Orbital Motors

Low Speed, High Torque Motors

BMR / BMRS

Series

ANFIELD Orbital Motor Catalog BMR/BMRS Rev. A (1/18/2024)

ANFIELD

Strength in Products,
Strength in Service

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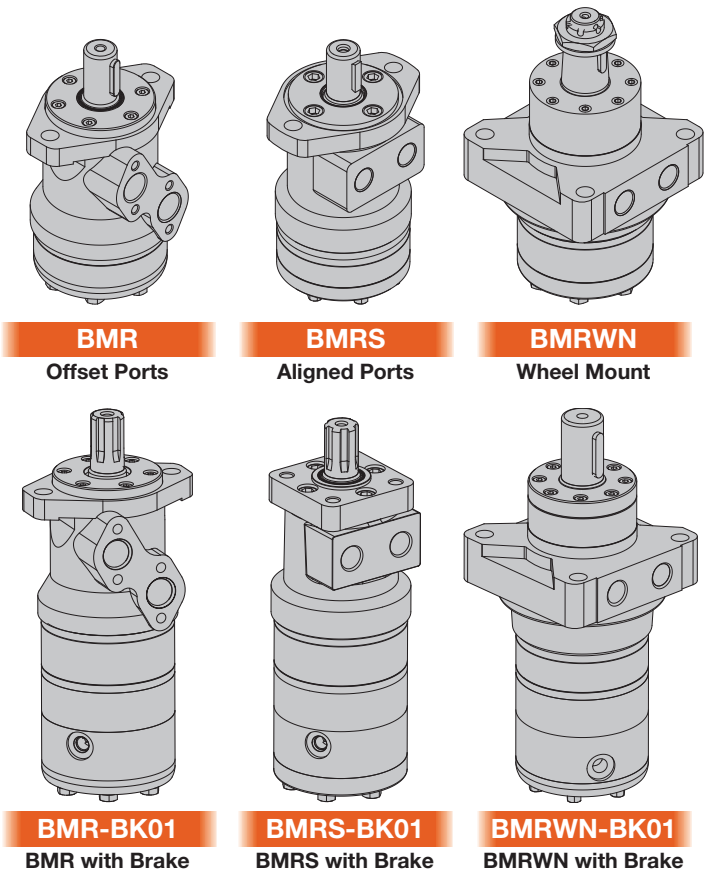
DESCRIPTION

Anfield BMR series motors, unlike the BMP series that utilizes a two-piece rotor design, are designed with seven precision rollers to provide sliding contact points. The rollers added to the lobes of the outer ring of the gear set act as a roller bearing and reduce friction, increasing mechanical efficiency and reducing wear in systems with low fluid viscosity, requiring lower pressure at start-up and providing smoother operation at all speeds. The drive link in these models receives full flow lubrication at all times. The sum of these features provides more power and longer life for the motor in your application.

Check valves integrated into the housing allow case pressure to drain internally. The robust high pressure shaft seals standard on all models can withstand high case pressure spikes. The BMR series motors have three moving components: geroler-star (fig. 3b), drive (fig. 2), and shaft (fig. 1) making them compact and highly efficient. A variety of displacements, mounts, shafts and port options provide design flexibility. The output shaft on BMR and BMRS can also be supported in needle bearings. These bearings allow a higher permissible radial load in comparison to our standard BMR and BMRS motors. They are an ideal choice for light duty applications in either parallel or series systems.

As well as the standard BMR and BMRS the BMRWN model offers wheel mount. In addition BMR-BK01, BMRS-BK01 and BMRWN-BK01 models are equipped with a fail-safe friction disk brake, where in the absence of system pressure the brake is engaged (see pages 25 to 30).



BMR
Offset Ports

BMRS
Aligned Ports

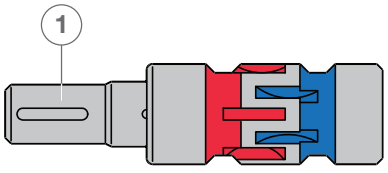
BMRWN
Wheel Mount

BMR-BK01
BMR with Brake

BMRS-BK01
BMRS with Brake

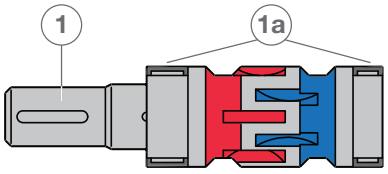
BMRWN-BK01
BMRWN with Brake

Standard Slide Bearings



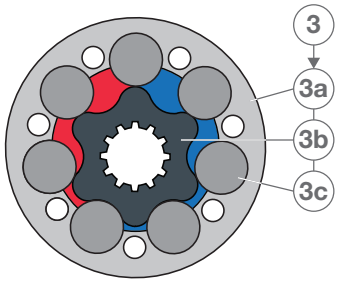
1) Motor Output Shaft / Spool Valve

Optional Needle Bearings (Factory Order)



1) Motor Output Shaft / Spool Valve supported by needle bearings (1a)

2) Shaft drive link (Cardan shaft)



3) Roller gear set
3a) Stator (ring)
3b) Rotor (star)
3c) Rollers

FEATURES

- "Roller Stator" motor design increases efficiency and life by using roller contact versus a solid, sliding contact design.
- Efficient, powerful and compact. Designed for light duty applications.
- Built-in check valves offer versatility and increased seal life.
- Variety of displacements, mounts and shafts provide flexibility in application design.
- Standard high pressure shaft seal offers superior seal life and performance.

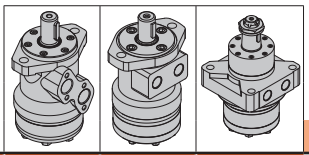
TYPICAL APPLICATIONS

Agricultural equipment, food processing equipment, augers, car wash brushes, conveyors, grain augers, machine tools, sweepers, spreaders, skid steer attachments, feed rollers, brush drives and more.

BMR, BMRS, BMRWN MOTOR CROSS REFERENCE GUIDE

Brand	*Series*
Danfoss®	OMR, OMRW N, OMRW NF, DS
Eaton Char-Lynn®	S (103-)
White®	WP (155/156), RS (200/201), WR (255/256)
Parker®	TB, TC, TE
M&S®	MLHR, MR, MLHRW
ROSS-TRW®	MF
BREVINI - SAM®	BR, BS

TECHNICAL SPECIFICATIONS - BMR, BMRS, BMRWN SERIES



				1	2	3	4	5	6	7	8	9	10	11
BMR	BMRS	BMRWN		36	50	80	100	125	160	200	250	315	375	500*
Geometric Displacement	in^3/r			2.20	3.15	4.97	6.22	7.76	9.59	11.87	15.46	19.38	23.27	29.84
	cm^3/r			36.0	51.7	81.5	102.0	127.2	157.2	194.5	253.3	317.5	381.4	489.0
Max. Speed	rpm		Cont.	1085	960	750	600	475	378	310	240	190	155	120
			Inter.	1220	1150	940	750	600	475	385	300	240	190	150
Max. Flow	gpm		Cont.	10.6	13.2	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
	l/min			40	50	60	60	60	60	60	60	60	60	60
			Inter.	11.9	15.9	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8	19.8
				45	60	75	75	75	75	75	75	75	75	75
Max. Torque Shaft extensions with diameters Ø 7/8", 1" Ø 25 mm, 28.5 mm	lbf-ft		Cont.	53.1	73.8	143.8	177.0	221.3	265.5	265.5	287.6	287.6	309.8	-
	Nm			72	100	195	240	300	360	360	390	390	420	-
			Inter.	61.2	92.9	162.3	206.5	250.8	317.2	324.5	361.4	394.6	365.1	-
				83	126	220	280	340	430	440	490	535	495	-
			Peak	77.4	121.7	199.1	236.0	272.9	339.3	413.0	472.0	479.4	501.5	-
				105	165	270	320	370	460	560	640	650	680	-
Max. Pressure Drop	Δ psi		Cont.	2031	2031	2538	2538	2538	2393	1885	1595	1305	1015	-
	Δ bar			140	140	175	175	175	165	130	110	90	85	-
			Inter.	2393	2538	2901	2901	2901	2901	2538	2176	1885	1450	-
				165	175	200	200	200	200	175	150	130	100	-
			Peak	3263	3263	3263	3263	3263	3263	3263	2901	2538	2176	-
				225	225	225	225	225	225	225	200	175	150	-
Max. Output	hp		Cont.	11.4	12.7	16.8	17.4	16.8	16.8	13.4	9.4	8.0	6.7	-
	kW			8.5	9.5	12.5	13.0	12.5	12.5	10.0	7.0	6.0	5.0	-
			Inter.	13.1	15.0	20.1	20.1	19.4	18.8	17.4	12.7	12.1	10.7	-
				9.8	11.2	15.0	15.0	14.5	14.0	13.0	9.5	9.0	8.0	-
Max. Torque Shaft extensions with diameters Ø 1 1/4" Ø 32 mm, 35 mm	lbf-ft		Cont.	53.1	73.8	143.8	177.0	221.3	280.3	331.9	398.3	405.7	427.8	427.8
	Nm			72	100	195	240	300	380	450	540	550	580	580
			Inter.	61.2	92.9	162.3	206.5	250.8	317.2	368.8	449.9	508.9	508.9	508.9
				83	126	220	280	340	430	500	610	690	690	690
			Peak	77.4	121.7	199.1	236.0	272.9	339.3	413.0	523.7	619.6	612.2	612.2
				105	165	270	320	370	460	560	710	840	830	830
Max. Pressure Drop	Δ psi		Cont.	2031	2031	2538	2538	2538	2538	2538	2538	1958	1668	1450
	Δ bar			140	140	175	175	175	175	175	175	135	115	100
			Inter.	2393	2538	2901	2901	2901	2901	2901	2901	2538	2176	1740
				165	175	200	200	200	200	200	200	175	150	120
			Peak	3263	3263	3263	3263	3263	3263	3263	3263	3046	2538	2176
				225	225	225	225	225	225	225	225	210	175	150
Max. Output	hp		Cont.	11.4	12.7	16.8	17.4	16.8	16.8	14.8	13.4	12.1	10.1	10.1
	kW			8.5	9.5	12.5	13.0	12.5	12.5	11.0	10.0	9.0	7.5	7.5
			Inter.	13.1	15.0	20.1	20.1	19.4	18.8	17.4	16.1	13.4	12.1	12.1
				9.8	11.2	15.0	15.0	14.5	14.0	13.0	12.0	10.0	9.0	9.0
Weight	lbs			15.4	15.7	16.3	16.8	17.2	17.9	19.0	20.3	21.6	22.9	22.9
	kg			7.0	7.1	7.4	7.6	7.8	8.1	8.6	9.2	9.8	10.4	10.4

Notes:

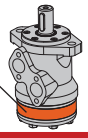
1. Continuous rating (Cont.): motor may be run continuously at these ratings.
2. Intermittent operation (Inter.): 10% of every minute. (6 sec.)
3. Peak: 1% of every minute. (0.6 sec.)

* 500 cc motor only offered on the BMR series with shaft extensions Ø 1-1/4", Ø 32 mm, 35 mm

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 - BMR, BMRS, BMRWN SERIES

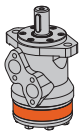
Performance data is based on the geroler displacement and applies to all models.
BMR, BMRS, BMRWN



BMR 36 — 2.2 in³/rev. (36 cm³/rev.)

Torque / Speed		Δ Pressure psi (bar) ➡						Max. Cont.	Max. Inter.
	lbf.ft (Nm) / rpm	290 (20)	435 (30)	725 (50)	1015 (70)	1305 (90)	1450 (100)	1813 (125)	2031 (140)	2393 (165)
Flow gpm (l/min) ⬇	1.1 (4)	7.4 (10) 105	11.8 (16) 100	18.4 (25) 92	27.3 (37) 80	33.9 (46) 71	36.9 (50) 58			
	2.1 (8)	6.6 (9) 208	11.1 (15) 200	18.4 (25) 188	27.3 (37) 175	34.7 (47) 158	36.9 (50) 149	46.5 (63) 134	52.4 (71) 120	61.2 (83) 108
	4.0 (15)	5.9 (8) 403	10.3 (14) 392	17.0 (23) 380	26.6 (36) 365	33.2 (45) 348	37.6 (51) 326	47.2 (64) 318	53.1 (72) 302	60.5 (82) 274
	5.3 (20)	4.4 (6) 540	9.6 (13) 531	16.2 (22) 518	25.8 (35) 500	32.5 (44) 483	36.9 (50) 462	47.2 (64) 450	53.1 (72) 435	60.5 (82) 412
	7.9 (30)	4.4 (6) 810	8.9 (12) 798	15.5 (21) 780	23.6 (32) 763	31.0 (42) 742	34.7 (47) 722	46.5 (63) 705	51.6 (70) 694	59.0 (80) 668
Max. Cont.	10.6 (40)	3.7 (5) 1092	8.1 (11) 1080	14.0 (19) 1069	22.1 (30) 1056	30.2 (41) 1042	33.2 (45) 1028	45.0 (61) 1011	50.2 (68) 984	58.3 (79) 957
Max. Inter.	11.9 (45)	3 (4) 1230	7.4 (10) 1215	12.5 (17) 1194	21.4 (29) 1170	29.5 (40) 1150	32.5 (44) 1128	43.5 (59) 1100	48.7 (66) 1070	56.8 (77) 1020

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



BMR 50 — 3.2 in³/rev. (51.7 cm³/rev.)

Torque / Speed		Δ Pressure psi (bar) ➡					Max. Cont.		Max. Inter.
	lbf.ft (Nm) / rpm	725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)
Flow gpm (l/min) ⬇	1.3 (5)	25.8 (35) 93	33.2 (45) 84	45.0 (61) 76	49.4 (67) 73	56.8 (77) 69	64.9 (88) 46		
	2.6 (10)	26.6 (36) 186	33.9 (46) 178	45.7 (62) 166	50.9 (69) 162	59.0 (80) 153	70.1 (95) 136	79.7 (108) 118	88.5 (120) 97
	4.0 (15)	25.8 (35) 283	36.1 (49) 277	46.5 (63) 269	53.8 (73) 261	64.9 (88) 250	73.8 (100) 230	80.4 (109) 211	90.7 (123) 185
	5.3 (20)	25.4 (34.5) 377	34.7 (47) 375	45.0 (61) 365	50.9 (69) 361	61.2 (83) 346	70.8 (96) 330	80.4 (109) 302	92.9 (126) 270
	7.9 (30)	24.3 (33) 576	32.5 (44) 569	44.3 (60) 561	49.4 (67) 554	59.0 (80) 542	70.1 (95) 531	79.7 (108) 500	92.9 (126) 465
	10.6 (40)	22.1 (30) 760	30.2 (41) 758	42.8 (58) 753	48.7 (66) 750	58.3 (79) 738	67.9 (92) 724	78.2 (106) 700	90.0 (122) 670
	11.9 (45)	21.8 (29.5) 856	29.5 (40) 853	42.0 (57) 849	47.9 (65) 845	57.5 (78) 835	66.4 (90) 815	77.4 (105) 796	89.2 (121) 770
Max. Cont.	13.2 (50)	19.2 (26) 950	27.3 (37) 940	39.1 (53) 925	44.3 (60) 906	53.8 (73) 880	62.7 (85) 852	73.0 (99) 832	84.1 (114) 801
Max. Inter.	15.9 (60)	14.8 (20) 1138	24.3 (33) 1124	35.4 (48) 1100	41.3 (56) 1075	50.9 (69) 1056	59.7 (81) 1028	70.1 (95) 1006	80.4 (109) 970

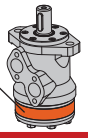
Continuous values — Intermittent values (max 10% operation every minute)

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 - BMR, BMRS, BMRWN SERIES

BMR 80 — 5.0 in³/rev. (81.5 cm³/rev.)

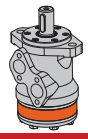
Performance data is based on the geroler displacement and applies to all models. BMR, BMRS, BMRWN



Torque lbf.ft (Nm) / Speed rpm	Δ Pressure psi (bar) ➡					Max. Cont.			Max. Inter.
	725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
Flow gpm (l/min) ⬇ 1.3 (5)	36.9 (50) 59	47.2 (64) 56	64.9 (88) 50	79.7 (108) 44	98.1 (133) 38				
2.6 (10)	39.8 (54) 118	56.8 (77) 113	73.0 (99) 106	79.7 (108) 97	95.1 (129) 86	110.6 (150) 79	127.6 (173) 56		
5.3 (20)	42.0 (57) 238	57.5 (78) 234	75.2 (102) 227	81.9 (111) 216	98.8 (134) 203	114.3 (155) 190	130.5 (177) 178	144.6 (196) 154	166.0 (225) 135
7.9 (30)	39.8 (54) 360	55.3 (75) 352	73.8 (100) 340	79.7 (108) 332	96.6 (131) 316	112.1 (152) 302	129.8 (176) 290	143.8 (195) 274	164.5 (223) 250
10.6 (40)	35.4 (48) 480	53.8 (73) 470	70.8 (96) 458	77.4 (105) 445	93.7 (127) 430	109.2 (148) 418	126.9 (172) 403	140.1 (190) 388	162.3 (220) 359
13.2 (50)	31.0 (42) 604	51.6 (70) 595	68.6 (93) 582	75.2 (102) 570	91.5 (124) 556	108.4 (147) 540	125.4 (170) 521	138.7 (188) 504	160.8 (218) 487
Max. Cont. 15.9 (60)	27.3 (37) 726	48.7 (66) 715	65.6 (89) 704	72.3 (98) 692	89.2 (121) 678	106.2 (144) 663	122.4 (166) 647	135.7 (184) 622	157.1 (213) 594
18.5 (70)	23.6 (32) 845	44.3 (60) 834	61.2 (83) 820	70.1 (95) 802	85.6 (116) 789	103.3 (140) 767	118.0 (160) 754	130.5 (177) 730	153.4 (208) 705
Max. Inter. 19.8 (75)	15.5 (21) 910	36.9 (50) 895	57.5 (78) 881	66.4 (90) 867	81.9 (111) 852	99.6 (135) 830	113.6 (154) 806	126.1 (171) 787	147.5 (200) 756

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

BMR 100 — 6.2 in³/rev. (102 cm³/rev.)



Torque lbf.ft (Nm) / Speed rpm	Δ Pressure psi (bar) ➡					Max. Cont.			Max. Inter.
	725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
Flow gpm (l/min) ⬇ 1.3 (5)	48.7 (66) 45	67.9 (92) 42	88.5 (120) 38	99.6 (135) 34	115.1 (156) 27				
2.6 (10)	50.2 (68) 93	70.8 (96) 90	92.2 (125) 86	101.8 (138) 81	117.3 (159) 74	138.7 (188) 57	156.4 (212) 42		
5.3 (20)	47.9 (65) 189	69.3 (94) 185	90.7 (123) 180	101.0 (137) 173	114.3 (155) 165	137.2 (186) 158	154.9 (210) 150	175.5 (238) 139	202.1 (274) 118
7.9 (30)	46.5 (63) 286	67.9 (92) 281	88.5 (120) 275	98.1 (133) 266	112.8 (153) 257	136.4 (185) 246	154.2 (209) 237	173.3 (235) 225	199.1 (270) 207
10.6 (40)	42.0 (57) 385	64.9 (88) 378	86.3 (117) 365	95.9 (130) 355	112.1 (152) 345	136.4 (185) 332	153.4 (208) 320	171.9 (233) 314	196.9 (267) 297
13.2 (50)	35.4 (48) 482	58.3 (79) 477	81.1 (110) 470	90.7 (123) 460	110.6 (150) 448	135.0 (183) 435	150.5 (204) 420	168.2 (228) 405	191.8 (260) 389
Max. Cont. 15.9 (60)	28.0 (38) 580	51.6 (70) 572	77.4 (105) 560	88.5 (120) 548	106.2 (144) 535	131.3 (178) 523	147.5 (200) 510	162.3 (220) 500	185.9 (252) 478
18.5 (70)	23.6 (32) 678	47.9 (65) 670	73.8 (100) 660	87.0 (118) 648	104.0 (141) 638	129.8 (176) 626	145.3 (197) 615	158.6 (215) 606	181.4 (246) 580
Max. Inter. 19.8 (75)	17.0 (23) 728	43.5 (59) 720	68.6 (93) 710	81.9 (111) 695	100.3 (136) 681	125.4 (170) 667	141.6 (192) 650	154.9 (210) 634	177.0 (240) 618

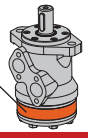
☐ Continuous values ▭ Intermittent values (max 10% operation every minute)

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 - BMR, BMRS, BMRWN SERIES

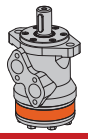
BMR 125 — 7.8 in³/rev. (127.2 cm³/rev.)

Performance data is based on the geroler displacement and applies to all models. BMR, BMRS, BMRWN



Torque / Speed		Δ Pressure psi (bar) ➡							Max. Cont.	Max. Inter.
		725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
Flow gpm (l/min) ⬇	1.3 (5)	56.1 (79) 36	81.1 (110) 31	106.9 (145) 25	123.2 (167) 19	139.4 (189) 13				
	2.6 (10)	62.0 (84) 73	87.0 (118) 70	114.3 (155) 60	129.8 (176) 48	149.0 (202) 36	168.2 (228) 25	186.6 (253) 19		
	5.3 (20)	60.5 (82) 153	86.3 (117) 151	112.8 (153) 148	128.3 (174) 144	147.5 (200) 138	169.6 (230) 128	191.0 (259) 117	216.8 (294) 104	244.9 (332) 73
	7.9 (30)	58.3 (79) 231	85.6 (116) 228	111.4 (151) 224	126.1 (171) 218	146.0 (198) 210	168.2 (228) 201	189.6 (257) 183	215.4 (292) 168	242.7 (329) 137
	10.6 (40)	53.1 (72) 309	84.1 (114) 307	109.2 (148) 303	123.9 (168) 298	144.6 (196) 292	166.7 (226) 280	188.8 (256) 270	213.9 (290) 252	241.2 (327) 218
	13.2 (50)	45.7 (62) 389	77.4 (105) 386	105.5 (143) 382	121.7 (165) 378	143.8 (195) 370	164.5 (223) 360	187.3 (254) 344	211.7 (287) 328	238.2 (323) 292
Max. Cont.	15.9 (60)	38.4 (52) 467	72.3 (98) 463	100.3 (136) 459	118.0 (160) 456	140.9 (191) 448	162.3 (220) 427	184.4 (250) 410	208.0 (282) 399	235.3 (319) 352
Inter.	18.5 (70)	30.2 (41) 545	66.4 (90) 542	95.9 (130) 538	115.1 (156) 534	137.9 (187) 529	158.6 (215) 520	178.5 (242) 508	205.0 (278) 486	230.9 (313) 430
Max. Inter.	19.8 (75)	23.6 (32) 586	58.3 (79) 583	92.9 (126) 578	109.2 (148) 570	132.8 (180) 560	153.4 (208) 546	172.6 (234) 532	193.2 (262) 520	221.3 (300) 480

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



BMR 160 — 9.6 in³/rev. (157.2 cm³/rev.)

Torque / Speed		Δ Pressure psi (bar) ➡							Max. Cont.	Max. Inter.
		725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
Flow gpm (l/min) ⬇	1.3 (5)	76.7 (104) 26	107.7 (146) 23	140.1 (190) 20	154.9 (210) 16	180.7 (245) 10				
	2.6 (10)	78.9 (107) 59	110.6 (150) 56	143.8 (195) 50	159.3 (216) 45	184.4 (250) 37	213.9 (290) 30	247.1 (335) 22		
	5.3 (20)	75.2 (102) 121	111.4 (151) 118	146.0 (198) 115	162.3 (220) 113	189.6 (257) 108	219.8 (298) 102	252.2 (342) 97	272.9 (370) 90	309.8 (420) 78
	7.9 (30)	71.5 (97) 184	107.7 (146) 178	140.. (190) 173	160.1 (217) 170	188.8 (256) 164	217.6 (295) 155	250.8 (340) 143	271.4 (368) 128	306.8 (416) 103
	10.6 (40)	65.6 (89) 246	103.3 (140) 241	136.4 (185) 235	154.9 (210) 228	185.9 (252) 220	213.9 (290) 210	247.1 (335) 194	267.7 (363) 177	303.9 (412) 150
	13.2 (50)	53.1 (72) 310	94.4 (128) 307	132.0 (179) 300	149.0 (202) 295	180.0 (244) 287	209.5 (284) 278	241.2 (327) 262	264.0 (358) 247	301.7 (409) 210
Max. Cont.	15.9 (60)	44.3 (60) 374	85.6 (116) 367	125.4 (170) 359	146.0 (198) 354	177.0 (240) 346	205.8 (279) 338	236.8 (321) 323	259.6 (352) 306	295.0 (400) 265
Inter.	18.5 (70)	36.1 (49) 437	78.9 (107) 430	121.0 (164) 421	142.3 (193) 415	171.9 (233) 403	199.9 (271) 393	227.9 (309) 381	253.7 (344) 365	287.6 (390) 318
Max. Inter.	19.8 (75)	26.5 (36) 472	72.3 (98) 463	112.1 (152) 450	136.4 (185) 441	166.7 (226) 431	195.5 (265) 420	221.3 (300) 405	246.3 (334) 389	279.5 (379) 365

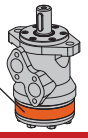
Continuous values — Intermittent values (max 10% operation every minute)

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.

ANFIELD Orbital Motor Catalog BMR/BMRS Rev. A (1/18/2024)

PERFORMANCE DATA - BMR, BMRS, BMRWN SERIES

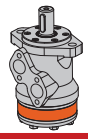
Performance data is based on the geroler displacement and applies to all models. BMR, BMRS, BMRWN



BMR 200 — 11.9 in³/rev. (194.5 cm³/rev.)

Torque lbf.ft (Nm) / Speed rpm	Δ Pressure psi (bar) ➡ 725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
						Max. Cont.			Max. Inter.
Flow gpm (l/min) ⬇ 1.3 (5)	97.4 (132) 24	133.5 (181) 22	175.5 (238) 18	193.2 (262) 13	228.6 (310) 10				
2.6 (10)	99.6 (135) 49	137.2 (186) 47	177.0 (240) 45	194.7 (264) 43	232.3 (315) 38	262.6 (356) 33	297.2 (403) 24		
5.3 (20)	96.6 (131) 99	135.0 (183) 97	175.5 (238) 94	191.8 (260) 92	231.6 (314) 88	264.0 (358) 83	298.0 (404) 74	323.1 (438) 64	367.3 (498) 56
7.9 (30)	92.9 (126) 149	131.3 (178) 147	171.9 (233) 144	187.3 (254) 141	229.4 (311) 135	261.8 (355) 126	296.5 (402) 113	317.9 (431) 105	358.5 (486) 91
10.6 (40)	82.6 (112) 200	124.6 (169) 197	168.2 (228) 194	184.4 (250) 191	226.4 (307) 185	259.6 (352) 174	295.0 (400) 160	314.2 (426) 151	351.8 (477) 127
13.2 (50)	70.1 (95) 252	115.1 (156) 249	163.0 (221) 246	181.4 (246) 243	221.3 (300) 238	258.1 (350) 228	293.5 (398) 212	310.5 (421) 194	346.7 (470) 161
Max. Cont. 15.9 (60)	57.5 (78) 304	106.9 (145) 301	157.1 (213) 298	175.5 (238) 294	213.2 (289) 286	252.2 (342) 276	284.7 (386) 262	303.9 (412) 243	338.5 (459) 218
18.5 (70)	49.4 (67) 355	99.6 (135) 353	151.9 (206) 349	168.2 (228) 340	204.3 (277) 329	247.8 (336) 316	276.6 (375) 300	300.9 (408) 288	334.1 (453) 257
Max. Inter. 19.8 (75)	42.8 (58) 382	92.2 (125) 379	145.3 (197) 373	162.3 (220) 362	199.1 (270) 350	236.8 (321) 337	265.5 (360) 322	293.5 (398) 312	326.0 (442) 278

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



BMR 250 — 15.5 in³/rev. (253.5 cm³/rev.)

Torque lbf.ft (Nm) / Speed rpm	Δ Pressure psi (bar) ➡ 725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)	2901 (200)
						Max. Cont.			Max. Inter.
Flow gpm (l/min) ⬇ 1.3 (5)	129.1 (175) 17	179.2 (243) 16	224.2 (304) 14	252.2 (342) 12	300.2 (407) 10				
2.6 (10)	131.3 (178) 37	181.4 (246) 35	228.6 (310) 31	253.7 (344) 28	301.7 (409) 23	343.0 (465) 18	387.2 (525) 11		
5.3 (20)	129.1 (175) 75	180.0 (244) 73	227.2 (308) 72	250.8 (340) 70	300.9 (408) 66	341.5 (463) 58	383.5 (520) 53	411.6 (558) 50	469.1 (636) 42
7.9 (30)	119.5 (162) 114	173.3 (235) 111	224.2 (304) 108	244.9 (332) 106	295.0 (400) 100	335.6 (455) 92	380.6 (516) 83	405.7 (550) 77	458.0 (621) 65
10.6 (40)	105.5 (143) 154	164.5 (223) 152	221.3 (300) 150	242.7 (329) 147	292.1 (396) 143	329.7 (447) 132	377.6 (512) 120	402.7 (546) 110	455.1 (617) 90
13.2 (50)	91.5 (124) 193	153.4 (208) 190	213.2 (289) 187	238.2 (323) 174	283.2 (384) 168	324.5 (440) 160	371.0 (503) 149	394.6 (535) 140	442.5 (600) 116
Max. Cont. 15.9 (60)	76.0 (103) 233	141.6 (192) 230	206.5 (280) 227	231.6 (314) 224	273.6 (371) 218	314.2 (426) 205	360.7 (489) 190	379.1 (514) 181	426.3 (578) 155
18.5 (70)	64.9 (88) 273	131.3 (178) 270	194.7 (264) 267	222.0 (301) 263	262.6 (356) 252	308.3 (418) 242	353.3 (479) 226	367.3 (498) 209	413.0 (560) 173
Max. Inter. 19.8 (75)	45.7 (62) 294	121.7 (165) 291	188.8 (256) 287	212.4 (288) 283	255.9 (347) 274	303.9 (412) 263	349.6 (474) 249	358.5 (486) 236	399.8 (542) 211

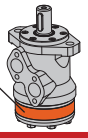
Continuous values Intermittent values (max 10% operation every minute)

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 - BMR, BMRS, BMRWN SERIES

BMR 315 — 19.4 in³/rev. (317.5 cm³/rev.)

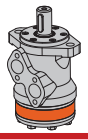
Performance data is based on the geroler displacement and applies to all models. BMR, BMRS, BMRWN



Torque / Speed		Δ Pressure psi (bar) ➡					Max. Cont.		Max. Inter.
	lbf.ft (Nm) / rpm	725 (50)	1015 (70)	1305 (90)	1450 (100)	1740 (120)	2031 (140)	2321 (160)	2538 (175)
Flow gpm (l/min) ⬇	1.3 (5)	158.6 (215) 13	222.7 (302) 11						
	2.6 (10)	160.8 (218) 28	225.0 (305) 27	282.5 (383) 25	311.3 (422) 24	359.9 (488) 21	406.4 (551) 18	458.8 (622) 13	
	5.3 (20)	158.6 (215) 60	223.5 (303) 59	280.3 (380) 57	308.3 (418) 55	357.7 (485) 52	404.9 (549) 49	457.3 (620) 45	486.5 (660) 42
	7.9 (30)	150.5 (204) 91	218.3 (296) 89	276.6 (375) 86	304.6 (413) 84	354.0 (480) 81	399.8 (542) 78	452.1 (613) 72	482.4 (654) 67
	10.6 (40)	144.6 (196) 122	211.7 (287) 120	271.4 (368) 117	302.4 (410) 112	351.8 (477) 106	397.5 (539) 100	449.2 (609) 94	479.4 (650) 85
	13.2 (50)	129.8 (176) 154	199.1 (270) 151	262.6 (356) 147	289.9 (393) 140	340.0 (461) 131	388.0 (526) 120	440.3 (597) 109	475.7 (645) 100
Max. Cont.	15.9 (60)	119.5 (162) 185	181.4 (246) 182	250.0 (339) 177	275.8 (374) 172	329.0 (446) 163	376.9 (511) 152	432.2 (586) 140	463.2 (628) 134
	18.5 (70)	105.5 (143) 217	173.3 (235) 213	239.0 (324) 208	264.0 (358) 201	317.2 (430) 190	363.6 (493) 178	414.5 (562) 166	452.9 (614) 138
Max. Inter.	19.8 (75)	92.2 (125) 232	156.4 (212) 228	223.5 (303) 222	250.0 (339) 216	307.6 (417) 208	354.8 (481) 200	400.5 (543) 183	429.3 (582) 171

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

BMR 375 — 23.3 in³/rev. (381.4 cm³/rev.)



Torque / Speed		Δ Pressure psi (bar) ➡					Max. Cont.		Max. Inter.
	lbf.ft (Nm) / rpm	435 (30)	653 (45)	798 (55)	943 (65)	1160 (80)	1450 (100)	1813 (125)	2031 (140)
Flow gpm (l/min) ⬇	1.3 (5)	112.8 (153) 12	171.1 (232) 10						
	2.6 (10)	115.8 (157) 24	174.1 (236) 23	209.5 (284) 22	248.6 (337) 21	299.4 (406) 19	366.6 (497) 17	451.4 (612) 15	492.7 (668) 12
	5.3 (20)	110.6 (150) 49	171.1 (232) 48	206.5 (280) 47	244.9 (332) 46	295.8 (401) 44	361.4 (490) 41	447.0 (606) 38	489.8 (660) 32
	7.9 (30)	104.7 (142) 76	158.6 (215) 75	202.1 (274) 74	241.2 (327) 73	293.5 (398) 71	356.2 (483) 67	444.7 (603) 63	480.9 (652) 50
	10.6 (40)	92.9 (126) 103	156.4 (212) 101	197.7 (268) 99	236.0 (320) 97	289.9 (393) 95	351.8 (477) 92	437.4 (593) 88	468.4 (635) 70
	13.2 (50)	77.4 (105) 128	137.9 (187) 126	178.5 (242) 124	222.7 (302) 121	277.3 (376) 118	335.6 (455) 115	430.0 (583) 111	448.4 (608) 96
Max. Cont.	15.9 (60)	66.4 (90) 154	123.2 (167) 152	168.9 (229) 150	207.3 (281) 148	267.0 (362) 145	327.5 (444) 138	417.5 (566) 130	442.5 (600) 121
	18.5 (70)	66.4 (90) 180	109.9 (149) 179	147.5 (200) 178	190.3 (258) 176	251.5 (341) 173	313.5 (425) 168	402.7 (549) 160	427.8 (580) 148
Max. Inter.	19.8 (75)	41.3 (56) 195	92.2 (125) 194	134.2 (182) 193	177.8 (241) 191	236.0 (320) 189	300.9 (408) 185	386.5 (524) 178	416.7 (565) 170

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

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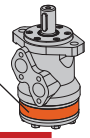
Performance data is typical of randomly selected motors at back pressure of 72.5 to 145 psi [5 to 10 bar] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122 F]. Actual data may vary slightly from one production motor to another.

ANFIELD Orbital Motor Catalog BMR/BMRS Rev. A (1/18/2024)

PERFORMANCE DATA - BMR, BMRS, BMRWN SERIES

BMR 500* 29.8 in³/rev. (489 cm³/rev.)

Performance data is based on the geroler displacement and applies to all models.
BMR, BMRS, BMRWN



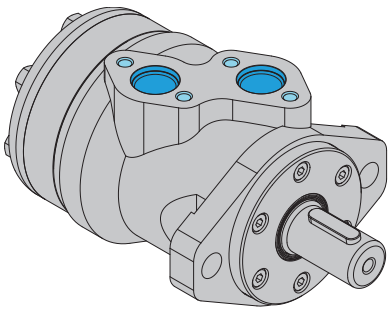
Torque lbf.ft (Nm) / Speed rpm		△ Pressure psi (bar) ➡				Max. Cont.	Max. Inter.
		435 (30)	**653** (45)	**870** (60)	**1160** (80)	**1450** (100)	**1740** (120)
Flow gpm (l/min) ⬇	**2.6** (10)	**141.6** (192) **16**	**210.9** (286) **17**	**280.3** (380) **16**	**372.5** (505) **14**	**457.3** (620) **12**	**542.1** (735) **9**
	5.3 (20)	**143.8** (195) **38**	**216.1** (293) **37**	**284.7** (386) **35**	**377.6** (512) **32**	**461.0** (625) **28**	**545.8** (740) **22**
	7.9 (30)	**137.2** (186) **58**	**221.3** (300) **77**	**291.3** (395) **56**	**383.5** (520) **53**	**467.6** (634) **49**	**551.7** (748) **40**
	10.5 (40)	**125.4** (170) **78**	**221.3** (300) **77**	**287.6** (390) **75**	**387.2** (525) **72**	**472.0** (640) **68**	**556.9** (755) **60**
	13.2 (50)	**116.5** (158) **99**	**213.9** (290) **97**	**281.7** (382) **95**	**379.8** (515) **92**	**464.7** (630) **88**	**550.2** (746) **78**
Max. Cont.	**15.9** (60)	**104.7** (142) **120**	**191.8** (260) **118**	**269.2** (365) **116**	**368.8** (500) **112**	**448.4** (608) **108**	**538.4** (730) **100**
	18.5 (70)	**92.2** (125) **140**	**180.7** (245) **138**	**250.8** (340) **136**	**355.5** (482) **132**	**433.7** (588) **127**	**520.7** (706) **118**
Max. Inter.	**19.8** (75)	**76.7** (104) **150**	**166.7** (226) **148**	**237.5** (322) **146**	**343.0** (465) **142**	**418.9** (568) **136**	**506.0** (686) **128**

□ **Continuous values** ▭ **Intermittent values (max 10% operation every minute)**

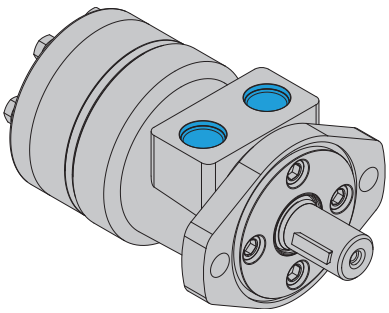
*500 cc motor only offered on the BMR models with shaft extensions Ø 1-1/4", 32 mm, 35 mm.

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.

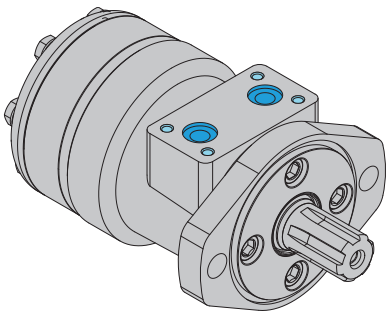
BMR/BMRS PORTING CODE OVERVIEW



BMR
Line/Manifold Mount (Offset)
S, P, D, R, M

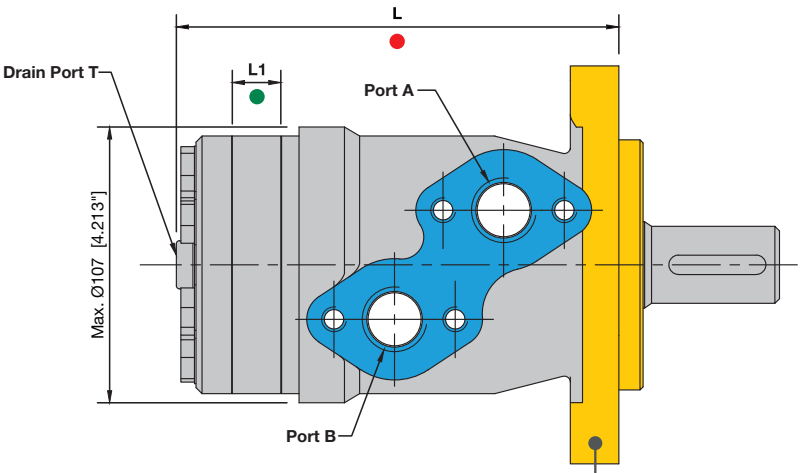


BMRS
Line Mount (Aligned)
S, P, G, R, M1, M2, M3



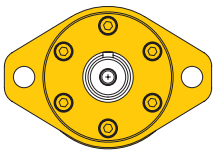
BMRS
Manifold Mount (Aligned)
B4, B5

BMR DIMENSIONS, PORT & MOUNTING DETAILS

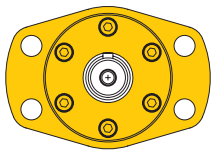


Model	Oval Mounts L mm [in]	Square Mounts L mm [in]	GEROLER WIDTH L1 mm [in]
BMR 36	137.0 [5.39"]	142.0 [5.591]	7.0 [0.28"]
BMR 50	140.0 [5.51"]	145.0 [5.71"]	10.0 [0.39"]
BMR 80	146.0 [5.75"]	151.0 [5.94"]	16.0 [0.63"]
BMR 100	150.0 [5.91"]	155.0 [6.10"]	20.0 [0.79"]
BMR 125	155.0 [6.10"]	160.0 [6.30"]	25.0 [0.98"]
BMR 160	160.5 [6.32"]	165.5 [6.52"]	30.5 [1.20"]
BMR 200	168.1 [6.62"]	173.1 [6.81"]	38.1 [1.50"]
BMR 250	180.0 [7.09"]	185.0 [7.28"]	50.0 [1.97"]
BMR 315	192.0 [7.56"]	197.0 [7.76"]	62.0 [2.44"]
BMR 375	204.0 [8.03"]	209.0 [8.23"]	74.0 [2.91"]
BMR 500	199.0 [7.83"]	204.0 [8.03"]	69.0 [2.72"]

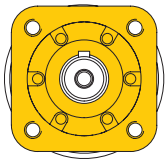
BMR MOUNTING FLANGE — CODE **2**



BMR MOUNTING FLANGE — CODE **4**

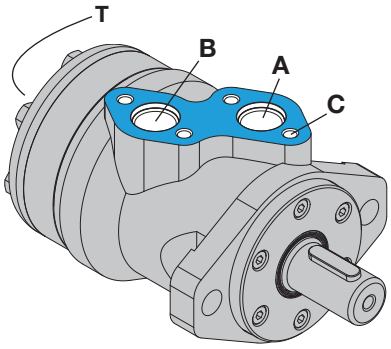


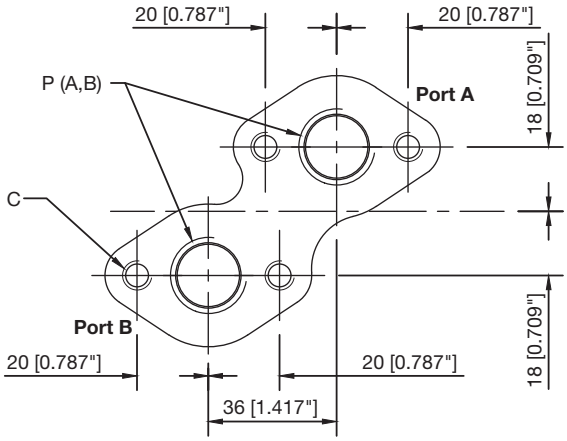
BMR MOUNTING FLANGE — CODE **H4** (U) / **H5** (M)



BMR PORT **S** **P** **D** **R** **M**

Line/Manifold Mount





	BMR PORT CODE				
	S	**P**	**D**	**R**	**M**
Connection	**SAE ports**	**NPTF ports**	**BSPP ports**	**BSPT ports**	**Metric ports**
P (A,B)	7/8-14 UNF (17)	1/2-14 NPTF (15)	G 1/2" (15)	Rc 1/2" (15)	M22x1.5 (15) M
T	7/16-20 UNF (12)	7/16-20 UNF (12)	G 1/4" (12)	Rc 1/4" (9.7)	M14x1.5 (12) M
C (4x)	5/16-18 UNC (13) U	5/16-18 UNC (13) U	M8 (13) M	M8 (13) M	M8 (13) M

(Depth in mm)

S : SAE straight thread (O-Ring Boss)
P : NPTF (National Pipe Tapered Fuel)
D : BSPP (British Standard Pipe Parallel) G thread
R : BSPT (British Standard Pipe Taper) Rc thread
M : Metric port

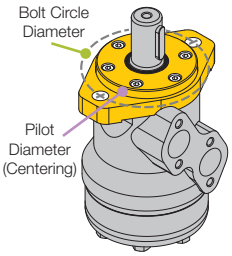
mm [Inch]
U Imperial M Metric

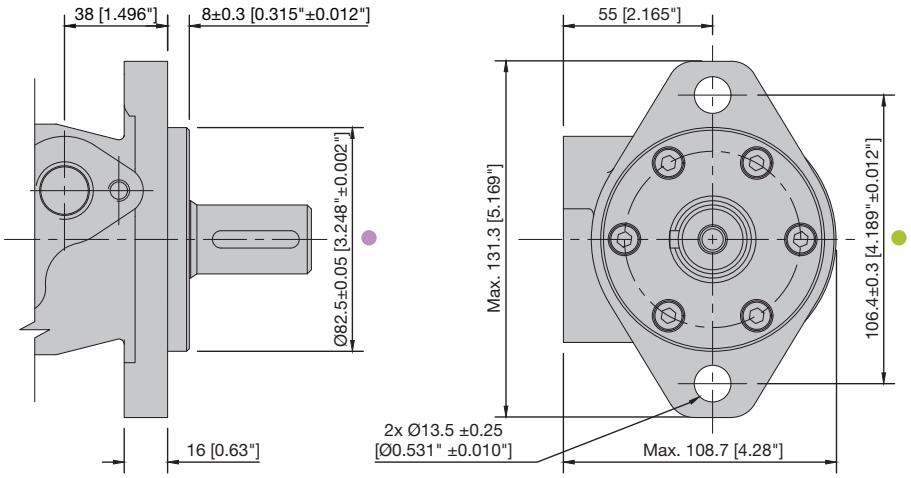
CODE

BMR MOUNTING FLANGE 2

2-Bolt, SAE A Mount

- Pilot Diameter: 3.25"
- Bolt Circle Diameter: 4.19"



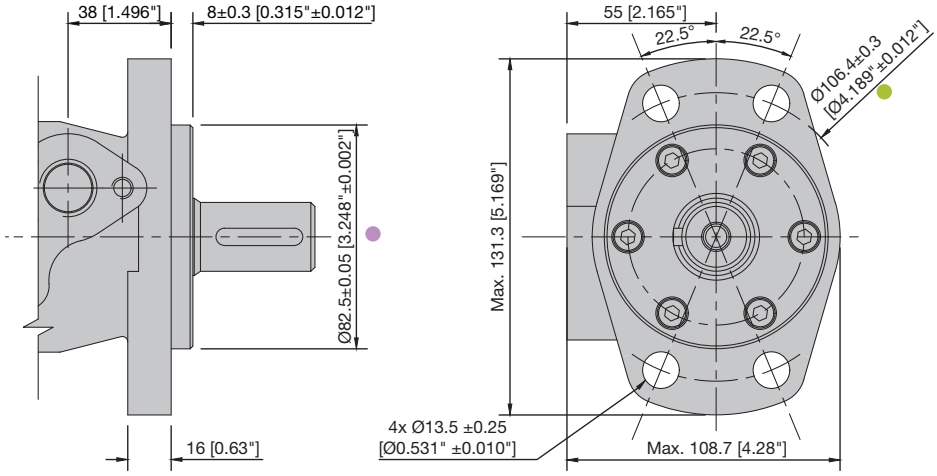


CODE

BMR MOUNTING FLANGE 4

4-Bolt, Magneto Mount

- Pilot Diameter: 3.25"
- Bolt Circle Diameter: 4.19"

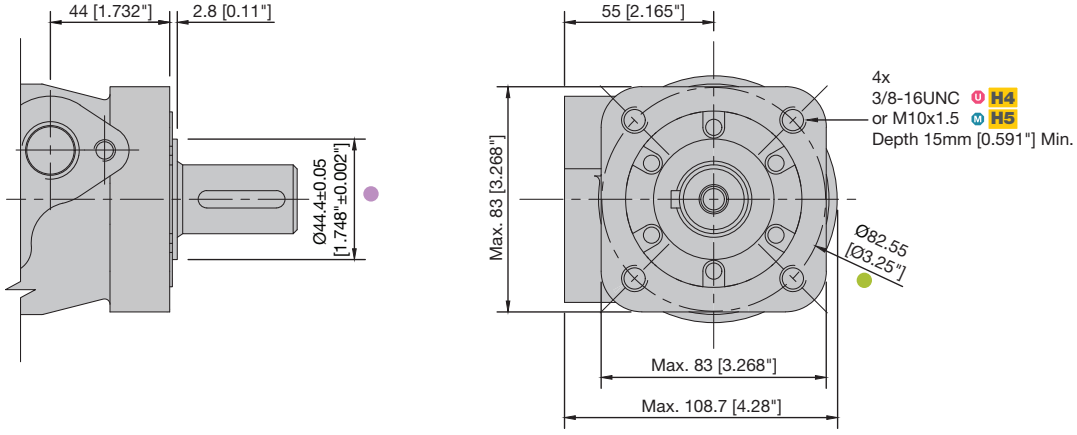


CODE CODE

BMR MOUNTING FLANGE H4 (U) H5 (M)

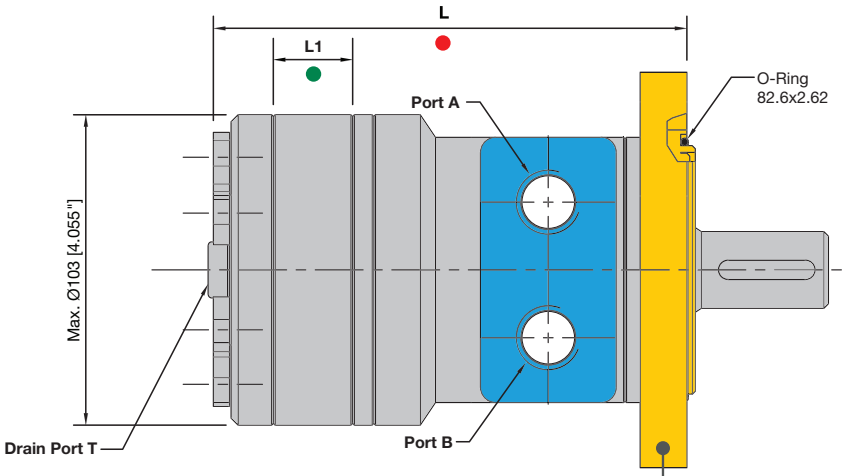
4-Bolt, Square Mount

- Pilot Diameter: 1.75"
- Bolt Circle Diameter: 3.25"



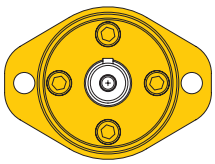
mm [inch]
(U) Imperial (M) Metric
Pilot Diameter
Bolt Circle Diameter

BMRS DIMENSIONS, PORT & MOUNTING DETAILS

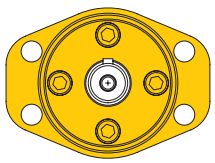


Model	L	GEROLER WIDTH L1
BMRS 36	143.0 [5.63"]	7.0 [0.28"]
BMRS 50	146.0 [5.75"]	10.0 [0.39"]
BMRS 80	152.0 [5.98"]	16.0 [0.63"]
BMRS 100	156.0 [6.14"]	20.0 [0.79"]
BMRS 125	161.0 [6.34"]	25.0 [0.98"]
BMRS 160	166.5 [6.56"]	30.5 [1.20"]
BMRS 200	174.0 [6.85"]	38.1 [1.50"]
BMRS 250	186.0 [7.32"]	50.0 [1.97"]
BMRS 315	198.0 [7.80"]	62.0 [2.44"]
BMRS 375	210.0 [8.27"]	74.0 [2.91"]

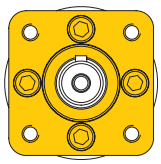
BMRS MOUNTING FLANGE — CODE **H2**



BMRS MOUNTING FLANGE — CODE **H6**

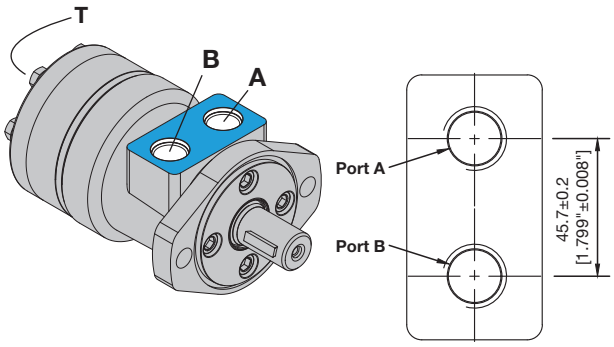


BMRS MOUNTING FLANGE — CODE **H4** (U) / **H5** (M)



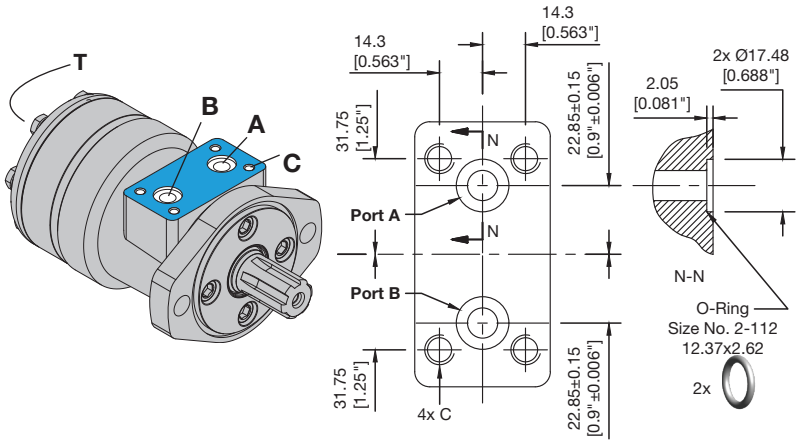
BMRS PORT | **S** | **P** | **G** | **R** | **M1** | **M2** | **M3**

Line Mount



BMRS PORT | **B4** (U) | **B5** (M)

Manifold Mount



	BMRS PORT CODE								
	S	P	G	R	M1	M2	M3	B4	B5
Connection	SAE ports	NPTF ports	BSPP ports	BSPT ports	Metric ports	Metric ports	Metric ports	Manifold Mount (U)	Manifold Mount (M)
P (A,B)	7/8-14 UNF (17)	1/2-14 NPTF (15)	G 1/2 (15)	Rc 1/2" (15)	M18x1.5 (15)	M20x1.5 (15)	M22x1.5 (15)	Ø10	Ø10
T	7/16-20 UNF (12)	7/16-20 UNF (12)	G 1/4 (12)	Rc 1/4" (9.7)	M10x1 (12)	M10x1 (12)	M10x1 (12)	7/16-20 UNF (12)	G 1/4 (12)
C (4x)	-	-	-	-	-	-	-	5/16-18 UNC (13) (U)	M8 (13) (M)

S : SAE straight thread (O-Ring Boss)
P : NPTF (National Pipe Tapered Fuel)
G : BSPP (British Standard Pipe Parallel) G thread
R : BSPT (British Standard Pipe Taper) Rc thread
M1, M2, M3 : Metric port

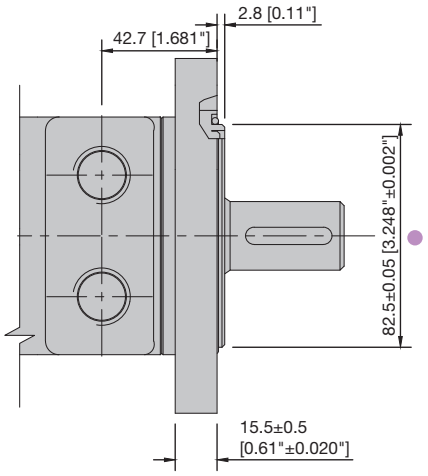
(Depth in mm)

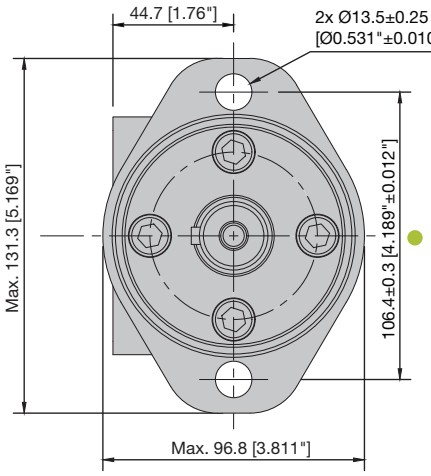
mm [Inch]
(U) Imperial (M) Metric

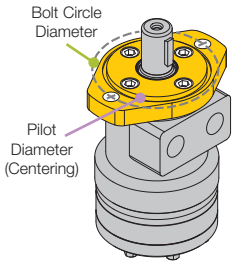
BMRS MOUNTING FLANGE — CODE H2

2-Bolt, SAE A Mount

- Pilot Diameter: 3.25"
- Bolt Circle Diameter: 4.19"



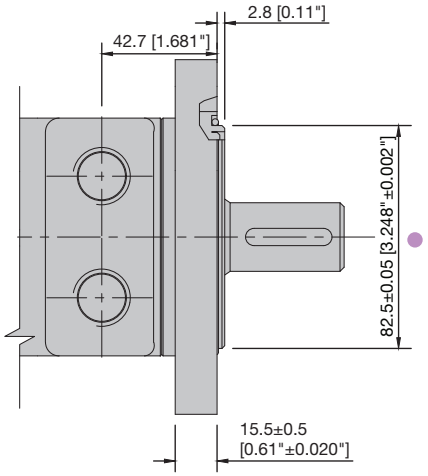


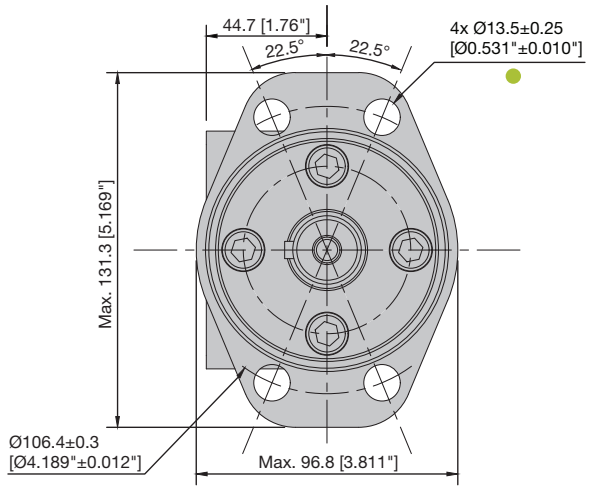


BMRS MOUNTING FLANGE — CODE H6

4-Bolt, Magneto Mount

- Pilot Diameter: 3.25"
- Bolt Circle Diameter: 4.19"

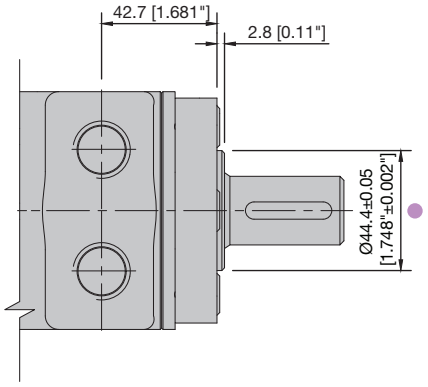


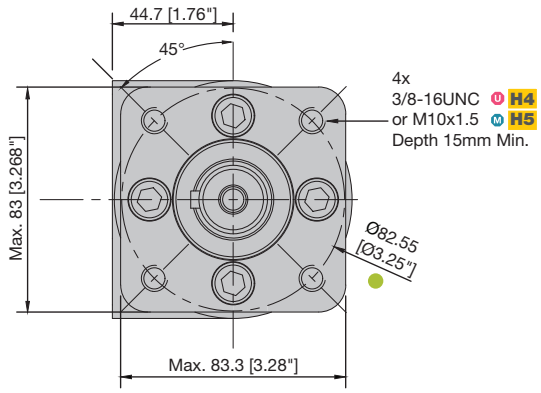


BMRS MOUNTING FLANGE — CODE H4 (U) CODE H5 (M)

4-Bolt, Square Mount

- Pilot Diameter: 1.75"
- Bolt Circle Diameter: 3.25"





mm [inch]
(U) Imperial (M) Metric
Pilot Diameter
Bolt Circle Diameter

BMR SHAFT EXTENSIONS

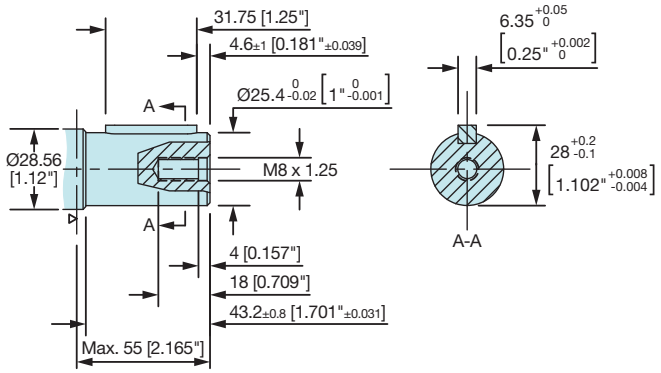
IMPORTANT:
Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

BMR SHAFT EXTENSION — CODE C (IMPERIAL)

1" Straight Keyed

Parallel key ¼"x¼"x1¼"

Max. Torque
290 lbf.ft [395 Nm]

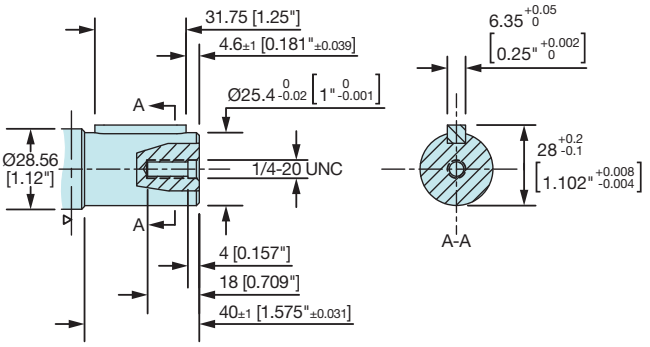


BMR SHAFT EXTENSION — CODE R (IMPERIAL)

1" Straight Keyed

Parallel key ¼"x¼"x1¼"

Max. Torque
290 lbf.ft [395 Nm]

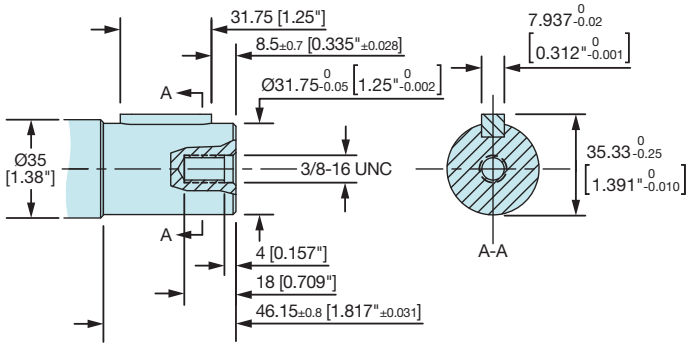


BMR SHAFT EXTENSION — CODE G (IMPERIAL)

1¼" Straight Keyed

Parallel key 5⁄16"x5⁄16"x1¼"

Max. Torque
568 lbf.ft [770 Nm]

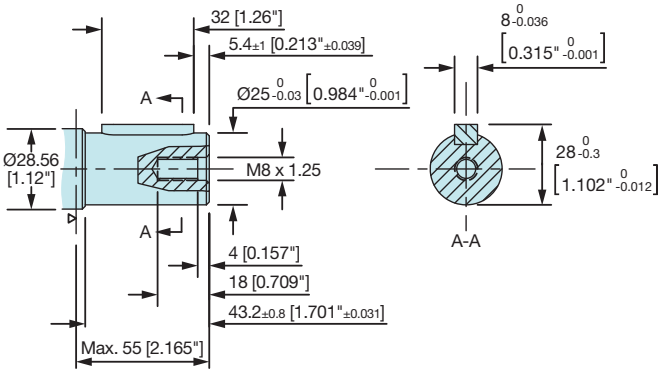


BMR SHAFT EXTENSION — CODE A (METRIC)

25 mm Straight Keyed

Parallel key 8x7x32

Max. Torque
290 lbf.ft [395 Nm]

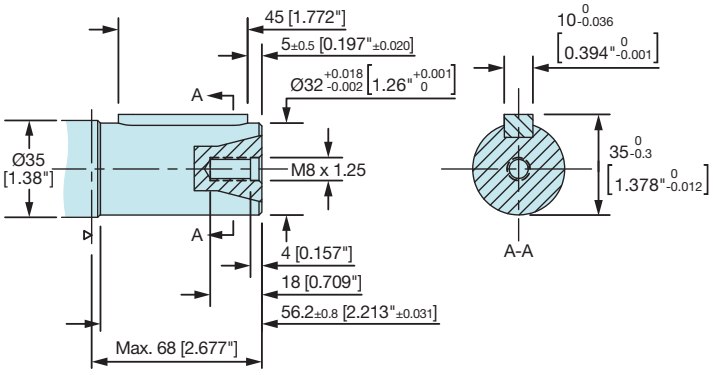


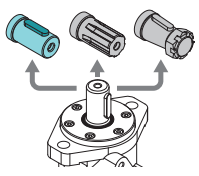
BMR SHAFT EXTENSION — CODE B (METRIC)

32 mm Straight Keyed

Parallel key 10x8x45

Max. Torque
568 lbf.ft [770 Nm]





mm [Inch]
U Imperial M Metric

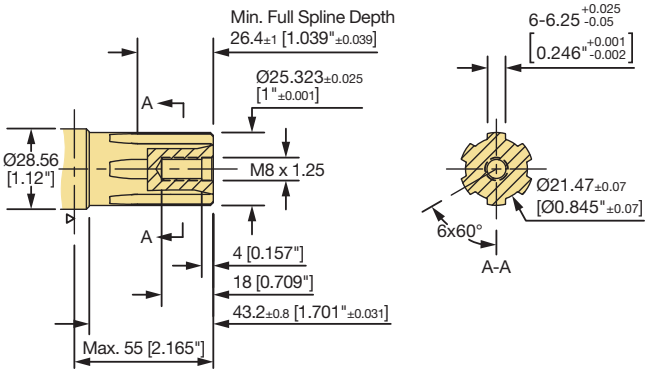
BMR SHAFT EXTENSIONS (cont.)

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

BMR SHAFT EXTENSION — CODE E (U IMPERIAL)

1" SAE 6B Splined

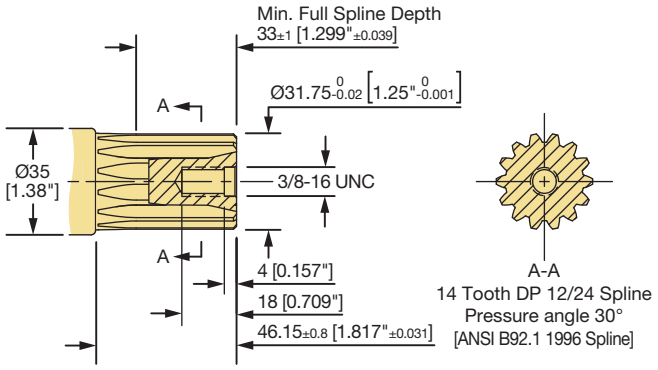
Max. Torque
290 lbf.ft [395 Nm]



BMR SHAFT EXTENSION — CODE F (U IMPERIAL)

1¼" 14 Tooth Splined

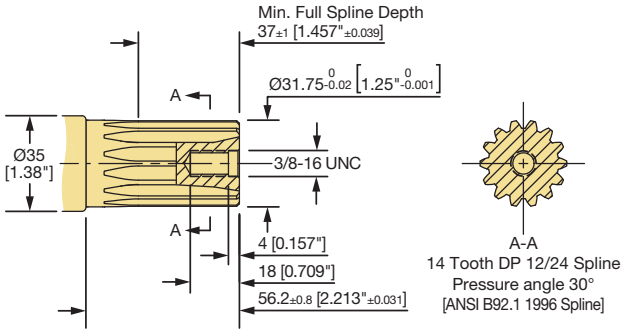
Max. Torque
568 lbf.ft [770 Nm]



BMR SHAFT EXTENSION — CODE FD (U IMPERIAL)

1¼" 14 Tooth Splined (Ext.)

Max. Torque
568 lbf.ft [770 Nm]



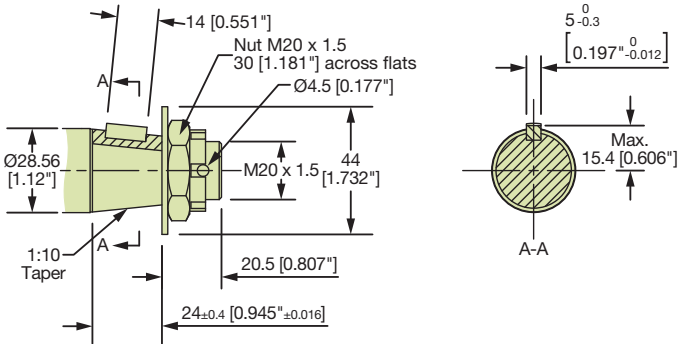
BMR SHAFT EXTENSION — CODE T (M METRIC)

28.56 mm Tapered (1:10) w/ Nut

Parallel Key B5x5x14

Tightening Torque 100±10 Nm

Max. Torque
290 lbf.ft [395 Nm]



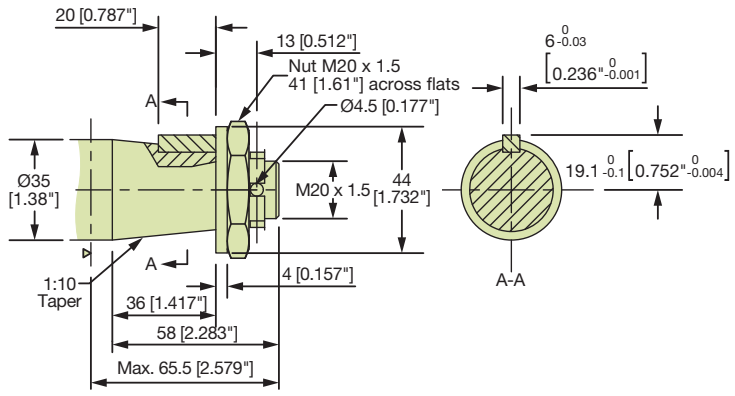
BMR SHAFT EXTENSION — CODE T1 (M METRIC)

35 mm Tapered (1:10) w/ Nut

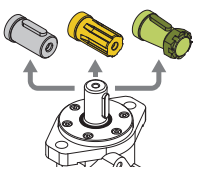
Parallel Key B6x6x20

Tightening Torque 100±10 Nm

Max. Torque
568 lbf.ft [770 Nm]



mm [Inch]
U Imperial M Metric



BMRS SHAFT EXTENSIONS

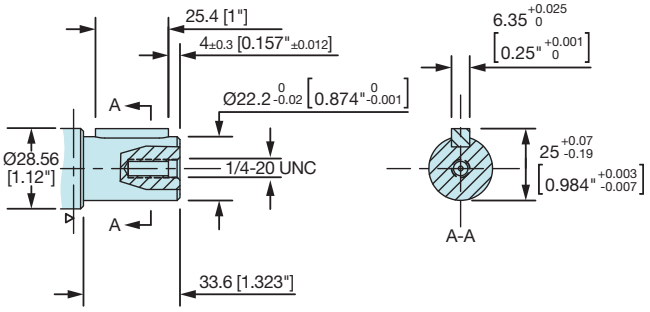
IMPORTANT:
Ensure that the torque rating of your motor does not exceed shaft torque limitations stated below. Please refer to performance data charts.

BMRS SHAFT EXTENSION — CODE D (U IMPERIAL)

7/8" Straight Keyed

Parallel key ¼"x¼"x1"

Max. Torque
265 lbf.ft [360 Nm]

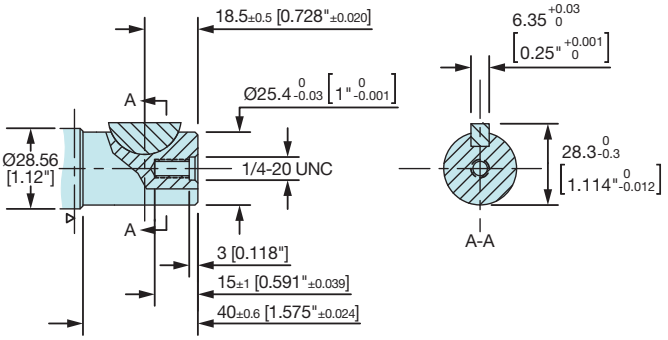


BMRS SHAFT EXTENSION — CODE K (U IMPERIAL)

1" Straight Keyed

Woodruff key ¼"x1"

Max. Torque
290 lbf.ft [395 Nm]

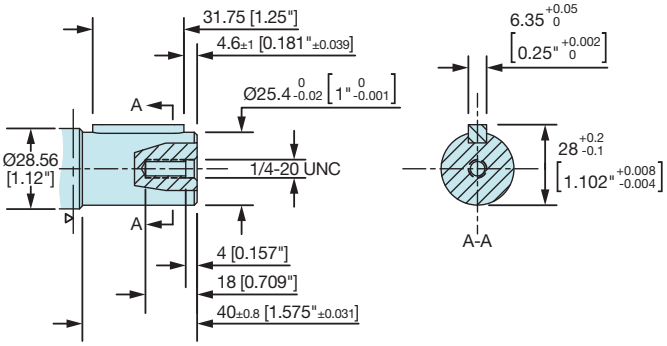


BMRS SHAFT EXTENSION — CODE R (U IMPERIAL)

1" Straight Keyed

Parallel key ¼"x¼"x1¼"

Max. Torque
290 lbf.ft [395 Nm]

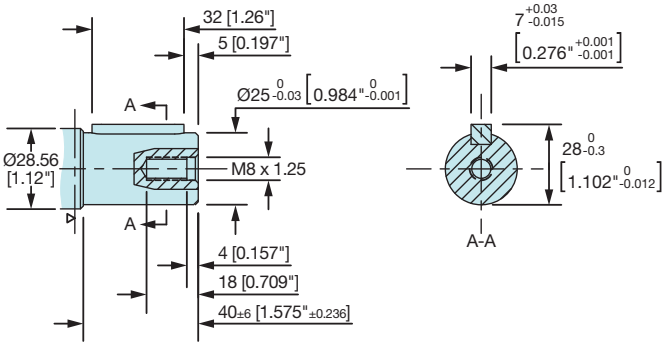


BMRS SHAFT EXTENSION — CODE J (M METRIC)

25 mm Straight Keyed

Parallel key Ø7x7x32

Max. Torque
290 lbf.ft [395 Nm]

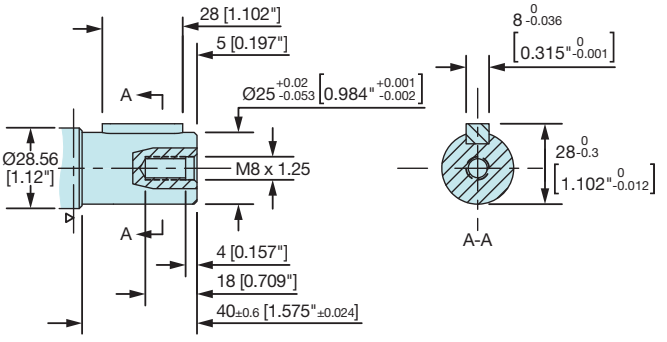


BMRS SHAFT EXTENSION — CODE P (M METRIC)

25 mm Straight Keyed

Parallel key 8x7x28

Max. Torque
290 lbf.ft [395 Nm]

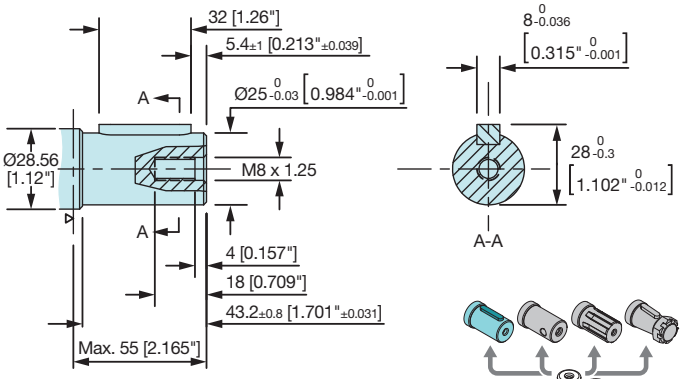


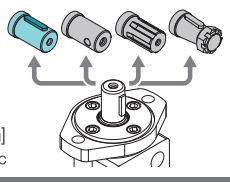
BMRS SHAFT EXTENSION — CODE A (M METRIC)

25 mm Straight Keyed

Parallel key 8x7x32

Max. Torque
290 lbf.ft [395 Nm]





mm [Inch]
U Imperial M Metric

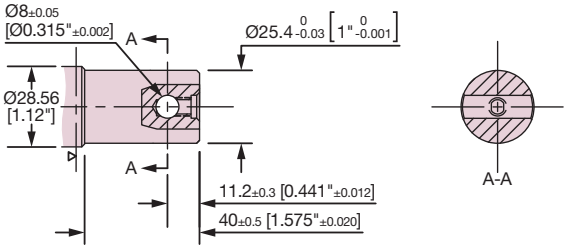
BMRS SHAFT EXTENSIONS (cont.)

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

BMRS SHAFT EXTENSION — CODE H1

1" Straight w/ .315 Crosshole

Max. Torque
147.5 lbf.ft [200 Nm]

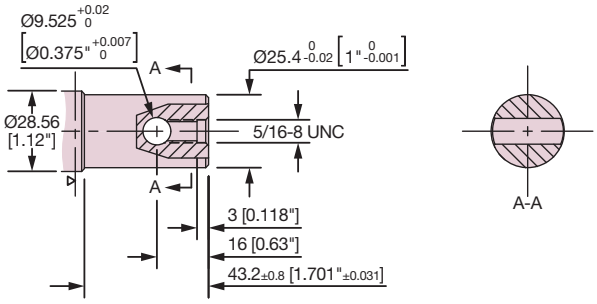


* H1 shaft can also be ordered on the BMR model.

BMRS SHAFT EXTENSION — CODE H5

1" Straight w/ .375 Crosshole

Max. Torque
147.5 lbf.ft [200 Nm]

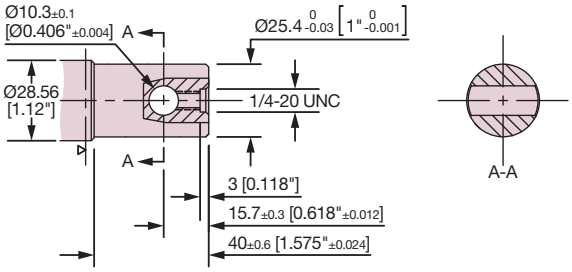


* H5 shaft can also be ordered on the BMR model.

BMRS SHAFT EXTENSION — CODE H

1" Straight w/ .406 Crosshole

Max. Torque
147.5 lbf.ft [200 Nm]

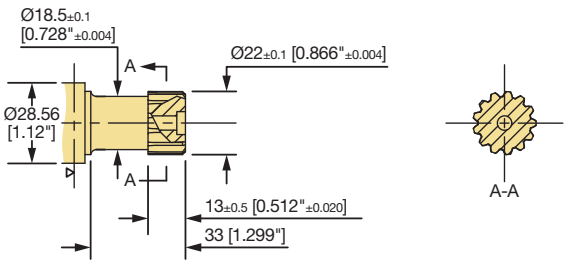


* H shaft can also be ordered on the BMR model.

BMRS SHAFT EXTENSION — CODE I

7/8" SAE B 13T Splined

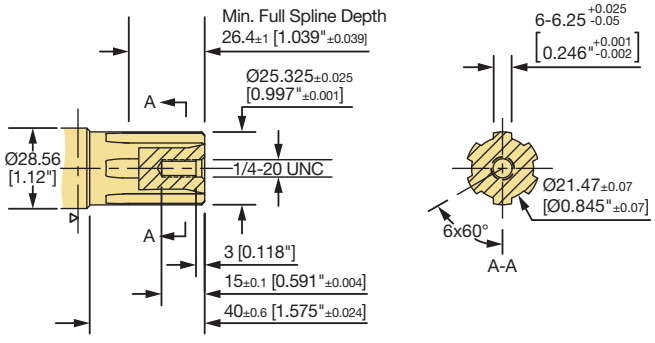
Max. Torque
125 lbf.ft [170 Nm]



BMRS SHAFT EXTENSION — CODE S

1" SAE 6B Splined

Max. Torque
290 lbf.ft [395 Nm]



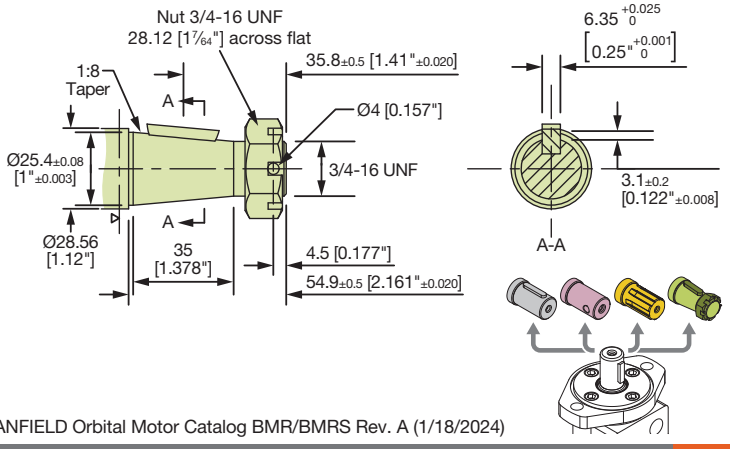
BMRS SHAFT EXTENSION — CODE T2

1" Tapered (1:8) w/ Nut

Woodruff Key ¼"x1"

Tightening Torque 200±10 Nm

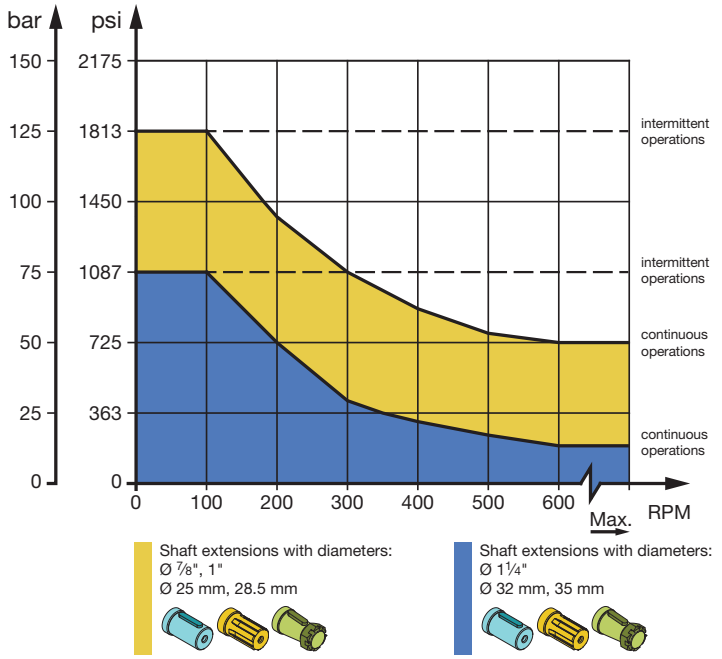
Max. Torque
290 lbf.ft [395 Nm]



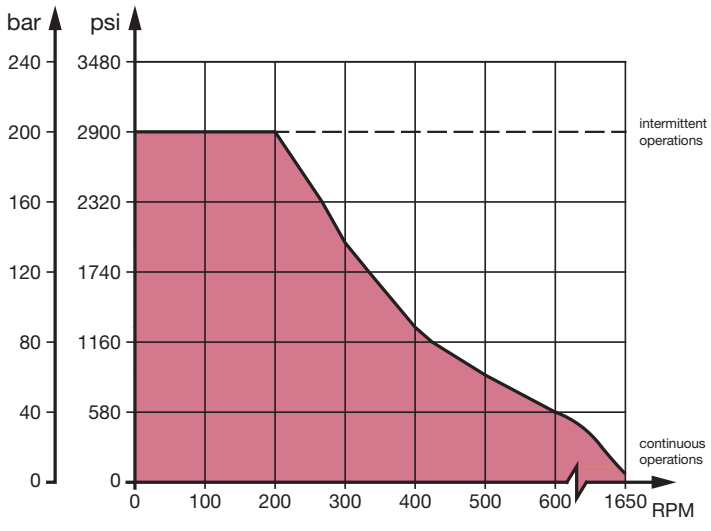
mm [Inch]
U Imperial M Metric

PERMISSIBLE SHAFT SEAL PRESSURES - BMR, BMRS MODELS

Standard Shaft Seal



High Pressure Shaft Seal (HPS)



Internal Drain, Permissible back pressure and case pressure:

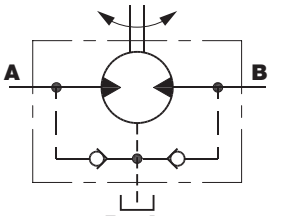
The internal drain option is standard on all BMR, BMRS, BMRWN series motors. There are Built-In Check Valves integrated in the housing of the motor that connect the case area of the motor to each of the work ports (A and B). During normal operation, pressure in the input and return lines of the motor 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
With case drain port used, the shaft seal pressure = pressure at drain.

Schematic 2 - Internal Drain
With case drain port not in use, the shaft seal pressure = pressure at the return line.

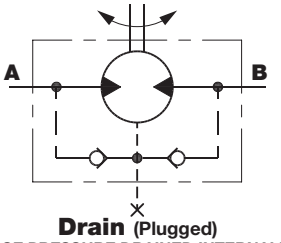
Important:
1) Installing motors with “internal drainage" in series or when the motor operates in a meter-out circuit is not recommended unless overall pressure drop over all motors is below the maximum allowable backpressure.

Schematic 1 External Drain

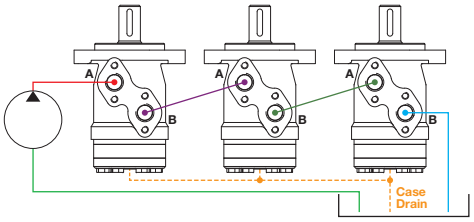


CASE PRESSURE DRAINED TO TANK
Shaft Seal Pressure = Pressure at Drain

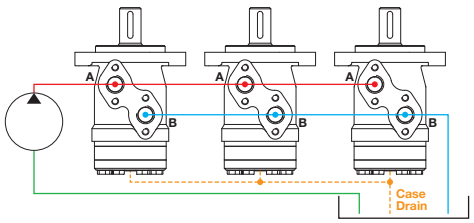
Schematic 2 Internal Drain



CASE PRESSURE DRAINED INTERNALLY
Shaft Seal Pressure = Pressure at Return Line



Series Connection



Parallel Connection

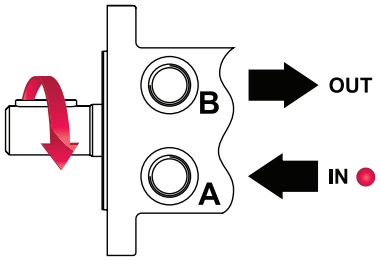
Oil Flow In Drain Line

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

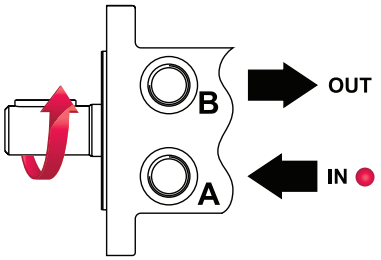
Pressure Drop psi (bar)	Viscosity mm²/s	Oil Flow in the Drain Line gpm (l/min)
1450 (100)	20	0.66 (2.5)
	35	0.48 (1.8)
2030 (140)	20	0.93 (3.5)
	35	0.75 (2.8)

DIRECTION OF SHAFT ROTATION - BMR, BMRS, BMRWN, BMR(S)-BK01 SERIES

Standard Rotation
(Viewed from Shaft End)
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

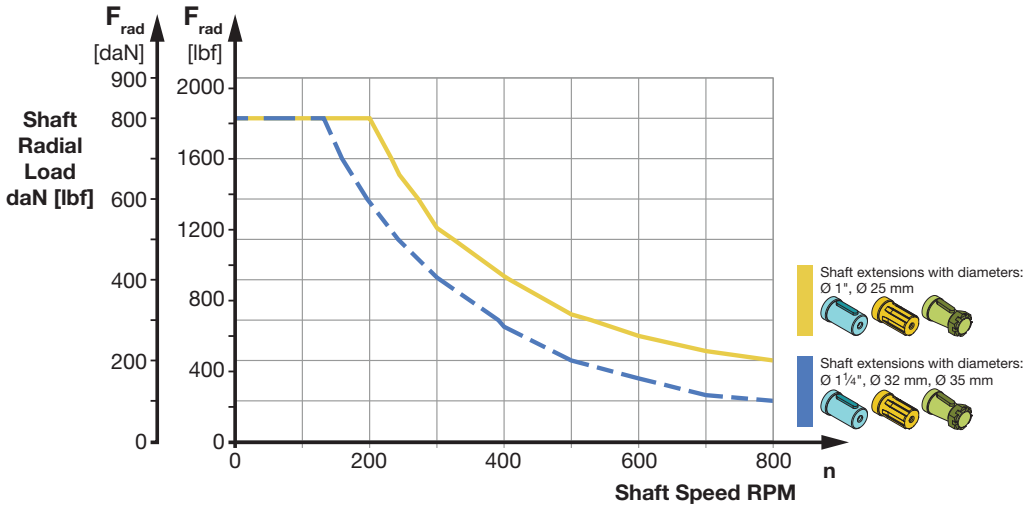


Reverse Rotation
(Viewed from Shaft End)
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

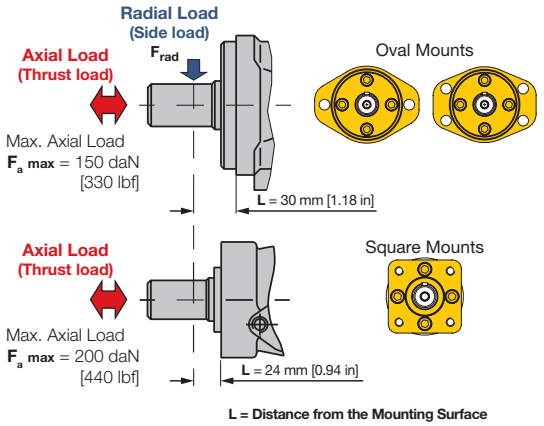


PERMISSIBLE SHAFT LOADS FOR BMR AND BMRS MOTORS

The permissible radial shaft load F_{rad} depends on the speed (rpm), distance from the point of load to the mounting flange and shaft version. The curve shows the relation between F_{rad} and speed (rpm) on the standard motor with journal (slide) bearing.



Mounting Flange		Oval Mounts		Square Mount
Distance from Mounting Surface		L = 30 mm [1.18 in]		L = 24 mm [0.94 in]
Shaft Extension		Shaft extensions with diameters: Ø 1", Ø 25 mm, Ø 28.5 mm	Shaft extensions with diameters: Ø 1¼", Ø 32 mm, Ø 35 mm	Shaft extensions with diameters: Ø 1", Ø 25 mm, Ø 28.5 mm
F_{rad} Shaft Radial Load (side load)	lbf* (Imperial formula)	$\frac{800}{n} \times \frac{2215}{3.74+L}$	$\frac{800}{n} \times \frac{1660}{3.74+L}$	$\frac{800}{n} \times \frac{2215}{3.98+L}$
	daN* (Metric formula)	$\frac{800}{n} \times \frac{25000}{95+L}$	$\frac{800}{n} \times \frac{18750}{95+L}$	$\frac{800}{n} \times \frac{25000}{101+L}$



L = Distance from the Mounting Surface

* n < 200 RPM; max Frad = 1800 lbs [800 daN]
n ≥ 200 RPM; L < 2.2 in [55 mm]
1 Dekanewton [daN] = 2.248 Pound-force [lbf]

mm [Inch]

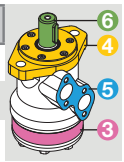
BMR DESIGNATION & ORDERING CODE

BMR - ... - 200 - 2 - C - S - ... - ... - ... -HPS

1	2	3	4	5	6	7	8	8	9
BMR									HPS

1 Series

BMR	Offset Ports



2 Bearing

Omit	Standard Slide Bearings
N1	Needle Bearings[1] (Optional)

**N1 will be factory delivery.*

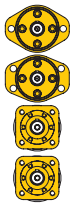
3 Displacement

	cm³/rev	in³/rev
36	36	2.20
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27
500	489	29.8

**Pages 5-10 for performance details.*

4 Mounting Type

2	2-Bolt, SAE A
4	4-Bolt, Magneto
H4	4-Bolt, Square (U Imperial)
H5	4-Bolt, Square (M Metric)



**Pages 11-12 for mounting details.*

5 Output Shaft

C	1" Straight Keyed (Ext.) (1/4"x1/4"x1-1/4" key) (U Imperial)
R	1" Straight Keyed (1/4"x1/4"x1-1/4" key) (U Imperial)
G	1¼" Straight Keyed (5/16"x5/16"x1-1/4" key) (U Imperial)
A	25 mm Straight Keyed (8x7x32 key) (M Metric)
B	32 mm Straight Keyed (10x8x45 key) (M Metric)
E	1" SAE 6B Splined (U Imperial)
F	1¼" 14 Tooth Splined (U Imperial)
FD	1¼" 14 Tooth Splined (Ext.) (U Imperial)
T	28.56 mm Tapered (1:10) (M Metric)
T1	35 mm Tapered (1:8) (M Metric)

**Pages 15-16 for shaft details.*

6 Ports (A&B,T)

S	SAE Ports (-10,-4) (U Imperial)
P	NPTF Ports (1/2,-4) (U Imperial)
D	BSPP Ports (G1/2,G1/4)
R	BSPT Ports (Rc1/2,Rc1/4)
M	Metric Ports (M22,M14) (M Metric)

**Page 11 for port details.*

7 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 20 for rotation details.*

8 Options

Omit	None
0	No Case Drain
F	Free Running Rotor[3]
LS	Low Speed Valve[4]

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

9 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:** Anfield standard BMR and BMRS motors have the slide bearing. For shafts supported by needle bearings use the N1 code (e.g., BMR-N1, BMRS-N1). Motors with needle bearings are suitable for operating conditions such as frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.
2. **High Pressure Shaft Seal:** The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.
3. **Free Running Rotors:** The Free Running Rotor Set has increased clearance in all friction parts, allowing the shaft to rotate more freely with less mechanical drag. The increased clearance also improves lubrication of the wear surfaces of gear set and friction parts. Additional advantages of "F" version are prolonging of the life of the hydraulic motors at high speeds, as well as the possibility to use them in systems with wide variation of the loading. "F" version motors are designed to operate with high speed (typically over 300 rpm) and low pressure drop. Volumetric efficiency may be reduced slightly due to increased clearances.
4. **Low Speed Motors:** Low speed valve feature optimizes the motor for low-speed performance. Motors with this valving provide very low speed while maintaining high torque. They are designed to run continuously at low speed (typically up to 200 rpm) and normal pressure drop and reduced flow. Optimal run is guaranteed at speeds of 20 to 50 rpm. Motors with this valving have an increased starting pressure and are not recommended for use at pressure drop less than 580 psi (40 bar).

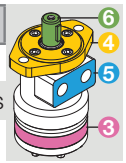
BMRS DESIGNATION & ORDERING CODE

BMRS - ... - 200 - H2 - K - S - ... - ... - ... - HPS

1	2	3	4	5	6	7	8	8	9
BMRS									HPS

1 Series

BMRS	Aligned Ports



2 Bearing

Omit	Standard Slide Bearings
N1	Needle Bearings[1] (Optional)

**N1 will be factory delivery.*

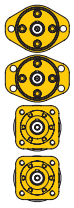
3 Displacement

	cm³/rev	in³/rev
36	36	2.20
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27

**Pages 5-10 for performance details.*

4 Mounting Type

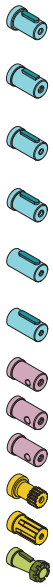
H2	2-Bolt, SAE A
H6	4-Bolt, Magneto
H4	4-Bolt, Square (U)
H5	4-Bolt, Square (M)



**Pages 13-14 for mounting details.*

5 Output Shaft

D	0.875" Straight Keyed (1/4"x1/4"x1" key) (U)
K	1" Straight Keyed (1/4"x1" Woodruff key) (U)
R	1" Straight Keyed (1/4"x1/4"x1-1/4" key) (U)
J	25 mm Straight Keyed (7x7x32 key) (M)
P	25 mm Straight Keyed (8x7x28 key) (M)
A	25 mm Straight Keyed (8x7x32 key) (M)
H1	1" Straight w/ .315 Crosshole (U)
H5	1" Straight w/ .375 Crosshole (U)
H	1" Straight w/ .406 Crosshole (U)
I	0.875" SAE B 13T Splined (U)
S	1" SAE 6B Splined (U)
T2	28.56 mm Tapered (1:10) (U)



**Pages 17-18 for shaft details.*

6 Ports (A&B,T)

S	SAE Ports (-10,-4) (U)
P	NPTF Ports (1/2,-4) (U)
G	BSPP Ports (G1/2,G1/4)
R	BSPT Ports (Rc1/2,Rc1/4)
M1	Metric Ports (M18,M10) (M)
M2	Metric Ports (M20,M10) (M)
M3	Metric Ports (M22,M10) (M)
B4	Manifold Mount (5/16 UNC bolts,-4) (U)
B5	Manifold Mount (M8 bolts,G1/4) (M)

**Page 13 for port details.*

7 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 20 for rotation details.*

8 Options

Omit	None
0	No Case Drain
F	Free Running Rotor[3]
LS	Low Speed Valve[4]

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

9 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:** Anfield standard BMR and BMRS motors have the slide bearing. For shafts supported by needle bearings use the N1 code (e.g., BMR-N1, BMRS-N1). Motors with needle bearings are suitable for operating conditions such as frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.
2. **High Pressure Shaft Seal:** The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.
3. **Free Running Rotors:** The Free Running Rotor Set has increased clearance in all friction parts, allowing the shaft to rotate more freely with less mechanical drag. The increased clearance also improves lubrication of the wear surfaces of gear set and friction parts. Additional advantages of "F" version are prolonging of the life of the hydraulic motors at high speeds, as well as the possibility to use them in systems with wide variation of the loading. "F" version motors are designed to operate with high speed (typically over 300 rpm) and low pressure drop. Volumetric efficiency may be reduced slightly due to increased clearances.
4. **Low Speed Motors:** Low speed valve feature optimizes the motor for low-speed performance. Motors with this valving provide very low speed while maintaining high torque. They are designed to run continuously at low speed (typically up to 200 rpm) and normal pressure drop and reduced flow. Optimal run is guaranteed at speeds of 20 to 50 rpm. Motors with this valving have an increased starting pressure and are not recommended for use at pressure drop less than 580 psi (40 bar).

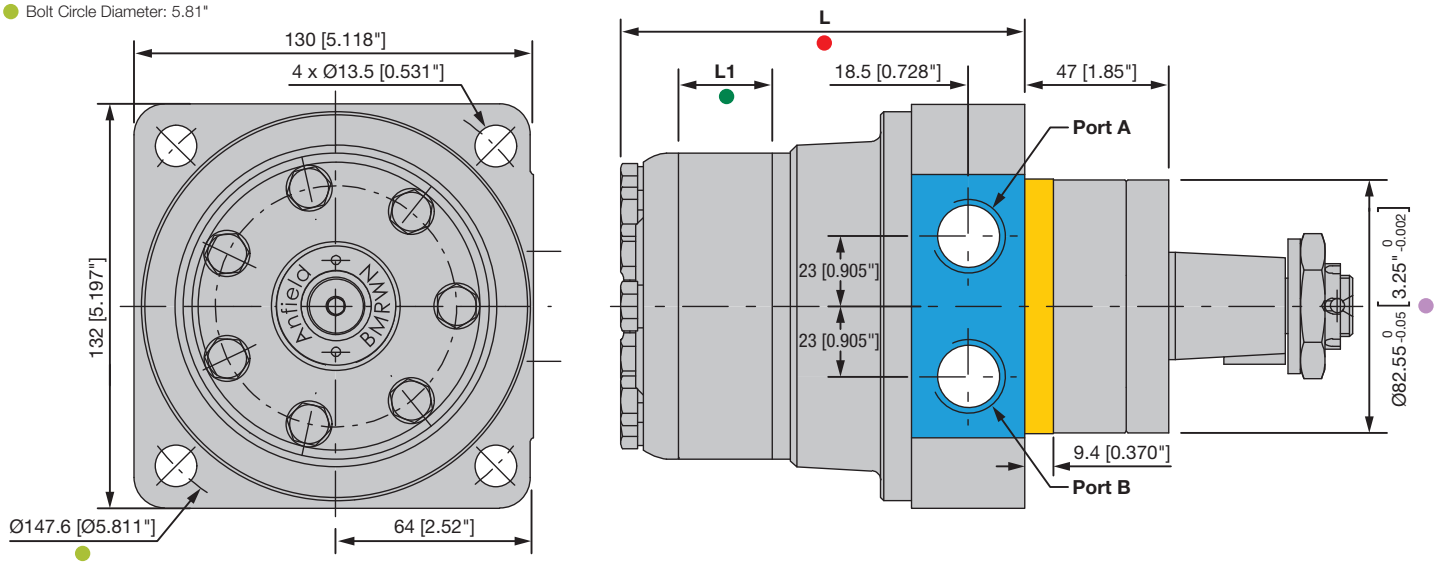
(U) Imperial (M) Metric

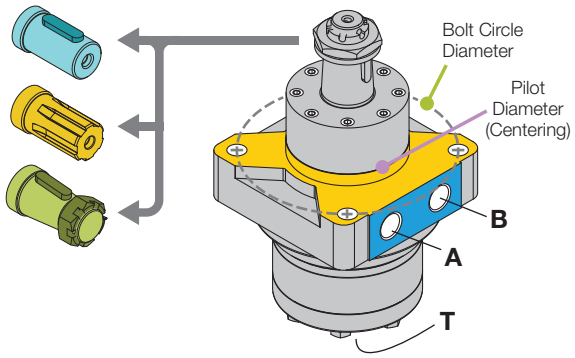
BMRWN DIMENSIONS, PORT & MOUNTING DETAILS

BMRWN Wheel Motor

4-Bolt, Wheel Mount

- Pilot Diameter: 3.25"
- Bolt Circle Diameter: 5.81"





Model	L	GEROTOR WIDTH L1
BMRWN 50	113.0 [4.45"]	10.0 [0.39"]
BMRWN 80	119.0 [4.69"]	16.0 [0.63"]
BMRWN 100	123.0 [4.84"]	20.0 [0.79"]
BMRWN 125	128.0 [5.04"]	25.0 [0.98"]
BMRWN 160	133.5 [5.26"]	30.5 [1.20"]
BMRWN 200	141.0 [5.55"]	38.1 [1.50"]
BMRWN 250	153.0 [6.02"]	50.0 [1.97"]
BMRWN 315	165.0 [6.50"]	62.0 [2.44"]
BMRWN 375	126.0 [4.96"]	74.0 [2.91"]

	BMRWN PORT CODE			
	S	P	G	M
Connection	SAE ports	NPTF ports	BSPP ports	Metric ports
P (A,B)	7/8-14 O-Ring (17)	1/2-14NPTF (15)	G 1/2 (15)	M22 x 1.5 (15) M
T	7/16-20UNF (12)	7/16-20UNF (12)	G 1/4 (12)	M14 x 1.5 (12) M

(Depth in mm)

S : SAE straight thread (O-Ring Boss)
P : NPTF (National Pipe Tapered Fuel)
G : BSPP (British Standard Pipe Parallel) G thread
M : Metric port

SHAFT EXTENSION CODE G (U IMPERIAL)
1¼ Inch Straight Keyed

SHAFT EXTENSION CODE B (M METRIC)
32 mm Straight Keyed

SHAFT EXTENSION CODE F (U IMPERIAL)
1¼ Inch 14 Tooth Splined

SHAFT EXTENSION CODE FD (U IMPERIAL)
1¼ Inch 14 Tooth Splined (Ext.)

SHAFT EXTENSION CODE T1 (M METRIC)
35 mm Tapered (1:10 w/ Nut)

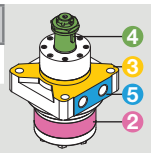
Shaft Details: pages 15-16.

BMRWN DESIGNATION & ORDERING CODE

BMRWN - 200 - ... - T1 - S - ... - ... - ... -HPS

1	2	3	4	5	6	7	7	8
BMRWN								HPS

1 Series



BMRWN	Wheel Motor w/ Needle Bearing[1]

2 Displacement

	cm³/rev	in³/rev
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27

**Pages 5-10 for performance details.*

3 Mounting Type

Omit	Wheel Mount Pilot Ø 82.5 x 9.4

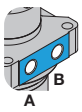
**Pages 23 for mounting details.*

4 Output Shaft

G	1¼" Straight Keyed (5/16"x5/16"x1-1/4" key)	U Imperial
B	32 mm Straight Keyed (10x8x45 key)	M Metric
F	1¼" 14 Tooth Splined	U Imperial
FD	1¼" 14 Tooth Splined (Ext.)	U Imperial
T1	35 mm Tapered (1:10)	M Metric

**Pages 15-16 for shaft details.*

5 Ports (A&B,T)



S	SAE Ports (-10,-4)	U Imperial
P	NPTF Ports (1/2,-4)	U Imperial
G	BSPP Ports (G1/2,G1/4)	
M	Metric Ports (M22,M14)	M Metric

**Page 23 for port details.*

6 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 20 for rotation details.*

7 Options

Omit	None
0	No Case Drain

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

8 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:**
   The output shaft on BMRWN runs in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to our standard BMR motors with slide bearings. The needle bearings are capable of absorbing large radial forces. As the motors have separate axial bearings, the operating life of the needle bearings is not affected by the size of the axial load.

   These types of motors are suitable for operating conditions such as frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.

2. **High Pressure Shaft Seal:**
   The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.

U Imperial M Metric

BMR-BK01, BMRS-BK01, BMRWN-BK01 MOTORS WITH INTEGRATED BRAKE

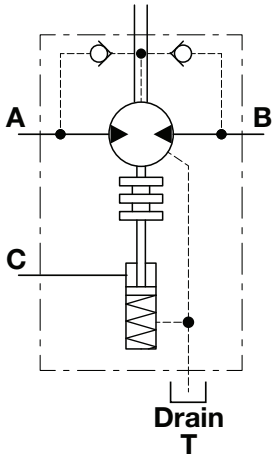
DESCRIPTION & FUNCTION

BMR-BK01, BMRS-BK01 and BMRWN-BK01 models are equipped with a fail-safe friction disk brake, where in the absence of system pressure (at port C) the brake is engaged.

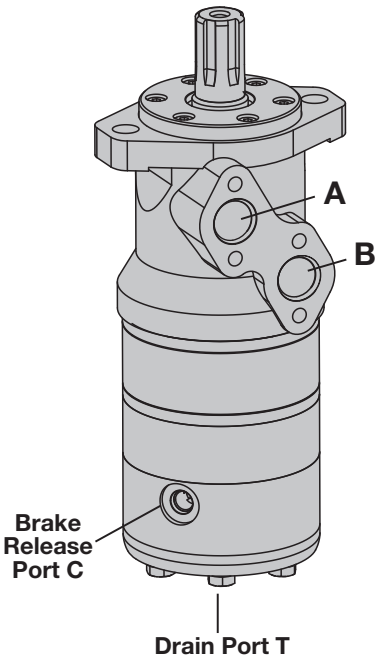
In normal condition where there is no pressure on the integrated brake, the brake is applied. The brake is released when hydraulic pressure of 21 bar [300psi] min. is applied to the brake release port.

1) This brake is to be used only as a passive parking brake. It may not be used for dynamic braking.

2) Brake motors must always have a drain line. The brake release pressure is the difference between the pressure in the brake release line and the pressure in the drain line.

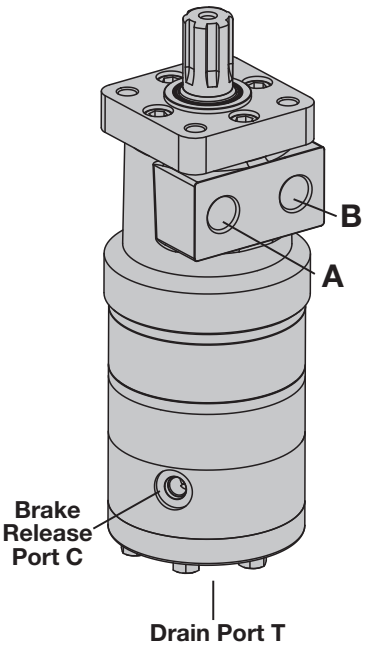


Schematic



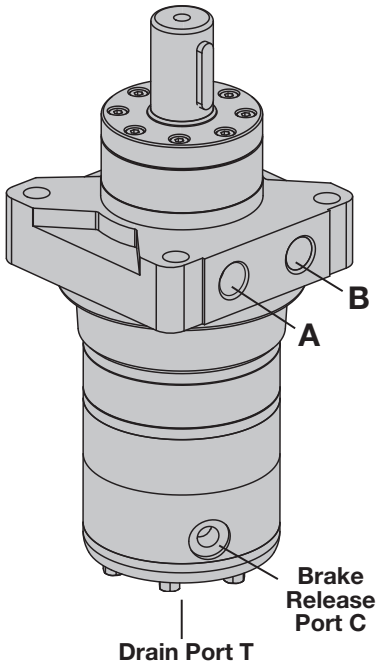
BMR-BK01

BMR with Brake



BMRS-BK01

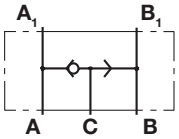
BMRS with Brake



BMRWN-BK01

BMRWN with Brake

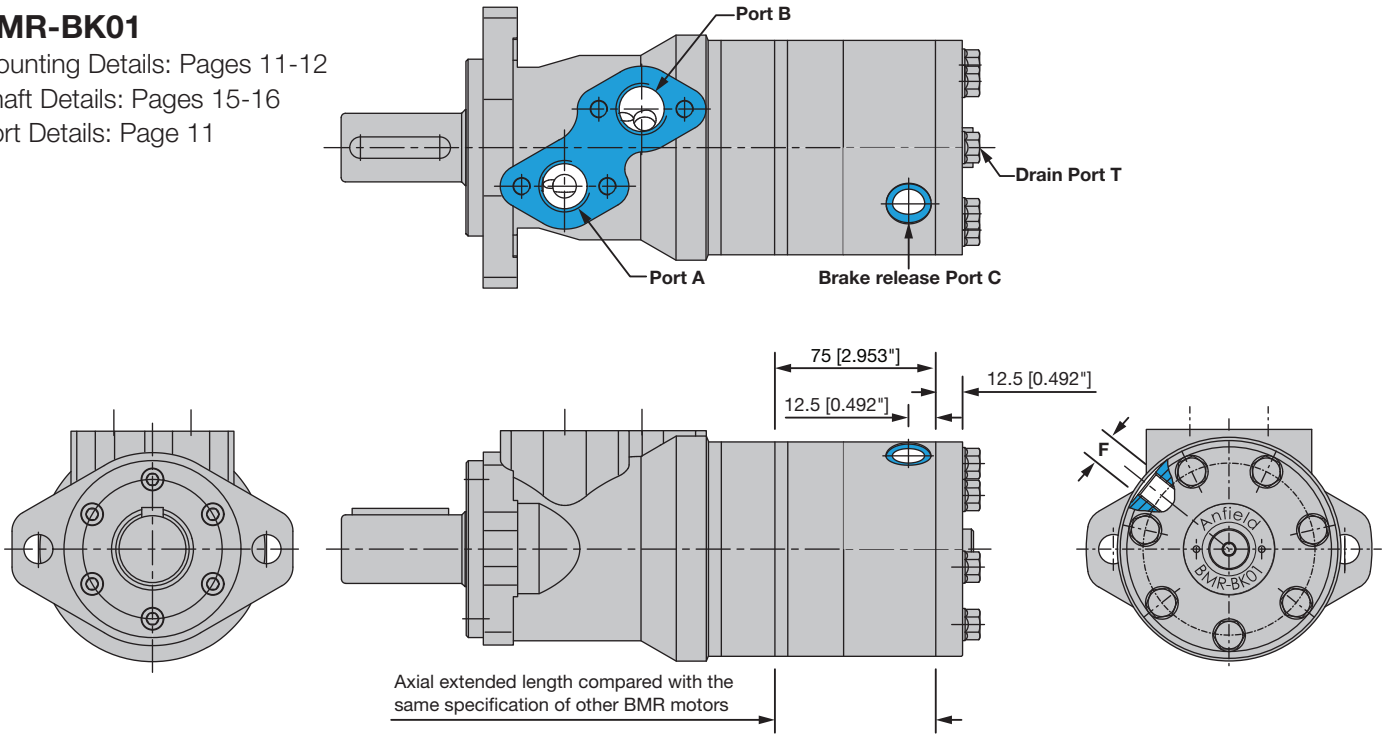
Anfield switch valve (Part no. FSR) with brake release port available for BMR-BK01 motor.



BMR-BK01, BMRS-BK01, BMRWN-BK01
DIMENSIONS, PORT & MOUNTING DETAILS

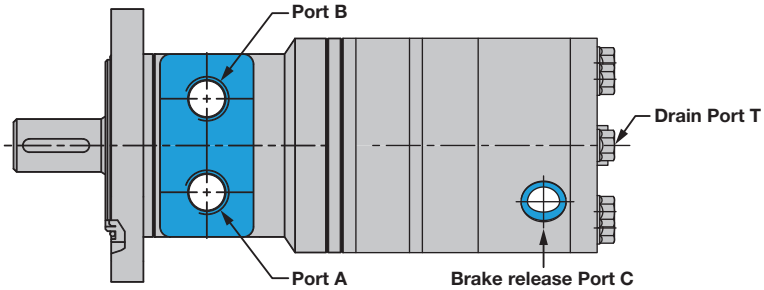
BMR-BK01

Mounting Details: Pages 11-12
Shaft Details: Pages 15-16
Port Details: Page 11



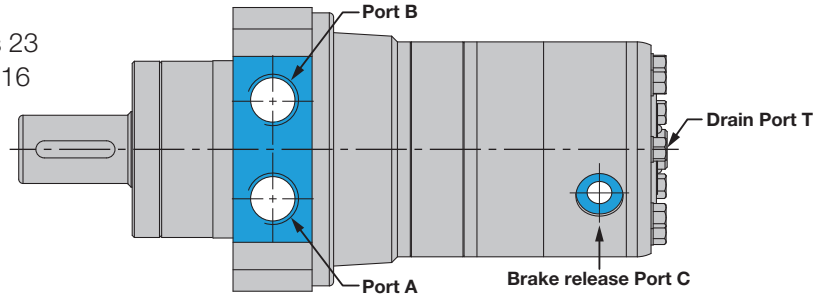
BMRS-BK01

Mounting Details: Pages 13-14
Shaft Details: Pages 17-18
Port Details: Page 13



BMRWN-BK01

Mounting Details: Pages 23
Shaft Details: Pages 15-16
Port Details: Page 23

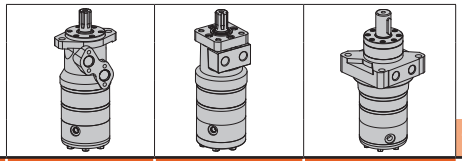


Note:
The axial extended length reduces 75mm as pictured above.
Port C is brake releasing port; the position is as pictured above.

Port C	F
S	7/16-20 UNF Depth 9 [0.354"]
G	G1/4 Depth 9 [0.354"]

mm [Inch]

TECHNICAL SPECIFICATIONS - BMR-BK01, BMRS-BK01, BMRWN-BK01



	BMR-BK01	BMRS-BK01	BMRWN-BK01	1	2	3	4	5	6	7	8	9
				50	80	100	125	160	200	250	315	375
Geometric Displacement		in^3/r		3.15	4.97	6.22	7.76	9.59	11.87	15.46	19.38	23.27
		cm^3/r		51.7	81.5	102.0	127.2	157.2	194.5	253.3	317.5	381.4
Max. Speed		rpm	Rated	490	479	478	421	341	276	212	169	141
			Cont.	509	502	497	459	372	301	231	184	166
			Inter.	603	598	574	574	465	376	289	230	192
Max. Flow		gpm	Rated	6.9	10.6	13.2	14.6	14.6	14.6	14.6	14.6	14.6
		l/min		26	40	50	55	55	55	55	55	55
			Cont.	7.1	11.1	13.8	15.9	15.9	15.9	15.9	15.9	17.2
				29	42	52	60	60	60	60	60	65
			Inter.	8.5	13.2	15.9	19.8	19.8	19.8	19.8	19.8	19.8
				32	50	60	75	75	75	75	75	75
Max. Torque		lbf-ft	Rated	76.8	121.0	151.3	188.9	233.2	247.2	322.5	336.5	343.2
		Nm		104	164	205	256	316	335	437	456	465
			Cont.	76	149.8	187.5	233.9	288.6	264.9	322.5	336.5	343.2
				103	203	254	317	391	359	437	456	465
			Inter.	65.4	118.1	147.6	184.5	227.3	245.8	349.1	370.5	383.8
				88.6	160	200	250	308	333	473	502	520
Max. Output		hp	Rated	7.1	11.0	13.8	15.2	15.2	13.0	13.0	10.9	9.3
		kW		5.3	8.2	10.3	11.3	11.3	9.7	9.7	8.1	6.9
			Cont.	7.4	14.3	17.7	20.4	20.4	15.2	14.2	11.8	10.9
				5.5	10.7	13.2	15.2	15.2	11.3	10.6	8.8	8.1
			Inter.	7.5	13.4	16.1	20.1	20.1	17.6	19.2	16.2	14.1
				5.6	10.0	12.0	15.0	15.0	13.1	14.3	12.1	10.5
Max. Pressure Drop		Δ psi	Rated	2031	2031	2031	2031	2031	1740	1740	1450	1233
		Δ bar		140	140	140	140	140	120	120	100	85
			Cont.	2031	2538	2538	2538	2538	1885	1740	1450	1233
				140	175	175	175	175	130	120	100	85
			Inter.	2538	2901	2901	2901	2901	2538	1885	1595	1378
				175	200	200	200	200	175	130	110	95
Min. Release Pressure		psi (bar)		247 (17)								
Max. Inlet Pressure		Δ psi (Δ bar)		3626 (250)								
Max. Pressure in Brake Line		Δ psi (Δ bar)		3626 (250)								
Max. Static Torque of Brake (Holding Torque)		lbf-ft (Nm)		369 - 405.7 (500 - 550)								
Weight		lbs		25.8	26.2	26.2	26.9	27.6	28.7	29.8	30.9	32.0
		kg		11.7	11.9	11.9	12.2	12.5	13.0	13.5	14.0	14.5

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.

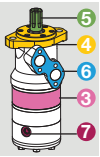
BMR-BK01 DESIGNATION & ORDERING CODE

BMR-BK01 - N1 - 200 - H4 - C - S - S - ... - ... - ... - HPS

1	2	3	4	5	6	7	8	9	9	10
BMR-BK01	N1									HPS

1 Series

BMR-BK01	Offset Ports
BMR w/ integrated brake	



2 Bearing

Omit	Standard Slide Bearings
N1	Needle Bearings[1]

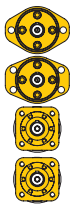
3 Displacement

	cm³/rev	in³/rev
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27

**Pages 5-10 for performance details.*

4 Mounting Type

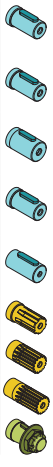
2	2-Bolt, SAE A
4	4-Bolt, Magneto
H4	4-Bolt, Square (U)
H5	4-Bolt, Square (M)



**Pages 11-12 for mounting details.*

5 Output Shaft

C	1" Straight Keyed (Ext.) (1/4"x1/4"x1-1/4" key) (U)
R	1" Straight Keyed (1/4"x1/4"x1-1/4" key) (U)
G	1¼" Straight Keyed (5/16"x5/16"x1-1/4" key) (U)
A	25 mm Straight Keyed (8x7x32 key) (M)
B	32 mm Straight Keyed (10x8x45 key) (M)
E	1" SAE 6B Splined (U)
F	1¼" 14 Tooth Splined (U)
FD	1¼" 14 Tooth Splined (Ext.) (U)
T	28.56 mm Tapered (1:10) (M)



**Pages 15-16 for shaft details.*

6 Ports (A&B,T)

S	SAE Ports (-10,-4) (U)
P	NPTF Ports (1/2,-4) (U)
D	BSPP Ports (G1/2,G1/4)
R	BSPT Ports (Rc1/2,Rc1/4)
M	Metric Ports (M22,M14) (M)

**Page 11 for port details.*

7 Brake Release Port (C)

S	SAE Port (-4)
G	BSPP Ports (G1/4)

**Page 25 for brake release port details.*

8 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 20 for rotation details.*

9 Options

Omit	None
0	No Case Drain
F	Free Running Rotor[3]
LS	Low Speed Valve[4]

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

10 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:** BMR-BK01-N1 has an output shaft supported in needle bearing. These types of motors are more suitable for operating conditions such us frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.
2. **High Pressure Shaft Seal:** The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.
3. **Free Running Rotors:** The Free Running Rotor Set, have increased clearance in all friction parts, allowing the shaft to rotate more freely with less mechanical drag. The increased clearance also improves lubrication of the wear surfaces of gear set and friction parts. Additional advantages of "F" version are prolonging of the life of the hydraulic motors at high speeds, as well as the possibility to use them in systems with wide variation of the loading. "F" version motors are designed to operate with high speed (typically over 300 rpm) and low pressure drop. Volumetric efficiency may be reduced slightly due to increased clearances.
4. **Low Speed Motors:** Low speed valve feature optimizes the motor for low-speed performance. Motors with this valving provide very low speed while maintaining high torque. They are designed to run continuously at low speed (typically up to 200 rpm) and normal pressure drop and reduced flow. Optimal run is guaranteed at speeds of 20 to 50 rpm. Motors with this valving have an increased starting pressure and are not recommended for use at pressure drop less than 580 psi (40 bar).

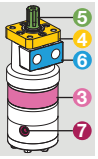
(U) Imperial (M) Metric

BMRS-BK01 DESIGNATION & ORDERING CODE

BMRS-BK01 - N1 - 200 - H2 - K - S - S - ... - ... - ... - HPS

1	2	3	4	5	6	7	8	9	9	10
BMRS-BK01	N1									HPS

1 Series



BMRS-BK01	Aligned Ports BMRS w/ integrated brake

2 Bearing

Omit	Standard Slide Bearings
N1	Needle Bearings[1]

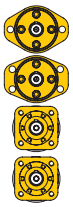
3 Displacement

	cm³/rev	in³/rev
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27

**Pages 5-10 for performance details.*

4 Mounting Type

H2	2-Bolt, SAE A
H6	4-Bolt, Magneto
H4	4-Bolt, Square
H5	4-Bolt, Square



**Pages 13-14 for mounting details.*

5 Output Shaft

D	7/8" Straight Keyed (1/4"x1/4"x1" key)
K	1" Straight Keyed (Woodruff) (1/4"x1")
R	1" Straight Keyed (1/4"x1/4"x1-1/4" key)
J	25 mm Straight Keyed (7x7x32 key)
P	25 mm Straight Keyed (8x7x28 key)
A	25 mm Straight Keyed (8x7x32 key)
H1	1" Straight w/ .315 Crosshole
H	1" Straight w/ .406 Crosshole
I	7/8" SAE B 13T Splined
S	1" SAE 6B Splined
T2	1" Tapered (1:8)

**Pages 17-18 for shaft details.*

6 Ports (A&B,T)

S	SAE Ports (-10,-4)
P	NPTF Ports (1/2,-4)
G	BSPP Ports (G1/2,G1/4)
R	BSPT Ports (Rc1/2,Rc1/4)
M1	Metric Ports (M18,M10)
M2	Metric Ports (M20,M10)
M3	Metric Ports (M22,M10)
B4	Manifold Mount (5/16 UNC bolts,-4)
B5	Manifold Mount (M8 bolts,G1/4)

**Page 13 for port details.*

7 Brake Release Port (C)

S	SAE Port (-4)
G	BSPP Ports (G1/4)

**Page 25 for brake release port details.*

8 Rotation

Omit	Standard Rotation
R	Reverse Rotation

**Page 20 for rotation details.*

9 Options

Omit	None
0	No Case Drain
F	Free Running Rotor[3]
LS	Low Speed Valve[4]

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

10 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:** BMRS-BK01-N1 has an output shaft supported in needle bearing. These types of motors are more suitable for operating conditions such us frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.
2. **High Pressure Shaft Seal:** The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.
3. **Free Running Rotors:** The Free Running Rotor Set, have increased clearance in all friction parts, allowing the shaft to rotate more freely with less mechanical drag. The increased clearance also improves lubrication of the wear surfaces of gear set and friction parts. Additional advantages of "F" version are prolonging of the life of the hydraulic motors at high speeds, as well as the possibility to use them in systems with wide variation of the loading. "F" version motors are designed to operate with high speed (typically over 300 rpm) and low pressure drop. Volumetric efficiency may be reduced slightly due to increased clearances.
4. **Low Speed Motors:** Low speed valve feature optimizes the motor for low-speed performance. Motors with this valving provide very low speed while maintaining high torque. They are designed to run continuously at low speed (typically up to 200 rpm) and normal pressure drop and reduced flow. Optimal run is guaranteed at speeds of 20 to 50 rpm. Motors with this valving have an increased starting pressure and are not recommended for use at pressure drop less than 580 psi (40 bar).

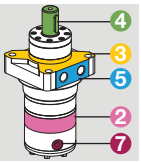
BMRWN-BK01 DESIGNATION & ORDERING CODE

BMRWN-BK01 - 200 - ... - T1 - S - S - ... - ... - ... -HPS

1	2	3	4	5	6	7	8	8	9
BMRWN-BK01									HPS

1 Series

BMRWN-BK01
BMRWN Wheel Motor
w/ integrated brake



2 Displacement

	cm³/rev	in³/rev
50	51.7	3.15
80	81.5	4.97
100	102	6.22
125	127.2	7.76
160	157.2	9.59
200	194.5	11.87
250	253.5	15.47
315	317.5	19.38
375	381.4	23.27

Pages 5-10 for performance details.

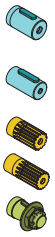
3 Mounting Type

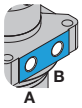
Omit	Wheel Mount Pilot Ø 82.5 x 9.4

Pages 23 for mounting details.

4 Output Shaft

G	1¼" Straight Keyed (5/16"x5/16"x1-1/4" key)	U IMPERIAL
B	32 mm Straight Keyed (10x8x45 key)	M METRIC
F	1¼" 14 Tooth Splined	U IMPERIAL
FD	1¼" 14 Tooth Splined (Ext.)	U IMPERIAL
T1	35 mm Tapered (1:10)	M METRIC





Pages 15-16 for shaft details.

5 Ports (A&B,T)

S	SAE Ports (-10,-4)	U IMPERIAL
P	NPTF Ports (1/2,-4)	U IMPERIAL
G	BSPP Ports (G1/2,G1/4)	
M	Metric Ports (M22,M14)	M METRIC

Page 23 for port details.

6 Brake Release Port (C)

S	SAE Port (-4)
G	BSPP Ports (G1/4)

Page 25 for brake release port details.

7 Rotation

Omit	Standard Rotation
R	Reverse Rotation

Page 20 for rotation details.

8 Options

Omit	None
0	No Case Drain

Contact Anfield if option required is not listed.

9 Shaft Seal Version

HPS	High Pressure Shaft Seal[2]

Anfield "standard" series motors are painted black and "J" series motors are painted industrial gray.

1. **Needle Bearing:**
   The output shaft on BMRWN-BK01 runs in needle bearings. These bearings and the recessed mounting flange allow a higher permissible radial load in comparison to our standard BMR motors with slide bearings. The needle bearings are capable of absorbing large radial forces. As the motors have separate axial bearings, the operating life of the needle bearings is not affected by the size of the axial load.

   These types of motors are suitable for operating conditions such as frequent start and stops, vibration on the shaft, high static and dynamic radial loads in short operating terms.

2. **High Pressure Shaft Seal:**
   The high pressure shaft seals allow the motors to withstand high case pressures at high speeds without external drain line.

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

ANFIELD Orbital Motor Catalog BMR/BMRS Rev. A (1/18/2024)

ANFIELD

Anfield Industries Inc.

USA
375 International Park
Suite 300
Newnan, Georgia 30265
Phone: (404) 530-3804
Fax: (404) 530-3805
Email: info@anfieldind.com
Web: www.anfieldind.com

Canada
8831 Keele Street
Concord, Ontario
L4K 2N1
Phone: (905) 303-1369
Fax: (905) 303-7256
Email: sales@mpfiltricanada.com
Web: www.mpfiltricanada.com