

Orbital Motors

Low Speed, High Torque Motors

BMK10

Series



ANFIELD Orbital Motor Catalog BMK10 Rev. A (01-31-25)



Strength in Products,
Strength in Service

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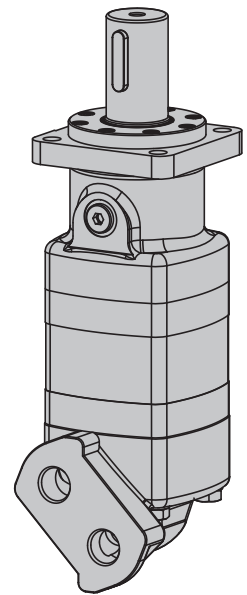
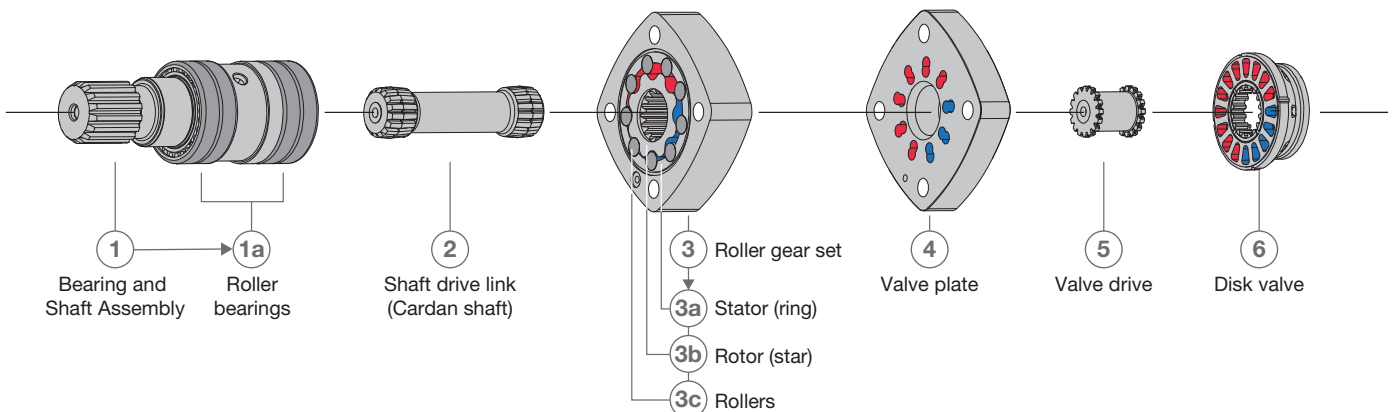
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DESCRIPTION

Anfield BMK10 series heavy duty motors are high power density for demanding mobile and industrial applications. The BMK10 is one of the biggest disc valve motors of our line (the other being the BMV series). Offered in 4 displacements with up to 45 gpm and 1800 ft-lb of torque in continuous mode, this motor is powerful and yet provides good efficiency while operating smoothly.

BMK10 series motors use a two-piece rotor design. Nine precision rollers (fig. 3c) added to the lobes of the outer ring (fig. 3a) 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 low fluid viscosity, requiring lower pressure at start-up and providing superior drive life and smoother performance at all speeds.

The disk distributor valve (fig. 6) has been separated from the output shaft (fig. 1) and is driven synchronously by a dedicated short valve drive (fig. 5) ensuring that the individual chambers of the motor are filled and emptied precisely. This allows for higher permissible pressure and torque. The output shaft supported by roller bearings permit high radial forces and offers smooth operation.


BMK10


FEATURES

- The BMK10 series motors deliver power for heavy-duty applications.
- Disc valve and roller gear set design increases mechanical efficiency and reduces wear.
- Output shaft supported in roller bearings for radial forces.
- Available in 4 displacement sizes and straight, splined and tapered shafts.
- Choice of SAE, BSPP, and flange ports.
- Standard case drain with integral internal drain for extended shaft seal life.

APPLICATIONS

Boring, Industrial, Metal Forming, Port Equipment, Saw Mill

BMK10 CROSS REFERENCE GUIDE

Brand	Series
Danfoss®	-
Eaton Char-Lynn®	10,000 Series (119-)
White®	-
Parker®	-
M+S®	-

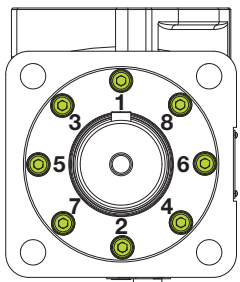
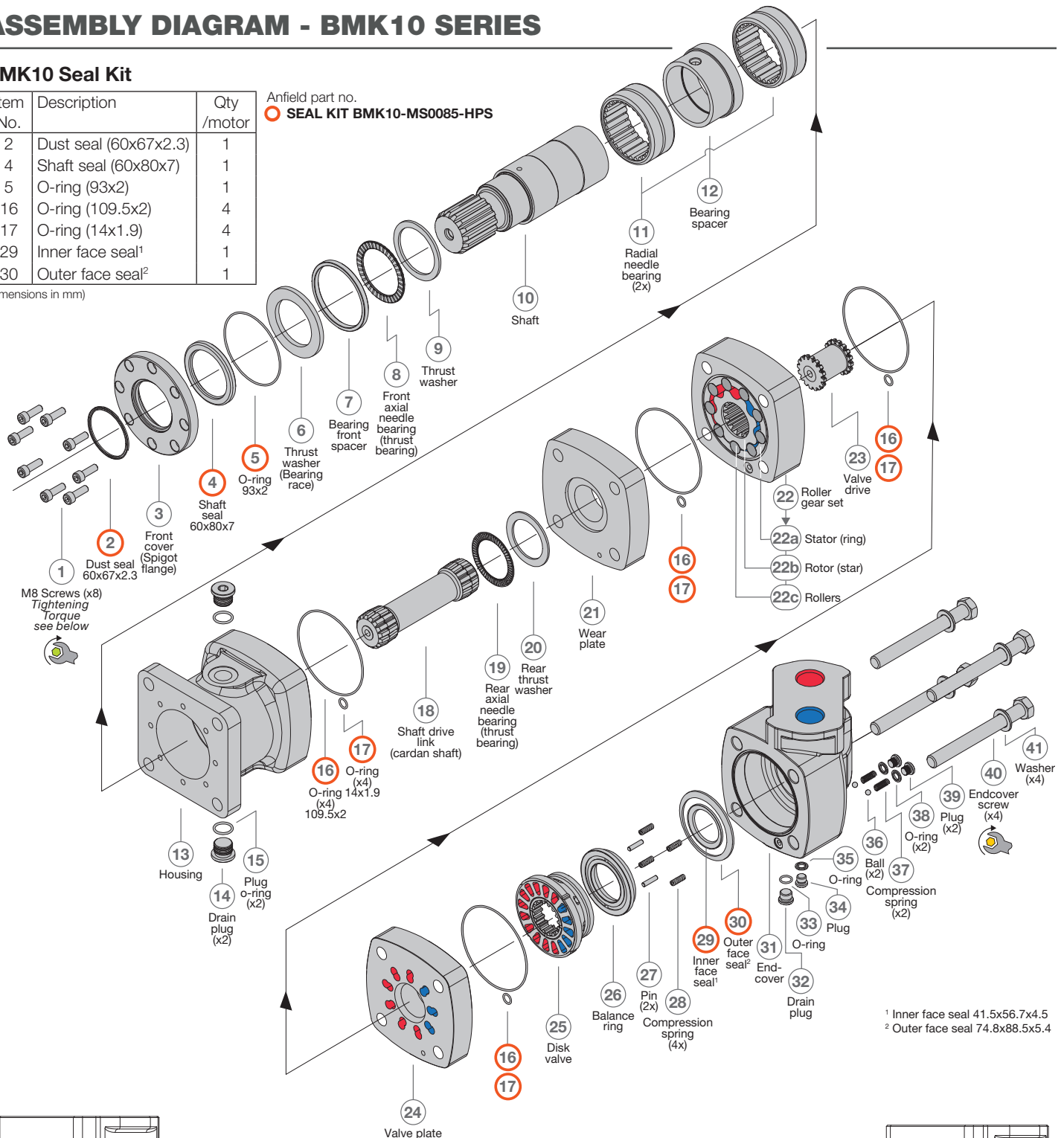
ASSEMBLY DIAGRAM - BMK10 SERIES

BMK10 Seal Kit

Item No.	Description	Qty /motor
2	Dust seal (60x67x2.3)	1
4	Shaft seal (60x80x7)	1
5	O-ring (93x2)	1
16	O-ring (109.5x2)	4
17	O-ring (14x1.9)	4
29	Inner face seal ¹	1
30	Outer face seal ²	1

(Dimensions in mm)

Anfield part no.
SEAL KIT BMK10-MS0085-HPS

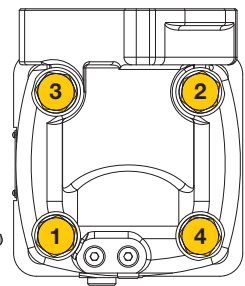


BMK10 Front Cover Bolt Tightening Torque & Sequence

Pre-torque bolts (1) to 9 ft. lb. [12 Nm].
 Using the bolt pattern shown below,
 final torque the bolts to
 25-30 ft. lb. [35-40 Nm]

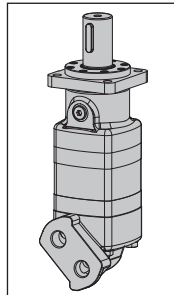
BMK10 Endcover Bolt Tightening Torque & Sequence

Pre-torque bolts (40) to 33 ft. lb. [45 Nm].
 Using the bolt pattern shown below,
 final torque the bolts to
 103-110 ft. lb. [140-150 Nm]



¹ Inner face seal 41.5x56.7x4.5
² Outer face seal 74.8x88.5x5.4

TECHNICAL SPECIFICATIONS - BMK10 SERIES



		BMK10	350	480	665	940
Geometric Displacement	in ³ /r		21.42	29.23	38.93	56.94
	cm ³ /r		351	479	638	933
Max. Speed	rpm	Cont.	485	355	265	180
		Inter.	755	555	410	280
Max. Flow	gpm	Cont.	44.9	44.9	44.9	44.9
			l/min	170	170	170
		Inter.	70	70	70	70
			265	265	265	265
Max. Torque	lbf-ft	Cont.	756	1051	1423	1829
			Nm	1025	1425	1930
		Inter.	1051	1445	1858	2507
			1425	1960	2520	3400
Max. Pressure Drop	Δ psi	Cont.	2900	2900	2900	2538
			Δ bar	200	200	200
		Inter.	3989	3989	3771	3481
			275	275	260	240
	Peak	3989	3989	3989	3771	
		275	275	275	260	
Weight	lbs		95.7	101.0	101.0	103.8
	kg		43.4	45.8	45.8	47.1

Notes:

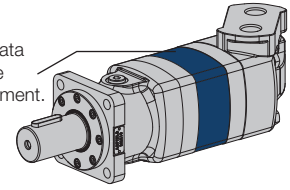
1. Continuous rating (Cont.): motor may be run continuously at these ratings.
2. Intermittent operation (Inter.): 10% of every minute. (6 sec.)
3. Peak: 1% of every minute. (0.6 sec.)
4. Δ Pressure: Δ psi [Δ bar] True pressure difference between inlet port and outlet port.
5. Motor Power (HP) = (Torque Output (In. lbs.) x RPM) / 63025
6. Simultaneous maximum torque & maximum speed NOT recommended and may damage the motor.
7. To assure best motor life, run motor for approximately one hour at 30% of rated pressure before application to full load. Be sure motor is filled with fluid prior to any load applications.
8. Recommended Fluids: Premium quality anti-wear type hydraulic oil with viscosity between 37 and 73 cSt at operating temperature. A roller gear set requires a minimum fluid viscosity of 70 SUS (13 cSt) at operating temperature.
9. Recommended Filtration: per ISO Cleanliness Code, 4406: 20/18/13
10. Recommended System Operating Temp.: -30°C to 80°C [-22°F to 175°F]
11. Maximum Case Pressure: 300 psi [20 bar]
12. Do not exceed Δ pressure rating (see chart above).

The motor housing must be filled with fluid during commissioning and remain full when operating. Allowing internal leakage to fill the case at all times ensures bearings, seals and other internal components are lubricated at low pressure. Case drain also removes heat and contamination from the motor. If contamination is not removed, motor performance and longevity will suffer.

Anfield recommends (best practice) to allow the case drain to vent to tank, heat and contamination are sent to the reservoir, extending motor life. Depending on motor installation and its position relative to the reservoir, make sure a drain port is used that ensures the motor housing is always filled with oil. Even if the case drain port is located on the bottom of the motor, the case will remain filled if the reservoir is above the motor.

PERFORMANCE DATA - BMK10 SERIES

Performance data is based on the motor displacement.



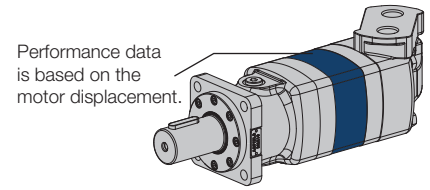
BMK10 350 21.4 in³/rev. (351 cm³/rev.)

Torque Speed	lbf.ft (Nm) rpm	Δ Pressure psi (bar) →					Max. Cont.	Inter.	Max. Inter.		
		254 (17.5)	508 (35)	1015 (70)	1523 (105)	2030 (140)				2538 (175)	2900 (200)
Flow gpm (l/min) ↓	1.1 (4)	51.6 (70) 3	112.8 (153) 1								
	2.1 (8)	64.2 (87) 22	130.5 (177) 20	263.3 (357) 16	396.8 (538) 11	529.6 (718) 8	662.3 (898) 4				
	4.0 (15)	64.2 (87) 42	130.5 (177) 40	263.3 (357) 36	396.8 (538) 32	529.6 (718) 29	662.3 (898) 25	757.5 (1027) 21	909.4 (1233) 17	1042.2 (1413) 14	
	7.9 (30)	62.0 (84) 85	128.3 (174) 84	261.1 (354) 80	394.6 (535) 76	528.1 (716) 72	661.6 (897) 68	756.0 (1025) 64	907.9 (1231) 60	1041.4 (1412) 56	
	11.9 (45)	60.5 (82) 127	126.9 (172) 126	260.4 (353) 123	393.1 (533) 119	525.9 (713) 115	659.4 (894) 111	754.5 (1023) 107	907.2 (1230) 103	1040.0 (1410) 99	
	15.9 (60)	59.0 (80) 170	125.4 (170) 169	258.9 (351) 167	391.6 (531) 162	524.4 (711) 158	657.9 (892) 153	753.0 (1021) 150	905.7 (1228) 145	1038.5 (1408) 141	
	19.8 (75)	56.8 (77) 213	123.2 (167) 212	255.9 (347) 211	389.4 (528) 206	522.2 (708) 201	655.7 (889) 196	751.6 (1019) 192	902.8 (1224) 187	1035.5 (1404) 184	
	23.8 (90)	54.6 (74) 255	121.0 (164) 254	254.5 (345) 253	387.2 (525) 249	520.0 (705) 245	653.5 (886) 239	748.6 (1015) 235	900.6 (1221) 230	1034.1 (1402) 225	
	27.7 (105)	51.6 (70) 296	118.0 (160) 295	251.5 (341) 294	384.3 (521) 292	517.0 (701) 287	651.3 (883) 283	746.4 (1012) 278	899.1 (1219) 272	1031.8 (1399) 267	
	31.7 (120)	49.4 (67) 340	115.8 (157) 339	249.3 (338) 338	382.1 (518) 336	514.8 (698) 330	648.3 (879) 325	744.2 (1009) 320	896.1 (1215) 315	1028.9 (1395) 310	
Max. Cont.	35.7 (135)	46.5 (63) 383	112.8 (153) 382	245.6 (333) 381	379.1 (514) 379	511.9 (694) 373	645.4 (875) 368	741.2 (1005) 362	893.2 (1211) 357	1026.7 (1392) 352	
	39.6 (150)	42.8 (58) 425	109.2 (148) 424	243.4 (330) 423	376.2 (510) 422	509.7 (691) 417	642.4 (871) 411	738.3 (1001) 405	890.2 (1207) 400		
	44.9 (170)	39.8 (54) 482	105.5 (143) 481	238.2 (323) 480	371.0 (503) 479	503.8 (683) 475	636.5 (863) 470	731.7 (992) 463	882.9 (1197) 457		
	Inter.	59.4 (225)		92.9 (126) 637	225.7 (306) 636	358.5 (486) 635	492.7 (668) 632	625.5 (848) 625	722.8 (980) 619		
		70.0 (265)		82.6 (112) 752	216.1 (293) 750	348.9 (473) 747	482.4 (654) 746	615.9 (835) 739	712.5 (966) 731		

Continuous values
 Intermittent values (max. 10% operation every minute)
 Do not operate

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 - BMK10 SERIES



Performance data is based on the motor displacement.

BMK10 480 29.2 in³/rev. (479 cm³/rev.)

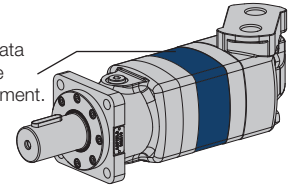
Torque Speed	lbf.ft (Nm) rpm	Δ Pressure psi (bar) →					Max. Cont.	Inter.	Max. Inter.	
		254 (17.5)	508 (35)	1015 (70)	1523 (105)	2030 (140)				2538 (175)
Flow gpm (l/min) ↓	1.1 (4)	64.2 (87) 6	129.8 (176) 5	263.3 (357) 4	391.6 (531) 2					
	2.1 (8)	87.8 (119) 16	178.5 (242) 14	364.4 (494) 12	548.0 (743) 8	733.1 (994) 5	916.8 (1243) 2			
	4.0 (15)	87.8 (119) 31	180.0 (244) 29	363.3 (493) 27	547.3 (742) 24	732.4 (993) 21	916.1 (1242) 18	1048.1 (1421) 16	1258.3 (1706) 13	1441.9 (1955) 10
	7.9 (30)	86.3 (117) 62	177.8 (241) 61	362.1 (491) 58	546.5 (741) 55	730.2 (990) 53	914.6 (1240) 50	1046.6 (1419) 47	1256.8 (1704) 44	1440.5 (1953) 42
	11.9 (45)	83.3 (113) 93	175.5 (238) 92	359.9 (488) 89	544.3 (738) 86	728.0 (987) 83	912.4 (1237) 80	1044.4 (1416) 77	1253.9 (1700) 74	1439.0 (1951) 72
	15.9 (60)	81.1 (110) 124	174.1 (236) 123	357.7 (485) 121	541.4 (734) 118	725.0 (983) 115	910.2 (1234) 112	1042.2 (1413) 109	1251.6 (1697) 106	1436.0 (1947) 103
	19.8 (75)	78.2 (106) 156	170.4 (231) 155	354.0 (480) 153	539.2 (731) 149	722.8 (980) 146	906.5 (1229) 143	1039.2 (1409) 140	1249.4 (1694) 137	1433.1 (1943) 134
	23.8 (90)	75.2 (102) 188	166.7 (226) 187	351.8 (477) 184	535.5 (726) 181	719.1 (975) 178	904.2 (1226) 174	1036.3 (1405) 171	1245.7 (1689) 168	
	27.7 (105)	71.5 (97) 219	163.7 (222) 218	348.1 (472) 215	532.5 (722) 213	716.2 (971) 209	900.6 (1221) 206	1033.3 (1401) 202	1242.8 (1685) 199	
	31.7 (120)	68.6 (93) 250	160.1 (217) 249	344.4 (467) 247	528.8 (717) 243	712.5 (966) 240	896.9 (1216) 236	1029.6 (1396) 233	1239.1 (1680) 229	
35.7 (135)	64.2 (87) 280	156.4 (212) 279	340.8 (462) 278	524.4 (711) 275	708.8 (961) 271	893.2 (1211) 268	1025.9 (1391) 264			
39.6 (150)	59.7 (81) 313	151.9 (206) 312	336.3 (456) 310	520.7 (706) 306	704.4 (955) 303	888.8 (1205) 299	1021.5 (1385) 295			
Max. Cont.	44.9 (170)	54.6 (74) 354	146.8 (199) 353	330.4 (448) 351	515.6 (699) 348	699.2 (948) 344	882.9 (1197) 340	1017.1 (1379) 336		
Inter.	59.4 (225)	36.1 (49) 469	128.3 (174) 468	312.7 (424) 467	497.1 (674) 464	680.8 (923) 459	865.2 (1173) 455	999.4 (1355) 451		
Max. Inter.	70.0 (265)		115.1 (156) 552	298.7 (405) 551	483.1 (655) 547	667.5 (905) 542	851.9 (115) 537	986.1 (1337) 533		

Continuous values
 Intermittent values (max. 10% operation every minute)
 Do not operate

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PERFORMANCE DATA - BMK10 SERIES

Performance data is based on the motor displacement.

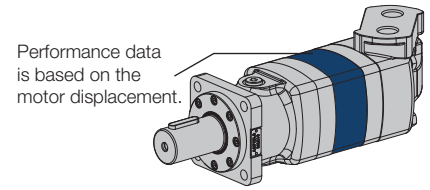


BMK10 665 38.9 in³/rev. (638 cm³/rev.)

Torque Speed	lbf.ft (Nm) rpm	Δ Pressure psi (bar) →					Max. Cont.	Inter.	Max. Inter.	
		254 (17.5)	508 (35)	1015 (70)	1523 (105)	2030 (140)				2538 (175)
Flow gpm (l/min) ↓	1.1 (4)	119.5 (162) 4	244.1 (331) 3	494.9 (671) 2						
	2.1 (8)	120.2 (163) 11	244.9 (332) 10	495.6 (672) 8	745.7 (1011) 7	995.7 (1350) 4	1245.7 (1689) 2			
	4.0 (15)	119.5 (162) 23	244.1 (331) 22	494.9 (671) 20	744.9 (1010) 18	995.0 (1349) 15	1245.0 (1688) 13	1424.2 (1931) 11	1710.4 (2319) 9	1853.5 (2513) 8
	7.9 (30)	116.5 (158) 45	241.9 (328) 44	492.0 (667) 42	742.7 (1007) 40	993.5 (1347) 38	1242.8 (1685) 36	1422.0 (1928) 34	1708.2 (2316) 33	1850.5 (2509) 32
	11.9 (45)	113.6 (154) 69	239.0 (324) 68	489.7 (664) 66	739.0 (1002) 64	989.8 (1342) 62	1240.6 (1682) 60	1419.1 (1924) 58	1705.2 (2312) 56	1848.3 (2506) 55
	15.9 (60)	109.9 (149) 92	236.0 (320) 91	485.3 (658) 89	736.1 (998) 87	986.9 (1338) 85	1236.9 (1677) 83	1416.1 (1920) 81	1699.3 (2304) 79	
	19.8 (75)	106.2 (144) 116	231.6 (314) 115	481.6 (653) 113	732.4 (993) 111	982.4 (1332) 107	1233.2 (1672) 105	1413.2 (1916) 103		
	23.8 (90)	101.8 (138) 139	227.2 (308) 138	477.2 (647) 135	728.0 (987) 133	978.7 (1327) 131	1228.0 (1665) 128	1408.0 (1909) 126		
	27.7 (105)	97.4 (132) 162	222.7 (302) 161	473.5 (642) 159	722.8 (980) 156	973.6 (1320) 154	1224.4 (1660) 152			
	31.7 (120)	92.2 (125) 186	218.3 (296) 185	467.6 (634) 182	718.4 (974) 180	969.2 (1314) 178	1219.2 (1653) 175			
Max. Cont.	35.7 (135)	87.8 (119) 209	212.4 (288) 208	463.2 (628) 206	713.2 (967) 202	963.3 (1306) 200	1213.3 (1645) 197			
	39.6 (150)	81.9 (111) 232	206.5 (280) 231	457.3 (620) 228	708.1 (960) 226	957.4 (1298) 223	1208.1 (1638) 221			
	44.9 (170)	74.5 (101) 264	199.1 (270) 262	449.9 (610) 259	699.9 (949) 257	950.0 (1288) 254	1200.7 (1628) 252			
	Inter.	59.4 (225)	49.4 (67) 349	174.1 (236) 347	424.8 (576) 345	675.6 (916) 342	925.6 (1255) 339			
		Max. Inter.	70.0 (265)	156.4 (212) 410	406.4 (551) 407	656.4 (890) 404	907.2 (1230) 400			

Continuous values
 Intermittent values (max. 10% operation every minute)
 Do not operate

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PERFORMANCE DATA - BMK10 SERIES

BMK10 940 56.9 in³/rev. (933 cm³/rev.)

Torque Speed	lb.ft (Nm) rpm	Δ Pressure psi (bar) →				Max. Cont.	Inter.	Max. Inter.
		254 (17.5)	508 (35)	1015 (70)	1523 (105)			
Flow gpm (l/min) ↓	1.1 (4)	174.1 (236) 3	357.0 (484) 2					
	2.1 (8)	175.5 (238) 7	357.7 (485) 6	724.3 (982) 5	1090.1 (1478) 3	1456.7 (1975) 1		
	4.0 (15)	174.1 (236) 15	357.0 (484) 14	722.8 (980) 13	1089.4 (1477) 11	1455.9 (1974) 9	1821.0 (2469) 7	2502.5 (3393) 4
	7.9 (30)	171.1 (232) 31	354.0 (480) 30	720.6 (977) 28	1085.7 (1472) 27	1452.3 (1969) 25	1818.8 (2466) 23	
	11.9 (45)	166.7 (226) 47	349.6 (474) 46	716.2 (971) 44	1082.0 (1467) 43	1448.6 (1964) 41	1814.4 (2460) 39	
	15.9 (60)	161.5 (219) 63	344.4 (467) 62	711.0 (964) 60	1076.8 (1460) 58	1443.4 (1957) 57		
	19.8 (75)	155.6 (211) 79	338.5 (459) 78	705.1 (956) 76	1070.9 (1452) 74	1437.5 (1949) 72		
	23.8 (90)	149.0 (202) 95	332.6 (451) 94	698.5 (947) 92	1065.0 (1444) 90	1431.6 (1941) 88		
	27.7 (105)	142.3 (193) 111	326.0 (442) 110	691.8 (938) 108	1058.4 (1435) 106	1425.0 (1932) 104		
	31.7 (120)	135.7 (184) 127	318.6 (432) 126	684.5 (928) 124	1051.0 (1425) 122			
	35.7 (135)	127.6 (173) 143	311.3 (422) 142	677.1 (918) 140	1042.9 (1414) 138			
39.6 (150)	118.7 (161) 159	302.4 (410) 158	668.2 (906) 156	1034.8 (1403) 154				
Max. Cont.	44.9 (170)	108.4 (147) 180	292.1 (396) 179	657.2 (891) 177	1023.7 (1388) 175			
Inter.	59.4 (225)	72.3 (98) 239	255.2 (346) 238	621.0 (842) 235	987.6 (1339) 233			
Max. Inter.	70.0 (265)	45.0 (61) 281	227.9 (309) 280	594.5 (806) 277	961.0 (1303) 275			

Continuous values
 Intermittent values (max. 10% operation every minute)
 Do not operate

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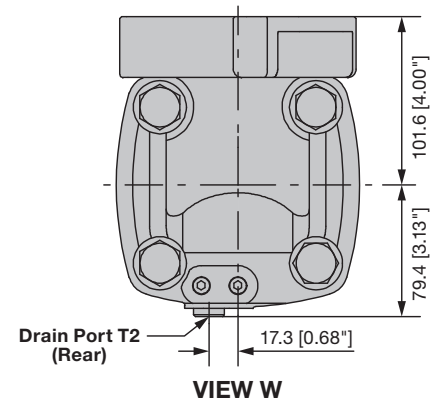
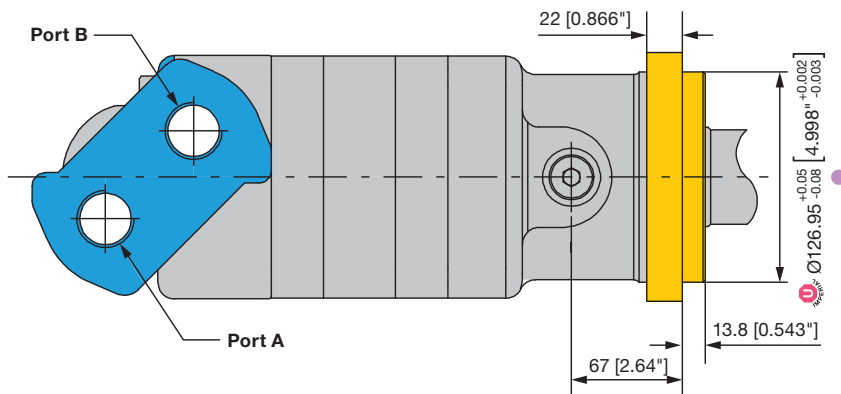
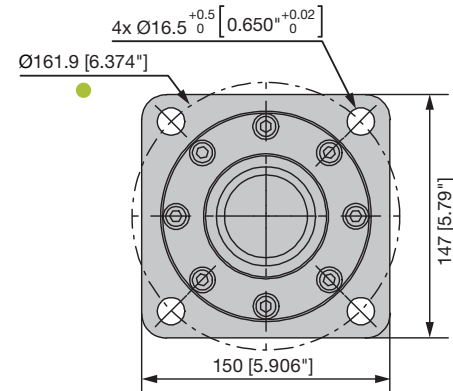
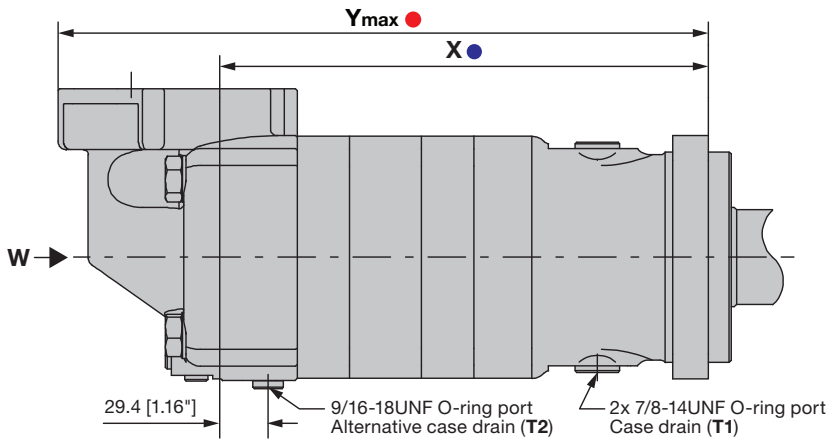
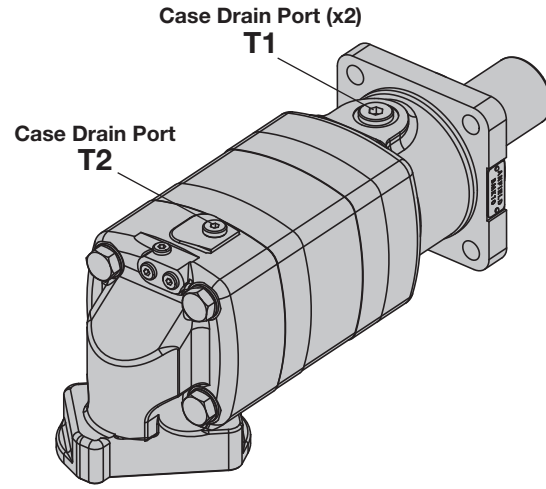
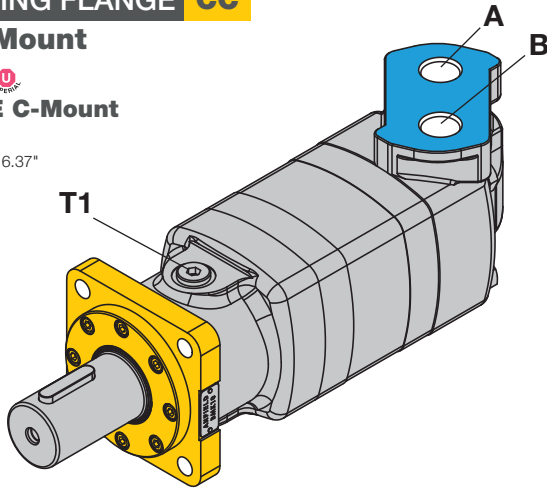
BMK10 OVERALL DIMENSIONS & MOUNTING DETAILS

BMK10 MOUNTING FLANGE CODE
CC

4-Bolt, Square Mount

CC **U.S. Version** **Standard SAE C-Mount**

- Pilot Diameter: 5"
- Bolt Circle Diameter: 6.37"



Model	X ● mm [in]	Y _{max} ● mm [in]
BMK10 350	281 [11.06"]	381 [15.00"]
BMK10 480	293 [11.54"]	393 [15.47"]
BMK10 665	293 [11.54"]	393 [15.47"]
BMK10 940	313 [12.32"]	413 [16.26"]

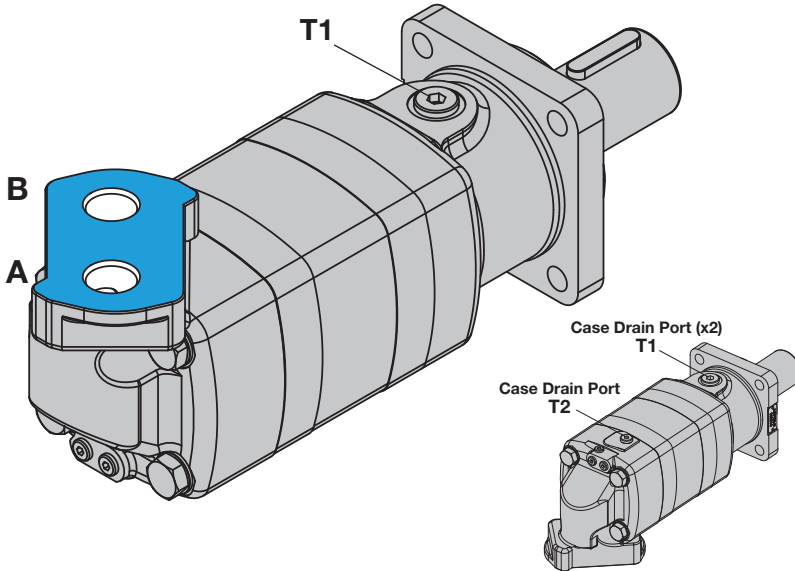
BMK10 PORT OPTIONS

BMK10 PORT	CODE	
	SF5	SF7

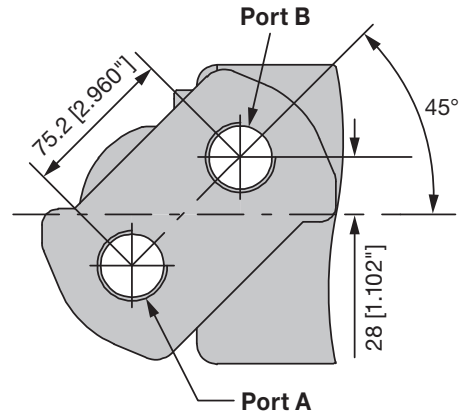
Line Mount
Threaded Ports

SF5: SAE Straight Thread O-ring Ports (SAE-16)

SF7: BSPP Ports



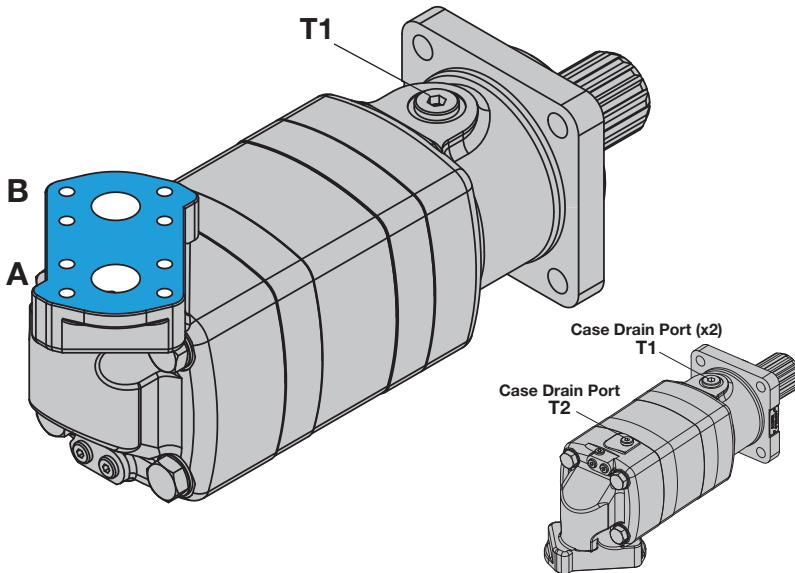
Connection	BMK10 PORT CODE	
	SF5	SF7
P (A,B)	1-5/16-12UN O-Ring (18)	G1 (18)
T1	7/8-14UNF (16)	G 1/2 (16)
T2	9/16-18UNF (12)	G 1/4 (12)

 SF5 : SAE straight thread (O-Ring Boss) (Depth in mm)
 SF7 : BSPP (British Standard Pipe Parallel) G thread


BMK10 PORT	CODE	
	SF	U

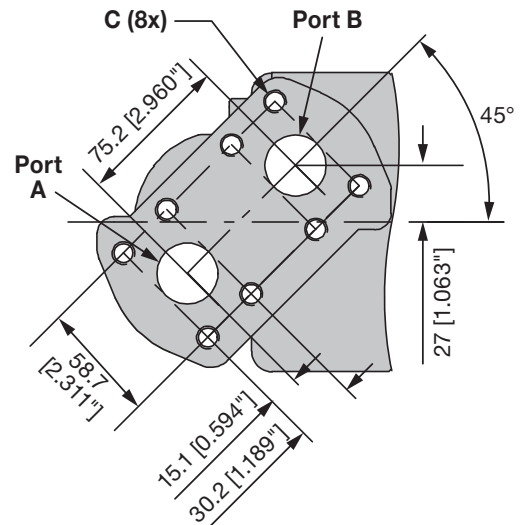
Line Mount
Flange Ports

SF: 1 1/4" SAE CODE 61 Flange Ports



Connection	BMK10 PORT CODE	
	SF	
P (A,B)	1-1/4" CD61 [Ø29.4]	
T1	7/8-14UNF (16)	
T2	9/16-18UNF (12)	
C (8x)	7/16-14UNC (25)	

SF : SAE CODE 61 ports (Depth in mm)



mm [inch]

Imperial Metric

BMK10 SHAFT EXTENSIONS

IMPORTANT:

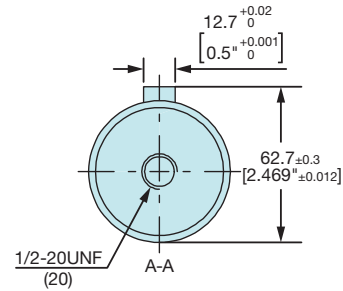
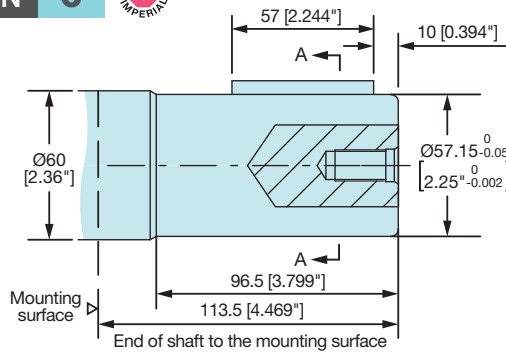
Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

BMK10 SHAFT EXTENSION **CODE C**

2 1/4" Straight Keyed
(1/2-20UNF-2B thread in shaft end)

Parallel key 1/2"x1/2"x2.24"

Max. Torque
1990 lbf.ft [2700 Nm]

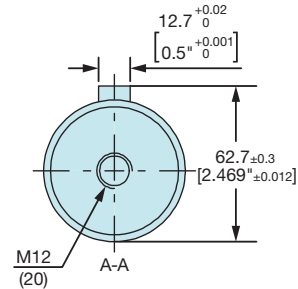
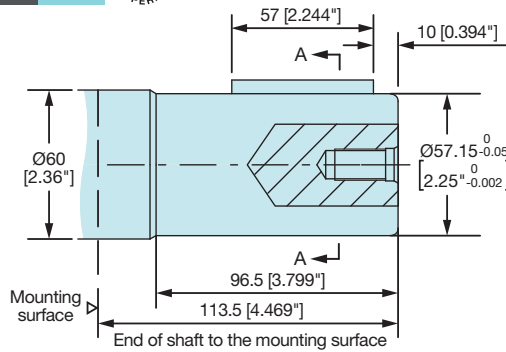


BMK10 SHAFT EXTENSION **CODE C1**

2 1/4" Straight Keyed
(M12 thread in shaft end)

Parallel key 1/2"x1/2"x2.24"

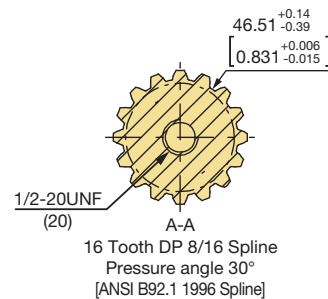
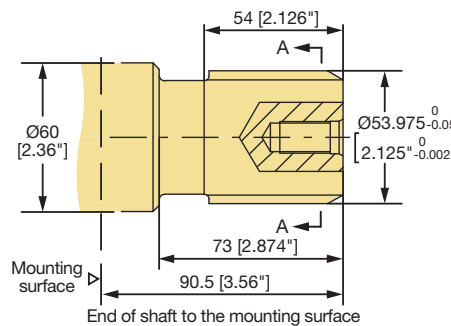
Max. Torque
1990 lbf.ft [2700 Nm]



BMK10 SHAFT EXTENSION **CODE BD**

2 1/8" 16 Tooth Splined
(1/2"-20 UNF-2B thread in shaft end)

Max. Torque
1990 lbf.ft [2700 Nm]



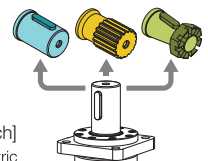
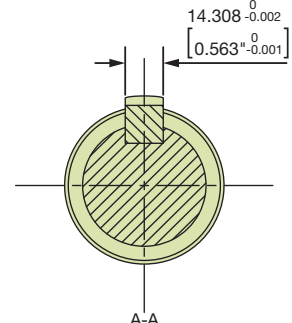
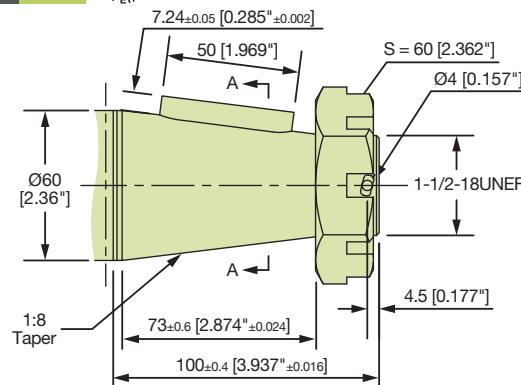
BMK10 SHAFT EXTENSION **CODE T1**

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

Parallel key 9/16"x9/16"x2"

Tightening Torque 750±50 Nm

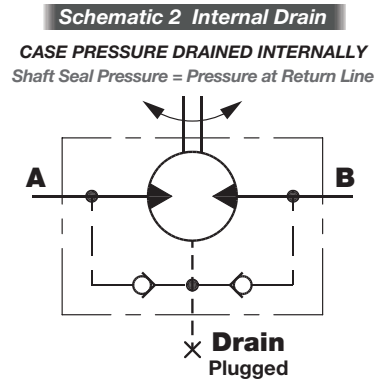
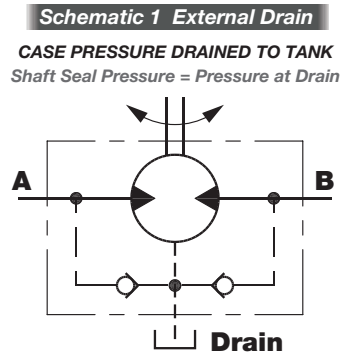
Max. Torque
1990 lbf.ft [2700 Nm]



BMK10 SERIES AND PARALLEL CIRCUIT

Internal Drain, Permissible back pressure and case pressure:

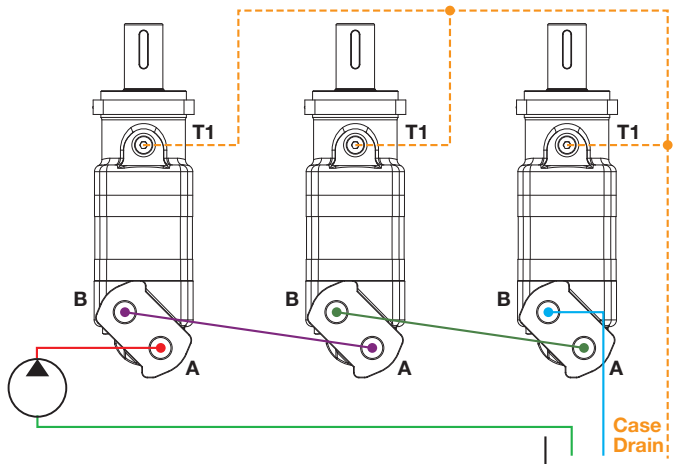
The internal drain option is standard on all BMK10 series motors. There are Built-In Check Valves integrated in the housing of the motor that connect the case area of the motor to each of the work ports (A and B). During normal operation, pressure in the input and return lines of the motor close the 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⁾



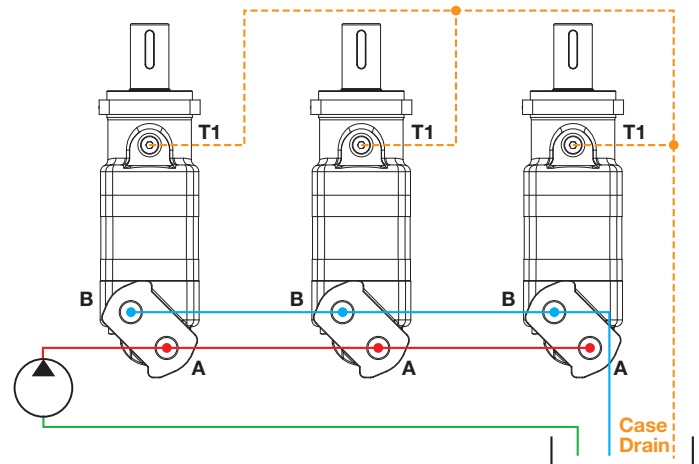
Important:

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



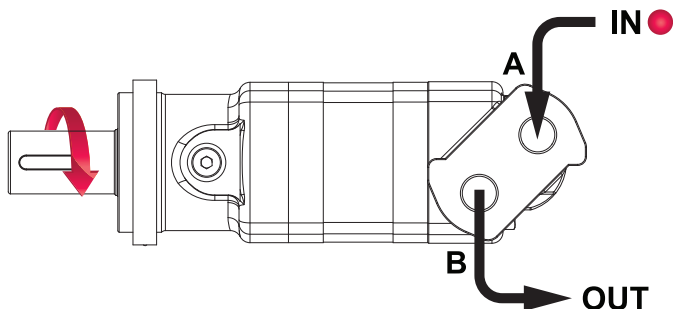
DIRECTION OF SHAFT ROTATION - BMK10 SERIES

Standard Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CW**

Port **B** Pressurized - **CCW**

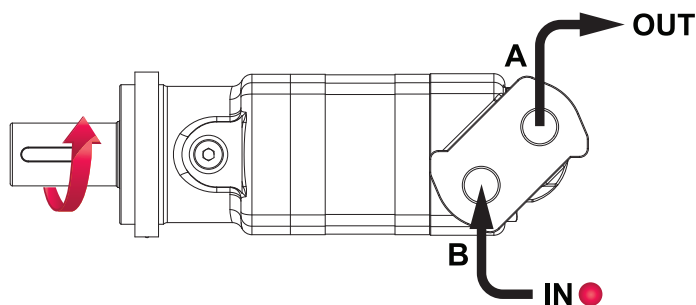


Reverse Rotation

(Viewed from Shaft End)

Port **A** Pressurized - **CCW**

Port **B** Pressurized - **CW**



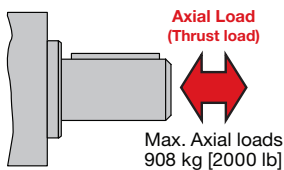
PERMISSIBLE SHAFT LOADS FOR BMK10 MOTORS

These curves indicate the radial load capacity on the motor shaft at various locations with an external thrust load of 454 kg [1000 lb]. The maximum allowable thrust load is 908 kg [2000 lb].

Note: Case pressure will increase the allowable inward thrust load and decrease the allowable outward thrust load. Case pressure will push outward on the shaft at 441 lb/100 psi [200 kg/7 Bar].

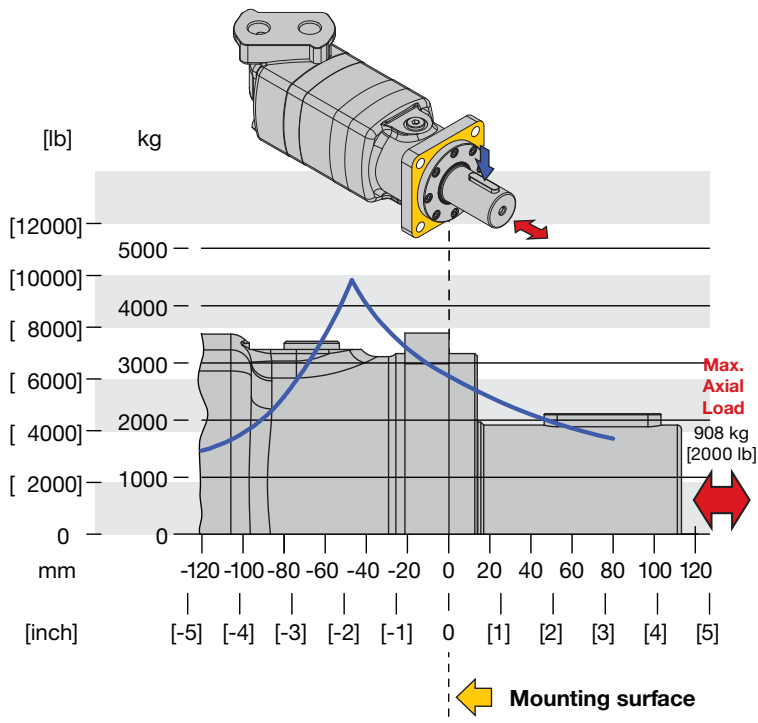
Each curve is based on B10 bearing life (2000 hours of 12,000,000 shaft revolutions at 100 RPM) at rated output torque.

To determine radial load at speeds other than 100 RPM, multiply the load values given on the bearing curve by the factors in the chart on the right.



RPM	Multiplication Factor
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62

Standard motor (CC) straight and splined shafts (C, C1, BD)



BMK10 DESIGNATION & ORDERING CODE
BMK10 - 665 - CC - C1 - SF5 - ... - ...

1 Series
BMK10

2 Displacement

	cm ³ /rev	in ³ /rev
350	351	21.42
480	479	29.23
665	638	38.93
940	933	56.94

**Pages 5-8 for performance details.*

3 Mounting Type

CC	4-Bolt, SAE C-Mount Pilot Dia: 5", Bolt Circle Dia: 6.37"	
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**Page 9 for mounting details.*

4 Output Shaft

C	2¼" Straight Keyed (1/2"x1/2"x2-1/4" key) 1/2"-20 UNF-2B thread in shaft end	
C1	2¼" Straight Keyed (1/2"x1/2"x2-1/4" key) M12 thread in shaft end	
BD	2½" 16 Tooth Splined 1/2"-20 UNF-2B thread in shaft end	
T1	2¼" Tapered (1:8)	

**Page 11 for shaft details.*

5 Ports (A&B, T1, T2)

SF	SAE CODE 61 Ports (1-1/4" CD61, -10, -6)	
SF5	SAE Staggered Ports (-16, -10, -6)	
SF7	BSPP Staggered Ports (G1, G1/2, G1/4)	

**Page 10 for port details.*

6 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 13 for rotation details.*

7 Options

Omit	None
------	------

**Contact Anfield if option required is not listed.*

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 BMK10 Rev. A (01-31-25)



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