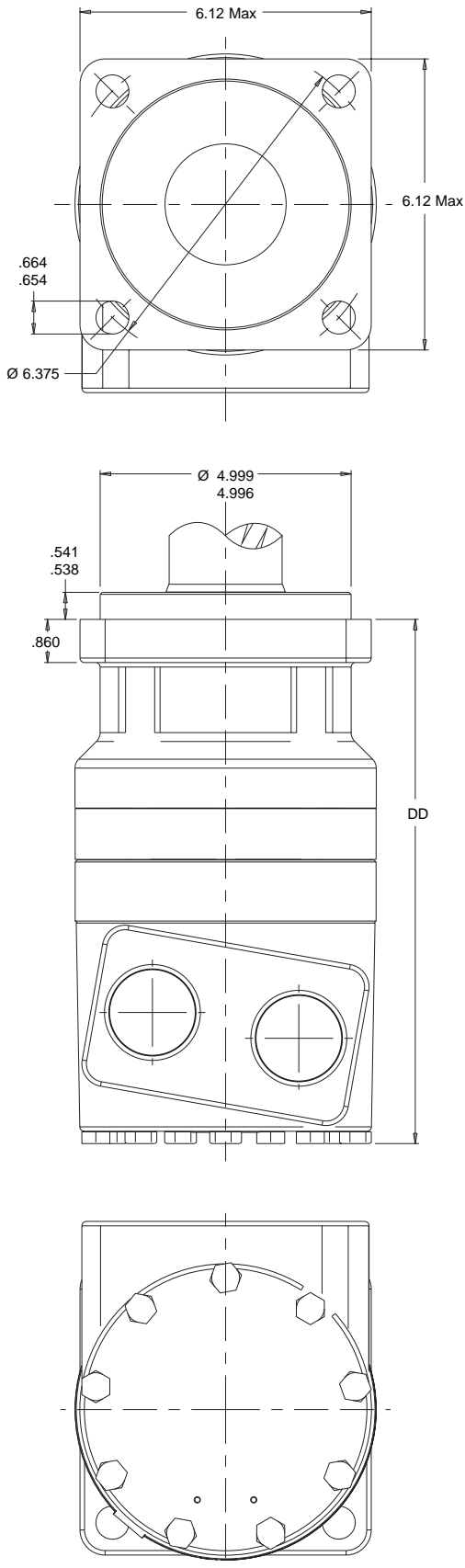
1K0 62.7 in³/rev

Flow GPM (LPM)	Pressure psi (bars)						Max. Cont.	Inter.	Theo. RPM
	250 (17)	500 (35)	1000 (69)	1500 (104)	2000 (138)	2500 (173)			
2 (8)	2006 (227)	4134 (467)	8363 (945)	12528 (1416)	16673 (1884)				8
6 (23)	2118 (239)	4380 (495)	8851 (1000)	13156 (1487)	17228 (1947)				23
12 (45)	2102 (238)	4454 (503)	9111 (1030)	13666 (1544)	17815 (2013)				45
18 (68)	1988 (225)	4373 (494)	9105 (1029)	13770 (1556)	18186 (2055)	22350 (2526)			67
24 (91)	1753 (198)	4135 (467)	8911 (1007)	13615 (1539)	18127 (2048)	22399 (2531)			89
30 (114)	1479 (167)	3871 (437)	8651 (978)	13384 (1512)	18025 (2037)	22434 (2535)			111
36 (136)	1139 (129)	3527 (399)	8319 (940)	13069 (1477)	17733 (2004)	22235 (2513)			133
42 (159)	773 (87)	3124 (353)	7910 (894)	12671 (1432)	17381 (1964)	21818 (2465)			155
48 (182)		2684 (303)	7472 (844)	12241 (1383)	16964 (1917)	21550 (2435)			177
Max. Cont. 54 (204)		2180 (246)	6950 (785)	11718 (1324)	16429 (1856)	20883 (2360)			199
Inter. 60 (227)		1617 (183)	6400 (723)	11150 (1260)	15872 (1793)	20522 (2319)			222
Theo. Torque	2495 (282)	4990 (564)	9981 (1128)	14971 (1692)	19961 (2256)	24952 (2820)			

Tested at 129°F with an oil viscosity of 213 SUS

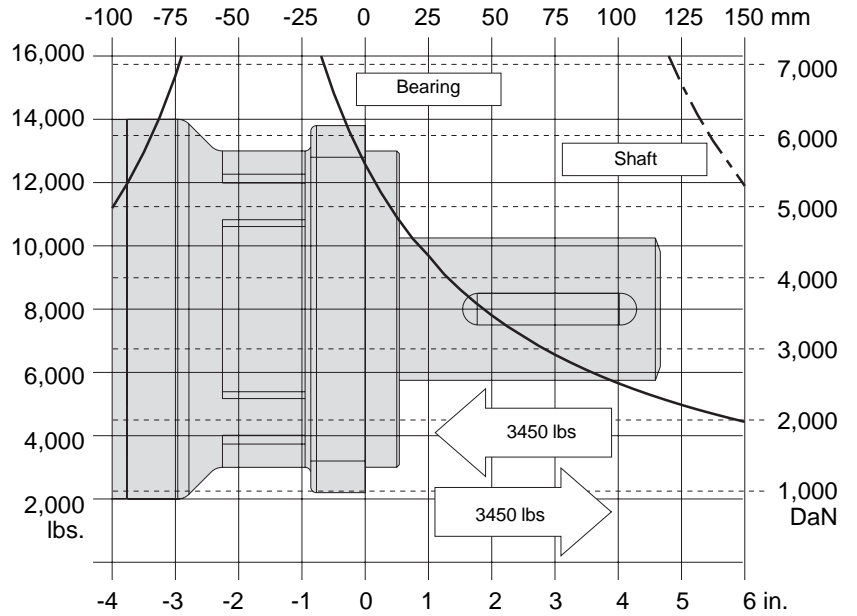
Note: Performance data is typical. Performance of production units varies slightly from one motor to another.

C8 4-Hole C Mount Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



LENGTH AND WEIGHT TABLES

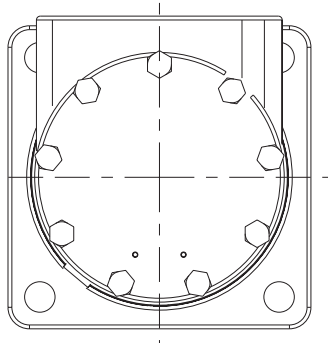
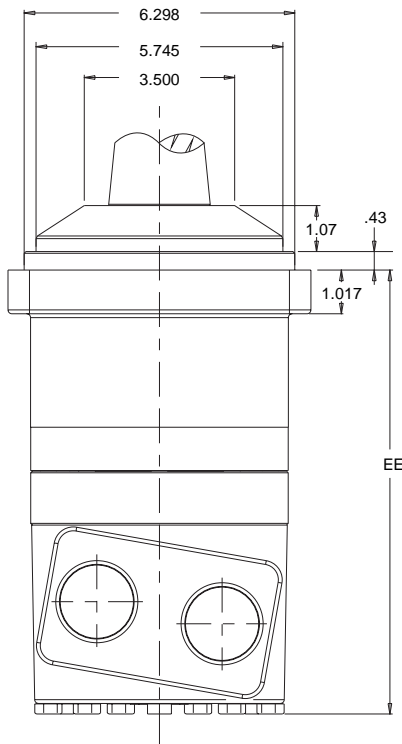
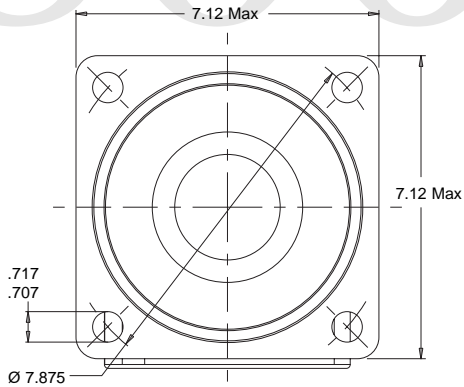
C Mount

Code	DD in	Weight lbs
260	10.03	70.5
300	10.16	71.4
375	10.41	73.1
450	10.71	75.1
525	10.95	76.8
625	11.29	78.9
735	11.66	81.4
910	12.26	85.4
1K0	12.67	88.0

D9 motor weights vary ± 5 lbs depending upon motor configuration.

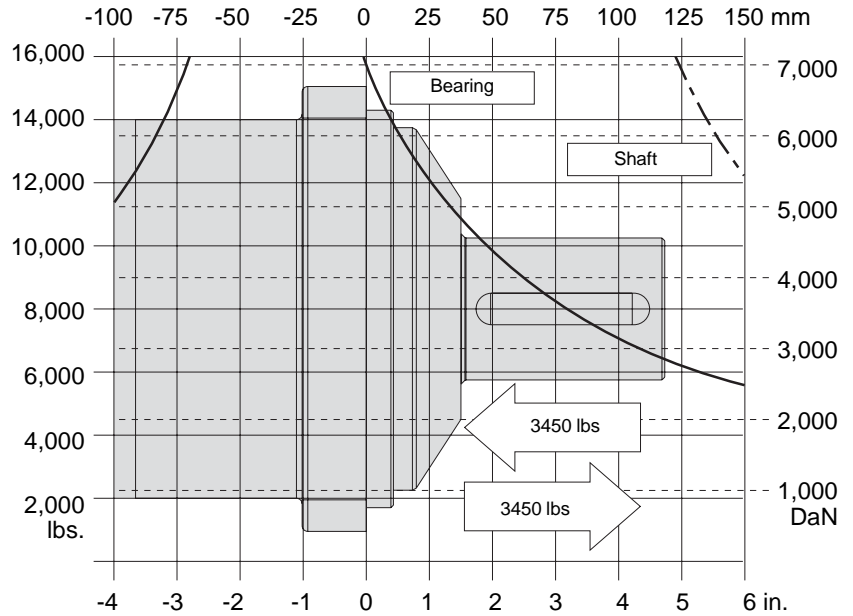
TECHNICAL

D8 4-Hole 160mm Pilot Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



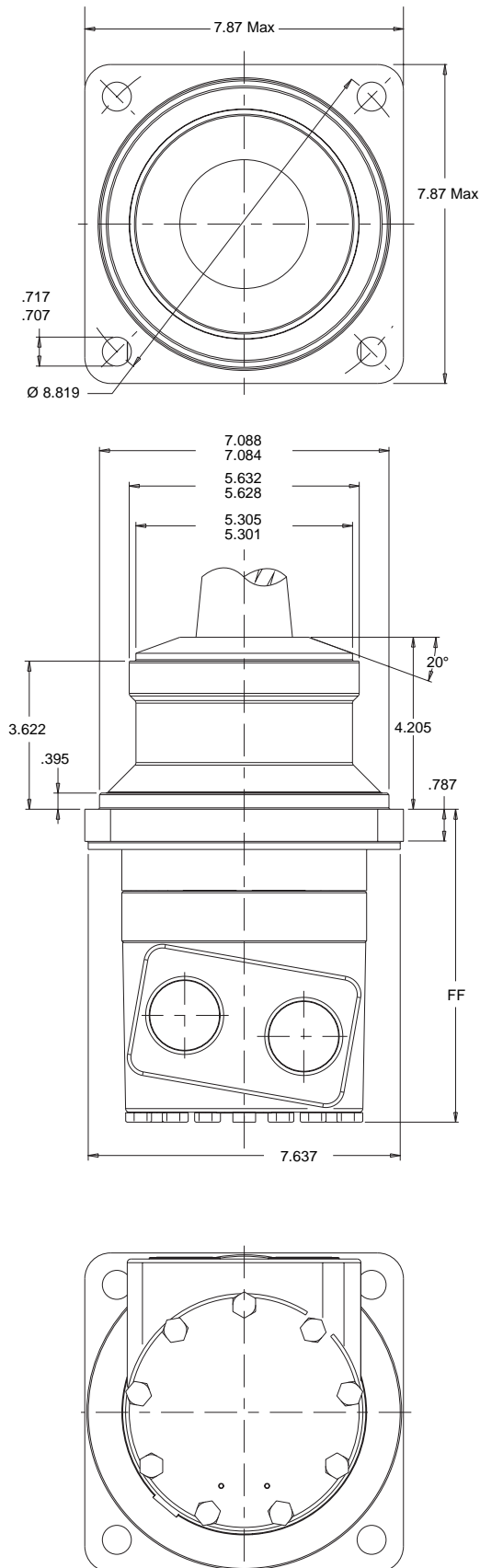
LENGTH AND WEIGHT TABLES

160mm Pilot

Code	EE in	Weight lbs
260	9.93	82.8
300	10.06	83.7
375	10.31	85.4
450	10.61	87.4
525	10.85	89.0
625	11.19	91.2
735	11.56	93.7
910	12.16	97.7
1K0	12.57	100.3

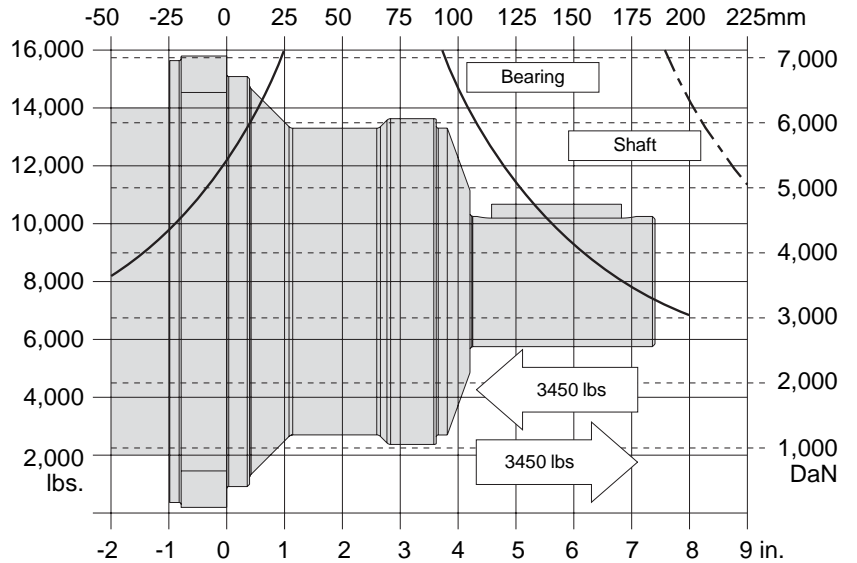
D9 motor weights vary ± 5 lbs depending upon motor configuration.

W8 4-Hole Wheel Mount Side Ports



ALLOWABLE BEARING AND SHAFT LOADS

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2000 hours at 100 RPM. Radial loads for speeds other than 100 RPM may be calculated using the multiplication factor table located on page 24.



LENGTH AND WEIGHT TABLES

Wheel Mount

Code	FF in	Weight lbs
260	7.26	83.0
300	7.39	83.9
375	7.64	85.5
450	7.94	87.5
525	8.18	89.1
625	8.51	91.4
735	8.89	93.9
910	9.49	97.8
1K0	9.89	100.5

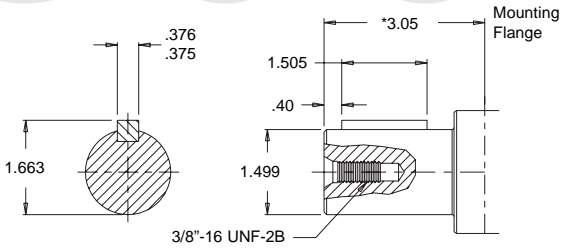
D9 motor weights vary ± 5 lbs depending upon motor configuration.

800

SHAFTS

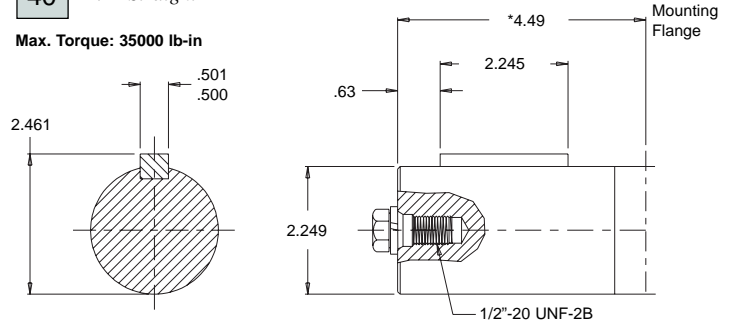
30 1 1/2" Straight

Max. Torque: 24000 lb-in



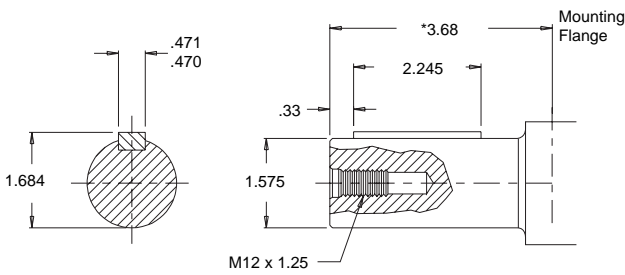
40 2 1/4" Straight

Max. Torque: 35000 lb-in



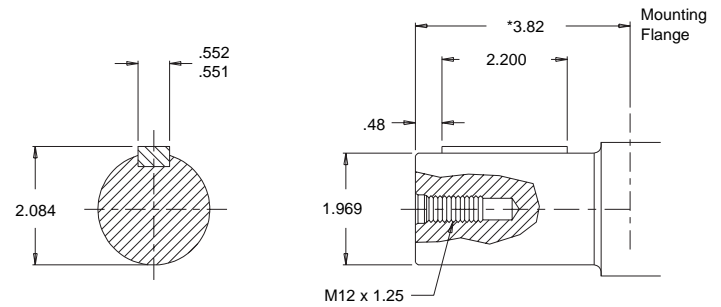
36 40mm Straight

Max. Torque: 35000 lb-in



41 50mm Straight

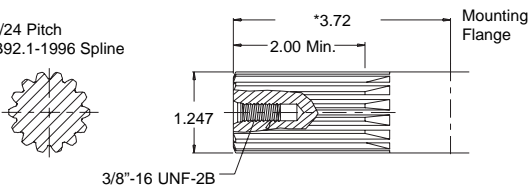
Max. Torque: 35000 lb-in



23 14 Tooth Spline

Max. Torque: 18400 lb-in

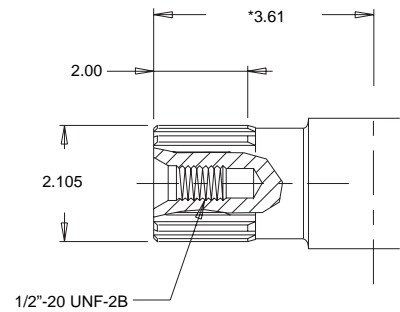
14 tooth 12/24 Pitch
Std. ANSI B92.1-1996 Spline



42 16 Tooth Spline

Max. Torque: 35000 lb-in

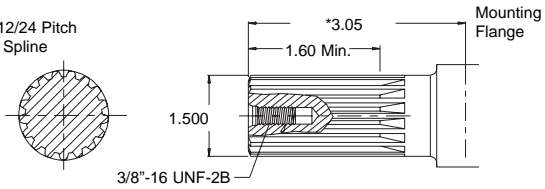
**16 tooth 8/16 Pitch
Std. ANSI B92.1-1996 Spline



33 17 Tooth Spline

Max. Torque: 19900 lb-in

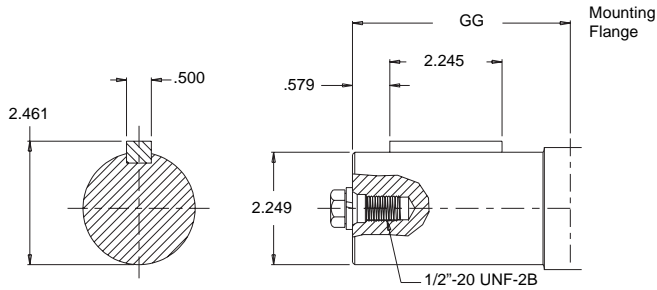
17 tooth 12/24 Pitch
SAE Std. Spline



*Shaft Lengths vary $\pm .030$ inches.
Shafts on this page are used with the C8 housing only.

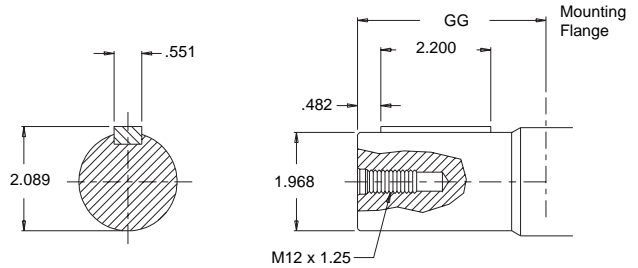
47 2 1/4" Straight Extended

Max. Torque: 35000 lb-in



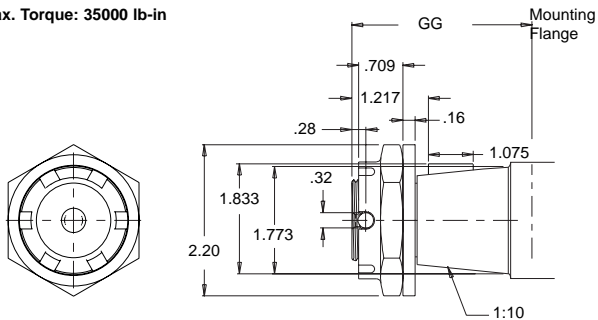
68 50mm Straight Extended

Max. Torque: 35000 lb-in



38 45mm Tapered

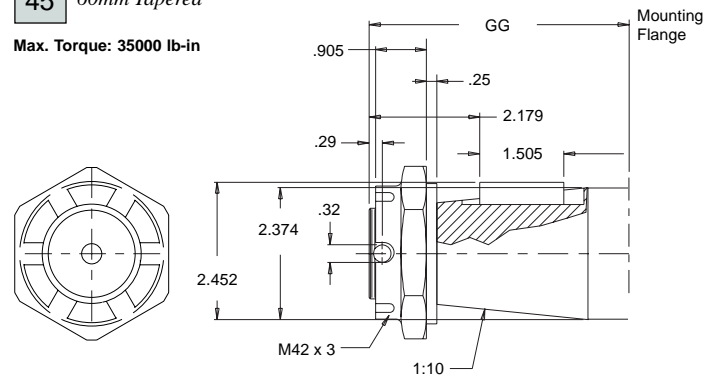
Max. Torque: 35000 lb-in



Note: A slotted nut is standard on this shaft.

45 60mm Tapered

Max. Torque: 35000 lb-in



Note: A slotted nut is standard on this shaft.

GG

Code	160mm Pilot (in)	Wheel Mount Flange (in)
38	4.78	7.45
45	5.67	8.34
47	4.73	7.40
68	4.73	7.40

Shaft Lengths vary $\pm .030$ inches.

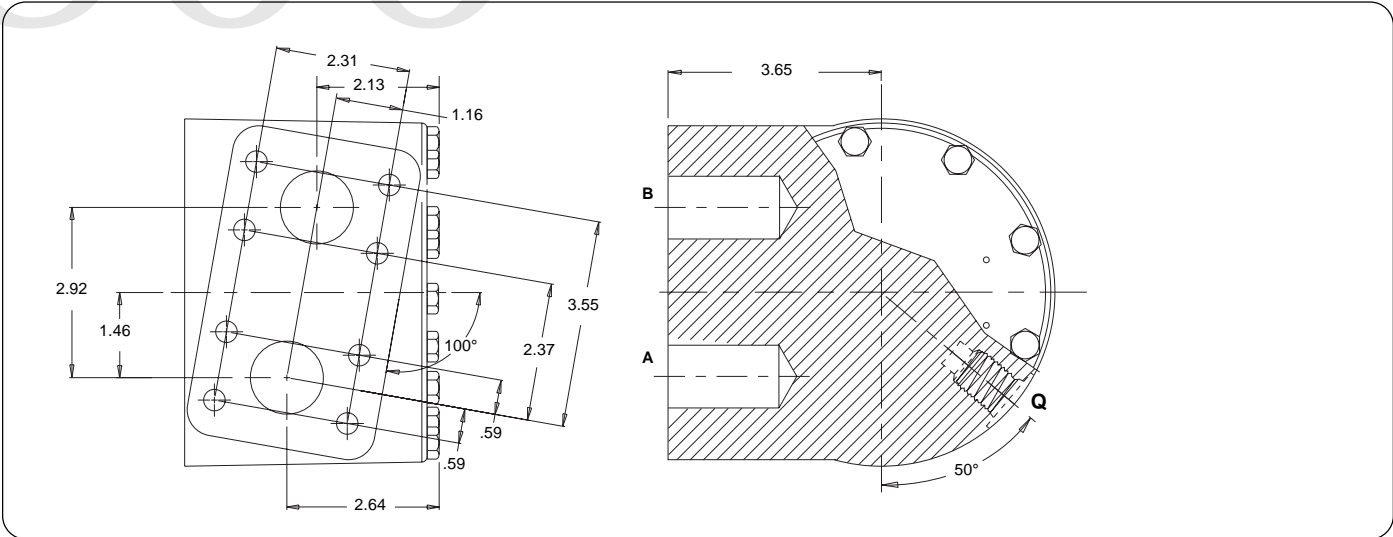
Shafts on this page are used with the D8 & W8 housings only.

8000

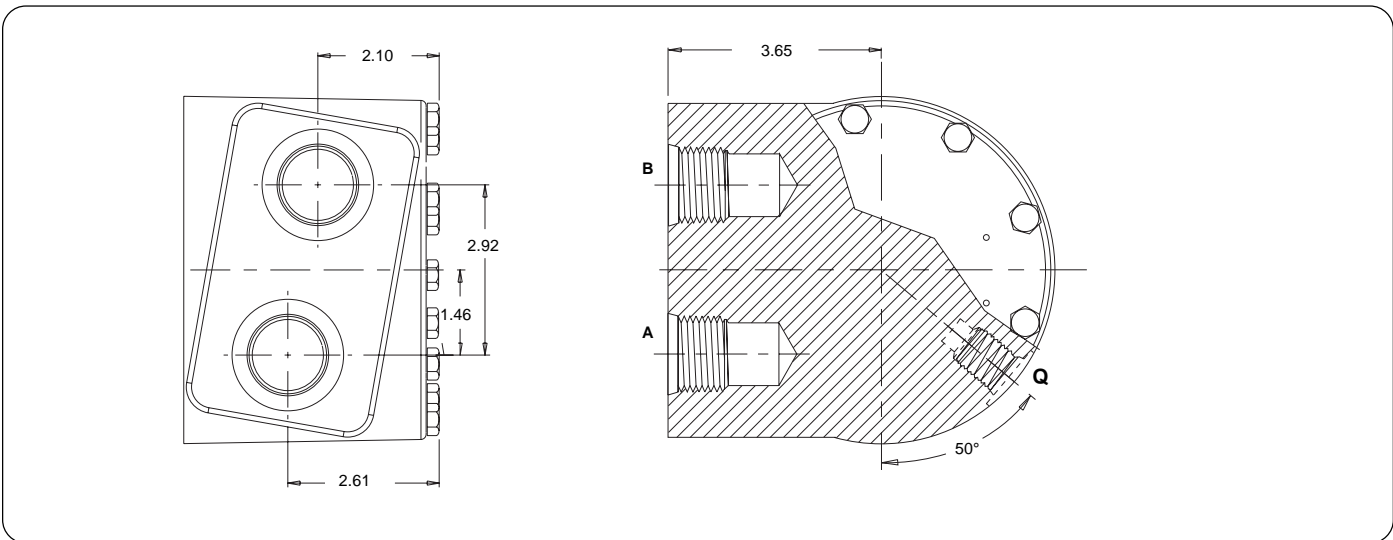
PORTING

SIDE PORTS

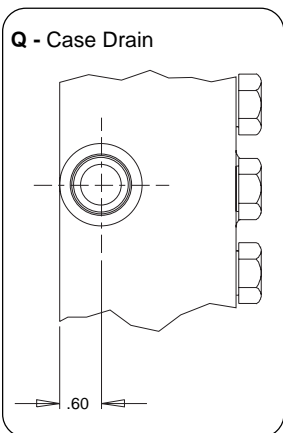
0 1-1/4" Split Flange with 3/4" O-Ring Drain



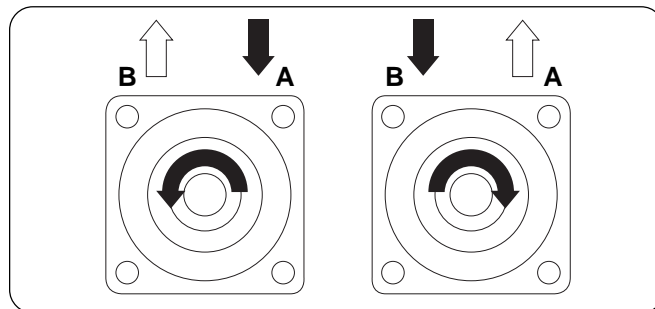
9 1-5/16" O-Ring with 3/4" O-Ring Drain



Q

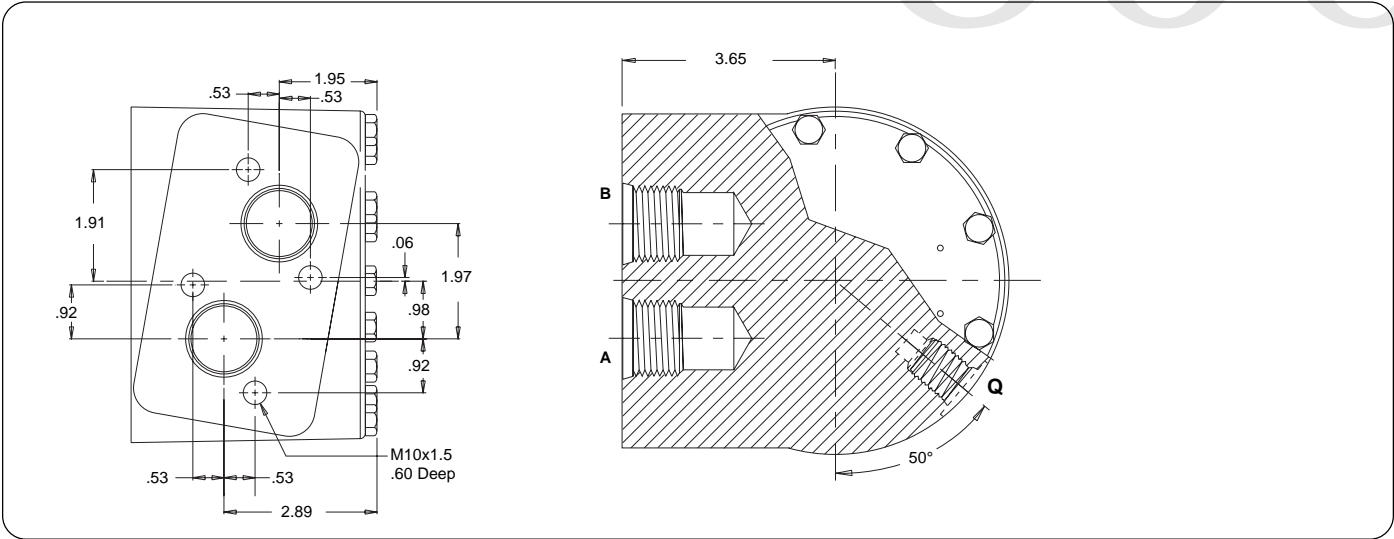


D9 ROTATION SELECTION

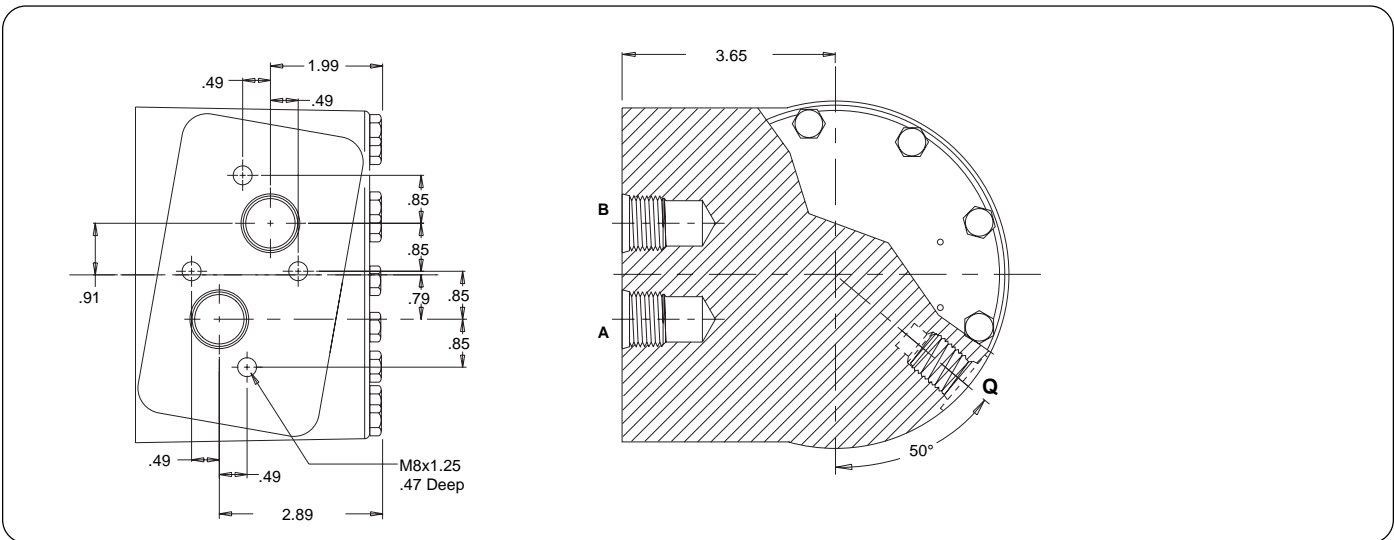


NOTE: The D9 is designed to run with a case drain. Sealing off the case drain can over-pressurize the shaft seal causing seal failure.

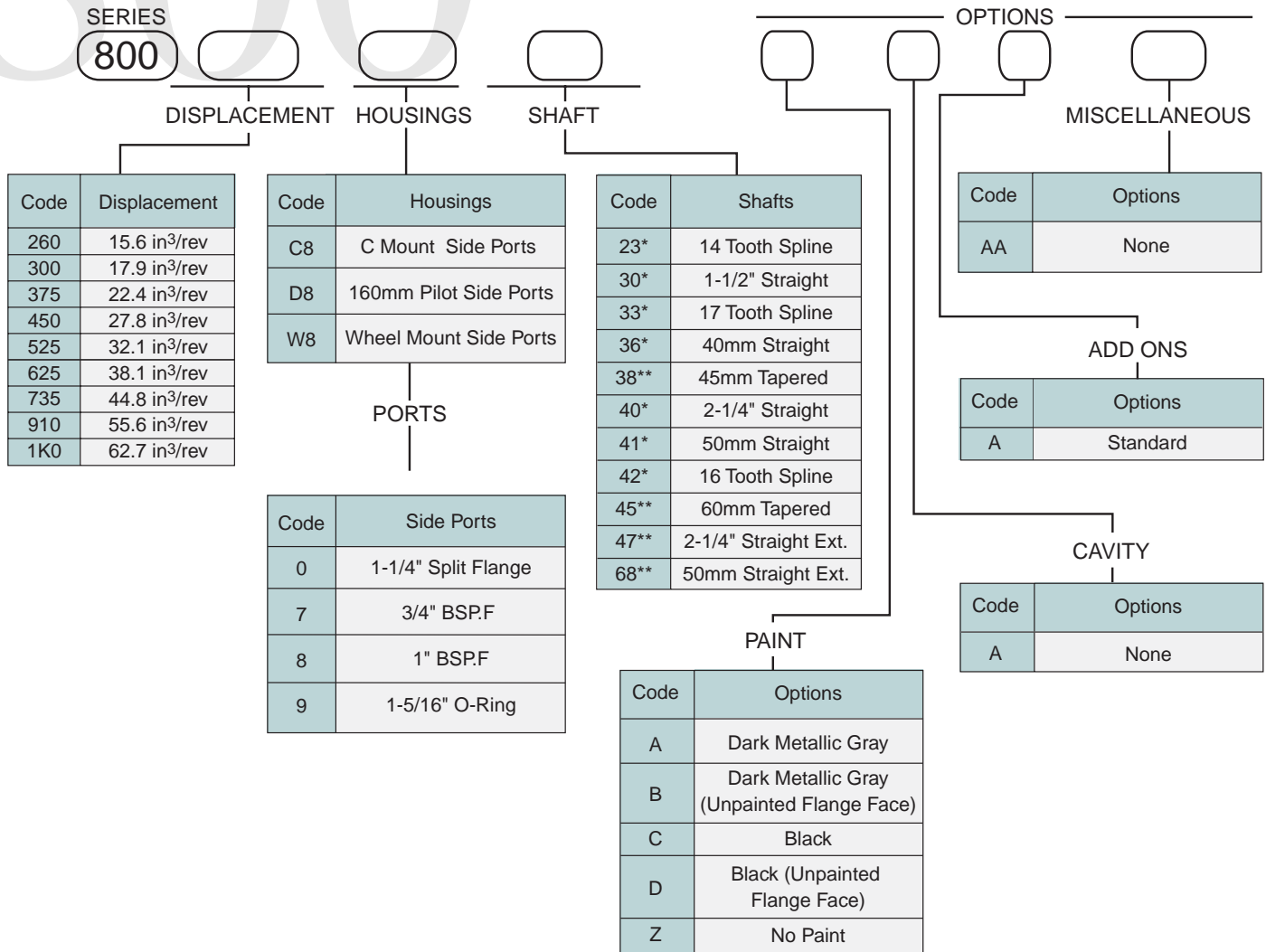
8 1" BSP.F with 1/4" BSP.F Drain



7 3/4" BSP.F with 3/8" BSP.F Drain



ORDERING INFORMATION



NOTE: To complete the 3 digit housing code, a housing and port option must be entered (housing followed by port).

*These shafts are for use on the C8 housing only. **These shafts are for use on the D8& W8 housings only.