

Part number:

HYDROMA

HYDRAULICKÉ SYSTÉMY

HIDROMA
SYSTEMS

UKŁADY HYDRAULICZNE

HYDROMA

ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ



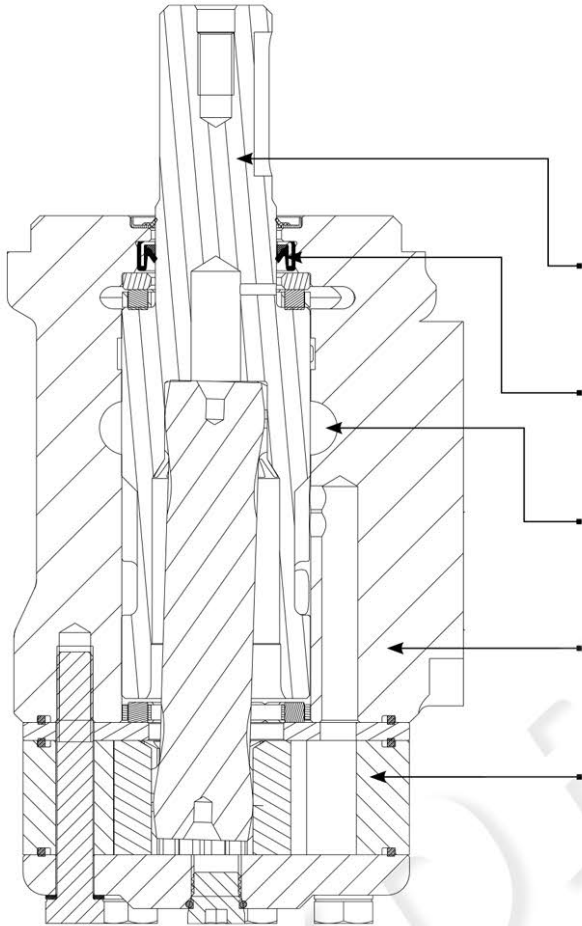
WP

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.

Integral Roller Stator® Motor Design provides compact volume, high power & low weight.

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
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]

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 in³/rev.]

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]	
Max. Inter.	75 [19.8]	

Torque - Nm [lb-in], Speed rpm										Intermittent Ratings - 10% of Operation		
19 [168]	39 [345]	48 [425]	62 [549]	75 [664]						101	Theoretical rpm	
100	85	75	64	48						202		
20 [177]	38 [336]	50 [442]	63 [558]	78 [690]	92 [814]	102 [903]	107 [947]			404		
197	196	174	159	146	127	101	97			606		
18 [159]	38 [336]	52 [460]	64 [566]	78 [690]	90 [796]	104 [920]	108 [956]			808		
400	386	371	355	341	314	292	290			1010		
15 [133]	37 [327]	50 [442]	64 [566]	77 [681]	89 [788]	103 [912]	107 [947]			1212		
600	585	571	560	540	516	499	495			1414		
12 [106]	31 [274]	45 [398]	59 [522]	73 [646]	87 [770]	99 [876]	106 [938]			1515		
808	800	790	770	766	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% 40 - 69% 0 - 39%

Theoretical Torque - Nm [lb-in]

24 [212]	47 [416]	63 [558]	79 [699]	95 [841]	110 [973]	126 [1115]	138 [1221]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

060

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

59 cc [3.6 in³/rev.]

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]	
Max. Inter.	75 [19.8]	

Torque - Nm [lb-in], Speed rpm										Intermittent Ratings - 10% of Operation		
20 [177]	46 [407]	65 [575]	80 [708]	95 [841]	112 [991]					85	Theoretical rpm	
83	79	72	64	51	38					170		
22 [195]	47 [416]	66 [584]	81 [717]	96 [850]	113 [1000]	125 [1106]	136 [1204]			339		
169	164	155	142	135	124	108	88			509		
20 [177]	45 [398]	64 [566]	80 [708]	93 [823]	111 [982]	123 [1088]	134 [1186]			678		
338	332	320	309	290	276	245	222			848		
17 [150]	43 [381]	62 [549]	76 [673]	89 [788]	109 [965]	121 [1071]	131 [1159]			1017		
507	502	493	482	468	454	424	400			1186		
14 [124]	41 [363]	58 [513]	73 [646]	87 [770]	105 [929]	117 [1035]	127 [1124]			1271		
678	669	660	645	630	616	594	582					
10 [88]	37 [327]	55 [487]	70 [619]	84 [743]	102 [903]	113 [1000]	122 [1080]					
845	841	833	818	805	792	770	754					
7 [62]	34 [301]	52 [460]	66 [584]	82 [726]	99 [876]	109 [965]	118 [1044]					
1014	1005	999	992	982	968	956	933					
4 [35]	27 [239]	47 [416]	62 [549]	76 [673]	93 [823]	104 [920]	114 [1009]					
1185	1182	1180	1175	1158	1144	1128	1112					
	22 [195]	43 [381]	58 [513]	73 [646]	86 [761]	100 [885]	110 [973]					
	1271	1265	1256	1241	1228	1212	1196					

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]



PERFORMANCE

080

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

78 cc [4.8 in³/rev.]

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]	
Max. Inter.	75 [19.8]	

Torque - Nm [lb-in], Speed rpm		Intermittent Ratings - 10% of Operation								
		32 [283]	62 [549]	80 [708]	106 [938]	125 [1106]				
		60	56	50	42	30				
		31 [274]	64 [566]	84 [743]	104 [920]	120 [1062]	142 [1257]	162 [1434]	175 [1549]	
		125	118	112	104	98	82	67	50	
		26 [230]	60 [531]	84 [743]	102 [903]	125 [1106]	144 [1274]	164 [1451]	183 [1619]	
		254	245	236	228	215	204	190	175	
		24 [212]	56 [496]	81 [717]	100 [885]	122 [1080]	142 [1257]	160 [1416]	175 [1549]	
		384	374	366	358	346	335	318	305	
		19 [168]	53 [469]	75 [664]	96 [850]	118 [1044]	140 [1239]	158 [1398]	170 [1504]	
		512	505	494	483	473	462	450	438	
		14 [124]	46 [407]	70 [619]	92 [814]	110 [973]	135 [1195]	156 [1381]	168 [1487]	
		638	630	625	615	606	593	580	568	
		10 [88]	42 [372]	66 [584]	86 [761]	106 [938]	128 [1133]	150 [1327]	164 [1451]	
		768	762	756	748	738	728	717	694	
		6 [53]	36 [319]	56 [496]	78 [690]	98 [867]	118 [1044]	140 [1239]	160 [1416]	
		896	890	882	872	860	846	830	816	
		3 [27]	27 [239]	50 [442]	74 [655]	92 [814]	113 [1000]	133 [1177]	148 [1310]	
		960	955	948	938	926	916	896	802	

Theoretical rpm	64
	128
	256
	385
	513
	641
	769
	897
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]

Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

100

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

96 cc [5.9 in³/rev.]

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]	
Max. Inter.	75 [19.8]	

Torque - Nm [lb-in], Speed rpm		Intermittent Ratings - 10% of Operation								
		43 [381]	82 [726]	109 [965]	131 [1159]					
		51	42	35	25					
		43 [381]	84 [743]	108 [956]	133 [1177]	152 [1345]	180 [1593]	197 [1743]		
		99	93	84	72	62	48	24		
		41 [363]	79 [699]	107 [947]	127 [1124]	154 [1363]	178 [1575]	200 [1770]	212 [1876]	
		205	202	197	192	182	172	140	118	
		39 [345]	74 [655]	101 [894]	126 [1115]	152 [1345]	176 [1558]	198 [1752]	213 [1885]	
		311	307	301	294	283	271	258	240	
		29 [257]	63 [558]	93 [823]	121 [1071]	150 [1327]	172 [1522]	195 [1726]	208 [1841]	
		413	410	406	399	388	379	368	347	
		20 [177]	52 [460]	85 [752]	115 [1018]	148 [1310]	169 [1496]	193 [1708]	203 [1796]	
		519	515	510	503	492	480	464	446	
		17 [150]	53 [469]	83 [735]	111 [982]	138 [1221]	165 [1460]	183 [1619]	193 [1708]	
		624	620	615	608	600	582	565	548	
		11 [97]	42 [372]	73 [646]	93 [823]	126 [1115]	159 [1407]	172 [1522]	183 [1619]	
		728	726	723	714	706	684	668	646	
		6 [53]	35 [310]	61 [540]	89 [788]	118 [1044]	145 [1283]	156 [1381]	176 [1558]	
		780	771	764	755	736	724	712	699	

Theoretical rpm	52
	104
	208
	313
	417
	521
	625
	729
781	

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

Theoretical Torque - Nm [lb-in]							
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]

125

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

125 cc [7.6 in³/rev.]

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm								Theoretical rpm
	5 [1.3]	10 [2.6]	20 [5.3]	30 [7.9]	40 [10.6]	50 [13.2]	60 [15.8]	70 [18.5]	
	52 [460] 38	95 [841] 35	135 [1195] 32	168 [1487] 27					40
	50 [442] 78	98 [867] 74	138 [1221] 69	172 [1522] 62	190 [1681] 54	234 [2071] 45	258 [2283] 35		80
	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
	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
	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
	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
	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
	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
		40 [354] 599	71 [628] 594	128 [1133] 588	158 [1398] 576	192 [1699] 565	199 [1761] 536	224 [1982] 524	600

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

Theoretical Torque - Nm [lb-in]

60 [531]	119 [1053]	159 [1407]	199 [1761]	239 [2115]	279 [2469]	318 [2814]	348 [3080]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]

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 in³/rev.]

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], Speed rpm								Theoretical rpm
	5 [1.3]	10 [2.6]	20 [5.3]	30 [7.9]	40 [10.6]	50 [13.2]	60 [15.8]	70 [18.5]	
	56 [496] 30	112 [991] 25	154 [1363] 18	201 [1779] 10					32
	58 [513] 63	115 [1018] 60	156 [1381] 56	205 [1814] 52	245 [2168] 48	285 [2522] 37			65
	60 [532] 128	123 [1089] 125	162 [1434] 121	202 [1788] 116	242 [2142] 110	282 [2496] 100	327 [2894] 86	360 [3186] 78	130
	50 [443] 193	117 [1035] 190	157 [1389] 187	197 [1743] 183	238 [2106] 179	278 [2460] 173	322 [2850] 160	358 [3168] 144	194
	48 [425] 257	113 [1000] 255	155 [1372] 252	195 [1726] 248	236 [2089] 244	273 [2416] 239	318 [2814] 224	355 [3142] 211	258
	32 [283] 323	106 [938] 320	149 [1319] 316	188 [1664] 312	235 [2080] 306	267 [2363] 299	313 [2770] 288	352 [3115] 275	323
	23 [204] 387	88 [779] 384	133 [1177] 380	178 [1575] 375	212 [1876] 371	260 [2301] 366	308 [2726] 358	342 [3027] 346	387
	16 [142] 452	82 [726] 451	128 [1133] 448	170 [1505] 444	206 [1823] 436	255 [2257] 430	302 [2673] 423	331 [2929] 412	453
	10 [89] 483	79 [699] 481	124 [1097] 477	164 [1451] 472	201 [1779] 466	248 [2195] 460	296 [2620] 450	319 [2823] 436	485

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

Theoretical Torque - Nm [lb-in]

74 [651]	147 [1302]	196 [1736]	245 [2170]	282 [2496]	343 [3038]	392 [3472]	429 [3798]
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Displacement tested at 45°C [113°F] with an oil viscosity of 46cSt [213 SUS]



PERFORMANCE

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 in³/rev.]

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]
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Torque - Nm [lb-in], Speed rpm										Intermittent Ratings - 10% of Operation	
75 [664]	158 [1398]	200 [1770]	241 [2133]								26
25	22	20	10								53
78 [690]	160 [1416]	204 [1805]	252 [2230]	291 [2575]	348 [3080]	377 [3336]					105
51	49	45	39	35	29	22					158
74 [655]	156 [1381]	200 [1770]	246 [2177]	293 [2593]	354 [3133]	380 [3363]	416 [3681]				211
104	102	99	95	89	83	76	65				263
70 [619]	152 [1345]	196 [1735]	240 [2124]	290 [2566]	352 [3115]	378 [3345]	420 [3717]				316
157	155	152	148	143	137	130	118				368
65 [575]	147 [1301]	190 [1681]	228 [2018]	286 [2531]	340 [3009]	376 [3327]	418 [3699]				395
210	208	205	200	193	186	178	168				
54 [478]	142 [1257]	180 [1593]	222 [1965]	277 [2451]	333 [2947]	356 [3150]	402 [3558]				
262	260	258	254	249	243	235	223				
36 [319]	128 [1133]	166 [1469]	210 [1858]	266 [2354]	322 [2850]	350 [3097]	400 [3540]				
315	313	309	305	299	293	284	268				
15 [133]	102 [903]	158 [1398]	202 [1788]	254 [2248]	302 [2673]	327 [2894]	376 [3327]				
367	365	362	358	352	336	330	316				
	94 [832]	146 [1292]	194 [1717]	230 [2035]	290 [2566]	317 [2805]	364 [3221]				
	394	390	385	380	374	365	352				

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

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]

250

Pressure - bars [psi]					Max. Cont.	Max. Inter.
30 [435]	60 [870]	85 [1230]	100 [1450]	125 [1810]	140 [2030]	160 [2320] 175 [2540]

240 cc [14.6 in³/rev.]

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]
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Torque - Nm [lb-in], Speed rpm										Intermittent Ratings - 10% of Operation	
89 [788]	194 [1717]	264 [2336]	326 [2885]								21
19	16	10	6								42
92 [814]	196 [1735]	268 [2372]	329 [2912]	394 [3487]							83
40	36	32	21	10							125
90 [796]	192 [1699]	264 [2336]	321 [2841]	397 [3513]	445 [3938]	510 [4513]	554 [4903]				167
81	77	72	65	50	42	36	23				208
86 [761]	185 [1637]	256 [2265]	314 [2779]	392 [3469]	439 [3855]	502 [4442]	557 [4929]				250
124	121	115	106	94	84	76	61				292
82 [726]	179 [1584]	248 [2195]	305 [2699]	384 [3398]	431 [3814]	486 [4301]	545 [4823]				313
165	162	158	153	144	135	125	113				
69 [611]	169 [1496]	243 [2150]	293 [2593]	378 [3345]	421 [3726]	475 [4204]	526 [4655]				
207	203	195	189	183	170	157	138				
48 [425]	152 [1345]	230 [2035]	282 [2496]	364 [3221]	407 [3602]	456 [4035]	508 [4496]				
250	247	243	236	222	216	205	188				
37 [327]	139 [1230]	219 [1938]	263 [2327]	343 [3035]	386 [3416]	441 [3903]	496 [4389]				
291	285	278	271	256	249	234	221				
26 [230]	128 [1133]	205 [1814]	245 [2168]	328 [2903]	374 [3310]	428 [3788]	481 [4257]				
312	310	307	302	294	270	254	242				

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]



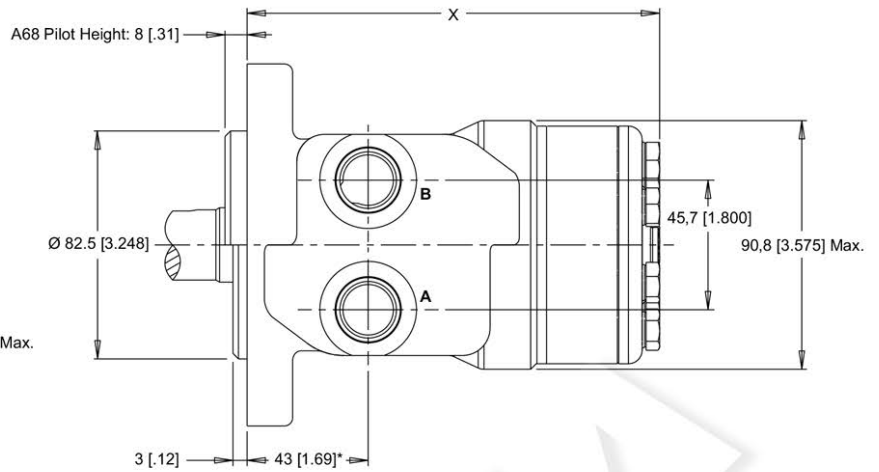
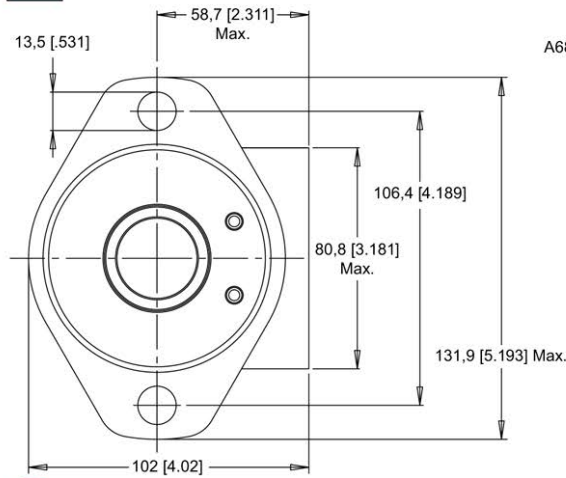
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS)

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*

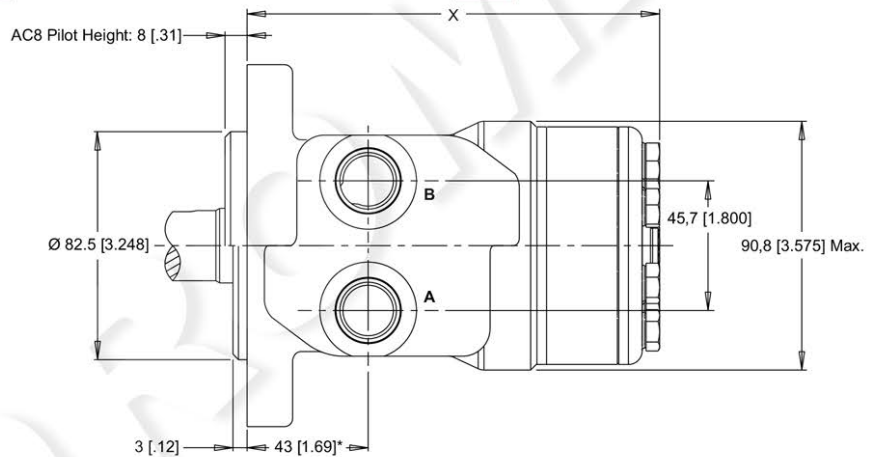
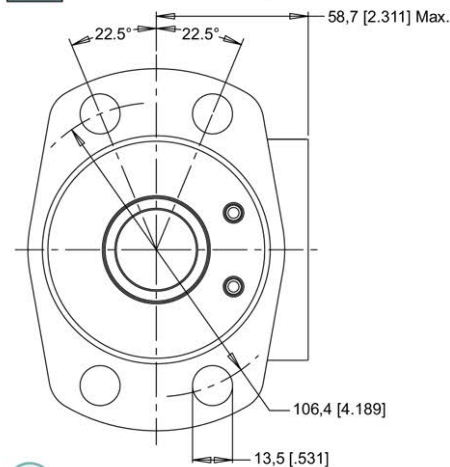


NOTE: Dimension X is found on page 12. * Add 5 [.20] to dimension for the A10, A11, & A18 housings.

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

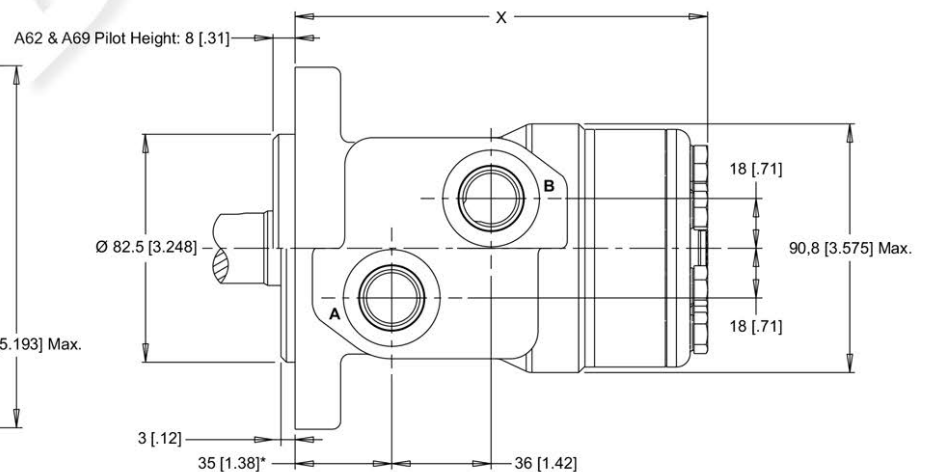
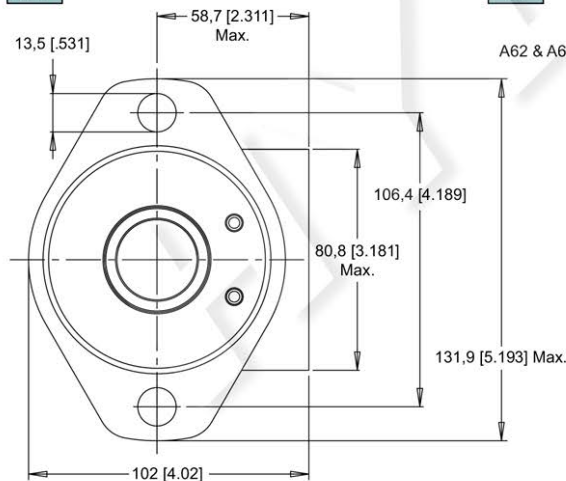


NOTE: Dimension X is found on page 12. * Add 5 [.20] to dimension for the A30 & A31 housings.

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

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

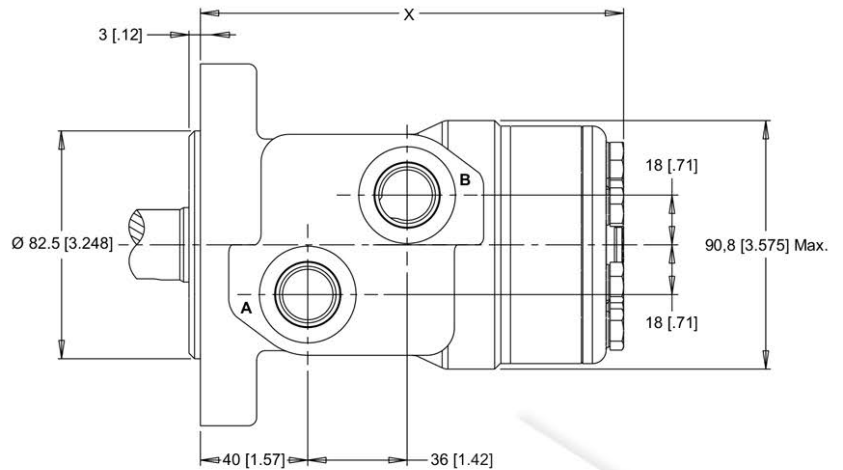
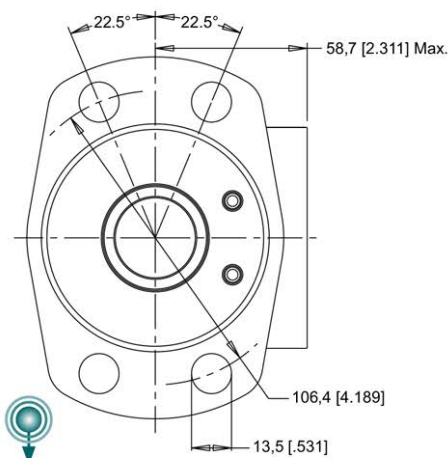
A69 2-Hole 7/8" O-Ring Offset Ports



NOTE: Dimension X is found on page 12. * Add 5 [.20] to dimension for the A12 housing.

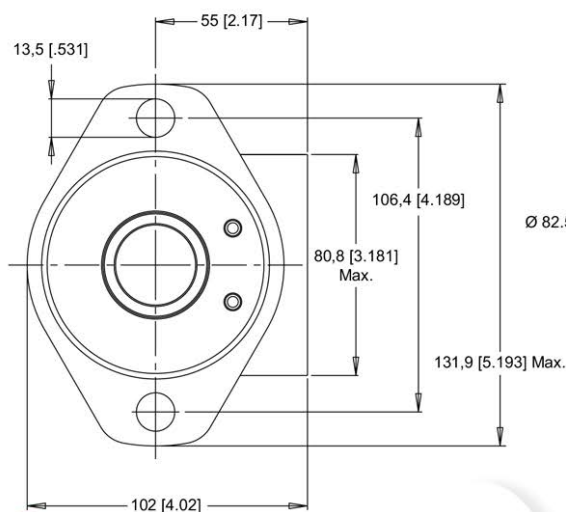
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS)

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

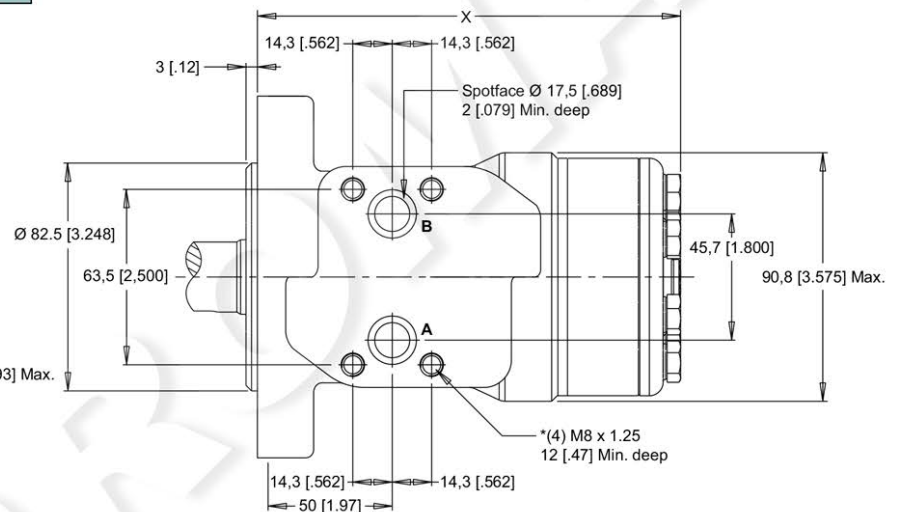


NOTE: Dimension X is found on page 12.

A17 2-Hole Manifold Ports

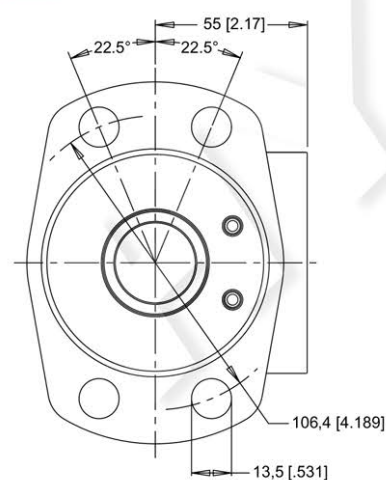


G17 2-Hole Manifold Ports

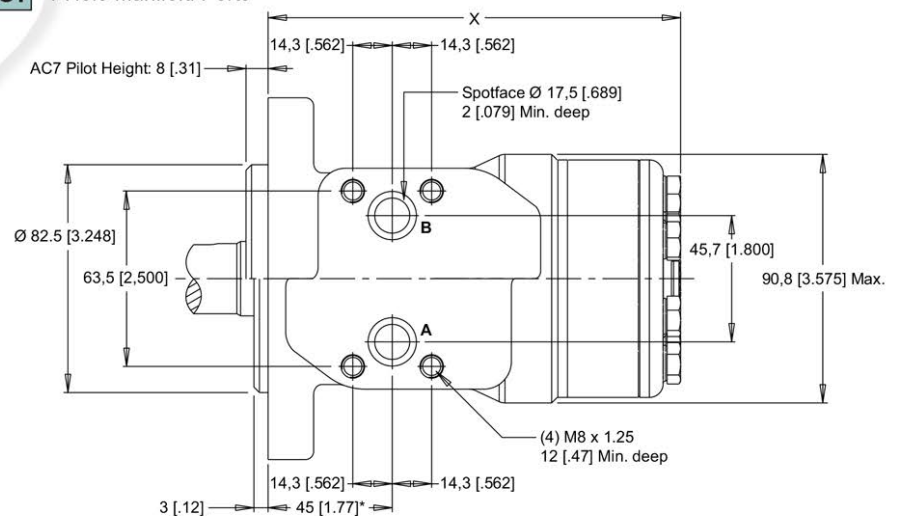


NOTE: Dimension X is found on page 12. * The four (4) mounting holes on the A17 housing are 5/16-18 UNC at the same depth.

A37 4-Hole Manifold Ports



AC7 4-Hole Manifold Ports

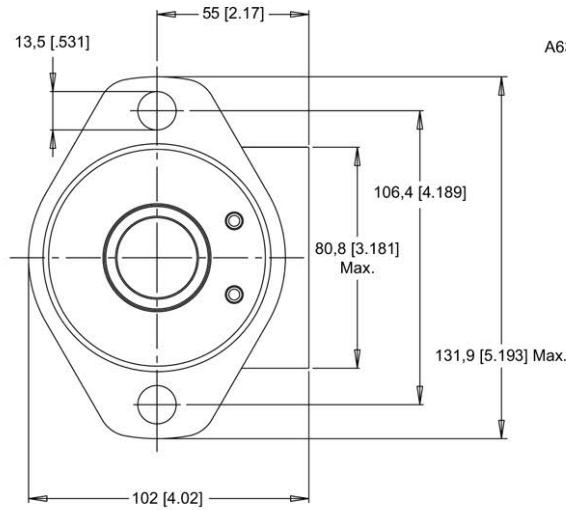


NOTE: Dimension X is found on page 12. * Pilot height is 3 [.12] for the A37 housing. ** Add 5 [.20] to dimension for the A37 housing.

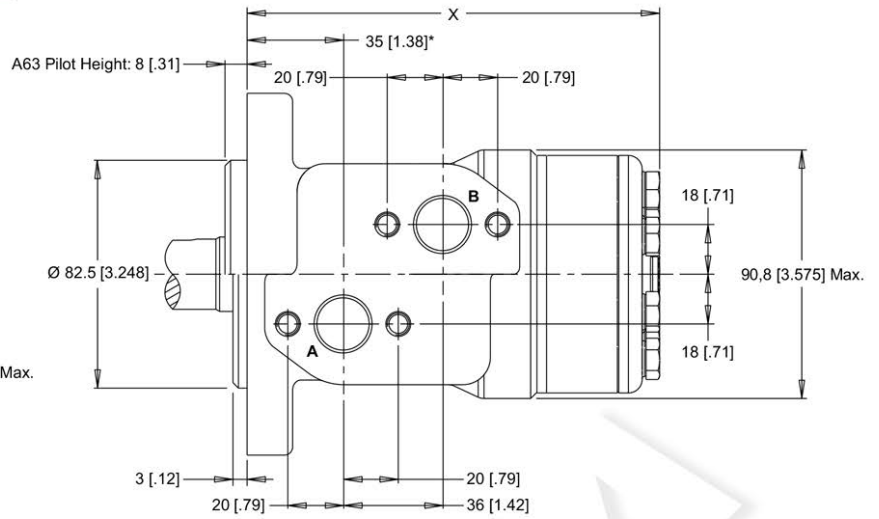


155 & 156 SERIES HOUSINGS (SAE A, MAGNETO, 4-HOLE SQUARE MOUNTS)

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

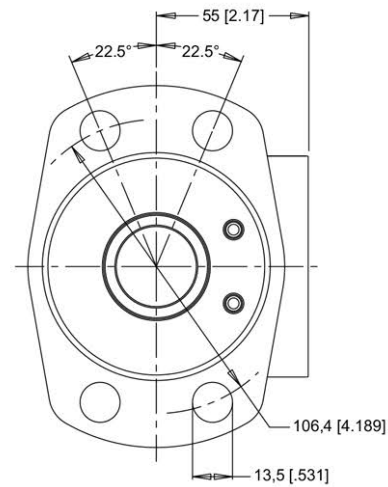


A63 2-Hole 1/2" BSP.F Offset Manifold Ports

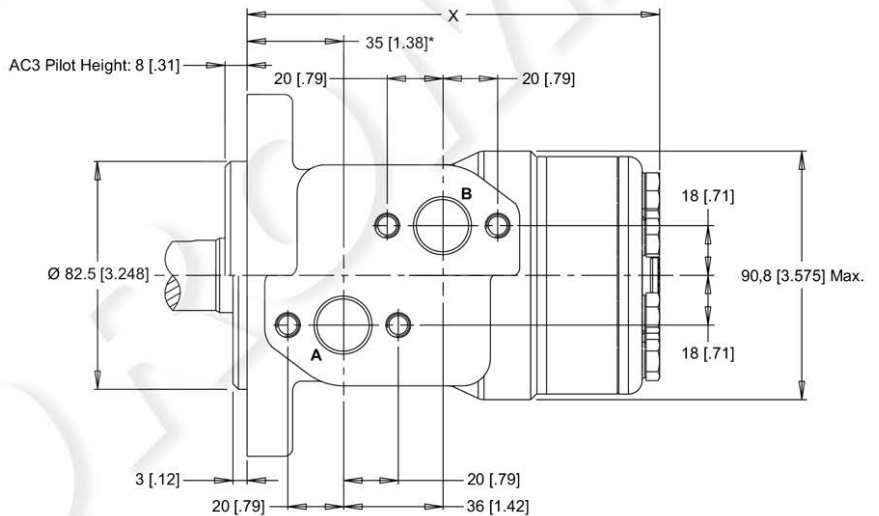


NOTE: Dimension X is found on page 12. * Add 5 [0.20] to dimension for the A13 housing.

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

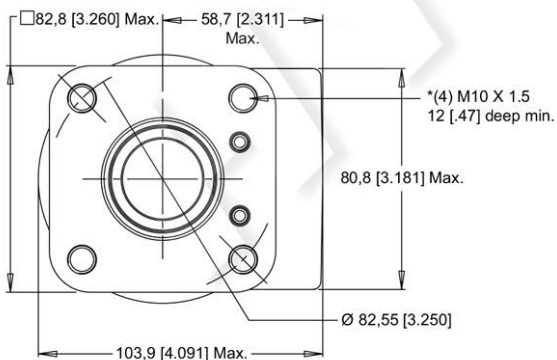


A3D 4-Hole 7/8" O-Ring Offset Manifold Ports

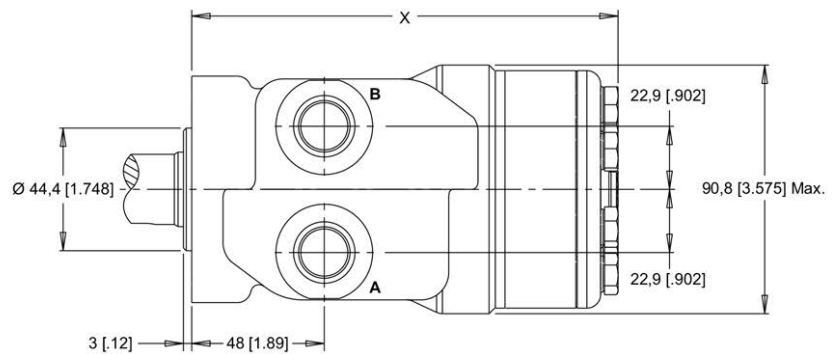


NOTE: Dimension X is found on page 12. * Add 5 [0.20] to dimension for the A3D housing.

F30 4-Hole 1/2" NPT Aligned Ports



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

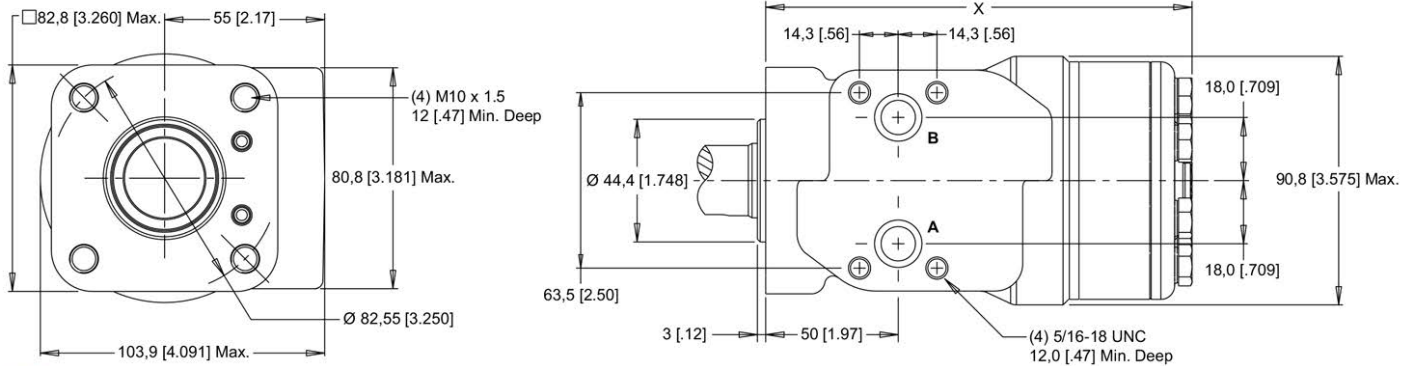


F38 4-Hole 1/2" BSP.F Aligned Ports

NOTE: Dimension X is found on page 12. * The four (4) mounting holes on the F30 & F31 housings are 3/8-16 UNC at the same depth.

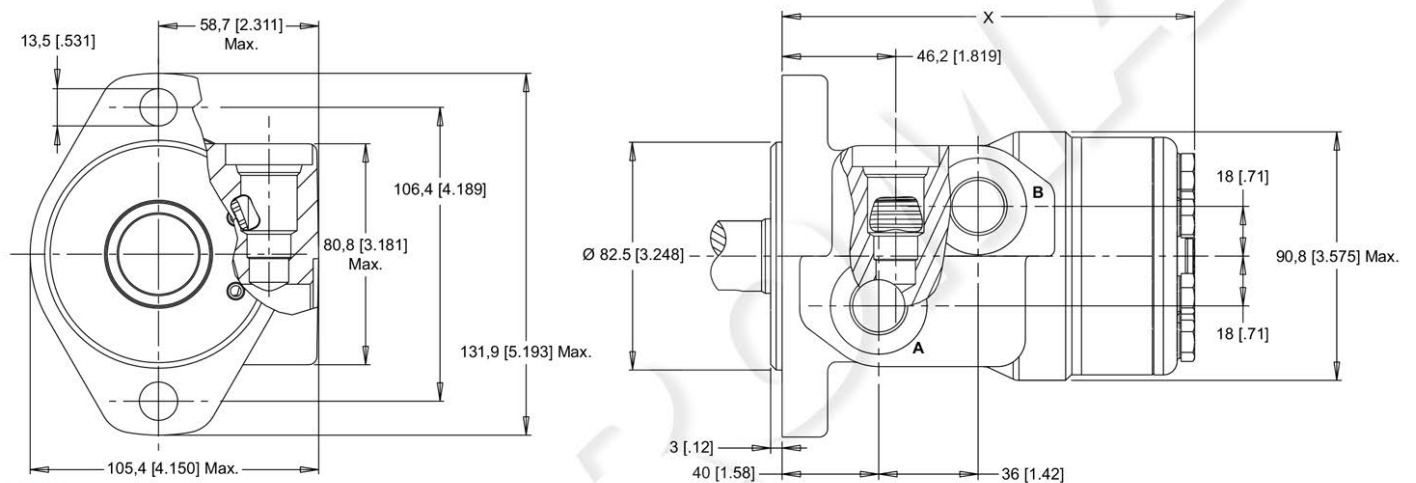
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS WITH RELIEF CAVITY)

F37 4-Hole Manifold Ports



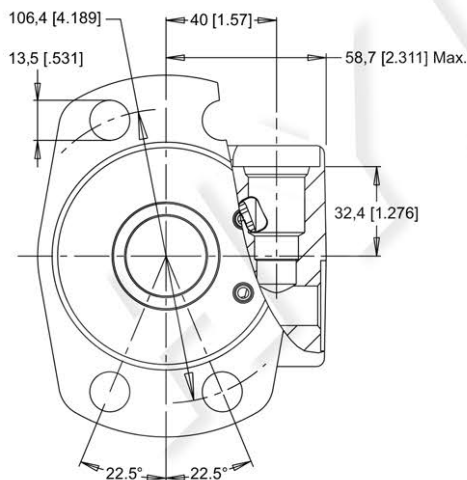
NOTE: Dimension X is found on page 12.

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

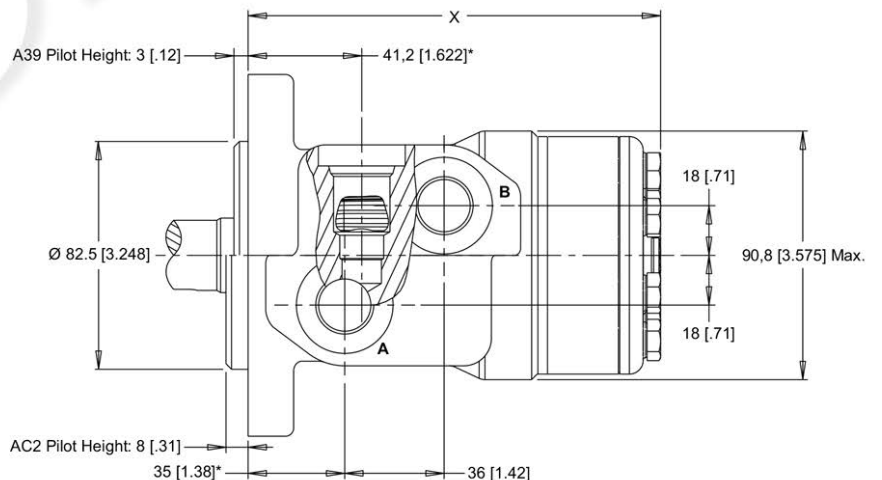


NOTE: Dimension X is found on page 12.

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



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

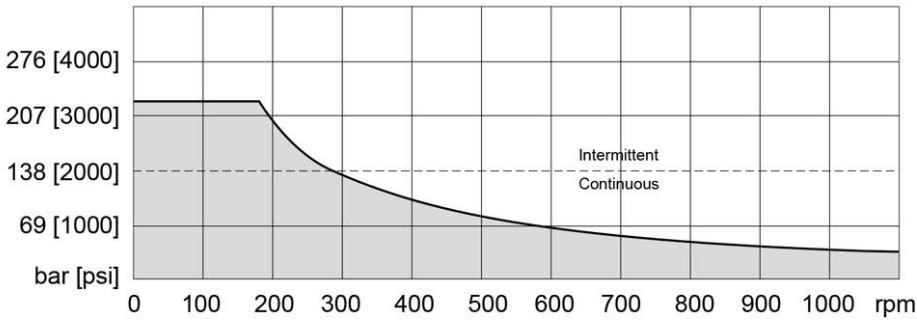


NOTE: Dimension X is found on page 12. * Add 5 [2.0] to dimension for the A39 housing.

155 & 156 SERIES TECHNICAL INFORMATION

PERMISSIBLE SHAFT SEAL PRESSURE

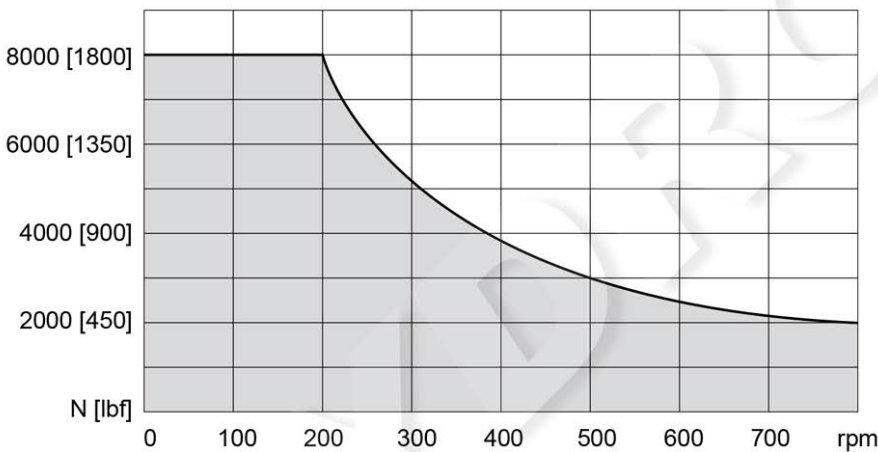
The curve below represents allowable seal pressure at various speeds. Operation in the gray area results in maintaining the rated life of the shaft seal. Actual shaft seal pressure depends on motor configuration (see below).



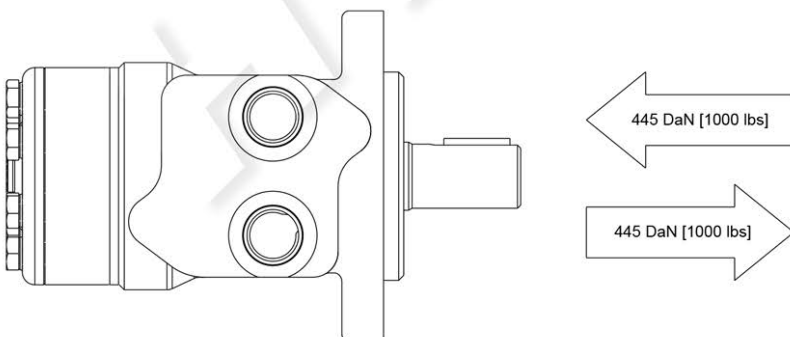
With check valves and drain connection, the shaft seal pressure equals pressure in the drain line. With check valves and no drain connection, shaft seal pressure is identical to output pressure. No check valves and no drain connection, the shaft seal pressure is identical to the average value of input 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]
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 $\pm 0,5$ kg [1 lb] depending upon motor configuration.

LENGTH / WEIGHT CHART 8mm Pilot Mounts - Dimension X

Code	mm [in]	kg [lb]
050	131 [5.16]	6.5 [14.2]
060	132 [5.20]	6.5 [14.3]
080	134 [5.28]	6.6 [14.5]
100	137 [5.39]	6.7 [14.7]
125	141 [5.55]	6.8 [14.9]
160	145 [5.71]	6.9 [15.2]
200	150 [5.91]	7.1 [15.6]
250	157 [6.18]	7.3 [16.1]
315	165 [6.50]	7.6 [16.7]
400	176 [6.93]	7.9 [17.5]

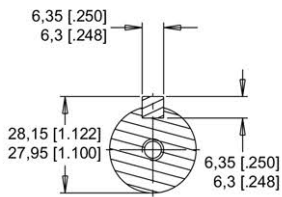
NOTE:

WP motor weights vary $\pm 0,5$ kg [1 lb] depending upon motor configuration.

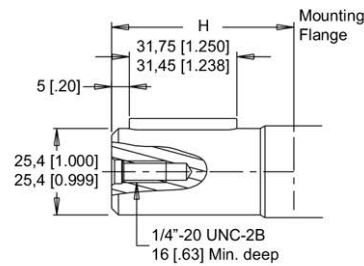
155 & 156 SERIES SHAFTS

10 1" Straight

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



15 1" Straight Extended

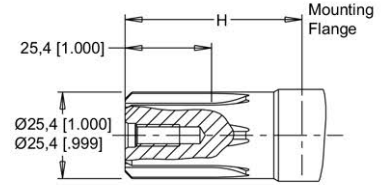


02 6B Spline (1/4" UNC Tap)

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



04 6B Spline (M8 x 1.25 Tap)



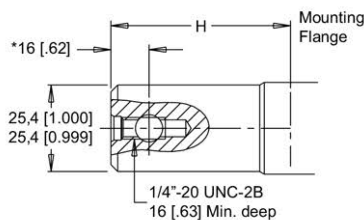
05 1" Pinhole (.375")

66 1" Pinhole (8mm)

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

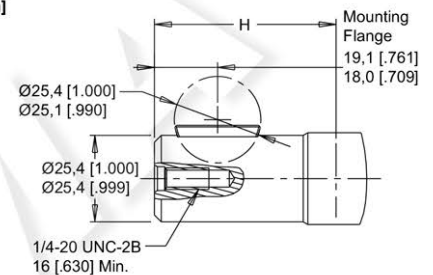
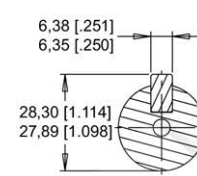


53 1" Pinhole (.406")



B1 1" Straight with Woodruff Key

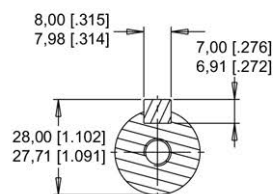
Max. Torque: 655 Nm [5800 lb-in]



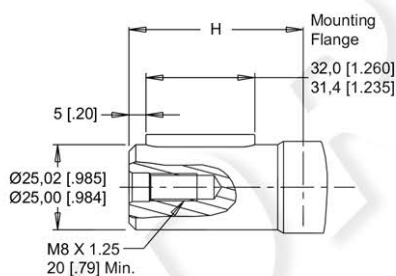
NOTE: *For 66 shaft subtract 4,6 [0.18] from this dimension.

12 25mm Straight

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

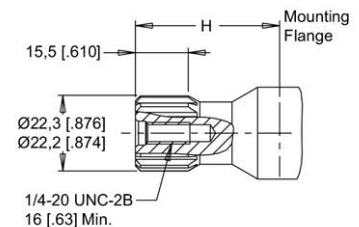


16 25mm Straight Extended



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]		



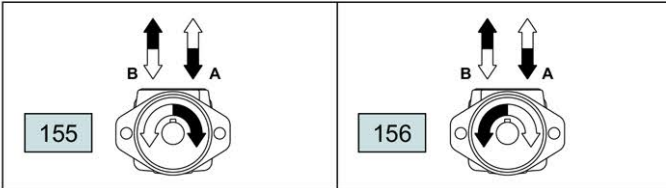
NOTE: For 3mm pilot housings subtract 5,0 [0.197] from dimension. Shaft lengths vary ± 0,8 [0.030].

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



NOTE: To obtain the desired direction of shaft rotation, use the graphic above to determine the rotation code for the motor.

STEP 2 - Select a displacement option

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

STEP 3 - Select a housing option

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)
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
F30	4-Hole 1/2" NPT Aligned Ports (S)
F31	4-Hole 7/8" O-ring Aligned Ports (S)

STEP 3 (Continued) - Select a housing option

- F37 4-Hole Manifold Ports (S)
- F38 4-Hole 1/2" BSP.F Aligned Ports (S)
- G17 2-Hole Manifold Ports (S)

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 face)

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