

The BMT series motor adapts the advanced **ROLORTORC™** gear set design with **DISC** distribution flow and high pressure. These motors can be supplied with various options for multifunctional operations in accordance with the application requirements. The output shaft tapered roller bearings permit high axial and radial forces offering a smooth operation during low pressure start up and high pressure operation.

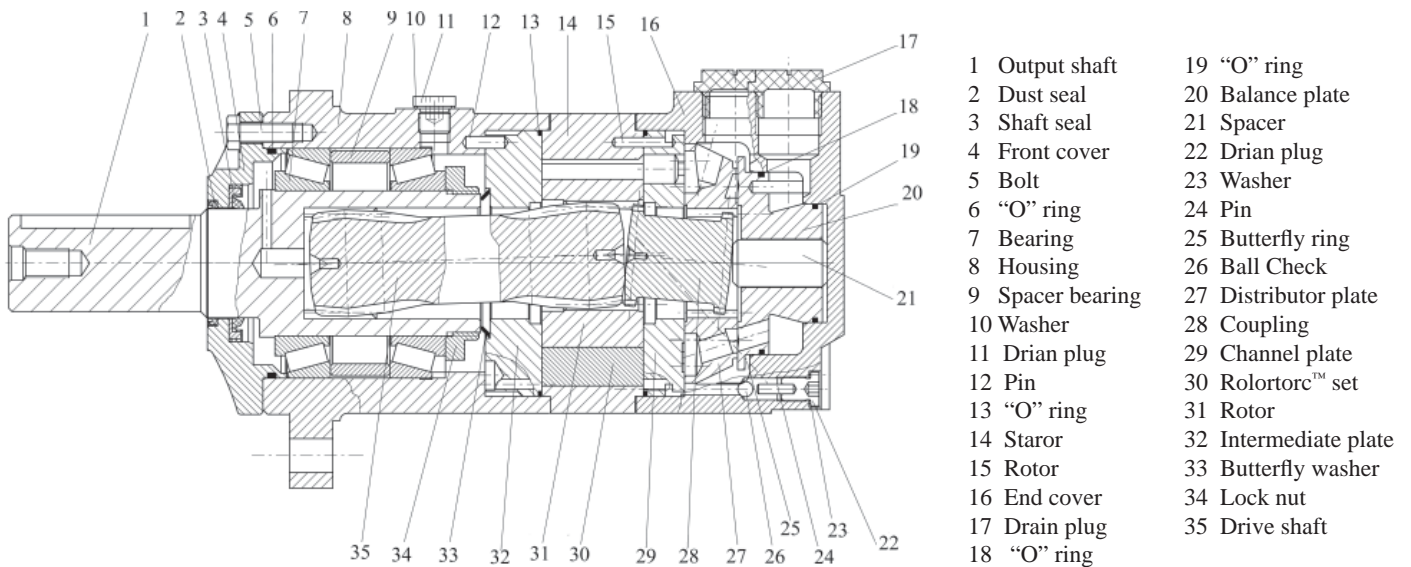
These low weight advanced construction design motors are manufactured in accordance with the requirements of the ISO 9000-2000 quality system.

Technical Specifications - BMT

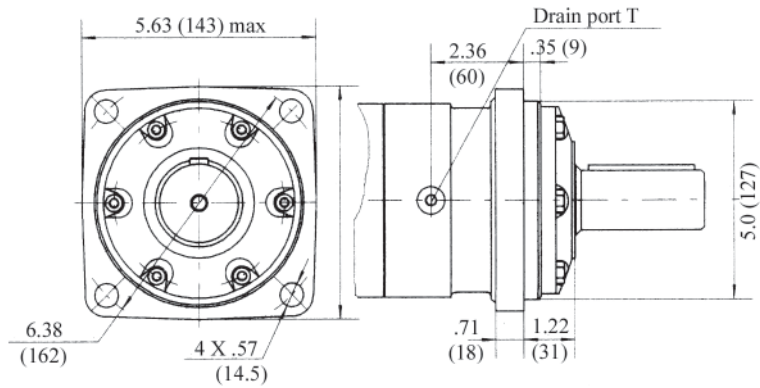
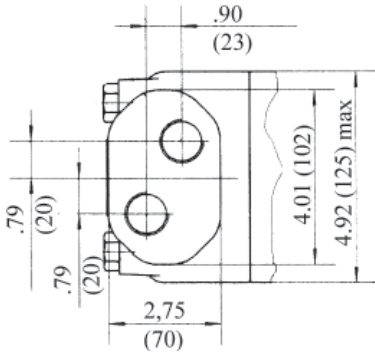
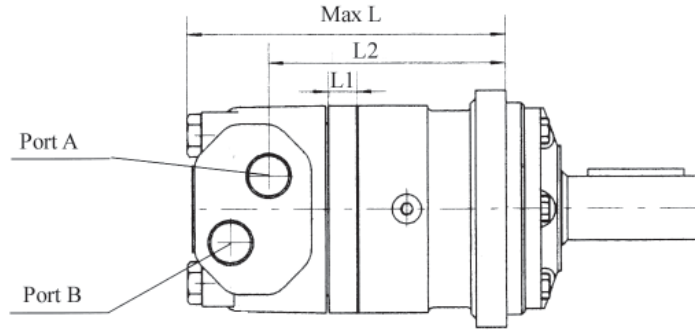
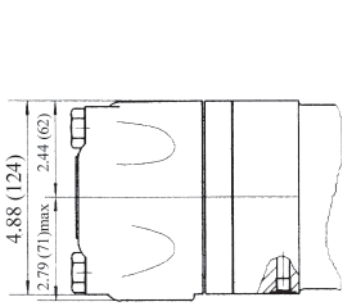
MODEL		BMT160	BMT200	BMT250	BMT315	BMT400	BMT500	BMT630	BMT800
Displacement CM ³ /Rev (In ³ /Rev)		161.1 (9.83)	201.4 (12.29)	251.8 (15.36)	326.3 (19.91)	410.9 (25.07)	523.6 (31.95)	629.1 (38.39)	801.8 (48.93)
	Maximum Speed RPM	Cont. 614 Int. 770	615 743	495 592	380 458	302 364	237 284	196 233	154 185
Max Torque NM / (in.lbs)	Cont.	471 (4168)	589 (5213)	727 (6434)	962 (8514)	1095 (9691)	1245 (11018)	1318 (11664)	1464 (12956)
	Int.	573 (5071)	718 (6354)	888 (7859)	1154 (10213)	1269 (11231)	1409 (12470)	1498 (13257)	1520 (13452)
Max Differential Mpa / (PSI)	Cont.	20 (2944)	20 (2944)	20 (2944)	20 (2944)	18 (2650)	16 (2355)	14 (2060)	12.5 (1840)
	Int.	24 (3533)	24 (3533)	24 (3533)	24 (3533)	21 (3091)	18 (2650)	16 (2355)	13 (1914)
Max Flow L/min / (gpm)	Cont.	100 (26.42)	125 (33.02)	125 (33.02)	125 (33.02)	125 (33.02)	125 (33.02)	125 (33.02)	125 (33.02)
	Int.	125 (33.02)	150 (39.62)	150 (39.62)	150 (39.62)	150 (39.62)	150 (39.62)	150 (39.62)	150 (39.62)
Weight Kg / (lbs)		20 (44.09)	21 (46.30)	21 (46.30)	21 (46.30)	23 (50.71)	24 (52.91)	25 (55.11)	26 (57.32)

Continuous = maximum of continuous operation

Intermittent = maximum operating range for 6 seconds per minute



BMT INSTALLATION DATA

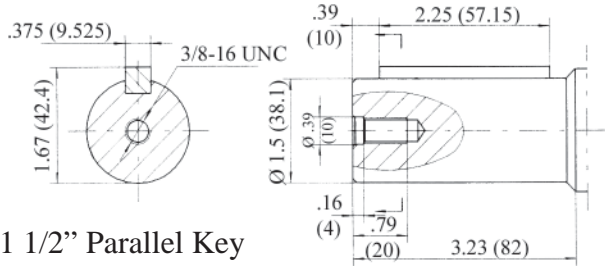


MODEL BMS	L		L1		L2	
	inches	mm	inches	mm	inches	mm
BMT 160	8.38	213	.75	19	6.36	161.5
BMT 200	8.46	215	.83	21	6.44	163.5
BMT 250	8.70	221	1.06	27	6.67	169.5
BMT 315	8.98	228	1.34	34	6.95	176.5
BMT 400	9.29	236	1.65	42	7.26	184.5
BMT 500	9.76	248	2.12	54	7.74	196.5
BMT 630	9.92	252	2.28	58	7.89	200.5
BMT 800	10.20	259	2.56	65	8.17	207.5

PORT SIZES	SAE
P (A,B)	1 1/16-12 SAE
T	7/16-20 SAE

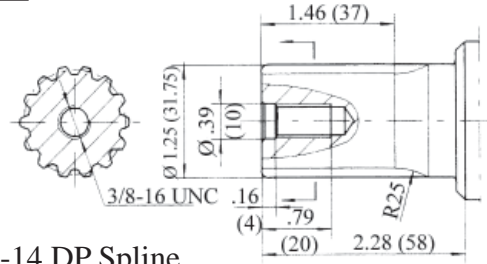
MODEL BMT DRIVE SHAFT DATA

G



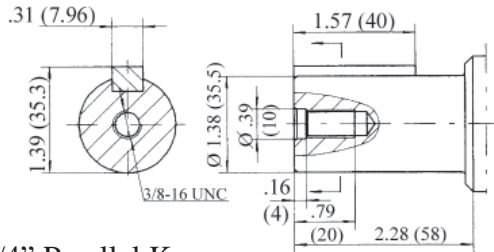
1 1/2" Parallel Key

F1



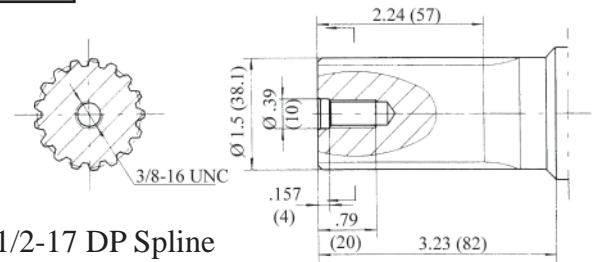
1 1/4-14 DP Spline

G



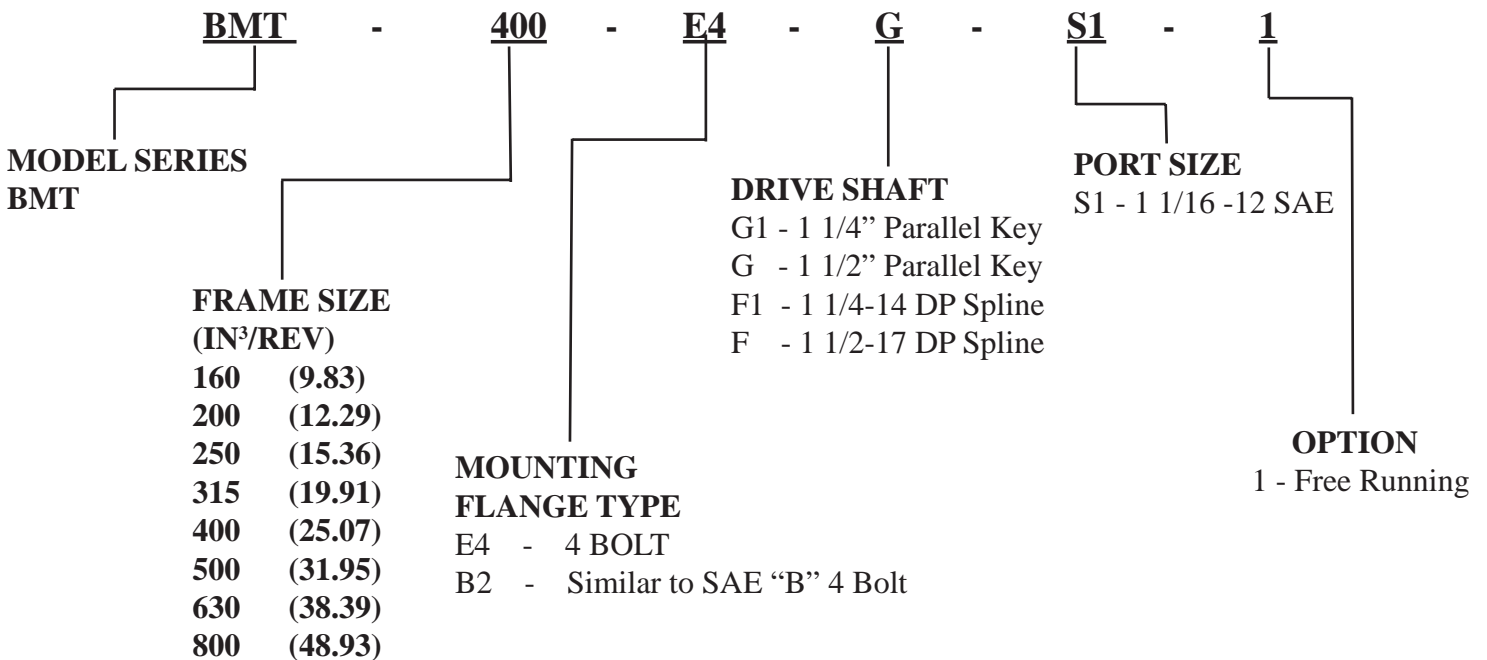
1 1/4" Parallel Key

F



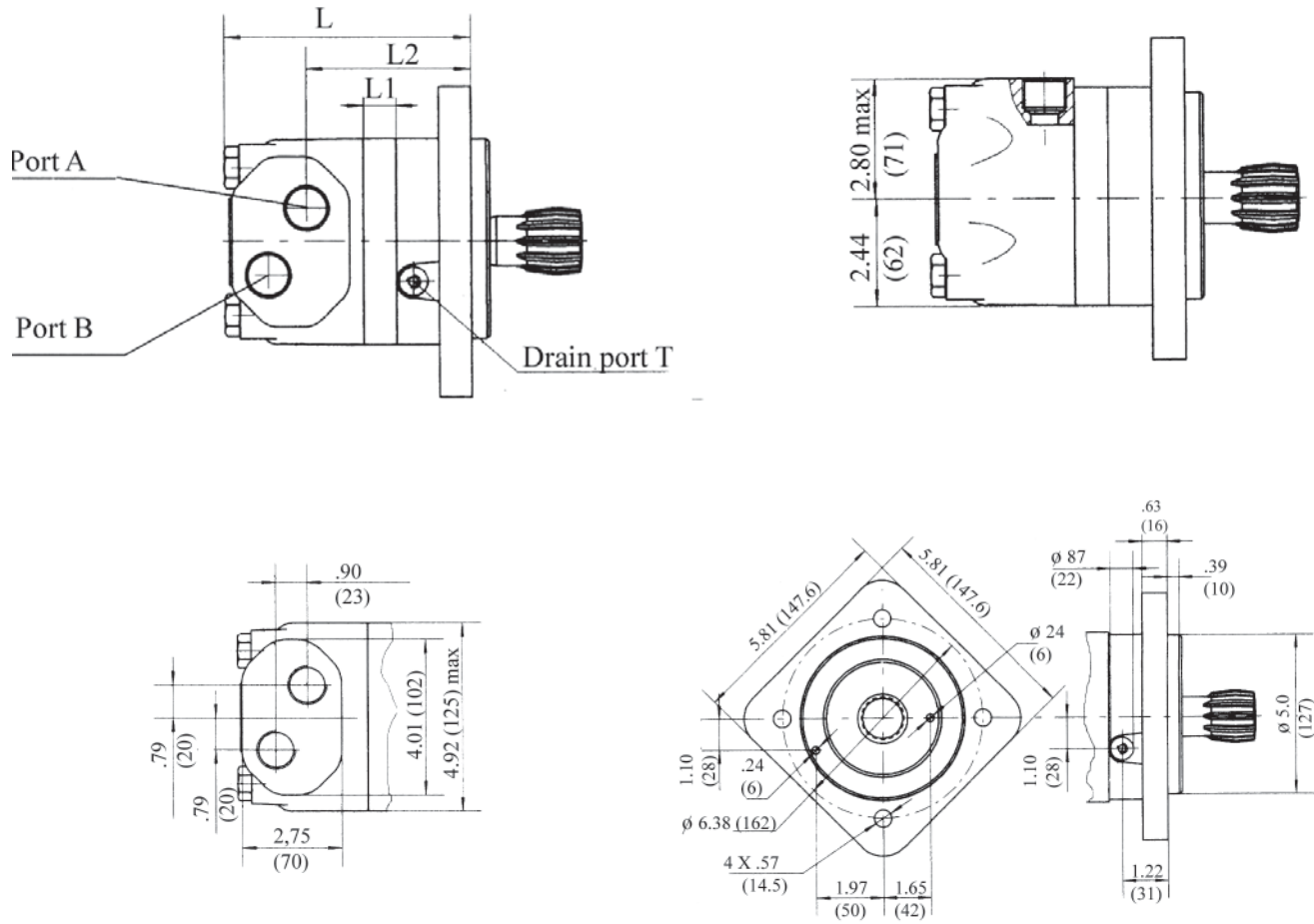
1 1/2-17 DP Spline

BMT MODEL NUMBER DATA



Additional flange and drive shaft options available please consult factory

BMTS INSTALLATION DATA (BEARINGLESS DESIGN)



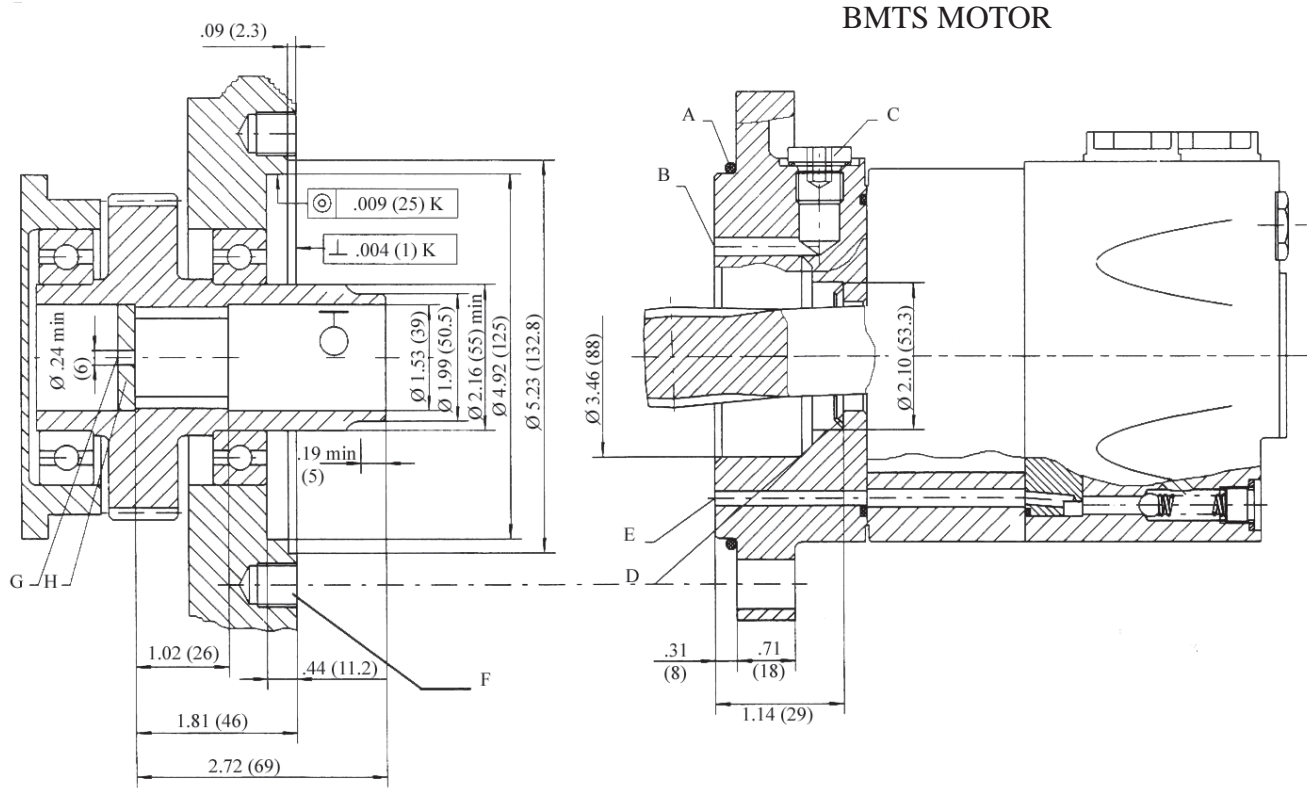
E - Square Flange
4 Bolt

MODEL BMS	L		L1		L2	
	inches	mm	inches	mm	inches	mm
BMTS 160	6.20	157.5	.79	20	4.23	107.5
BMTS 200	6.40	162.5	.98	25	4.43	112.5
BMTS 250	6.63	168.5	1.22	31	4.66	118.5
BMTS 315	6.99	177.5	1.57	40	5.02	127.5
BMTS 400	7.38	187.5	1.97	50	5.41	137.5
BMTS 500	7.87	200	2.46	62.5	5.90	150

PORT SIZES	SAE
P (A,B)	1 1/16-12 SAE
T	7/16-18 SAE

BMTS MOUNTING DATA

Required dimensions of the component to be attached

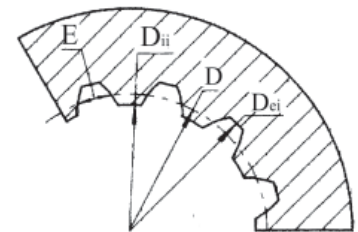


- A: O-RING 125 X 3
- B: EXTERNAL DRAIN CHANNEL
- C: DRAIN CONNECTION
- D: CONICIAL SEAL RING

- E: INTERNAL DRAIN CHANNEL
- F: M12 MIN 18mm DEEP
- G: OIL CIRCULATION HOLE
- H: HARDENED STOP PLATE

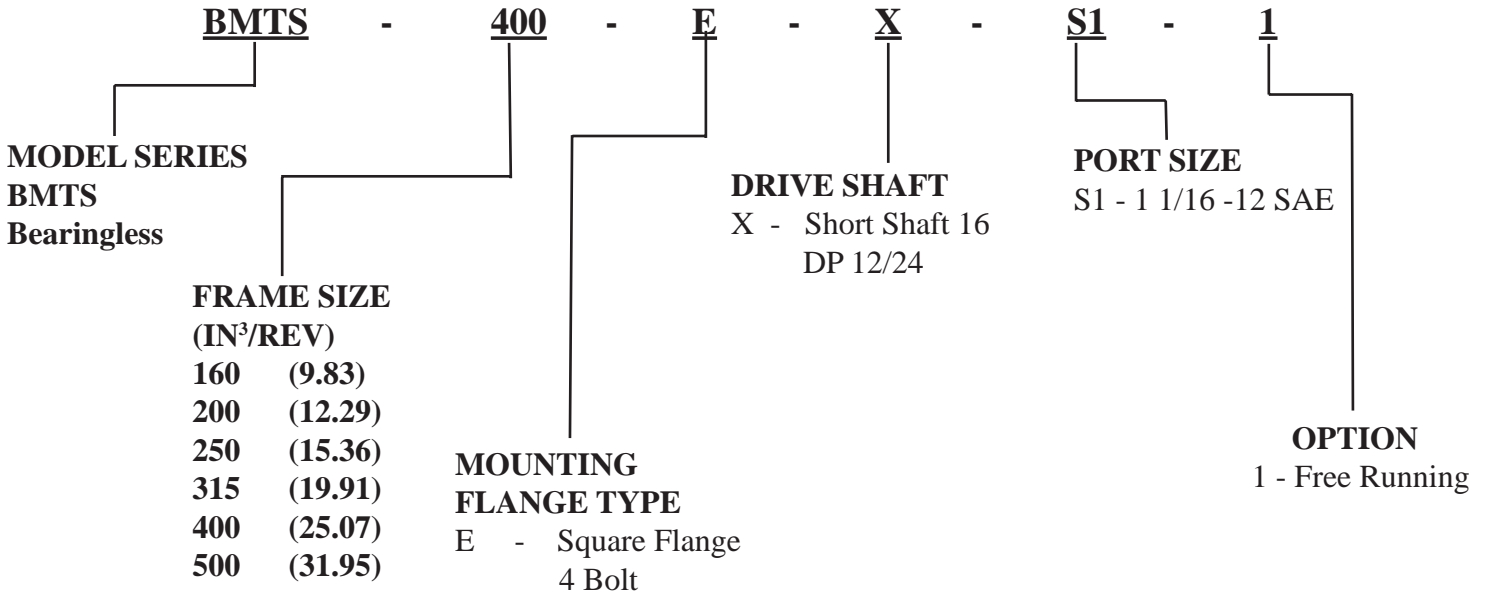
INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

FILLET ROOT SIDE FIT		
Number of teeth	Z	12
Diametral Pitch	DP	12/24
Pressure Angle	D	30°
Pitch Diameter	D	Ø 1.33 (33.865)
Major Diameter	D _{ei}	Ø 1.51 (38.4)
Minor Diameter	D _{ii}	Ø 1.26 (32.15)
Space Width (Circular)	E	0.178 (4.516)



Hardening Specification: HRC 62 +/- 2
Effective case depth .027 (0.7)

BMTS MODEL NUMBER DATA



BMT/BMTS 160		161.1 Cm³/Rev 9.83 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		4 (588)	8 (1175)	10 (1470)	12 (1766)	16 (2355)	20 (2950)	24 (3535)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	88 (780)	176 (1558)	228 (2081)	275 (2434)	361 (3195)	447 (3956)	535 (4735)
		60 rpm	59 rpm	58 rpm	56 rpm	54 rpm	50 rpm	44 rpm
	20 (5.25)	89 (788)	181 (1602)	234 (2071)	277 (2451)	372 (3292)	459 (4062)	557 (4929)
		121 rpm	120 rpm	117 rpm	114 rpm	109 rpm	103 rpm	95 rpm
	40 (10.50)	91 (805)	180 (1593)	235 (2080)	277 (2451)	381 (3372)	471 (4168)	573 (5071)
		249 rpm	246 rpm	243 rpm	236 rpm	230 rpm	223 rpm	212 rpm
	60 (15.85)	82 (726)	178 (1575)	235 (2080)	277 (2451)	381 (3372)	470 (4160)	572 (5063)
		371 rpm	367 rpm	362 rpm	356 rpm	349 rpm	340 rpm	330 rpm
Max Cont.	100 (26.30)	70 (620)	160 (1416)	218 (1929)	269 (2380)	370 (3275)	455 (4026)	558 (4938)
		614 rpm	611 rpm	606 rpm	598 rpm	590 rpm	582 rpm	570 rpm
	Max Int.	125 (33.02)	58 (513)	148 (1309)	211 (1867)	261 (2310)	359 (3177)	448 (3965)
		770 rpm	764 rpm	758 rpm	750 rpm	741 rpm	731 rpm	715 rpm

BMT/BMTS 200		201.4 Cm³/Rev 12.29 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		4 (588)	8 (1175)	10 (1470)	12 (1766)	16 (2355)	20 (2950)	24 (3535)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	124 (1097)	233 (2062)	289 (2558)	340 (3009)	454 (4018)	560 (4956)	669 (5921)
		47 rpm	46 rpm	45 rpm	42 rpm	39 rpm	37 rpm	33 rpm
	20 (5.25)	125 (1106)	239 (2175)	298 (2637)	347 (3071)	468 (4142)	576 (5098)	696 (6160)
		95 rpm	94 rpm	92 rpm	90 rpm	87 rpm	84 rpm	75 rpm
	40 (10.50)	120 (1062)	241 (2133)	296 (2620)	352 (3115)	475 (4204)	589 (5213)	716 (6337)
		195 rpm	193 rpm	191 rpm	187 rpm	183 rpm	178 rpm	167 rpm
	60 (15.85)	116 (1027)	237 (2097)	295 (2611)	352 (3115)	478 (4230)	589 (5213)	718 (6354)
		297 rpm	295 rpm	292 rpm	287 rpm	282 rpm	276 rpm	263 rpm
	80 (21.00)	108 (956)	231 (2044)	289 (2558)	350 (3098)	474 (4195)	586 (5186)	716 (6337)
		395 rpm	393 rpm	389 rpm	384 rpm	377 rpm	370 rpm	259 rpm
Max Cont.	100 (26.30)	99 (871)	227 (2009)	286 (2531)	344 (3044)	471 (4168)	580 (5133)	712 (6301)
		493 rpm	490 rpm	486 rpm	482 rpm	475 rpm	467 rpm	460 rpm
Max Int.	125 (33.02)	87 (743)	208 (1841)	276 (2443)	333 (2947)	459 (4062)	566 (5009)	697 (6168)
			615 rpm	611 rpm	607 rpm	602 rpm	595 rpm	588 rpm
	150 (39.50)	70 (620)	194 (1717)	260 (23010)	324 (2867)	447 (3956)	554 (4903)	682 (6036)
		743 rpm	740 rpm	735 rpm	727 rpm	717 rpm	706 rpm	682 rpm

BMT/BMTS 250		251.8 Cm³/Rev 15.36 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		4 (588)	8 (1175)	10 (1470)	12 (1766)	16 (2355)	20 (2950)	24 (3535)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	138 (1221)	286 (2531)	355 (3142)	419 (3708)	559 (4947)	689 (6098)	824 (7292)
		38 rpm	38 rpm	37 rpm	36 rpm	34 rpm	32 rpm	31 rpm
	20 (5.25)	143 (1266)	296 (2620)	364 (3221)	432 (3823)	580 (5133)	708 (6266)	853 (7550)
		76 rpm	75 rpm	74 rpm	72 rpm	70 rpm	67 rpm	62 rpm
	40 (10.50)	139 (1230)	301 (2664)	372 (3297)	440 (3894)	593 (5248)	723 (6400)	884 (7823)
		156 rpm	154 rpm	152 rpm	149 rpm	146 rpm	142 rpm	134 rpm
	60 (15.85)	132 (1168)	294 (2602)	372 (3292)	441 (3903)	592 (5239)	727 (6434)	888 (7860)
		237 rpm	236 rpm	233 rpm	229 rpm	224 rpm	219 rpm	207 rpm
	80 (21.00)	128 (1133)	283 (2505)	364 (3221)	433 (3832)	587 (5195)	721 (6381)	887 (7850)
		317 rpm	316 rpm	314 rpm	308 rpm	303 rpm	299 rpm	284 rpm
Max Cont.	100 (26.30)	126 (1115)	282 (2496)	355 (3142)	427 (3779)	582 (5151)	716 (6337)	879 (7779)
		396 rpm	394 rpm	391 rpm	387 rpm	381 rpm	373 rpm	359 rpm
	125 (33.02)	116 (1027)	260 (2301)	340 (3010)	414 (3665)	568 (5027)	703 (6222)	864 (7646)
		485 rpm	492 rpm	488 rpm	483 rpm	476 rpm	469 rpm	454 rpm
Max Int.	150 (39.50)	88 (779)	242 (2142)	320 (2832)	397 (3513)	552 (4885)	686 (6071)	847 (7496)
			592 rpm	589 rpm	585 rpm	580 rpm	572 rpm	565 rpm

BMT/BMTS 315		326.3 Cm³/Rev 19.91 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		4 (588)	8 (1175)	10 (1470)	12 (1766)	16 (2355)	20 (2950)	24 (3535)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	184 (1628)	363 (3213)	453 (4009)	545 (4823)	734 (6496)	891 (7885)	1062 (9399)
		30 rpm	29 rpm	28 rpm	27 rpm	26 rpm	25 rpm	23 rpm
	20 (5.25)	189 (1673)	380 (3363)	472 (4177)	562 (4975)	757 (6700)	917 (8115)	1109 (9815)
		60 rpm	59 rpm	58 rpm	56 rpm	54 rpm	52 rpm	50 rpm
	40 (10.50)	191 (1690)	381 (3372)	484 (4283)	570 (5045)	774 (6850)	954 (8445)	1149 (10170)
		121 rpm	120 rpm	118 rpm	115 rpm	112 rpm	109 rpm	104 rpm
	60 (15.85)	189 (1673)	376 (3328)	493 (4363)	573 (5070)	772 (6832)	962 (8514)	1154 (10213)
		183 rpm	181 rpm	179 rpm	175 rpm	172 rpm	168 rpm	158 rpm
	80 (21.00)	179 (1584)	369 (3266)	479 (4240)	565 (5000)	768 (6797)	954 (8443)	1153 (10204)
	244 rpm	242 rpm	239 rpm	236 rpm	231 rpm	227 rpm	217 rpm	
	100 (26.30)	169 (1496)	357 (3160)	467 (4133)	562 (4975)	758 (6708)	942 (8357)	1143 (10116)
		305 rpm	304 rpm	301 rpm	298 rpm	294 rpm	289 rpm	276 rpm
Max Cont.	125 (26.30)	147 (1301)	336 (2975)	447 (3955)	544 (4815)	745 (6595)	920 (8145)	1127 (9975)
		380 rpm	378 rpm	375 rpm	371 rpm	367 rpm	362 rpm	349 rpm
Max Int.	150 (39.50)	119 (1053)	318 (8950)	432 (3825)	526 (4655)	713 (6310)	894 (7912)	1097 (9710)
		458 rpm	456 rpm	453 rpm	449 rpm	444 rpm	431 rpm	425 rpm

BMT/BMTS 400		410.9 Cm³/Rev 25.07 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		3 (440)	6 (880)	9 (1325)	12 (1766)	15 (2208)	18 (2652)	21 (3090)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	176 (1557)	367 (3248)	560 (4956)	715 (6328)	885 (7832)	1050 (9293)	1209 (10700)
		24 rpm	23 rpm	22 rpm	21 rpm	20 rpm	19 rpm	18 rpm
	20 (5.25)	179 (1584)	370 (3275)	565 (5000)	726 (6425)	899 (7956)	1071 (9470)	1236 (10940)
		49 rpm	48 rpm	47 rpm	44 rpm	42 rpm	40 rpm	38 rpm
	40 (10.50)	176 (1557)	370 (3275)	567 (5018)	733 (6487)	919 (8133)	1091 (9647)	1263 (11178)
		96 rpm	95 rpm	93 rpm	90 rpm	87 rpm	83 rpm	79 rpm
	60 (15.85)	174 (1540)	361 (3195)	563 (4983)	729 (6452)	920 (8142)	1095 (9691)	1269 (11237)
		145 rpm	143 rpm	139 rpm	135 rpm	131 rpm	127 rpm	121 rpm
	80 (21.00)	166 (1469)	353 (3124)	553 (3124)	719 (6363)	912 (8071)	1084 (9593)	1263 (11178)
	193 rpm	191 rpm	188 rpm	184 rpm	180 rpm	1761 rpm	170 rpm	
	100 (26.30)	150 (1328)	339 (3000)	538 (4761)	708 (6267)	896 (7930)	1067 (9443)	1252 (11080)
		242 rpm	240 rpm	238 rpm	234 rpm	228 rpm	224 rpm	218 rpm
Max Cont.	125 (26.30)	135 (1195)	309 (2735)	524 (4637)	688 (6089)	873 (7726)	1045 (9248)	1221 (10806)
		302 rpm	300 rpm	298 rpm	294 rpm	289 rpm	285 rpm	178 rpm
Max Int.	150 (39.50)	126 (1175)	292 (2584)	508 (4496)	666 (5894)	852 (7540)	1020 (9027)	1197 (10593)
		364 rpm	362 rpm	358 rpm	354 rpm	350 rpm	346 rpm	339 rpm

rpm

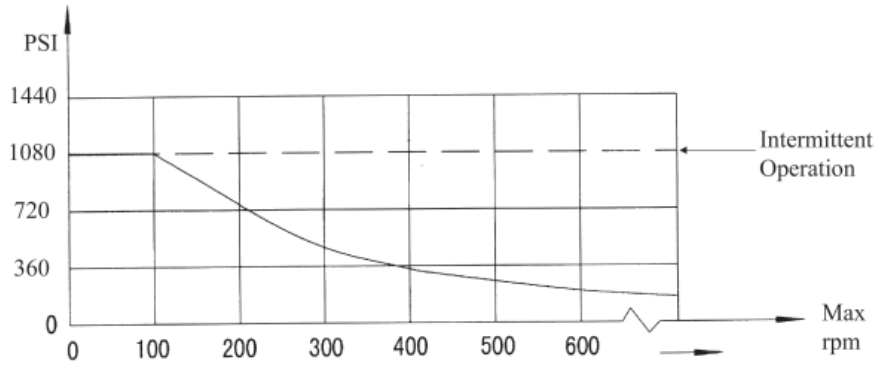
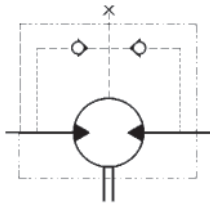
BMT/BMTS 500		523.6 Cm³/Rev 31.95 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		3 (440)	6 (880)	9 (1325)	12 (1766)	14 (2060)	16 (2355)	18 (2652)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	222 (1965)	451 (3991)	692 (6124)	892 (7894)	1050 (9293)	1193 (10560)	1340 (11859)
		18 rpm	18 rpm	18 rpm	17 rpm	16 rpm	15 rpm	13 rpm
	20 (5.25)	231 (2044)	464 (4106)	714 (6319)	918 (8124)	1070 (9470)	1220 (10797)	1377 (12186)
		37 rpm	36 rpm	35 rpm	34 rpm	33 rpm	32 rpm	30 rpm
	40 (10.50)	230 (2036)	466 (4124)	727 (6434)	941 (8328)	1094 (9682)	1244 (11009)	1422 (12585)
		75 rpm	74 rpm	73 rpm	72 rpm	70 rpm	68 rpm	64 rpm
	60 (15.85)	225 (1991)	457 (4044)	714 (6319)	941 (8328)	1088 (9629)	1245 (11018)	1409 (12470)
		113 rpm	112 rpm	111 rpm	109 rpm	107 rpm	105 rpm	101 rpm
	80 (21.00)	213 (1885)	431 (3814)	696 (6160)	927 (8204)	1076 (9523)	1244 (11009)	1401 (12399)
	151 rpm	150 rpm	149 rpm	147 rpm	145 rpm	143 rpm	138 rpm	
	100 (26.30)	189 (1717)	420 (3717)	680 (6018)	901 (7974)	1063 (9408)	1224 (10832)	1383 (12240)
		189 rpm	188 rpm	187 rpm	185 rpm	183 rpm	181 rpm	177 rpm
Max Cont.	125 (26.30)	182 (1611)	398 (3522)	641 (5673)	877 (7761)	1024 (9062)	1199 (10612)	1352 (11965)
		237 rpm	236 rpm	235 rpm	233 rpm	231 rpm	229 rpm	225 rpm
Max Int.	150 (39.50)	147 (13010)	369 (3266)	618 (5469)	853 (7549)	1004 (8885)	1167 (10238)	1325 (11726)
		284 rpm	283 rpm	282 rpm	280 rpm	278 rpm	276 rpm	272 rpm

BMT 630		629.1 Cm³/Rev 38.39 in³/Rev				Max Cont.	Max Int.	
Pressure Mpa (psi)		3 (440)	6 (880)	9 (1325)	10.5 (1546)	12 (1766)	14 (2060)	16 (2355)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	10 (2.60)	233 (2062)	520 (4602)	795 (7036)	902 (7983)	1074 (9505)	1194 (10567)	1363 (12063)
		14 rpm	14 rpm	13 rpm	13 rpm	13 rpm	11 rpm	11 rpm
	20 (5.25)	237 (2097)	554 (4903)	837 (7407)	953 (8434)	1117 (9885)	1239 (10965)	1407 (12452)
		28 rpm	27 rpm	27 rpm	26 rpm	26 rpm	24 rpm	22 rpm
	40 (10.50)	239 (2115)	553 (4894)	860 (7611)	987 (8735)	1171 (10364)	1308 (11576)	1483 (13125)
		62 rpm	62 rpm	61 rpm	60 rpm	59 rpm	56 rpm	54 rpm
	60 (15.85)	223 (1974)	544 (4814)	863 (7638)	978 (8655)	1172 (10372)	1318 (11664)	1498 (13257)
		94 rpm	94 rpm	92 rpm	91 rpm	90 rpm	86 rpm	82 rpm
	80 (21.00)	220 (1947)	537 (5071)	854 (7558)	965 (8540)	1172 (10372)	1314 (11629)	1497 (13248)
	123 rpm	123 rpm	121 rpm	119 rpm	118 rpm	114 rpm	110 rpm	
	100 (26.30)	208 (1841)	522 (4620)	832 (7363)	945 (8363)	1156 (10231)	1303 (10231)	1488 (13169)
		156 rpm	155 rpm	153 rpm	152 rpm	150 rpm	147 rpm	142 rpm
Max Cont.	125 (26.30)	201 (1779)	499 (4416)	810 (7169)	931 (8239)	1137 (10062)	1292 (1143)	1472 (1307)
		196 rpm	196 rpm	194 rpm	192 rpm	191 rpm	187 rpm	183 rpm
Max Int.	150 (39.50)	174 (1540)	492 (4354)	785 (6947)	921 (8151)	1121 (9912)	1277 (11301)	1454 (12868)
		233 rpm	232 rpm	231 rpm	230 rpm	227 rpm	223 rpm	217 rpm

BMT 800		801.8 Cm³/Rev 48.93 in³/Rev				Max Cont.	Max Int.
Pressure Mpa (psi)		3 (440)	6 (880)	9 (1325)	10.5 (1546)	12.5 (1840)	13 (1914)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification					
	10 (2.60)	346 (3062)	677 (5991)	1003 (8877)	1159 (10257)	1365 (12080)	1390 (12302)
		12 rpm	12 rpm	11 rpm	11 rpm	11 rpm	10 rpm
	20 (5.25)	356 (3151)	692 (6124)	1034 (9151)	1183 (10470)	1404 (12425)	1458 (12903)
		24 rpm	24 rpm	24 rpm	23 rpm	22 rpm	18 rpm
	40 (10.50)	365 (3220)	703 (6222)	1066 (9434)	1236 (10939)	1459 (12912)	1516 (13417)
		50 rpm	50 rpm	49 rpm	48 rpm	46 rpm	40 rpm
	60 (15.85)	354 (3133)	703 (6222)	1060 (9381)	1237 (10947)	1464 (12956)	1516 (13417)
		74 rpm	73 rpm	71 rpm	71 rpm	68 rpm	63 rpm
	80 (21.00)	332 (2938)	686 (6071)	1050 (9293)	1226 (10850)	1464 (12956)	1514 (13399)
	99 rpm	98 rpm	98 rpm	96 rpm	93 rpm	86 rpm	
	100 (26.30)	305 (3699)	654 (5788)	1025 (9071)	1207 (10682)	1445 (12788)	1506 (13328)
		125 rpm	123 rpm	123 rpm	121 rpm	118 rpm	110 rpm
Max Cont.	125 (26.30)	280 (2478)	622 (5505)	989 (8753)	1181 (10452)	1422 (12585)	1487 (13160)
		154 rpm	153 rpm	153 rpm	150 rpm	149 rpm	140 rpm
Max Int.	150 (39.50)	247 (2186)	590 (5222)	953 (8454)	1156 (10231)	1406 (12443)	1476 (13663)
		185 rpm	184 rpm	183 rpm	181 rpm	179 rpm	172 rpm

MODEL BMT TECHNICAL DATA

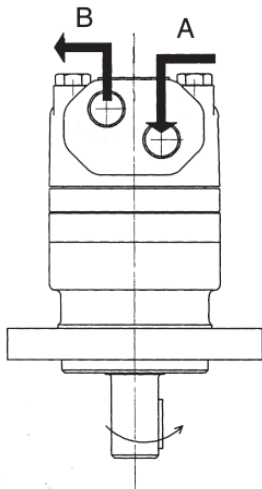
SHAFT SEAL RATED PRESSURE



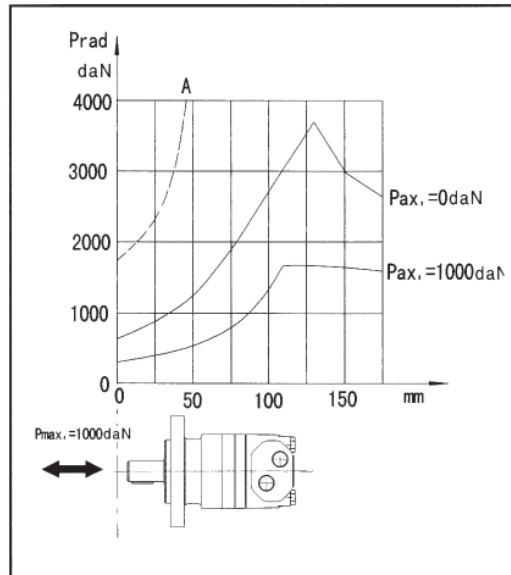
CASE DRAIN

In applications without a motor drain line, the pressure exerted on the shaft seal is marginally in excess of the return line pressure. When the drain line is used the pressure exerted on the shaft seal is equal to the return line pressure.

SHAFT ROTATION DIRECTION



Axial and Radial forces



The output shaft runs tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve risk of breakage. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.