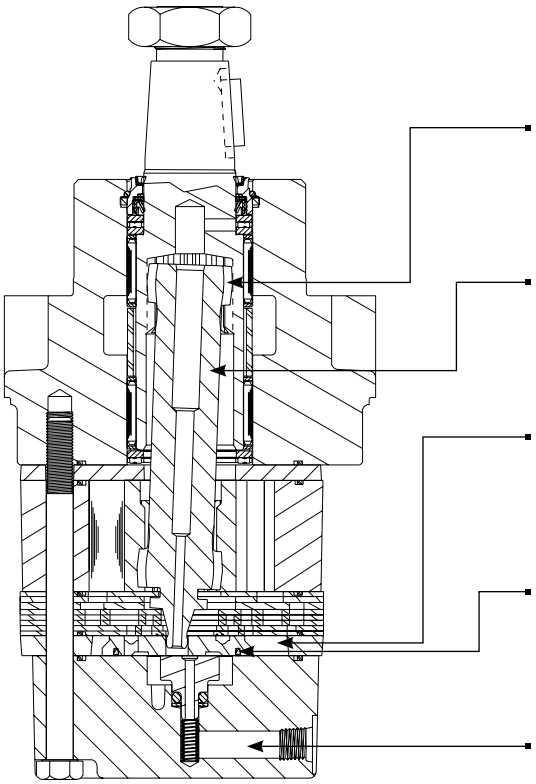
HB

SERIES HYDRAULIC MOTORS

HB

OVERVIEW

The HB Series motor is the leader in its class, offering high efficiency and durability. The three-zone orbiting valve, laminated manifold and Roller Stator® motor work harmoniously to produce high overall efficiencies over a wide range of operating conditions. The standard case drain increases shaft seal life by reducing internal pressures experienced by the seal. Case oil leakage is also directed across all driveline components, increasing motor life. An internal drain option is also available. At the heart of the motor is a heavy-duty drivelink, offering 30% more torque capacity than competitive designs. These features make the HB Series motor the preferred choice for applications requiring peak efficiency for continuous operation.



KEY FEATURES

Forced Drive Link Lubrication reduces wear and promotes longer life from motor.

Heavy-Duty Drive Link is up to 30% stronger than competitive designs for longer life.

Three-Zone Orbiting Valve precisely meters oil to produce exceptional volumetric efficiency.

Rubber Energized Steel Face Seal does not extrude or melt under high pressure or high temperature.

Standard Case Drain increases shaft seal life by reducing pressure on seal.

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	52 [3.2]	680	830	38 [10]	45 [12]	135 [1200]	158 [1400]	207 [3000]	242 [3500]	276 [4000]
080	76 [4.6]	800	950	53 [14]	64 [17]	191 [1700]	222 [1975]	207 [3000]	242 [3500]	276 [4000]
090	89 [5.4]	680	840	61 [16]	76 [20]	225 [2000]	270 [2400]	207 [3000]	242 [3500]	276 [4000]
110	111 [6.8]	680	850	76 [20]	95 [25]	298 [2650]	349 [3100]	207 [3000]	242 [3500]	276 [4000]
125	127 [7.7]	580	740	76 [20]	95 [25]	338 [3000]	394 [3500]	207 [3000]	242 [3500]	276 [4000]
160	164 [10.0]	460	580	76 [20]	95 [25]	448 [3975]	512 [4550]	207 [3000]	242 [3500]	276 [4000]
200	205 [12.5]	370	460	76 [20]	95 [25]	569 [5050]	653 [5800]	207 [3000]	242 [3500]	276 [4000]
250	254 [15.5]	290	370	76 [20]	95 [25]	704 [6250]	799 [7100]	207 [3000]	242 [3500]	276 [4000]
300	293 [17.9]	250	320	76 [20]	95 [25]	811 [7200]	929 [8250]	207 [3000]	242 [3500]	276 [4000]
400	409 [24.9]	180	230	76 [20]	95 [25]	946 [8400]	1019 [9050]	173 [2500]	189 [2750]	207 [3000]

050

52 cc [3.2 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], **Speed rpm**							Theoretical rpm
2 [0.5]	7 [66] **36**	18 [158] **31**	38 [314] **26**	51 [447] **21**	66 [587] **9**			37
4 [1]	9 [77] **72**	19 [164] **69**	38 [335] **65**	57 [505] **63**	71 [631] **33**	87 [772] **32**	98 [866] **9**	73
8 [2]	9 [75] **142**	19 [164] **140**	39 [342] **135**	59 [521] **133**	78 [690] **122**	95 [840] **102**	109 [964] **77**	123 [1086] **57**	145
15 [4]	8 [68] **288**	19 [164] **286**	38 [340] **285**	57 [507] **284**	78 [688] **265**	99 [872] **245**	112 [993] **211**	129 [1145] **189**	289
23 [6]			36 [319] **431**	56 [492] **427**	76 [669] **416**	97 [859] **396**	114 [1009] **347**	134 [1182] **321**	434
30 [8]			34 [304] **577**	53 [467] **572**	73 [646] **568**	95 [841] **543**	113 [1001] **488**	134 [1183] **463**	578
Max. Inter. 38 [10]				51 [451] **699**	71 [628] **683**	92 [810] **665**	111 [978] **634**	133 [1174] **604**	722
45 [12]				48 [427] **847**	68 [606] **825**	88 [781] **798**	111 [980] **980**		867

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

Theoretical Torque - Nm [lb-in]

14 [127]	29 [255]	58 [510]	86 [764]	115 [1019]	144 [1274]	173 [1529]	202 [1783]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

080

76 cc [4.6 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], **Speed rpm**							Theoretical rpm
2 [0.5]	14 [127] **25**	30 [262] **24**	61 [543] **21**	91 [806] **18**	120 [1062] **17**	145 [1285] **11**	169 [1496] **11**	191 [1693] **9**	26
4 [1]	16 [140] **50**	32 [286] **50**	63 [559] **43**	95 [839] **43**	124 [1099] **34**	151 [1340] **32**	178 [1579] **32**	203 [1796] **31**	51
8 [2]	16 [139] **100**	32 [280] **100**	64 [563] **99**	97 [857] **92**	129 [1139] **87**	157 [1390] **79**	187 [1652] **78**	211 [1865] **77**	101
15 [4]	14 [127] **200**	31 [275] **200**	65 [572] **199**	99 [872] **191**	131 [1155] **181**	160 [1420] **174**	186 [1643] **160**	216 [1911] **154**	201
23 [6]	13 [113] **301**	30 [262] **300**	63 [557] **297**	96 [853] **295**	130 [1149] **284**	160 [1420] **271**	186 [1646] **253**	218 [1930] **245**	302
30 [8]	10 [91] **401**	27 [243] **400**	61 [536] **398**	93 [826] **390**	127 [1125] **384**	159 [1409] **372**	187 [1654] **346**	220 [1945] **339**	402
38 [10]		24 [212] **502**	58 [511] **500**	89 [790] **499**	123 [1087] **498**	156 [1379] **485**	185 [1638] **443**	213 [1883] **433**	503
45 [12]		20 [177] **602**	54 [482] **601**	87 [767] **600**	120 [1060] **597**	164 [1451] **540**	193 [1711] **526**	228 [2021] **510**	603
Max. Cont. 53 [14]		14 [127] **690**	50 [445] **689**	84 [741] **688**	124 [1098] **658**	155 [1369] **644**	185 [1640] **631**	217 [1918] **613**	704
61 [16]									804
Max. Inter. 64 [17]									904

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

Theoretical Torque - Nm [lb-in]

21 [183]	41 [366]	83 [732]	124 [1099]	166 [1465]	207 [1831]	248 [2197]	290 [2564]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

HB

PERFORMANCE

090

89 cc [5.4 in³/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	12 [106] **21**	26 [231] **19**	69 [609] **17**	100 [889] **15**	142 [1259] **13**	174 [1537] **10**	206 [1826] **7**	232 [2049] **5**	22
4 [1]		30 [264] **41**	68 [605] **38**	107 [947] **34**	146 [1296] **30**	180 [1596] **27**	212 [1875] **26**	242 [2142] **23**	43
8 [2]		33 [291] **84**	71 [629] **79**	108 [958] **73**	149 [1323] **67**	183 [1620] **66**	221 [1956] **60**	251 [2223] **59**	86
15 [4]			72 [636] **167**	113 [1003] **158**	153 [1351] **149**	188 [1664] **143**	225 [1990] **141**	260 [2300] **135**	172
23 [6]			72 [633] **252**	112 [995] **243**	151 [1340] **233**	187 [1654] **227**	226 [1996] **222**	260 [2304] **218**	257
30 [8]			68 [598] **339**	109 [960] **331**	151 [1340] **317**	188 [1660] **309**	227 [2012] **301**	263 [2326] **300**	343
38 [10]				108 [959] **416**	150 [1328] **403**	188 [1667] **391**	229 [2024] **381**	270 [2393] **370**	428
45 [12]				109 [961] **505**	153 [1356] **490**	195 [1728] **475**	232 [2049] **462**	271 [2398] **448**	514
53 [14]				145 [1287] **590**	190 [1678] **578**	213 [1886] **558**	241 [2135] **544**	282 [2495] **530**	599
Max. Cont. 61 [16]				134 [1190] **677**	187 [1654] **660**	192 [1701] **644**	227 [2007] **629**	269 [2384] **610**	685
68 [18]					136 [1201] **748**	189 [1675] **729**	240 [2122] **719**		770
Max. Inter. 76 [20]					136 [1205] **835**	174 [1536] **819**	216 [1916] **806**		856

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

Theoretical Torque - Nm [lb-in]

24 [215]	49 [430]	97 [860]	146 [1290]	194 [1720]	243 [2150]	291 [2580]	340 [3010]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

110

111 cc [6.8 in³/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	12 [106] **16**	39 [347] **16**	88 [777] **14**	135 [1199] **11**	182 1609] **9**	223 [1977] **8**	273 [2420] **6**	304 [2690] **5**	17
4 [1]	16 [142] **33**	42 [374] **33**	97 [857] **31**	146 [1290] **27**	199 [1763] **21**	246 [2179] **19**	293 [2592] **18**	329 [2916] **16**	34
8 [2]		42 [372] **67**	98 [866] **64**	148 [1313] **59**	201 [1782] **49**	249 [2204] **46**	297 [2629] **44**	345 [3050] **43**	68
15 [4]			94 [835] **134**	149 [1320] **126**	201 [1777] **117**	251 [2223] **110**	302 [2674] **104**	348 [3083] **104**	136
23 [6]			93 [819] **202**	148 [1312] **196**	201 [1775] **186**	250 [2215] **177**	302 [2671] **167**	348 [3078] **163**	204
30 [8]			89 [785] **269**	145 [1287] **267**	199 [1760] **258**	249 [2204] **247**	299 [2648] **267**	352 [3114] **229**	272
38 [10]			83 [738] **339**	139 [1232] **336**	194 [1718] **327**	244 [2163] **315**	296 [2617] **304**	349 [3086] **292**	340
45 [12]			82 [723] **407**	145 [1281] **406**	209 [1853] **397**	291 [2578] **386**	315 [2786] **368**	343 [3031] **360**	408
53 [14]			74 [654] **475**	129 [1143] **473**	183 [1621] **466**	238 [2103] **451**	287 [2539] **441**	349 [3085] **426**	476
61 [16]				143 [1261] **542**	199 [1763] **536**	251 [2224] **523**	301 [2666] **510**	363 [3213] **492**	544
68 [18]				120 [1059] **609**	179 [1586] **603**	233 [2058] **593**	284 [2510] **580**	347 [3071] **561**	612
Max. Cont. 76 [20]				107 [944] **678**	160 [1419] **677**	217 [1918] **661**	268 [2374] **645**	327 [2896] **627**	680
83 [22]				93 [824] **746**	157 [1393] **743**	206 [1823] **735**	257 [2271] **714**		748
91 [24]				86 [762] **813**	139 [1234] **810**	197 [1744] **803**	250 [2214] **783**		816
Max. Inter. 95 [25]				77 [678] **847**	132 [1171] **844**	191 [1694] **835**	243 [2154] **828**		850

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

Theoretical Torque - Nm [lb-in]

31 [271]	61 [541]	122 [1083]	184 [1624]	245 [2166]	306 [2707]	367 [3248]	428 [3790]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

125

127 cc [7.7 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	14 [127] **14**	44 [394] **14**	109 [961] **13**	159 [1408] **13**	217 [1922] **12**	267 [2364] **10**	313 [2766] **9**	355 [3146] **7**	15
4 [1]	16 [138] **29**	45 [401] **29**	108 [952] **29**	167 [1475] **27**	226 [2004] **25**	278 [2459] **23**	332 [2936] **21**	367 [3245] **19**	30
8 [2]		49 [432] **59**	108 [953] **59**	165 [1462] **57**	231 [2046] **54**	286 [2528] **48**	332 [2941] **48**	387 [3421] **45**	60
15 [4]		49 [430] **119**	107 [949] **119**	167 [1479] **118**	229 [2024] **113**	284 [2513] **108**	342 [3023] **102**	392 [3467] **98**	120
23 [6]			102 [902] **179**	166 [1473] **177**	223 [1973] **173**	279 [2473] **169**	337 [2985] **163**	393 [3477] **157**	180
30 [8]			100 [888] **239**	160 [1420] **239**	222 [1968] **235**	287 [2541] **235**	337 [2987] **221**	391 [3459] **214**	240
38 [10]			95 [841] **299**	154 [1359] **298**	217 [1919] **298**	273 [2413] **292**	332 [2940] **281**	387 [3428] **273**	300
45 [12]			83 [738] **359**	147 [1304] **358**	207 [1831] **357**	267 [2361] **350**	329 [2914] **342**	406 [3590] **308**	360
53 [14]			82 [727] **419**	146 [1293] **418**	204 [1801] **417**	268 [2375] **413**	332 [2935] **402**	419 [3704] **340**	420
61 [16]			69 [608] **473**	168 [1484] **463**	198 [1756] **440**	258 [2287] **415**	327 [2895] **384**	386 [3419] **341**	480
68 [18]				193 [1704] **517**	214 [1894] **498**	278 [2460] **472**	360 [3188] **438**	386 [3412] **384**	540
Max. Cont. 76 [20]				205 [1815] **577**	245 [2164] **561**	290 [2567] **537**	344 [3040] **505**	408 [3606] **453**	600
83 [22]				151 [1336] **640**	201 [1781] **623**	260 [2298] **597**	320 [2832] **563**		660
91 [24]				85 [751] **705**	151 [1334] **686**	218 [1930] **662**	284 [2516] **621**		720
Max. Inter. 95 [25]				79 [697] **736**	139 [1227] **723**	209 [1853] **694**	270 [2387] **669**		750

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

Theoretical Torque - Nm [lb-in]

35 [307]	69 [613]	139 [1226]	208 [1839]	277 [2452]	346 [3065]	416 [3678]	485 [4291]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

160

164 cc [10.0 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	24 [216] **11**	61 [538] **11**	143 [1267] **10**	213 [1881] **9**	287 [2536] **8**	351 [3106] **7**	411 [3640] **5**	470 [4159] **4**	12
4 [1]	28 [244] **23**	67 [596] **22**	145 [1287] **21**	215 [1899] **18**	291 [2578] **16**	355 [3145] **14**	425 [3758] **13**	493 [4366] **11**	24
8 [2]		66 [588] **46**	148 [1306] **44**	224 [1983] **39**	301 [2666] **34**	366 [3241] **32**	441 [3904] **30**	508 [4493] **28**	47
15 [4]		66 [584] **92**	146 [1291] **91**	226 [2002] **87**	313 [2769] **80**	375 [3318] **71**	451 [3990] **67**	516 [4569] **66**	93
23 [6]		62 [551] **137**	146 [1295] **136**	224 [1986] **134**	307 [2718] **125**	379 [3358] **119**	449 [3975] **108**	515 [4553] **106**	139
30 [8]			142 [1258] **184**	221 [1954] **182**	299 [2644] **172**	376 [3329] **161**	447 [3952] **152**	520 [4603] **146**	185
38 [10]			132 [1169] **230**	216 [1909] **229**	289 [2558] **222**	371 [3282] **211**	448 [3961] **195**	520 [4598] **190**	231
45 [12]			129 [1144] **277**	208 [1842] **275**	284 [2510] **270**	357 [3161] **261**	436 [3862] **239**	512 [4529] **228**	278
53 [14]			117 [1040] **323**	202 [1788] **320**	275 [2438] **316**	353 [3124] **305**	427 [3781] **291**	509 [4508] **279**	324
61 [16]			103 [913] **369**	187 [1659] **367**	275 [2431] **364**	338 [2994] **356**	418 [3698] **341**	496 [4392] **325**	370
68 [18]			91 [803] **415**	175 [1553] **413**	257 [2278] **4110**	325 [2874] **403**	405 [3587] **389**	480 [4246] **376**	416
Max. Cont. 76 [20]				169 [1499] **461**	246 [2176] **459**	328 [2906] **447**	397 [3514] **438**	477 [4223] **422**	462
83 [22]				147 [1297] **507**	232 [2049] **504**	315 [2792] **498**	385 [3411] **487**		509
91 [24]				131 [1157] **553**	218 [1928] **550**	300 [2655] **546**	378 [3344] **531**		555
Max. Inter. 95 [25]				121 [1073] **577**	208 [1844] **573**	291 [2577] **571**	365 [3229] **557**		578

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

Theoretical Torque - Nm [lb-in]

45 [398]	90 [796]	180 [1592]	270 [2389]	360 [3185]	450 [3981]	540 [4777]	630 [5573]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

HB

PERFORMANCE

200

205 cc [12.5 in³/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	Max. Cont. 207 [3000]	Max. Inter. 242 [3500]

Intermittent Ratings - 10% of Operation

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

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	35 [314] **9**	83 [734] **9**	179 [1581] **8**	267 [2365] **7**	353 [3121] **6**	443 [3921] **5**	505 [4469] **4**	579 [5120] **3**	10
4 [1]	37 [325] **18**	81 [721] **18**	186 [1642] **17**	287 [2536] **14**	301 [2665] **13**	452 [4004] **11**	540 [4777] **9**	611 [5406] **8**	19
8 [2]	39 [349] **36**	89 [790] **36**	199 [1759] **35**	295 [2610] **31**	386 [3412] **27**	473 [4185] **24**	554 [4904] **21**	643 [5687] **20**	37
15 [4]	38 [338] **73**	87 [766] **73**	191 [1689] **72**	292 [2586] **68**	386 [3417] **61**	480 [4252] **53**	574 [5077] **49**	661 [5849] **46**	74
23 [6]		84 [742] **110**	185 [1635] **109**	287 [2542] **106**	382 [3380] **98**	480 [4247] **89**	570 [5046] **81**	657 [5817] **74**	111
30 [8]			176 [1556] **147**	279 [2468] **144**	376 [3327] **136**	479 [4243] **123**	571 [5051] **112**	658 [5827] **104**	148
38 [10]			166 [1471] **184**	268 [2374] **182**	368 [3256] **173**	467 [4131] **162**	556 [4923] **151**	651 [5761] **141**	185
45 [12]			154 [1361] **221**	257 [2275] **219**	360 [3185] **214**	460 [4069] **200**	558 [4939] **187**	650 [5751] **176**	222
53 [14]			147 [1304] **258**	245 [2165] **256**	355 [3141] **250**	441 [3906] **238**	539 [4773] **224**	640 [5666] **213**	259
61 [16]			123 [1089] **295**	235 [2083] **290**	333 [2949] **286**	429 [3797] **277**	523 [4628] **264**	624 [5519] **242**	296
68 [18]			112 [993] **331**	220 [1943] **327**	302 [2669] **323**	414 [3665] **319**	527 [4659] **303**	616 [5451] **289**	333
Max. Cont. 76 [20]				197 [1745] **369**	310 [2740] **365**	395 [3499] **360**	492 [4353] **343**	596 [5273] **331**	370
83 [22]				172 [1525] **405**	282 [2496] **401**	386 [3420] **395**	480 [4252] **382**		407
91 [24]				157 [1390] **442**	265 [2341] **441**	369 [3269] **438**	453 [4005] **425**		444
Max. Inter. 95 [25]				139 [1229] **460**	252 [2234] **458**	349 [3087] **456**	447 [3955] **444**		462

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

Theoretical Torque - Nm [lb-in]

56 [498]	112 [995]	225 [1990]	337 [2986]	450 [3981]	562 [4976]	675 [5971]	787 [6967]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

250

254 cc [15.5 in³/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	Max. Cont. 207 [3000]	Max. Inter. 242 [3500]

Intermittent Ratings - 10% of Operation

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

Flow - lpm [gpm]	17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000]	242 [3500]	Theoretical rpm
2 [0.5]	43 [381] **7**	104 [924] **6**	221 [1955] **6**	339 [3001] **5**	449 [3974] **3**	551 [4872] **1**			8
4 [1]	50 [439] **14**	115 [1014] **14**	240 [2128] **13**	361 [3196] **11**	466 [4128] **9**	574 [5080] **7**	668 [5907] **4**		15
8 [2]	51 [455] **29**	115 [1014] **29**	245 [2167] **28**	369 [3262] **26**	479 [4236] **22**	604 [5342] **17**	712 [6303] **13**	800 [7082] **9**	30
15 [4]	48 [428] **59**	105 [930] **58**	242 [2145] **57**	371 [3286] **56**	493 [4363] **51**	619 [5480] **41**	741 [6555] **33**	847 [7496] **25**	60
23 [6]	42 [368] **89**	110 [969] **88**	234 [2069] **88**	367 [3252] **87**	487 [4313] **82**	626 [5542] **69**	747 [6611] **58**	847 [7492] **48**	90
30 [8]		92 [818] **119**	223 [1978] **118**	357 [3159] **117**	490 [4332] **115**	622 [5508] **101**	744 [6587] **87**	846 [7490] **76**	120
38 [10]		80 [712] **149**	209 [1849] **148**	342 [3025] **147**	472 [4176] **141**	605 [5353] **129**	717 [6345] **114**	844 [7472] **104**	150
45 [12]			199 [1757] **178**	329 [2915] **176**	455 [4022] **174**	581 [5142] **165**	703 [6225] **147**	833 [7375] **127**	179
53 [14]			182 [1640] **208**	310 [2743] **206**	443 [3919] **205**	567 [5017] **197**	711 [6296] **176**	817 [7227] **158**	209
61 [16]			164 [1456] **238**	294 [2603] **235**	438 [3873] **233**	552 [4886] **227**	674 [5960] **205**	804 [7114] **191**	239
68 [18]			145 [1285] **268**	270 [2393] **266**	402 [3560] **263**	530 [4694] **259**	661 [5846] **245**	784 [6939] **222**	269
Max. Cont. 76 [20]			122 [1083] **298**	255 [2256] **295**	380 [3359] **292**	511 [4519] **289**	627 [5547] **277**	757 [6697] **252**	299
83 [22]				221 [1955] **326**	353 [3124] **323**	484 [4279] **319**	607 [5368] **307**		328
91 [24]				201 [1775] **357**	336 [2973] **355**	461 [4082] **353**	599 [5297] **342**		358
Max. Inter. 95 [25]				184 [1627] **371**	313 [2768] **368**	442 [3915] **365**	575 [5088] **360**		373

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

Theoretical Torque - Nm [lb-in]

70 [617]	139 [1234]	279 [2468]	418 [3702]	558 [4936]	697 [6170]	837 [7404]	976 [8639]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

300

293 cc [17.9 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500]	207 [3000] Max. Cont.	242 [3500] Max. Inter.

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], **Speed rpm**								Theoretical rpm
2 [0.5]	61 [543] **6**	118 [1044] **5**	261 [2311] **5**	388 [3433] **4**					7
4 [1]	59 [521] **12**	140 [1237] **12**	271 [2397] **11**	414 [3666] **11**	546 [4833] **8**	681 [6025] **5**			13
8 [2]	61 [541] **25**	128 [1134] **25**	281 [2490] **24**	425 [3761] **23**	562 [4970] **19**	693 [6128] **14**	820 [7259] **10**	915 [8095] **4**	26
15 [4]	52 [461] **51**	128 [1130] **51**	275 [2436] **50**	427 [3782] **50**	578 [5119] **44**	715 [6327] **32**	827 [7317] **25**	956 [8457] **19**	52
23 [6]		115 [1017] **77**	266 [2351] **76**	406 [3592] **75**	557 [4931] **70**	706 [6250] **55**	840 [7435] **43**	945 [8361] **37**	78
30 [8]		107 [951] **103**	251 [2223] **102**	407 [3598] **101**	538 [4759] **96**	691 [6117] **82**	832 [7359] **66**	948 [8393] **52**	104
38 [10]		88 [779] **129**	229 [2026] **127**	393 [3475] **126**	528 [4672] **122**	672 [5950] **109**	826 [7307] **90**	959 [8487] **74**	130
45 [12]			217 [1923] **154**	368 [3256] **153**	504 [4457] **150**	663 [5864] **133**	800 [7076] **112**	931 [8239] **97**	155
53 [14]			201 [1782] **180**	347 [3067] **178**	510 [4513] **173**	646 [5713] **161**	798 [7060] **140**	921 [8149] **114**	181
61 [16]			168 [1491] **206**	324 [2865] **204**	472 [4180] **201**	621 [5492] **188**	764 [6765] **171**	917 [8112] **142**	207
68 [18]			143 [1266] **232**	298 [2638] **230**	427 [3783] **227**	591 [5234] **220**	745 [6591] **198**	878 [7773] **176**	233
Max. Cont. 76 [20]			114 [1013] **258**	283 [2501] **256**	443 [3916] **254**	597 [5284] **247**	717 [6344] **227**	849 [7512] **206**	259
83 [22]				246 [2179] **282**	397 [3512] **280**	559 [4943] **274**	681 [6023] **257**		284
91 [24]				181 [1601] **309**	357 [3159] **306**	502 [4442] **304**	642 [5684] **294**		310
Max. Inter. 95 [25]				166 [1466] **321**	323 [2858] **319**	491 [4347] **318**	630 [5577] **300**		323

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

Theoretical Torque - Nm [lb-in]

81 [713]	161 [1425]	322 [2850]	483 [4275]	644 [5701]	805 [7126]	966 [8551]	1127 [9976]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

400

409 cc [24.9 in^3/rev.]

Pressure - bars [psi]

17 [250]	35 [500]	69 [1000]	104 [1500]	138 [2000]	173 [2500] Max. Cont.	207 [3000] Peak

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

Intermittent Ratings - 10% of Operation

Flow - lpm [gpm]	Torque - Nm [lb-in], **Speed rpm**							Theoretical rpm
2 [0.5]	85 [757] **4**	193 [1710] **4**	367 [3248] **3**	534 [4721] **2**				5
4 [1]	88 [776] **9**	185 [1640] **8**	383 [3386] **8**	580 [5129] **6**	745 [6590] **4**	899 [7954] **1**		10
8 [2]	86 [762] **18**	196 [1734] **18**	394 [3487] **17**	586 [5184] **15**	764 [6763] **11**	927 [8204] **5**		19
15 [4]	85 [749] **37**	188 [1661] **36**	404 [3571] **35**	602 [5325] **32**	796 [7047] **24**	962 [8517] **18**	1108 [9804] **9**	38
23 [6]	71 [629] **55**	180 [1593] **55**	387 [3428] **54**	596 [5274] **49**	787 [6969] **39**	978 [8653] **28**	1141 [10094] **20**	56
30 [8]		165 [1462] **74**	373 [3299] **73**	595 [5264] **69**	792 [7010] **58**	966 [8552] **44**	1149 [10167] **31**	75
38 [10]		143 [1269] **92**	356 [3150] **90**	581 [5144] **88**	782 [6923] **79**	974 [8617] **62**	1156 [10231] **45**	93
45 [12]		122 [1076] **111**	333 [2950] **109**	545 [4823] **107**	749 [6624] **98**	957 [8470] **83**	1143 [10116] **61**	112
53 [14]		95 [842] **129**	313 [2774] **128**	521 [4607] **126**	717 [6344] **117**	931 [8235] **103**	1131 [10007] **78**	130
61 [16]			282 [2493] **147**	496 [4385] **145**	685 [6063] **141**	919 [8131] **121**	1100 [9733] **100**	149
68 [18]			244 [2156] **166**	453 [4009] **165**	681 [6023] **158**	871 [7708] **142**	1071 [9478] **121**	167
Max. Cont. 76 [20]			197 [1741] **185**	420 [3713] **183**	650 [5756] **179**	838 [7417] **166**	1051 [9302] **145**	186
83 [22]			164 [1448] **203**	378 [3344] **201**	588 [5200] **198**	810 [7171] **186**		205
91 [24]				333 [2947] **222**	559 [4945] **220**	750 [6640] **211**		223
Max. Inter. 95 [25]				303 [2682] **231**	539 [4773] **228**	764 [6760] **221**		232

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

Theoretical Torque - Nm [lb-in]

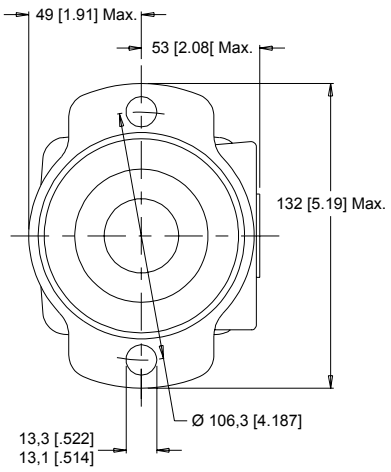
112 [991]	224 [1982]	448 [3965]	672 [5947]	896 [7930]	1120 [9912]	1344 [11895]

Displacement tested at 54°C [129°F] with an oil viscosity of 46cSt [213 SUS]

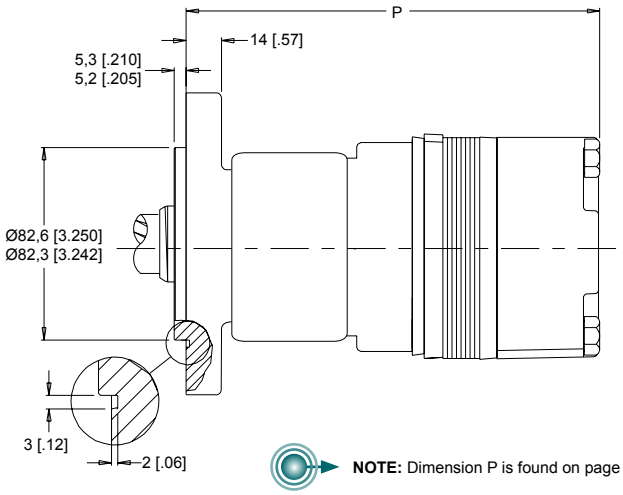
HB

300 SERIES HOUSINGS (MAGNETO MOUNTS)

A0 2-Hole with End Ports

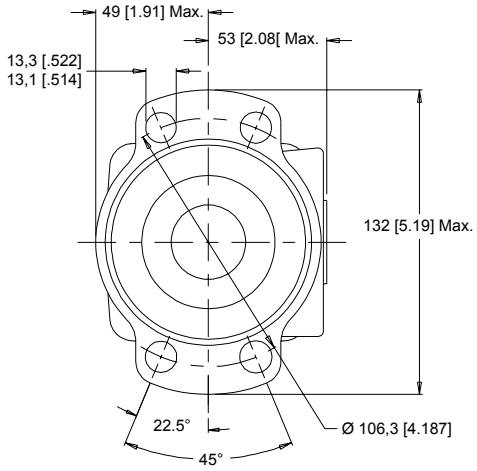


A7 2-Hole with Side Ports

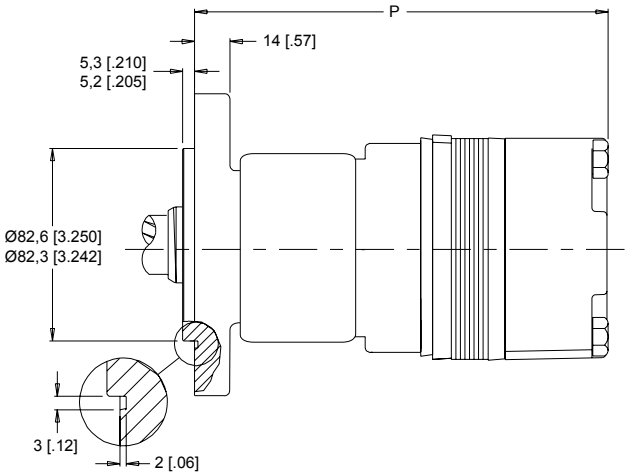


NOTE: Dimension P is found on page 10.

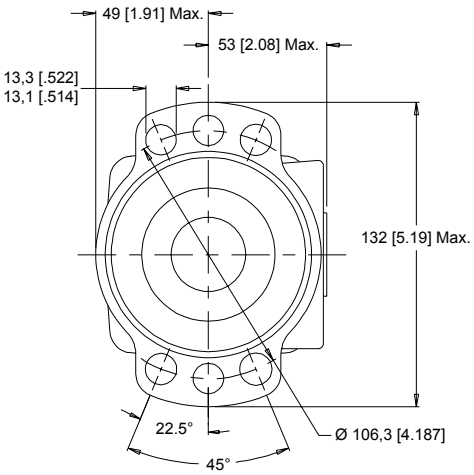
A2 4-Hole with End Ports



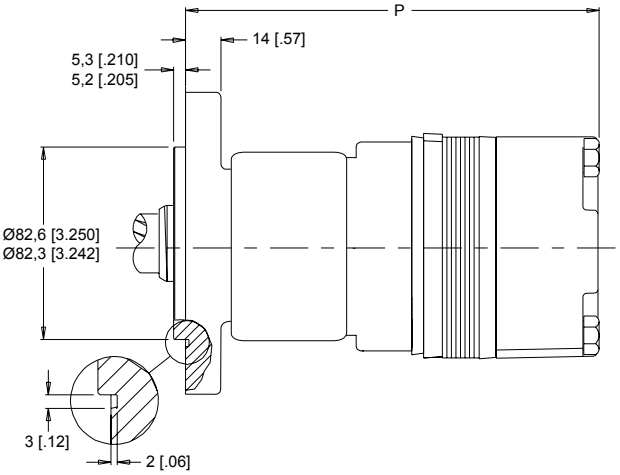
A8 4-Hole with Side Ports



A4 6-Hole with End Ports

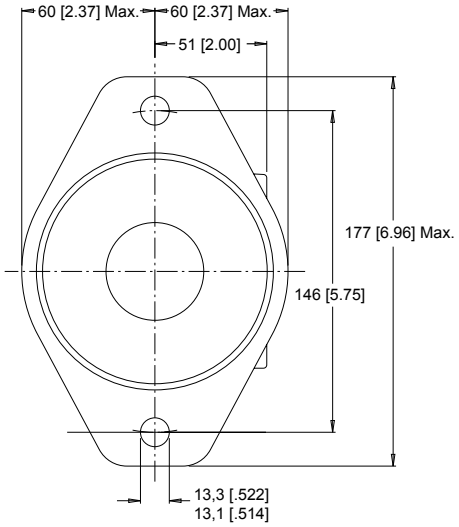


A9 6-Hole with Side Ports

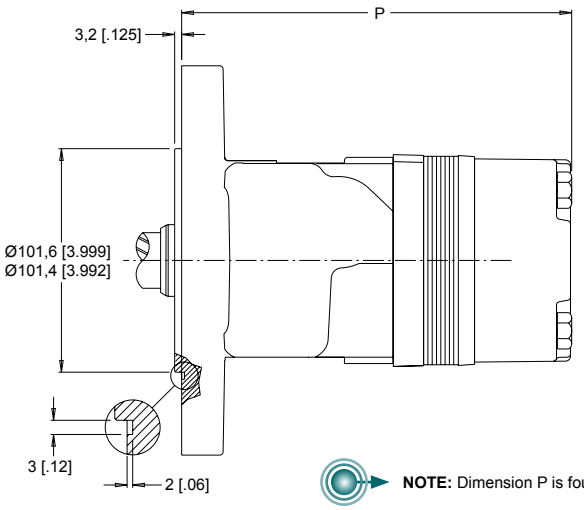


300 SERIES HOUSINGS (SAE B, WHEEL, & 4-HOLE SQUARE MOUNTS)

B0 2-Hole with End Ports

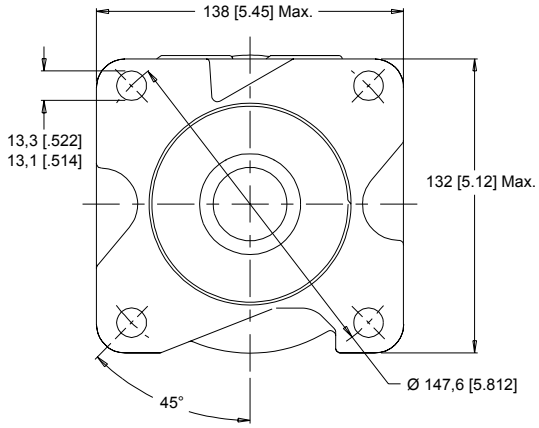


B7 2-Hole with Side Ports

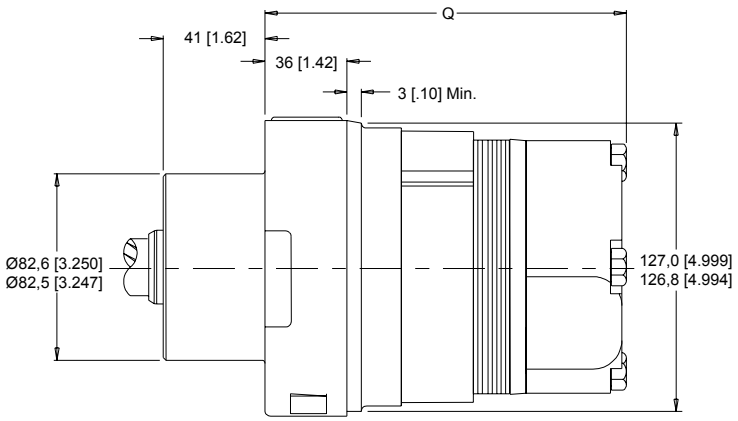


NOTE: Dimension P is found on page 10.

W2 4-Hole with End Ports

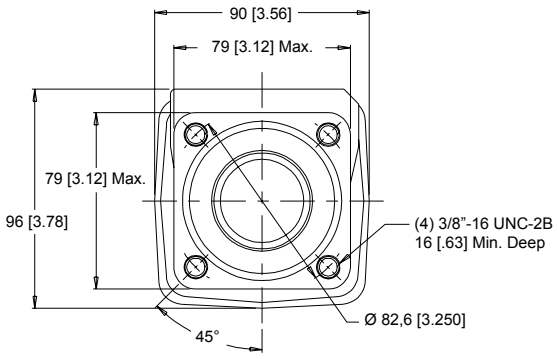


W8 4-Hole with Side Ports

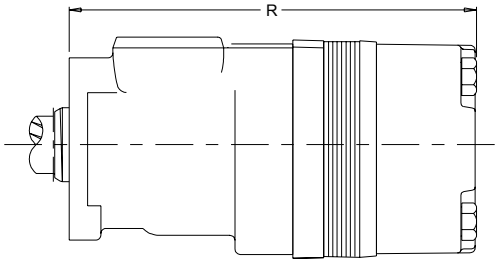


NOTE: Dimension Q is found on page 10.

F2 4-Hole with End Ports



F8 4-Hole with Side Ports



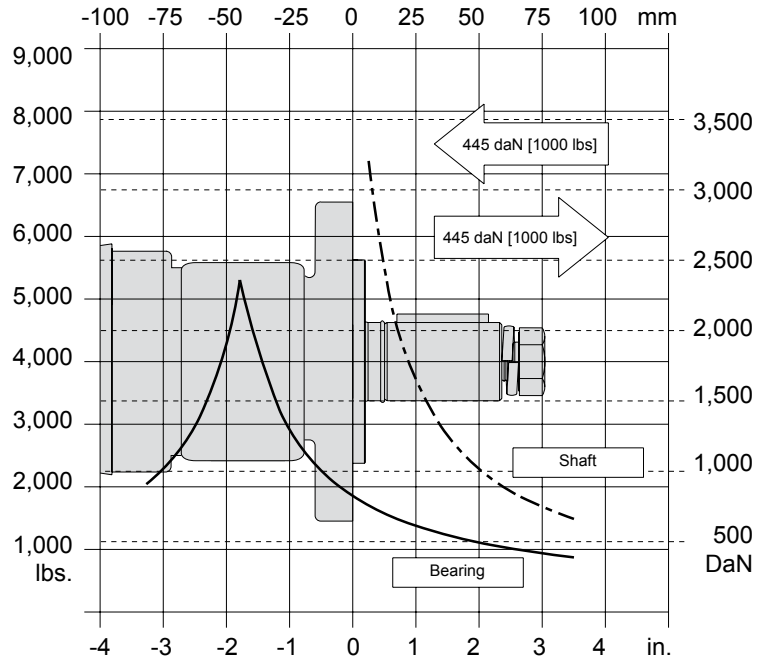
NOTE: Dimension R is found on page 11.

HB

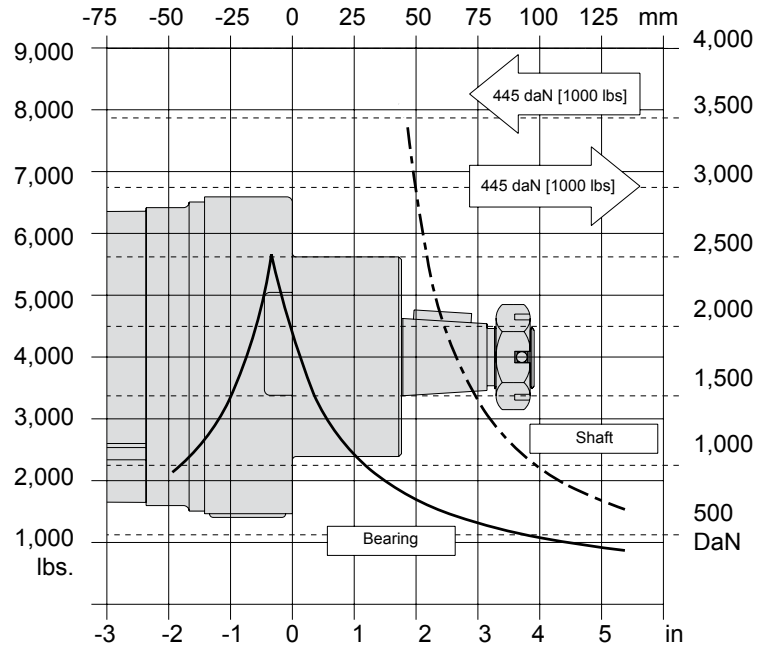
300 SERIES TECHNICAL INFORMATION

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 rpm. Radial loads for speeds other than 100 rpm may be calculated using the multiplication factor table located below.

SAE A & B MOUNTS



WHEEL MOUNT



LENGTH / WEIGHT CHART SAE A & B Mounts - Dimension **P**		
Code	**mm [in]**	**kg [lb]**
050	195 [7.68]	8,8 [19.5]
080	199 [7.82]	9,1 [20.0]
090	201 [7.90]	9,2 [20.2]
110	204 [8.04]	9,4 [20.7]
125	207 [8.14]	9,5 [21.0]
160	212 [8.36]	9,8 [21.7]
200	219 [8.61]	10,2 [22.5]
250	226 [8.91]	10,6 [23.4]
300	232 [9.15]	11,0 [24.3]
400	251 [9.86]	12,0 [26.4]

NOTE:
HB motor weights vary ± 1,0 kg [2 lbs] depending upon motor configuration. Add 1,2 kg [2.7 lb] to motor weight for the SAE B mount. Subtract 18 [.71] from Dimension P if side ports 5, 6, or 7 and end ports 1 or 2 are used.

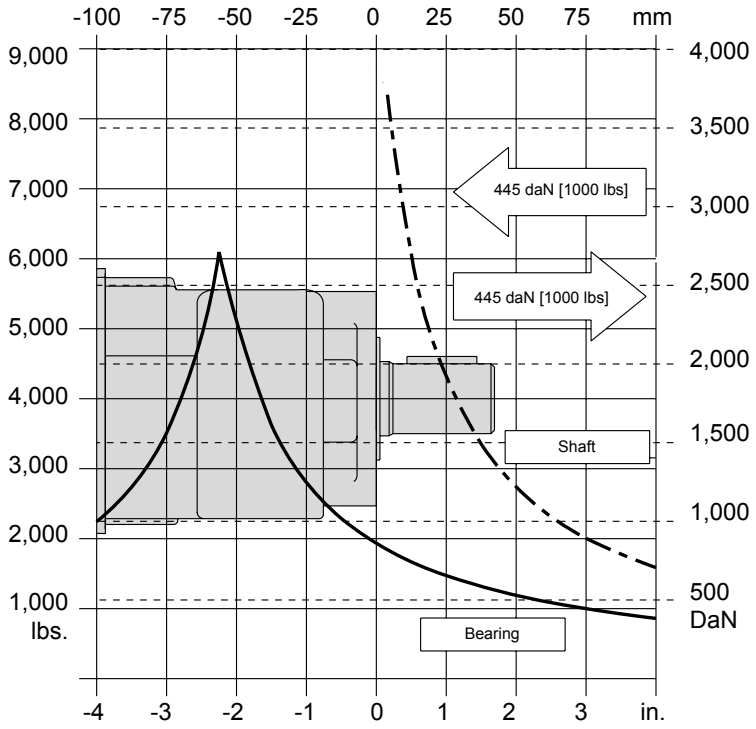
LENGTH / WEIGHT CHART Wheel Mount - Dimension **Q**		
Code	**mm [in]**	**kg [lb]**
050	158 [6.22]	11,5 [25.3]
080	162 [6.36]	11,7 [25.7]
090	163 [6.41]	11,8 [25.9]
110	166 [6.55]	12,0 [26.5]
125	169 [6.64]	12,1 [26.7]
160	174 [6.87]	12,4 [27.4]
200	181 [7.12]	12,8 [28.3]
250	188 [7.42]	13,2 [29.7]
300	195 [7.66]	13,6 [30.0]
400	213 [8.37]	14,6 [32.1]

NOTE:
HB motor weights vary ± 1,0 kg [2 lbs] depending upon motor configuration. Subtract 18 [.71] from Dimension Q if side ports 5, 6, or 7 and end ports 1 or 2 are used.

BEARING LOAD MULTIPLICATION FACTOR TABLE	
RPM	**FACTOR**
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.50

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 rpm. Radial loads for speeds other than 100 rpm may be calculated using the multiplication factor table located on page 10.

4-HOLE SQUARE MOUNT



MOUNTING FLANGE TO SHAFT END - Dimension **S**			
Code	**SAE A & B Mounts** mm [in]	**Wheel Mounts** mm [in]	**4-Hole Sq. Mounts** mm [in]
01	44 [1.75]	82 [3.21]	41 [1.63]
02	49 [1.93]	86 [3.39]	46 [1.81]
07	62 [2.46]	100 [3.93]	60 [2.35]
08	62 [2.46]	100 [3.93]	60 [2.35]
10	49 [1.93]	86 [3.39]	46 [1.81]
12	55 [2.17]	92 [3.63]	52 [2.05]
15	51 [1.99]	88 [3.45]	47 [1.87]
20	61 [2.40]	99 [3.87]	58 [2.29]
21	61 [2.40]	98 [3.87]	58 [2.29]
22	66 [2.58]	103 [4.04]	63 [2.46]
23	57 [2.23]	94 [3.69]	54 [2.11]

NOTE: Shaft lengths vary ± 0,8 mm [.030 in.]

LENGTH / WEIGHT CHART 4-Hole Sq. Mount - Dimension **R**		
Code	**mm [in]**	**kg [lb]**
050	198 [7.80]	8,3 [18.4]
080	202 [7.94]	8,6 [18.9]
090	204 [8.02]	8,7 [19.1]
110	207 [8.16]	8,9 [19.6]
125	210 [8.26]	9,0 [19.9]
160	215 [8.48]	9,3 [20.6]
200	222 [8.73]	9,7 [21.4]
250	229 [9.03]	10,1 [22.3]
300	236 [9.27]	10,5 [23.2]
400	254 [9.98]	11,5 [25.3]

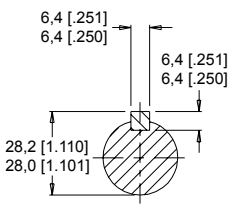
NOTE:
HB motor weights vary ± 1,0 kg [2 lbs] depending upon motor configuration. Subtract 18 [.71] from Dimension R if side ports 5, 6, or 7 and end ports 1 or 2 are used.

HB

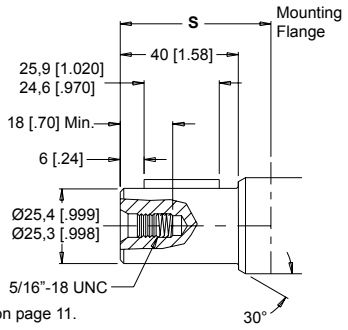
300 SERIES SHAFTS

10 1" Straight

Max. Torque: 661 Nm [5850 lb-in]



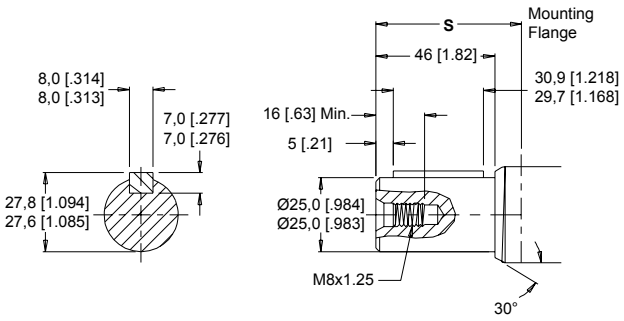
*15 1" Straight Extended



NOTE: Dimension S is found on page 11.

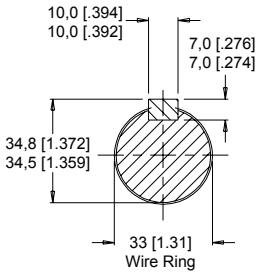
12 25mm Straight

Max. Torque: 631 Nm [5580 lb-in]

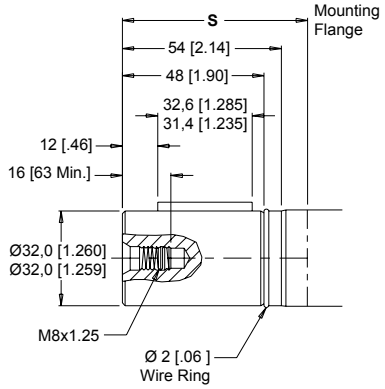


21 32mm Straight

Max. Torque: 882 Nm [7804 lb-in]

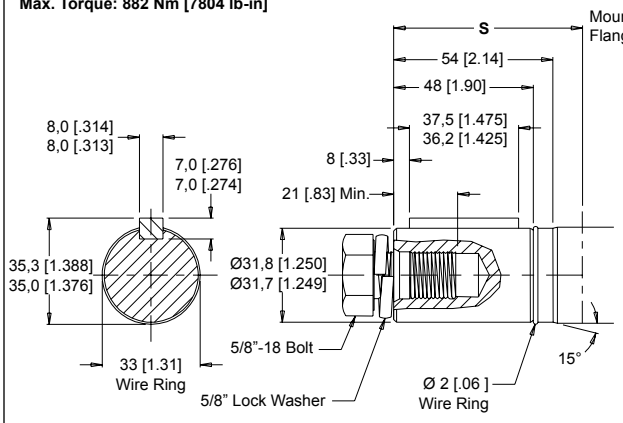


*08 32mm Straight Extended



20 1-1/4" Straight

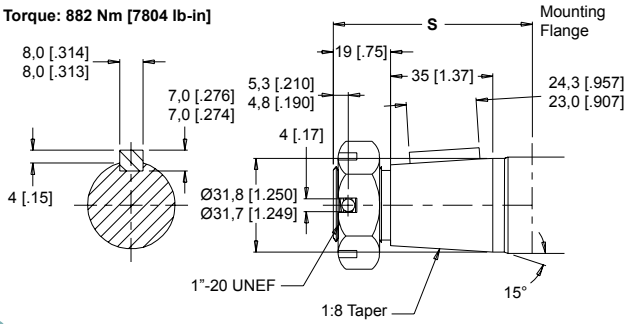
Max. Torque: 882 Nm [7804 lb-in]



*07 1-1/4" Straight Extended

22 1-1/4" Tapered

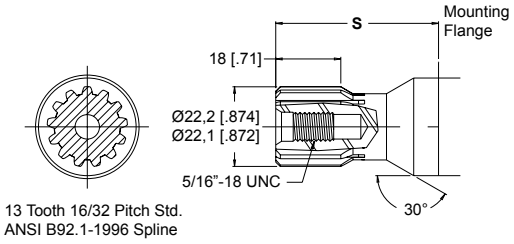
Max. Torque: 882 Nm [7804 lb-in]



NOTE: A slotted nut is standard on this shaft.

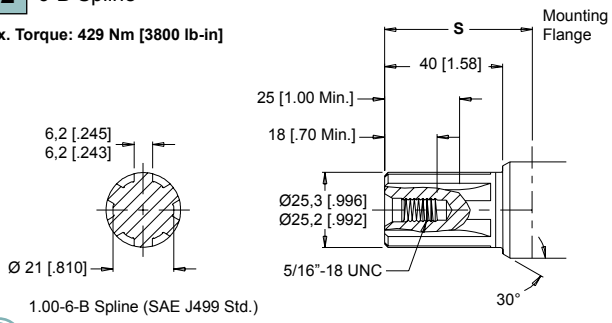
01 13 Tooth Spline

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



02 6-B Spline

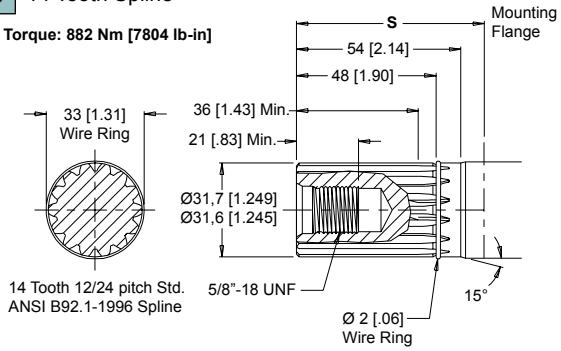
Max. Torque: 429 Nm [3800 lb-in]



NOTE: *Shafts for speed sensor use only.

23 14 Tooth Spline

Max. Torque: 882 Nm [7804 lb-in]

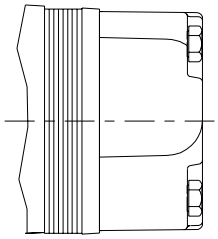


HB

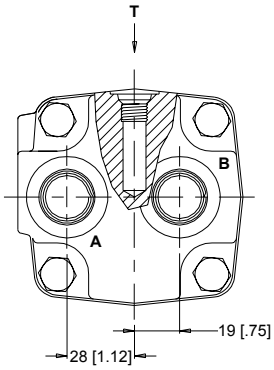
300 SERIES PORTING OPTIONS

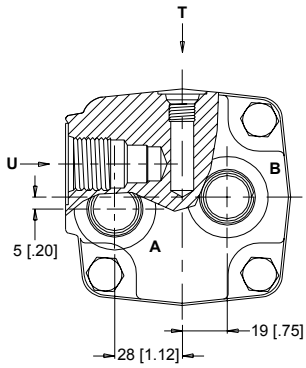
END PORTS

1 7/8” O-Ring with 7/16” Drain



2 1/2” BSP.F with 1/4” Drain

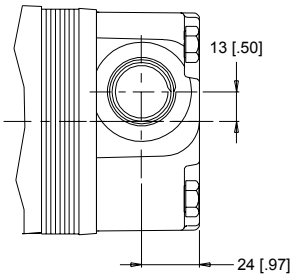




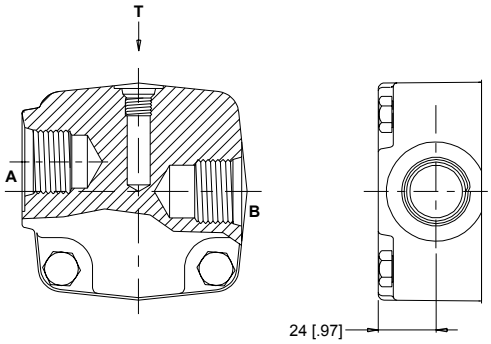
NOTE: The 1 & 2 porting options can be ordered with an internal drain and/or a relief valve cavity. **U** - 10 Series/2-way Valve Cavity (7/8-14 UNF-2B)

SIDE PORTS

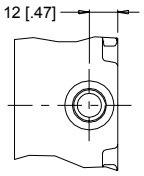
6 1-1/16” O-Ring with 7/16” Drain



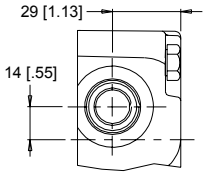
7 1/2” BSP.F with 1/4” Drain



T - Case Drain

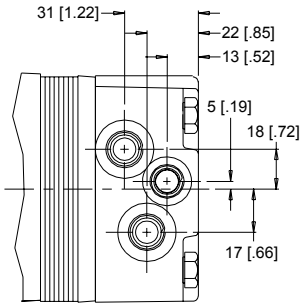


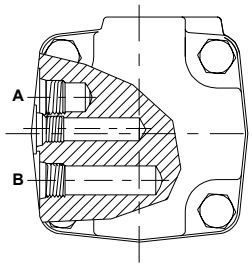
U - Valve Cavity

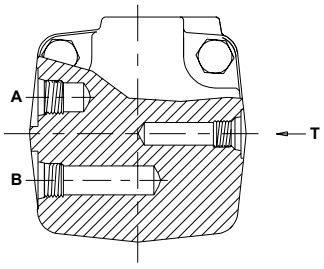


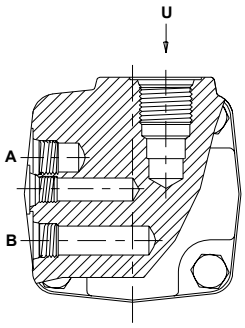
NOTE: The 6 & 7 porting options can be ordered with an internal drain.

5 9/16” O-Ring with 7/16” Drain









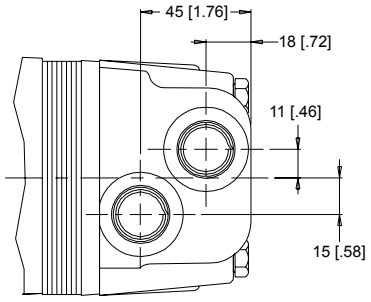
NOTE: The 5 porting option can be ordered with an internal drain or a relief valve cavity. **U** - 10 Series/2-way Valve Cavity (7/8-14 UNF-2B)

HB

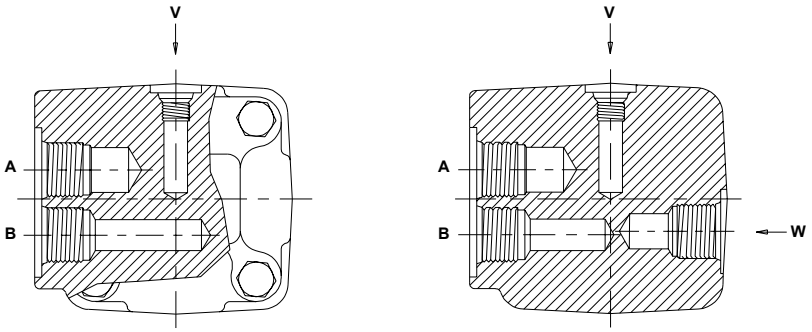
300 SERIES PORTING OPTIONS

SIDE PORTS

1 7/8” O-Ring with 7/16” Drain

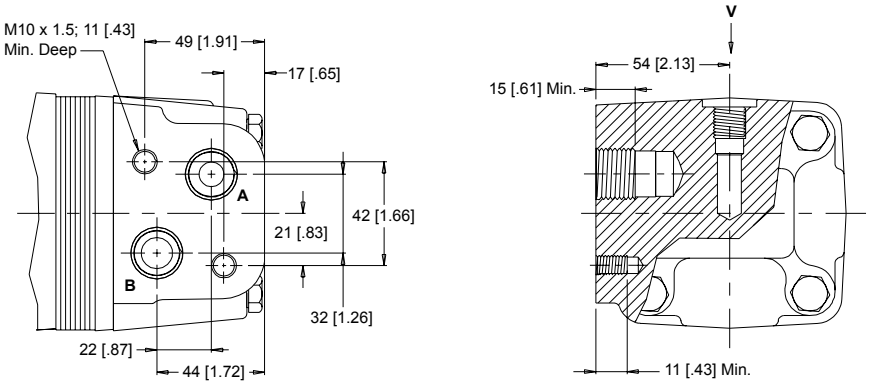


2 1/2” BSP.F with 1/4” Drain



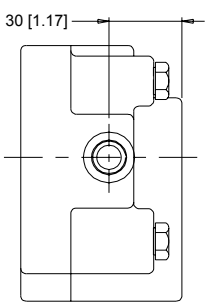
NOTE: The 1 & 2 porting options can be ordered with an internal drain and/or a relief valve cavity. **W** - 10 Series/2-way Valve Cavity (7/8-14 UNF-2B)

3 1/2” BSP.F Offset Manifold With 1/4” Drain

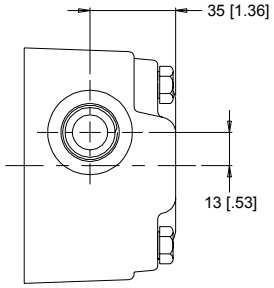


NOTE: The 3 porting option can be ordered with an internal drain.

V - Case Drain



W - Valve Cavity



whitedriveproducts

HB

300 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

300	High Pressure HB Series

STEP 2 - Select a displacement option

050	52 cc	[3.2 in^3/rev]	160	164 cc	[10.0 in^3/rev]
080	76 cc	[4.6 in^3/rev]	200	205 cc	[12.5 in^3/rev]
090	89 cc	[5.4 in^3/rev]	250	254 cc	[15.5 in^3/rev]
110	111 cc	[6.8 in^3/rev]	300	293 cc	[17.9 in^3/rev]
125	127 cc	[7.7 in^3/rev]	400	409 cc	[24.9 in^3/rev]

STEP 3 - Select a mounting option

NOTE: To complete the three (3) digit HB Series housing code a two (2) digit mounting option must be followed with the single (1) digit porting option found in STEP 3 part II. Side port mounting options need side port porting options and end port mounting options need end port porting options.

A0	2-Hole End Port Magneto Mount (S)
A7	2-Hole Side Port Magneto Mount (S)
A2	4-Hole End Port Magneto Mount (S)
A8	4-Hole Side Port Magneto Mount (S)
A4	6-Hole End Port Magneto Mount (S)
A9	6-Hole Side Port Magneto Mount (S)
B0	2-Hole End Port SAE B Mount
B7	2-Hole Side Port SAE B Mount
W2	4-Hole End Port Wheel Mount
W8	4-Hole Side Port Wheel Mount
F2	4-Hole End Port Square Mount (S)
F8	4-Hole Side Port Square Mount (S)

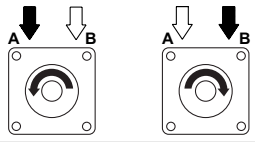
STEP 3 (part II) - Select a porting option

END PORTS

1	7/8” O-Ring With 7/16” Drain
2	1/2” BSP.F With 1/4” Drain

SIDE PORTS

1	7/8” O-Ring With 7/16” Drain
2	1/2” BSP.F With 1/4” Drain
3	1/2” BSP.F Offset Manifold With 1/4” Drain
5	9/16” O-Ring With 7/16” Drain
6	1-1/16” O-Ring With 7/16” Drain
7	1/2” BSP.F With 1/4” Drain



NOTE: HB Series motors do not have internal components that allow the motor to turn in either direction. Refer to the diagram to the left to determine which way the motor will turn when either port A or port B is pressurized.

STEP 4 - Select a shaft option

01	7/8" 13 Tooth Spline
02	1" 6-B Spline
07	1-1/4" Straight Ext. (S)
08	32mm Straight Ext. (S)
10	1” Straight
12	25mm Straight
15	1” Straight Ext. (S)
20	1-1/4” Straight
21	32mm Straight
22	1-1/4” Tapered
23	1-1/4” 14 Tooth Spline

STEP 5 - Select a paint option

A	Black
B	Black (unpainted flange face)
Z	No Paint

STEP 6 - Select a valve cavity option

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

NOTE: Valve cavity option is only available on side ports 1, 2, & 5 and end ports 1 & 2.

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 Mountings available for use with speed sensors. STEP 4 Shafts available for use with speed sensors. STEP 7 Speed sensor options.

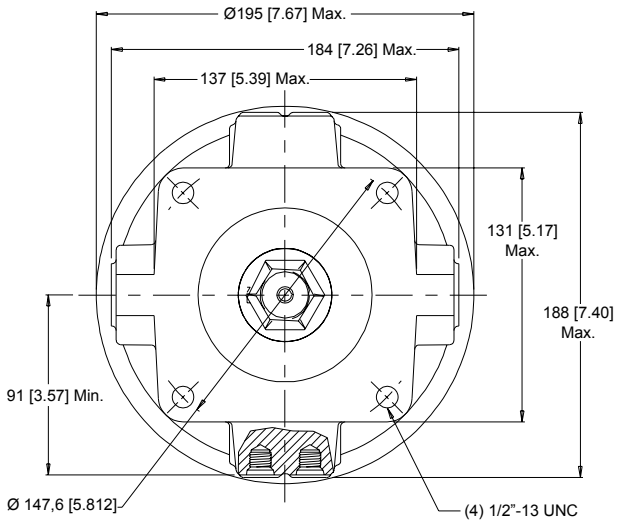
STEP 8 - Select a miscellaneous option

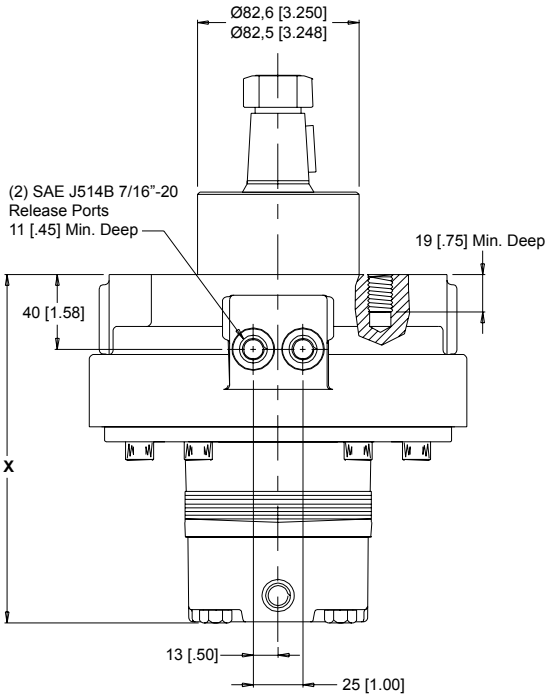
AA	None
AB	Internal Drain
AC	Freeturning Rotor
AD	Internal Drain with Freeturning Rotor

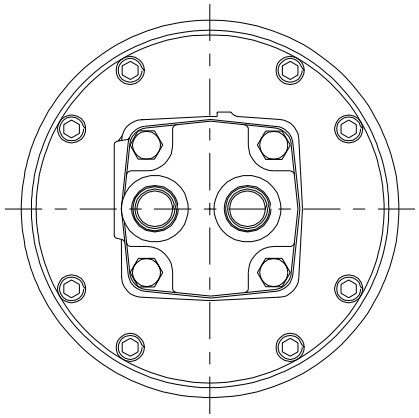
HB

310 SERIES (HB MOTOR/BRAKE)

W2 4-Hole with End Ports **W8** 4-Hole with Side Ports



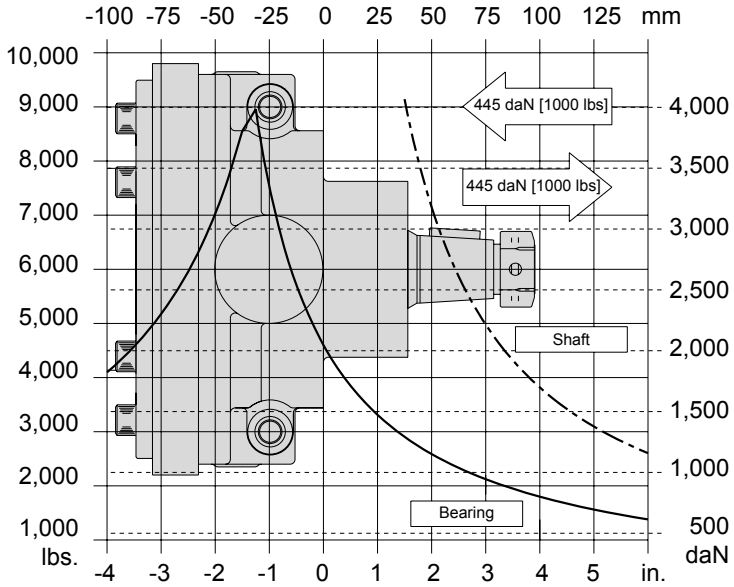




Rated brake torque.....904 Nm [8000 lb-in]
Initial release pressure ..... 21 bar [300 psi]
Full release pressure..... 31 bar [450 psi]
Maximum release pressure ..... 207 bar [3000 psi]
Release volume.....13-16 cc [0.8 - 1.0 cu in]

NOTE: See page 19 for important motor/brake operating recommendations.

Bearing Curve: The bearing curve represents allowable bearing loads based on ISO 281 bearing capacity for an L_{10} life of 2,000 hours at 100 rpm. Radial loads for speeds other than 100 rpm may be calculated using the multiplication factor table located on page 10.



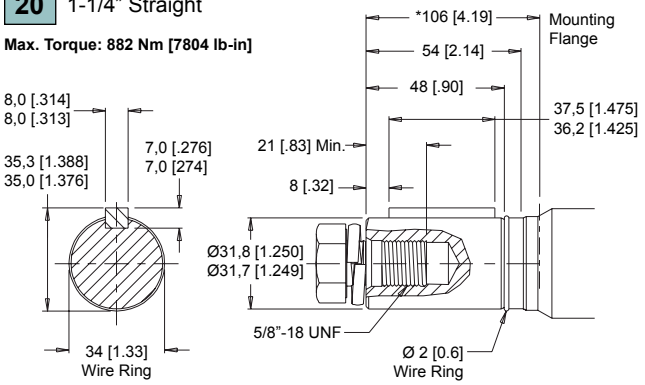
LENGTH / WEIGHT CHART 310 Wheel Mount - Dimension **X**		
Code	**mm [in]**	**kg [lb]**
050	173 [6.80]	19,1 [42.2]
080	175 [6.88]	19,4 [42.7]
090	178 [7.02]	19,5 [42.9]
110	182 [7.16]	19,7 [43.4]
125	184 [7.26]	19,8 [43.7]
160	190 [7.48]	20,1 [44.4]
200	196 [7.73]	20,5 [45.3]
250	204 [8.03]	20,9 [46.1]
300	210 [8.27]	21,3 [47.0]
400	228 [8.98]	22,3 [49.1]

NOTE:
HB motor weights vary ± 1,0 kg [2 lbs] depending upon motor configuration. Subtract 18 [.71] from Dimension X if side ports 5, 6, or 7 and end ports 1 or 2 are used.

310 SERIES (HB MOTOR/BRAKE SHAFTS)

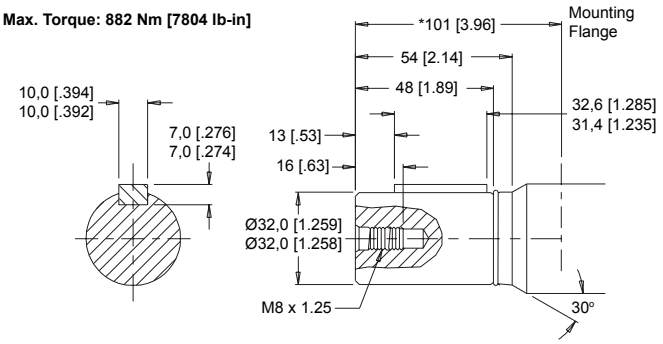
20 1-1/4" Straight

Max. Torque: 882 Nm [7804 lb-in]



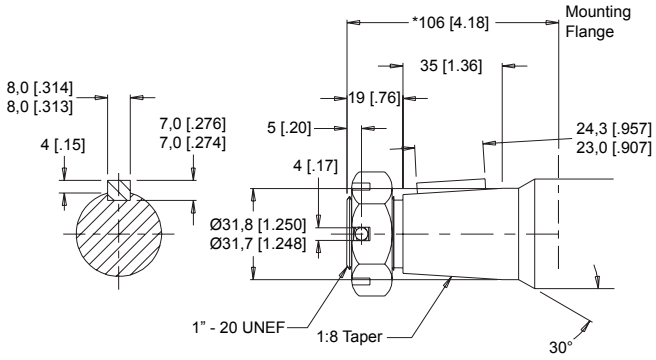
21 32mm Straight

Max. Torque: 882 Nm [7804 lb-in]



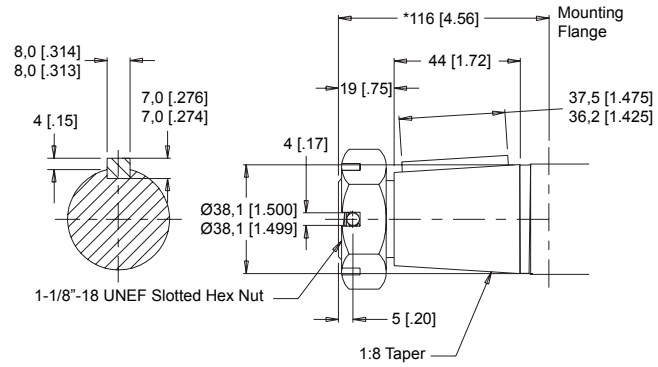
22 1-1/4" Tapered

Max. Torque: 882 Nm [7804 lb-in]



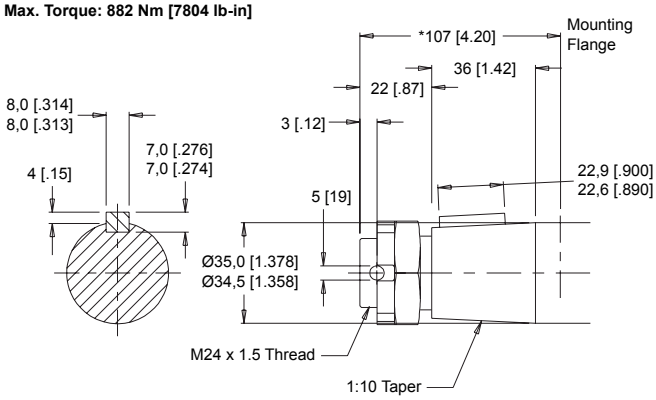
31 1-1/2" Tapered

Max. Torque: 882 Nm [7804 lb-in]



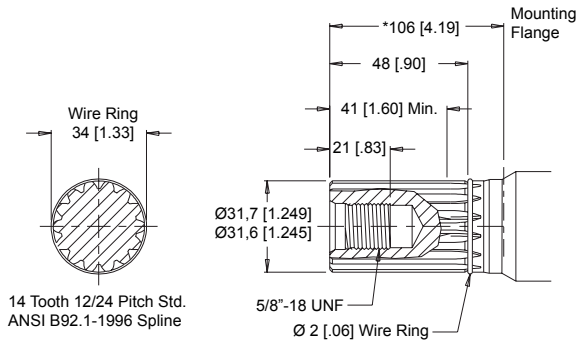
28 35mm Tapered

Max. Torque: 882 Nm [7804 lb-in]



23 1-1/4" 14 Tooth Spline

Max. Torque: 882 Nm [7804 lb-in]



NOTE: A slotted hex nut is standard on all tapered shafts. * Shaft lengths may vary ± 0,8mm [.030 in]

HB

310 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

310	HB Series Motor/Brake

STEP 2 - Select a displacement option

050	52 cc	[3.2 in^3/rev]	160	164 cc	[10.0 in^3/rev]
080	76 cc	[4.6 in^3/rev]	200	205 cc	[12.5 in^3/rev]
090	89 cc	[5.4 in^3/rev]	250	254 cc	[15.5 in^3/rev]
110	111 cc	[6.8 in^3/rev]	300	293 cc	[17.9 in^3/rev]
125	127 cc	[7.7 in^3/rev]	400	409 cc	[24.9 in^3/rev]

STEP 3 - Select a mounting option

NOTE: To complete the three (3) digit HB Series housing code a two (2) digit mounting option must be followed with the single (1) digit porting option found in STEP 3 part II. Side port mounting options need side port porting options and end port mounting options need end port porting options.

W2	4-Hole End Port Wheel Mount
W8	4-Hole Side Port Wheel Mount

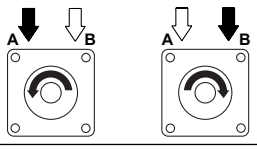
STEP 3 (part II) - Select a porting option

END PORTS

1	7/8” O-Ring With 7/16” Drain
2	1/2” BSP.F With 1/4” Drain

SIDE PORTS

1	7/8” O-Ring With 7/16” Drain
2	1/2” BSP.F With 1/4” Drain
3	1/2” BSP.F Offset Manifold With 1/4” Drain
5	9/16” O-Ring With 7/16” Drain
6	1-1/16” O-Ring With 7/16” Drain
7	1/2” BSP.F With 1/4” Drain



NOTE: HB Series motors do not have internal components that allow the motor to turn in either direction. Refer to the diagram to the left to determine which way the motor will turn when either port A or port B is pressurized.

STEP 4 - Select a shaft option

20	1-1/4" Straight	23	1-1/4” 14 Tooth Spline
21	32mm Straight	28	35mm Tapered
22	1-1/4” Tapered	31	1-1/2” Tapered

STEP 5 - Select a paint option

A	Black
B	Black (unpainted flange face)
Z	No Paint

STEP 6 - Select a valve cavity option

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

NOTE: Valve cavity option is only available on side ports 1, 2, & 5 and end ports 1 & 2.

STEP 7 - Select an add on option

A	Standard
B	Lock Nut
C	Solid Hex Nut

STEP 8 - Select a miscellaneous option

AA	None
AC	Freeturning Rotor

NOTE: The HB 310 series motor/brakes are available with different holding torque specifications. For additional information please contact White Drive Products Customer Service & Technical Support or your local White Drive Products’ distributor.

WHITE DRIVE PRODUCT MOTOR/BRAKE PRECAUTION

CAUTION! - White Drive Products' motors/brakes are intended to operate as static or parking brakes. System circuitry must be designed to bring the load to a stop before applying the brake.

CAUTION! - Because it is possible for some large displacement motors to overpower the brake, it is critical that the maximum system pressure be limited for these applications. Failure to do so could cause serious injury or death. When choosing a motor/brake for an application, consult the performance chart for the series and displacement chosen for the application to verify that the maximum operating pressure of the system will not allow the motor to produce more torque than the maximum rating of the brake. Also, it is vital that the system relief be set low enough to insure that the motor is not able to overpower the brake.

To ensure proper operation of the brake, case drain back pressure must be maintained at 34 bar [500 psi] or less. Case drain back pressure above 34 bar [500 psi] can result in erratic operation of the brake. To avoid potential problems with the operation of the brake, a separate case drain line is recommended. Use of the internal drain option is not recommended due to the possibility of return line pressure spikes. A simple schematic of a system utilizing a motor/brake is shown in Figure A below. Although maximum brake release pressure may be used for an application, a 34 bar [500 psi] pressure reducing valve is recommended to promote maximum life for the brake release piston seals. However, if a pressure reducing valve is used in a system which has case drain back pressure, the pressure reducing valve should be set to 34 bar [500 psi] over the expected case pressure to ensure full brake release. To achieve proper brake release operation, it is necessary to bleed out any trapped air and fill brake release cavity and hoses before all connections are tightened. To facilitate this operation, all motor/brakes feature two release ports. One or both of these ports may be used to release the brake in the unit. Motor/brakes should be configured so that the release ports are near the top of the unit in the installed position. Once all system connections are made, one release port must be opened to atmosphere and the brake release line carefully charged with fluid until all air is removed from the line and motor/brake release cavity. When this has been accomplished the port plug or secondary release line must be reinstalled. In the event of a pump or battery failure, an external pressure source may be connected to the brake release port to release the brake, allowing the machine to be moved.

Typical motor/brake schematic

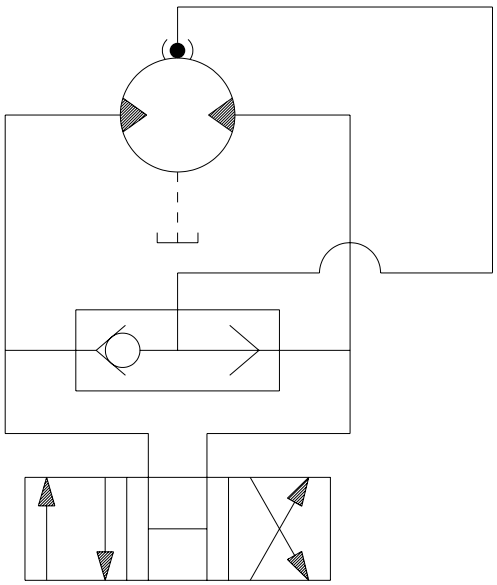


Figure A

NOTE: It is vital that all operating recommendations be followed. Failure to do so could result in injury or death.

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

Hong Kong

White Drive Products, Inc.
Asian Distribution Center
Unit 18, 9/F.,Corporation Park
11 on Lai Street, Siu Lek Yuen
Shatin, N.T. Hong Kong
Phone: +852 2637 6682
Fax: +852 2637 6978
infohk@whitedriveproducts.com

whitedriveproducts

www.whitedriveproducts.com