

MJ SERIES

LOW SPEED HIGH TORQUE MOTORS



HIGH EFFICIENCY TORQUE MOTORS

The MJ Series Low Speed High Torque Motor is available in 10 displacement sizes. The MJ Series motor is constructed using heavy-duty roller bearings designed for extra side load capacity. A heavy-duty drive link provides greater resistance to pressure and torque spikes.



KEY FEATURES

- Shaft and Mounting options to match the most common SAE standards.**
- Three zone commutator valve for higher flows and higher pressure applications.
- Heavy-duty tapered roller bearings for extra side load capacity.
- Heavy-duty drive link with larger pitch diameter than competitors for greater resistance to pressure and torque spikes.
- Standard case drain with integral internal drain for extended shaft seal life.

MOTOR SPECIFICATIONS

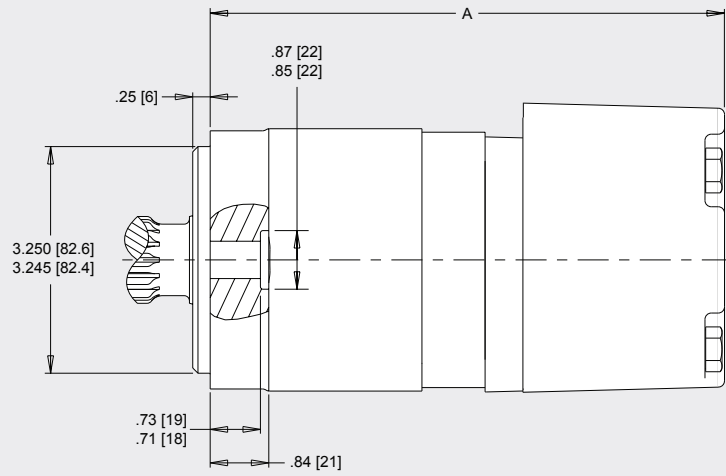
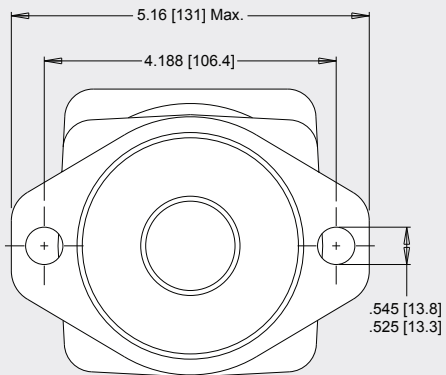
MODEL NUMBER	DISPLACEMENT IN ³ (CC)	MAX RPM* (CONTINUOUS)	MAX FLOW*		MAX TORQUE*		MAX PRESSURE*	
			GPM	LPM	LB.IN.	NM	PSI	BAR
MJ080	4.8 (79)	843	18	68	2,036	230	3,000	207
MJ100	6.1 (100)	756	20	76	2,390	270	3,000	207
MJ110	6.9 (112)	669	20	76	2,761	312	3,000	207
MJ130	7.9 (129)	588	20	76	3,328	370	3,000	207
MJ160	9.9 (162)	471	20	76	4,177	472	3,000	207
MJ200	12.3 (202)	377	20	76	5,124	579	3,000	207
MJ230	13.9 (228)	330	20	76	5,779	655	3,000	207
MJ320	19.8 (325)	235	20	76	7,620	861	2,750	190
MJ400	24.4 (399)	191	20	76	7,593	858	2,250	155
MJ500	30.3 (496)	153	20	76	7,531	851	1,750	121

* Reference only, see performance data

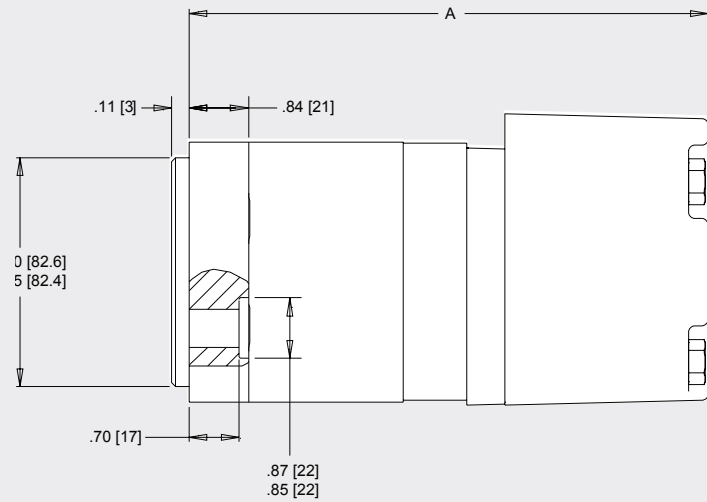
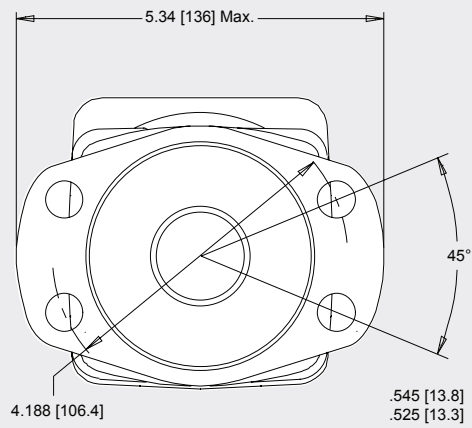
** Other options available, call for information and availability

DIMENSIONS

2-Bolt, SAE A Flange - Code: "A"



4 Hole Magneto Mount - Code: "Z"

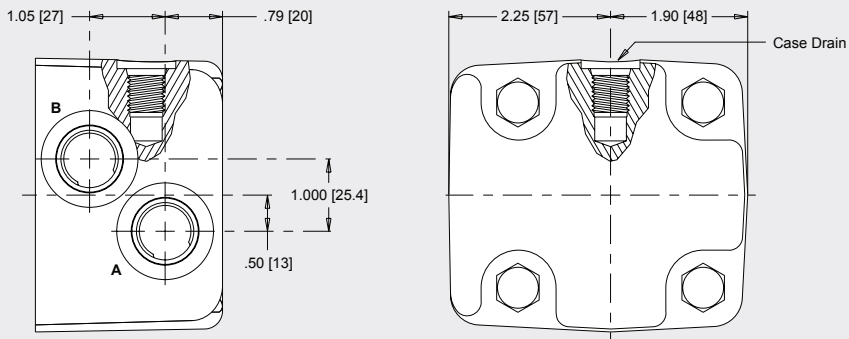


DIMENSION A

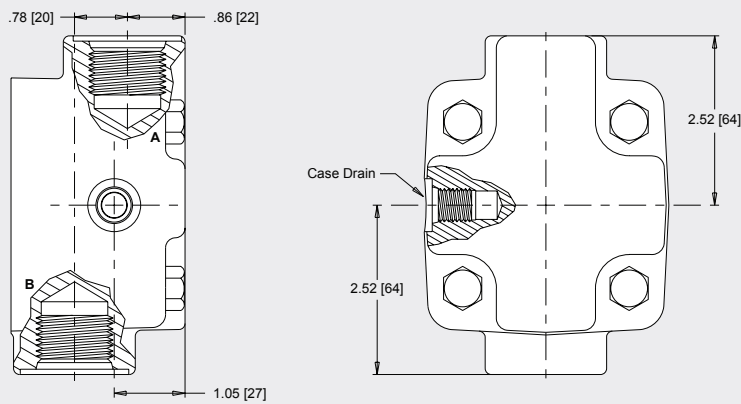
MODEL	IN	MM	MODEL	IN	MM
080	7.27	185	200	8.04	204
100	7.27	185	230	8.28	210
110	7.36	187	320	8.99	228
130	7.49	190	400	8.99	228
160	7.74	197	500	9.60	244

PORT OPTIONS

7/8" O-Ring Offset with 7/16" Drain Port
Code: "FM" - Dash Size: -10

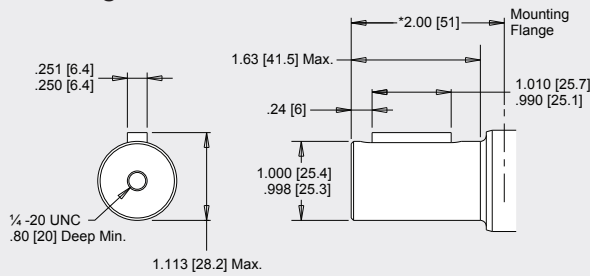


1 1/16" O-Ring 180 Opposed with 7/16" Drain Port
Code: "FX" - Dash Size: -12

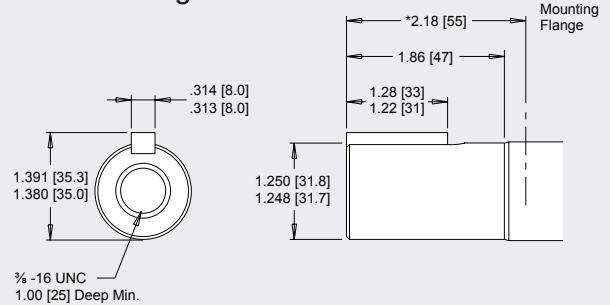


SHAFT OPTIONS

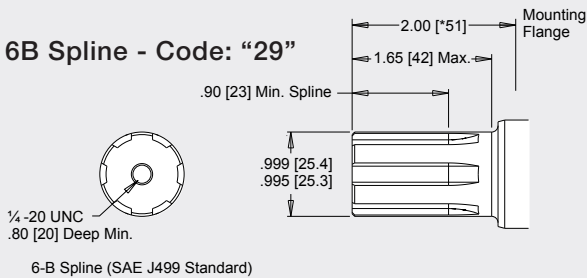
1" Straight - Code: "1"



1 1/4" Straight - Code: "07"



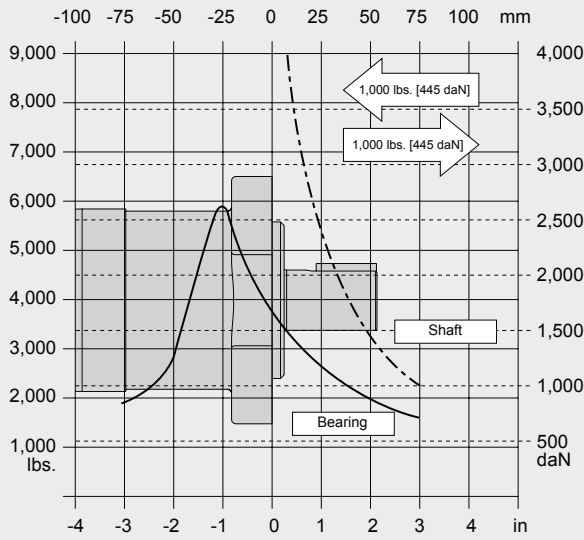
6B Spline - Code: "29"



6-B Spline (SAE J499 Standard)

TECHNICAL SPECIFICATIONS

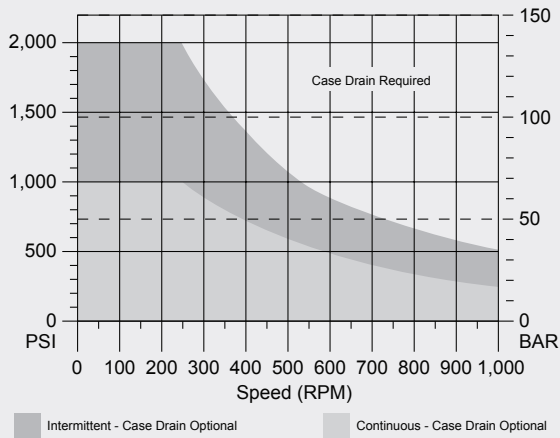
All Mount Types



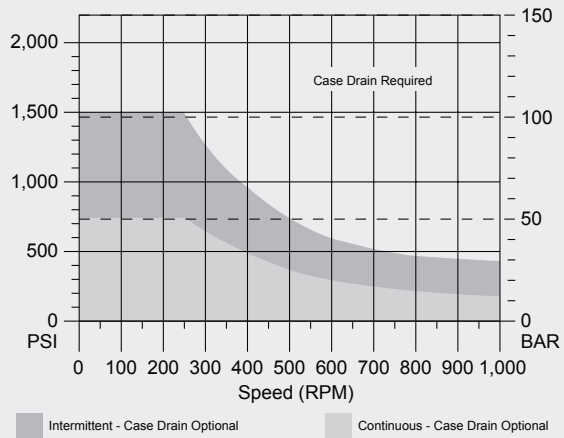
Bearing Curve: The bearing curve represents allowable bearing loads for a B10 life of 2,000 hours @ 100 RPM. The curve includes affects of 1,000 lbs. inward/outward net thrust.

*Case pressure will push outward on the shaft. If case drain line is not attached, case pressure will be nearly the same as motor return pressure. When case pressure is acting, the allowable axial load can be increased and the allowable outward axial load must be decreased at a rate of 130 lb./100 PSI [59kg/7BAR].

Permissible Shaft Seal Pressure



Note: Above chart represents shaft options that are less than 1.259 inches (32mm) in diameter.



Note: Above chart represents the 32mm shaft option.
*This shaft not stocked, must be special ordered.

MODEL NUMBER CONSTRUCTION

M-J-100-01-A-FX XXX-RR

Type:

M (Motor)

Series J

Special Features:

RR - Red Paint

Product Attributes:

XXX - None

Ports:

FM - 7/8"-14 O-Ring*

FX - 1 1/16"-12 O-Ring

Mounting Flange:

A - 2-Bolt, SAE A

Z - Magneto (Only available w/1"-6B Spline Shaft)

Shaft:

01 - 1" Straight (SAE B-B)

07 - 1 1/4" Straight (SAE C)

29 - 1" 6B Spline (Only available w/Magneto Flange)

Note: 1"-6B Spline/Magneto flange configuration only available in 160cc-500cc displacements

DISPLACEMENT			
MODEL CODE	IN ³ (CC)	MODEL CODE	IN ³ (CC)
080	4.8 (79)	200	12.3 (202)
100	6.1 (100)	230	13.9 (228)
110	6.9 (112)	320	19.8 (325)
130	7.9 (129)	400	24.4 (399)
160	9.9 (162)	500	30.3 (496)

PERFORMANCE DATA

Flow - GPM [LPM]	Pressure - PSI [BAR]									Max. Cont.	Max. Inter.	Theoretical RPM
	250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	3,000 [207]	3,500 [242]	4,000 [276]			
080 4.8 in. ³ /rev [79 cm ³]												
	Intermittent Ratings are below and to the right of the BOLD line.											
	Intermittent Ratings - 10% of Operation											
0.5 [2]	159 [18] 23	336 [38] 22	655 [74] 19									25
1 [4]	159 [18] 50	354 [40] 47	682 [77] 42	1,018 [115] 38	1,328 [150] 30	1,611 [182] 23						51
2 [8]	159 [18] 100	345 [39] 96	682 [77] 91	1,036 [117] 82	1,363 [154] 74	1,699 [192] 63	1,983 [224] 53					101
4 [15]	159 [18] 187	345 [39] 182	690 [78] 179	1,044 [118] 169	1,381 [156] 154	1,717 [194] 138	2,036 [230] 126	2,301 [260] 107				190
6 [23]	150 [17] 290	327 [37] 282	682 [77] 272	1,027 [116] 264	1,372 [155] 248	1,699 [192] 229	1,974 [223] 217	2,337 [264] 193	2,673 [302] 168			291
8 [30]	142 [16] 379	319 [36] 369	673 [76] 348	1,036 [117] 349	1,372 [155] 335	1,717 [194] 315	1,983 [224] 300	2,354 [266] 277	2,691 [304] 242			380
10 [38]	124 [14] 480	301 [34] 468	646 [73] 457	1,009 [114] 451	1,354 [153] 435	1,690 [191] 414	2,036 [230] 390	2,345 [265] 383	2,699 [305] 340			481
12 [45]	115 [13] 565	292 [33] 556	637 [72] 544	1,000 [113] 537	1,345 [152] 518	1,682 [190] 496	1,974 [223] 477	2,345 [265] 447	2,691 [304] 424			570
14 [53]		266 [30] 655	611 [69] 642	1,018 [115] 630	1,310 [148] 616	1,673 [189] 585	1,974 [223] 572	2,337 [264] 545	2,699 [305] 519			671
16 [61]		230 [26] 752	584 [66] 747	912 [103] 736	1,292 [146] 705	1,611 [182] 678	1,991 [225] 650	2,319 [262] 644	2,682 [303] 600			772
18 [68]		230 [26] 843	575 [65] 830	938 [106] 825	1,301 [147] 798	1,646 [186] 769	1,929 [218] 768	2,301 [260] 753	2,682 [303] 682			861
20 [76]			540 [61] 929	894 [101] 924	1,239 [140] 898	1,540 [174] 873	1,894 [214] 848	2,283 [258] 803	2,673 [302] 772			962
	Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>											
Max. Cont. Max. Inter.	192 [22]	394 [45]	778 [88]	1,172 [132]	1,556 [176]	1,939 [219]	2,334 [264]	2,728 [308]	3,111 [351]			
Rotor Width in. [mm]	Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]											

100	Pressure - PSI [BAR]						Max. Cont.		Max. Inter.	
	250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	3,000 [207]	3,500 [242]	4,000 [276]	

6.1 in.³/rev [100 cm³]

Intermittent Ratings are below and to the right of the BOLD line. Intermittent Ratings - 10% of Operation

Flow - GPM [LPM]	0.5 [2]	124 [14] 19	336 [38] 18	681 [77] 17						
	1 [4]	150 [17] 39	372 [42] 39	761 [86] 37	1,151 [130] 35	1,496 [169] 31	1,814 [205] 24			
	2 [8]	133 [15] 79	381 [43] 78	788 [89] 76	1,195 [135] 73	1,584 [179] 68	1,947 [220] 61	2,292 [259] 52	2,567 [290] 35	
	4 [15]	124 [14] 148	381 [43] 148	805 [91] 145	1,204 [136] 140	1,602 [181] 134	1,982 [224] 125	2,363 [267] 113	2,726 [308] 98	3,018 [341] 67
	6 [23]	124 [14] 228	381 [43] 228	797 [90] 224	1,212 [137] 218	1,611 [182] 209	2,000 [226] 197	2,390 [270] 185	2,779 [314] 164	3,133 [354] 135
	8 [30]	106 [12] 299	363 [41] 298	779 [88] 294	1,204 [136] 286	1,602 [181] 275	1,991 [225] 262	2,390 [270] 246	2,779 [314] 226	3,151 [356] 194
	10 [38]	89 [10] 372	336 [38] 372	752 [85] 369	1,168 [132] 365	1,575 [178] 351	1,974 [223] 337	2,381 [269] 319	2,788 [315] 296	3,186 [360] 263
	12 [45]		327 [37] 444	743 [84] 435	1,168 [132] 434	1,575 [178] 419	1,974 [223] 403	2,390 [270] 384	2,805 [317] 361	3,204 [362] 325
	14 [53]		310 [35] 525	726 [82] 520	1,142 [129] 514	1,558 [176] 498	1,956 [221] 481	2,381 [269] 457	2,805 [317] 432	3,213 [363] 397
	16 [61]		292 [33] 604	699 [79] 600	1,115 [126] 592	1,522 [172] 576	1,929 [218] 558	2,354 [266] 533	2,779 [314] 503	3,195 [361] 474
	18 [68]		274 [31] 675	664 [75] 662	1,089 [123] 662	1,496 [169] 643	1,912 [216] 622	2,328 [263] 597	2,770 [313] 566	3,186 [360] 532
	20 [76]		257 [29] 756	628 [71] 754	1,062 [120] 742	1,478 [167] 723	1,894 [214] 700	2,319 [262] 673	2,744 [310] 640	3,177 [359] 600
	22 [83]			611 [69] 825	1,035 [117] 813	1,451 [164] 794	1,967 [211] 769	2,292 [259] 743	2,726 [308] 708	3,151 [356] 669
	24 [91]			575 [65] 905	1,009 [114] 893	1,425 [161] 875	1,841 [208] 853	2,266 [256] 823	2,699 [305] 781	3,115 [352] 749
	25 [95]			549 [62] 945	982 [111] 931	1,407 [159] 908	1,823 [206] 882	2,248 [254] 854	2,690 [304] 805	3,106 [351] 750

Max. Cont.	Max. Inter.	Rotor Width		Torque lb.in. [Nm]		Speed RPM		Overall Efficiency -		70-100%	40-69%	0-39%
		.776 [19.7]		239 [27]	493 [56]	927 [110]	1,465 [166]	1,944 [220]	2,423 [274]	2,916 [329]	3,409 [385]	3,888 [439]

Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]

20
40
80
150
230
300
380
450
530
610
680
760
830
910
950

110	Pressure - PSI [BAR]						Max. Cont.		Max. Inter.	
	250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	3,000 [207]	3,500 [242]	4,000 [276]	

6.8 in.³/rev [112 cm³]

Intermittent Ratings are below and to the right of the BOLD line. Intermittent Ratings - 10% of Operation

Flow - GPM [LPM]	0.5 [2]	195 [22] 17	434 [49] 17	867 [98] 15						
	1 [4]	204 [23] 35	451 [51] 35	903 [102] 34	1,319 [149] 32	1,743 [197] 29				
	2 [8]	204 [23] 70	451 [51] 70	929 [105] 68	1,381 [156] 66	1,805 [204] 63	2,142 [242] 56	2,487 [281] 40	2,673 [302] 24	
	4 [15]	195 [22] 133	443 [50] 131	912 [103] 128	1,381 [156] 123	1,832 [207] 117	2,266 [256] 107	2,690 [304] 92	3,053 [345] 73	3,283 [371] 41
	6 [23]	195 [22] 203	425 [48] 202	894 [101] 198	1,381 [156] 192	1,850 [209] 184	2,310 [261] 173	2,761 [312] 159	3,195 [361] 136	3,584 [405] 106
	8 [30]	177 [20] 267	398 [45] 265	885 [100] 260	1,372 [155] 252	1,841 [208] 242	2,301 [260] 231	2,761 [312] 215	3,213 [363] 192	3,646 [412] 159
	10 [38]	168 [19] 337	372 [42] 336	841 [95] 330	1,354 [153] 320	1,814 [205] 308	2,283 [258] 292	2,761 [312] 278	3,213 [363] 254	3,673 [415] 224
	12 [45]	150 [17] 400	372 [42] 399	832 [94] 392	1,336 [151] 383	1,805 [204] 370	2,274 [257] 355	2,761 [312] 336	3,239 [366] 313	3,699 [418] 227
	14 [53]		336 [38] 470	823 [93] 463	1,310 [148] 452	1,779 [201] 437	2,248 [254] 418	2,735 [309] 399	3,221 [364] 372	3,699 [418] 338
	16 [61]		319 [36] 542	797 [90] 534	1,257 [142] 524	1,752 [198] 509	2,230 [252] 489	2,726 [308] 465	3,204 [362] 438	3,690 [417] 407
	18 [68]		283 [32] 606	770 [87] 596	1,266 [143] 586	1,726 [195] 571	2,204 [249] 549	2,699 [305] 525	3,186 [360] 497	3,673 [415] 461
	20 [76]		248 [28] 669	726 [82] 668	1,221 [138] 656	1,690 [191] 641	2,168 [245] 618	2,655 [300] 593	3,159 [357] 560	3,646 [412] 521
	22 [83]			690 [78] 731	1,186 [134] 719	1,637 [185] 702	2,115 [239] 679	2,620 [296] 652	3,115 [352] 621	3,611 [408] 576
	24 [91]			637 [72] 803	1,124 [127] 790	1,602 [181] 771	2,080 [235] 747	2,575 [291] 721	3,089 [349] 683	3,593 [406] 635
	25 [95]			620 [70] 837	1,106 [125] 821	1,584 [179] 801	2,062 [233] 780	2,558 [289] 751	3,062 [346] 714	3,567 [403] 668

Max. Cont.	Max. Inter.	Rotor Width		Torque lb.in. [Nm]		Speed RPM		Overall Efficiency -		70-100%	40-69%	0-39%
		.871 [22.1]		268 [30]	552 [62]	1,089 [123]	1,641 [185]	2,177 [246]	2,713 [307]	3,266 [369]	3,181 [431]	4,354 [492]

Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]

18
36
71
134
205
268
339
402
473
545
607
679
741
813
848

		Pressure - PSI [BAR]					Max. Cont.		Max. Inter.	
130		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	3,000 [207]	3,500 [242]	4,000 [276]
7.9 in. ³ /rev [129 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.					Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	0.5 [2]	204 [23] 15	469 [53] 15							
	1 [4]	212 [24] 30	487 [55] 30	1,000 [113] 30	1,478 [167] 29	1,991 [225] 27				
	2 [8]	221 [25] 61	504 [57] 61	1,053 [119] 60	1,584 [179] 58	2,071 [234] 54	2,567 [290] 46	2,929 [331] 29		
	4 [15]	230 [26] 115	513 [58] 115	1,080 [122] 113	1,646 [186] 109	2,186 [247] 103	2,708 [306] 93	3,212 [363] 77	3,682 [416] 55	
	6 [23]	221 [25] 177	504 [57] 177	1,080 [122] 174	1,655 [187] 169	2,213 [250] 161	2,761 [312] 147	3,301 [373] 130	3,814 [431] 105	4,275 [483] 70
	8 [30]	204 [23] 232	504 [57] 232	1,062 [120] 228	1,646 [186] 222	2,213 [250] 212	2,770 [313] 197	3,328 [376] 179	3,867 [437] 156	4,372 [494] 125
	10 [38]	195 [22] 294	478 [54] 294	1,044 [118] 290	1,628 [184] 283	2,195 [248] 273	2,761 [312] 257	3,328 [376] 237	3,885 [439] 212	4,416 [499] 182
	12 [45]	177 [20] 348	469 [53] 348	1,027 [116] 343	1,620 [183] 334	2,177 [246] 321	2,744 [310] 304	3,319 [375] 282	3,885 [439] 255	4,416 [499] 221
	14 [53]		434 [49] 410	1,000 [113] 405	1,584 [179] 395	2,151 [243] 380	2,717 [307] 361	3,301 [373] 336	3,867 [437] 311	4,416 [499] 275
	16 [61]		407 [46] 472	974 [110] 467	1,558 [176] 456	2,124 [240] 439	2,690 [304] 417	3,275 [370] 392	3,850 [435] 364	4,398 [497] 328
	18 [68]		372 [42] 526	938 [106] 521	1,522 [172] 510	2,089 [236] 493	2,655 [300] 470	3,239 [366] 442	3,823 [432] 411	4,381 [495] 376
	20 [76]		336 [38] 588	903 [102] 583	1,478 [167] 572	2,053 [232] 553	2,628 [297] 527	3,213 [363] 499	3,788 [428] 467	4,345 [491] 423
	22 [83]		292 [33] 642	867 [98] 638	1,451 [164] 627	2,018 [228] 607	2,593 [293] 581	3,177 [359] 549	3,744 [423] 517	4,292 [485] 473
	24 [91]		266 [30] 704	823 [93] 702	1,398 [158] 692	1,965 [222] 677	2,549 [288] 648	3,133 [354] 625	3,726 [421] 576	4,275 [483] 531
	25 [95]		239 [27] 734	805 [91] 733	1,398 [158] 720	1,947 [220] 703	2,531 [286] 672	3,106 [351] 639	3,708 [419] 602	4,275 [483] 559
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>								
1.000 [25.4] in. [mm]		309 [35]	636 [72]	1,254 [142]	1,890 [214]	2,508 [283]	3,125 [353]	3,761 [425]	4,397 [497]	5,015 [567]
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]								

16
31
62
116
178
233
295
349
411
473
527
589
643
705
736

		Pressure - PSI [BAR]					Max. Cont.		Max. Inter.	
160		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	3,000 [207]	3,500 [242]	4,000 [276]
9.8 in. ³ /rev [161 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.					Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	0.5 [2]	186 [21] 11	575 [65] 10							
	1 [4]	257 [29] 24	593 [67] 24	1,239 [140] 23	1,850 [209] 21					
	2 [8]	274 [31] 49	628 [71] 48	1,266 [143] 47	1,894 [214] 46	2,522 [285] 43	3,115 [352] 36			
	4 [15]	301 [34] 92	664 [75] 92	1,363 [154] 91	2,044 [231] 88	2,708 [306] 84	3,363 [380] 77	4,018 [454] 64	4,593 [519] 43	
	6 [23]	283 [32] 142	664 [75] 141	1,372 [155] 140	2,080 [235] 139	2,779 [314] 133	3,452 [390] 123	4,124 [466] 108	4,752 [537] 85	5,345 [604] 52
	8 [30]	274 [31] 185	646 [73] 185	1,363 [154] 184	2,071 [234] 183	2,788 [315] 178	3,487 [394] 166	4,177 [472] 151	4,841 [547] 130	5,443 [615] 99
	10 [38]	248 [28] 233	637 [72] 231	1,354 [153] 229	2,044 [231] 229	2,752 [311] 223	3,460 [391] 210	4,168 [471] 194	4,850 [548] 175	5,487 [620] 144
	12 [45]	221 [25] 280	593 [67] 280	1,336 [151] 272	2,027 [229] 269	2,744 [310] 260	3,460 [391] 243	4,124 [466] 227	4,814 [544] 202	5,522 [624] 159
	14 [53]	204 [23] 328	558 [63] 327	1,283 [145] 320	2,009 [227] 312	2,717 [307] 303	3,434 [388] 288	4,133 [467] 271	4,850 [548] 247	5,505 [622] 216
	16 [61]		513 [58] 378	1,230 [139] 372	1,956 [221] 366	2,673 [302] 361	3,416 [386] 350	4,142 [468] 328	4,859 [549] 305	5,540 [626] 273
	18 [68]		469 [53] 418	1,195 [135] 412	1,920 [217] 410	2,637 [298] 406	3,363 [380] 389	4,142 [468] 370	4,859 [549] 348	5,549 [627] 312
	20 [76]		469 [53] 471	1,177 [133] 467	1,912 [216] 455	2,620 [296] 440	3,336 [377] 423	4,080 [461] 397	4,814 [544] 368	5,390 [609] 348
	22 [83]		389 [44] 515	1,115 [126] 514	1,814 [205] 513	2,496 [282] 504	3,177 [359] 491	3,894 [440] 467	4,629 [523] 434	5,328 [602] 384
	24 [91]		336 [38] 560	1,053 [119] 556	1,832 [207] 547	2,513 [284] 546	3,257 [368] 532	3,894 [440] 515	4,611 [521] 493	5,363 [606] 461
	25 [95]		301 [34] 585	991 [112] 580	1,717 [194] 579	2,443 [276] 574	3,230 [365] 555	3,938 [445] 540		
30 [114]			832 [94] 707	1,566 [177] 706	2,381 [269] 687	3,018 [341] 676	3,699 [418] 654			
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>								
1.251 [31.8] in. [mm]		386 [44]	794 [90]	1,565 [177]	2,358 [266]	3,130 [354]	3,901 [441]	4,694 [530]	5,488 [620]	6,259 [707]
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]								

12
25
50
93
143
186
236
280
329
379
422
472
516
565
590
708

		Pressure - PSI [BAR]						Max. Cont.	Max. Inter.		
200		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	2,750 [190]	3,000 [207]	3,500 [242]	4,000 [276]
12.3 in. ³ /rev [201 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	1 [4]	354 [40] 19	770 [87] 18	1,673 [189] 17	2,496 [282] 15						
	2 [8]	389 [44] 39	858 [97] 39	1,699 [192] 38	2,531 [286] 37	3,275 [370] 36	4,063 [456] 33				
	4 [15]	398 [45] 74	876 [99] 74	1,752 [198] 73	2,637 [298] 71	3,460 [391] 67	4,257 [481] 63	4,655 [526] 60	5,009 [566] 57	5,708 [645] 50	
	6 [23]	372 [42] 113	858 [97] 113	1,735 [196] 112	2,620 [296] 108	3,443 [389] 104	4,230 [478] 98	4,629 [523] 93	5,027 [568] 93	5,779 [653] 80	6,407 [724] 66
	8 [30]	354 [40] 148	832 [94] 147	1,717 [194] 146	2,593 [293] 142	3,434 [388] 136	4,230 [478] 129	4,646 [525] 125	5,027 [568] 121	5,823 [658] 109	6,407 [724] 96
	10 [38]	319 [36] 188	805 [91] 187	1,690 [191] 186	2,584 [292] 181	3,434 [388] 175	4,275 [483] 167	4,717 [533] 162	5,124 [579] 158	5,947 [672] 146	6,717 [759] 126
	12 [45]	283 [32] 223	770 [87] 222	1,646 [186] 221	2,549 [288] 217	3,416 [386] 208	4,266 [482] 198	4,708 [532] 194	5,124 [579] 188	5,974 [675] 175	6,770 [765] 162
	14 [53]	266 [30] 263	717 [81] 262	1,602 [181] 261	2,505 [283] 257	3,381 [382] 248	4,239 [479] 236	4,673 [528] 235	5,098 [576] 224	5,956 [673] 212	6,770 [765] 194
	16 [61]	239 [27] 302	637 [72] 301	1,522 [172] 299	2,443 [276] 297	3,319 [378] 288	4,186 [473] 276	4,637 [524] 269	5,053 [571] 263	5,903 [667] 248	6,735 [761] 231
	18 [68]		584 [66] 337	1,478 [167] 336	2,381 [269] 332	3,257 [368] 324	4,124 [466] 312	4,584 [518] 303	5,009 [566] 297	5,876 [664] 279	6,699 [757] 262
	20 [76]		513 [58] 377	1,389 [157] 375	2,301 [260] 372	3,177 [359] 364	4,044 [457] 353	4,514 [510] 343	4,947 [559] 336	5,806 [656] 320	6,646 [751] 302
	22 [83]		443 [50] 412	1,354 [153] 410	2,221 [251] 408	3,115 [352] 398	3,974 [449] 387	4,452 [503] 377	4,868 [550] 372		
24 [91]		363 [41] 452	1,283 [145] 450	2,159 [244] 448	3,062 [346] 436	3,938 [445] 421	4,390 [496] 415	4,761 [538] 410			
25 [95]			1,230 [139] 472	2,115 [239] 466	3,000 [339] 456	3,876 [438] 441	4,345 [491] 430	4,770 [539] 423			
30 [114]			1,027 [116] 566	1,885 [213] 561	2,770 [313] 549	3,682 [416] 531	4,142 [468] 521	4,531 [512] 519			
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>									
1.552 [39.4] in. [mm]		481 [54]	991 [112]	1,954 [221]	2,944 [333]	3,907 [441]	4,870 [550]	5,379 [608]	5,861 [662]	6,852 [774]	7,814 [883]
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]									

20	Theoretical RPM
40	
75	
114	
149	
189	
224	
264	
303	
338	
378	
413	
453	
473	
567	

		Pressure - PSI [BAR]						Max. Cont.	Max. Inter.		
230		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,500 [172]	2,750 [190]	3,000 [207]	3,500 [242]	4,000 [276]
14.0 in. ³ /rev [229 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	1 [4]	443 [50] 16	867 [98] 15	1,752 [198] 14	2,744 [310] 13						
	2 [8]	372 [42] 34	876 [99] 34	1,805 [204] 33	2,797 [316] 33	3,682 [416] 32	4,514 [510] 28	4,885 [552] 25	5,257 [594] 22		
	4 [15]	416 [47] 65	920 [104] 64	1,894 [214] 63	2,876 [325] 62	3,770 [426] 62	4,655 [526] 55	5,133 [580] 51	5,540 [626] 47	6,381 [721] 37	
	6 [23]	398 [45] 99	929 [105] 98	1,929 [218] 98	2,929 [331] 96	3,876 [438] 93	4,814 [544] 87	5,292 [598] 83	5,744 [649] 79	6,655 [752] 67	7,461 [843] 50
	8 [30]	381 [43] 130	912 [103] 129	1,920 [217] 127	2,938 [332] 125	3,903 [441] 121	4,859 [549] 116	5,328 [602] 111	5,788 [654] 106	6,708 [758] 93	7,602 [859] 76
	10 [38]	354 [40] 165	885 [100] 164	1,894 [214] 162	2,921 [330] 159	3,894 [440] 154	4,850 [548] 148	5,345 [604] 144	5,797 [655] 138	6,735 [761] 123	7,664 [866] 105
	12 [45]	310 [35] 196	841 [95] 194	1,867 [211] 192	2,903 [328] 189	3,876 [438] 184	4,832 [546] 177	5,345 [604] 172	5,806 [656] 167	6,761 [764] 152	7,691 [869] 130
	14 [53]	266 [30] 230	797 [90] 230	1,823 [206] 227	2,859 [323] 223	3,850 [435] 217	4,814 [544] 210	5,319 [601] 204	5,788 [654] 197	6,753 [763] 183	7,708 [871] 113
	16 [61]	248 [28] 265	743 [84] 265	1,770 [200] 262	2,805 [317] 257	3,806 [430] 251	4,779 [540] 243	5,292 [598] 237	5,770 [652] 231	6,753 [763] 216	7,717 [872] 192
	18 [68]		681 [77] 295	1,690 [191] 292	2,752 [311] 288	3,761 [425] 281	4,744 [536] 272	5,248 [593] 266	5,735 [648] 260	6,717 [759] 244	7,691 [869] 222
	20 [76]		602 [68] 330	1,628 [184] 327	2,673 [302] 323	3,682 [416] 316	4,682 [529] 306	5,186 [586] 300	5,682 [642] 294		
	22 [83]		513 [58] 361	1,558 [176] 358	2,611 [295] 353	3,629 [410] 346	4,629 [523] 336	5,133 [580] 329	5,629 [636] 323		
24 [91]		451 [51] 396	1,478 [167] 393	2,522 [285] 388	3,540 [400] 380	4,531 [513] 370	5,053 [571] 363	5,549 [627] 357			
25 [95]			1,451 [164] 411	2,478 [250] 406	3,496 [395] 399	4,487 [507] 389	4,991 [564] 382	5,505 [622] 375			
30 [114]			1,151 [130] 495	2,239 [253] 489	3,257 [368] 480	4,275 [483] 467	4,788 [541] 460	5,257 [594] 452			
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>									
1.791 [45.5] in. [mm]		548 [62]	1,129 [128]	2,226 [251]	3,355 [379]	4,451 [503]	5,548 [627]	6,129 [693]	6,677 [754]	7,806 [882]	8,903 [1006]
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]									

17	Theoretical RPM
35	
66	
100	
131	
166	
197	
231	
266	
297	
332	
362	
397	
415	
498	

		Pressure - PSI [BAR]						Max. Cont.			Max. Inter.		
250		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,250 [155]	2,500 [172]	2,750 [190]	3,000 [207]	2,350 [224]		
15.1 in. ³ /rev [248 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation					
Flow - GPM [LPM]	1 [4]	481 [51]	991 [112]	2,036 [230]									16
	2 [8]	469 [53]	1,044 [118]	2,089 [236]	3,142 [355]	4,106 [464]	4,620 [522]	5,089 [575]					32
	4 [15]	443 [50]	1,053 [119]	2,115 [239]	3,195 [361]	4,213 [476]	4,699 [531]	5,186 [586]	5,699 [644]	6,160 [696]	6,549 [740]		60
	6 [23]	443 [50]	1,018 [115]	2,097 [237]	3,186 [360]	4,213 [476]	4,646 [525]	5,177 [585]	5,664 [640]	6,168 [697]	6,646 [751]		93
	8 [30]	416 [47]	982 [111]	2,071 [234]	3,159 [357]	4,204 [475]	4,699 [531]	5,292 [598]	5,814 [657]	6,301 [712]	6,717 [759]		121
	10 [38]	372 [42]	956 [108]	2,044 [231]	3,142 [355]	4,204 [475]	4,717 [533]	5,230 [591]	5,788 [654]	6,257 [707]	6,806 [769]		153
	12 [45]	310 [35]	903 [102]	1,991 [225]	3,106 [351]	4,151 [469]	4,673 [528]	5,177 [585]	5,726 [647]	6,230 [704]	6,682 [755]		181
	14 [53]	283 [32]	814 [92]	1,912 [216]	3,027 [342]	4,089 [462]	4,611 [521]	5,133 [580]	5,673 [641]	6,177 [698]	6,673 [754]		214
	16 [61]	257 [29]	735 [83]	1,859 [210]	2,947 [333]	4,018 [454]	4,531 [512]	5,053 [571]	5,602 [633]	6,115 [691]	6,602 [746]		246
	18 [68]	239 [27]	646 [73]	1,770 [200]	2,859 [323]	3,938 [445]	4,460 [504]	4,983 [563]	5,514 [623]				274
Max. Cont.	20 [76]		558 [63]	1,664 [188]	2,744 [310]	3,832 [433]	4,372 [494]	4,885 [552]	5,425 [613]				306
	22 [83]		504 [57]	1,584 [179]	2,673 [302]	3,761 [425]	4,283 [484]	4,823 [545]	5,381 [608]				335
	24 [91]		363 [41]	1,513 [171]	2,575 [291]	3,655 [413]	4,213 [476]	4,726 [534]	5,275 [596]				367
	25 [95]		283 [32]	1,416 [160]	2,478 [280]	3,549 [401]	4,098 [463]	4,637 [524]	5,168 [584]				383
	30 [114]			1,133 [128]	2,177 [246]	3,292 [372]	3,814 [431]	4,372 [494]	4,903 [554]				460
				459	456	442	434	422	412				
Rotor Width	1.552 [39.4]	594 [67]	1,223 [138]	2,410 [272]	3,633 [411]	4,821 [545]	5,415 [612]	6,008 [679]	6,637 [750]	7,231 [817]	7,825 [884]		
	in. [mm]	Theoretical Torque lb.in. [Nm]										Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]	

		Pressure - PSI [BAR]						Max. Cont.			Max. Inter.		
320		250 [17]	500 [35]	1,000 [69]	1,500 [104]	2,000 [138]	2,250 [155]	2,500 [172]	2,750 [190]	3,000 [207]	2,350 [224]		
19.6 in. ³ /rev [322 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation					
Flow - GPM [LPM]	1 [4]	602 [68]	1,283 [145]										12
	2 [8]	681 [77]	1,381 [156]	2,752 [311]	4,027 [455]	5,222 [590]	5,664 [640]						25
	4 [15]	681 [77]	1,416 [160]	2,752 [311]	4,053 [458]	5,257 [594]	5,797 [655]	6,239 [705]	6,815 [770]	7,390 [835]			47
	6 [23]	646 [73]	1,389 [157]	2,797 [316]	4,230 [478]	5,558 [628]	6,177 [698]	6,797 [768]	7,443 [841]	8,054 [910]	8,629 [975]		71
	8 [30]	611 [69]	1,363 [154]	2,797 [316]	4,239 [479]	5,584 [631]	6,239 [705]	6,903 [780]	7,611 [860]	8,222 [929]	8,832 [998]		93
	10 [38]	566 [64]	1,328 [150]	2,752 [311]	4,248 [480]	5,584 [631]	6,275 [709]	6,938 [784]	7,620 [861]	8,231 [930]	8,850 [1000]		118
	12 [45]	522 [59]	1,266 [143]	2,699 [305]	4,168 [471]	5,593 [632]	6,239 [705]	6,930 [783]	7,611 [860]	8,266 [934]	8,850 [1000]		140
	14 [53]	434 [49]	1,212 [137]	2,628 [297]	4,098 [463]	5,549 [627]	6,168 [697]	6,885 [778]	7,593 [858]	8,292 [937]	8,877 [1003]		165
	16 [61]	363 [41]	1,133 [128]	2,549 [288]	4,044 [457]	5,452 [616]	6,098 [689]	6,806 [769]	7,496 [847]				189
	18 [68]	310 [35]	1,062 [120]	2,496 [282]	4,000 [452]	5,390 [609]	6,045 [683]	6,744 [762]	7,443 [841]				211
Max. Cont.	20 [76]	230 [26]	1,000 [113]	2,416 [273]	3,921 [443]	5,337 [603]	5,876 [664]	6,584 [744]	7,346 [830]				236
	22 [83]		876 [99]	2,319 [262]	3,806 [430]	5,222 [590]	5,841 [660]	6,558 [741]	7,257 [820]				258
	24 [91]		752 [85]	2,177 [246]	3,673 [415]	5,098 [576]	5,788 [654]	6,469 [731]	7,169 [810]				283
	25 [95]		673 [76]	2,133 [241]	3,575 [404]	5,053 [571]	5,735 [648]	6,363 [719]	7,115 [804]				295
	30 [114]		389 [44]	1,805 [204]	3,283 [371]	4,761 [538]	5,328 [602]	6,062 [685]	6,779 [766]				354
			352	345	337	321	314	304	293				
Rotor Width	2.501 [63.5]	771 [87]	1,587 [179]	3,130 [354]	4,717 [533]	6,259 [707]	7,030 [794]	7,801 [881]	8,618 [974]	9,389 [1,061]	10,160 [1,148]		
	in. [mm]	Theoretical Torque lb.in. [Nm]										Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]	

		Pressure - PSI [BAR]						Max. Cont.		Max. Inter.	
400		250 [17]	500 [35]	1,000 [69]	1,250 [86]	1,500 [104]	1,750 [121]	2,000 [138]	2,250 [155]	2,500 [172]	2,750 [190]
24.2 in. ³ /rev [396 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	1 [4]	690 [78] 9	1,593 [180] 8								
	2 [8]	743 [84] 19	1,637 [185] 19	3,363 [380] 18	4,071 [460] 18	4,912 [555] 17	5,664 [640] 15				
	4 [15]	743 [84] 37	1,637 [185] 36	3,310 [374] 36	4,142 [468] 35	4,947 [559] 34	5,735 [648] 30	6,514 [736] 26			
	6 [23]	681 [77] 57	1,611 [182] 56	3,310 [374] 55	4,151 [469] 53	5,018 [567] 50	5,753 [650] 46	6,611 [747] 41	7,425 [839] 37	8,142 [920] 30	8,868 [1,002] 24
	8 [30]	673 [76] 75	1,602 [181] 74	3,328 [376] 71	4,186 [473] 69	5,089 [575] 65	5,930 [670] 61	6,753 [763] 56	7,558 [854] 50	8,354 [944] 43	9,231 [1,043] 36
	10 [38]	593 [67] 95	1,549 [175] 94	3,319 [375] 91	4,186 [473] 89	5,089 [575] 84	5,938 [671] 79	6,761 [764] 74	7,593 [858] 68	8,416 [951] 62	9,275 [1,048] 55
	12 [45]	504 [57] 113	1,460 [165] 112	3,248 [367] 109	4,133 [467] 106	5,062 [572] 102	5,912 [668] 97	6,744 [762] 90	7,540 [852] 82	8,346 [943] 77	9,239 [1,044] 69
	14 [53]	389 [44] 133	1,363 [154] 132	3,142 [355] 130	4,018 [454] 127	4,956 [560] 123	5,832 [659] 118	6,691 [756] 112	7,531 [851] 104	8,346 [943] 96	9,133 [1,032] 84
	16 [61]	283 [32] 153	1,257 [142] 153	3,036 [343] 149	3,929 [444] 146	4,859 [549] 141	5,726 [647] 135	6,576 [743] 129	7,407 [837] 123	8,248 [932] 114	
	18 [68]		1,089 [123] 170	2,938 [332] 166	3,823 [432] 162	4,761 [538] 156	5,620 [635] 150	6,425 [726] 145	7,319 [827] 137		
	20 [76]		938 [106] 191	2,797 [316] 185	3,699 [418] 181	4,629 [523] 176	5,478 [619] 169	6,345 [717] 162	7,186 [812] 156		
	22 [83]		885 [100] 208	2,646 [299] 205	3,558 [402] 201	4,478 [506] 195	5,319 [601] 191	6,195 [700] 183	7,053 [797] 176		
	24 [91]		611 [69] 229	2,451 [277] 226	3,345 [378] 223	4,239 [479] 219	5,124 [579] 213	5,983 [676] 206	6,841 [773] 199		
	26 [99]		407 [46] 249	2,274 [257] 247	3,124 [353] 245	4,018 [454] 241	4,912 [555] 236	5,823 [658] 228	6,655 [752] 222		
30 [114]			1,859 [210] 285	2,717 [307] 283	3,682 [416] 279	4,575 [517] 273	5,434 [614] 266	6,284 [710] 259			
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>									
2.501 [63.5] in. [mm]		948 [107]	1,952 [221]	3,849 [435]	4,797 [542]	5,801 [655]	6,749 [763]	7,698 [870]	8,646 [977]	9,594 [1,084]	10,598 [1,198]
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]									

Theoretical RPM

10

20

38

58

76

96

114

134

154

172

192

210

230

250

288

		Pressure - PSI [BAR]						Max. Cont.		Max. Inter.	
500		250 [17]	500 [35]	750 [52]	1,000 [69]	1,250 [86]	1,500 [104]	1,750 [121]	2,000 [138]	2,250 [155]	
30.2 in. ³ /rev [495 cm ³]		Intermittent Ratings are below and to the right of the BOLD line.						Intermittent Ratings - 10% of Operation			
Flow - GPM [LPM]	2 [8]	974 [110] 15	2,089 [236] 15	3,115 [352] 15	4,133 [467] 14	5,142 [581] 14	6,186 [699] 13				
	4 [15]	956 [108] 29	2,133 [241] 29	3,230 [365] 29	4,319 [488] 28	5,354 [605] 28	6,540 [739] 27	7,399 [836] 25			
	6 [23]	938 [106] 45	2,124 [240] 45	3,239 [366] 45	4,319 [488] 44	5,399 [610] 44	6,531 [738] 42	7,531 [851] 37	8,505 [961] 31		
	8 [30]	867 [98] 60	2,071 [234] 60	3,177 [359] 60	4,275 [483] 59	5,345 [604] 58	6,496 [734] 56	7,514 [849] 52	8,531 [964] 45	9,408 [1,063] 37	
	10 [38]	770 [87] 76	1,982 [224] 76	3,080 [348] 76	4,186 [473] 75	5,266 [595] 74	6,399 [723] 71	7,434 [840] 67	8,452 [955] 61	9,408 [1,063] 53	
	12 [45]	673 [76] 90	1,859 [210] 90	2,974 [336] 90	4,098 [463] 89	5,186 [586] 88	6,319 [714] 85	7,390 [835] 80	8,424 [952] 73	9,416 [1,064] 65	
	14 [53]	531 [60] 106	1,717 [194] 106	2,823 [319] 106	3,938 [445] 105	5,045 [570] 104	6,186 [699] 101	7,248 [819] 96	8,275 [935] 88	9,293 [1,050] 79	
	16 [61]	354 [40] 122	1,566 [177] 122	2,682 [303] 121	3,770 [426] 121	4,868 [550] 120	6,027 [681] 117	7,124 [805] 106	8,124 [918] 106		
	18 [68]		1,363 [154] 136	2,513 [284] 136	3,611 [408] 135	4,735 [535] 134	5,885 [665] 131	6,947 [785] 126			
	20 [76]		1,133 [128] 153	2,310 [261] 153	3,416 [386] 152	4,514 [510] 150	5,646 [638] 147	6,735 [761] 142			
	22 [83]		956 [108] 167	2,097 [237] 167	3,195 [361] 166	4,310 [487] 165	5,363 [606] 163	6,531 [738] 157			
	24 [91]			1,823 [206] 183	3,036 [343] 182	4,115 [465] 180	5,266 [595] 175	6,363 [719] 170			
	26 [99]			1,602 [181] 199	2,805 [317] 198	3,850 [435] 196	5,080 [574] 191	6,168 [697] 184			
	30 [114]			1,035 [117] 229	2,221 [251] 229	3,372 [381] 226	4,567 [516] 221	5,673 [641] 214			
Rotor Width		Torque lb.in. [Nm] Speed RPM Overall Efficiency - 70-100% <input type="checkbox"/> 40-69% <input type="checkbox"/> 0-39% <input type="checkbox"/>									
3.105 [78.9] in. [mm]		1,185 [134]	2,440 [276]	3,626 [410]	4,811 [544]	5,996 [678]	7,251 [819]	8,437 [953]	9,622 [1,087]	10,807 [1,221]	
		Theoretical Torque lb.in. [Nm] Displacement tested at 129°F [54°C] with an oil viscosity of 213 SUS [46cSt]									

Theoretical RPM

16

30

46

61

77

91

107

123

137

154

168

184

200

230

To use charts, find the intersection point between 2 ratings (i.e. Pressure and Flow). This will give the overall efficiency, as well as the actual torque & RPM for the given motor displacement. Intermittent Ratings are for motors that will be ran for less than 10% per minute. For motors that will be used longer, please refer to continuous use ratings.

OIL RECOMMENDATIONS

A good quality anti-foaming petroleum based fluid with anti-emulsion and anti-wear additives is recommended. Muncie does not promote specific manufacturer's brands of oil. Oil Viscosity Reference: Between 100 - 200 S.U.S. [20 - 43 cSt] at operating temperature is recommended. Fluid temperature should also be maintained below 180° F [85° C]. During cold weather, oil may thicken and not flow properly. Allow oil to warm up at slow speed. Your oil supplier should be consulted for your application needs.



A Member of the Interpump Group
MP15-41 (Rev. 05-18)

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