

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

**HIDROMA
SYSTEMS**

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

white drive products



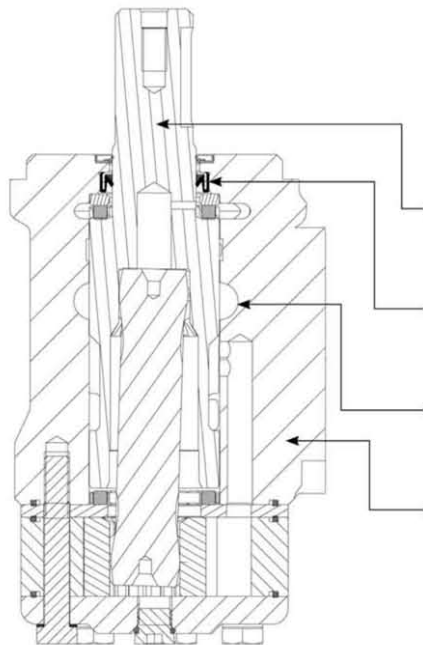
WP

SERIES HYDRAULIC MOTORS

WP

OVERVIEW

The WP motor series is an economical alternative to more complex geroler designs that still provides high efficiency across a wide performance range. These motors are intended for medium-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.



KEY FEATURES

Variety of Mounts and Shafts provide flexibility in application design.

High Pressure Shaft Seal offers superior seal life and performance.

Spool Valve Design gives superior performance and smooth operation over a wide speed and torque range.

Built-In Check Valves (not shown) in the housing offers versatility and increased seal life.

SPECIFICATIONS

Intermittent Ratings - 10% of Operation Peak Ratings - 1% of Operation

CODE	Displacement cc [in ³ /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	154 [9.4]	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]

025

25 cc [1.5 in³/rev.]

Max. Max. Inter. Cont.	Flow - lpm [gpm]	5 [1.3]	10 [2.6]	15 [4.0]	20 [5.3]	25 [6.6]	30 [7.9]	35 [9.2]	40 [10.6]	45 [11.9]
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Pressure - bars [psi]	Max. Cont.	Max. Inter.			
30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]

Torque - Nm [lb-in]	Speed rpm	Intermittent Ratings - 10% of Operation				
		9 [80]	10 [88]	15 [4.0]	20 [5.3]	25 [6.6]
18 [159]	25 [221]	32 [283]	35 [664]	48 [425]	56 [493]	
160	134	101	106	142	160	
18 [159]	26 [230]	34 [301]	37 [690]	48 [425]	56 [493]	
386	323	280	255	210	210	
19 [168]	26 [230]	35 [310]	38 [690]	44 [389]	56 [493]	
568	505	467	431	390	390	
19 [168]	25 [221]	33 [292]	39 [681]	45 [398]	56 [493]	
7 [71]	25 [221]	33 [292]	39 [681]	45 [398]	56 [493]	
777	736	692	608	566	566	
18 [159]	26 [230]	32 [283]	39 [646]	45 [398]	56 [493]	
7 [62]	26 [230]	32 [283]	39 [646]	45 [398]	56 [493]	
972	920	870	803	756	756	
17 [150]	25 [221]	32 [283]	39 [602]	44 [389]	56 [493]	
6 [53]	25 [221]	32 [283]	39 [602]	44 [389]	56 [493]	
1167	1122	1088	998	976	976	
16 [142]	24 [212]	31 [274]	37 [566]	43 [381]	56 [493]	
5 [44]	24 [212]	31 [274]	37 [566]	43 [381]	56 [493]	
1360	1318	1282	1258	1216	1160	
15 [133]	22 [195]	31 [274]	36 [513]	41 [363]	56 [493]	
5 [44]	22 [195]	31 [274]	36 [513]	41 [363]	56 [493]	
1570	1503	1476	1432	1394	1359	
13 [115]	20 [177]	28 [248]	34 [496]	39 [345]	56 [493]	
1687	1636	1600	1558	1516	1516	

Theoretical rpm	200
	400
	600
	800
	1000
	1200
	1400
1600	
1800	

Overall Efficiency - 70 - 100% 40 - 69% 0 - 39%

Theoretical Torque - Nm [lb-in]

12 [106]	24 [211]	32 [282]	40 [352]	48 [423]	56 [493]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

032

32 cc [2.0 in³/rev.]

Max. Max. Inter. Cont.	Flow - lpm [gpm]	5 [1.3]	10 [2.6]	15 [4.0]	20 [5.3]	25 [6.6]	30 [7.9]	35 [9.2]	40 [10.6]	45 [11.9]	50 [13.2]	55 [14.5]
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Pressure - bars [psi]	Max. Cont.	Max. Inter.			
30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]

Torque - Nm [lb-in]	Speed rpm	Intermittent Ratings - 10% of Operation				
		11 [97]	12 [106]	15 [4.0]	20 [5.3]	25 [6.6]
24 [212]	35 [310]	37 [327]	46 [407]	56 [496]	61 [541]	
149	135	94	240	211	211	
27 [239]	37 [327]	43 [381]	46 [407]	56 [496]	61 [541]	
308	284	270	250	211	211	
26 [230]	36 [319]	45 [398]	48 [425]	57 [504]	61 [541]	
465	444	429	398	378	355	
25 [221]	35 [310]	44 [389]	46 [407]	56 [496]	61 [541]	
10 [88]	35 [310]	44 [389]	46 [407]	56 [496]	61 [541]	
624	589	575	557	544	524	
24 [212]	34 [301]	42 [372]	45 [398]	54 [478]	61 [541]	
9 [80]	34 [301]	42 [372]	45 [398]	54 [478]	61 [541]	
780	771	751	735	719	695	
23 [204]	32 [283]	40 [354]	45 [398]	52 [460]	61 [541]	
8 [71]	32 [283]	40 [354]	45 [398]	52 [460]	61 [541]	
931	908	895	876	857	822	
20 [177]	29 [257]	39 [345]	43 [381]	51 [451]	61 [541]	
7 [62]	29 [257]	39 [345]	43 [381]	51 [451]	61 [541]	
1086	1066	1051	1030	1012	981	
19 [168]	27 [239]	38 [336]	43 [381]	50 [442]	61 [541]	
7 [62]	27 [239]	38 [336]	43 [381]	50 [442]	61 [541]	
1240	1212	1190	1178	1145	1121	
18 [159]	26 [230]	35 [310]	42 [372]	48 [425]	61 [541]	
6 [53]	26 [230]	35 [310]	42 [372]	48 [425]	61 [541]	
1400	1382	1366	1340	1314	1280	
16 [142]	24 [212]	31 [274]	40 [354]	46 [407]	61 [541]	
5 [44]	24 [212]	31 [274]	40 [354]	46 [407]	61 [541]	
1550	1526	1500	1478	1452	1418	
12 [106]	20 [177]	28 [248]	34 [301]	39 [345]	61 [541]	
1674	1641	1617	1584	1555	1555	

Theoretical rpm	156
	313
	469
	625
	781
	938
	1094
	1250
	1406
	1563
1719	

Overall Efficiency - 70 - 100% 40 - 69% 0 - 39%

Theoretical Torque - Nm [lb-in]

15 [135]	31 [271]	41 [361]	51 [451]	61 [541]	71 [631]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

WP

PERFORMANCE

040		Pressure - bars [psi]					Max. Cont.	Max. Inter.			
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]				
40 cc [2.5 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation				
Max. Max. Inter. 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]	125	Theoretical rpm
		15 [133]	31 [274]	38 [336]	48 [425]	56 [496]	70 [619]			250	
		113	98	83	60	49	114			500	
		14 [124]	31 [274]	41 [363]	54 [478]	62 [549]	74 [655]			750	
		238	222	204	182	161	381			1000	
		13 [115]	32 [283]	41 [363]	53 [469]	65 [575]	74 [655]			1250	
		482	458	442	423	402	624			1500	
		12 [106]	30 [265]	39 [345]	51 [451]	63 [558]	74 [655]			2000	
		730	704	687	668	646	870				
		10 [88]	27 [239]	39 [345]	51 [451]	61 [540]	72 [637]				
	968	949	928	908	892	1107					
	7 [62]	25 [221]	37 [327]	49 [434]	59 [522]	71 [628]					
	1219	1191	1173	1150	1127	1341					
	4 [35]	23 [204]	34 [301]	46 [407]	56 [496]	68 [602]					
	1471	1428	1411	1387	1369	1598					
		16 [142]	30 [265]	41 [363]	52 [460]	64 [566]					
		1670	1653	1627	1612	1598					
Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>											
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]											

050		Pressure - bars [psi]					Max. Cont.	Max. Inter.				
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]			
50 cc [3.0 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm					Intermittent Ratings - 10% of Operation					
Max. Max. Inter. 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]	101	Theoretical rpm
		19 [168]	39 [345]	48 [425]	62 [549]	75 [664]	92 [814]	102 [903]	107 [947]		202	
		100	85	75	64	49	127	101	97		404	
		20 [177]	38 [336]	50 [442]	63 [558]	78 [690]	92 [814]	104 [920]	108 [956]		606	
		197	196	174	159	146	314	292	290		808	
		18 [159]	38 [336]	52 [460]	64 [566]	78 [690]	90 [796]	103 [912]	107 [947]		1010	
		400	386	371	355	341	314	292	290		1212	
		15 [133]	37 [327]	50 [442]	64 [566]	77 [681]	89 [788]	103 [912]	107 [947]		1414	
		600	585	571	560	540	516	499	495		1515	
		12 [106]	31 [274]	45 [398]	59 [522]	73 [646]	87 [770]	99 [876]	106 [938]			
	808	800	790	770	765	733	703	697				
	9 [80]	27 [239]	41 [363]	55 [487]	68 [602]	84 [743]	98 [867]	105 [929]				
	1009	1006	986	982	964	956	930	872				
	6 [53]	24 [212]	37 [327]	53 [469]	64 [566]	82 [726]	95 [841]	102 [903]				
	1208	1200	1196	1188	1176	1160	1140	963				
	3 [27]	17 [150]	32 [283]	44 [389]	58 [513]	80 [708]	93 [823]	98 [867]				
	1410	1396	1382	1370	1358	1347	1334	1315				
		15 [133]	30 [265]	40 [354]	56 [496]	77 [681]	88 [779]	93 [823]				
		1500	1488	1473	1457	1439	1412	1388				
Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>												
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]												

060

59 cc [3.6 in³/rev.]

Max. Inter.	5 [1.3]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	10 [2.6]					
Max. Cont.	20 [5.3]	Max. Inter.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	30 [7.9]					
Max. Inter.	40 [10.6]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	50 [13.2]					
Max. Cont.	60 [15.8]	Max. Inter.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	70 [18.5]					
Max. Inter.	75 [19.8]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm

Pressure - bars [psi]							Max. Cont.	Max. Inter.
30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]	

Torque - Nm [lb-in], Speed rpm							Intermittent Ratings - 10% of Operation	
20 [177]	46 [407]	65 [575]	80 [708]	95 [841]	112 [991]			85
22 [195]	47 [416]	66 [584]	81 [717]	96 [850]	113 [1000]	125 [1106]	136 [1204]	170
20 [177]	45 [398]	64 [566]	80 [708]	93 [823]	111 [982]	123 [1088]	134 [1186]	339
17 [150]	43 [381]	62 [549]	76 [673]	89 [788]	109 [965]	121 [1071]	131 [1159]	509
14 [124]	41 [363]	58 [513]	73 [646]	87 [770]	105 [929]	117 [1035]	127 [1124]	678
10 [88]	37 [327]	55 [487]	70 [619]	84 [743]	102 [903]	113 [1000]	122 [1080]	848
7 [62]	34 [301]	52 [460]	66 [584]	82 [726]	99 [876]	109 [965]	118 [1044]	1017
4 [35]	27 [239]	47 [416]	62 [549]	76 [673]	93 [823]	104 [920]	114 [1009]	1186
	22 [195]	43 [381]	58 [513]	73 [646]	86 [761]	100 [885]	110 [973]	1271

Overall Efficiency - 70 - 100% 40 - 69% 0 - 39%

Theoretical Torque - Nm [lb-in]

28 [249]	56 [499]	75 [665]	94 [831]	113 [998]	132 [1164]	150 [1330]	164 [1455]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

080

78 cc [4.8 in³/rev.]

Max. Inter.	5 [1.3]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	10 [2.6]					
Max. Cont.	20 [5.3]	Max. Inter.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	30 [7.9]					
Max. Inter.	40 [10.6]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	50 [13.2]					
Max. Cont.	60 [15.8]	Max. Inter.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm
	70 [18.5]					
Max. Inter.	75 [19.8]	Max. Cont.	Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm	Intermittent Ratings - 10% of Operation	Theoretical rpm

Pressure - bars [psi]							Max. Cont.	Max. Inter.
30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]	

Torque - Nm [lb-in], Speed rpm							Intermittent Ratings - 10% of Operation	
32 [283]	62 [549]	80 [708]	106 [938]	125 [1106]				64
31 [274]	64 [566]	84 [743]	104 [920]	120 [1062]	142 [1257]	162 [1434]	175 [1549]	128
26 [230]	60 [531]	84 [743]	102 [903]	125 [1106]	144 [1274]	164 [1451]	183 [1619]	256
24 [212]	56 [496]	81 [717]	100 [885]	122 [1080]	142 [1257]	160 [1416]	175 [1549]	385
19 [168]	53 [469]	75 [664]	96 [850]	118 [1044]	140 [1239]	158 [1398]	170 [1504]	513
14 [124]	46 [407]	70 [619]	92 [814]	110 [973]	135 [1195]	156 [1381]	168 [1487]	641
10 [88]	42 [372]	66 [584]	86 [761]	106 [938]	128 [1133]	150 [1327]	164 [1451]	769
6 [53]	36 [319]	56 [496]	78 [690]	98 [867]	118 [1044]	140 [1239]	160 [1416]	897
3 [27]	27 [239]	50 [442]	74 [655]	92 [814]	113 [1000]	133 [1177]	148 [1310]	962

Overall Efficiency - 70 - 100% 40 - 69% 0 - 39%

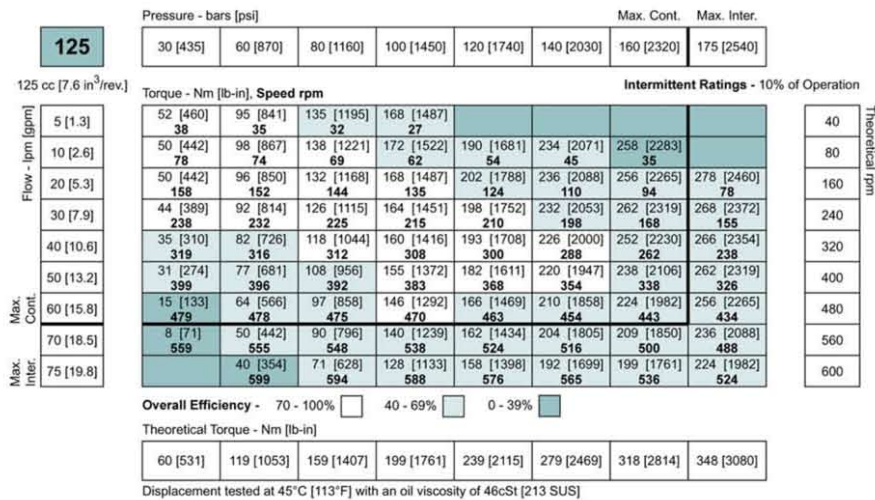
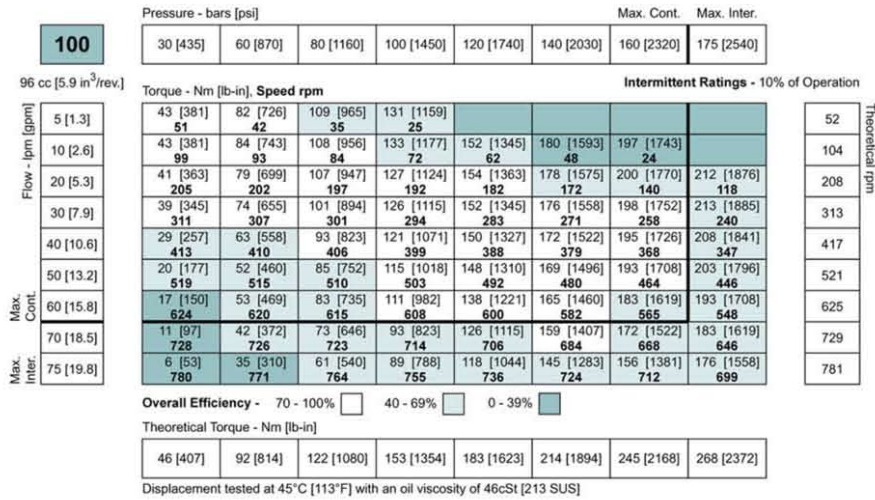
Theoretical Torque - Nm [lb-in]

37 [327]	75 [664]	100 [885]	125 [1106]	149 [1319]	174 [1540]	199 [1761]	218 [1929]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

WP

PERFORMANCE



160

		Pressure - bars [psi]						Max. Cont.	Max. Inter.	
		30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	160 [2320]	175 [2540]	
160 cc [9.4 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm							Intermittent Ratings - 10% of Operation	
Max. Inter.	75 [19.8]	10 [89]	79 [699]	124 [1097]	164 [1451]	201 [1779]	248 [2195]	296 [2620]	319 [2823]	485
	70 [18.5]	16 [142]	82 [726]	128 [1133]	170 [1505]	206 [1823]	255 [2257]	302 [2673]	331 [2929]	453
	60 [15.8]	23 [204]	88 [779]	133 [1177]	178 [1575]	212 [1876]	260 [2301]	308 [2726]	342 [3027]	387
	50 [13.2]	32 [283]	106 [938]	149 [1319]	188 [1664]	235 [2080]	267 [2363]	313 [2770]	352 [3115]	323
	40 [10.6]	48 [425]	113 [1000]	155 [1372]	195 [1726]	236 [2089]	273 [2416]	318 [2814]	355 [3142]	258
	30 [7.9]	50 [443]	117 [1035]	157 [1389]	197 [1743]	238 [2106]	278 [2460]	322 [2850]	358 [3168]	194
	20 [5.3]	60 [532]	123 [1089]	162 [1434]	202 [1788]	242 [2142]	282 [2496]	327 [2894]	360 [3186]	130
	10 [2.6]	58 [513]	115 [1018]	156 [1381]	205 [1814]	245 [2168]	285 [2522]			65
5 [1.3]	56 [496]	112 [991]	154 [1363]	201 [1779]					32	
		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>								
		Theoretical Torque - Nm [lb-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]										

200

		Pressure - bars [psi]						Max. Cont.	Max. Inter.	
		30 [435]	60 [870]	80 [1160]	100 [1450]	115 [1670]	140 [2030]	150 [2180]	175 [2540]	
190 cc [11.6 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm							Intermittent Ratings - 10% of Operation	
Max. Inter.	75 [19.8]	15 [133]	102 [903]	158 [1398]	202 [1788]	254 [2248]	302 [2673]	327 [2894]	376 [3327]	395
	70 [18.5]	36 [319]	128 [1133]	166 [1469]	210 [1858]	266 [2354]	322 [2850]	350 [3097]	400 [3540]	368
	60 [15.8]	65 [575]	147 [1301]	190 [1681]	228 [2018]	286 [2531]	340 [3009]	376 [3327]	418 [3699]	316
	50 [13.2]	70 [619]	152 [1345]	196 [1735]	240 [2124]	290 [2566]	352 [3115]	378 [3345]	420 [3717]	263
	40 [10.6]	74 [655]	156 [1381]	200 [1770]	246 [2177]	293 [2593]	354 [3133]	380 [3363]	416 [3681]	211
	30 [7.9]	78 [690]	160 [1416]	204 [1805]	252 [2230]	291 [2575]	348 [3080]	377 [3336]		158
	20 [5.3]	80 [700]	162 [1426]	206 [1815]	254 [2240]	293 [2585]	348 [3090]	377 [3346]		105
	10 [2.6]	80 [700]	162 [1426]	206 [1815]	254 [2240]	293 [2585]	348 [3090]	377 [3346]		53
5 [1.3]	75 [664]	158 [1398]	200 [1770]	241 [2133]					26	
		Overall Efficiency - 70 - 100% <input type="checkbox"/> 40 - 69% <input type="checkbox"/> 0 - 39% <input type="checkbox"/>								
		Theoretical Torque - Nm [lb-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]										

WP

PERFORMANCE

		Pressure - bars [psi]						Max. Cont.	Max. Inter.		
		30 [435]	60 [870]	85 [1230]	100 [1450]	125 [1810]	140 [2030]	160 [2320]	175 [2540]		
250											
240 cc [14.6 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm						Intermittent Ratings - 10% of Operation			
Flow - lpm [gpm]	5 [1.3]	89 [788]	194 [1717]	264 [2336]	326 [2885]						21
	10 [2.6]	19 [164]	196 [1735]	268 [2372]	329 [2912]	394 [3487]					42
	20 [5.3]	40 [352]	264 [2336]	321 [2841]	397 [3513]	445 [3938]	510 [4513]	554 [4903]			83
	30 [7.9]	81 [716]	185 [1637]	256 [2265]	314 [2779]	392 [3469]	439 [3855]	502 [4442]	557 [4929]		125
	40 [10.6]	124 [1096]	179 [1584]	248 [2195]	305 [2699]	384 [3398]	431 [3814]	486 [4301]	545 [4823]		167
	50 [13.2]	165 [1455]	169 [1496]	243 [2150]	293 [2593]	378 [3345]	421 [3726]	475 [4204]	526 [4655]		208
	60 [15.8]	207 [1833]	152 [1345]	230 [2035]	282 [2496]	364 [3221]	407 [3602]	456 [4035]	508 [4496]		250
	70 [18.5]	250 [2195]	139 [1230]	219 [1938]	263 [2327]	343 [3035]	386 [3416]	441 [3903]	496 [4389]		292
	75 [19.8]	291 [2553]	128 [1133]	205 [1814]	245 [2168]	328 [2903]	374 [3310]	428 [3788]	481 [4257]		313
	Max. Inter.	75 [19.8]	312 [2733]	310 [2715]	307 [2715]	302 [2673]	294 [2593]	270 [2385]	254 [2245]	242 [2135]	
Max. Cont.	70 [18.5]	48 [425]	152 [1345]	230 [2035]	282 [2496]	364 [3221]	407 [3602]	456 [4035]	508 [4496]		
Overall Efficiency -		70 - 100%	40 - 69%	0 - 39%							
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 - bars [psi]						Max. Cont.	Max. Inter.		
		30 [435]	50 [725]	70 [1015]	85 [1230]	100 [1450]	120 [1740]	140 [2030]	160 [2320]		
315											
303 cc [18.5 in ³ /rev.]		Torque - Nm [lb-in], Speed rpm						Intermittent Ratings - 10% of Operation			
Flow - lpm [gpm]	5 [1.3]	123 [1089]	200 [1770]	282 [2496]	344 [3044]						17
	10 [2.6]	16 [1035]	194 [1717]	277 [2451]	342 [3027]	399 [3531]					33
	20 [5.3]	31 [2715]	196 [1735]	275 [2434]	340 [3009]	397 [3513]	460 [4071]	526 [4655]	605 [5354]		66
	30 [7.9]	64 [561]	183 [1620]	267 [2363]	322 [2850]	390 [3452]	448 [3965]	520 [4602]	602 [5328]		99
	40 [10.6]	98 [858]	168 [1487]	252 [2230]	304 [2690]	365 [3230]	440 [3894]	515 [4558]	588 [5204]		132
	50 [13.2]	129 [1125]	156 [1381]	238 [2106]	288 [2549]	350 [3098]	424 [3752]	500 [4425]	571 [5053]		165
	60 [15.8]	164 [1437]	140 [1239]	223 [1974]	270 [2390]	325 [2876]	396 [3505]	480 [4248]	546 [4832]		198
	70 [18.5]	195 [1715]	122 [1080]	186 [1646]	254 [2248]	309 [2735]	368 [3257]	455 [4027]	527 [4664]		231
	75 [19.8]	228 [1995]	100 [885]	174 [1540]	237 [2097]	293 [2593]	359 [3177]	444 [3929]	516 [4567]		248
	Max. Inter.	75 [19.8]	245 [2145]	242 [2115]	238 [2095]	233 [2055]	228 [2005]	222 [1955]	215 [1895]	206 [1815]	
Max. Cont.	70 [18.5]	37 [327]	122 [1080]	186 [1646]	254 [2248]	309 [2735]	368 [3257]	455 [4027]	527 [4664]		
Overall Efficiency -		60 - 100%	40 - 59%	0 - 39%							
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]											

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

WP

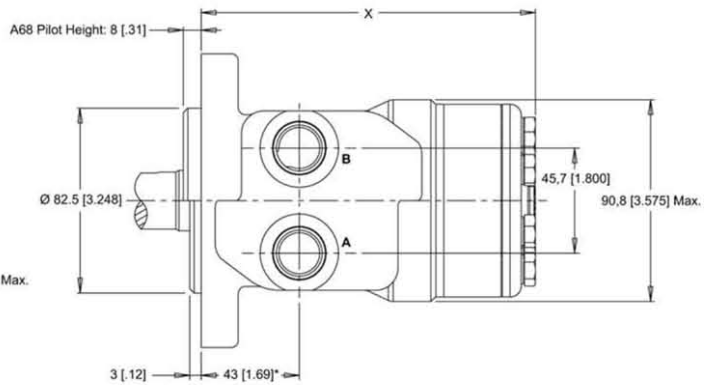
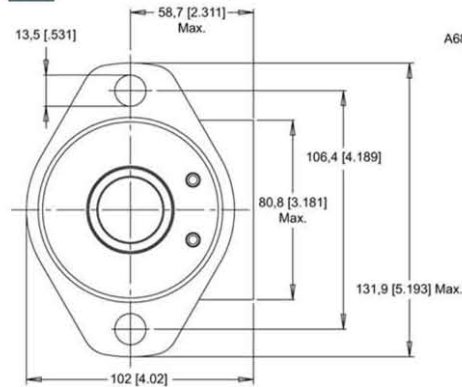
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS)

A10 2-Hole 1/2" NPT Aligned Ports

A11 2-Hole 7/8" O-Ring Aligned Ports

A18 2-Hole 1/2" BSP.F Aligned Ports

A68 2-Hole 1/2" BSP.F Aligned Ports*

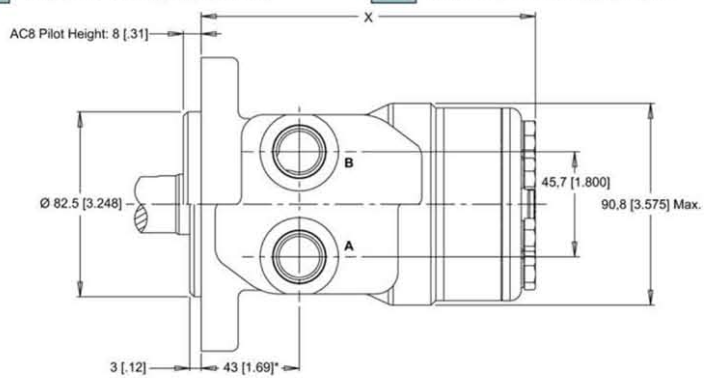
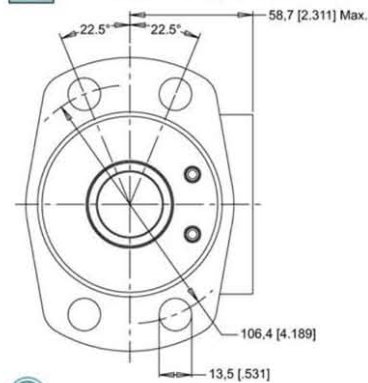


NOTE: Dimension X is found on page 16. * Add 5 [.20] to dimension for the A10, A11, & A18 housings.

A30 4-Hole 1/2" NPT Aligned Ports

A31 4-Hole 7/8" O-Ring Aligned Ports

AC8 4-Hole 1/2" BSP.F Aligned Ports

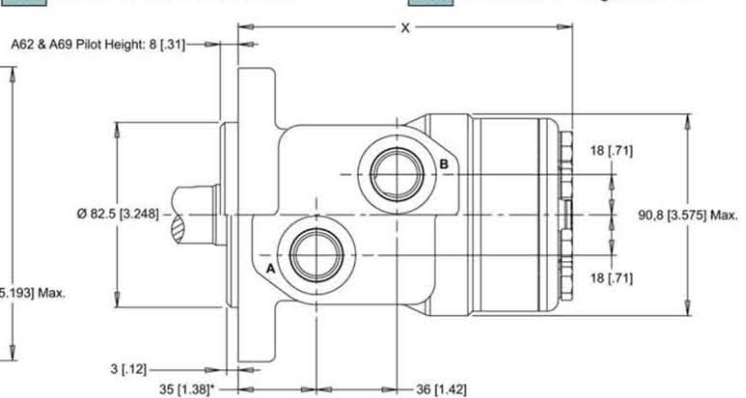
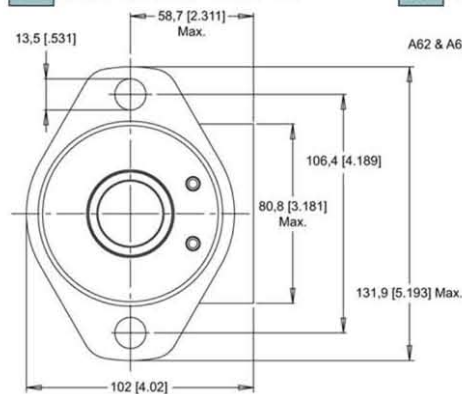


NOTE: Dimension X is found on page 16. * Add 5 [.20] to dimension for the A30 & A31 housings.

A12 2-Hole 1/2" BSP.F Offset Ports

A62 2-Hole 1/2" BSP.F Offset Ports

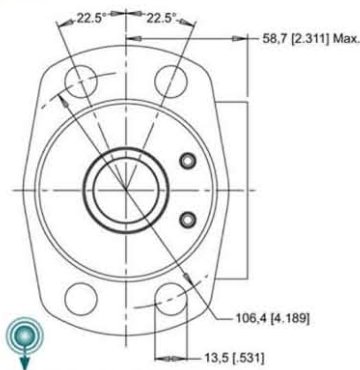
A69 2-Hole 7/8" O-Ring Offset Ports



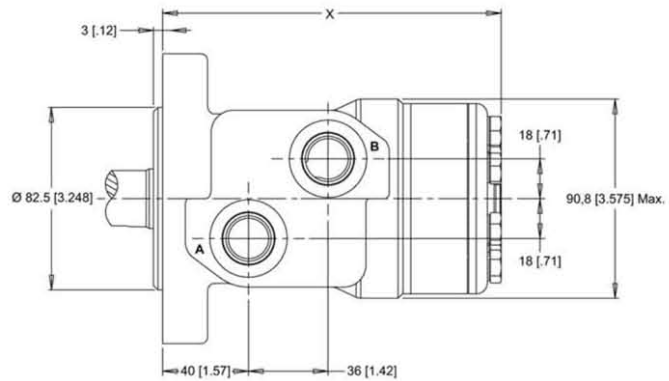
NOTE: Dimension X is found on page 16. * Add 5 [.20] to dimension for the A12 housing.

155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS)

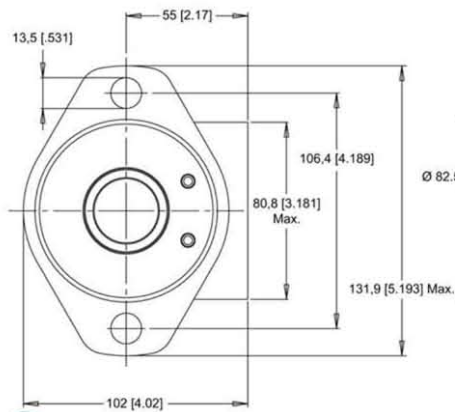
A32 4-Hole 1/2" BSP.F Offset Ports



NOTE: Dimension X is found on page 16.

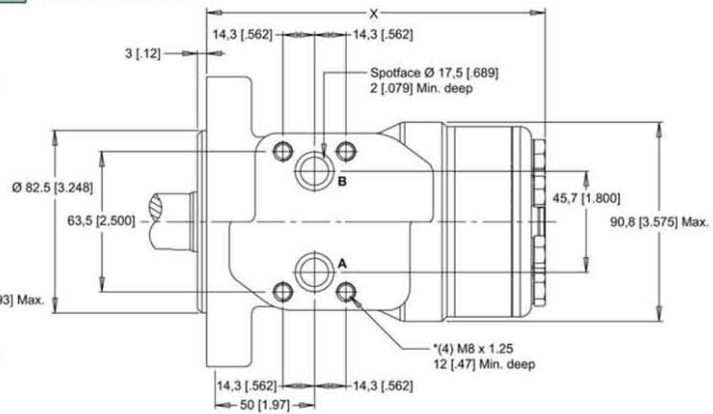


A17 2-Hole Manifold Ports

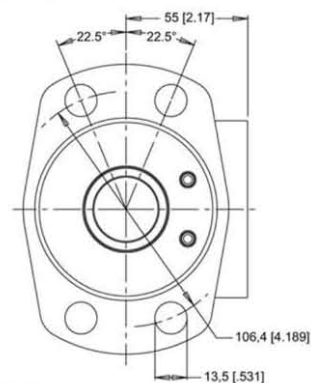


NOTE: Dimension X is found on page 16. * The four (4) mounting holes on the A17 housing are 5/16-18 UNC at the same depth.

G17 2-Hole Manifold Ports

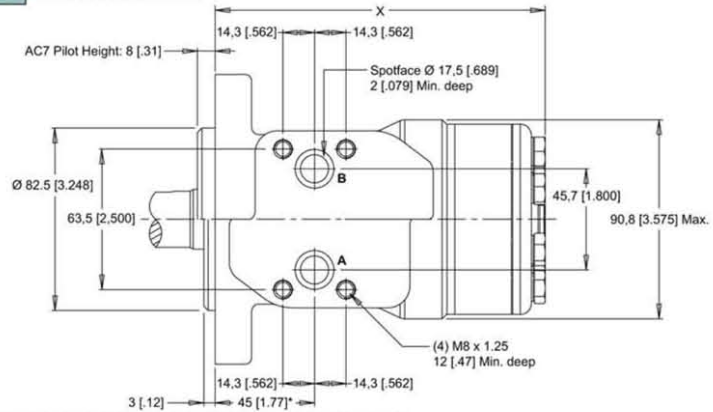


A37 4-Hole Manifold Ports



NOTE: Dimension X is found on page 16. * Pilot height is 3 [.12] for the A37 housing. ** Add 5 [.20] to dimension for the A37 housing.

AC7 4-Hole Manifold Ports

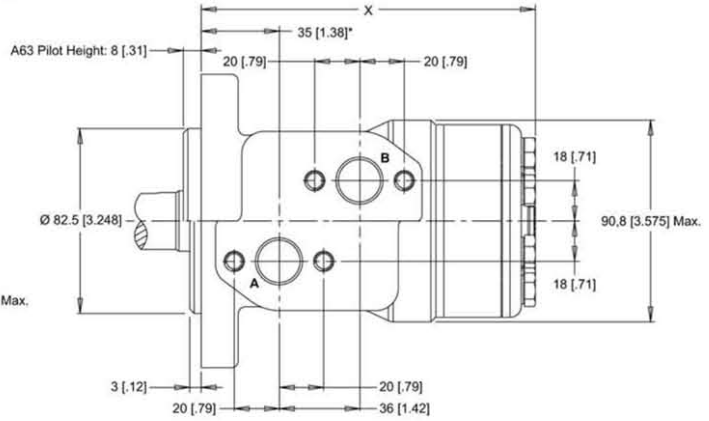
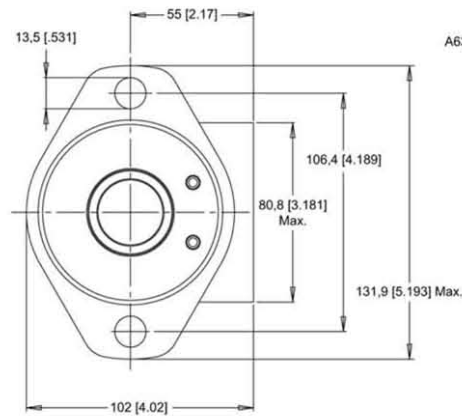


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155 & 156 SERIES HOUSINGS (SAE A, MAGNETO, 4-HOLE SQUARE MOUNTS)

A13 2-Hole 1/2" BSP.F Offset Manifold Ports

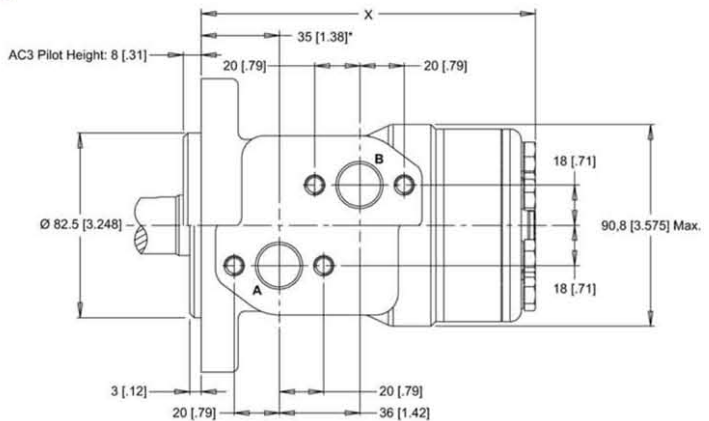
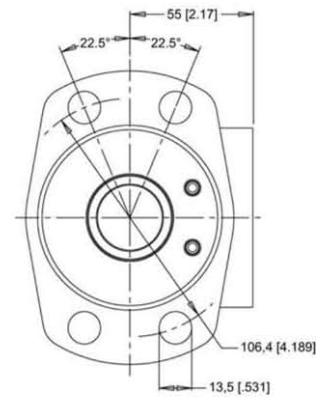
A63 2-Hole 1/2" BSP.F Offset Manifold Ports



NOTE: Dimension X is found on page 16. * Add 5 [20] to dimension for the A13 housing.

AC3 4-Hole 1/2" BSP.F Offset Manifold Ports

A3D 4-Hole 7/8" O-Ring Offset Manifold Ports

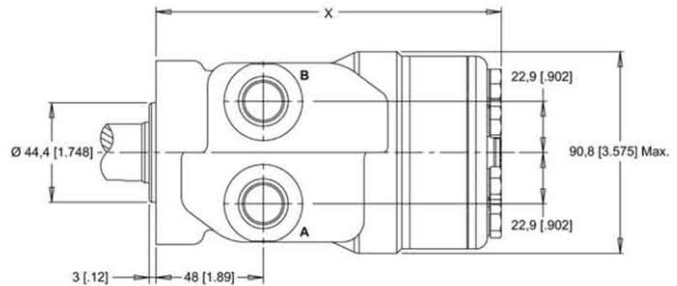
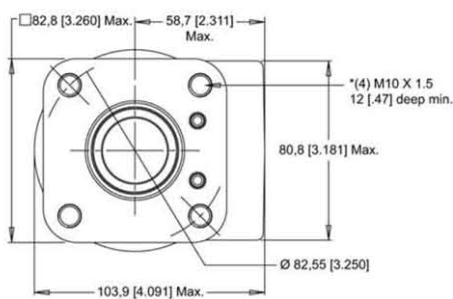


NOTE: Dimension X is found on page 16. * Add 5 [20] to dimension for the A3D housing.

F30 4-Hole 1/2" NPT Aligned Ports

F31 4-Hole 7/8" O-Ring Aligned Ports

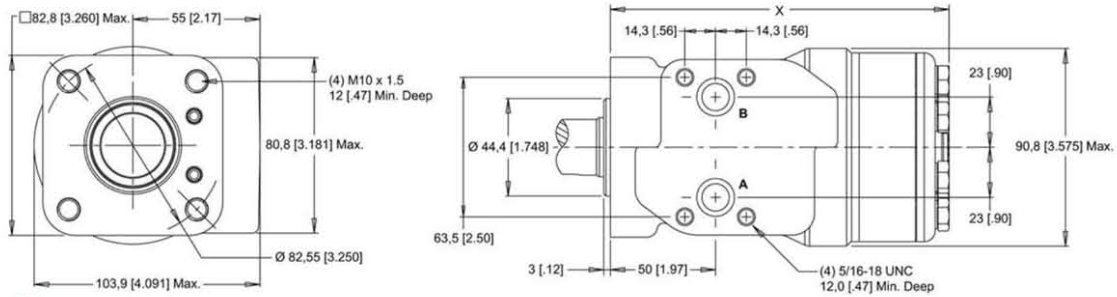
F38 4-Hole 1/2" BSP.F Aligned Ports



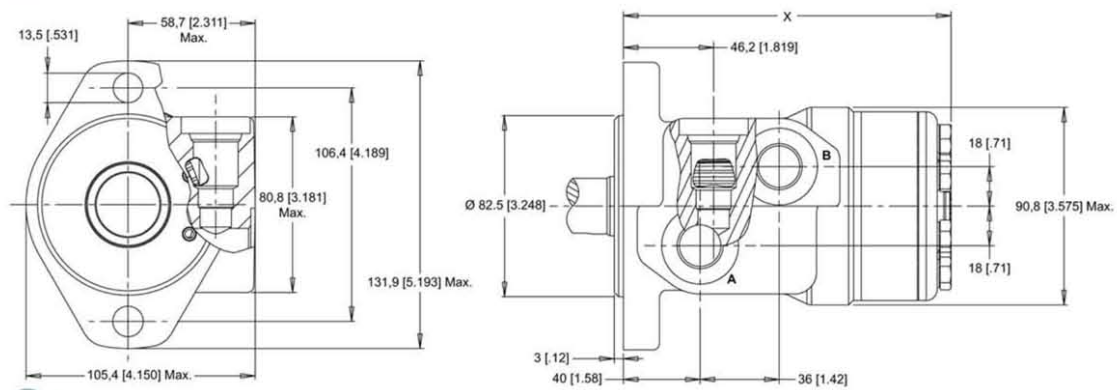
NOTE: Dimension X is found on page 16. * The four (4) mounting holes on the F30 & F31 housings are 3/8-16 UNC at the same depth.

155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS WITH RELIEF CAVITY)

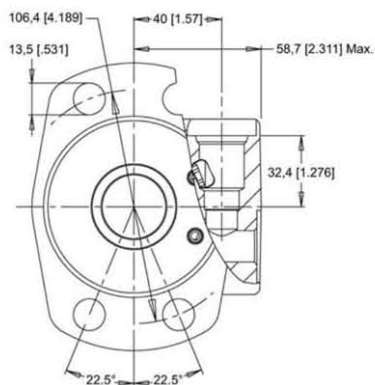
F37 4-Hole Manifold Ports



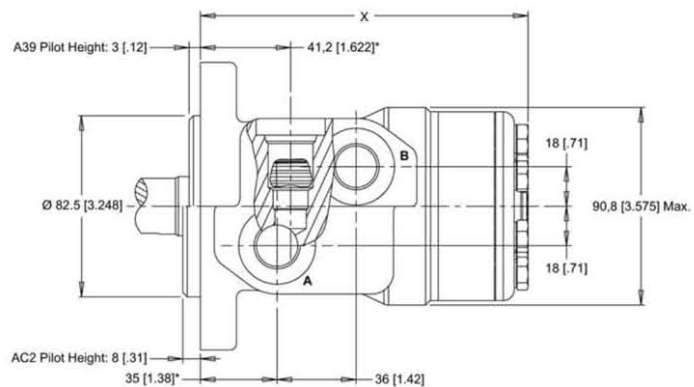
A19 2-Hole 7/8" O-Ring Offset Ports



A39 4-Hole 7/8" O-Ring Offset Ports



AC2 4-Hole 1/2" BSP.F Offset Ports

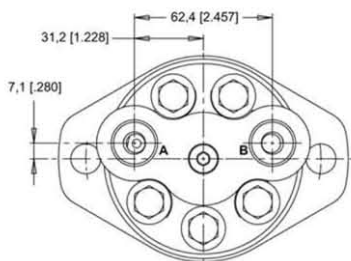
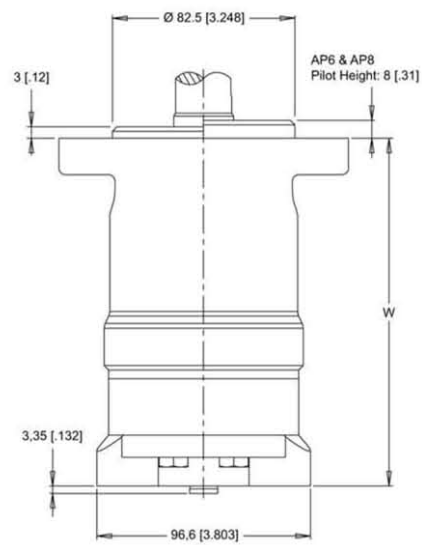
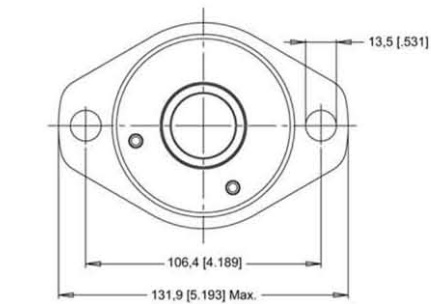


NOTE: Dimension X is found on page 16. * Add 5 [0.20] to dimension for the A39 housing.

WP

155 & 156 SERIES HOUSINGS (SAE A MOUNT WITH END PORTS)

- A06** 2-Hole 3/4" O-Ring Ports With 3mm Pilot
- A08** 2-Hole 1/2" BSP.F Ports With 3mm Pilot
- AP6** 2-Hole 3/4" O-Ring Ports With 8mm Pilot
- AP8** 2-Hole 1/2" BSP.F Ports With 8mm Pilot



LENGTH / WEIGHT CHART		
3mm Pilot Mounts - Dimension W		
Code	mm [in]	kg [lb]
025	144 [5.67]	5.9 [13.0]
032	145 [5.71]	6.0 [13.2]
040	146 [5.75]	6.1 [13.4]
050	146 [5.75]	6.1 [13.4]
060	148 [5.83]	6.1 [13.4]
080	150 [5.91]	6.2 [13.6]
100	153 [6.02]	6.3 [13.9]
125	157 [6.18]	6.4 [14.1]
160	161 [6.33]	6.5 [14.3]
200	166 [6.54]	6.7 [14.7]
250	173 [6.81]	6.9 [15.2]
315	181 [7.13]	7.2 [15.8]
400	192 [7.56]	7.5 [16.5]

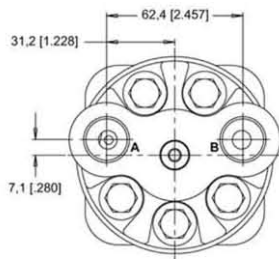
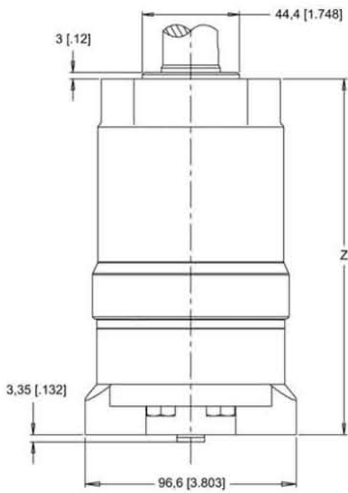
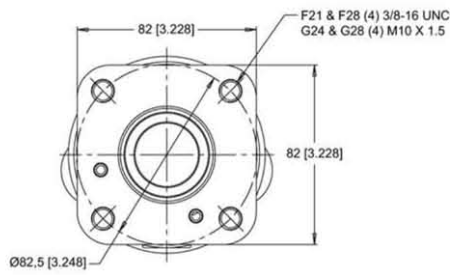
NOTE:
WP motor weights vary ± 0.5 kg [1 lb] depending upon motor configuration.

LENGTH / WEIGHT CHART		
8mm Pilot Mounts - Dimension W		
Code	mm [in]	kg [lb]
025	139 [5.47]	5.8 [12.1]
032	140 [5.51]	5.9 [13.0]
040	141 [5.55]	6.0 [13.2]
050	141 [5.55]	6.0 [13.2]
060	143 [5.63]	6.0 [13.2]
080	145 [5.71]	6.1 [13.4]
100	148 [5.83]	6.2 [13.6]
125	152 [5.98]	6.3 [13.9]
160	156 [6.14]	6.4 [14.1]
200	161 [6.34]	6.6 [14.5]
250	168 [6.61]	6.8 [15.0]
315	176 [6.93]	7.1 [15.6]
400	187 [7.36]	7.4 [16.3]

NOTE:
WP motor weights vary ± 0.5 kg [1 lb] depending upon motor configuration.

155 & 156 SERIES HOUSINGS (4 HOLE SQUARE MOUNT WITH END PORTS)

- F21** 4-Hole 7/8" O-Ring Ports
- F26** 4-Hole 3/4" O-Ring Ports
- G24** 4-Hole M22 x 1.5 Ports
- G28** 4-Hole 1/2" BSP.F Ports



LENGTH / WEIGHT CHART		
Dimension Z		
Code	mm [in]	kg [lb]
025	144 [5.67]	5.5 [12.1]
032	145 [5.71]	5.6 [12.3]
040	146 [5.75]	5.7 [12.6]
050	146 [5.75]	5.7 [12.6]
060	148 [5.83]	5.7 [12.6]
080	150 [5.91]	5.8 [12.8]
100	153 [6.02]	5.9 [13.0]
125	157 [6.18]	6.0 [13.2]
160	161 [6.34]	6.1 [13.4]
200	166 [6.54]	6.3 [13.9]
250	173 [6.81]	6.5 [14.3]
315	181 [7.13]	6.8 [15.0]
400	192 [7.56]	7.1 [15.7]

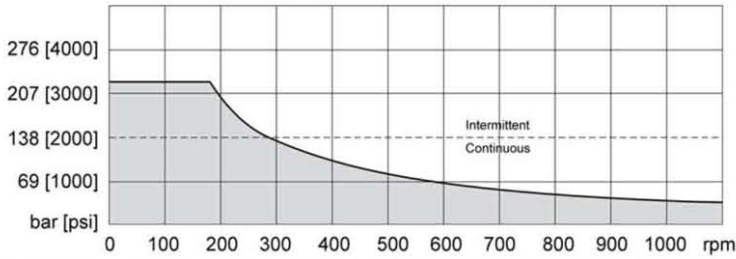
NOTE:
WP motor weights vary ± 0.5 kg [1 lb] depending upon motor configuration.

WP

155 & 156 SERIES TECHNICAL INFORMATION

PERMISSIBLE SHAFT SEAL PRESSURE

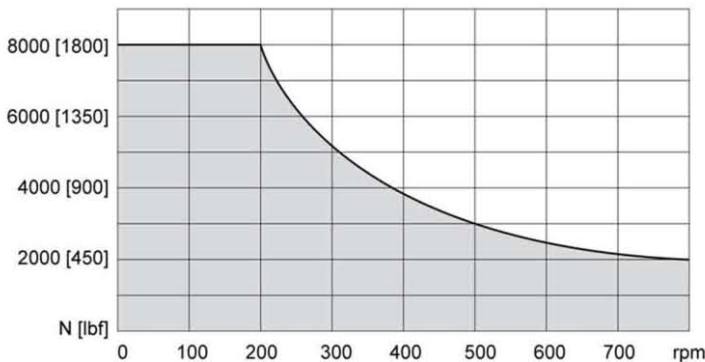
The curve below represents allowable seal pressure at various speeds. Operation in the gray area results in maintaining the rated life of the shaft seal. Actual shaft seal pressure depends on motor configuration (see below).



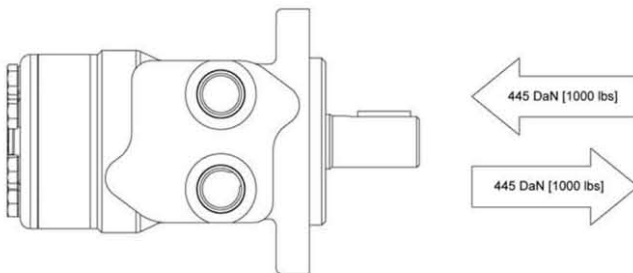
With check valves and drain connection, the shaft seal pressure equals pressure in the drain line. With check valves and no drain connection, shaft seal pressure is identical to output pressure. No check valves and no drain connection, the shaft seal pressure is identical to the average value of input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

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.



THRUST LOAD



LENGTH / WEIGHT CHART
3mm Pilot Mounts - Dimension X

Code	mm [in]	kg [lb]
025	133 [5.24]	6.3 [13.9]
032	134 [5.28]	6.4 [14.1]
040	136 [5.34]	6.5 [14.2]
050	136 [5.34]	6.5 [14.2]
060	137 [5.40]	6.5 [14.3]
080	139 [5.49]	6.6 [14.5]
100	142 [5.59]	6.7 [14.7]
125	146 [5.74]	6.8 [14.9]
160	150 [5.90]	6.9 [15.2]
200	155 [6.10]	7.1 [15.6]
250	162 [6.36]	7.3 [16.1]
315	170 [6.69]	7.6 [16.7]
400	181 [7.13]	7.9 [17.5]

NOTE:

WP motor weights vary ± 0.5 kg [1 lb] depending upon motor configuration.

LENGTH / WEIGHT CHART
8mm Pilot Mounts - Dimension X

Code	mm [in]	kg [lb]
025	128 [5.04]	6.2 [13.6]
032	129 [5.08]	6.3 [13.9]
040	131 [5.16]	6.4 [14.1]
050	131 [5.16]	6.4 [14.1]
060	132 [5.20]	6.4 [14.1]
080	134 [5.28]	6.5 [14.3]
100	137 [5.39]	6.6 [14.5]
125	141 [5.55]	6.7 [14.7]
160	145 [5.71]	6.8 [15.0]
200	150 [5.91]	7.0 [15.4]
250	157 [6.18]	7.2 [15.8]
315	165 [6.50]	7.5 [16.5]
400	176 [6.93]	7.8 [17.2]

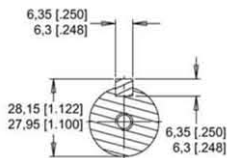
NOTE:

WP motor weights vary ± 0.5 kg [1 lb] depending upon motor configuration.

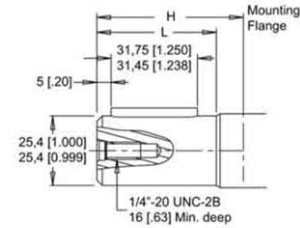
155 & 156 SERIES SHAFTS

10 1" Straight

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



15 1" Straight Extended

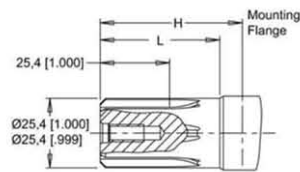


02 6B Spline (1/4" UNC Tap)

Max. Torque: 429 Nm [3800 lb-in]



04 6B Spline (M8 x 1.25 Tap)



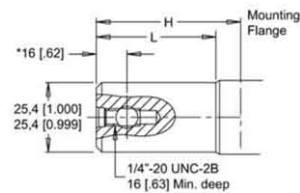
05 1" Pinhole 9,5 [.375]

66 1" Pinhole 8,0 [.315]

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

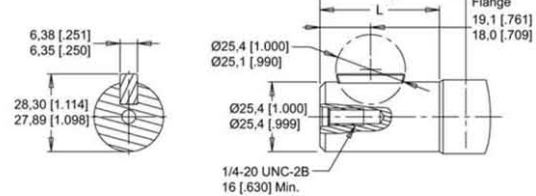


53 1" Pinhole 10,3 [.406]



B1 1" Straight with Woodruff Key

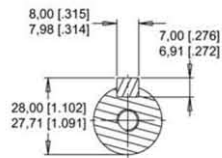
Max. Torque: 655 Nm [5800 lb-in]



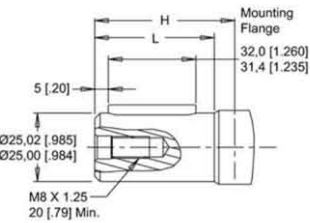
NOTE: *For 66 shaft subtract 4,6 [.18] from this dimension.

12 25mm Straight

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

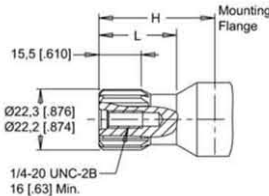


16 25mm Straight Extended



01 13 Tooth Spline

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



MOUNTING FLANGE TO SHAFT END Dimension H			
Code	8mm Pilot	Code	8mm Pilot
01	48,3 [1.902]	15	67,1 [2.642]
02	50,3 [1.980]	16	67,6 [2.661]
04	50,3 [1.980]	53	50,3 [1.980]
05	50,3 [1.980]	66	55,3 [2.177]
10	50,3 [1.980]	B1	50,3 [1.980]
12	55,3 [2.177]		

NOTE: For 3mm pilot housings subtract 5,0 [.197] from dimension. Shaft lengths vary $\pm 0,8$ [.030].

Dimension L			
Code	8mm Pilot	Code	8mm Pilot
01	33,0 [1.299]	15	56,0 [2.205]
02	39,5 [1.555]	16	56,5 [2.224]
04	39,5 [1.555]	53	39,5 [1.555]
05	39,5 [1.555]	66	44,5 [1.752]
10	39,5 [1.555]	B1	39,5 [1.555]
12	44,5 [1.752]		

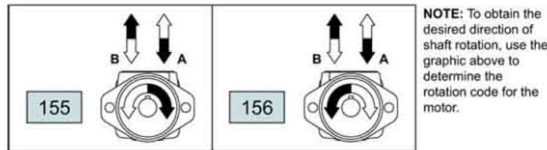
WP

155 & 156 SERIES MODEL CODE BUILDER

SERIES	DISPLACEMENT	HOUSING	SHAFT	PAINT	CAVITY	ADD ON	MISCELLANEOUS
STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8

STEP 1 - Select a series

155 Clockwise Rotation **156** Counterclockwise Rotation



STEP 2 - Select a displacement option


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

STEP 3 - Select a housing option

A06	2-Hole 3/4" O-Ring With End Ports (S)
A08	2-Hole 1/2" BSP.F With End Ports (S)
AP6	2-Hole 3/4" O-Ring With End Ports 8mm Pilot
AP8	2-Hole 1/2" BSP.F With End Ports 8mm Pilot
A10	2-Hole 1/2" NPT Aligned Ports (S)
A11	2-Hole 7/8" O-ring Aligned Ports (S)
A12	2-Hole 1/2" BSP.F Offset Ports (S)
A13	2-Hole 1/2" BSP.F Offset Manifold (S)
A17	2-Hole Manifold Ports (S)

STEP 3 (Continued) - Select a housing option

A18	2-Hole 1/2" BSP.F Aligned (S)
A19	2-Hole 7/8" O-ring With Valve Cavity (S)
A30	4-Hole 1/2" NPT Aligned Ports
A31	4-Hole 7/8" O-ring Aligned Ports
A32	4-Hole 1/2" BSP.F Offset Ports
A37	4-Hole Manifold Ports
A39	4-Hole 7/8" O-ring With Valve Cavity
A3D	4-Hole 7/8" O-ring Offset Manifold Ports
A62	2-Hole 1/2" BSP.F Offset 8mm Pilot
A63	2-Hole 1/2" BSP.F Offset Manifold 8mm Pilot
A68	2-Hole 1/2" BSP.F Aligned 8mm Pilot
A69	2-Hole 7/8" O-Ring Offset Ports 8mm Pilot
AC2	4-Hole 1/2" BSP.F Offset Ports 8mm Pilot Valve Cavity
AC3	4-Hole 1/2" BSP.F Offset Manifold 8mm Pilot
AC7	4-Hole Manifold Ports 8mm Pilot
AC8	4-Hole 1/2" BSP.F Aligned Ports 8mm Pilot
F21	4-Hole 7/8" O-ring With End Ports (S)
F26	4-Hole 3/4" O-ring With End Ports (S)
F30	4-Hole 1/2" NPT Aligned Ports (S)
F31	4-Hole 7/8" O-ring Aligned Ports (S)
F37	4-Hole Manifold Ports (S)
F38	4-Hole 1/2" BSP.F Aligned Ports (S)
G17	2-Hole Manifold Ports (S)
G24	4-Hole M22 x 1.5 With End Ports (S)
G28	4-Hole 1/2" BSP.F With End Ports (S)

 **NOTE:** Housings with metric ports will have a 1/4" BSP.F drain. Housings with SAE and NPT ports will have a 7/16-20 UN drain.



155 & 156 SERIES MODEL CODE BUILDER

SERIES	DISPLACEMENT	HOUSING	SHAFT	PAINT	CAVITY	ADD ON	MISCELLANEOUS
STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7	STEP 8

STEP 4 - Select a shaft option

01	13 Tooth Spline	15	1" Straight Ext. (S)
02	6B (1/4" UNC Tap)	16	25mm Straight Ext. (S)
04	6B (M8 x 1.25 Tap)	53	1" Pinhole (.406")
05	1" Pinhole (.375")	66	1" Pinhole (8mm)
10	1" Straight	B1	1" Straight (Woodruff Key)
12	25mm Straight		

STEP 5 - Select a paint option

A	Black	B	Black (Unpainted Flange)
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STEP 6 - Select a valve cavity option and installed valve

A	None	F	121 bar [1750 psi]
B	Relief Valve Cavity	G	138 bar [2000 psi]
C	69 bar [1000 psi]	J	173 bar [2500 psi]
D	86 bar [1250 psi]	L	207 bar [3000 psi]
E	104 bar [1500 psi]		

NOTE: Valve cavity is only available on the A19, A39, A62 & AC2 housings. The B option will not have a valve cartridge listed above installed.

STEP 7 - Select an add on option

A	Standard
B	Lock Nut
C	Solid Hex Nut
W	4-Pin Dual Male Weatherpack Connector (S)
X	4-Pin M12 Dual Male Connector (S)
Y	3-Pin Single Male Weatherpack Connector (S)
Z	4-Pin M12 Single Male Connector (S)

NOTE: (S) - STEP 3 Housings available for use with speed sensors. STEP 4 Shafts available for use with speed sensors. STEP 7 Speed sensor options.

STEP 8 - Select a miscellaneous option

AA	None
AC	Freeturning Rotor
FB	No Check Valves Installed In Motor