white drive products

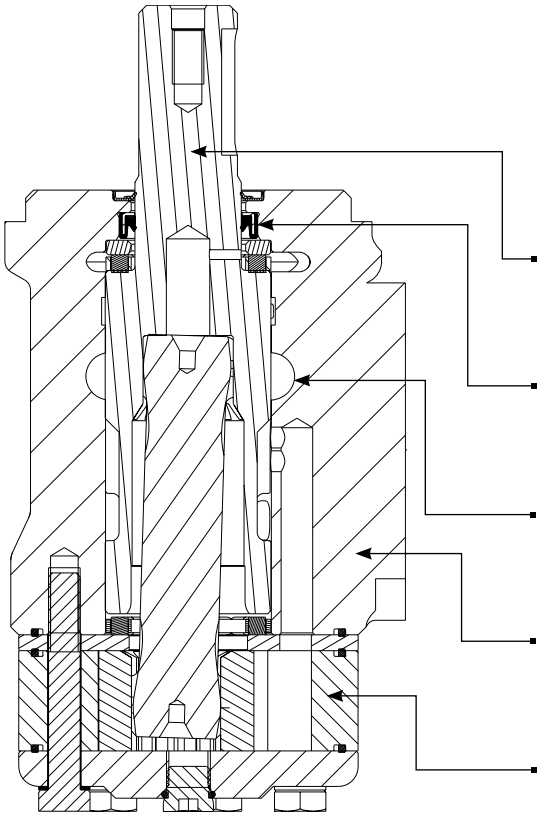
WP

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.

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
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 in^3/rev.]

Pressure - bars [psi]

30 [435]	60 [870]	80 [1160]	Max. Cont. 100 [1450]	120 [1740]	Max. Inter. 140 [2030]

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	Theoretical rpm
5 [1.3]	9 [80] **186**	18 [159] **160**	25 [221] **134**	32 [283] **101**	35 [664] **106**		200
10 [2.6]	10 [88] **386**	18 [159] **352**	26 [230] **323**	34 [301] **280**	37 [690] **255**	48 [425] **210**	400
15 [4.0]	9 [80] **568**	19 [168] **537**	26 [230] **505**	35 [310] **467**	38 [690] **431**	44 [389] **390**	600
20 [5.3]	8 [71] **777**	19 [168] **736**	25 [221] **692**	33 [292] **660**	39 [681] **608**	45 [398] **566**	800
25 [6.6]	7 [62] **972**	18 [159] **920**	26 [230] **870**	32 [283] **840**	39 [646] **803**	45 [398] **756**	1000
30 [7.9]	6 [53] **1167**	17 [150] **1122**	25 [221] **1088**	32 [283] **155**	39 [602] **998**	44 [389] **976**	1200
35 [9.2]	5 [44] **1360**	16 [142] **1318**	24 [212] **1282**	31 [274] **1258**	37 [566] **1216**	43 [381] **1160**	1400
Max. Inter. 40 [10.6]	5 [44] **1570**	15 [133] **1503**	22 [195] **1476**	31 [274] **1432**	36 [513] **1394**	41 [363] **1359**	1600
Max. Cont. 45 [11.9]		13 [115] **1687**	20 [177] **1636**	28 [248] **1600**	34 [496] **1558**	39 [345] **1516**	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]

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

032

32 cc [2.0 in^3/rev.]

Pressure - bars [psi]

30 [435]	60 [870]	80 [1160]	Max. Cont. 100 [1450]	120 [1740]	Max. Inter. 140 [2030]

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	30 [435]	60 [870]	80 [1160]	100 [1450]	120 [1740]	140 [2030]	Theoretical rpm
5 [1.3]	11 [97] **149**	24 [212] **135**	35 [310] **114**	37 [327] **94**			156
10 [2.6]	12 [106] **308**	27 [239] **284**	37 [327] **270**	43 [381] **250**	46 [407] **240**	56 [496] **211**	313
15 [4.0]	11 [97] **465**	26 [230] **444**	36 [319] **429**	45 [398] **398**	48 [425] **378**	57 [504] **355**	469
20 [5.3]	10 [88] **624**	25 [221] **589**	35 [310] **575**	44 [389] **557**	46 [407] **544**	56 [496] **524**	625
25 [6.6]	9 [80] **780**	24 [212] **771**	34 [301] **751**	42 [372] **735**	45 [398] **719**	54 [478] **695**	781
30 [7.9]	8 [71] **931**	23 [204] **908**	32 [283] **895**	40 [354] **876**	45 [398] **857**	52 [460] **822**	938
35 [9.2]	7 [62] **1086**	20 [177] **1066**	29 [257] **1051**	39 [345] **1030**	43 [381] **1012**	51 [451] **981**	1094
40 [10.6]	7 [62] **1240**	19 [168] **1212**	27 [239] **1190**	38 [336] **1178**	43 [381] **1145**	50 [442] **1121**	1250
45 [11.9]	6 [53] **1400**	18 [159] **1382**	26 [230] **1366**	35 [310] **1340**	42 [372] **1314**	48 [425] **1280**	1406
Max. Inter. 50 [13.2]	5 [44] **1550**	16 [142] **1526**	24 [212] **1500**	31 [274] **1478**	40 [354] **1452**	46 [407] **1418**	1563
Max. Cont. 55 [14.5]		12 [106] **1674**	20 [177] **1641**	28 [248] **1617**	34 [301] **1584**	39 [345] **1555**	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]

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

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PERFORMANCE

040

40 cc [2.5 in^3/rev.]

Pressure - bars [psi]

30 [435]	60 [870]	80 [1160]	100 [1450]	Max. Cont. 120 [1740]	Max. Inter. 140 [2030]

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]							Theoretical rpm
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
Max. Inter. 60 [15.8]	4 [35] **1471**	23 [204] **1428**	34 [301] **1411**	46 [407] **1387**	56 [496] **1369**	68 [602] **1341**	1500
Max. Cont. 70 [18.5]		16 [142] **1670**	30 [265] **1653**	41 [363] **1627**	52 [460] **1612**	64 [566] **1598**	2000

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

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

50 cc [3.0 in^3/rev.]

Pressure - bars [psi]

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

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]									Theoretical rpm
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**	202
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**	404
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**	606
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**	808
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**	1010
Max. Cont. 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**	1212
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**	1414
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

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]

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

060

59 cc [3.6 in^3/rev.]

Pressure - bars [psi]

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

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]									Theoretical 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
Max. Cont.	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
Max. Inter.	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

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]

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

080

78 cc [4.8 in^3/rev.]

Pressure - bars [psi]

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

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]									Theoretical 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
Max. Cont.	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
Max. Inter.	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

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]

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100

96 cc [5.9 in^3/rev.]

Pressure - bars [psi]

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

Torque - Nm [lb-in], **Speed rpm** — **Intermittent Ratings -** 10% of Operation

Flow - lpm [gpm]									Theoretical rpm
	5 [1.3]	43 [381] **51**	82 [726] **42**	109 [965] **35**	131 [1159] **25**					52
	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
Max. Cont.	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

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

125 cc [7.6 in^3/rev.]

Pressure - bars [psi]

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

Torque - Nm [lb-in], **Speed rpm** — **Intermittent Ratings -** 10% of Operation

Flow - lpm [gpm]									Theoretical rpm
	5 [1.3]	52 [460] **38**	95 [841] **35**	135 [1195] **32**	168 [1487] **27**					40
	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
Max. Cont.	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

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]

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

160

160 cc [9.4 in^3/rev.]

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

Intermittent Ratings - 10% of Operation

Torque - Nm [lb-in], **Speed rpm**

Flow - lpm [gpm]									Theoretical rpm
	5 [1.3]	56 [496] **30**	112 [991] **25**	154 [1363] **18**	201 [1779] **10**				32
	10 [2.6]	58 [513] **63**	115 [1018] **60**	156 [1381] **56**	205 [1814] **52**	245 [2168] **48**	285 [2522] **37**		65
	20 [5.3]	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
	30 [7.9]	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
	40 [10.6]	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
	50 [13.2]	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
Max. Cont.	60 [15.8]	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
	70 [18.5]	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
Max. Inter.	75 [19.8]	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]

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

200

190 cc [11.6 in^3/rev.]

Pressure - bars [psi]						Max. Cont.	Max. Inter.
30 [435]	60 [870]	80 [1160]	100 [1450]	115 [1670]	140 [2030]	150 [2180]	175 [2540]

Intermittent Ratings - 10% of Operation

Torque - Nm [lb-in], **Speed rpm**

Flow - lpm [gpm]									Theoretical rpm
	5 [1.3]	75 [664] **25**	158 [1398] **22**	200 [1770] **20**	241 [2133] **10**				26
	10 [2.6]	78 [690] **51**	160 [1416] **49**	204 [1805] **45**	252 [2230] **39**	291 [2575] **35**	348 [3080] **29**	377 [3336] **22**	53
	20 [5.3]	74 [655] **104**	156 [1381] **102**	200 [1770] **99**	246 [2177] **95**	293 [2593] **89**	354 [3133] **83**	380 [3363] **76**	416 [3681] **65**	105
	30 [7.9]	70 [619] **157**	152 [1345] **155**	196 [1735] **152**	240 [2124] **148**	290 [2566] **143**	352 [3115] **137**	378 [3345] **130**	420 [3717] **118**	158
	40 [10.6]	65 [575] **210**	147 [1301] **208**	190 [1681] **205**	228 [2018] **200**	286 [2531] **193**	340 [3009] **186**	376 [3327] **178**	418 [3699] **168**	211
	50 [13.2]	54 [478] **262**	142 [1257] **260**	180 [1593] **258**	222 [1965] **254**	277 [2451] **249**	333 [2947] **243**	356 [3150] **235**	402 [3558] **223**	263
Max. Cont.	60 [15.8]	36 [319] **315**	128 [1133] **313**	166 [1469] **309**	210 [1858] **305**	266 [2354] **299**	322 [2850] **293**	350 [3097] **284**	400 [3540] **268**	316
	70 [18.5]	15 [133] **367**	102 [903] **365**	158 [1398] **362**	202 [1788] **358**	254 [2248] **352**	302 [2673] **336**	327 [2894] **330**	376 [3327] **316**	368
Max. Inter.	75 [19.8]		94 [832] **394**	146 [1292] **390**	194 [1717] **385**	230 [2035] **380**	290 [2566] **374**	317 [2805] **365**	364 [3221] **352**	395

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]

WP

PERFORMANCE

250

240 cc [14.6 in^3/rev.]

Pressure - bars [psi]	30 [435]	60 [870]	85 [1230]	100 [1450]	125 [1810]	140 [2030] Max. Cont.	160 [2320]	175 [2540] Max. Inter.
Torque - Nm [lb-in], **Speed rpm**								
5 [1.3]	89 [788] **19**	194 [1717] **16**	264 [2336] **10**	326 [2885] **6**				
10 [2.6]	92 [814] **40**	196 [1735] **36**	268 [2372] **32**	329 [2912] **21**	394 [3487] **10**			
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**
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**
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**
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**
60 [15.8] Max. Cont.	48 [425] **250**	152 [1345] **247**	230 [2035] **243**	282 [2496] **236**	364 [3221] **222**	407 [3602] **216**	456 [4035] **205**	508 [4496] **188**
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**
75 [19.8] Max. Inter.	26 [230] **312**	128 [1133] **310**	205 [1814] **307**	245 [2168] **302**	328 [2903] **294**	374 [3310] **270**	428 [3788] **254**	481 [4257] **242**

Flow - lpm [gpm]

Intermittent Ratings - 10% of Operation

Theoretical rpm
21
42
83
125
167
208
250
292
313

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]

315

303 cc [18.5 in^3/rev.]

Pressure - bars [psi]	30 [435]	50 [725]	70 [1015]	85 [1230]	100 [1450]	120 [1740] Max. Cont.	140 [2030]	160 [2320] Max. Inter.
Torque - Nm [lb-in], **Speed rpm**								
5 [1.3]	123 [1089] **16**	200 [1770] **13**	282 [2496] **10**	344 [3044] **6**				
10 [2.6]	117 [1035] **31**	194 [1717] **29**	277 [2451] **25**	342 [3027] **21**	399 [3531] **17**			
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**
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**
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**
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**
60 [15.8] Max. Cont.	60 [531] **195**	140 [1239] **192**	223 [1974] **188**	270 [2390] **183**	325 [2876] **176**	396 [3505] **170**	480 [4248] **164**	546 [4832] **157**
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**
75 [19.8] Max. Inter.	23 [204] **245**	100 [885] **242**	174 [1540] **238**	237 [2097] **233**	293 [2593] **228**	359 [3177] **222**	444 [3929] **215**	516 [4567] **206**

Flow - lpm [gpm]

Intermittent Ratings - 10% of Operation

Theoretical rpm
17
33
66
99
132
165
198
231
248

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

388 cc [23.7 in^3/rev.]

Pressure - bars [psi]

30 [435]	45 [650]	55 [800]	65 [940]	80 [1160]	95 [1380] Max. Cont.	110 [1595]	125 [1810] Max. Inter.

Torque - Nm [lb-in], **Speed rpm**

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	30 [435]	45 [650]	55 [800]	65 [940]	80 [1160]	95 [1380]	110 [1595]	125 [1810]	Theoretical rpm
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
Max. Cont. 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

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

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

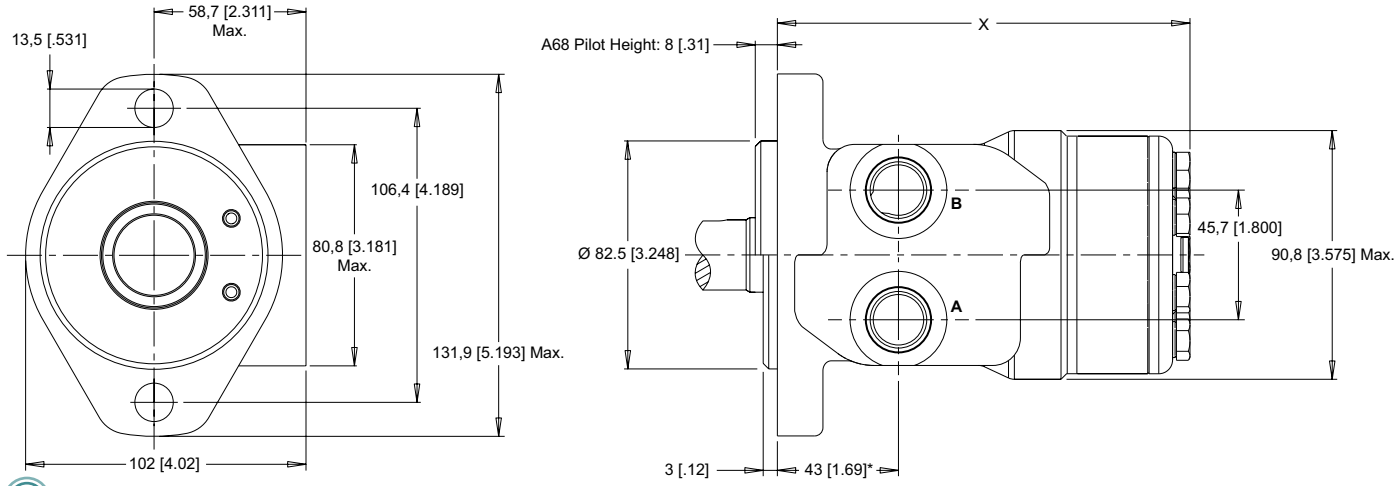
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS)

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*

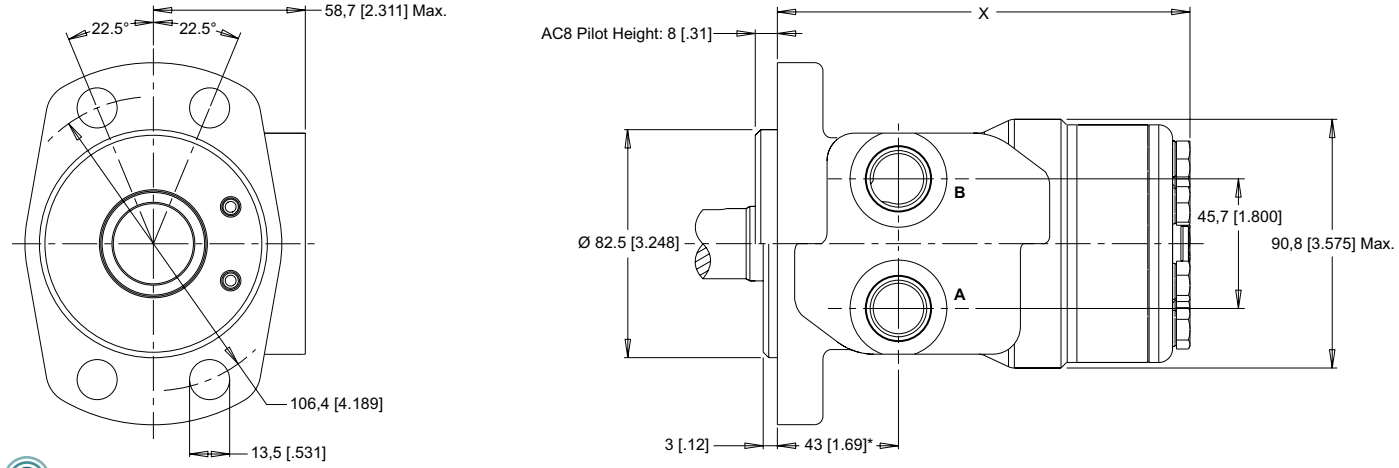


NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A10, A11, & A18 housings.

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

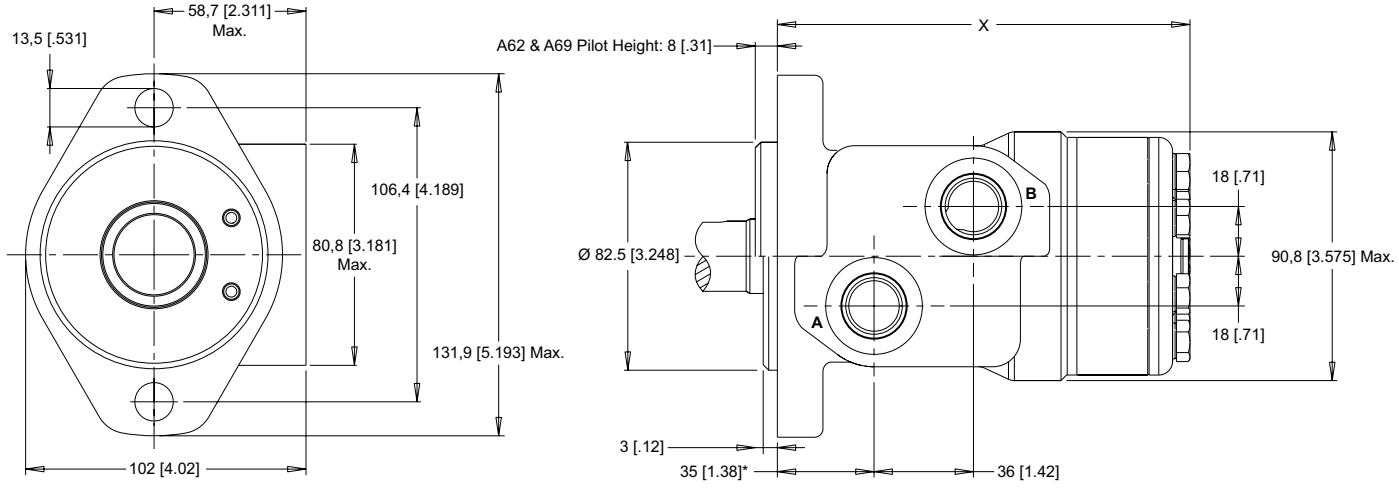


NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A30 & A31 housings.

A12 2-Hole 1/2” BSP.F Offset Ports

A62 2-Hole 1/2” BSP.F Offset Ports

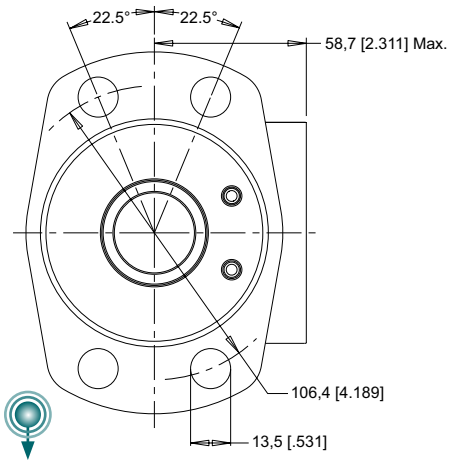
A69 2-Hole 7/8” O-Ring Offset Ports

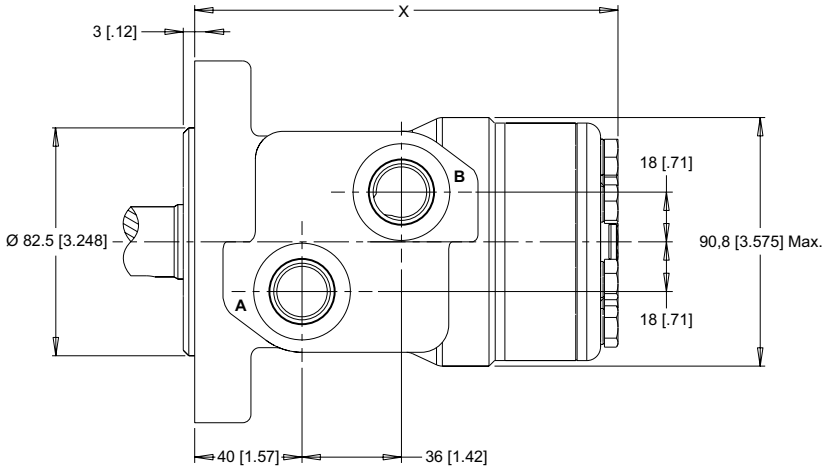


NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A12 housing.

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

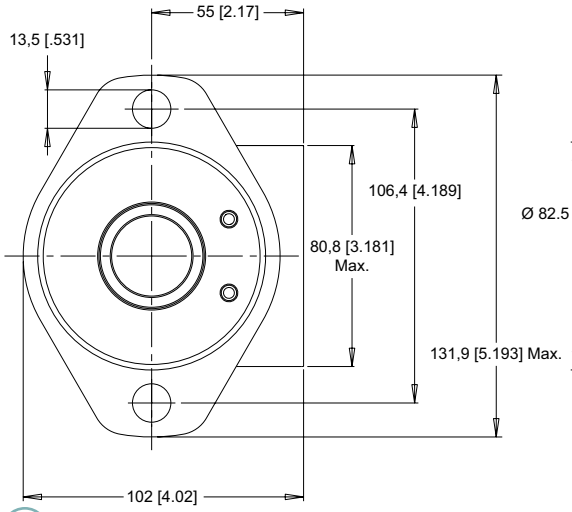
A32 4-Hole 1/2" BSP.F Offset Ports



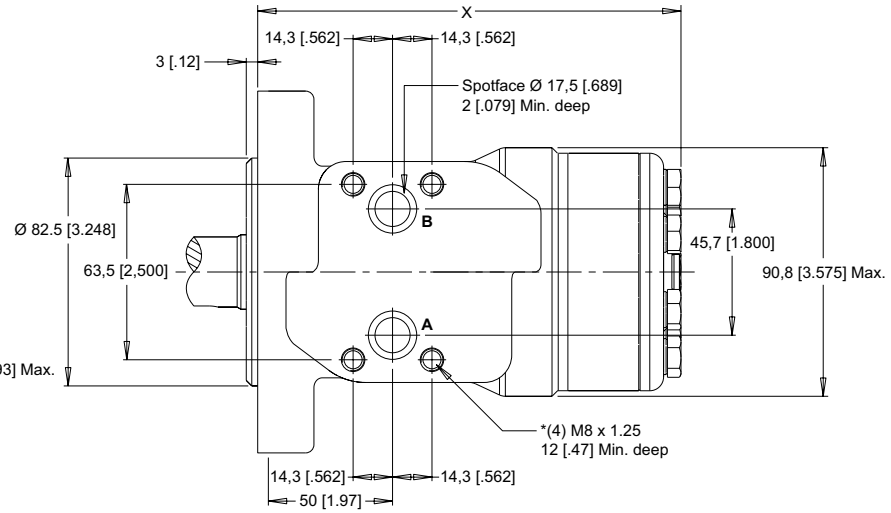


NOTE: Dimension X is found on page 15.

A17 2-Hole Manifold Ports

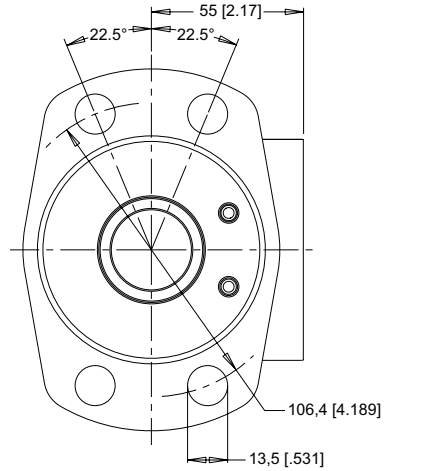


G17 2-Hole Manifold Ports

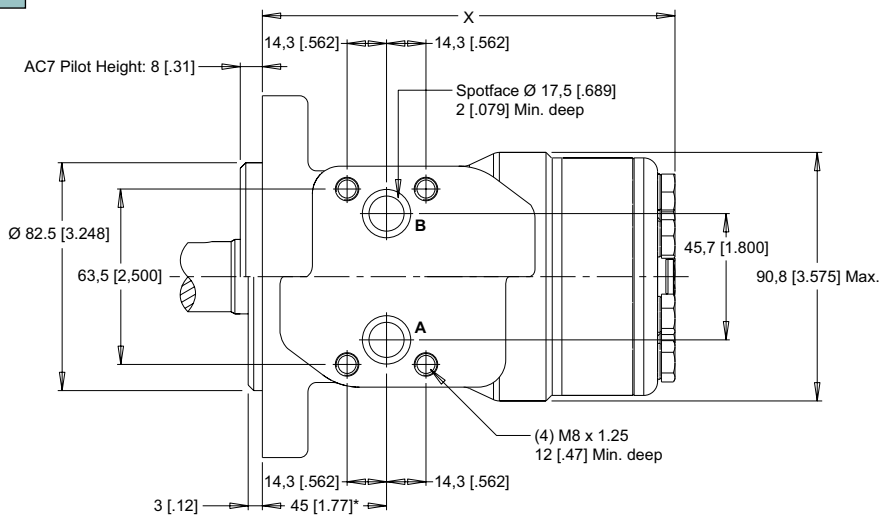


NOTE: Dimension X is found on page 15. * The four (4) mounting holes on the A17 housing are 5/16-18 UNC at the same depth.

A37 4-Hole Manifold Ports



AC7 4-Hole Manifold Ports

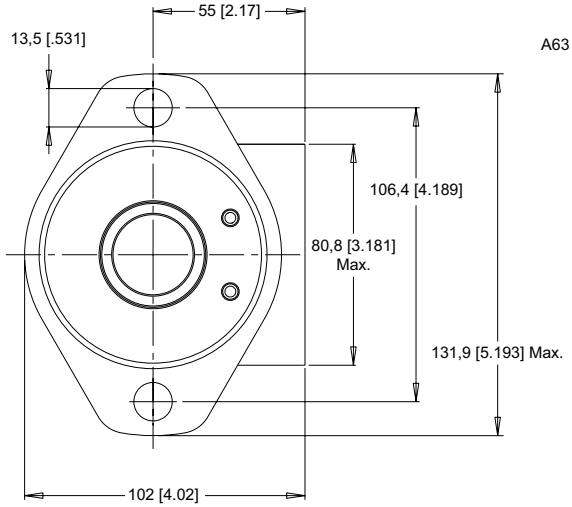


NOTE: Dimension X is found on page 15. * Pilot height is 3 [.12] for the A37 housing. ** Add 5 [.20] to dimension for the A37 housing.

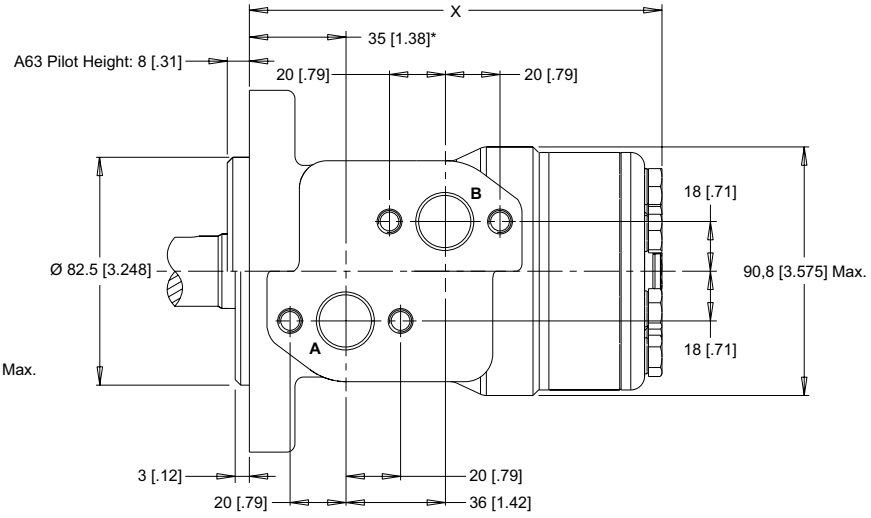
WP

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

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

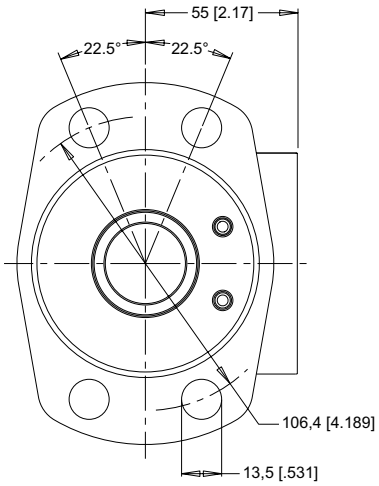


A63 2-Hole 1/2” BSP.F Offset Manifold Ports

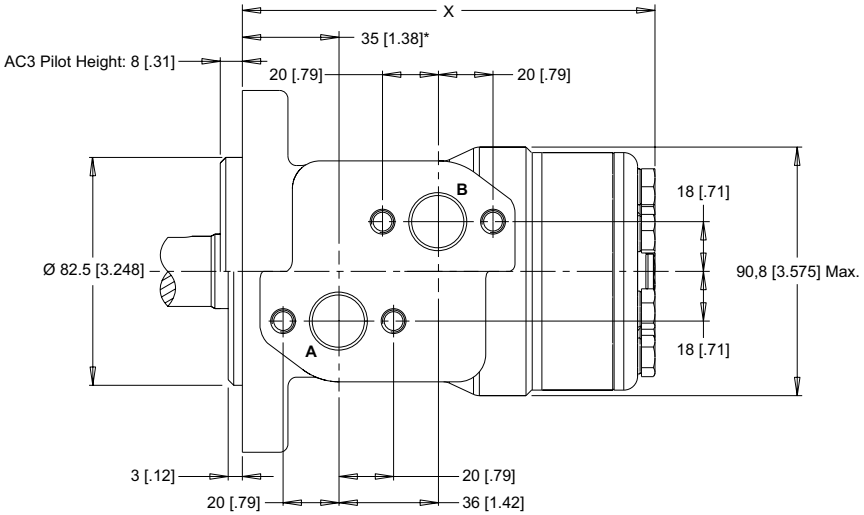


NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A13 housing.

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

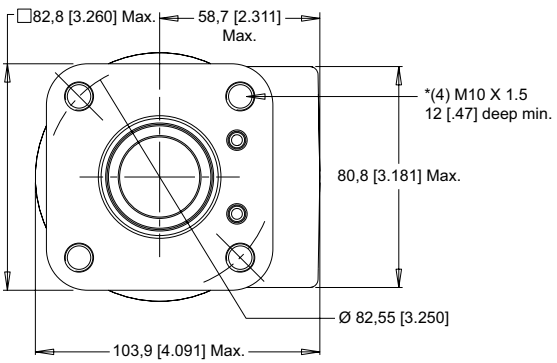


A3D 4-Hole 7/8” O-Ring Offset Manifold Ports



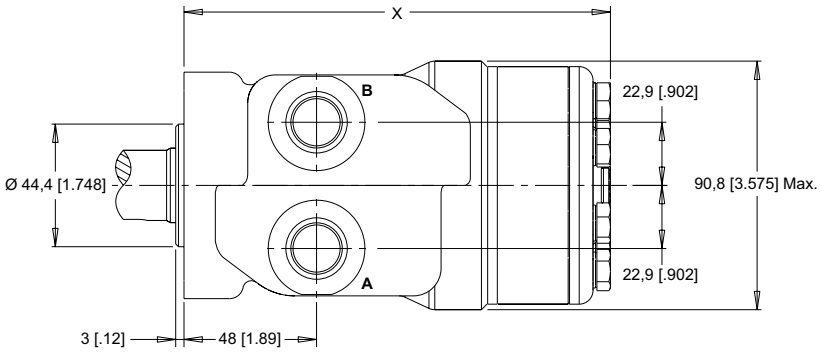
NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A3D housing.

F30 4-Hole 1/2” NPT Aligned Ports



F31 4-Hole 7/8” O-Ring Aligned Ports

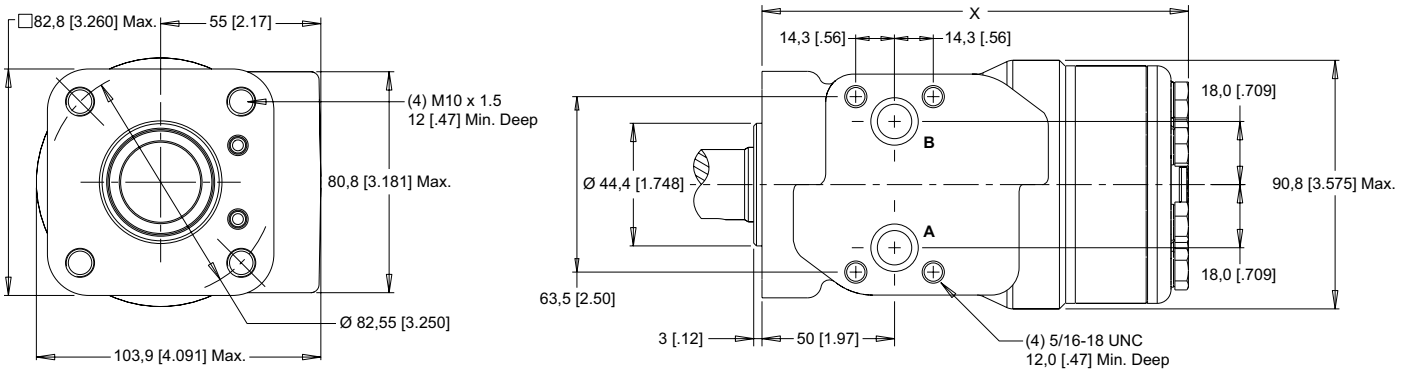
F38 4-Hole 1/2” BSP.F Aligned Ports



NOTE: Dimension X is found on page 15. * The four (4) mounting holes on the F30 & F31 housings are 3/8-16 UNC at the same depth.

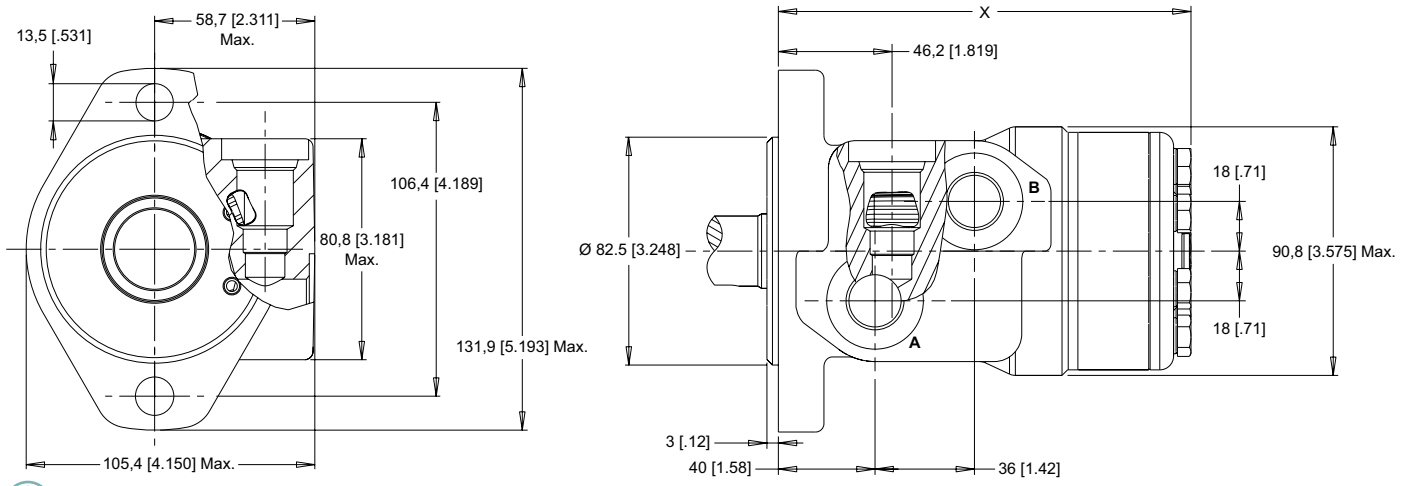
155 & 156 SERIES HOUSINGS (SAE A & MAGNETO MOUNTS WITH RELIEF CAVITY)

F37 4-Hole Manifold Ports



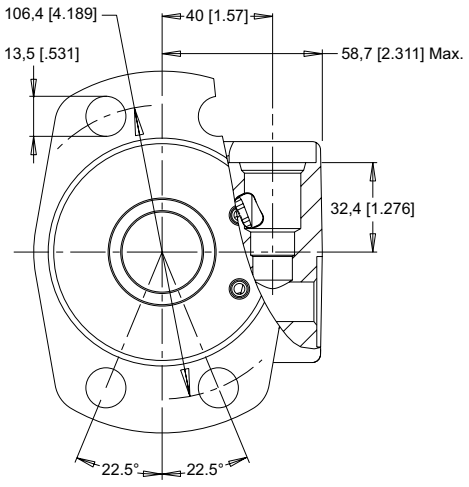
NOTE: Dimension X is found on page 15.

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

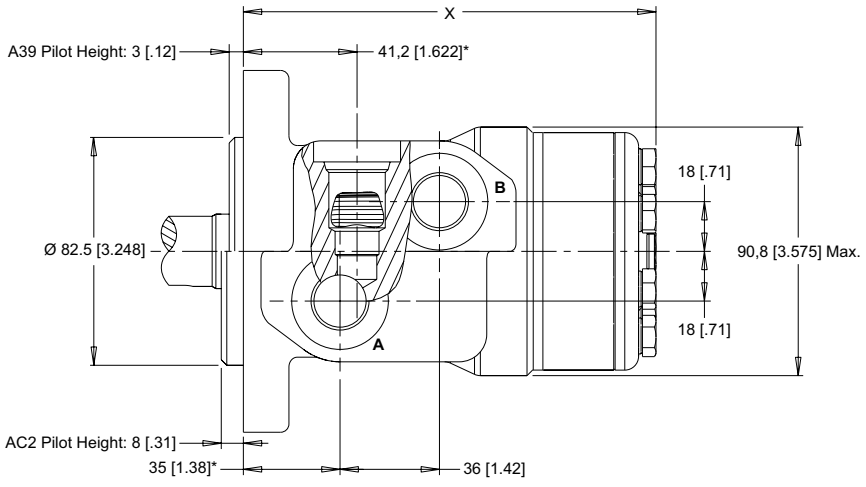


NOTE: Dimension X is found on page 15.

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



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

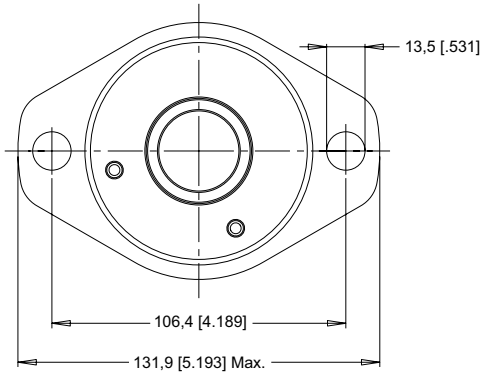


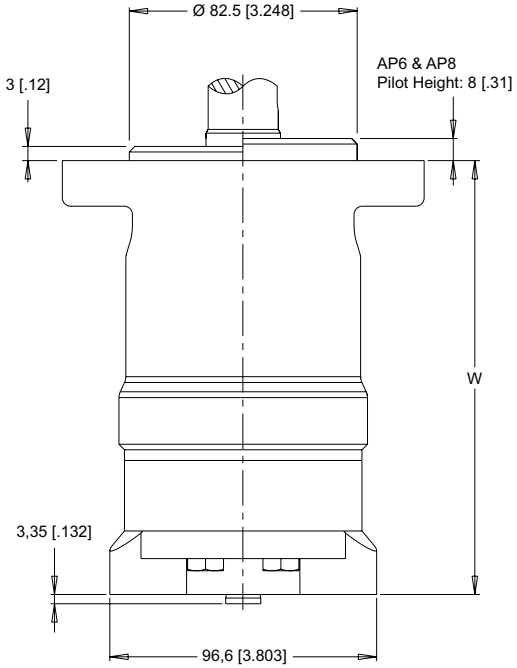
NOTE: Dimension X is found on page 15. * Add 5 [.20] to dimension for the A39 housing.

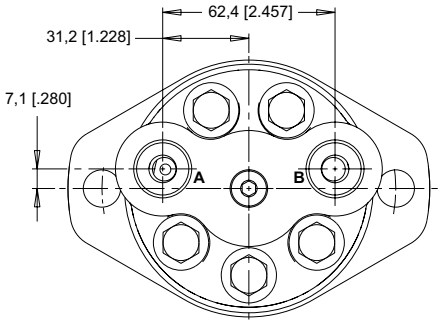
WP

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	145 [5.71]	5.9 [13.0]
032	146 [5.75]	6.0 [13.2]
040	148 [5.83]	6.1 [13.4]
050	148 [5.83]	6.1 [13.4]
060	149 [5.87]	6.1 [13.4]
080	152 [5.98]	6.2 [13.6]
100	154 [6.06]	6.3 [13.9]
125	158 [6.22]	6.4 [14.1]
160	162 [6.38]	6.5 [14.3]
200	167 [6.57]	6.7 [14.7]
250	174 [6.85]	6.9 [15.2]
315	182 [7.17]	7.2 [15.8]
400	193 [7.60]	7.5 [16.5]

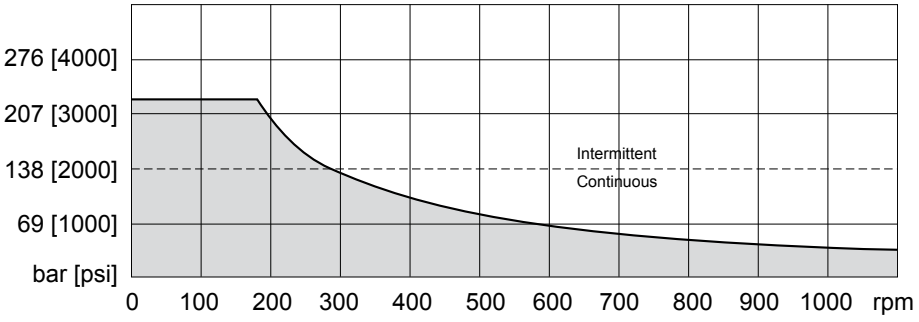
NOTE:
WP motor weights vary ± 0,5 kg [1 lb] depending upon motor configuration.

LENGTH / WEIGHT CHART 8mm Pilot Mounts - Dimension **W**		
Code	**mm [in]**	**kg [lb]**
025	140 [5.51]	5.8 [12.1]
032	141 [5.55]	5.9 [13.0]
040	143 [5.63]	6.0 [13.2]
050	143 [5.63]	6.0 [13.2]
060	144 [5.67]	6.0 [13.2]
080	147 [5.79]	6.1 [13.4]
100	149 [5.87]	6.2 [13.6]
125	153 [6.02]	6.3 [13.9]
160	157 [6.18]	6.4 [14.1]
200	162 [6.38]	6.6 [14.5]
250	169 [6.65]	6.8 [15.0]
315	177 [6.97]	7.1 [15.6]
400	188 [7.40]	7.4 [16.3]

NOTE:
WP motor weights vary ± 0,5 kg [1 lb] depending upon motor configuration.

PERMISSIBLE SHAFT SEAL PRESSURE

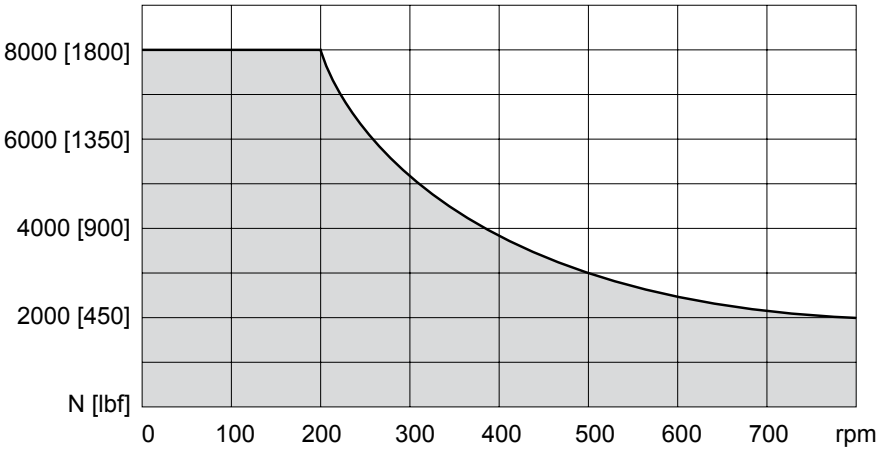
The curve below represents allowable seal pressure at various speeds. Operation in the gray area results in maintaining the rated life of the shaft seal. Actual shaft seal pressure depends on motor configuration (see below).



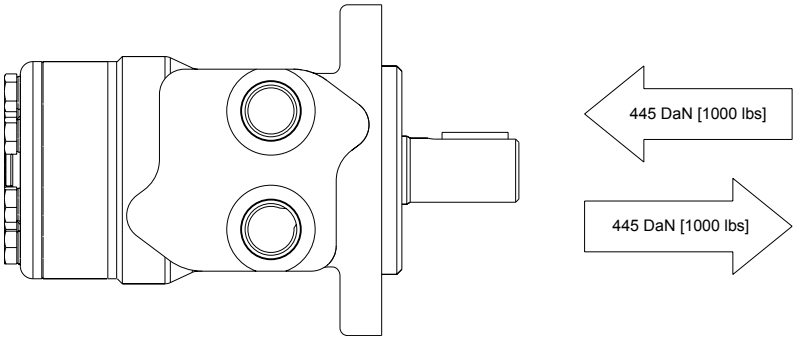
With check valves and drain connection, the shaft seal pressure equals pressure in the drain line. With check valves and no drain connection, shaft seal pressure is identical to output pressure. No check valves and no drain connection, the shaft seal pressure is identical to the average value of input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

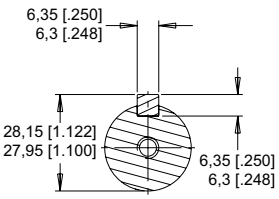
NOTE:
WP motor weights vary ± 0,5 kg [1 lb] depending upon motor configuration.

WP

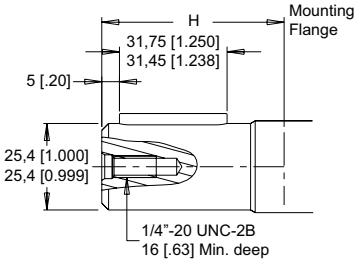
155 & 156 SERIES SHAFTS

10 1" Straight

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



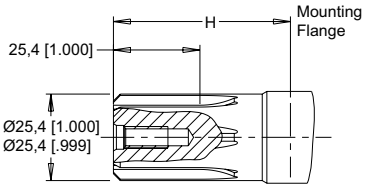
15 1" Straight Extended



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

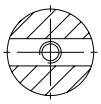
Max. Torque: 429 Nm [3800 lb-in]

04 6B Spline (M8 x 1.25 Tap)

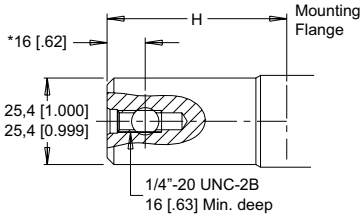


05 1" Pinhole 9,5 [.375]
66 1" Pinhole 8,0 [.315]

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



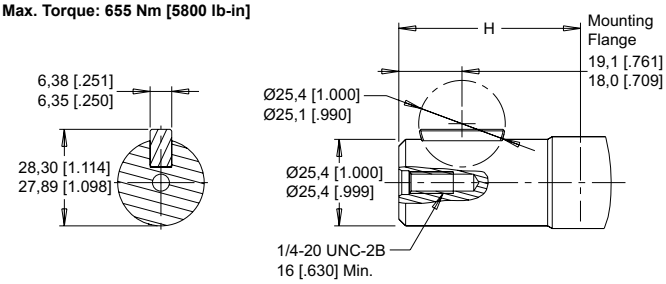
53 1" Pinhole 10,3 [.406]



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

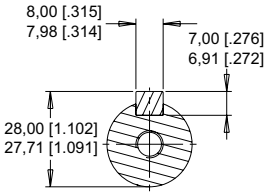
B1 1" Straight with Woodruff Key

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

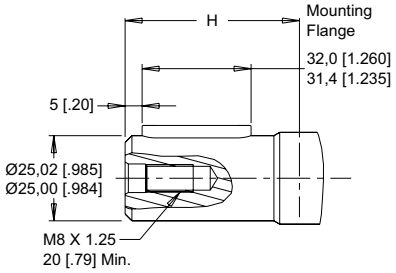


12 25mm Straight

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

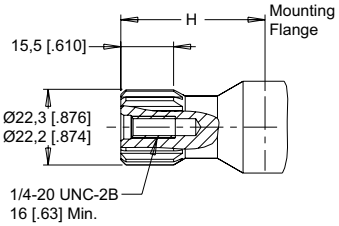


16 25mm Straight Extended



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 ± 0,8 [.030].

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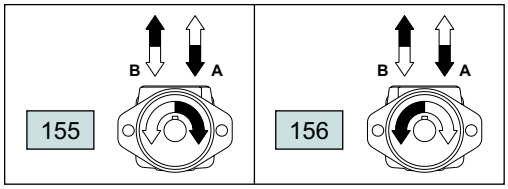
WP

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



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

025	25 cc	[1.5 in^3/rev]
032	32 cc	[2.0 in^3/rev]
040	40 cc	[2.5 in^3/rev]
050	50 cc	[3.0 in^3/rev]
060	59 cc	[3.6 in^3/rev]
080	78 cc	[4.8 in^3/rev]
100	96 cc	[5.9 in^3/rev]
125	125 cc	[7.6 in^3/rev]
160	154 cc	[9.4 in^3/rev]
200	190 cc	[11.6 in^3/rev]
250	240 cc	[14.6 in^3/rev]
315	303 cc	[18.5 in^3/rev]
400	388 cc	[23.7 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-Hole1/2" 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

STEP 3 (Continued) - Select a housing option

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

STEP 5 - Select a paint option

A	Black	B	Black (Unpainted Flange)

STEP 6 - Select a valve cavity option and installed valve

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

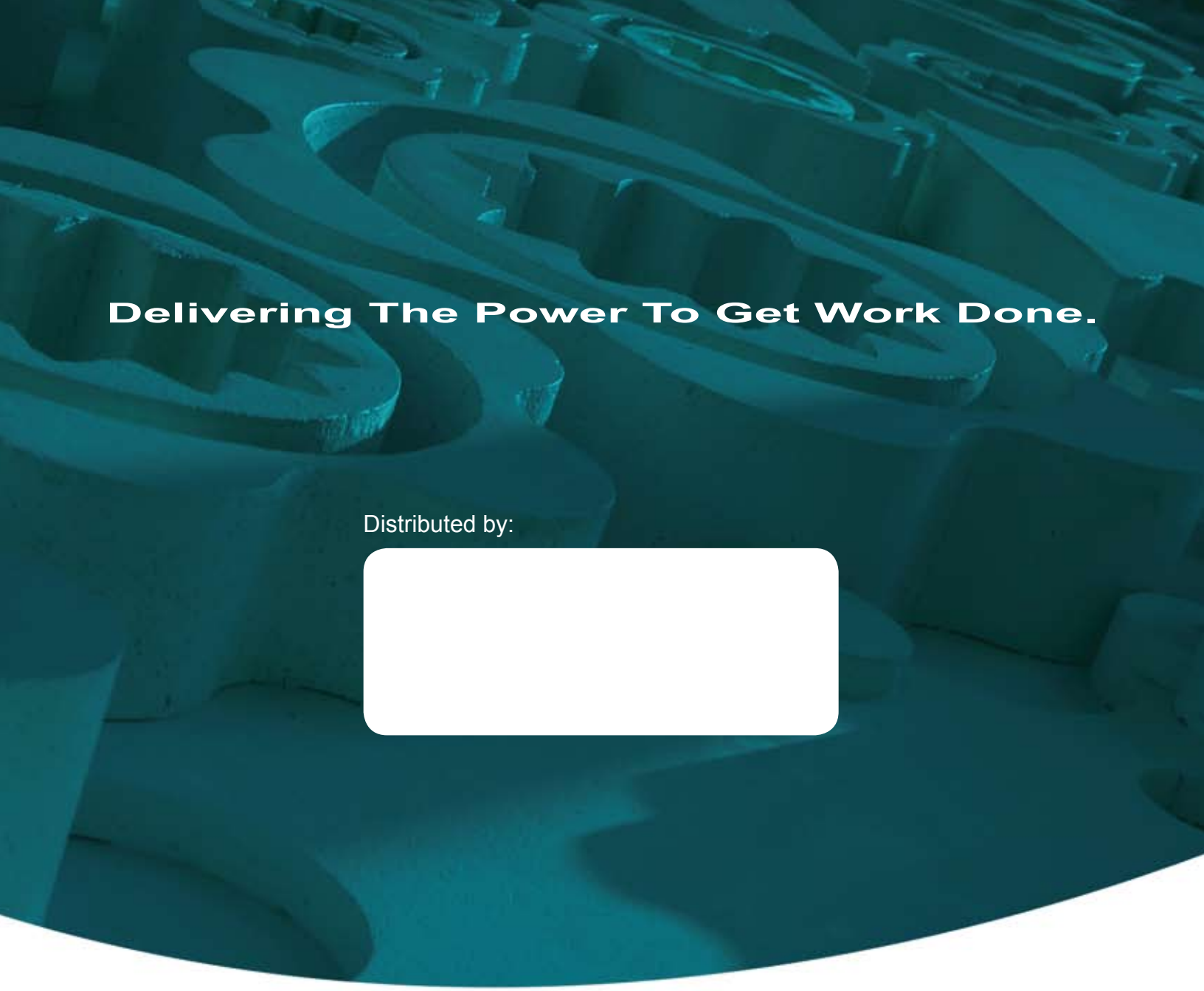
STEP 7 - Select an add on option

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		



Distributed by:

United States

White Drive Products, Inc.
P.O. Box 1127
Hopkinsville, KY. USA 42241
Phone: +1.270.885.1110
Fax: +1.270.886.8462
infousa@whitedriveproducts.com

Germany

White Drive Products GmbH
Halskestrasse 15
D-40880 Ratingen, Germany
Phone: +49 2102-1237770
Fax: +49 2102-1237779
infoeu@whitedriveproducts.com

China

White (China) Drive Products Co., Ltd.
1-8 Ning Zhen Gong Lu
Zhenjiang, 212021, Jiangsu, China
Phone: +86 511 5729988
Fax: +86 511 5728921
infochina@whitedriveproducts.com

whitedriveproducts

www.whitedriveproducts.com

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