

## OVERVIEW

The WP motor series is an economical alternative to more complex roller gerotor designs and still provides high efficiency across a wide performance range. These motors are intended for light-duty applications requiring high torque in a compact package and are suitable for industrial and mobile applications including car wash brushes, food processing equipment, conveyors, machine tools, agricultural equipment, sweepers, skid steer attachments, and more.

## FEATURES / BENEFITS

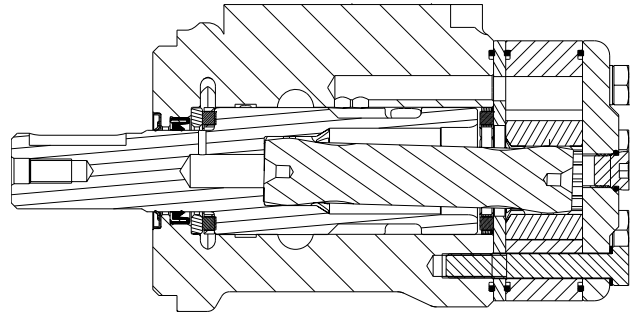
- Built-in check valves offer versatility and increased seal life.
- A variety of mounts and shafts provide flexibility in application design.
- Spool valve design gives superior performance and smooth operation over a wide speed and torque range.
- Standard high pressure shaft seals offer superior seal life and performance.

## TYPICAL APPLICATIONS

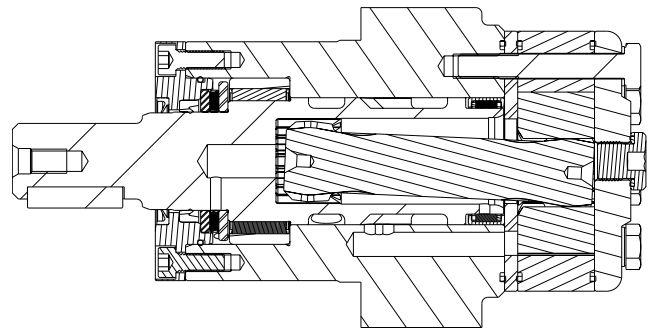
agriculture equipment, conveyors, carwashes, sweepers, food processing, grain augers, spreaders, feed rollers, augers, brush drives and more

## SERIES DESCRIPTIONS

**155/156** - Hydraulic Motor  
*Standard*



**157/158** - Hydraulic Motor  
*With Needle Bearings*



## SPECIFICATIONS

CODE	Displacement cm <sup>3</sup> [in <sup>3</sup> /rev]	Max. Speed rpm		Max. Flow lpm [gpm]		Max. Torque Nm [lb-in]		Max. Pressure bar [psi]		
		cont.	inter.	cont.	inter.	cont.	inter.	cont.	inter.	peak
025	25 [1.5]	1570	1687	40 [11]	45 [12]	35 [310]	48 [425]	100 [1450]	140 [2030]	225 [3260]
032	32 [2.0]	1550	1674	50 [13]	55 [15]	45 [398]	57 [504]	100 [1450]	140 [2030]	225 [3260]
040	40 [2.5]	1471	1670	60 [16]	70 [19]	65 [575]	74 [655]	100 [1450]	140 [2030]	225 [3260]
050	50 [3.0]	1208	1500	60 [16]	75 [20]	91 [805]	108 [956]	140 [2030]	175 [2540]	240 [3480]
060	59 [3.6]	1185	1271	60 [16]	75 [20]	125 [1106]	136 [1204]	160 [2320]	175 [2540]	240 [3480]
080	78 [4.8]	896	960	60 [16]	75 [20]	164 [1451]	183 [1620]	160 [2320]	175 [2540]	240 [3480]
100	96 [5.9]	728	780	60 [16]	75 [20]	195 [1726]	213 [1885]	160 [2320]	175 [2540]	240 [3480]
125	125 [7.6]	559	599	60 [16]	75 [20]	258 [2285]	278 [2460]	160 [2320]	175 [2540]	240 [3480]
160	159 [9.7]	452	483	60 [16]	75 [20]	321 [2840]	362 [3205]	160 [2320]	175 [2540]	240 [3480]
200	190 [11.6]	367	385	60 [16]	75 [20]	380 [3365]	420 [3720]	150 [2180]	175 [2540]	240 [3480]
250	240 [14.6]	291	312	60 [16]	75 [20]	445 [3940]	557 [4930]	140 [2030]	175 [2540]	240 [3480]
315	303 [18.5]	228	245	60 [16]	75 [20]	460 [4071]	602 [5330]	120 [1740]	160 [2320]	200 [2900]
400	388 [23.7]	155	189	60 [16]	75 [20]	488 [4320]	625 [5532]	95 [1380]	125 [1810]	180 [2610]

► Performance data is typical. Performance of production units varies slightly from one motor to another. Running at intermittent ratings should not exceed 10% of every minute of operation.

**DISPLACEMENT PERFORMANCE**

		Pressure - bar [psi]			Max. Cont.		Max. Inter.	
<b>025</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	
25 cm <sup>3</sup> [1.5 in <sup>3</sup> ] / rev								
		Torque - Nm [lb-in], Speed rpm				Intermittent Ratings - 10% of Operation		
Flow - lpm [gpm]	5 [1.3]	9 [80] <b>186</b>	18 [159] <b>160</b>	25 [221] <b>134</b>	32 [283] <b>101</b>	35 [310] <b>106</b>		200
	10 [2.6]	10 [88] <b>386</b>	18 [159] <b>352</b>	26 [230] <b>323</b>	34 [301] <b>280</b>	37 [327] <b>255</b>	48 [425] <b>210</b>	400
	15 [4.0]	9 [80] <b>568</b>	19 [168] <b>537</b>	26 [230] <b>505</b>	35 [310] <b>467</b>	38 [336] <b>431</b>	44 [389] <b>390</b>	600
	20 [5.3]	8 [71] <b>777</b>	19 [168] <b>736</b>	25 [221] <b>692</b>	33 [292] <b>660</b>	39 [345] <b>608</b>	45 [398] <b>566</b>	800
	25 [6.6]	7 [62] <b>972</b>	18 [159] <b>920</b>	26 [230] <b>870</b>	32 [283] <b>840</b>	39 [345] <b>803</b>	45 [398] <b>756</b>	1000
	30 [7.9]	6 [53] <b>1167</b>	17 [150] <b>1122</b>	25 [221] <b>1088</b>	32 [283] <b>1055</b>	39 [345] <b>998</b>	44 [389] <b>976</b>	1200
	35 [9.2]	5 [44] <b>1360</b>	16 [142] <b>1318</b>	24 [212] <b>1282</b>	31 [274] <b>1258</b>	37 [327] <b>1216</b>	43 [381] <b>1160</b>	1400
	40 [10.6]	5 [44] <b>1570</b>	15 [133] <b>1503</b>	22 [195] <b>1476</b>	31 [274] <b>1432</b>	36 [319] <b>1394</b>	41 [363] <b>1359</b>	1600
	45 [11.9]		13 [115] <b>1687</b>	20 [177] <b>1636</b>	28 [248] <b>1600</b>	34 [301] <b>1558</b>	39 [345] <b>1516</b>	1800
	Max. Max. Inter. Cont.							
<b>Rotor Width</b>		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>						
4.1 [160] mm [in]		Theoretical Torque - Nm [lb-in]						
		12 [106]	24 [211]	32 [282]	40 [352]	48 [423]	56 [493]	
Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]								

		Pressure - bar [psi]			Max. Cont.		Max. Inter.	
<b>032</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	
32 cm <sup>3</sup> [2.0 in <sup>3</sup> ] / rev								
		Torque - Nm [lb-in], Speed rpm				Intermittent Ratings - 10% of Operation		
Flow - lpm [gpm]	5 [1.3]	11 [97] <b>149</b>	24 [212] <b>135</b>	35 [310] <b>114</b>	37 [327] <b>94</b>			156
	10 [2.6]	12 [106] <b>308</b>	27 [239] <b>284</b>	37 [327] <b>270</b>	43 [381] <b>250</b>	46 [407] <b>240</b>	56 [496] <b>211</b>	313
	15 [4.0]	11 [97] <b>465</b>	26 [230] <b>444</b>	36 [319] <b>429</b>	45 [398] <b>398</b>	48 [425] <b>378</b>	57 [504] <b>355</b>	469
	20 [5.3]	10 [88] <b>624</b>	25 [221] <b>589</b>	35 [310] <b>575</b>	44 [389] <b>557</b>	46 [407] <b>544</b>	56 [496] <b>524</b>	625
	25 [6.6]	9 [80] <b>780</b>	24 [212] <b>771</b>	34 [301] <b>751</b>	42 [372] <b>735</b>	45 [398] <b>719</b>	54 [478] <b>695</b>	781
	30 [7.9]	8 [71] <b>931</b>	23 [204] <b>908</b>	32 [283] <b>895</b>	40 [354] <b>876</b>	45 [398] <b>857</b>	52 [460] <b>822</b>	938
	35 [9.2]	7 [62] <b>1086</b>	20 [177] <b>1066</b>	29 [257] <b>1051</b>	39 [345] <b>1030</b>	43 [381] <b>1012</b>	51 [451] <b>981</b>	1094
	40 [10.6]	7 [62] <b>1240</b>	19 [168] <b>1212</b>	27 [239] <b>1190</b>	38 [336] <b>1178</b>	43 [381] <b>1145</b>	50 [442] <b>1121</b>	1250
	45 [11.9]	6 [53] <b>1400</b>	18 [159] <b>1382</b>	26 [230] <b>1366</b>	35 [310] <b>1340</b>	42 [372] <b>1314</b>	48 [425] <b>1280</b>	1406
	50 [13.2]	5 [44] <b>1550</b>	16 [142] <b>1526</b>	24 [212] <b>1500</b>	31 [274] <b>1478</b>	40 [354] <b>1452</b>	46 [407] <b>1418</b>	1563
55 [14.5]		12 [106] <b>1674</b>	20 [177] <b>1641</b>	28 [248] <b>1617</b>	34 [301] <b>1584</b>	39 [345] <b>1555</b>	1719	
Max. Max. Inter. Cont.								
<b>Rotor Width</b>		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>						
5.1 [200] mm [in]		Theoretical Torque - Nm [lb-in]						
		15 [135]	31 [271]	41 [361]	51 [451]	61 [541]	71 [631]	
Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]								

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

		Pressure - bar [psi]					Max. Cont.	Max. Inter.
<b>040</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	
40 cm <sup>3</sup> [2.5 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation	
Flow - lpm [gpm]	5 [1.3]	15 [133] 113	31 [274] 98	38 [336] 83	48 [425] 60	56 [496] 48		125
	10 [2.6]	14 [124] 238	31 [274] 222	41 [363] 204	54 [478] 182	62 [549] 161	70 [619] 114	250
	20 [5.3]	13 [115] 482	32 [283] 458	41 [363] 442	53 [469] 423	65 [575] 402	74 [655] 381	500
	30 [7.9]	12 [106] 730	30 [265] 704	39 [345] 687	51 [451] 668	63 [558] 646	74 [655] 624	750
	40 [10.6]	10 [88] 968	27 [239] 949	39 [345] 928	51 [451] 908	61 [540] 892	72 [637] 870	1000
	50 [13.2]	7 [62] 1219	25 [221] 1191	37 [327] 1173	49 [434] 1150	59 [522] 1127	71 [628] 1107	1250
	60 [15.8]	4 [35] 1471	23 [204] 1428	34 [301] 1411	46 [407] 1387	56 [496] 1369	68 [602] 1341	1500
	70 [18.5]		16 [142] 1670	30 [265] 1653	41 [363] 1627	52 [460] 1612	64 [566] 1598	2000
Max. Max. Inter. Cont.								
<b>Rotor Width</b>		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>						
6.6 [260] mm [in]		Theoretical Torque - Nm [lb-in]						
		19 [168]	38 [336]	50 [442]	64 [566]	76 [673]	89 [788]	
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]						

		Pressure - bar [psi]					Max. Cont.	Max. Inter.	
<b>050</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]
50 cm <sup>3</sup> [3.0 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation		
Flow - lpm [gpm]	5 [1.3]	19 [168] 100	39 [345] 85	48 [425] 75	62 [549] 64	75 [664] 48			101
	10 [2.6]	20 [177] 197	38 [336] 196	50 [442] 174	63 [558] 159	78 [690] 146	92 [814] 127	102 [903] 101	107 [947] 97
	20 [5.3]	18 [159] 400	38 [336] 386	52 [460] 371	64 [566] 355	78 [690] 341	90 [796] 314	104 [920] 292	108 [956] 290
	30 [7.9]	15 [133] 600	37 [327] 585	50 [442] 571	64 [566] 560	77 [681] 540	89 [788] 516	103 [912] 499	107 [947] 495
	40 [10.6]	12 [106] 808	31 [274] 800	45 [398] 790	59 [522] 770	73 [646] 766	87 [770] 733	99 [876] 703	106 [938] 697
	50 [13.2]	9 [80] 1009	27 [239] 1006	41 [363] 986	55 [487] 982	68 [602] 964	84 [743] 956	98 [867] 930	105 [929] 872
	60 [15.8]	6 [53] 1208	24 [212] 1200	37 [327] 1196	53 [469] 1188	64 [566] 1176	82 [726] 1160	95 [841] 1140	102 [903] 963
	70 [18.5]	3 [27] 1410	17 [150] 1396	32 [283] 1382	44 [389] 1370	58 [513] 1358	80 [708] 1347	93 [823] 1334	98 [867] 1315
Max. Inter.	75 [19.8]	15 [133] 1500	30 [265] 1488	40 [354] 1473	56 [496] 1457	77 [681] 1439	88 [779] 1412	93 [823] 1388	1515
<b>Rotor Width</b>		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>							
6.6 [260] mm [in]		Theoretical Torque - Nm [lb-in]							
		24 [212]	47 [416]	63 [558]	79 [699]	95 [841]	110 [973]	126 [1115]	138 [1221]
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]							

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

<b>060</b>		Pressure - bar [psi]						Max. Cont.	Max. Inter.		
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]		
		59 cm <sup>3</sup> [3.6 in <sup>3</sup> ] / rev						Intermittent Ratings - 10% of Operation			
Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm									
		5 [1.3]	20 [177] 83	46 [407] 79	65 [575] 72	80 [708] 64	95 [841] 51	112 [991] 38	85		
		10 [2.6]	22 [195] 169	47 [416] 164	66 [584] 155	81 [717] 142	96 [850] 135	113 [1000] 124	125 [1106] 108	136 [1204] 88	170
		20 [5.3]	20 [177] 338	45 [398] 332	64 [566] 320	80 [708] 309	93 [823] 290	111 [982] 276	123 [1088] 245	134 [1186] 222	339
		30 [7.9]	17 [150] 507	43 [381] 502	62 [549] 493	76 [673] 482	89 [788] 468	109 [965] 454	121 [1071] 424	131 [1159] 400	509
		40 [10.6]	14 [124] 678	41 [363] 669	58 [513] 660	73 [646] 645	87 [770] 630	105 [929] 616	117 [1035] 594	127 [1124] 582	678
		50 [13.2]	10 [88] 845	37 [327] 841	55 [487] 833	70 [619] 818	84 [743] 805	102 [903] 792	113 [1000] 770	122 [1080] 754	848
		60 [15.8]	7 [62] 1014	34 [301] 1005	52 [460] 999	66 [584] 992	82 [726] 982	99 [876] 968	109 [965] 956	118 [1044] 933	1017
		70 [18.5]	4 [35] 1185	27 [239] 1182	47 [416] 1180	62 [549] 1175	76 [673] 1158	93 [823] 1144	104 [920] 1128	114 [1009] 1112	1186
		75 [19.8]		22 [195] 1271	43 [381] 1265	58 [513] 1256	73 [646] 1241	86 [761] 1228	100 [885] 1212	110 [973] 1196	1271
Rotor Width		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>									
8.0 [.314] mm [in]		Theoretical Torque - Nm [lb-in]									
		28 [249]	56 [499]	75 [665]	94 [831]	113 [998]	132 [1164]	150 [1330]	164 [1455]		
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]									

<b>080</b>		Pressure - bar [psi]						Max. Cont.	Max. Inter.		
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]		
		78 cm <sup>3</sup> [4.8 in <sup>3</sup> ] / rev						Intermittent Ratings - 10% of Operation			
Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm									
		5 [1.3]	32 [283] 60	62 [549] 56	80 [708] 50	106 [938] 42	125 [1106] 30			64	
		10 [2.6]	31 [274] 125	64 [566] 118	84 [743] 112	104 [920] 104	120 [1062] 98	142 [1257] 82	162 [1434] 67	175 [1549] 50	128
		20 [5.3]	26 [230] 254	60 [531] 245	84 [743] 236	102 [903] 228	125 [1106] 215	144 [1274] 204	164 [1451] 190	183 [1619] 175	256
		30 [7.9]	24 [212] 384	56 [496] 374	81 [717] 366	100 [885] 358	122 [1080] 346	142 [1257] 335	160 [1416] 318	175 [1549] 305	385
		40 [10.6]	19 [168] 512	53 [469] 505	75 [664] 494	96 [850] 483	118 [1044] 473	140 [1239] 462	158 [1398] 450	170 [1504] 438	513
		50 [13.2]	14 [124] 638	46 [407] 630	70 [619] 625	92 [814] 615	110 [973] 606	135 [1195] 593	156 [1381] 580	168 [1487] 568	641
		60 [15.8]	10 [88] 768	42 [372] 762	66 [584] 756	86 [761] 748	106 [938] 738	128 [1133] 728	150 [1327] 717	164 [1451] 694	769
		70 [18.5]	6 [53] 896	36 [319] 890	56 [496] 882	78 [690] 872	98 [867] 860	118 [1044] 846	140 [1239] 830	160 [1416] 816	897
		75 [19.8]	3 [27] 960	27 [239] 955	50 [442] 948	74 [655] 938	92 [814] 926	113 [1000] 916	133 [1177] 896	148 [1310] 802	962
Rotor Width		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>									
10.4 [.410] mm [in]		Theoretical Torque - Nm [lb-in]									
		37 [327]	75 [664]	100 [885]	125 [1106]	149 [1319]	174 [1540]	199 [1761]	218 [1929]		
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]									

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

		Pressure - bar [psi]						Max. Cont.	Max. Inter.			
<b>100</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]			
96 cm <sup>3</sup> [5.9 in <sup>3</sup> ] / rev		<b>Torque - Nm [lb-in], Speed rpm</b>						<b>Intermittent Ratings - 10% of Operation</b>				
Flow - lpm [gpm]	5 [1.3]	43 [381] 51	82 [726] 42	109 [965] 35	131 [1159] 25						52	Theoretical rpm
	10 [2.6]	43 [381] 99	84 [743] 93	108 [956] 84	133 [1177] 72	152 [1345] 62	180 [1593] 48	197 [1743] 24		104		
	20 [5.3]	41 [363] 205	79 [699] 202	107 [947] 197	127 [1124] 192	154 [1363] 182	178 [1575] 172	200 [1770] 140	212 [1876] 118	208		
	30 [7.9]	39 [345] 311	74 [655] 307	101 [894] 301	126 [1115] 294	152 [1345] 283	176 [1558] 271	198 [1752] 258	213 [1885] 240	313		
	40 [10.6]	29 [257] 413	63 [558] 410	93 [823] 406	121 [1071] 399	150 [1327] 388	172 [1522] 379	195 [1726] 368	208 [1841] 347	417		
	50 [13.2]	20 [177] 519	52 [460] 515	85 [752] 510	115 [1018] 503	148 [1310] 492	169 [1496] 480	193 [1708] 464	203 [1796] 446	521		
	60 [15.8]	17 [150] 624	53 [469] 620	83 [735] 615	111 [982] 608	138 [1221] 600	165 [1460] 582	183 [1619] 565	193 [1708] 548	625		
	70 [18.5]	11 [97] 728	42 [372] 726	73 [646] 723	93 [823] 714	126 [1115] 706	159 [1407] 684	172 [1522] 668	183 [1619] 646	729		
Max. Inter.	75 [19.8]	6 [53] 780	35 [310] 771	61 [540] 764	89 [788] 755	118 [1044] 736	145 [1283] 724	156 [1381] 712	176 [1558] 699	781		
<b>Rotor Width</b>		<b>Overall Efficiency - 70 - 100%</b> <input type="checkbox"/> <b>40 - 69%</b> <input type="checkbox"/> <b>0 - 39%</b> <input type="checkbox"/>										
13.0 [510] mm [in]		<b>Theoretical Torque - Nm [lb-in]</b>										
		46 [407]	92 [814]	122 [1080]	153 [1354]	183 [1623]	214 [1894]	245 [2168]	268 [2372]			
Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]												

		Pressure - bar [psi]						Max. Cont.	Max. Inter.			
<b>125</b>		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]			
125 cm <sup>3</sup> [7.6 in <sup>3</sup> ] / rev		<b>Torque - Nm [lb-in], Speed rpm</b>						<b>Intermittent Ratings - 10% of Operation</b>				
Flow - lpm [gpm]	5 [1.3]	52 [460] 38	95 [841] 35	135 [1195] 32	168 [1487] 27						40	Theoretical rpm
	10 [2.6]	50 [442] 78	98 [867] 74	138 [1221] 69	172 [1522] 62	190 [1681] 54	234 [2071] 45	258 [2283] 35		80		
	20 [5.3]	50 [442] 158	96 [850] 152	132 [1168] 144	168 [1487] 135	202 [1788] 124	236 [2088] 110	256 [2265] 94	278 [2460] 78	160		
	30 [7.9]	44 [389] 238	92 [814] 232	126 [1115] 225	164 [1451] 215	198 [1752] 210	232 [2053] 198	262 [2319] 168	268 [2372] 155	240		
	40 [10.6]	35 [310] 319	82 [726] 316	118 [1044] 312	160 [1416] 308	193 [1708] 300	226 [2000] 288	252 [2230] 262	266 [2354] 238	320		
	50 [13.2]	31 [274] 399	77 [681] 396	108 [956] 392	155 [1372] 383	182 [1611] 368	220 [1947] 354	238 [2106] 338	262 [2319] 326	400		
	60 [15.8]	15 [133] 479	64 [566] 478	97 [858] 475	146 [1292] 470	166 [1469] 463	210 [1858] 454	224 [1982] 443	256 [2265] 434	480		
	70 [18.5]	8 [71] 559	50 [442] 555	90 [796] 548	140 [1239] 538	162 [1434] 524	204 [1805] 516	209 [1850] 500	236 [2088] 488	560		
Max. Inter.	75 [19.8]	40 [354] 599	71 [628] 594	128 [1133] 588	158 [1398] 576	192 [1699] 565	199 [1761] 536	224 [1982] 524	600			
<b>Rotor Width</b>		<b>Overall Efficiency - 70 - 100%</b> <input type="checkbox"/> <b>40 - 69%</b> <input type="checkbox"/> <b>0 - 39%</b> <input type="checkbox"/>										
16.8 [660] mm [in]		<b>Theoretical Torque - Nm [lb-in]</b>										
		60 [531]	119 [1053]	159 [1407]	199 [1761]	239 [2115]	279 [2469]	318 [2814]	348 [3080]			
Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]												

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

<b>160</b>		Pressure - bar [psi]						Max. Cont.	Max. Inter.		
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]		
159 cm <sup>3</sup> [9.7 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm						Intermittent Ratings - 10% of Operation			
Max. Cont.	Flow - lpm [gpm]	5 [1.3]	10 [2.6]	20 [5.3]	30 [7.9]	40 [10.6]	50 [13.2]	60 [15.8]	70 [18.5]	75 [19.8]	Theoretical rpm
	56 [496]	112 [991]	154 [1363]	201 [1779]						32	
	<b>30</b>	<b>25</b>	<b>18</b>	<b>10</b>						65	
	58 [513]	115 [1018]	156 [1381]	205 [1814]	245 [2168]	285 [2522]				130	
	<b>63</b>	<b>60</b>	<b>56</b>	<b>52</b>	<b>48</b>	<b>37</b>				194	
	60 [532]	123 [1089]	162 [1434]	202 [1788]	242 [2142]	282 [2496]	327 [2894]	360 [3186]		258	
	<b>128</b>	<b>125</b>	<b>121</b>	<b>116</b>	<b>110</b>	<b>100</b>	<b>86</b>	<b>78</b>		323	
	50 [443]	117 [1035]	157 [1389]	197 [1743]	238 [2106]	278 [2460]	322 [2850]	358 [3168]		387	
<b>193</b>	<b>190</b>	<b>187</b>	<b>183</b>	<b>179</b>	<b>173</b>	<b>160</b>	<b>144</b>		453		
48 [425]	113 [1000]	155 [1372]	195 [1726]	236 [2089]	273 [2416]	318 [2814]	355 [3142]		485		
<b>257</b>	<b>255</b>	<b>252</b>	<b>248</b>	<b>244</b>	<b>239</b>	<b>224</b>	<b>211</b>				
32 [283]	106 [938]	149 [1319]	188 [1664]	235 [2080]	267 [2363]	313 [2770]	352 [3115]				
<b>323</b>	<b>320</b>	<b>316</b>	<b>312</b>	<b>306</b>	<b>299</b>	<b>288</b>	<b>275</b>				
23 [204]	88 [779]	133 [1177]	178 [1575]	212 [1876]	260 [2301]	308 [2726]	342 [3027]				
<b>387</b>	<b>384</b>	<b>380</b>	<b>375</b>	<b>371</b>	<b>366</b>	<b>358</b>	<b>346</b>				
16 [142]	82 [726]	128 [1133]	170 [1505]	206 [1823]	255 [2257]	302 [2673]	331 [2929]				
<b>452</b>	<b>451</b>	<b>448</b>	<b>444</b>	<b>436</b>	<b>430</b>	<b>423</b>	<b>412</b>				
10 [89]	79 [699]	124 [1097]	164 [1451]	201 [1779]	248 [2195]	296 [2620]	319 [2823]				
<b>483</b>	<b>481</b>	<b>477</b>	<b>472</b>	<b>466</b>	<b>460</b>	<b>450</b>	<b>436</b>				
<b>Rotor Width</b>		<b>Overall Efficiency</b> - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>									
20.8 [820]		Theoretical Torque - Nm [lb-in]									
mm [in]		74 [651]	147 [1302]	196 [1736]	245 [2170]	282 [2496]	343 [3038]	392 [3472]	429 [3798]		
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]									

<b>200</b>		Pressure - bar [psi]						Max. Cont.	Max. Inter.		
		30 [435]	60 [870]	80 [1160]	100 [1450]	115 [1670]	140 [2030]	150 [2180]	175 [2540]		
190 cm <sup>3</sup> [11.6 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm						Intermittent Ratings - 10% of Operation			
Max. Cont.	Flow - lpm [gpm]	5 [1.3]	10 [2.6]	20 [5.3]	30 [7.9]	40 [10.6]	50 [13.2]	60 [15.8]	70 [18.5]	75 [19.8]	Theoretical rpm
	75 [664]	158 [1398]	200 [1770]	241 [2133]						26	
	<b>25</b>	<b>22</b>	<b>20</b>	<b>10</b>						53	
	78 [690]	160 [1416]	204 [1805]	252 [2230]	291 [2575]	348 [3080]	377 [3336]			105	
	<b>51</b>	<b>49</b>	<b>45</b>	<b>39</b>	<b>35</b>	<b>29</b>	<b>22</b>			158	
	74 [655]	156 [1381]	200 [1770]	246 [2177]	293 [2593]	354 [3133]	380 [3363]	416 [3681]		211	
	<b>104</b>	<b>102</b>	<b>99</b>	<b>95</b>	<b>89</b>	<b>83</b>	<b>76</b>	<b>65</b>		263	
	70 [619]	152 [1345]	196 [1735]	240 [2124]	290 [2566]	352 [3115]	378 [3345]	420 [3717]		316	
<b>157</b>	<b>155</b>	<b>152</b>	<b>148</b>	<b>143</b>	<b>137</b>	<b>130</b>	<b>118</b>		368		
65 [575]	147 [1301]	190 [1681]	228 [2018]	286 [2531]	340 [3009]	376 [3327]	418 [3699]		395		
<b>210</b>	<b>208</b>	<b>205</b>	<b>200</b>	<b>193</b>	<b>186</b>	<b>178</b>	<b>168</b>				
54 [478]	142 [1257]	180 [1593]	222 [1965]	277 [2451]	333 [2947]	356 [3150]	402 [3558]				
<b>262</b>	<b>260</b>	<b>258</b>	<b>254</b>	<b>249</b>	<b>243</b>	<b>235</b>	<b>223</b>				
36 [319]	128 [1133]	166 [1469]	210 [1858]	266 [2354]	322 [2850]	350 [3097]	400 [3540]				
<b>315</b>	<b>313</b>	<b>309</b>	<b>305</b>	<b>299</b>	<b>293</b>	<b>284</b>	<b>268</b>				
15 [133]	102 [903]	158 [1398]	202 [1788]	254 [2248]	302 [2673]	327 [2894]	376 [3327]				
<b>367</b>	<b>365</b>	<b>362</b>	<b>358</b>	<b>352</b>	<b>336</b>	<b>330</b>	<b>316</b>				
	94 [832]	146 [1292]	194 [1717]	230 [2035]	290 [2566]	317 [2805]	364 [3221]				
	<b>394</b>	<b>390</b>	<b>385</b>	<b>380</b>	<b>374</b>	<b>365</b>	<b>352</b>				
<b>Rotor Width</b>		<b>Overall Efficiency</b> - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>									
25.9 [1.020]		Theoretical Torque - Nm [lb-in]									
mm [in]		91 [803]	182 [1611]	242 [2142]	303 [2677]	348 [3079]	424 [3748]	454 [4016]	529 [4685]		
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]									

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

		Pressure - bar [psi]					Max. Cont.	Max. Inter.				
<b>250</b>		30 [435]	60 [870]	85 [1230]	100 [1450]	125 [1810]	140 [2030]	160 [2320]	175 [2540]			
240 cm <sup>3</sup> [14.6 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation					
Flow - lpm [gpm]	5 [1.3]	89 [788] 19	194 [1717] 16	264 [2336] 10	326 [2885] 6						21	Theoretical rpm
	10 [2.6]	92 [814] 40	196 [1735] 36	268 [2372] 32	329 [2912] 21	394 [3487] 10					42	
	20 [5.3]	90 [796] 81	192 [1699] 77	264 [2336] 72	321 [2841] 65	397 [3513] 50	445 [3938] 42	510 [4513] 36	554 [4903] 23		83	
	30 [7.9]	86 [761] 124	185 [1637] 121	256 [2265] 115	314 [2779] 106	392 [3469] 94	439 [3855] 84	502 [4442] 76	557 [4929] 61		125	
	40 [10.6]	82 [726] 165	179 [1584] 162	248 [2195] 158	305 [2699] 153	384 [3398] 144	431 [3814] 135	486 [4301] 125	545 [4823] 113		167	
	50 [13.2]	69 [611] 207	169 [1496] 203	243 [2150] 195	293 [2593] 189	378 [3345] 183	421 [3726] 170	475 [4204] 157	526 [4655] 138		208	
	60 [15.8]	48 [425] 250	152 [1345] 247	230 [2035] 243	282 [2496] 236	364 [3221] 222	407 [3602] 216	456 [4035] 205	508 [4496] 188		250	
	70 [18.5]	37 [327] 291	139 [1230] 285	219 [1938] 278	263 [2327] 271	343 [3035] 256	386 [3416] 249	441 [3903] 234	496 [4389] 221		292	
	75 [19.8]	26 [230] 312	128 [1133] 310	205 [1814] 307	245 [2168] 302	328 [2903] 294	374 [3310] 270	428 [3788] 254	481 [4257] 242		313	
<b>Rotor Width</b>		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>										
32.5 [1.280] mm [in]		Theoretical Torque - Nm [lb-in]										
		115 [1018]	229 [2027]	325 [2875]	382 [3381]	478 [4230]	535 [4735]	611 [5407]	669 [5920]			
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]										

		Pressure - bar [psi]					Max. Cont.	Max. Inter.				
<b>315</b>		30 [435]	50 [725]	70 [1015]	85 [1230]	100 [1450]	120 [1740]	140 [2030]	160 [2320]			
303 cm <sup>3</sup> [18.5 in <sup>3</sup> ] / rev		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation					
Flow - lpm [gpm]	5 [1.3]	123 [1089] 16	200 [1770] 13	282 [2496] 10	344 [3044] 6						17	Theoretical rpm
	10 [2.6]	117 [1035] 31	194 [1717] 29	277 [2451] 25	342 [3027] 21	399 [3531] 17					33	
	20 [5.3]	112 [991] 64	196 [1735] 62	275 [2434] 58	340 [3009] 54	397 [3513] 49	460 [4071] 43	526 [4655] 32	605 [5354] 23		66	
	30 [7.9]	104 [920] 98	183 [1620] 94	267 [2363] 90	322 [2850] 85	390 [3452] 79	448 [3965] 70	520 [4602] 62	602 [5328] 56		99	
	40 [10.6]	86 [761] 129	168 [1487] 126	252 [2230] 122	304 [2690] 118	365 [3230] 113	440 [3894] 106	515 [4558] 99	588 [5204] 76		132	
	50 [13.2]	73 [646] 164	156 [1381] 160	238 [2106] 155	288 [2549] 150	350 [3098] 144	424 [3752] 136	500 [4425] 127	571 [5053] 119		165	
	60 [15.8]	60 [531] 195	140 [1239] 192	223 [1974] 188	270 [2390] 183	325 [2876] 176	396 [3505] 170	480 [4248] 164	546 [4832] 157		198	
	70 [18.5]	37 [327] 228	122 [1080] 226	186 [1646] 223	254 [2248] 218	309 [2735] 212	368 [3257] 206	455 [4027] 196	527 [4664] 188		231	
	75 [19.8]	23 [204] 245	100 [885] 242	174 [1540] 238	237 [2097] 233	293 [2593] 228	359 [3177] 222	444 [3929] 215	516 [4567] 206		248	
<b>Rotor Width</b>		Overall Efficiency - 60 - 100% <input type="checkbox"/> 40 - 59% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>										
40.9 [1.610] mm [in]		Theoretical Torque - Nm [lb-in]										
		145 [1283]	241 [2133]	338 [2991]	410 [3628]	482 [4265]	579 [5124]	675 [5973]	772 [6832]			
		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]										

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

**DISPLACEMENT PERFORMANCE**

<b>400</b>		Pressure - bar [psi]				Max. Cont.		Max. Inter.			
		30 [435]	45 [650]	55 [800]	65 [940]	80 [1160]	95 [1380]	110 [1595]	125 [1810]		
388 cm <sup>3</sup> [23.7 in <sup>3</sup> ] / rev											
Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation						
Max. Cont.	Flow - lpm [gpm]	5 [1.3]	144 [1274] 11	220 [1947] 10	270 [2389] 7	338 [2991] 5				13	
		10 [2.6]	146 [1292] 25	223 [1973] 23	272 [2407] 20	340 [3009] 16	412 [3646] 10	488 [4319] 6		26	
		20 [5.3]	145 [1283] 51	219 [1938] 50	269 [2381] 48	333 [2347] 45	408 [3611] 40	484 [4283] 35	548 [4850] 27	52	
		30 [7.9]	138 [1221] 76	215 [1903] 75	262 [2319] 73	322 [2850] 70	402 [3558] 67	472 [4177] 59	546 [4832] 47	625 [5531] 36	77
		40 [10.6]	120 [1062] 103	204 [1805] 102	250 [2212] 100	310 [2743] 96	393 [3478] 89	458 [4053] 82	535 [4735] 73	618 [5469] 62	103
		50 [13.2]	100 [885] 129	186 [1646] 128	238 [2106] 125	295 [2611] 123	374 [3310] 119	446 [3947] 112	520 [4602] 102	600 [5310] 91	129
		60 [15.8]	76 [673] 155	166 [1469] 153	222 [1965] 150	282 [2496] 148	358 [3168] 143	427 [3779] 139	496 [4389] 130	576 [5097] 121	155
		70 [18.5]	50 [442] 179	145 [1283] 177	194 [1717] 174	250 [2212] 170	334 [2956] 165	402 [3558] 158	472 [4177] 152	540 [4779] 144	180
Max. Inter.	75 [19.8]	42 [372] 189	135 [1195] 187	176 [1558] 184	226 [2000] 180	306 [2708] 175	373 [3301] 167	445 [3938] 160	520 [4602] 150	190	
<b>Overall Efficiency</b> - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input checked="" type="checkbox"/>											
<b>Rotor Width</b>		Theoretical Torque - Nm [lb-in]									
52.1 [2.050]		185 [1640]	278 [2460]	340 [3007]	402 [3554]	494 [4374]	587 [5194]	680 [6014]	772 [6834]		
mm [in]		Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]									

► Performance data is typical. Performance of production units varies slightly from one motor to another. Operating at maximum continuous pressure and maximum continuous flow simultaneously is not recommended. For additional information on product testing please refer to page 6.

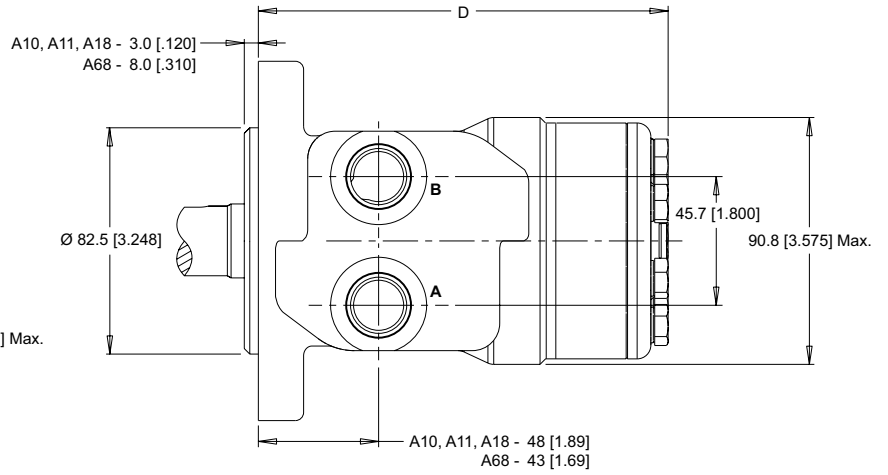
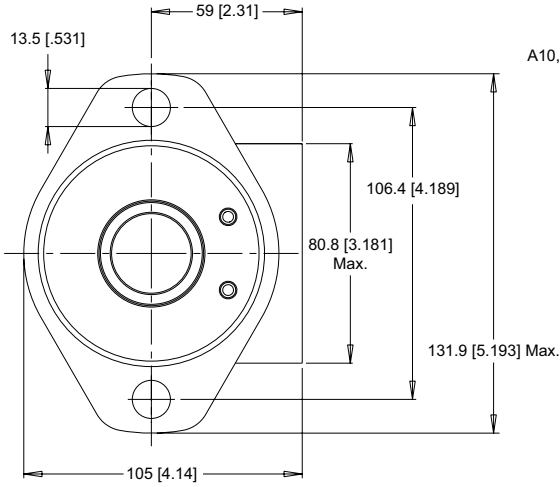


**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

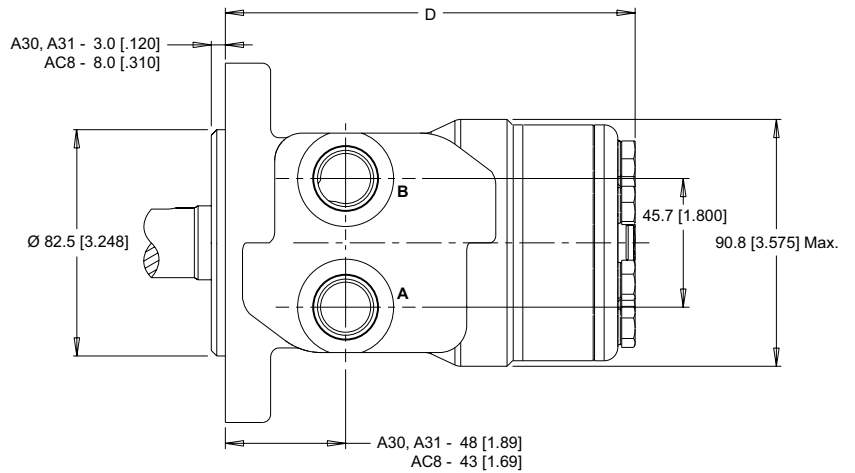
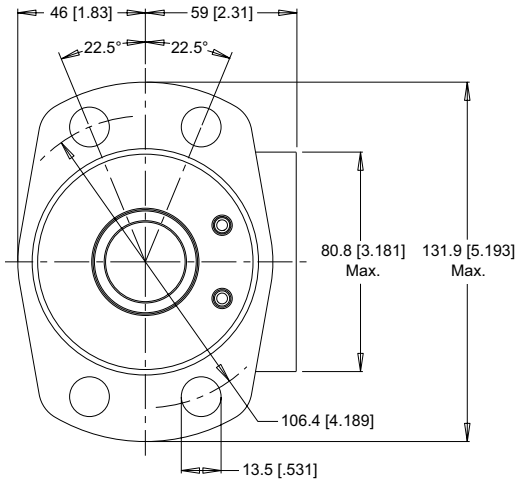
**2-HOLE, SAE A MOUNT, ALIGNED PORTS**

**A10** 1/2-14 NPT    **A11** 7/8-14 UNF    **A18** G 1/2    **A68** G 1/2 (TP)



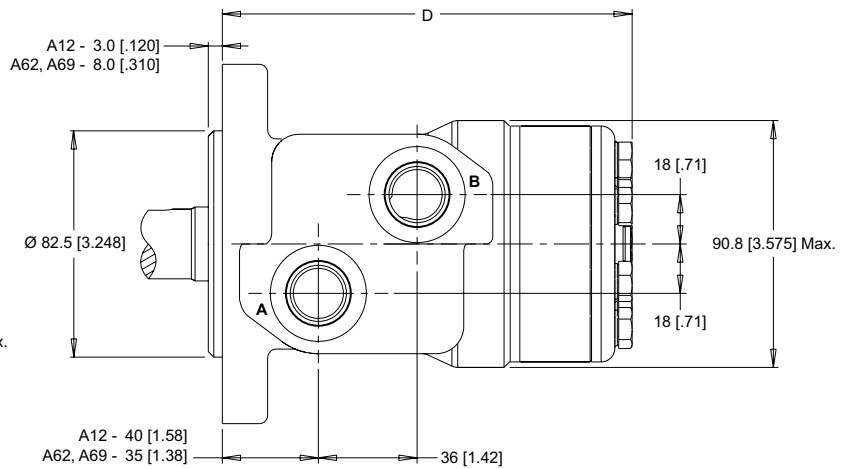
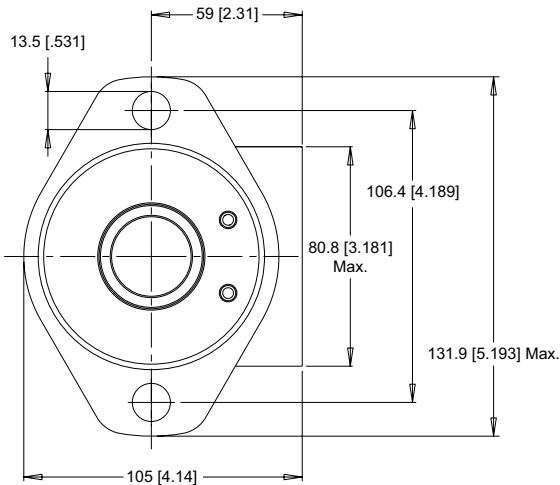
**4-HOLE, MAGNETO MOUNT, ALIGNED PORTS**

**A30** 1/2-14 NPT    **A31** 7/8-14 UNF    **AC8** G 1/2 (TP)



**2-HOLE, SAE A MOUNT, OFFSET PORTS**

**A12** G 1/2    **A62** G 1/2 (TP)    **A69** 7/8-14 UNF (TP)



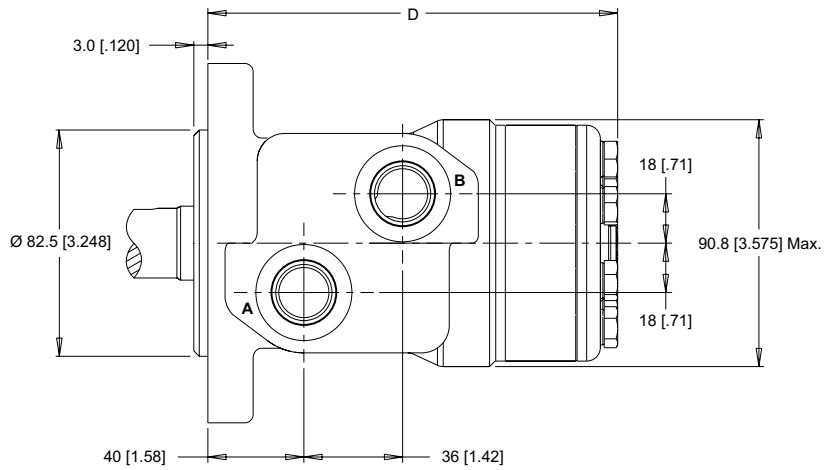
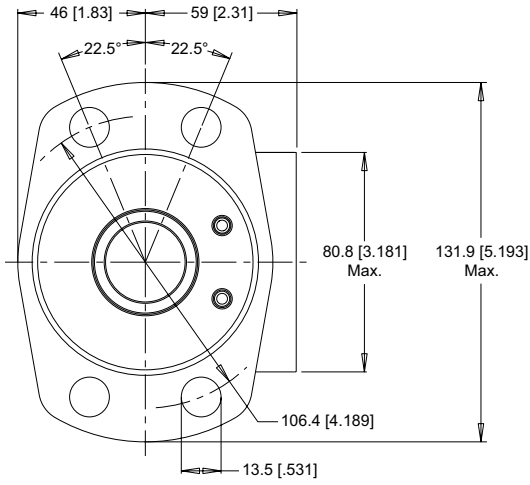
► Dimension D is charted on page 46. ► (TP) - Taller Pilot Height. Refer to detailed drawing for dimensional differences.

**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

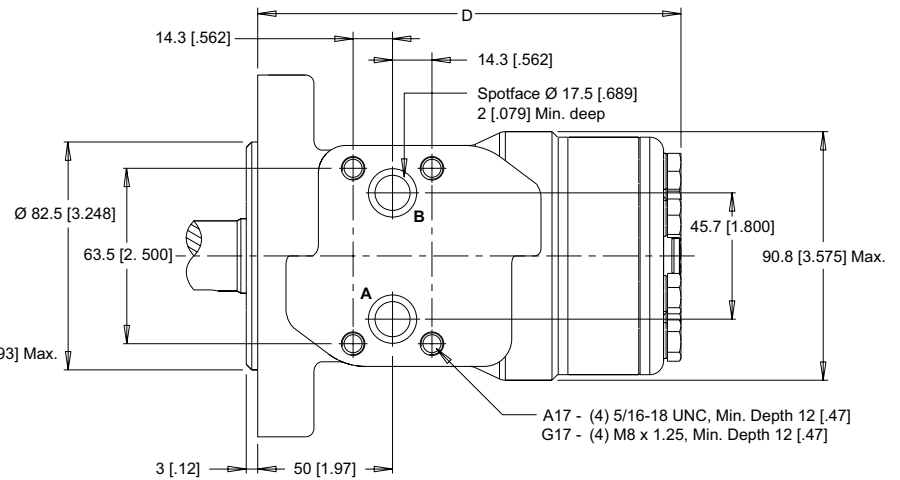
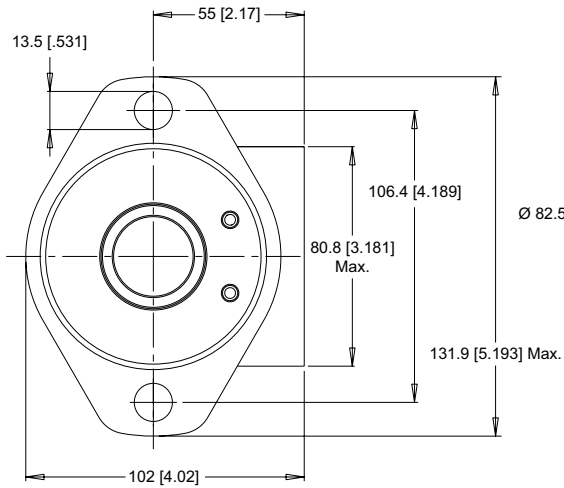
**4-HOLE, MAGNETO MOUNT, OFFSET PORTS**

**A32** G 1/2



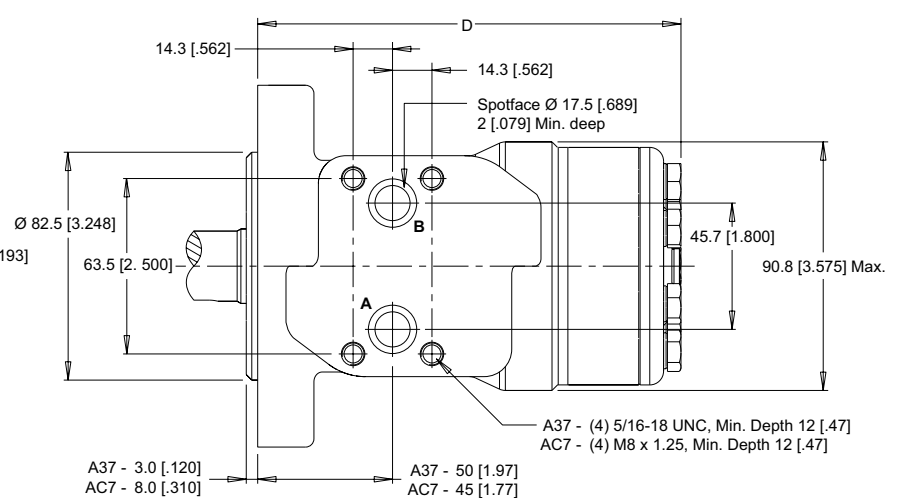
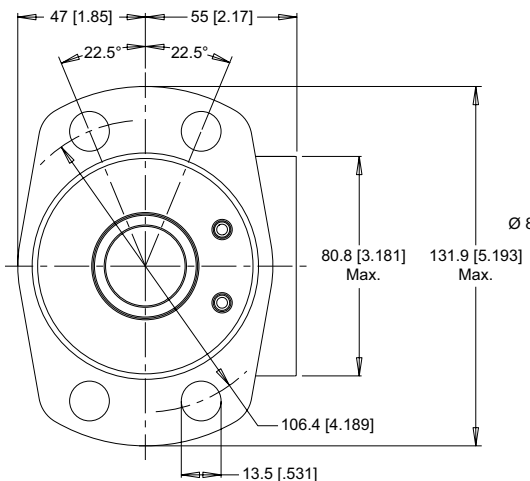
**2-HOLE, SAE A MOUNT, ALIGNED MANIFOLD PORTS**

**A17** 1/2" Drilled **G17** 1/2" Drilled



**4-HOLE, MAGNETO MOUNT, ALIGNED MANIFOLD PORTS**

**A37** 1/2" Drilled **AC7** 1/2" Drilled (TP)



► Dimension D is charted on page 46. ► (TP) - Taller Pilot Height. Refer to detailed drawing for dimensional differences.

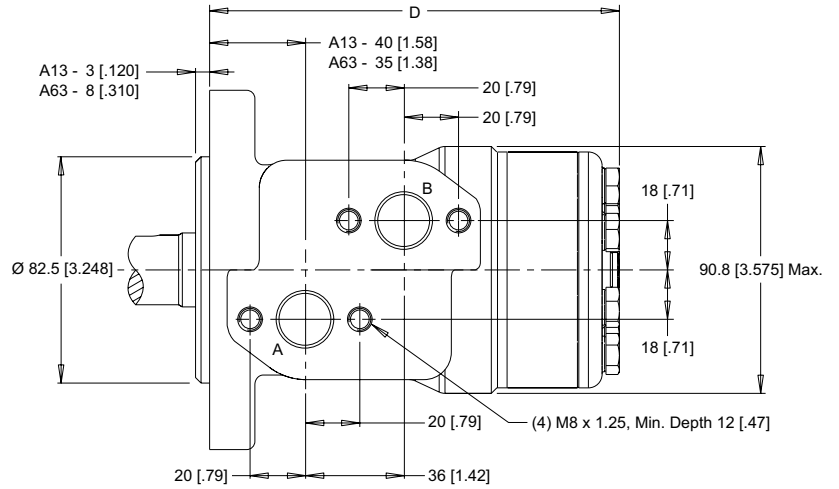
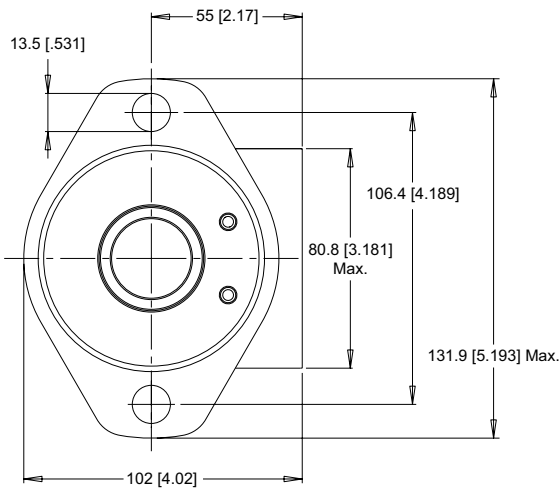
**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

**2-HOLE, SAE A MOUNT, OFFSET MANIFOLD PORTS**

**A13** G 1/2

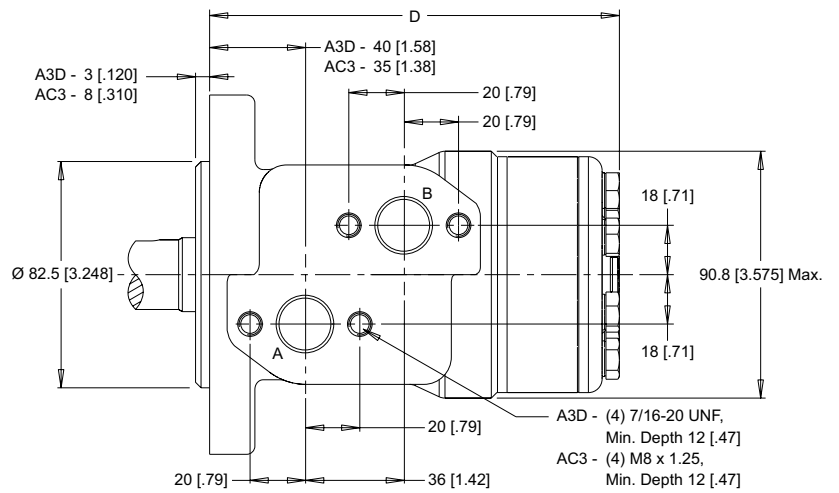
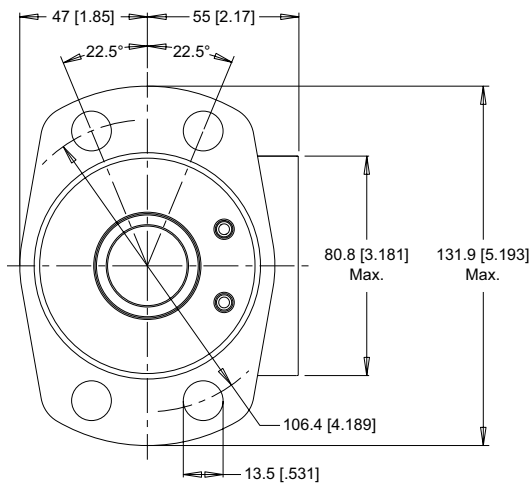
**A63** G 1/2 (TP)



**4-HOLE, MAGNETO MOUNT, OFFSET MANIFOLD PORTS**

**A3D** 7/8-14 UNF

**AC3** G 1/2 (TP)

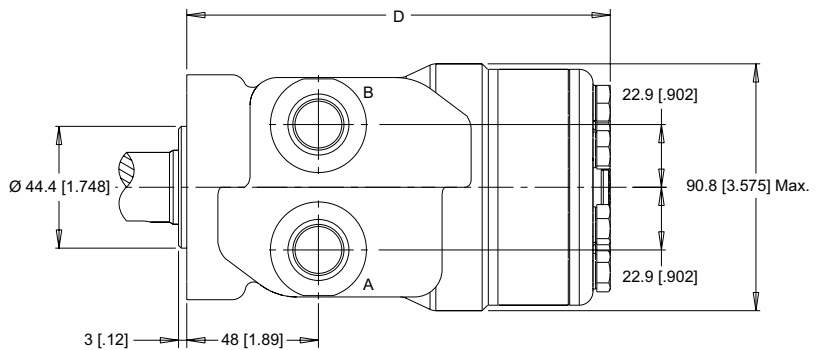
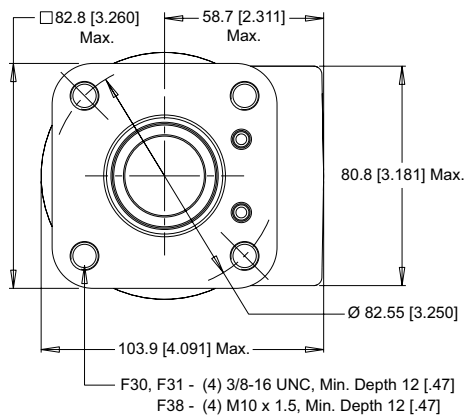


**4-HOLE, SQUARE MOUNT, ALIGNED PORTS**

**F30** 1/2-14 NPT

**F31** 7/8-14 UNF

**F38** G 1/2

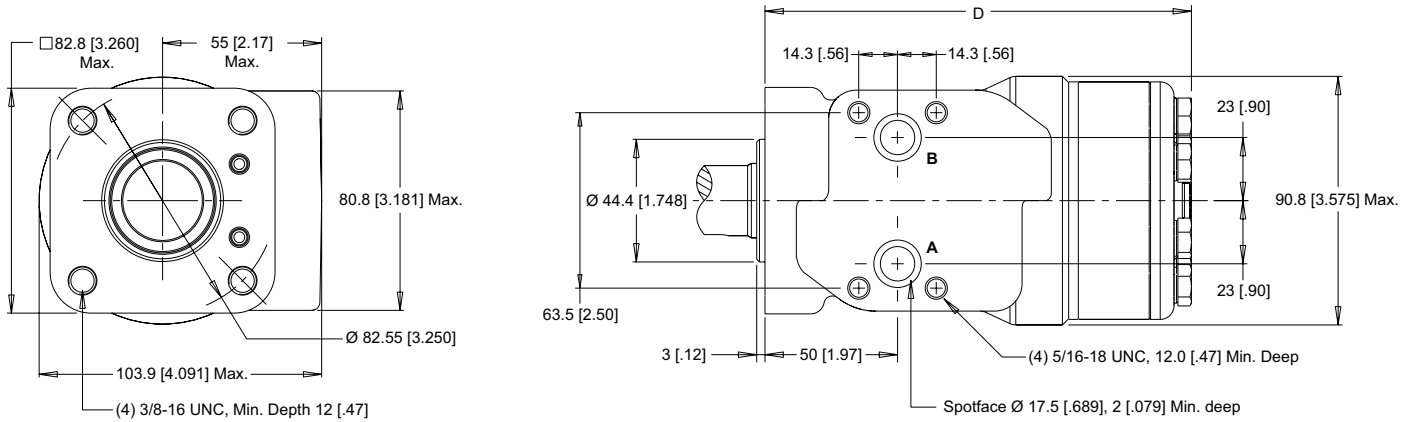


► Dimension D is charted on page 46. ► (TP) - Taller Pilot Height. Refer to detailed drawing for dimensional differences.

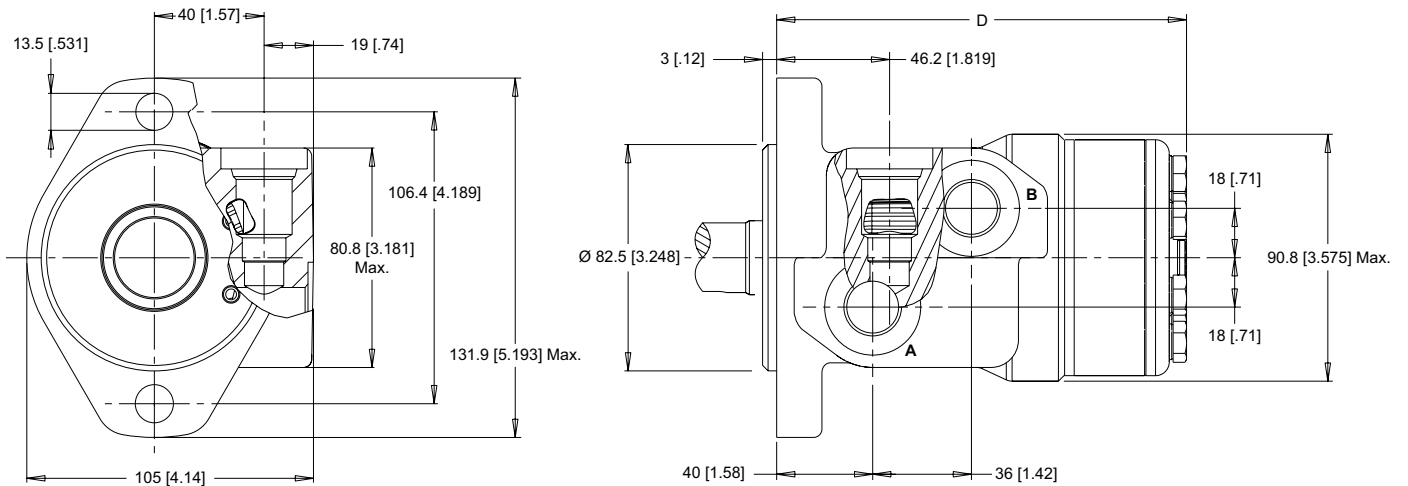
**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

**4-HOLE, SQUARE MOUNT, ALIGNED MANIFOLD PORTS** **F37** 1/2" Drilled

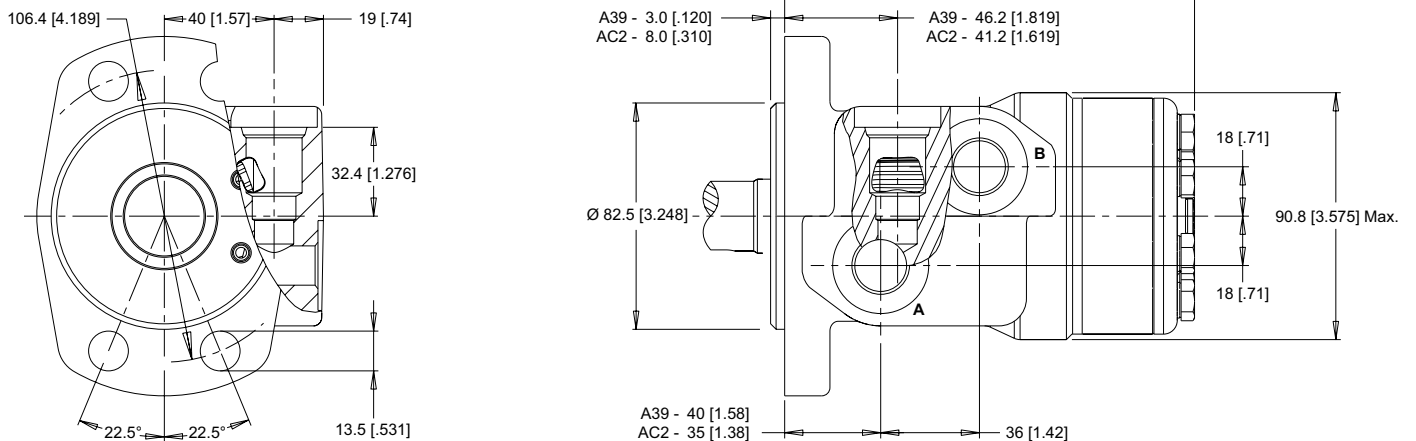


**2-HOLE, SAE A MOUNT, OFFSET PORTS, VALVE CAVITY** **A19** 7/8-14 UNF



**4-HOLE, MAGNETO MOUNT, OFFSET PORTS, VALVE CAVITY**

**A39** 7/8-14 UNF **AC2** G 1/2 (TP)



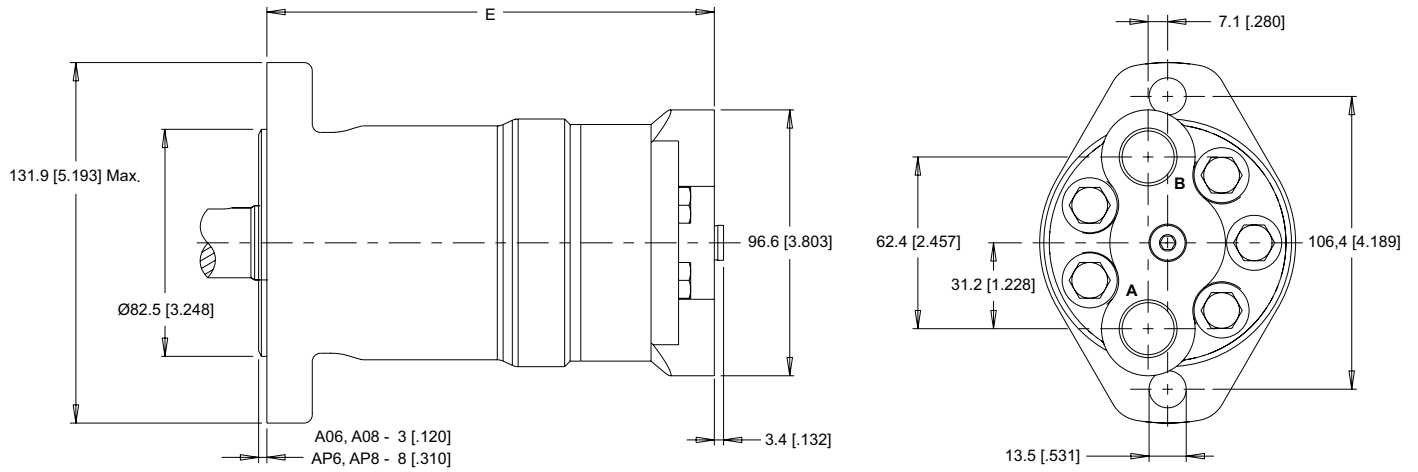
► Dimension D is charted on page 46. ► (TP) - Taller Pilot Height. Refer to detailed drawing for dimensional differences.

**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

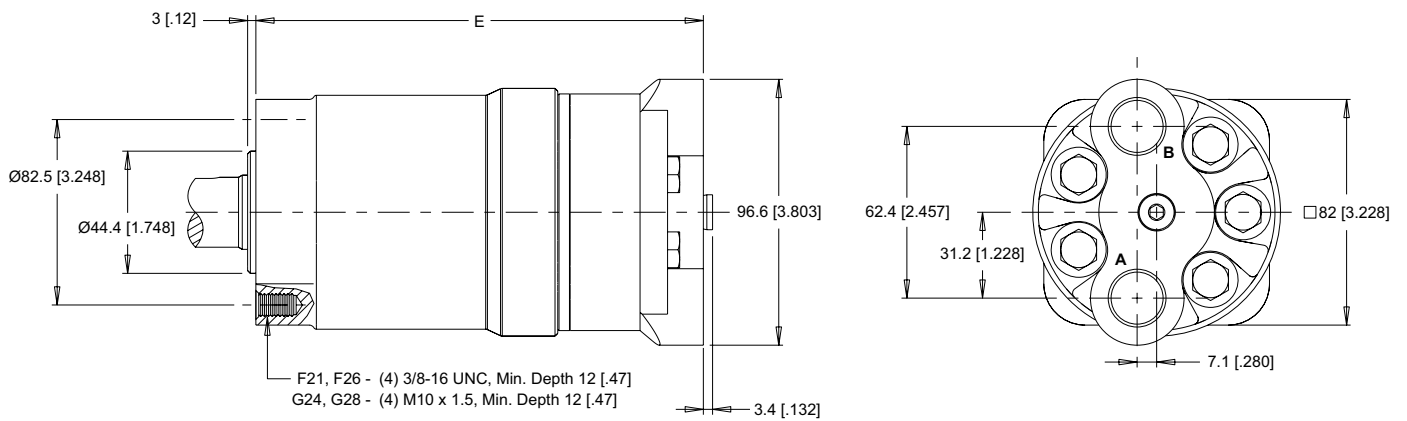
**2-HOLE, SAE A MOUNT, ALIGNED END PORTS**

- A06** 3/4-16 UNF    **A08** G 1/2    **AP6** 3/4-16 UNF (TP)    **AP8** G 1/2 (TP)



**4-HOLE, SQUARE MOUNT, ALIGNED END PORTS**

- F21** 7/8-14 UNF    **F26** 3/4-16 UNF    **G24** M22 x 1.5    **G28** G 1/2

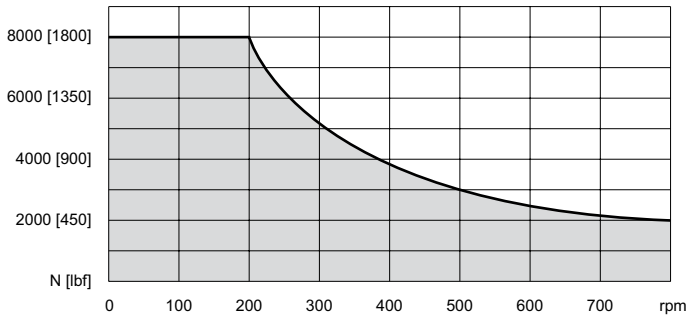


► Dimension E is charted on page 46.    ► (TP) - Taller Pilot Height. Refer to detailed drawing for dimensional differences.

**TECHNICAL INFORMATION**

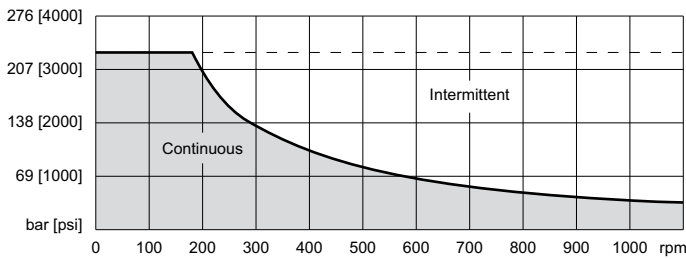
**ALLOWABLE SHAFT LOAD / BEARING CURVE**

The bearing curve below represents the side load capacity of the motor at the centerline of the key for various motor speeds. Operating conditions within the shaded area will maintain acceptable oil film lubrication with recommended fluids. Operating conditions outside the shaded area are susceptible to motor failure due to oil starvation and/or excessive heat generation. Fluids with low lubricity or low viscosity may require the maximum load and speed ratings to be derated to provide acceptable motor life and performance.

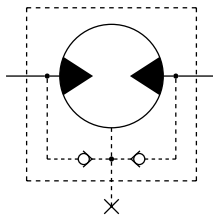


**PERMISSIBLE SHAFT SEAL PRESSURE**

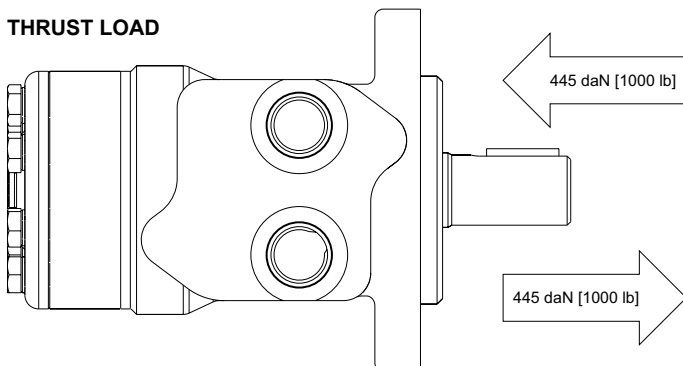
The curve below represents allowable seal pressure at various speeds. Operation in the gray area results in maintaining the rated life of the shaft seal. Actual shaft seal pressure depends on motor configuration.



▶ With check valves and drain connection, the shaft seal pressure equals pressure in the drain line. With check valves and no drain connection, shaft seal pressure is identical to output pressure. No check valves and no drain connection, the shaft seal pressure is identical to the average value of input and output pressure.



**THRUST LOAD**



**LENGTH & WEIGHT CHARTS**

Dimension D is the overall motor length from the rear of the motor to the mounting flange surface and is referenced on detailed housing drawings listed on pages 41-44.

D	3mm Pilot	8mm Pilot	Weight
#	mm [in]	mm [in]	kg [lb]
025	133 [5.24]	128 [5.04]	6.3 [13.9]
032	134 [5.28]	129 [5.08]	6.4 [14.1]
040	136 [5.34]	131 [5.16]	6.5 [14.2]
050	136 [5.34]	131 [5.16]	6.5 [14.2]
060	137 [5.40]	132 [5.20]	6.5 [14.3]
080	139 [5.49]	134 [5.28]	6.6 [14.5]
100	142 [5.59]	137 [5.39]	6.7 [14.7]
125	146 [5.74]	141 [5.55]	6.8 [14.9]
160	150 [5.90]	145 [5.71]	6.9 [15.2]
200	155 [6.10]	150 [5.91]	7.1 [15.6]
250	162 [6.36]	157 [6.18]	7.3 [16.1]
315	170 [6.69]	165 [6.50]	7.6 [16.7]
400	181 [7.13]	176 [6.93]	7.9 [17.5]

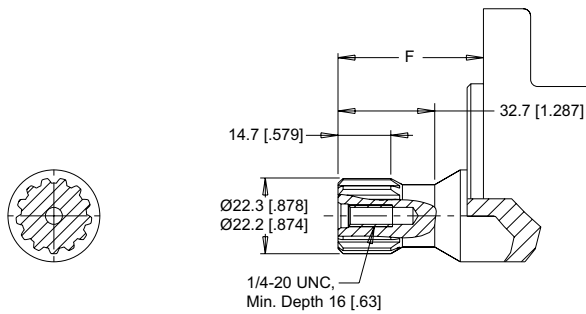
Dimension E is the overall motor length from the rear of the motor to the mounting flange surface and is referenced on detailed housing drawings listed on pages 45.

E	3mm Pilot	8mm Pilot	Weight
#	mm [in]	mm [in]	kg [lb]
025	144 [5.67]	139 [5.47]	5.9 [13.0]
032	145 [5.71]	140 [5.51]	6.0 [13.2]
040	146 [5.75]	141 [5.55]	6.1 [13.4]
050	146 [5.75]	141 [5.55]	6.1 [13.4]
060	148 [5.83]	143 [5.63]	6.1 [13.4]
080	150 [5.91]	145 [5.71]	6.2 [13.6]
100	153 [6.02]	148 [5.83]	6.3 [13.9]
125	157 [6.18]	152 [5.98]	6.4 [14.1]
160	161 [6.33]	156 [6.14]	6.5 [14.3]
200	166 [6.54]	161 [6.34]	6.7 [14.7]
250	173 [6.81]	168 [6.61]	6.9 [15.2]
315	181 [7.13]	176 [6.93]	7.2 [15.8]
400	192 [7.56]	187 [7.36]	7.5 [16.5]

▶ The overall motor weights listed in each chart above were calculated using the heaviest of the housing options associated with that mounting flange to end of motor dimension. 155 & 156 series motor weights can vary ± 0.5 kg [1 lb] depending on model configurations such as housing, shaft, endcover, options etc.

**SHAFTS**

**01** 7/8" 13 Tooth Spline



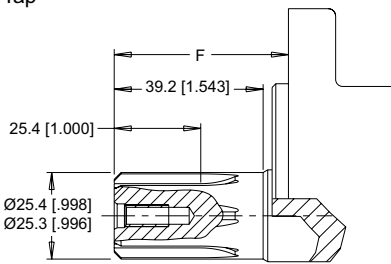
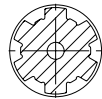
Max. Torque: 170 Nm [1500 lb-in]

**02** 1" 6B Spline, 1/4-20 Tap

**04** 1" 6B Spline, M8x1.25 Tap

**F3** 1" 6B Spline, M8x1.25 Tap

02, 04 - 6B Spline  
SAE J499 Standard  
F3 - 6B Spline  
B.S. 2059 Standard

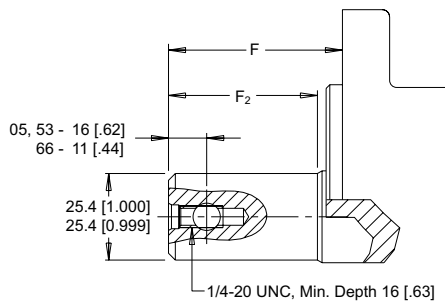
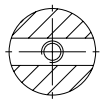


Max. Torque: 678 Nm [6000 lb-in]

**05** 1" - 9.5 [.375] Pinhole

**53** 1" - 10.3 [.406] Pinhole

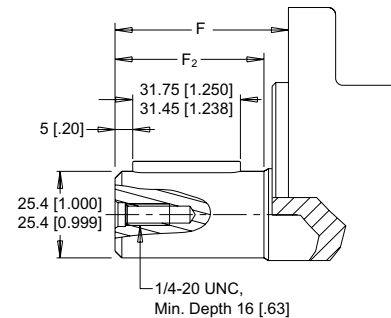
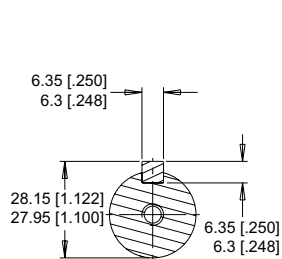
**66** 1" - 8.0 [.315] Pinhole



Max. Torque: 678 Nm [6000 lb-in]

**10** 1" Straight

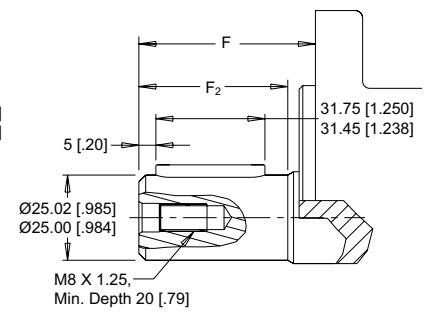
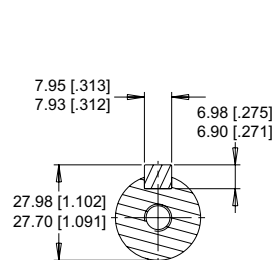
**15** 1" Straight Extended



Max. Torque: 655 Nm [5800 lb-in]

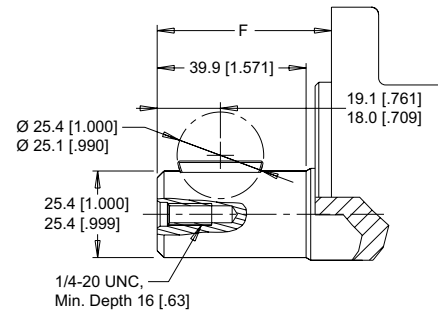
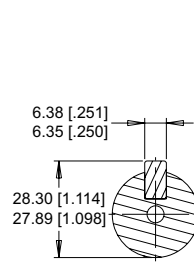
**12** 25mm Straight

**16** 25mm Straight Extended



Max. Torque: 655 Nm [5800 lb-in]

**B1** 1" Straight, Woodruff Key



Max. Torque: 655 Nm [5800 lb-in]

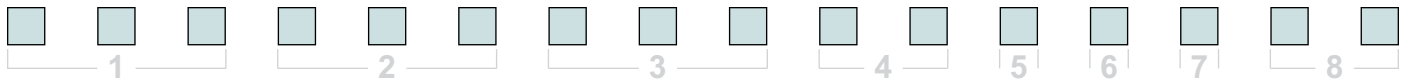
**MOUNTING / SHAFT LENGTH CHART**

Dimension F is the overall distance from the motor mounting surface to the end of the shaft.

Additional shaft length information, if necessary, is noted as F<sub>2</sub> and does not increase or decrease the listed F dimensions in this chart. The overall shaft lengths are already factored into the overall distance from the mounting surface to the end of the shaft.

F	3mm Pilot	8mm Pilot	F <sub>2</sub>
#	mm [in]	mm [in]	mm [in]
01	43.3 [1.705]	48.3 [1.902]	N/A
02	45.3 [1.783]	50.3 [1.980]	N/A
04	45.3 [1.783]	50.3 [1.980]	N/A
05	45.3 [1.783]	50.3 [1.980]	39.2 [1.543]
10	45.3 [1.783]	50.3 [1.980]	39.2 [1.543]
12	50.3 [1.980]	55.3 [2.177]	44.2 [1.740]
15	62.1 [2.445]	67.1 [2.642]	56.0 [2.205]
16	62.6 [2.464]	67.6 [2.661]	56.5 [2.225]
53	45.3 [1.783]	50.3 [1.980]	39.2 [1.543]
66	50.3 [1.980]	55.3 [2.177]	44.2 [1.740]
B1	45.3 [1.783]	50.3 [1.980]	N/A

**ORDERING INFORMATION**



**1. CHOOSE SERIES DESIGNATION**

**155** Standard Rotation      **156** Reverse Rotation

► The 155 & 156 series are bi-directional.

**2. SELECT A DISPLACEMENT OPTION**

<b>025</b>	25 cm <sup>3</sup> /rev [1.5 in <sup>3</sup> /rev]	<b>125</b>	125 cm <sup>3</sup> /rev [7.6 in <sup>3</sup> /rev]
<b>032</b>	32 cm <sup>3</sup> /rev [2.0 in <sup>3</sup> /rev]	<b>160</b>	154 cm <sup>3</sup> /rev [9.4 in <sup>3</sup> /rev]
<b>040</b>	40 cm <sup>3</sup> /rev [2.5 in <sup>3</sup> /rev]	<b>200</b>	190 cm <sup>3</sup> /rev [11.6 in <sup>3</sup> /rev]
<b>050</b>	50 cm <sup>3</sup> /rev [3.0 in <sup>3</sup> /rev]	<b>250</b>	240 cm <sup>3</sup> /rev [14.6 in <sup>3</sup> /rev]
<b>060</b>	59 cm <sup>3</sup> /rev [3.6 in <sup>3</sup> /rev]	<b>315</b>	303 cm <sup>3</sup> /rev [18.5 in <sup>3</sup> /rev]
<b>080</b>	78 cm <sup>3</sup> /rev [4.8 in <sup>3</sup> /rev]	<b>400</b>	388 cm <sup>3</sup> /rev [23.7 in <sup>3</sup> /rev]
<b>100</b>	96 cm <sup>3</sup> /rev [5.9 in <sup>3</sup> /rev]		

**3. SELECT A MOUNT & PORT OPTION**

<b>A06</b>	2-Hole, SAE A Mount, Aligned End Ports, 3/4-16 UNF
<b>A08</b>	2-Hole, SAE A Mount, Aligned End Ports, G 1/2
<b>AP6</b>	2-Hole, SAE A Mount, Aligned End Ports, 3/4-16 UNF (TP)
<b>AP8</b>	2-Hole, SAE A Mount, Aligned End Ports, G 1/2 (TP)
<b>A10</b>	2-Hole, SAE A Mount, Aligned Ports, 1/2-14 NPT
<b>A11</b>	2-Hole, SAE A Mount, Aligned Ports, 7/8-14 UNF
<b>A12</b>	2-Hole, SAE A Mount, Offset Ports, G 1/2
<b>A13</b>	2-Hole, SAE A Mount, Offset Manifold Ports, G 1/2
<b>A17</b>	2-Hole, SAE A Mount, Aligned Manifold Ports, 1/2" Drilled
<b>A18</b>	2-Hole, SAE A Mount, Aligned Ports, G 1/2
<b>A19</b>	2-Hole, SAE A Mount, Offset Ports, Valve Cavity 7/8-14 UNF
<b>A30</b>	4-Hole, Magneto Mount, Aligned Ports, 1/2-14 NPT
<b>A31</b>	4-Hole, Magneto Mount, Aligned Ports, 7/8-14 UNF
<b>A32</b>	4-Hole, Magneto Mount, Offset Ports, G 1/2
<b>A37</b>	4-Hole, Magneto Mount, Aligned Manifold Ports, 1/2" Drilled
<b>A39</b>	4-Hole, Magneto Mount, Offset Ports, Valve Cavity 7/8-14 UNF
<b>A3D</b>	4-Hole, Magneto Mount, Offset Manifold Ports, 7/8-14 UNF
<b>A62</b>	2-Hole, SAE A Mount, Offset Ports, G 1/2 (TP)
<b>A63</b>	2-Hole, SAE A Mount, Offset Manifold Ports, G 1/2 (TP)
<b>A68</b>	2-Hole, SAE A Mount, Aligned Ports, G 1/2 (TP)
<b>A69</b>	2-Hole, SAE A Mount, Offset Ports, 7/8-14 UNF (TP)
<b>AC2</b>	4-Hole, Magneto Mount, Offset Ports, G 1/2 (TP)
<b>AC3</b>	4-Hole, Magneto Mount, Offset Manifold Ports, G 1/2 (TP)
<b>AC7</b>	4-Hole, Magneto Mount, Aligned Manifold Ports, 1/2" Drilled (TP)

► (TP) - Tall pilot. Speed sensor option is not available on tall pilot housings.

**3. SELECT A MOUNT & PORT OPTION**

<b>AC8</b>	4-Hole, Magneto Mount, Aligned Ports, G 1/2 (TP)
<b>F21</b>	4-Hole, Square Mount, Aligned End Ports, 7/8-14 UNF
<b>F26</b>	4-Hole, Square Mount, Aligned End Ports, 3/4-16 UNF
<b>F30</b>	4-Hole, Square Mount, Aligned Ports, 1/2-14 NPT
<b>F31</b>	4-Hole, Square Mount, Aligned Ports, 7/8-14 UNF
<b>F37</b>	4-Hole, Square Mount, Aligned Manifold Ports, 1/2" Drilled
<b>F38</b>	4-Hole, Square Mount, Aligned Ports, G 1/2
<b>G17</b>	2-Hole, SAE A Mount, Aligned Manifold Ports, 1/2" Drilled
<b>G24</b>	4-Hole, Square Mount, Aligned End Ports, M22 x 1.5
<b>G28</b>	4-Hole, Square Mount, Aligned End Ports, G 1/2

**4. SELECT A SHAFT OPTION**

<b>01</b>	7/8" 13 Tooth Spline	<b>15</b>	1" Straight Extended
<b>02</b>	1" 6B Spline, 1/4-20 Tap	<b>16</b>	25mm Straight Extended
<b>04</b>	1" 6B Spline, M8x1.25 Tap	<b>53</b>	1" - 10.3 [.406] Pinhole
<b>05</b>	1" - 9.5 [.375] Pinhole	<b>66</b>	1" - 8.0 [.315] Pinhole
<b>10</b>	1" Straight	<b>B1</b>	1" Straight, Woodruff Key
<b>12</b>	25mm Straight	<b>F3</b>	1" 6B Spline, M8x1.25 Tap

► The 15 & 16 extended shafts are designed for use with one of the speed sensor options listed in STEP 7.

**5. SELECT A PAINT OPTION**

<b>A</b>	Black
<b>B</b>	Black, Unpainted Mounting Surface

**6. SELECT A VALVE CAVITY / CARTRIDGE OPTION**

<b>A</b>	None	<b>E</b>	104 bar [1500 psi] Relief
<b>B</b>	Valve Cavity Only	<b>F</b>	121 bar [1750 psi] Relief
<b>C</b>	69 bar [1000 psi] Relief	<b>G</b>	138 bar [2000 psi] Relief
<b>D</b>	86 bar [1250 psi] Relief	<b>J</b>	173 bar [2500 psi] Relief

► Valve cavity is only available on the A19, A39 & AC2 housings.

**7. SELECT AN ADD-ON OPTION**

<b>A</b>	Standard
<b>B</b>	Lock Nut
<b>C</b>	Solid Hex Nut
<b>W</b>	Speed Sensor, Dual, 4-Pin Male Weatherpack Connector
<b>X</b>	Speed Sensor, Dual, 4-Pin M12 Male Connector
<b>Y</b>	Speed Sensor, Single, 3-Pin Male Weatherpack Connector
<b>Z</b>	Speed Sensor, Single, 4-Pin M12 Male Connector

**8. SELECT A MISCELLANEOUS OPTION**

<b>AA</b>	None	<b>DS</b>	Groove In Mounting Flange
<b>AC</b>	Freeturning Rotor	<b>FB</b>	No Check Valves Installed
<b>BE</b>	Slinger Seal		



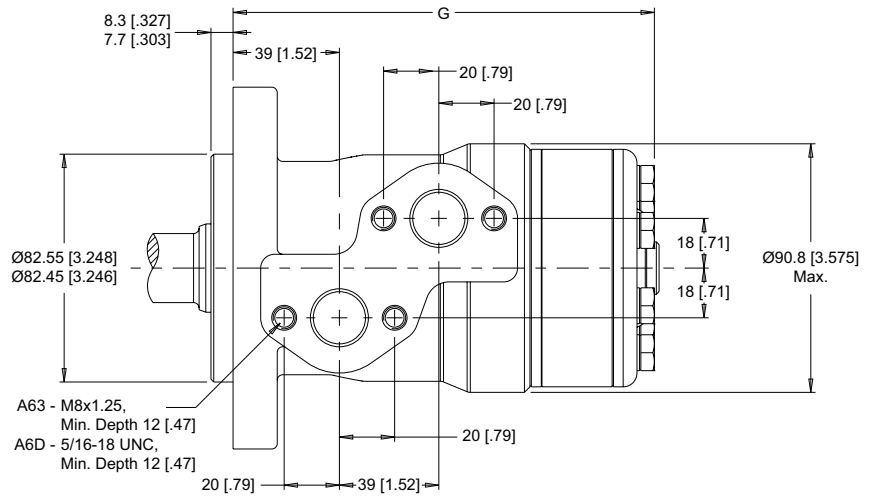
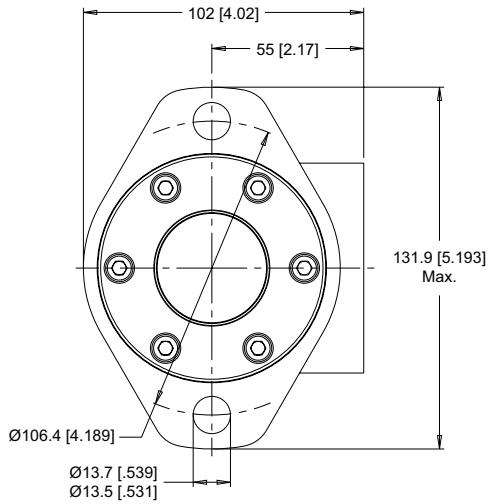
**HOUSINGS**

► Dimensions shown are without paint. Paint thickness can be up to 0.13 [.005].

**2-HOLE, SAE A MOUNT, OFFSET MANIFOLD PORTS**

**A63** G 1/2

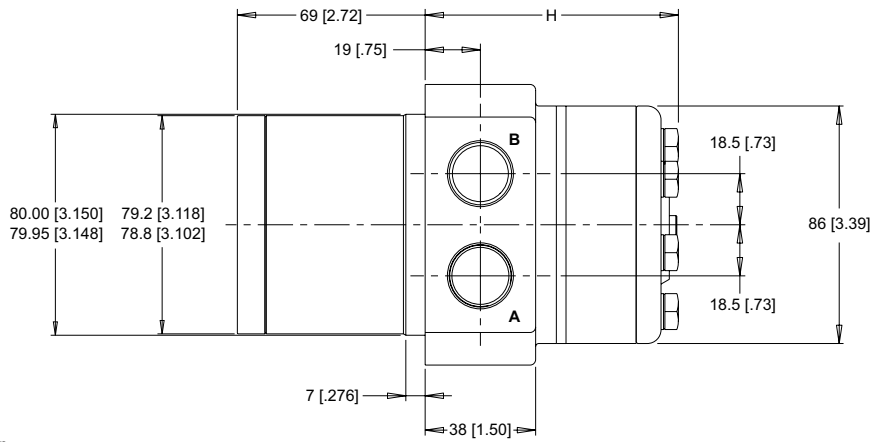
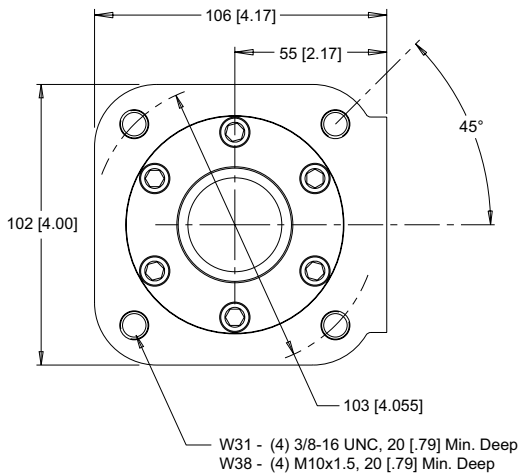
**A6D** 7/8-14 UNF



**4-HOLE, WHEEL MOUNT, ALIGNED PORTS**

**W31** 7/8-14 UNF

**W38** G 1/2



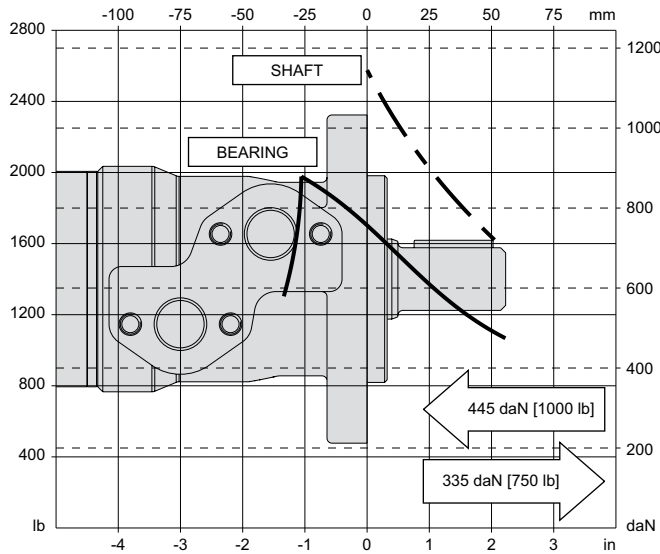
► Dimensions G & H are charted on page 50.

**TECHNICAL INFORMATION**

**ALLOWABLE SHAFT LOAD / 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 on page 7.

**SAE A MOUNT**

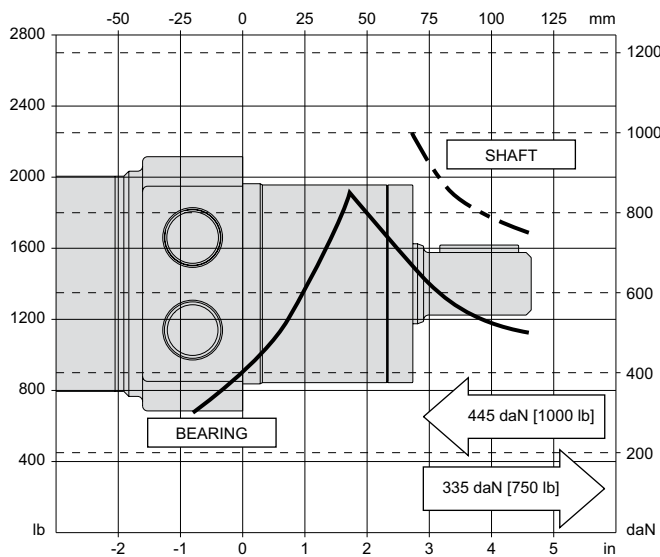


**LENGTH & WEIGHT CHART**

Dimension G is the overall motor length from the rear of the motor to the mounting flange surface.

G	Length	Weight
#	mm [in]	kg [lb]
025	133 [5.24]	6.0 [13.3]
032	134 [5.28]	6.1 [13.4]
040	136 [5.33]	6.1 [13.5]
050	136 [5.33]	6.1 [13.5]
060	137 [5.39]	6.2 [13.6]
080	139 [5.48]	6.2 [13.6]
100	142 [5.59]	6.3 [13.9]
125	146 [5.74]	6.4 [14.2]
160	150 [5.89]	6.6 [14.5]
200	155 [6.09]	6.7 [14.9]
250	161 [6.35]	7.0 [15.3]
315	170 [6.69]	7.2 [15.9]
400	181 [7.13]	7.6 [16.8]

**WHEEL MOUNT**



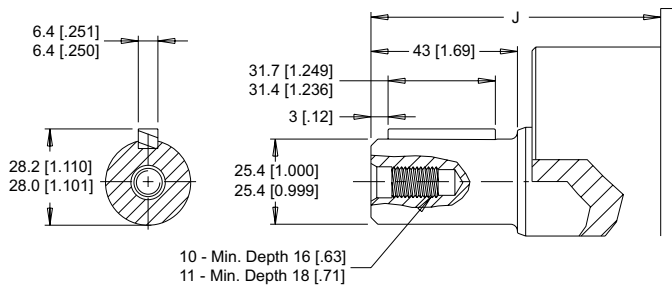
**LENGTH & WEIGHT CHART**

Dimension H is the overall motor length from the rear of the motor to the mounting flange surface.

H	Length	Weight
#	mm [in]	kg [lb]
025	72 [2.83]	6.4 [14.1]
032	73 [2.87]	6.5 [14.4]
040	75 [2.95]	6.6 [14.5]
050	75 [2.95]	6.6 [14.5]
060	76 [2.99]	6.7 [14.8]
080	78 [3.07]	6.8 [15.0]
100	81 [3.19]	6.9 [15.2]
125	85 [3.35]	7.0 [15.5]
160	89 [3.50]	7.1 [15.6]
200	94 [3.70]	7.2 [15.9]
250	100 [3.94]	7.4 [16.4]
315	109 [4.29]	7.7 [17.0]
400	120 [4.72]	8.1 [17.8]

**SHAFTS**

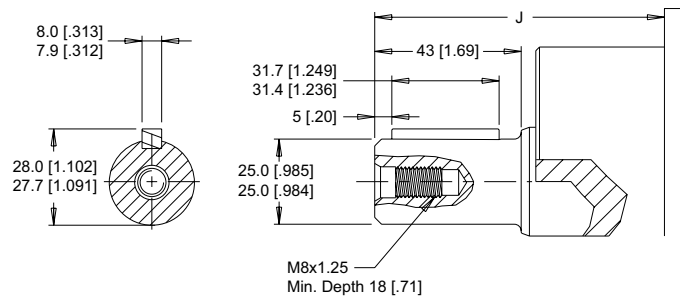
**10** 1" Straight, 1/4-20 Tap



Max. Torque: 655 Nm [5800 lb-in]

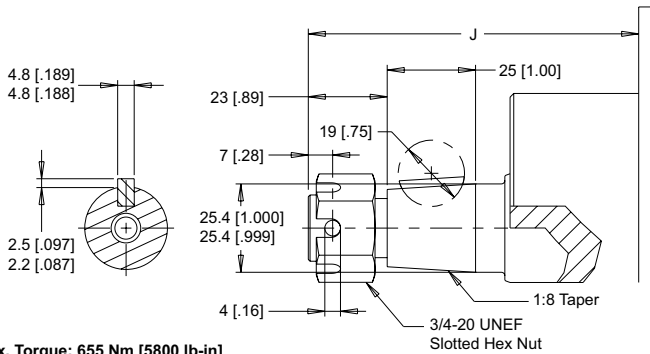
**11** 1" Straight, M8x1.25 Tap

**12** 25mm Straight



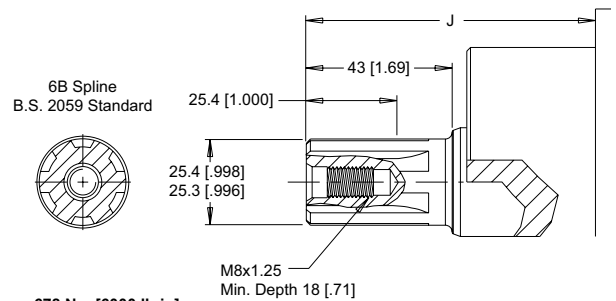
Max. Torque: 655 Nm [5800 lb-in]

**13** 1" Tapered



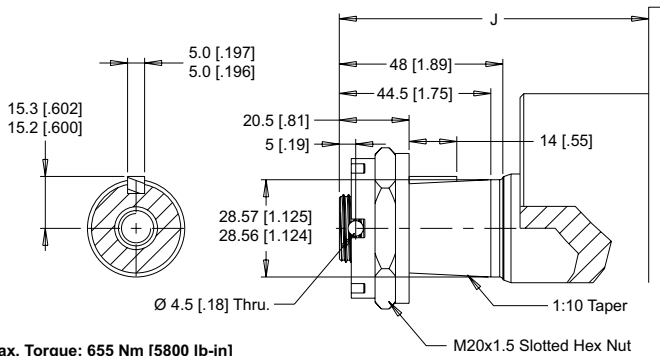
Max. Torque: 655 Nm [5800 lb-in]

**F3** 1" 6B Spline



Max. Torque: 678 Nm [6000 lb-in]

**N9** 28.5mm Tapered



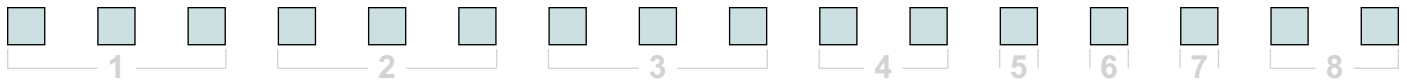
Max. Torque: 655 Nm [5800 lb-in]

**MOUNTING / SHAFT LENGTH CHART**

Dimension J is the overall distance from the motor mounting surface to the end of the shaft.

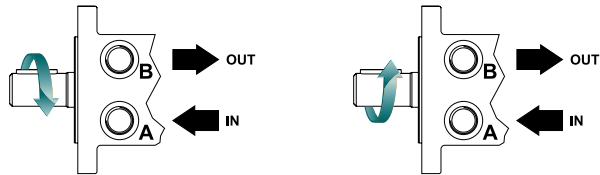
J #	SAE A Mounts mm [in]	Wheel Mounts mm [in]
10	55 [2.18]	116 [4.57]
11	55 [2.18]	116 [4.57]
12	55 [2.18]	116 [4.57]
13	66 [2.60]	127 [5.00]
F3	55 [2.18]	116 [4.57]
N9	58 [2.29]	119 [4.69]

**ORDERING INFORMATION**



**1. CHOOSE SERIES DESIGNATION**

- 157** Clockwise Rotation
- 158** Counterclockwise Rotation



► The 157 & 158 series are bi-directional. Reversing the inlet hose will reverse shaft rotation.

**2. SELECT A DISPLACEMENT OPTION**

<b>025</b>	25 cm <sup>3</sup> /rev [1.5 in <sup>3</sup> /rev]	<b>125</b>	125 cm <sup>3</sup> /rev [7.6 in <sup>3</sup> /rev]
<b>032</b>	32 cm <sup>3</sup> /rev [2.0 in <sup>3</sup> /rev]	<b>160</b>	154 cm <sup>3</sup> /rev [9.4 in <sup>3</sup> /rev]
<b>040</b>	40 cm <sup>3</sup> /rev [2.5 in <sup>3</sup> /rev]	<b>200</b>	190 cm <sup>3</sup> /rev [11.6 in <sup>3</sup> /rev]
<b>050</b>	50 cm <sup>3</sup> /rev [3.0 in <sup>3</sup> /rev]	<b>250</b>	240 cm <sup>3</sup> /rev [14.6 in <sup>3</sup> /rev]
<b>060</b>	59 cm <sup>3</sup> /rev [3.6 in <sup>3</sup> /rev]	<b>315</b>	303 cm <sup>3</sup> /rev [18.5 in <sup>3</sup> /rev]
<b>080</b>	78 cm <sup>3</sup> /rev [4.8 in <sup>3</sup> /rev]	<b>400</b>	388 cm <sup>3</sup> /rev [23.7 in <sup>3</sup> /rev]
<b>100</b>	96 cm <sup>3</sup> /rev [5.9 in <sup>3</sup> /rev]		

**3. SELECT A MOUNT & PORT OPTION**

- A63** 2-Hole, SAE A Mount, Offset Manifold Ports, G 1/2
- A6D** 2-Hole, SAE A Mount, Offset Manifold Ports, 7/8-14 UNF
- W31** 4-Hole, Wheel Mount, Aligned Ports, 7/8-14 UNF
- W38** 4-Hole, Wheel Mount, Aligned Ports, G 1/2

**4. SELECT A SHAFT OPTION**

- |           |                          |           |                |
|-----------|--------------------------|-----------|----------------|
| <b>10</b> | 1" Straight, 1/4-20 Tap  | <b>13</b> | 1" Tapered     |
| <b>11</b> | 1" Straight, M8x1.25 Tap | <b>F3</b> | 1" 6B Spline   |
| <b>12</b> | 25mm Straight            | <b>N9</b> | 28.5mm Tapered |

**5. SELECT A PAINT OPTION**

- A** Black
- B** Black, Unpainted Mounting Surface

**6. SELECT A VALVE CAVITY / CARTRIDGE OPTION**

- A** None

**7. SELECT AN ADD-ON OPTION**

- A** Standard

**8. SELECT A MISCELLANEOUS OPTION**

- AA** None
- AC** Freeturning Rotor