

Orbital Motors

Low Speed, High Torque Motors

BMV / BMVE

Series



ANFIELD Orbital Motor Catalog BMV/BMVE Rev.- (09/18/2025)



Strength in Products,
Strength in Service

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DESCRIPTION

Anfield BMV series medium to heavy-duty motors are high power density for demanding mobile and industrial applications. The BMV is one of the biggest disc valve motors of our line (the other being the BMK10 series). The BMV series motors are offered in 6 displacements with up to 53 gpm and 1480 ft-lb of torque in continuous mode, this motor is powerful and yet provides good efficiency while operating smoothly.

The BMV / BMVE motors consist of nine precision rollers added to the lobes of the outer ring of the gear set provide sliding contact points which act as roller bearings and reduce friction. This increases mechanical efficiency and reduces wear in systems specially with lower fluid viscosity, requiring lower pressure at startup and providing superior drive life and smoother performance at all speeds.

APPLICATIONS

Agriculture equipment, construction equipment, lawn and turf, material handling, crane, road building, dumper, forestry, forklift truck, harvester, mower, paver, salt spreader, scissor lift, screening & crushing, augers, mixers, winch drives, swing drives, grapple heads, feed rollers, broom drives, Lifts and work platforms and more

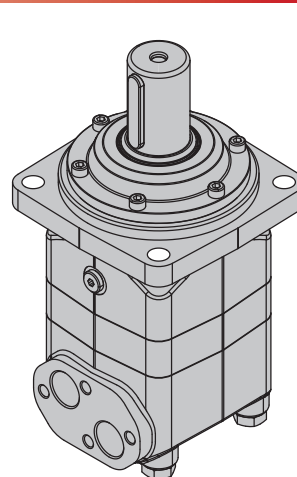
FEATURES

- The BMV series motors deliver power for medium to heavy-duty applications.
- Disc valve and roller gear set design increases mechanical efficiency and reduces wear in the system.
- Output shaft supported in tapered roller bearings for high axial and radial forces.
- Available in 315 to 1000 displacement sizes. Choices of standard and wheel mounting and straight, splined and tapered shafts provide flexibility in application design.
- Choice of SAE, BSPP, and Metric ports.
- Standard case drain with integral internal drain for extended shaft seal life.

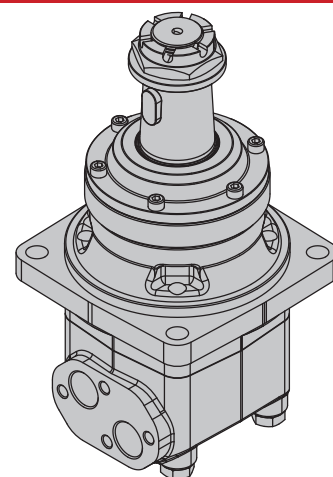
BMV MOTOR CROSS REFERENCE GUIDE

Brand	Series
Danfoss®	OMV
Eaton Char-Lynn®	10,000 series (119-) ¹
White®	DT (700)
Parker®	-
M+S®	MLHV, MV

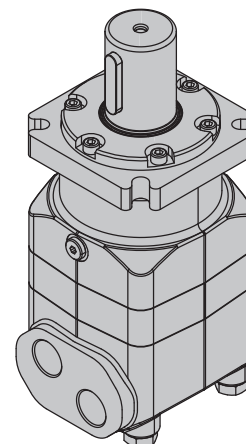
1. Most suitable crossover for Eaton Char-Lynn 119- motors is the Anfield BMK10 series. The BMVE can be an alternative replacement; however performance data table needs to be checked before ordering the BMVE to replace 119- series. Also note that neither BMVE nor BMK10 have a two-speed option.



BMV
Standard

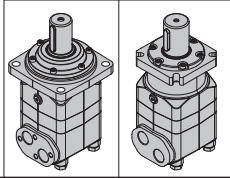


BMV
Wheel Mount



BMVE
Standard

TECHNICAL SPECIFICATIONS - BMV SERIES



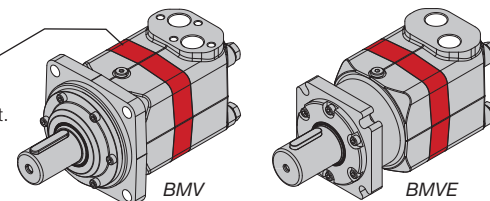
			1	2	3	4	5	6
	BMV	BMVE	315	400	500	630	800	1000
Geometric Displacement	in ³ /r		20.32	25.57	31.61	40.64	48.88	60.41
	cm ³ /r		333	419	518	666	801	990
Max. Speed	rpm	Cont.	510	500	400	320	250	200
		Inter.	630	600	480	380	300	240
Max. Flow	gpm	Cont.	42.3	52.9	52.9	52.9	52.9	52.9
	l/min		160	200	200	200	200	200
		Inter.	52.9	63.5	63.5	63.5	63.5	63.5
			200	240	240	240	240	240
Max. Torque	lbf-ft	Cont.	679.0	870.8	1077.5	1225.1	1387.4	1487.1
	Nm		920	1180	1460	1660	1880	2015
		Inter.	819.2	1040.6	1298.9	1431.7	1557.2	1682.6
			1110	1410	1760	1940	2110	2280
		Peak	952	1210.3	1512.9	1631.0	1822.9	1771.2
			1290	1640	2050	2210	2470	2400
Max. Pressure Drop	Δ psi	Cont.	2900	2900	2900	2610	2320	2030
	Δ bar		200	200	200	180	160	140
		Inter.	3480	3480	3480	3045	2610	2320
			240	240	240	210	180	160
		Peak	4060	4060	4060	3480	3045	2610
			280	280	280	240	210	180
Weight	lbs		70.0	71.7	73.7	76.8	80.3	84.9
	kg		31.8	32.6	33.5	34.9	36.5	38.6

Notes:

1. Continuous rating (Cont.): motor may be run continuously at these ratings.
2. Intermittent operation (Inter.): 10% of every minute. (6 sec.)
3. Peak: 1% of every minute. (0.6 sec.)
4. Δ Pressure: Δ psi [Δ bar] True pressure difference between inlet port and outlet port.
5. Motor Power (HP) = (Torque Output (In. lbs.) x RPM) / 63025
6. Simultaneous maximum torque & maximum speed NOT recommended and may damage the motor.

PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV - BMVE 315

20.3 in³/rev. (333.0 cm³/rev.)

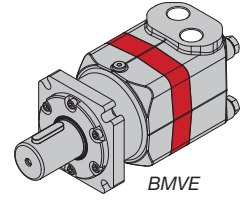
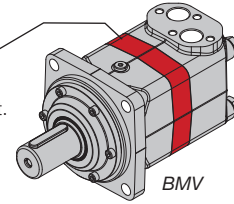
Torque Speed		Δ Pressure psi (bar) →					Max. Cont.	Max. Inter.
lbf.ft (Nm) rpm		510 (35)	1015 (70)	1450 (100)	2030 (140)	2610 (180)	2900 (200)	3480 (240)
Flow gpm (l/min) ↓	2.6 (10)	103.3 (140) 26	216.8 (294) 24	324.5 (440) 23	449.9 (610) 22	547.3 (742) 20	623.2 (845) 17	737.6 (1000) 14
	5.3 (20)	112.8 (153) 55	231.6 (314) 54	343.7 (466) 53	469.1 (636) 52	580.5 (787) 51	660.1 (895) 48	789.2 (1070) 44
	13.2 (50)	109.9 (149) 145	230.1 (312) 144	343.0 (465) 142	482.4 (654) 140	601.1 (815) 137	689.6 (935) 133	820.2 (1112) 127
	19.8 (75)	105.5 (143) 220	224.2 (304) 218	337.8 (458) 215	473.5 (642) 211	601.8 (816) 207	693.3 (940) 202	825.3 (1119) 195
	26.4 (100)	100.3 (136) 294	219.1 (297) 292	333.4 (452) 290	469.1 (636) 287	597.4 (810) 283	690.4 (936) 278	817.2 (1108) 270
	33.0 (125)	90.7 (123) 368	210.9 (286) 366	326.0 (442) 364	461.7 (626) 361	589.3 (799) 357	679.3 (921) 352	806.2 (1093) 345
	39.6 (150)	84.1 (114) 445	202.8 (275) 443	320.8 (435) 441	453.6 (615) 437	581.2 (788) 430	668.2 (906) 422	795.1 (1078) 410
	Max. Cont. 42.3 (160)	78.9 (107) 475	197.7 (268) 473	317.2 (430) 470	448.4 (608) 466	575.3 (780) 460	660.1 (895) 452	789.2 (1070) 439
	Max. Inter. 52.8 (200)	60.5 (82) 596	183.7 (249) 594	303.9 (412) 590	437.4 (593) 584	559.1 (758) 576	642.4 (871) 565	772.2 (1047) 544

☐ Continuous values
 ☐ Intermittent values
(max. 10% operation every minute)

Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area. Simultaneous maximum torque and maximum speed NOT recommended and may damage the motor. Performance data is typical of randomly selected motors at back pressure of 72.5 to 145 psi [5 to 10 bar] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F]. Actual data may vary slightly from one production motor to another.

PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV - BMVE 400

25.6 in³/rev. (419.0 cm³/rev.)

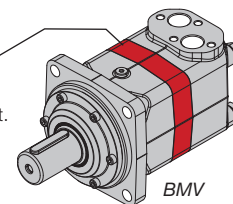
Torque Speed		Δ Pressure psi (bar) →					Max. Cont.	Max. Inter.
lb.ft (Nm) rpm		510 (35)	1015 (70)	1450 (100)	2030 (140)	2610 (180)	2900 (200)	3480 (240)
Flow gpm (l/min) ↓	2.6 (10)	135.0 (183) 20	284.0 (385) 20	418.9 (568) 19	572.3 (776) 18	714.0 (968) 17	812.1 (1101) 16	952.9 (1292) 14
	5.3 (20)	144.6 (196) 44	293.5 (398) 44	435.2 (590) 43	601.1 (815) 42	744.9 (1010) 40	849.7 (1152) 39	992.8 (1346) 37
	13.2 (50)	147.5 (200) 114	296.5 (402) 113	444.7 (603) 113	621.0 (842) 112	767.1 (1040) 110	874.7 (1186) 108	1054.7 (1430) 103
	19.8 (75)	143.8 (195) 175	290.6 (394) 173	439.6 (596) 170	618.1 (838) 166	769.3 (1043) 163	876.2 (1188) 157	1056.2 (1432) 152
	26.4 (100)	126.9 (172) 236	284.0 (385) 235	437.4 (593) 233	610.0 (827) 231	764.1 (1036) 227	873.3 (1184) 223	1051.0 (1425) 215
	33.0 (125)	123.2 (167) 296	275.8 (374) 294	430.0 (583) 291	601.8 (816) 288	753.0 (1021) 282	868.1 (1177) 275	1042.2 (1413) 268
	39.6 (150)	116.5 (158) 355	266.3 (361) 354	412.3 (559) 352	590.8 (801) 349	743.5 (1008) 344	859.3 (1165) 335	1025.2 (1390) 324
	46.2 (175)	105.5 (143) 416	255.2 (346) 414	407.9 (553) 411	578.2 (784) 407	729.4 (989) 403	844.5 (1145) 396	1015.6 (1377) 388
	52.8 (200)	87.0 (118) 475	244.1 (331) 473	395.3 (536) 469	567.9 (770) 463	714.7 (969) 455	832.0 (1128) 448	1000.1 (1356) 439
Max. Cont.								
Max. Inter.	63.4 (240)	60.5 (82) 571	222.0 (301) 596	373.2 (506) 565	545.8 (740) 548	695.5 (943) 539	814.3 (1104) 530	982.4 (1332) 520

Continuous values Intermittent values
(max. 10% operation every minute)

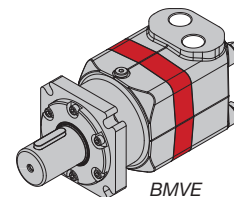
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PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV



BMVE

BMV - BMVE 500

31.6 in³/rev. (518.0 cm³/rev.)

Torque Speed		Δ Pressure psi (bar) →					Max. Cont.	Max. Inter.
lbf.ft (Nm) rpm		510 (35)	1015 (70)	1450 (100)	2030 (140)	2610 (180)	2900 (200)	3480 (240)
Flow gpm (l/min) ↓	2.6 (10)	178.5 (242) 17	345.2 (468) 17	513.3 (696) 16	707.3 (959) 16	877.7 (1190) 15	997.9 (1353) 13	1185.3 (1607) 11
	5.3 (20)	180.7 (245) 36	369.5 (501) 35	544.3 (738) 35	739.8 (1003) 34	908.7 (1232) 33	1028.2 (1394) 32	1222.9 (1658) 29
	13.2 (50)	177.0 (240) 93	368.8 (500) 92	559.1 (758) 91	756.0 (1025) 90	936.7 (1270) 88	1068.7 (1449) 85	1285.6 (1743) 80
	19.8 (75)	171.9 (233) 140	367.3 (498) 139	554.6 (752) 137	759.7 (1030) 135	950.0 (1288) 132	1087.9 (1475) 127	1302.5 (1766) 120
	26.4 (100)	168.2 (228) 189	362.1 (491) 187	551.7 (748) 185	756.7 (1026) 182	950.7 (1289) 178	1085.7 (1472) 173	1298.1 (1760) 166
	33.0 (125)	162.3 (220) 237	356.2 (483) 236	547.3 (742) 234	747.9 (1014) 231	944.1 (1280) 227	1076.8 (1460) 223	1287.0 (1745) 216
	39.6 (150)	148.2 (201) 287	343.0 (465) 286	533.3 (723) 284	743.5 (1008) 281	922.0 (1250) 276	1054.0 (1429) 270	1280.4 (1736) 260
	46.2 (175)	134.2 (182) 335	329.0 (446) 334	524.4 (711) 332	735.3 (997) 329	913.1 (1238) 325	1037.0 (1406) 320	1264.9 (1715) 310
	52.8 (200)	118.7 (161) 384	312.0 (423) 383	498.6 (676) 381	718.4 (974) 378	898.3 (1218) 374	1021.5 (1385) 366	1251.6 (1697) 354
Max. Cont.								
Max. Inter.								
	63.4 (240)	88.5 (120) 461	278.8 (378) 459	458.8 (622) 457	679.3 (921) 454	864.4 (1172) 450	988.3 (1340) 444	1217.0 (1650) 432

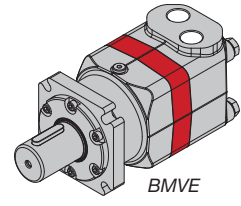
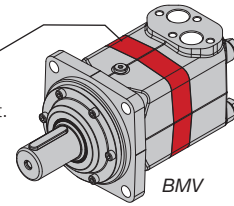
Continuous values

Intermittent values
(max. 10% operation every minute)

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PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV - BMVE 630

40.6 in³/rev. (666.0 cm³/rev.)

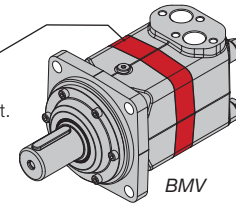
Torque Speed		Δ Pressure psi (bar) →					Max. Cont.	Max. Inter.
lbf.ft (Nm) rpm		510 (35)	870 (60)	1305 (90)	1740 (120)	2175 (150)	2610(180)	3045 (210)
Flow gpm (l/min) ↓	2.6 (10)	206.5 (280) 14	385.0 (522) 13	598.9 (812) 13	811.3 (1100) 12	935.2 (1268) 12	1142.5 (1549) 11	1315.8 (1784) 10
	5.3 (20)	212.4 (288) 28	407.1 (552) 28	618.8 (839) 27	812.1 (1101) 27	969.9 (1315) 26	1185.3 (1607) 24	1374.8 (1864) 22
	13.2 (50)	213.2 (289) 72	409.3 (555) 72	640.2 (868) 71	838.6 (1137) 69	1006.0 (1364) 68	1240.6 (1682) 66	1442.7 (1956) 62
	19.8 (75)	199.1 (270) 109	404.2 (548) 108	636.5 (863) 106	826.1 (1120) 104	997.2 (1352) 102	1239.1 (1680) 99	1448.6 (1964) 94
	26.4 (100)	194.7 (264) 146	396.8 (538) 145	631.4 (856) 143	806.2 (1093) 141	995.7 (1350) 138	1234.7 (1674) 135	1449.3 (1965) 130
	33.0 (125)	185.1 (251) 184	380.6 (516) 183	617.3 (837) 181	789.9 (1071) 179	985.4 (1336) 177	1223.6 (1659) 173	1438.2 (1950) 168
	39.6 (150)	177.0 (240) 221	365.1 (495) 220	602.6 (817) 219	784.0 (1063) 217	981.0 (1330) 215	1217.0 (1650) 212	1422.0 (1928) 205
	46.2 (175)	154.9 (210) 259	357.7 (485) 258	587.1 (796) 257	775.9 (1052) 254	958.8 (1300) 250	1206.6 (1636) 246	1407.3 (1908) 241
	Max. Cont. 52.8 (200)	134.2 (182) 297	345.9 (469) 297	553.9 (751) 295	750.8 (1018) 293	944.1 (1280) 290	1188.2 (1611) 284	1388.8 (1883) 273
Max. Inter. 63.4 (240)		95.9 (130) 358	306.8 (416) 357	525.1 (712) 355	721.3 (978) 351	912.4 (1237) 346	1152.8 (1563) 340	1353.4 (1835) 332

Continuous values Intermittent values (max. 10% operation every minute)

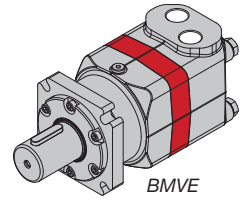
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PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV



BMVE

BMV - BMVE 800

48.9 in³/rev. (801.0 cm³/rev.)

Torque Speed		Δ Pressure psi (bar) →					Max. Cont.	Max. Inter.
lbf.ft (Nm) rpm		365 (25)	725 (50)	1160 (80)	1450 (100)	1885 (130)	2320 (160)	2611 (180)
Flow gpm (l/min) ↓	2.6 (10)	205.0 (278) 11	416.7 (565) 10	612.2 (830) 10	807.6 (1095) 9	1036.3 (1405) 8	1262.7 (1712) 8	1412.4 (1915) 7
	5.3 (20)	208.0 (282) 23	421.1 (571) 22	623.2 (845) 22	848.2 (1150) 21	1073.9 (1456) 20	1315.1 (1783) 18	1470.7 (1994) 16
	13.2 (50)	212.4 (288) 60	429.3 (582) 59	631.4 (856) 57	857.0 (1162) 87	1079.1 (1463) 54	1320.2 (1790) 52	1475.9 (2001) 48
	19.8 (75)	198.4 (269) 91	427.8 (580) 90	630.6 (855) 89	859.3 (1165) 87	1080.5 (1465) 84	1317.3 (1786) 81	1470.0 (1993) 105
	26.4 (100)	185.1 (251) 122	417.5 (566) 121	619.6 (840) 120	840.8 (1140) 118	1068.0 (1448) 115	1303.3 (1767) 111	1461.1 (1985) 105
	33.0 (125)	178.5 (242) 153	394.6 (535) 152	607.8 (824) 150	824.6 (1118) 147	1052.5 (1427) 143	1282.6 (1739) 139	1457.4 (1976) 133
	39.6 (150)	174.1 (236) 185	388.0 (526) 183	595.9 (808) 181	812.8 (1102) 178	1033.3 (1401) 174	1264.2 (1714) 169	1444.9 (1959) 163
	46.2 (175)	158.6 (215) 216	371.7 (504) 214	584.9 (793) 212	795.8 (1079) 209	1015.6 (1377) 206	1252.4 (1698) 203	1427.9 (1936) 196
	52.8 (200)	145.3 (197) 247	345.2 (468) 245	564.2 (765) 243	784.0 (1063) 240	1004.6 (1362) 237	1239.8 (1681) 232	1411.0 (1913) 225
Max. Cont.	52.8 (200)	145.3 (197) 247	345.2 (468) 245	564.2 (765) 243	784.0 (1063) 240	1004.6 (1362) 237	1239.8 (1681) 232	1411.0 (1913) 225
Max. Inter.	63.4 (240)	87.0 (118) 297	286.2 (388) 296	525.9 (713) 295	752.3 (1020) 293	972.1 (1318) 288	1207.4 (1637) 283	1355.6 (1838) 277

Continuous values

Intermittent values
(max. 10% operation every minute)

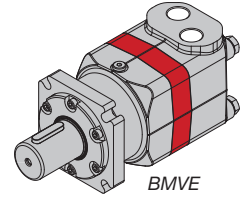
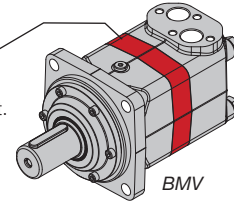
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Performance data is typical of randomly selected motors at back pressure of 72.5 to 145 psi [5 to 10 bar] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Actual data may vary slightly from one production motor to another.

PERFORMANCE DATA - BMV SERIES

Performance data is based on the motor displacement.



BMV - BMVE 1000

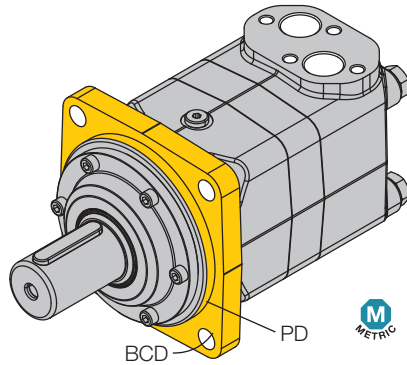
60.4 in³/rev. (990.0 cm³/rev.)

Torque Speed		Δ Pressure psi (bar) ➔				Max. Cont.	Max. Inter.
lb.ft (Nm) rpm		365 (25)	725 (50)	1015 (70)	1450 (100)	2030 (140)	2320 (160)
Flow gpm (l/min) ↓	2.6 (10)	230.1 (312) 9	472.0 (640) 9	716.2 (971) 9	1032.6 (1400) 8	1458.9 (1978) 7	1666.2 (2259) 6
	5.3 (20)	236.0 (320) 28	477.9 (648) 27	721.3 (978) 26	1040.0 (1410) 25	1460.4 (1980) 23	1674.3 (2270) 21
	13.2 (50)	240.4 (326) 47	483.1 (655) 46	731.7 (992) 45	1048.8 (1422) 43	1486.2 (2015) 41	1681.6 (2280) 38
	19.8 (75)	234.5 (318) 72	473.5 (642) 71	728.0 (987) 70	1051.0 (1425) 68	1477.3 (2003) 66	1678.7 (2276) 63
	26.4 (100)	227.9 (309) 98	467.6 (634) 97	725.0 (983) 95	1045.9 (1418) 93	1470.7 (1994) 90	1654.3 (2243) 86
	33.0 (125)	223.5 (303) 123	460.2 (624) 122	719.1 (975) 120	1039.2 (1409) 117	1466.3 (1988) 114	1640.3 (2224) 110
	39.6 (150)	205.0 (278) 149	444.0 (602) 148	708.8 (961) 146	1009.0 (1368) 144	1447.8 (1963) 140	1628.5 (2208) 133
	46.2 (175)	194.7 (264) 174	427.8 (580) 172	697.7 (946) 170	986.9 (1338) 166	1419.8 (1925) 162	1592.4 (2159) 155
	Max. Cont. 52.8 (200)	169.6 (230) 199	410.1 (556) 196	672.7 (912) 193	958.8 (1300) 190	1394.7 (1891) 185	1552.6 (2105) 178
	Max. Inter. 63.4 (240)	122.4 (166) 240	378.4 (513) 237	639.5 (867) 233	934.5 (1267) 229	1346.0 (1825) 225	1500.2 (2034) 218

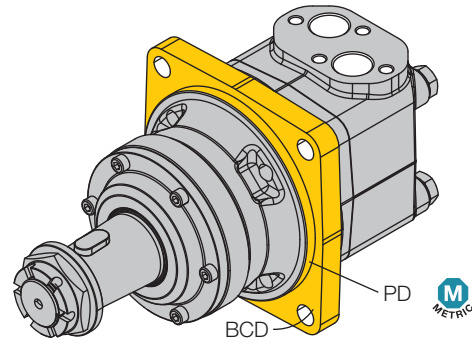
Continuous values Intermittent values (max. 10% operation every minute)

Motors run with high efficiency in all areas until maximum continuous values are exceeded. For best service life of the motor select a motor to run with a torque and speed range printed in the light shaded area. Simultaneous maximum torque and maximum speed NOT recommended and may damage the motor. Performance data is typical of randomly selected motors at back pressure of 72.5 to 145 psi [5 to 10 bar] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F]. Actual data may vary slightly from one production motor to another.

BMV MOUNTING OVERVIEW

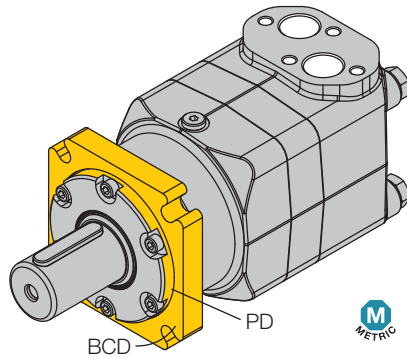


BMV Mounting 4 (p 12)
4-Bolt, 160 B4
Pilot Dia. (PD): 160 mm
Bolt Circle Dia. (BCD): 200 mm

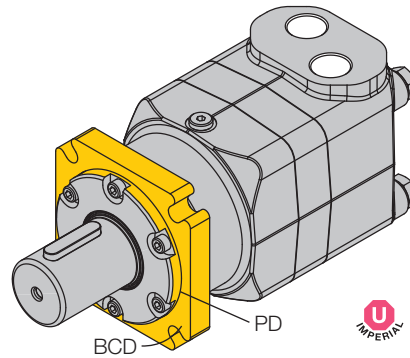


BMV Mounting W (p 13)
4-Bolt, Wheel (European version)
Pilot Dia. (PD): 180 mm
Bolt Circle Dia. (BCD): 224 mm

BMVE MOUNTING OVERVIEW



BMVE Mounting K4 (p ??)
4-Bolt, 125 B4
Pilot Dia. (PD): 125 mm
Bolt Circle Dia. (BCD): 160 mm



BMVE Mounting K6 (p ??)
4-Bolt, SAE C
Pilot Dia. (PD): 5.00"
Bolt Circle Dia. (BCD): 6.38"

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BMV OVERALL DIMENSIONS & MOUNTING DETAILS

BMV MOUNTING FLANGE

CODE W **M** METRIC

4-Bolt, Wheel Mount (European Version)

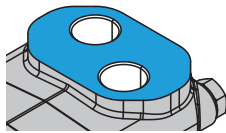
- Pilot Diameter: 180 mm
- Bolt Circle Diameter: 224 mm

Port Options available for BMV with W Mount:
For details, go to page 13

BMV PORT

S S1 G M5

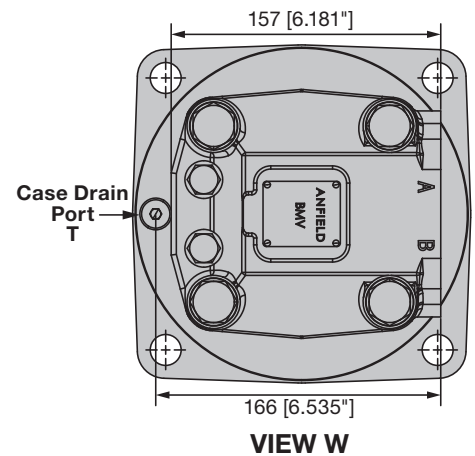
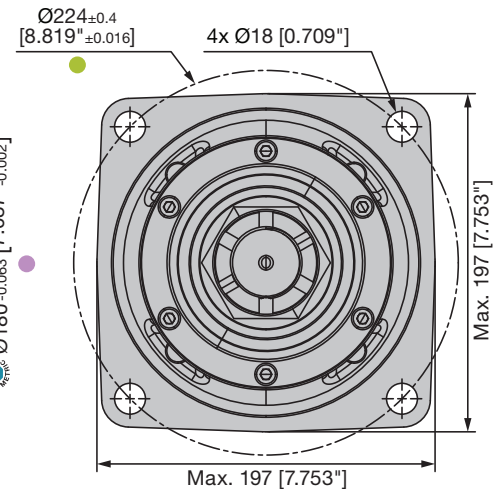
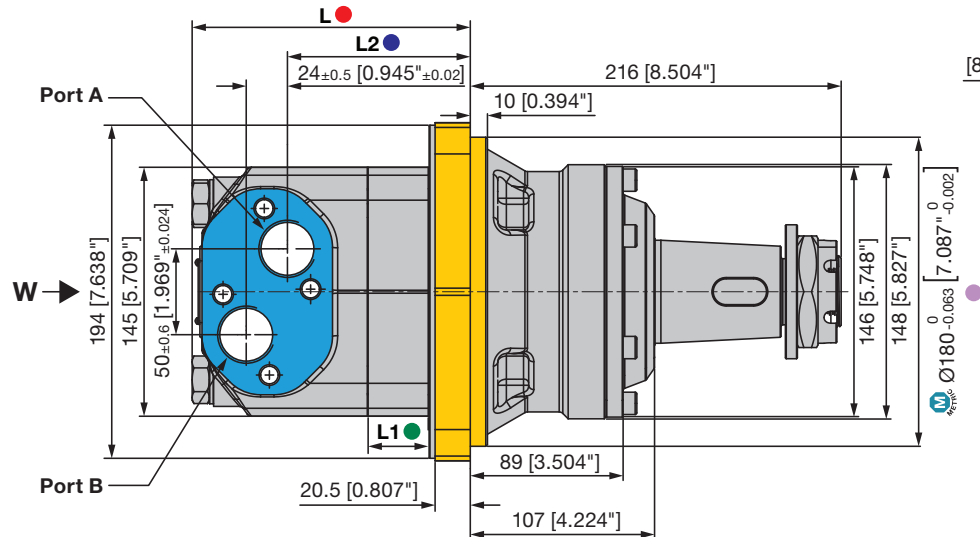
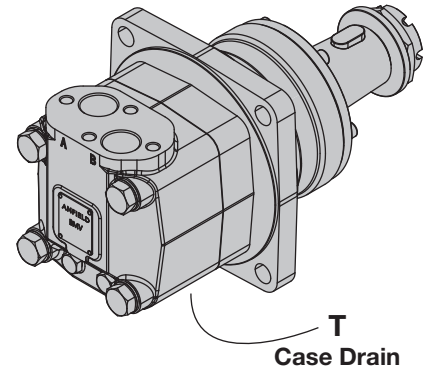
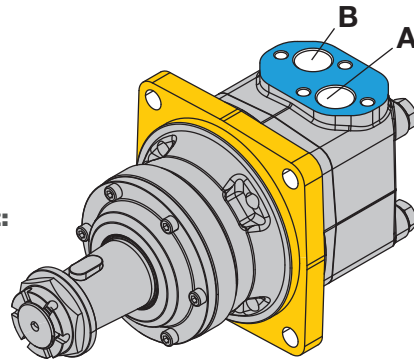
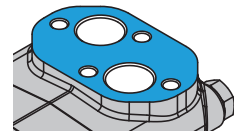
Line Mount
Threaded Ports



BMV PORT

D M

Line/Manifold Mount
Threaded Ports & Bolt Holes for Manifold



Model	GEROLER WIDTH		
	L ● mm [in]	L1 ● mm [in]	L2 ● mm [in]
BMV-315-W	148.5 [5.85"]	20 [0.79"]	93.5 [3.68"]
BMV-400-W	155.5 [6.12"]	27 [1.06"]	100.5 [3.96"]
BMV-500-W	163.5 [6.44"]	35 [1.38"]	108.5 [4.27"]
BMV-630-W	175.5 [6.91"]	47 [1.85"]	120.5 [4.74"]
BMV-800-W	186.5 [7.34"]	58 [2.28"]	131.5 [5.18"]
BMV-1000-W	202.5 [7.97"]	74 [2.91"]	147.5 [5.81"]

Notes:

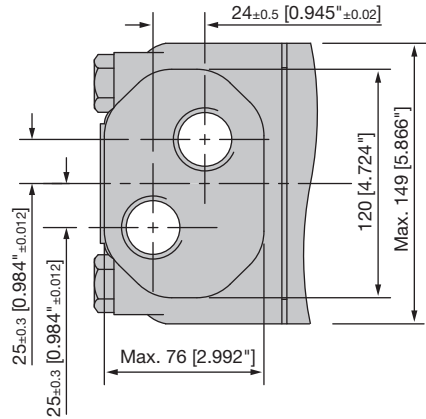
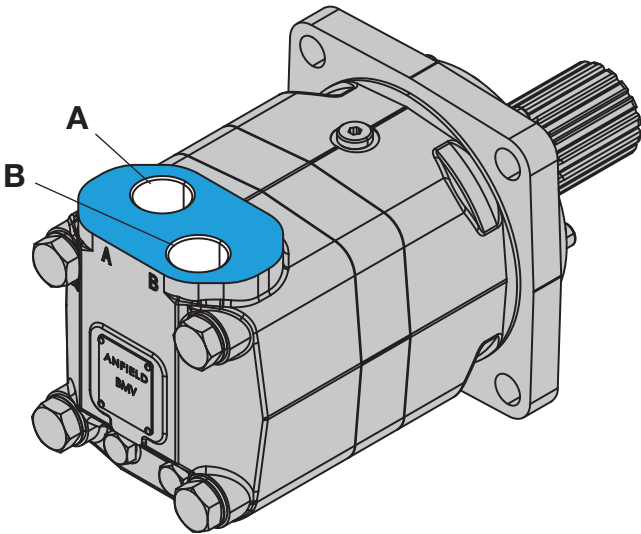
- The thickness of the stator and rotor is the dimension of L1 + 7mm.

BMV PORT OPTIONS

BMV PORT	CODE			
	S	S1	G	M5
Line Mount				
Threaded Ports				

Connection	BMV PORT CODE			
	S	S1	G	M5
P (A,B)	SAE O-Ring Ports	SAE O-Ring Ports	BSPP Ports	Metric Ports
T	1-5/16-12UN (18)	1-5/16-12UN (18)	G 1 (18)	M33 x 2 (18) 
	9/16-18UNF (12)	7/16-18UNF (12)	G 1/4 (12)	M14 x 1.5 (12) 

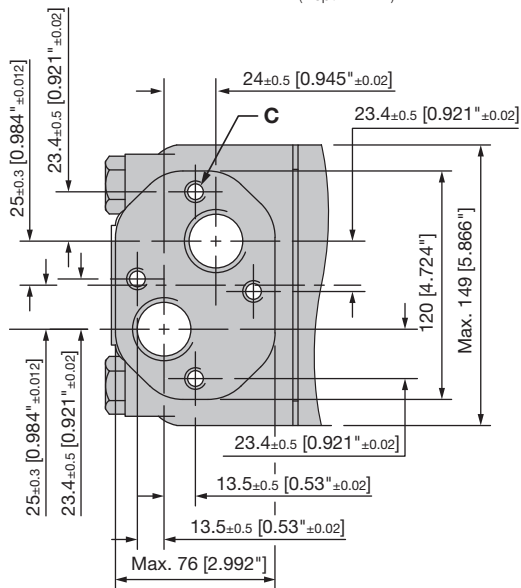
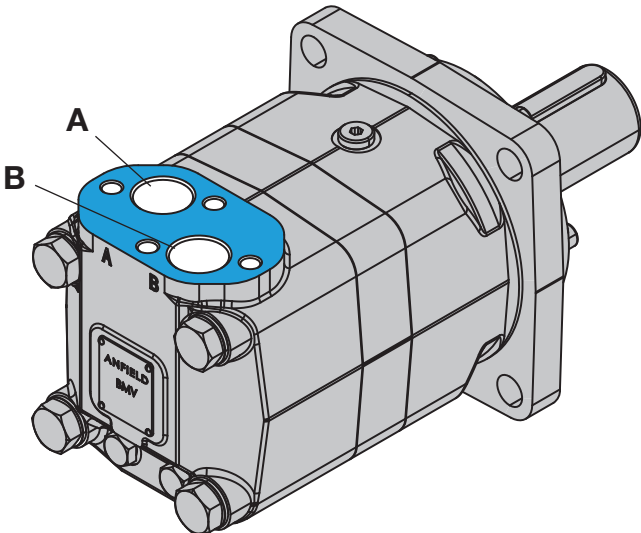
(Depth in mm)



BMV PORT	CODE	
	D	M
Line/Manifold Mount		
Threaded Ports & Bolt Holes for Manifold		

Connection	BMV PORT CODE	
	D	M
P (A,B)	BSPP Ports & Metric Bolts for Manifold Mount	Metric Ports & Bolts for Manifold Mount
T	G 1 (18)	M33 x 2 (18) 
	G 1/4 (12)	M14 x 1.5 (12) 
C (4x)	M12 (10) 	M12 (10) 

(Depth in mm)



BMVE OVERALL DIMENSIONS & MOUNTING DETAILS

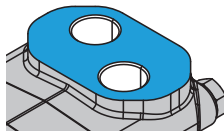
BMVE MOUNTING FLANGE **K4**

4-Bolt, 125 B4 Mount (European Version)

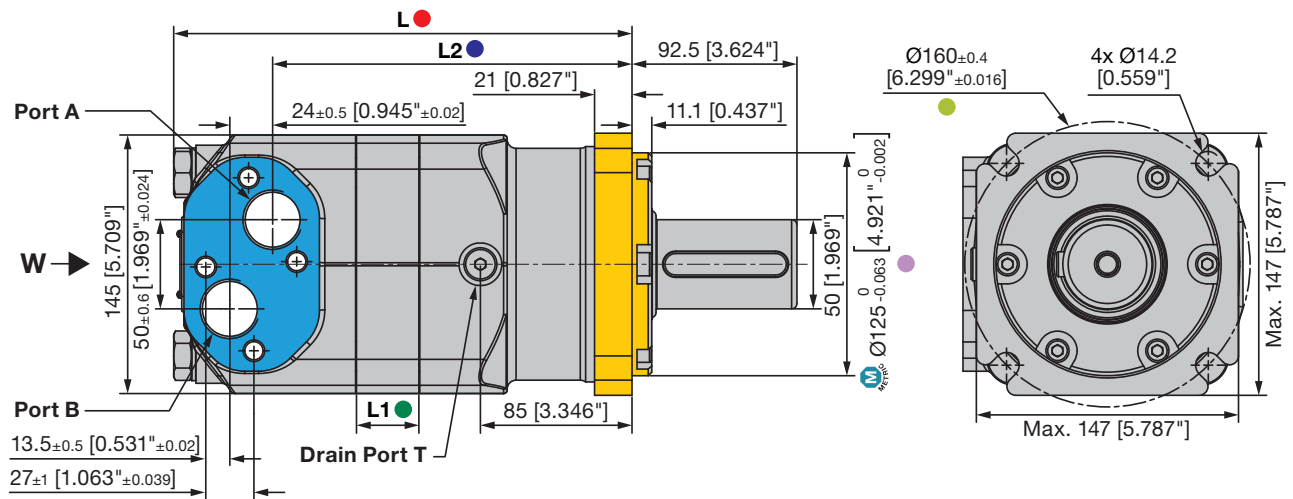
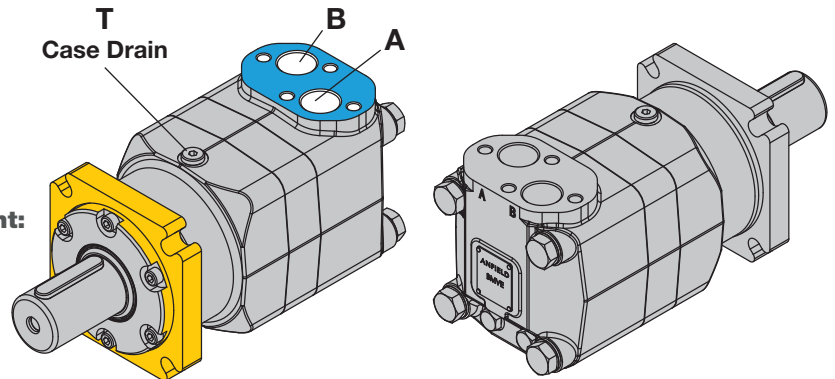
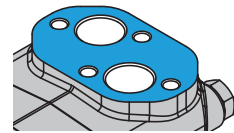
-  Pilot Diameter: 125 mm
-  Bolt Circle Diameter: 160 mm

Port Options available for BMVE with K4 Mount:
For details, go to page 16

BMVE PORT
S G M5
Line Mount
Threaded Ports



BMVE PORT
D D1 M
Line/Manifold Mount
Threaded Ports & Bolt Holes for Manifold

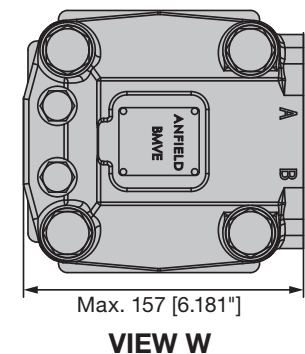


GEROLER WIDTH

Model	L  mm [in]	L1  mm [in]	L2  mm [in]
BMVE-315-K4	246.0 [9.69"]	20 [0.79"]	189.0 [7.44"]
BMVE-400-K4	253.0 [9.96"]	27 [1.06"]	196.0 [7.72"]
BMVE-500-K4	261.0 [10.28"]	35 [1.38"]	204.0 [8.03"]
BMVE-630-K4	273.0 [10.75"]	47 [1.85"]	216.0 [8.50"]
BMVE-800-K4	284.0 [11.18"]	58 [2.28"]	227.0 [8.94"]
BMVE-1000-K4	300.0 [11.81"]	74 [2.91"]	243.0 [9.57"]

Notes:

- The thickness of the stator and rotor is the dimension of L1 + 7mm.



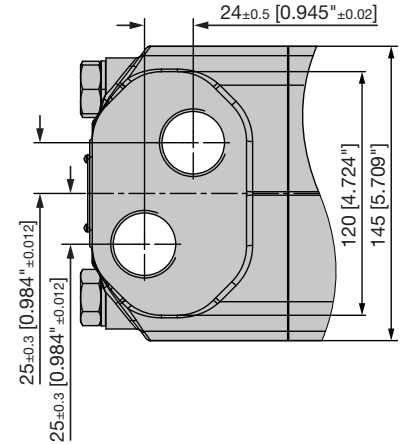
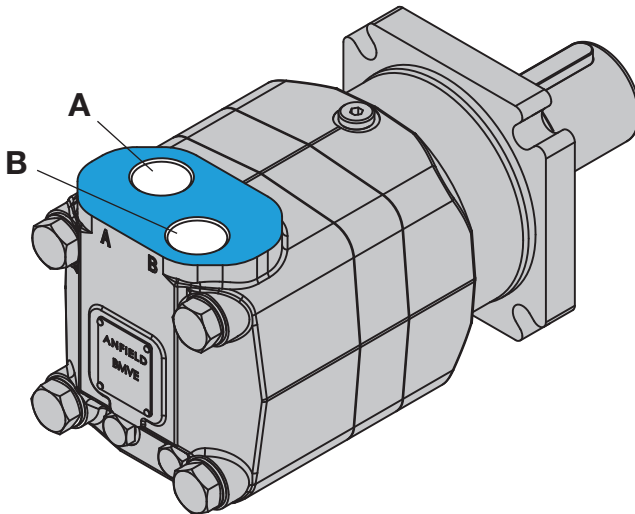
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BMVE PORT OPTIONS

BMVE PORT	CODE		
	S	G	M5
Line Mount	U		M
Threaded Ports	Imperial		Metric

Connection	BMVE PORT CODE		
	S	G	M5
P (A,B)	SAE O-Ring Ports	BSPP Ports	Metric Ports
T	1-5/16-12UN (18)	G 1 (18)	M33 x 2 (18)
	9/16-18UNF (12)	G 1/4 (12)	M14 x 1.5 (12)

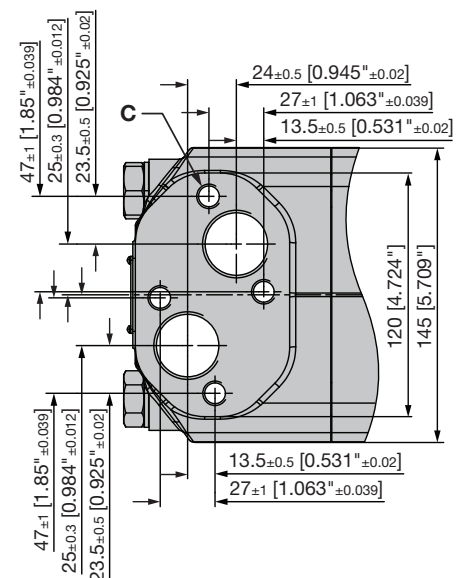
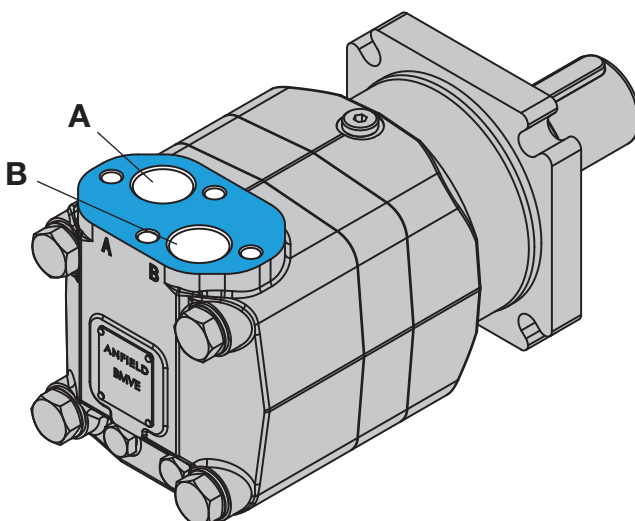
(Depth in mm)



BMVE PORT	CODE		
	D	D1	M
Line/Manifold Mount			M
Threaded Ports & Bolt Holes for Manifold			Metric

Connection	BMVE PORT CODE		
	D	D1	M
P (A,B)	BSPP Ports & Metric Bolts for Manifold Mount	BSPP Ports & Metric Bolts for Manifold Mount	Metric Ports & Bolts for Manifold Mount
T	G 1 (18)	G 3/4 (18)	M33 x 2 (18)
	G 1/4 (12)	G 1/4 (12)	M14 x 1.5 (12)
C (4x)	M12 (10)	M12 (10)	M12 (10)

(Depth in mm)



BMV/BMVE SHAFT EXTENSIONS

IMPORTANT:

Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

BMV/BMVE SHAFT EXTENSION

CODE
C

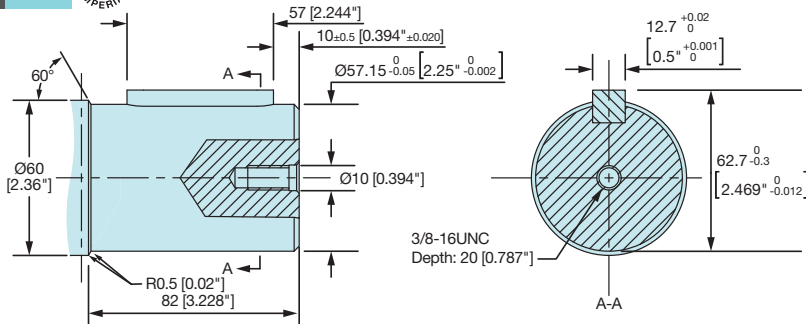


2 1/4" Straight Keyed

Parallel key 1/2"x1/2"x2 1/4"

Max. Torque

1990 lbf.ft [2700 Nm]



BMV/BMVE SHAFT EXTENSION

CODE
A

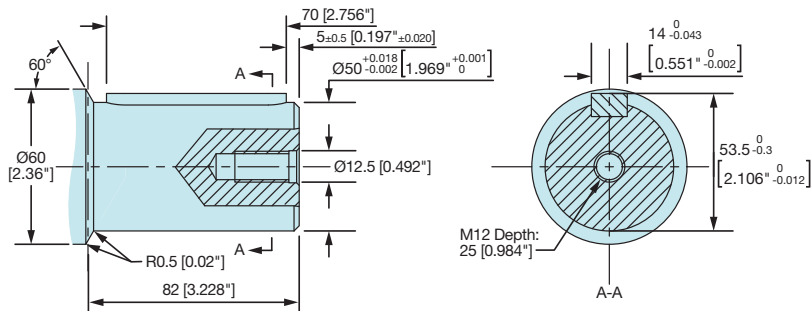


50 mm Straight Keyed

Parallel key 14x9x70

Max. Torque

1990 lbf.ft [2700 Nm]



BMV/BMVE SHAFT EXTENSION

CODE
B



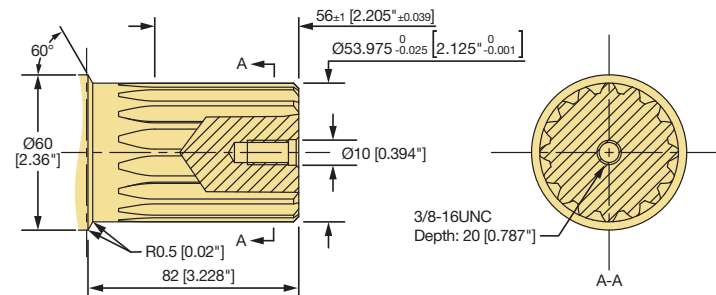
2 1/8" 16 Tooth Splined (UNC thread on shaft end)

16 Tooth DP 8/16 Spline
Pressure angle 30°
[ANSI B92.1 1996 Spline]

Max. Torque

1990 lbf.ft [2700 Nm]

Shafts B and BD are identical in all aspects with the exception of the threaded hole on shaft end. Shaft B has UNC threads and shaft BD has metric threads.



BMV/BMVE SHAFT EXTENSION

CODE
BD

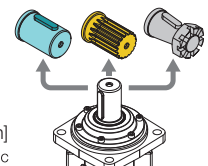
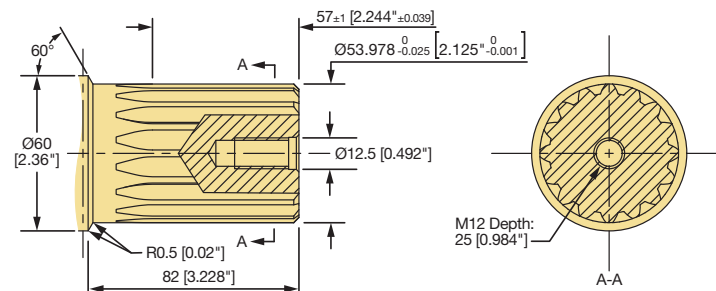


2 1/8" 16 Tooth Splined (Metric thread on shaft end)

16 Tooth DP 8/16 Spline
Pressure angle 30°
[ANSI B92.1 1996 Spline]

Max. Torque

1990 lbf.ft [2700 Nm]



BMV/BMVE SHAFT EXTENSIONS

IMPORTANT:

Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

BMV/BMVE SHAFT EXTENSION
CODE
T1
U
IMPERIAL

2 1/4" Tapered (1:8) w/ Nut

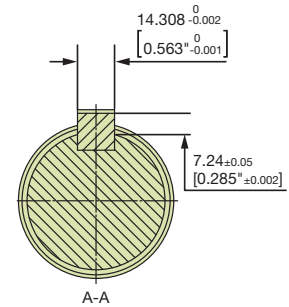
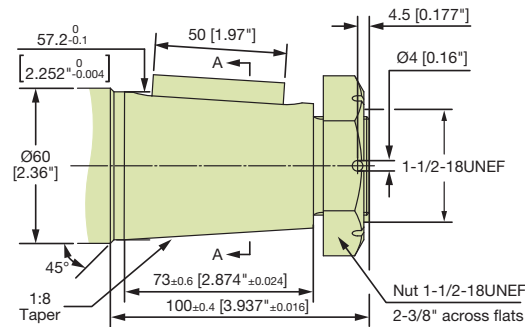

Parallel key 9/16"x9/16"x1.97"



Tightening Torque 750±50 Nm

Max. Torque

1990 lbf.ft [2700 Nm]


BMV/BMVE SHAFT EXTENSION
CODE
T
M
METRIC

60 mm Tapered (1:10) w/ Nut

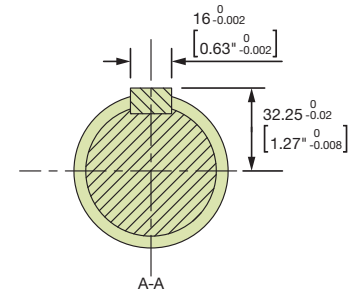
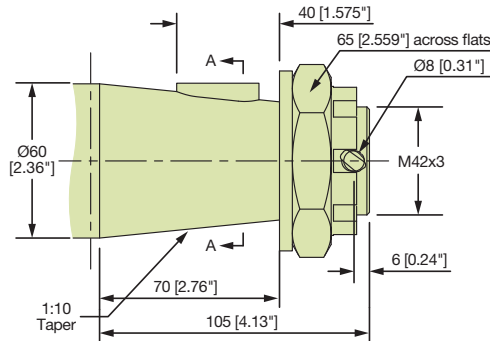

Parallel key 16x10x32



Tightening Torque 750±50 Nm

Max. Torque

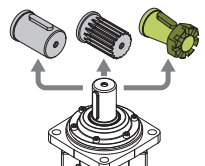
1990 lbf.ft [2700 Nm]



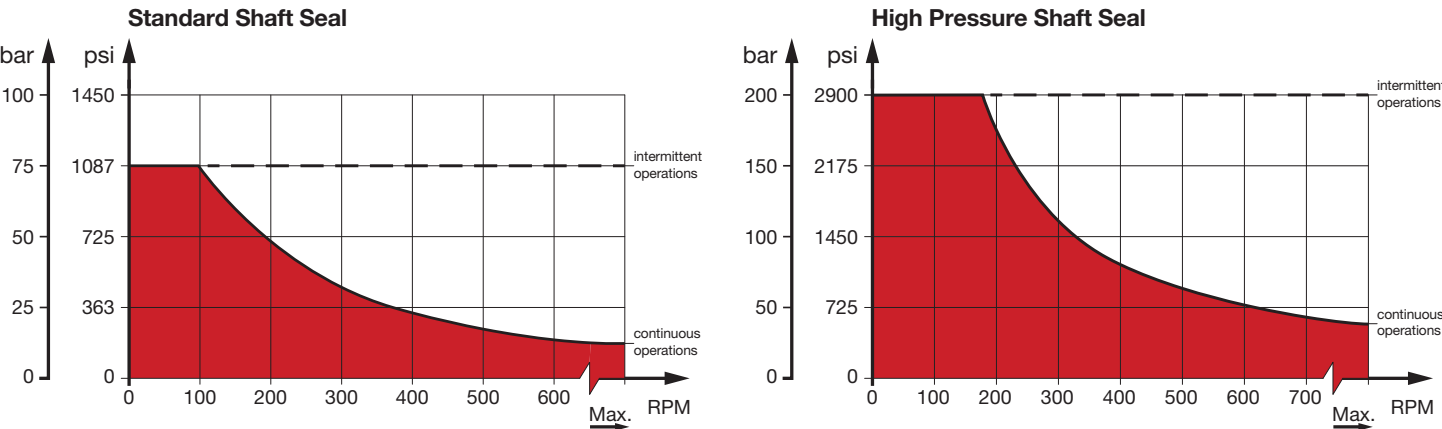
mm [inch]

U Imperial **M** Metric

ANFIELD Orbital Motor Catalog BMV/BMVE Rev.- (09/18/2025)



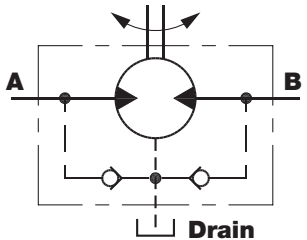
PERMISSIBLE SHAFT SEAL PRESSURES - BMV/BMVE SERIES



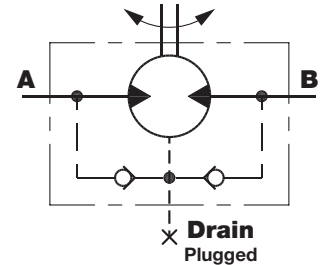
Internal Drain, Permissible back pressure and case pressure:

The internal drain option is standard on all BMV/BMVE series motors. There are Built-In Check Valves integrated in the housing of the motor that connect the case area of the motor to each of the work ports (A and B). During normal operation, pressure in the input and return lines of the motor close the corresponding check valves. However, when the pressure in the motor case becomes greater than that of the return line, the check valve between the case and low pressure return line opens, allowing the case leakage to flow into the return line. Since the operation of the check valves is dependent upon a pressure differential, the internal drain option operates in either direction of motor rotation and whichever work port (A or B) has the lower pressure. This offers versatility and increased seal life as the drain line relieves the pressure on the shaft seal to tank.¹⁾

Schematic 1 External Drain
 CASE PRESSURE DRAINED TO TANK
 Shaft Seal Pressure = Pressure at Drain



Schematic 2 Internal Drain
 CASE PRESSURE DRAINED INTERNALLY
 Shaft Seal Pressure = Pressure at Return Line



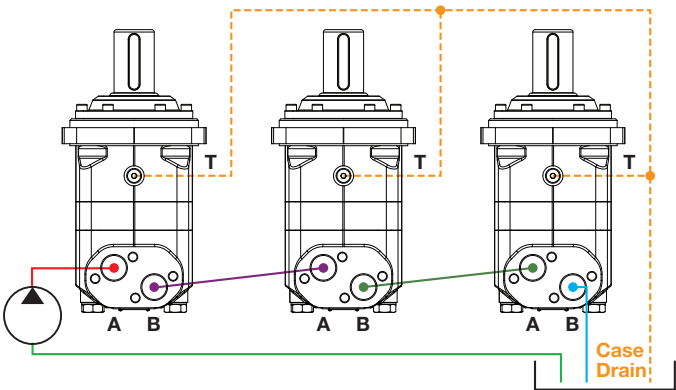
Oil Flow In Drain Line
 The table shows the Max. oil flow in the drain line at a return pressure less than 72-145 psi (5-10 bar)

Pressure Drop psi (bar)	Viscosity mm ² /s	Oil Flow in the Drain Line gpm (l/min)
2030 (140)	20	0.79 (3.0)
	35	0.53 (2.0)
3045 (210)	20	1.59 (5.0)
	35	1.06 (4.0)

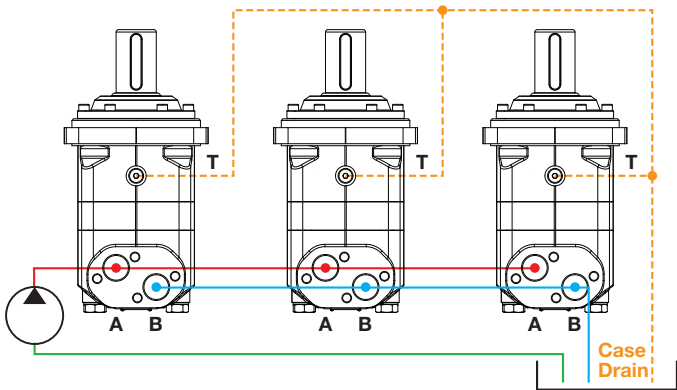
Important:

1) Installing motors with "internal drainage" in series or when the motor operates in a meter-out circuit is not recommended unless overall pressure drop over all motors is below the maximum allowable backpressure.

Series Connection



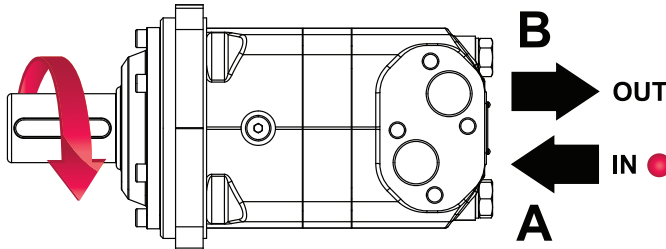
Parallel Connection



DIRECTION OF SHAFT ROTATION - BMV/BMVE SERIES

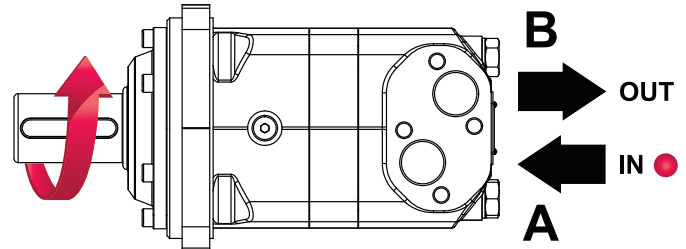
Standard Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CW**Port **B** Pressurized - **CCW**

Reverse Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CCW**Port **B** Pressurized - **CW**

PERMISSIBLE SHAFT LOAD / BEARING CURVE FOR BMV MOTORS

The bearing curve represents allowable bearing loads for an L10 bearing life at 12×10^6 revolutions.

The maximum load curve is defined by bearing static load capacity. This curve should not be exceeded at any time including shock loads.

BMV Standard motor (4)

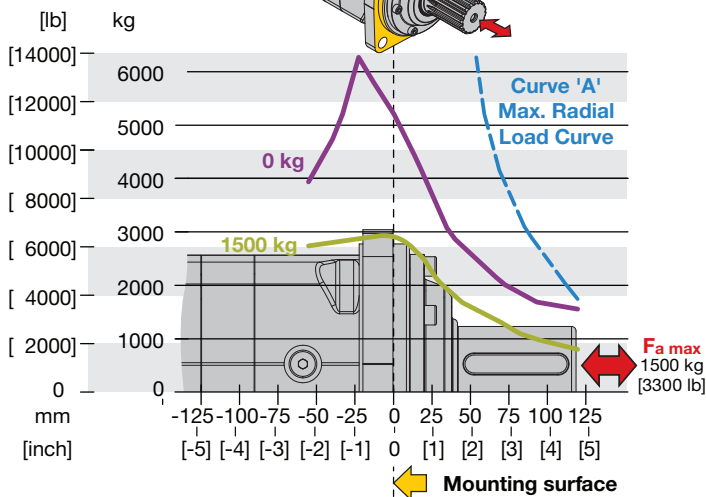
All shaft types

Max. axial load

Fa max

1500 kg

[3300 lb]



Notes for BMV/BMVE models:

1. The output shaft runs in tapered bearings that permit high axial and radial forces. Curve "A" shows max radial shaft load. Any shaft loads exceeding the values shown in the curve will involve a risk of breakage.
2. The dash curve A shows max. radial shaft load. Any shaft load exceeding the values shown in the curve will involve a risk of breakage.
3. The permissible radial load on the shaft is shown for an axial load of 0 N as a function of the distance from the mounting flange to the point of load application.
4. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

BMV DESIGNATION & ORDERING CODE

BMV - 400 - B2E - G1 - SE1 - ... - ... - HPS

1
BMV

2

3

4

5

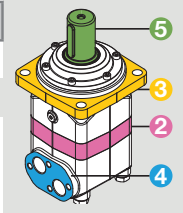
6

7

8

1 Series

BMV



2 Displacement

	cm ³ /rev	in ³ /rev
315	333.0	20.32
400	419.0	25.57
500	518.0	31.61
630	666.0	40.64
800	801.0	48.88
1000	990.0	60.41

**Pages 4-9 for performance details.*

3 Mounting Type

4	4-Bolt, 160 B4 Mount (European Ver.) Pilot Dia: 160 mm Bolt Circle Dia: 200 mm	
W	4-Bolt, Wheel Mount (European Ver.) Pilot Dia: 180 mm Bolt Circle Dia: 224 mm	

**Pages 11-12 for mounting details.*

8 Shaft Seal Version

HPS High Pressure Shaft Seal

7 Options

Omit None

**Contact Anfield if an option or special feature is required.*

6 Rotation

Omit	Standard Rotation (Pressurize A for CW)
R	Reverse Rotation (Pressurize A for CCW)

**Page 20 for rotation details.*

5 Ports (A&B) & Drain Ports (T)

S	SAE Staggered Ports (-16 & -6)	
S1	SAE Staggered Ports (-16 & -4)	
G	BSPP Staggered Ports (G1 & G1/4)	
M5	Metric Staggered Ports (M33 & M14)	
D	BSPP Staggered Ports (G1 & G1/4) [4x M12 bolts]	
M	Metric Staggered Ports (M33 & M14) [4x M12 bolts]	

**Page 13 for port details.*

4 Output Shaft		
C	2 1/4" Straight Keyed (1/2"x1/2"x2-1/4" key)	
A	50 mm Straight Keyed (14x9x70 key)	
B**	2 1/8" 16 Tooth Splined (UNC hole on shaft end)	
BD**	2 1/8" 16 Tooth Splined (Metric hole on shaft end)	
T1	2 1/4" Tapered (1:8) w/ Nut	
T	60 mm Tapered (1:10) w/ Nut	

**Pages 17-18 for shaft details.*

*** Shafts B and BD are identical in all aspects with the exception of the threaded hole on shaft end. Shaft B has UNC threads and shaft BD has metric threads.*

Anfield BMV/BMVE series motors are painted black.

ANFIELD Orbital Motor Catalog BMV/BMVE Rev.- (09/18/2025)

BMVE DESIGNATION & ORDERING CODE

BMVE - 400 - B2E - G1 - SE1 - ... - ... - HPS

1
BMVE

2

3

4

5

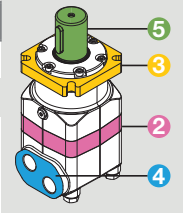
6

7

8

1 Series

BMVE



2 Displacement

	cm ³ /rev	in ³ /rev
315	333.0	20.32
400	419.0	25.57
500	518.0	31.61
630	666.0	40.64
800	801.0	48.88
1000	990.0	60.41

**Pages 4-9 for performance details.*

3 Mounting Type

K4	4-Bolt, 125 B4 Mount (European Ver.) Pilot Dia: 125 mm Bolt Circle Dia: 160 mm	
K6	4-Bolt, SAE C Mount Pilot Dia: 5.00" Bolt Circle Dia: 6.38"	

**Pages 15-16 for mounting details.*

8 Shaft Seal Version

HPS High Pressure Shaft Seal

7 Options

Omit None

**Contact Anfield if an option or special feature is required.*

6 Rotation

Omit	Standard Rotation (Pressurize A for CW)
R	Reverse Rotation (Pressurize A for CCW)

**Page 20 for rotation details.*

5 Ports (A&B) & Drain Ports (T)

S	SAE Staggered Ports (-16 & -6)	
G	BSPP Staggered Ports (G1 & G1/4)	
M5	Metric Staggered Ports (M33 & M14)	
D	BSPP Staggered Ports (G1 & G1/4) [4x M12 bolts]	
D1	BSPP Staggered Ports (G3/4 & G1/4) [4x M12 bolts]	
M	Metric Staggered Ports (M33 & M14) [4x M12 bolts]	

**Page 16 for port details.*

4 Output Shaft

C	2 1/4" Straight Keyed (1/2"x1/2"x2-1/4" key)	
A	50 mm Straight Keyed (14x9x70 key)	
B**	2 1/8" 16 Tooth Splined (UNC hole on shaft end)	
BD**	2 1/8" 16 Tooth Splined (Metric hole on shaft end)	
T1	2 1/4" Tapered (1:8) w/ Nut	
T	60 mm Tapered (1:10) w/ Nut	

**Pages 17-18 for shaft details.*

***Shafts B and BD are identical in all aspects with the exception of the threaded hole on shaft end. Shaft B has UNC threads and shaft BD has metric threads.*

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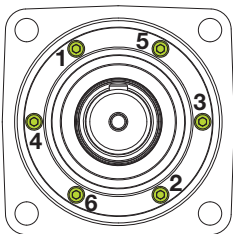
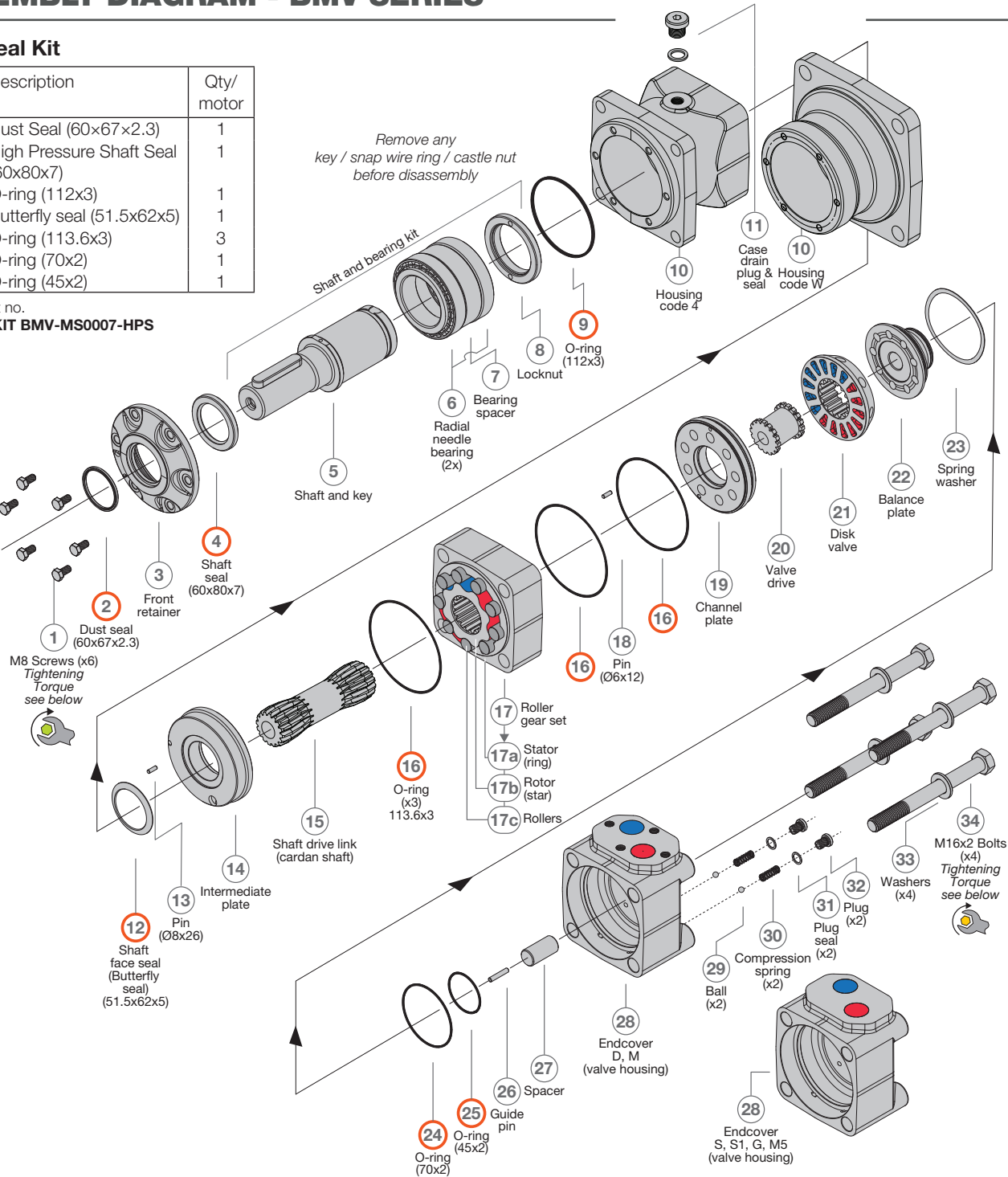
ASSEMBLY DIAGRAM - BMV SERIES

BMV Seal Kit

Item	Description	Qty/ motor
2	Dust Seal (60x67x2.3)	1
4	High Pressure Shaft Seal (60x80x7)	1
9	O-ring (112x3)	1
12	Butterfly seal (51.5x62x5)	1
16	O-ring (113.6x3)	3
23	O-ring (70x2)	1
24	O-ring (45x2)	1

Anfield part no.

SEAL KIT BMV-MS0007-HPS



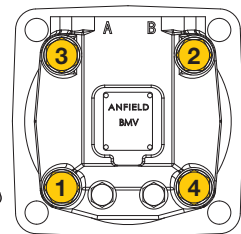
BMV Front Cover Bolt Tightening Torque & Sequence

Pre-torque bolts (1) to 7 ft. lb. [9 Nm].
Using the bolt pattern shown below,
final torque the bolts to
16-22 ft.lb. [22-30 Nm]



BMV Endcover Bolt Tightening Torque & Sequence

Pre-torque bolts (34) to 22 ft.lb. [30 Nm].
Using the bolt pattern shown below,
final torque the bolts to
103-118 ft.lb. [140-160 Nm]



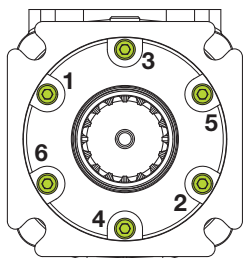
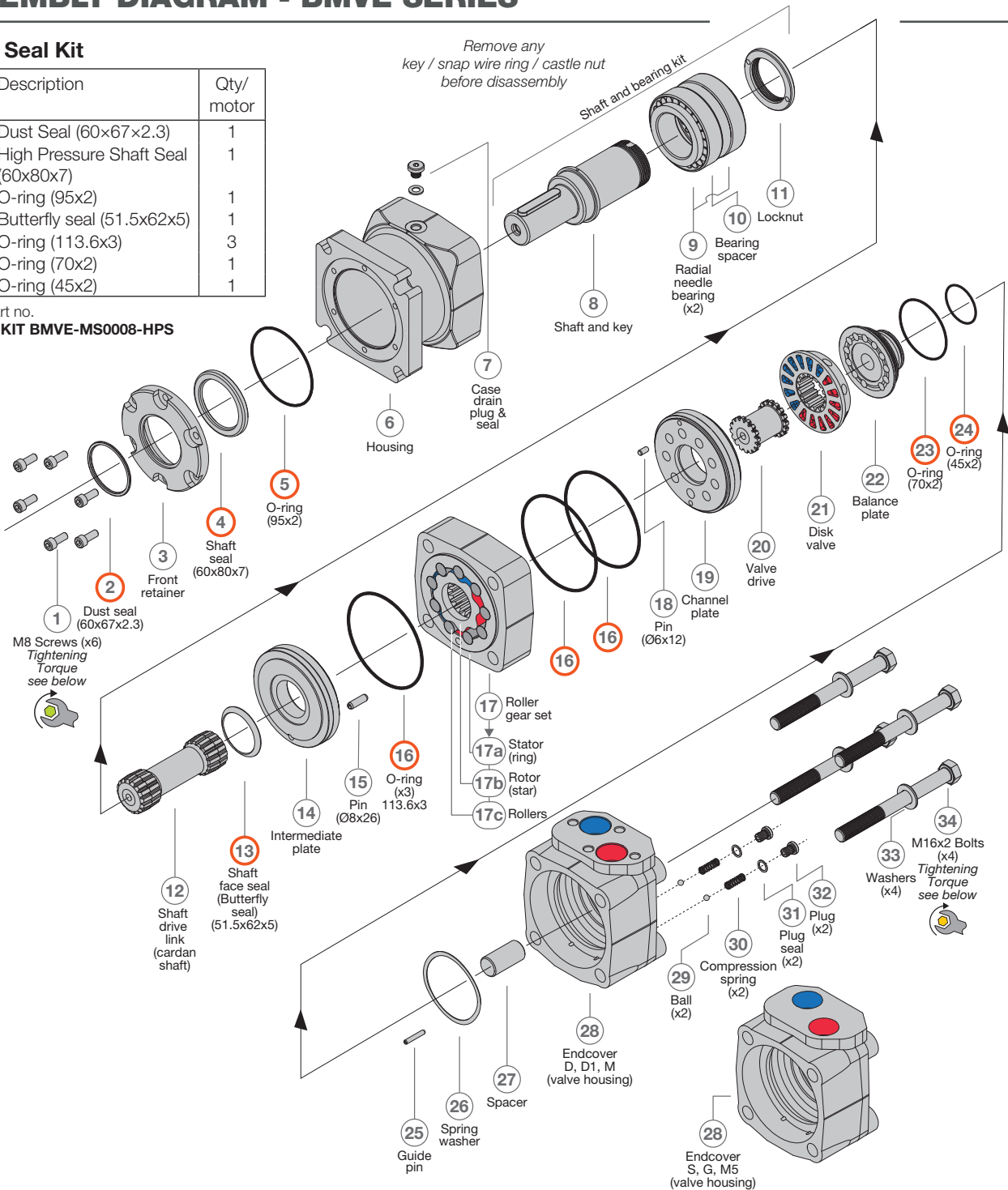
ASSEMBLY DIAGRAM - BMVE SERIES

BMVE Seal Kit

Item	Description	Qty/ motor
2	Dust Seal (60×67×2.3)	1
4	High Pressure Shaft Seal (60x80x7)	1
5	O-ring (95x2)	1
13	Butterfly seal (51.5x62x5)	1
16	O-ring (113.6x3)	3
23	O-ring (70x2)	1
24	O-ring (45x2)	1

Anfield part no.

SEAL KIT BMVE-MS0008-HPS



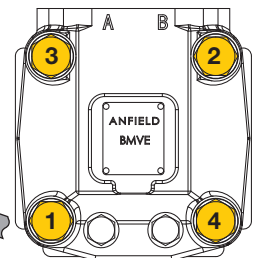
BMVE Front Cover Bolt Tightening Torque & Sequence

Pre-torque bolts (1) to 7 ft. lb. [9 Nm].
Using the bolt pattern shown below,
final torque the bolts to
16-22 ft.lb. [22-30 Nm]



BMVE Endcover Bolt Tightening Torque & Sequence

Pre-torque bolts (34) to 22 ft.lb. [30 Nm].
Using the bolt pattern shown below,
final torque the bolts to
89-96 ft.lb. [120-130 Nm]



Strength in Products, Strength in Service

- Pressure Switches
- Temperature Switches
- Differential Switches
- Level Switches
- Vacuum Switches
- Transducers
- Gear Pumps
- Vane Pumps
- Dump Pumps
- Variable Piston Pumps
- Orbital Motors
- Vane Motors
- Gear Motors
- Monoblock Valves
- High Pressure Ball Valves
- Flow Controls & Needle Valves
- Drive Couplings
- Flanges
- Gauges
- Test Points

Drain

ANFIELD Orbital Motor Catalog BMW/BMW-E Rev.- (09/18/2025)



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