

The BMS and BMSS 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.

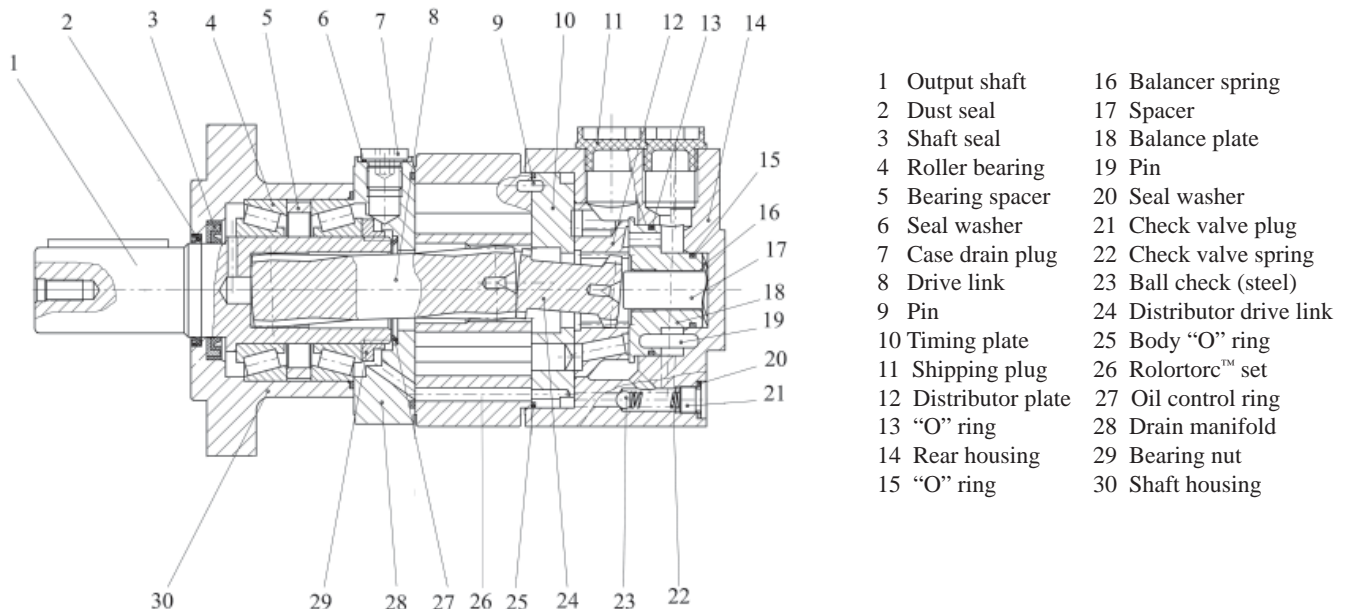
These low weight advanced construction design motors are manufactured in accordance with the requirements of the ISO 9000-2000 quality system.

Technical Specifications - BMS/BMSS

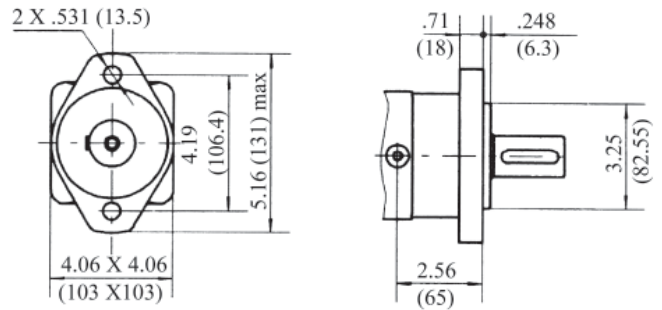
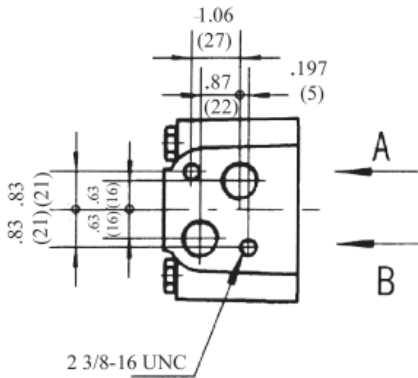
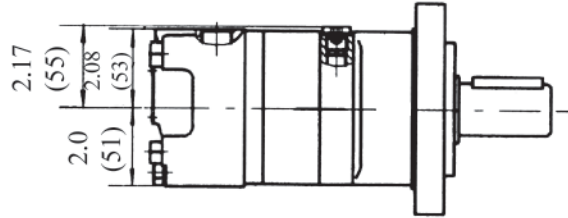
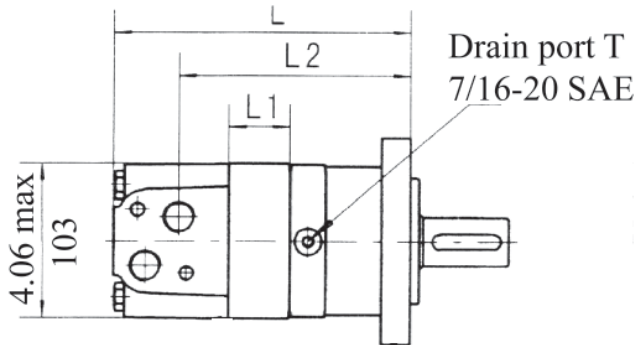
MODEL		BMS80	BMS100	BMS125	BMS160	BMS200	BMS250	BMS315	BMS375
		BMSS80	BMSS100	BMSS125	BMSS160	BMSS200	BMSS250	BMSS315	BMSS375
Displacement CM ³ /Rev (In ³ /Rev)		81 (4.95)	101 (6.15)	125 (7.63)	157 (9.59)	200 (12.2)	252 (15.4)	315 (19.2)	370 (22.6)
	Maximum Speed RPM	Cont	800	748	600	470	375	300	240
Int.		990	900	720	560	450	360	280	240
Max Torque NM / (in.lbs)	Cont	190 (1682)	240 (2124)	310 (2744)	316 (2780)	400 (3540)	450 (3983)	560 (4956)	576 (5098)
	Int.	240 (2124)	300 (2655)	370 (2744)	430 (3805)	466 (4124)	450 (4779)	658 (5823)	700 (6195)
Max Differential Mpa / (PSI)	Cont	17.5 (2576)	17.5 (2576)	17.5 (2576)	15 (2208)	14 (2061)	12.5 (1840)	12 (1766)	12 (1766)
	Int.	21 (3091)	21 (3091)	21 (3091)	21 (3091)	16 (2355)	16 (2355)	14 (2061)	14 (2060)
Max Flow L/min / (gpm)	Cont	65 (17.1)	75 (34.1)	75 (34.1)	75 (34.1)	75 (34.1)	75 (34.1)	75 (34.1)	75 (34.1)
	Int.	80 (36.4)	90 (40.9)	90 (40.9)	90 (40.9)	90 (40.9)	90 (40.9)	90 (40.9)	90 (40.9)
Weight Kg / (lbs)		9.8 (21.6)	10 (22)	10.3 (22.7)	10.7 (23.5)	11.1 (24.6)	11.6 (25.5)	12.3 (27.1)	12.6 (27.7)

Continuous = maximum of continuous operation

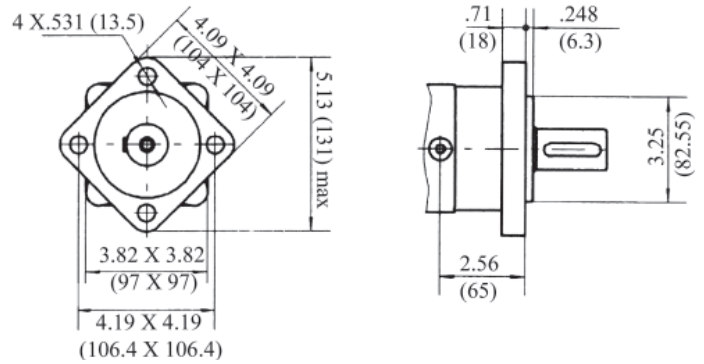
Intermittent = maximum operating range for 6 seconds per minute



BMS INSTALLATION DATA



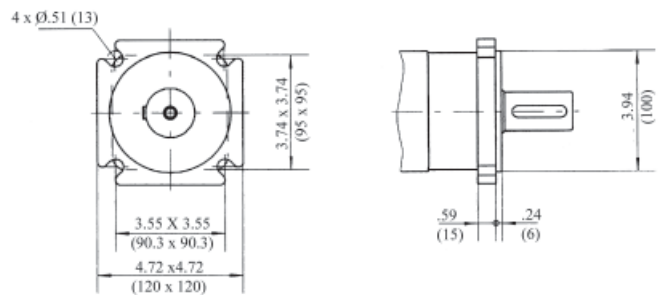
E2 - SAE - "A" 2 BOLT



E4 - 4 BOLT

PORT SIZES	SAE	NPT
P (A,B)	7/8-14 SAE	1/2-14 NPTF
T	7/16-20 SAE	7/16-20 SAE

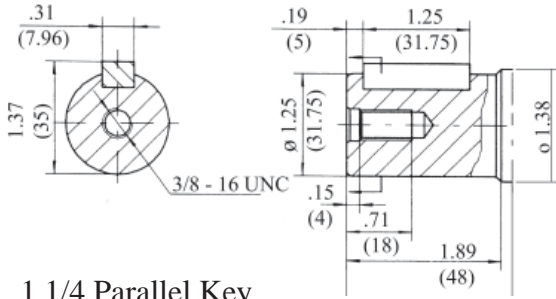
MODEL BMS	L		L1		L2	
	inches	mm	inches	mm	inches	mm
BMS 80	6.61	168	.63	16	4.88	124
BMS 100	6.77	172	.79	20	5.04	128
BMS 125	6.97	177	.98	20	5.24	133
BMS 160	7.22	183.5	1.24	31.5	5.49	140
BMS 200	7.57	192	1.57	40	5.83	148
BMS 250	7.95	202	1.97	50	6.22	158
BMS 315	8.43	214	2.44	62	6.69	170
BMS 375	8.90	226	2.91	74	7.16	182



B2 - Similar to SAE "B" 4 Bolt

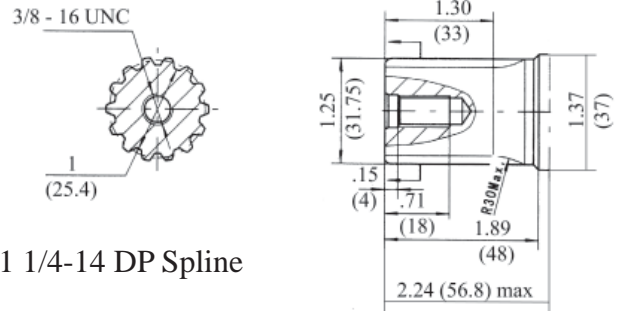
MODEL BMS DRIVE SHAFT DATA

G



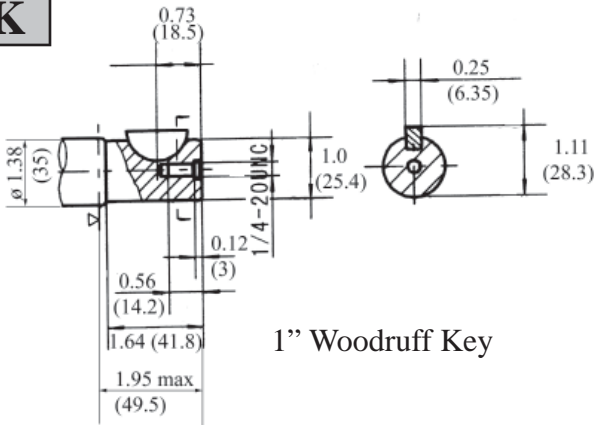
1 1/4 Parallel Key

F



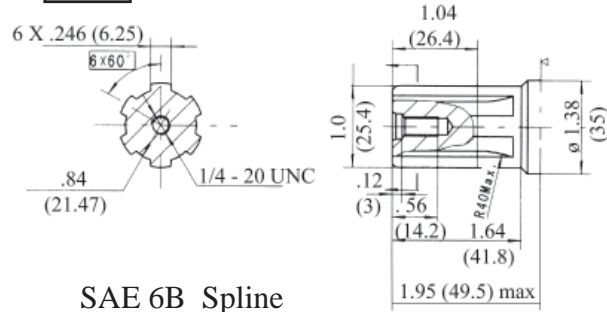
1 1/4-14 DP Spline

K



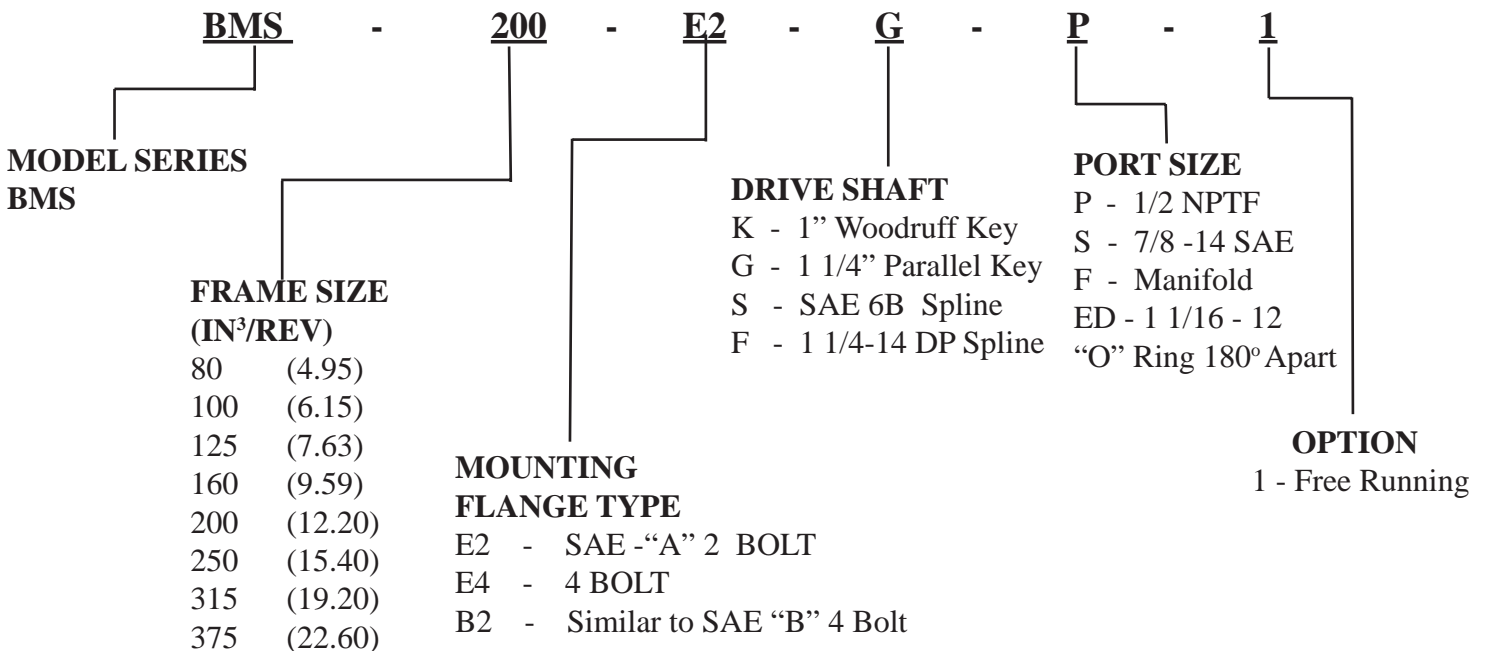
1" Woodruff Key

S



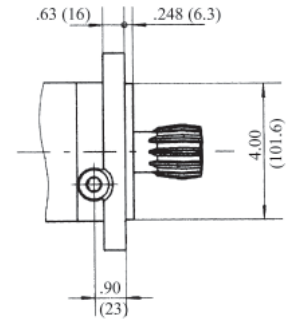
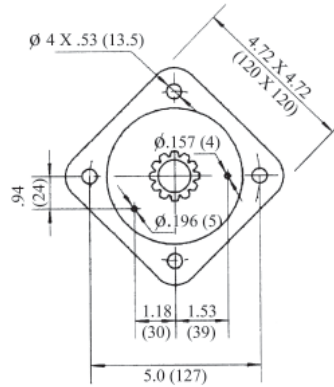
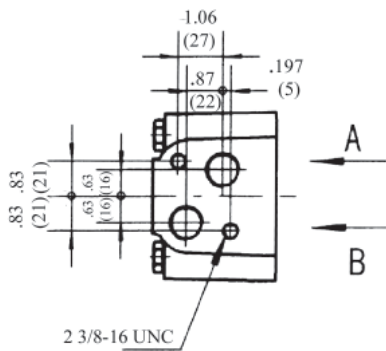
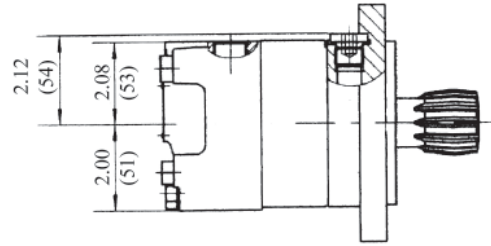
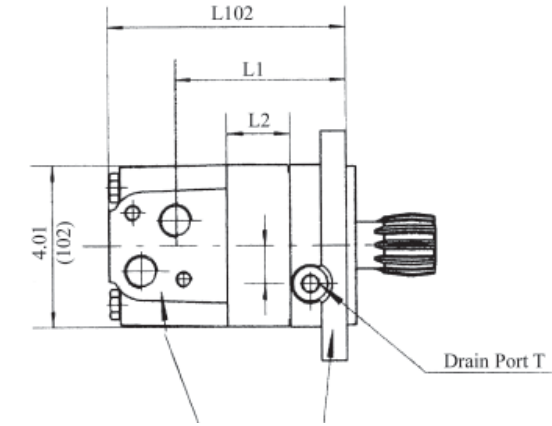
SAE 6B Spline

BMS MODEL NUMBER DATA



Additional flange and drive shaft options available please consult factory

BMSS INSTALLATION DATA (BEARINGLESS DESIGN)



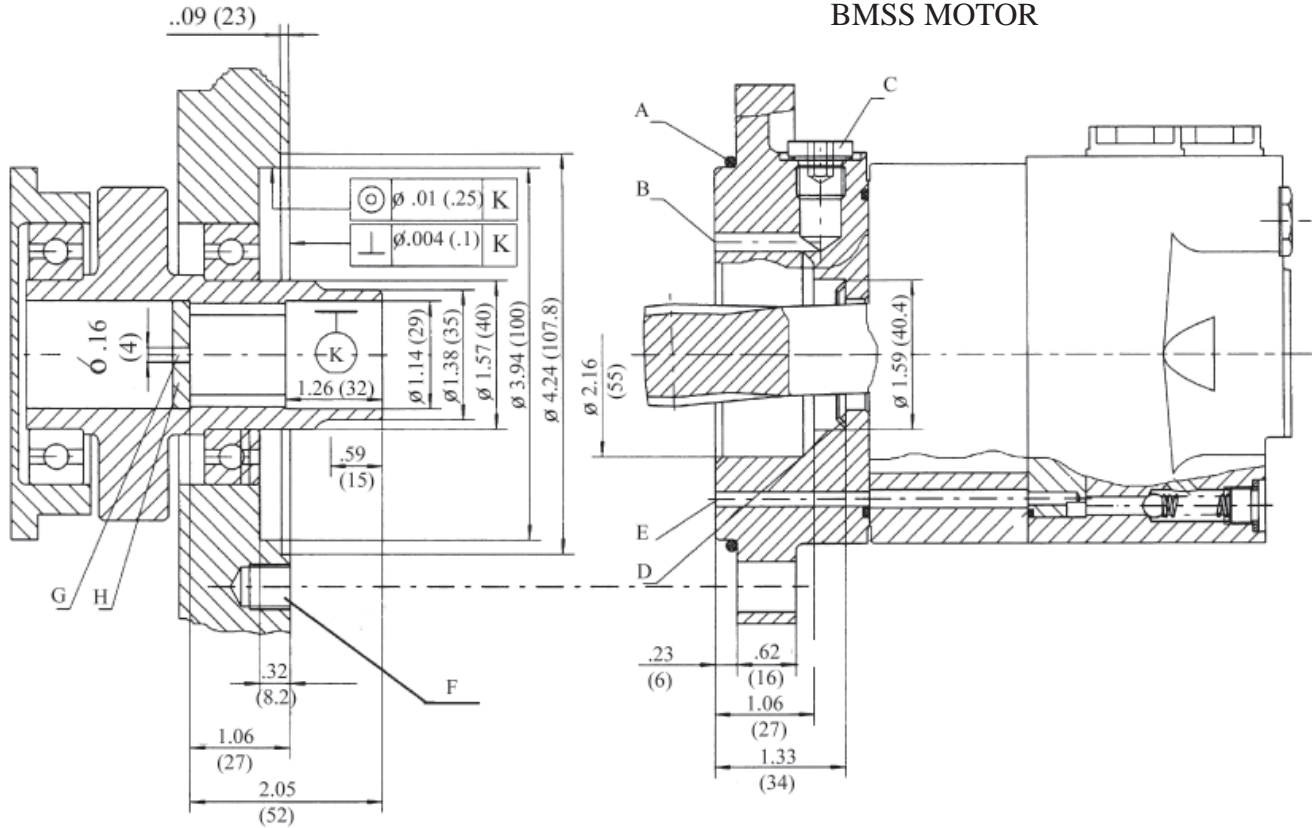
E - Square Flange
4 Bolt

MODEL BMSS	L		L1		L2	
	inches	mm	inches	mm	inches	mm
BMSS 80	4.92	125	.63	16	3.25	82.5
BMSS 100	5.27	134	.79	20	3.54	90
BMSS 125	5.47	139	.98	20	3.74	95
BMSS 160	5.73	145.5	1.24	31.5	3.99	101.5
BMSS 200	6.06	154	1.57	40	4.33	110
BMSS 250	6.46	164	1.97	50	4.72	120
BMSS 315	6.93	176	2.44	62	5.20	132
BMSS 375	7.40	188	2.91	74	5.67	144

PORT SIZES	SAE	NPT
P (A,B)	7/8-14 SAE	1/2-14 NPTF
T	7/16-20 SAE	7/16-20 SAE

BMSS MOUNTING DATA

Required dimensions of the component to be attached



A: O-RING 100 X 3

B: EXTERNAL DRAIN CHANNEL

C: DRAIN CONNECTION

D: CONICAL SEAL RING

E: INTERNAL DRAIN CHANNEL

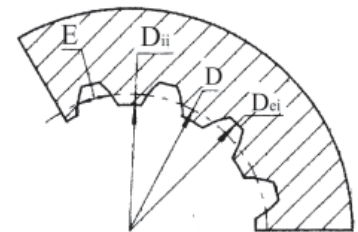
F: M10 MIN 15mm DEEP

G: OIL CIRCULATION HOLE

H: HARDENED STOP PLATE

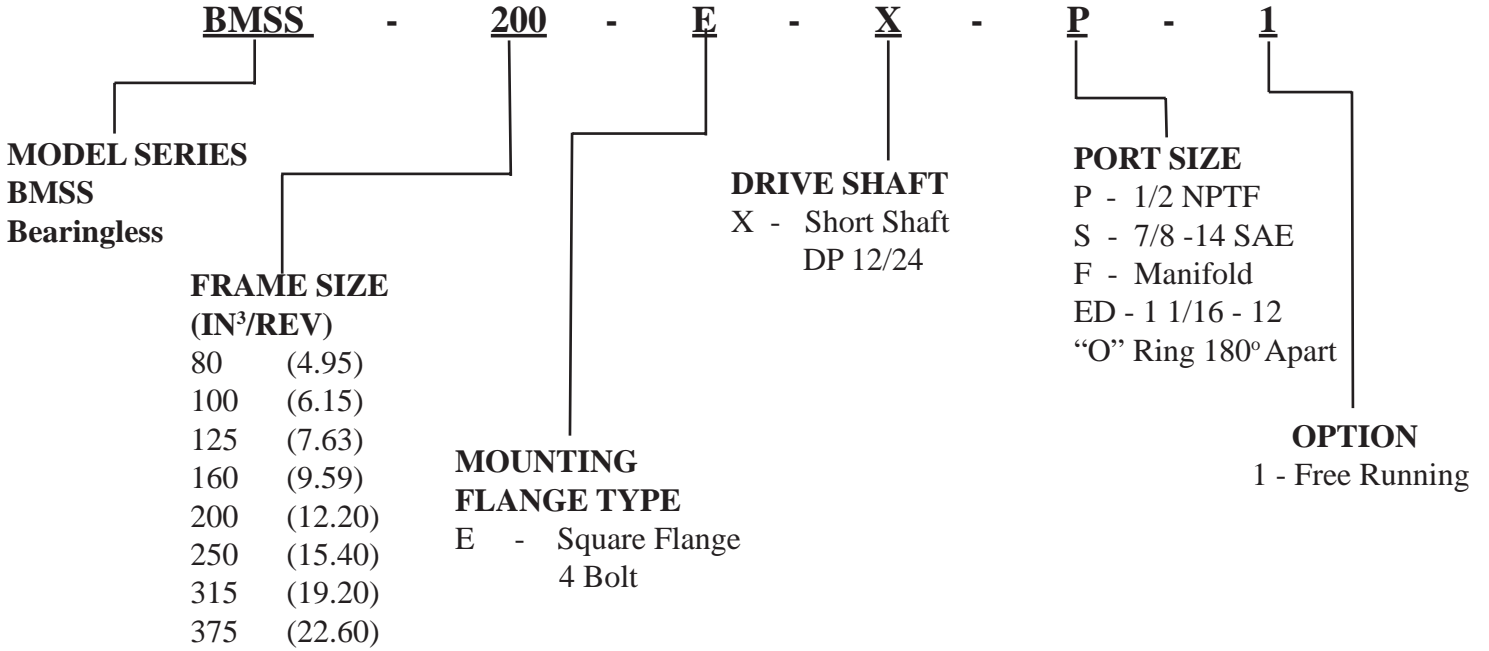
INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

FILLET ROOT SIDE FIT		
Number of teeth	Z	12
Diametral Pitch	DP	12/24
Pressure Angle	D	30°
Pitch Diameter	D	ϕ 1.0 (25.4)
Major Diameter	D _{ei}	ϕ 1.10 (28)
Minor Diameter	D _{ii}	ϕ .905 (23)
Space Width (Circular)	E	0.169 (4.308)



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

BMSS MODEL NUMBER DATA



BMS/BMSS 80		80.6 Cm³/Rev 4.92 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	21 (3090)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	15 (3.95)	35 (310)	80 (708)	120 (1062)	158 (1398)	195 (1726)	235 (2080)	249 (2204)
		180 rpm	174 rpm	168 rpm	164 rpm	158 rpm	151 rpm	143 rpm
	30 (7.90)	35 (310)	80 (708)	120 (1062)	158 (1398)	195 (1726)	240 (2124)	260 (2301)
		362 rpm	352 rpm	346 rpm	338 rpm	330 rpm	322 rpm	310 rpm
	40 (10.50)	35 (310)	79 (699)	119 (1053)	155 (1372)	193 (1708)	234 (2071)	250 (2213)
		482 rpm	473 rpm	464 rpm	453 rpm	444 rpm	434 rpm	415 rpm
	50 (13.20)	30 (266)	77 (681)	117 (1035)	153 (1354)	192 (1699)	232 (2053)	248 (2195)
		602 rpm	594 rpm	587 rpm	569 rpm	560 rpm	551 rpm	522 rpm
Max Cont.	75 (19.75)	25 (221)	75 (664)	114 (1009)	152 (1345)	190 (1682)	230 (2036)	245 (2168)
		840 rpm	832 rpm	817 rpm	796 rpm	786 rpm	777 rpm	737 rpm
Max Int.	90 (23.85)	24 (217)	73 (646)	110 (974)	150 (1328)	185 (1637)	225 (1991)	240 (2124)
		900 rpm	893 rpm	872 rpm	853 rpm	843 rpm	834 rpm	792 rpm

BMS/BMSS 100		100.8 Cm³/Rev 6.15 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	21 (3090)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	15 (3.95)	48 (425)	95 (841)	150 (1328)	200 (1770)	250 (2213)	289 (2558)	310 (2744)
		146 rpm	144 rpm	139 rpm	135 rpm	130 rpm	120 rpm	105 rpm
	30 (7.90)	45 (398)	94 (832)	146 (1292)	198 (1752)	250 (2213)	295 (2611)	317 (2805)
		291 rpm	289 rpm	278 rpm	274 rpm	269 rpm	258 rpm	242 rpm
	40 (10.50)	43 (381)	89 (788)	142 (1492)	196 (1735)	248 (2195)	293 (2593)	316 (2797)
		387 rpm	384 rpm	374 rpm	359 rpm	350 rpm	335 rpm	320 rpm
	50 (13.20)	40 (354)	88 (779)	135 (1195)	194 (1717)	247 (2186)	292 (2584)	315 (2788)
		486 rpm	483 rpm	473 rpm	462 rpm	450 rpm	430 rpm	420 rpm
Max Cont.	60 (15.85)	37 (327)	88 (779)	132 (1168)	185 (1657)	244 (2159)	289 (2558)	312 (2761)
		588 rpm	584 rpm	574 rpm	562 rpm	550 rpm	538 rpm	520 rpm
Max Int.	75 (19.75)	35 (310)	80 (708)	130 (1151)	180 (1593)	240 (2124)	286 (2531)	310 (2744)
		740 rpm	735 rpm	720 rpm	705 rpm	696 rpm	676 rpm	653 rpm
Max Int.	90 (23.85)	30 (266)	75 (664)	124 (1097)	170 (1505)	236 (2089)	277 (24510)	303 (2682)
		850 rpm	840 rpm	810 rpm	787 rpm	770 rpm	750 rpm	747 rpm

BMS/BMSS 125		125 Cm³/Rev 7.65 in³/Rev					Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	21 (3090)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	15 (3.95)	55 (487)	120 (1062)	176 (1558)	245 (2168)	309 (2735)	349 (3089)	375 (3319)
		112 rpm	110 rpm	103 rpm	96 rpm	93 rpm	90 rpm	84 rpm
	30 (7.90)	55 (487)	120 (1062)	175 (1549)	250 (2213)	324 (2867)	375 (3319)	408 (3611)
		222 rpm	220 rpm	217 rpm	208 rpm	200 rpm	199 rpm	190 rpm
	40 (10.50)	55 (487)	120 (1062)	175 (1549)	250 (2213)	324 (2867)	370 (3275)	408 (3611)
		302 rpm	298 rpm	292 rpm	284 rpm	276 rpm	268 rpm	260 rpm
	50 (13.20)	50 (443)	115 (443)	176 (1558)	248 (2195)	320 (3832)	370 (3275)	406 (3593)
		379 rpm	373 rpm	368 rpm	363 rpm	350 rpm	339 rpm	328 rpm
Max Cont.	60 (15.85)	45 (398)	113 (1000)	171 (1513)	245 (2168)	324 (2867)	368 (3257)	406 (3593)
		456 rpm	448 rpm	443 rpm	439 rpm	425 rpm	406 rpm	393 rpm
Max Int.	75 (19.75)	45 (398)	110 (974)	167 (1478)	240 (2724)	314 (2779)	370 (3275)	401 (3549)
		570 rpm	563 rpm	555 rpm	546 rpm	533 rpm	515 rpm	503 rpm
Max Int.	90 (23.85)	40 (354)	105 (938)	162 (1434)	237 (2097)	309 (2735)	365 (3230)	398 (3522)
		685 rpm	676 rpm	670 rpm	659 rpm	644 rpm	625 rpm	610 rpm

BMS/BMSS 160		157.2 Cm³/Rev 9.6 in³/Rev				Max Cont.	Max Int.	
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	21 (3090)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification						
	15 (3.95)	70 (620)	140 (1239)	205 (1814)	305 (2699)	371 (3283)	430 (3806)	473 (4186)
		91	88	84	78	76	74	58
	30 (7.90)	75 (664)	150 (1328)	214 (1894)	321 (2841)	380 (3363)	427 (3779)	490 (4337)
		185	182	176	168	164	162	152
	40 (10.50)	70 (620)	150 (1328)	215 (1903)	320 (2832)	378 (3345)	425 (3761)	488 (4319)
		248	244	239	229	224	217	204
	50 (13.20)	65 (575)	145 (1283)	215 (1903)	316 (2797)	378 (3345)	425 (3761)	482 (4266)
		312	308	304	294	288	280	270
	60 (15.85)	65 (575)	145 (1283)	214 (1894)	315 (2788)	375 (3319)	424 (3752)	482 (4266)
		375	371	365	357	346	336	323
Max Cont.	75 (19.75)	60 (531)	138 (1221)	208 (1841)	311 (2752)	375 (3319)	420 (3717)	
		470	465	458	447	436	426	
Max Int.	90 (23.85)	56 (496)	130 (1151)	200 (1770)	308 (2726)	370 (3275)	414 (3664)	
		564	559	551	541	526	517	

BMS/BMSS 200		200 Cm³/Rev 12.2 in³/Rev				Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification					
	15 (3.95)	89 (788)	190 (1682)	295 (2611)	400 (3540)	484 (4283)	608 (5381)
		73 rpm	71 rpm	68 rpm	64 rpm	60 rpm	52 rpm
	30 (7.90)	87 (770)	190 (1682)	294 (2602)	399 (3531)	485 (4292)	600 (5310)
		148 rpm	146 rpm	143 rpm	140 rpm	135 rpm	127 rpm
	40 (10.50)	86 (761)	188 (1664)	292 (2584)	397 (3513)	483 (4275)	594 (5257)
		193 rpm	191 rpm	189 rpm	186 rpm	181 rpm	172 rpm
	50 (13.20)	80 (708)	184 (1628)	290 (2567)	395 (3496)	480 (4248)	590 (5222)
		247 rpm	245 rpm	243 rpm	240 rpm	235 rpm	226 rpm
	60 (15.85)	74 (655)	178 (1575)	286 (2531)	390 (3452)	475 (4204)	582 (5151)
		298 rpm	295 rpm	293 rpm	290 rpm	284 rpm	273 rpm
Max Cont.	75 (19.75)	58 (513)	160 (1416)	275 (2434)	375 (3319)	460 (4071)	570 (5045)
		372 rpm	369 rpm	365 rpm	362 rpm	358 rpm	346 rpm
Max Int.	90 (23.85)	49 (434)	148 (1310)	260 (2301)	355 (3142)	445 (3938)	555 (4912)
		440 rpm	435 rpm	430 rpm	422 rpm	411 rpm	401 rpm

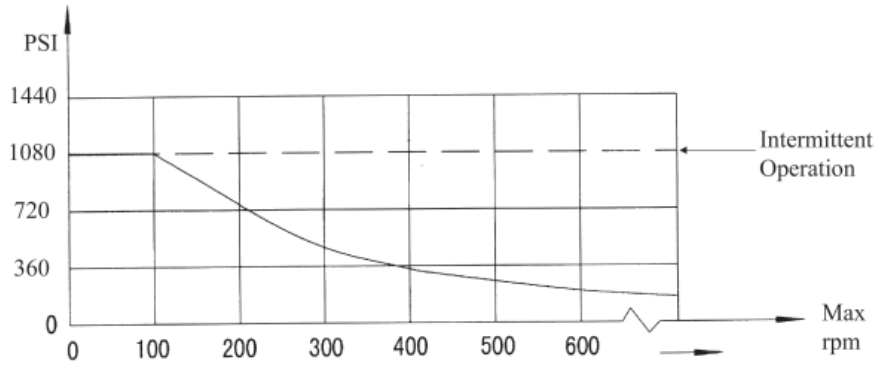
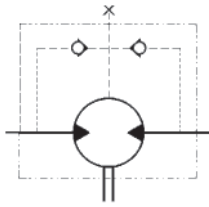
BMS/BMSS 250		252 Cm³/Rev 15.4 in³/Rev				Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	14 (2060)	17.5 (2576)	22.5 (3308)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification					
	15 (3.95)	117 (1035)	230 (2036)	355 (3142)	450 (3983)	554 (4903)	652 (5770)
		58 rpm	55 rpm	52 rpm	51 rpm	47 rpm	46 rpm
	30 (7.90)	117 (1035)	225 (1991)	350 (3098)	446 (3947)	560 (4956)	657 (5814)
		118 rpm	117 rpm	112 rpm	109 rpm	107 rpm	106 rpm
	40 (10.50)	115 (1018)	225 (1991)	348 (3080)	442 (3912)	552 (4885)	650 (5753)
		160 rpm	156 rpm	152 rpm	150 rpm	146 rpm	142 rpm
	50 (13.20)	110 (974)	220 (1947)	345 (3053)	438 (3876)	546 (4832)	645 (5708)
		202 rpm	200 rpm	198 rpm	196 rpm	195 rpm	192 rpm
	60 (15.85)	105 (929)	220 (1947)	340 (3009)	435 (3850)	542 (4797)	642 (5682)
		242 rpm	239 rpm	237 rpm	234 rpm	231 rpm	229 rpm
Max Cont.	75 (19.75)	95 (841)	215 (1903)	338 (2991)	430 (3805)	537 (4742)	638 (5646)
		300 rpm	296 rpm	293 rpm	286 rpm	282 rpm	278 rpm
Max Int.	90 (23.85)	90 (797)	205 (1814)	337 (2982)	420 (3717)	530 (4691)	632 (5593)
		360 rpm	354 rpm	348 rpm	340 rpm	332 rpm	326 rpm

BMS/BMSS 315		314.5 Cm³/Rev 19.2 in³/Rev				Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	10.5 (1546)	12 (1766)	14 (2060)	18.5 (2728)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification					
	15 (3.95)	160 (1416)	320 (2832)	465 (4115)	555 (4912)	650 (5735)	748 (6620)
		48 rpm	47 rpm	45 rpm	43 rpm	40 rpm	38 rpm
	30 (7.90)	165 (1460)	322 (2850)	468 (4142)	560 (4956)	658 (5823)	752 (6655)
		94 rpm	92 rpm	90 rpm	89 rpm	86 rpm	85 rpm
	40 (10.50)	160 (1416)	310 (2744)	457 (4044)	546 (4832)	642 (5682)	741 (6558)
		125 rpm	123 rpm	120 rpm	118 rpm	116 rpm	115 rpm
	50 (13.20)	155 (1372)	305 (2699)	450 (3983)	538 (4761)	637 (5638)	736 (6514)
		158 rpm	156 rpm	153 rpm	150 rpm	147 rpm	145 rpm
	60 (15.85)	152 (1345)	302 (2673)	442 (3912)	532 (4708)	632 (5593)	732 (6478)
	175 rpm	174 rpm	170 rpm	164 rpm	162 rpm	159 rpm	
Max Cont.	75 (19.75)	145 (1283)	295 (2611)	436 (3856)	525 (4646)	628 (5558)	726 (6425)
		236 rpm	234 rpm	230 rpm	227 rpm	225 rpm	222 rpm
Max Int.	90 (23.85)	132 (1168)	280 (2478)	430 (3806)	520 (4602)	622 (5505)	723 (6399)
		285 rpm	282 rpm	280 rpm	276 rpm	273 rpm	270 rpm

BMS/BMSS 375		370 Cm³/Rev 22.6 in³/Rev				Max Cont.	Max Int.
Pressure Mpa (psi)		3.5 (515)	7 (1030)	9 (1325)	10 (1470)	12 (1766)	14 (2060)
F L O W	LPM (GPM)	Torque Mn (in.Lbs) Speed Specification					
	15 (3.95)	185 (1637)	362 (3204)	474 (4195)	512 (4531)	588 (5204)	660 (5841)
		40	39	38	37	35	33
	30 (7.90)	184 (1628)	364 (3221)	475 (4204)	514 (4549)	590 (5222)	661 (5850)
		80	78	77	76	74	72
	40 (10.50)	180 (1593)	362 (3204)	473 (4186)	513 (4540)	588 (5204)	659 (5832)
		106	104	103	102	100	97
	50 (13.20)	160 (1416)	360 (3186)	472 (4177)	511 (4522)	586 (5186)	658 (5823)
		133	131	130	129	128	125
	60 (15.85)	150 (1328)	359 (3177)	471 (4168)	510 (4514)	585 (5177)	657 (5814)
	157	156	155	154	152	150	
Max Cont.	75 (19.75)	130 (1151)	353 (3124)	465 (4115)	504 (4460)	580 (5133)	651 (5761)
		200	198	196	195	225	193
Max Int.	90 (23.85)	105 (929)	350 (3098)	462 (4089)	500 (4425)	584 (5168)	647 (5726)
		238	235	234	232	230	227

MODEL BMS/BMSS TECHNICAL DATA

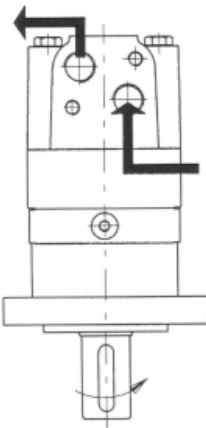
SHAFT SEAL RATED PRESSURE



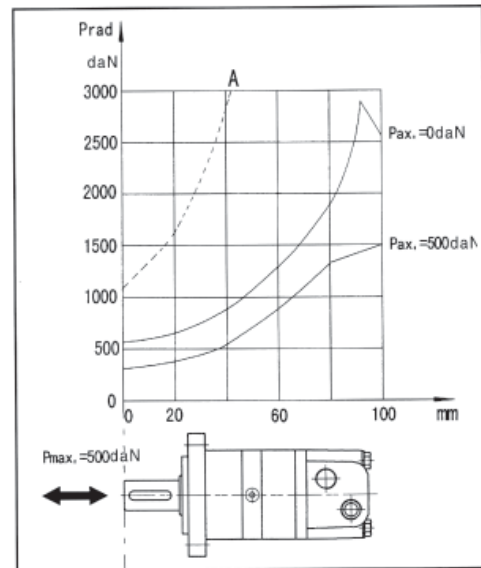
CASE DRAIN

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.