

BMR

Orbital Hydraulic Motor
Sizes: 36 to 375cc/rev
Max. Pressure up 175Bar



Index	Page No
• Introduction	02
• Main Specifications	03
• Performance data	04
• BMR Dimensions and Mounting data	07
• BMR Shaft Extension Dimensions data	08
• BMRS Shaft Extension Dimensions data	10
• BMR, BMRS Series Hydraulic Motor	12
• Ordering Code	13
• BMRWN Dimensions and Mounting data	14



Introduction

- BMR series motor adapt the advanced Geroler gear set design with shaft distribution flow, which can automatically compensate in operating with high pressure, provide reliable and smooth operation, high efficiency and long life.
- Characteristic features:
 - Advanced manufacturing devices for the Gerolor gear set, which use low pressure of start-up, provide smooth, reliable operation and high efficiency.
 - Shaft seal can bear high pressure of back and the motor can be used in parallel or in series.
 - Special design in the driver-linker and prolong operating life.
 - Special design for distribution system can meet the requirement of low noise of unit.
 - Compact volume and easy installation.

- Main Specifications:

Technical data for BMR with 25 and 1 in and 1 in splined and 28.56 tapered shaft

Type		BMR BMRS 36	BMR BMRS 50	BMR BMRS 80	BMR BMRS 100	BMR BMRS 125	BMR BMRS 160	BMR BMRS 200	BMR BMRS 250	BMR BMRS 315	BMR BMRS 375
Geometric displacement (cm ³ /rev.)		36	51.7	81.5	102	127.2	157.2	194.5	253.3	317.5	381.4
Max. speed (rpm)	cont.	1085	960	750	600	475	378	310	240	190	155
	int.	1220	1150	940	750	600	475	385	300	240	190
Max. torque (N • m)	cont.	72	100	195	240	300	360	360	390	390	365
	int.	83	126	220	280	340	430	440	490	535	495
	peak	105	165	270	320	370	460	560	640	650	680
Max. output (kW)	cont.	8.5	9.5	12.5	13.0	12.5	12.5	10.0	7.0	6.0	5.0
	int.	9.8	11.2	15.0	15.0	14.5	14.0	13.0	9.5	9.0	8.0
Max. pressure drop (MPa)	cont.	14.0	14	17.5	17.5	17.5	16.5	13	11	9	7
	int.	16.5	17.5	20	20	20	20	17.5	15	13	10
	peak	22.5	22.5	22.5	22.5	22.5	22.5	22.5	20	17.5	15
Max. flow (L/min)	cont.	40	50	60	60	60	60	60	60	60	60
	int.	45	60	75	75	75	75	75	75	75	75
Weight (kg)		6.5	6.7	6.9	7	7.3	7.6	8.0	8.5	9.0	9.5

- Continuous pressure: Max. value of operating motor continuously.
- Intermittent pressure: Max. value of operating motor in 6 seconds per minute .
- Peak pressure: Max. value of operating motor in 0.6 second per minute.



Main Specification

- Technical data for BMR with 31.75 and 32 shaft

Type		BMR 36	BMR 50	BMR 80	BMR 100	BMR 125	BMR 160	BMR 200	BMR 250	BMR 315	BMR 375
Geometric displacement (cm ³ /rev.)		36	51.7	81.5	102	127.2	157.2	194.5	253.3	317.5	381.4
Max. speed (rpm)	cont.	1250	960	750	600	475	378	310	240	190	155
	int.	1520	1150	940	750	600	475	385	300	240	190
Max. torque (N•m)	cont.	72	100	195	240	300	380	450	540	550	580
	int.	83	126	220	280	340	430	500	610	690	690
	peak	105	165	270	320	370	460	560	710	840	830
Max. output (kW)	cont.	8.5	9.5	12.5	13.0	12.5	12.5	11.0	10.0	9.0	7.5
	int.	9.8	11.2	15.0	15.0	14.5	14.0	13.0	12.0	10.0	9.0
Max. pressure drop (MPa)	cont.	14.0	14	17.5	17.5	17.5	17.5	17.5	17.5	13.5	11.5
	int.	16.5	17.5	20	20	20	20	20	20	17.5	15
	peak	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	21	17.5
Max. flow (L/min)	cont.	45	50	60	60	60	60	60	60	60	60
	int.	55	60	75	75	75	75	75	75	75	75
Weight (kg)		6.5	6.7	6.9	7	7.3	7.6	8.0	8.5	9.0	9.5

- Continuous pressure: Max. value of operating motor continuously.
- Intermittent pressure: Max. value of operating motor in 6 seconds per minute .
- Peak pressure: Max. value of operating motor in 0.6 second per minute.



Performance Data

BMR 36 [36cm³/rev.]

Pressure (MPa)

Max.cont. Max.int.

	2	3	5	7	9	10	12.5	14.0	16.5
4	10	16	25	37	46	50			
	105	100	92	80	71	58			
8	9	15	25	37	47	50	63	71	83
	208	200	188	175	158	149	134	120	108
15	8	14	23	36	45	51	64	72	82
	403	392	380	365	348	326	318	302	274
20	6	13	22	35	44	50	64	72	82
	540	531	518	500	483	462	450	435	412
30	6	12	21	32	42	47	63	70	80
	810	798	780	763	742	722	705	694	668
40	5	11	19	30	41	45	61	68	79
Max.cont.	1092	1080	1069	1056	1042	1028	1011	984	957
Max.int.	4	10	17	29	40	44	59	66	77
	1230	1215	1194	1170	1150	1128	1100	1070	1020

BMR 50 [51.7cm³/rev.]

Pressure (MPa)

Max.cont. Max.int.

	5	7	9	10	12	14	16	17.5
5	35	45	61	67	77	88		
	93	84	76	73	69	46		
10	36	46	62	69	80	95	108	120
	186	178	166	162	153	136	118	97
15	35	49	63	73	88	100	109	123
	283	277	269	261	250	230	211	185
20	34.5	47	61	69	83	96	109	126
	377	375	365	361	346	330	302	270
30	33	44	60	67	80	95	108	126
	576	569	561	554	542	531	500	465
40	30	41	58	66	79	92	106	122
	760	758	753	750	738	724	700	670
45	29.5	40	57	65	78	90	105	121
	856	853	849	845	835	815	796	770
50	26	37	53	60	73	85	99	114
Max.cont.	950	940	925	906	880	852	832	801
Max.int.	20	33	48	56	69	81	95	109
	1138	1124	1100	1075	1056	1028	1006	970

BMR 80 [81.5cm³/rev.]

Pressure (MPa)

Max.cont. Max.int.

	5	7	9	10	12	14	16	17.5	20
5	50	64	88	108	133				
	59	56	50	44	38				
10	54	77	99	108	129	150	173		
	118	113	106	97	86	79	56		
20	57	78.0	102	111	134	155	177	196	225
	238	234	227	216	203	190	178	154	135
30	54	75	100	108	131	152	176	195	223
	360	352	340	332	316	302	290	274	250
40	48	73	96	105	127	148	172	190	220
	480	470	458	445	430	418	403	388	359
50	42	70	93	102	124	147	170	188	218
	604	595	582	570	556	540	521	504	487
60	37	66	89	98	121	144	166	184	213
Max.cont.	726	715	704	692	678	663	647	622	594
70	32	60	83	95	116	140	160	177	208
	845	834	820	802	789	767	754	730	705
Max.int.	21	50	78	90	111	135	154	171	200
	910	895	881	867	852	830	806	787	756

BMR 100 [102cm³/rev.]

Pressure (MPa)

Max.cont. Max.int.

	5	7	9	10	12	14	16	17.5	20
5	66	92	120	135	156				
	45	42	38	34	27				
10	68	96	125	138	159	188	212		
	93	90	86	81	74	57	42		
20	65	94.0	123	137	155	186	210	238	274
	189	185	180	173	165	158	150	139	118
30	63	92	120	133	153	185	209	235	270
	286	281	275	266	257	246	237	225	207
40	57	88	117	130	152	185	208	233	267
	385	378	365	355	345	332	320	314	297
50	48	79	110	123	150	183	204	228	260
	482	477	470	460	448	435	420	405	389
60	38	70	105	120	144	178	200	220	252
Max.cont.	580	572	560	548	535	523	510	500	478
70	32	65	100	118	141	176	197	215	246
	678	670	660	648	638	626	615	606	580
Max.int.	23	59	93	111	136	170	192	210	240
	728	720	710	695	681	667	650	634	618

Torque (N•m) 135
Speed (rpm) 830

cont.
int.



Performance Data

BMR 125 [127.2cm³/rev.]

Pressure (MPa)

Max.cont.

Max.int.

		5	7	9	10	12	14	16	17.5	20
Flow (L/min)	5	76	110	145	167	189				
		36	31	25	19	13				
	10	84	118	155	176	202	228	253		
		73	70	60	48	36	25	19		
	20	82	117	153	174	200	230	259	294	332
		153	151	148	144	138	128	117	104	73
	30	79	116	151	171	198	228	257	292	329
		231	228	224	218	210	201	183	168	137
	40	72	114	148	168	196	226	256	290	327
		309	307	303	298	292	280	270	252	218
Max.cont.	50	62	105	143	165	195	223	254	287	323
		389	386	382	378	370	360	344	328	292
	60	52	98	136	160	191	220	250	282	319
		467	463	459	456	448	427	410	399	352
	70	41	90	130	156	187	215	242	278	313
		545	542	538	534	529	520	508	486	430
	75	32	79	126	148	180	208	234	262	300
		586	583	578	570	560	546	532	520	480
	Max.int.									

BMR 160 [157.2cm³/rev.]

Pressure (MPa)

Max.cont.

Max.int.

		5	7	9	10	12	14	16	17.5	20
Flow (L/min)	5	104	146	190	210	245				
		26	23	20	16	10				
	10	107	150	195	216	250	290	335		
		59	56	50	45	37	30	22		
	20	102	151	198	220	257	298	342	370	420
		121	118	115	113	108	102	97	90	78
	30	97	146	190	217	256	295	340	368	416
		184	178	173	170	164	155	143	128	103
	40	89	140	185	210	252	290	335	363	412
		246	241	235	228	220	210	194	177	150
Max.cont.	50	72	128	179	202	244	284	327	358	409
		310	307	300	295	287	278	262	247	210
	60	60	116	170	198	240	279	321	352	400
		374	367	359	354	346	338	323	306	265
	70	49	107	164	193	233	271	309	344	390
		437	430	421	415	403	393	381	365	318
	75	36	98	152	185	226	265	300	334	379
		472	463	450	441	431	420	405	389	365
	Max.int.									

BMR 200 [194.5cm³/rev.]

Pressure (MPa)

Max.cont.

Max.int.

		5	7	9	10	12	14	16	17.5	20
Flow (L/min)	5	132	181	238	262	310				
		24	22	18	13	10				
	10	135	186	240	264	315	356	403		
		49	47	45	43	38	33	24		
	20	131	183	238	260	314	358	404	438	498
		99	97	94	92	88	83	74	64	56
	30	126	178	233	254	311	355	402	431	486
		149	147	144	141	135	126	113	105	91
	40	112	169	228	250	307	352	400	426	477
		200	197	194	191	185	174	160	151	127
Max.cont.	50	95	156	221	246	300	350	398	421	470
		252	249	246	243	238	228	212	194	161
	60	78	145	213	238	289	342	386	412	459
		304	301	298	294	286	276	262	243	218
	70	67	135	206	228	277	336	375	408	453
		355	353	349	340	329	316	300	288	257
	75	58	125	197	220	270	321	360	398	442
		382	379	373	362	350	337	322	312	278
	Max.int.									

cont.

int.

BMR 250 [253.5cm³/rev.]

Pressure (MPa)

Max.cont.

Max.int.

		5	7	9	10	12	14	16	17.5	20
Flow (L/min)	5	175	243	304	342	407				
		17	16	14	12	10				
	10	178	246	310	344	409	465	525		
		37	35	31	28	23	18	11		
	20	175	244	308	340	408	463	520	558	636
		75	73	72	70	66	58	53	50	42
	30	162	235	304	332	400	455	516	550	621
		114	111	108	106	100	92	83	77	65
	40	143	223	300	329	396	447	512	546	617
		154	152	150	147	143	132	120	110	90
Max.cont.	50	124	208	289	323	384	440	503	535	600
		193	190	187	174	168	160	149	140	116
	60	103	192	280	314	371	426	489	514	578
		233	230	227	224	218	205	190	181	155
	70	88	178	264	301	356	418	479	498	560
		273	270	267	263	252	242	226	209	173
	75	62	165	256	288	347	412	474	486	542
		294	291	287	283	274	263	249	236	211
	Max.int.									

Torque (N•m) 256
Speed (rpm) 287



Performance Data

BMR 315 [317.5cm³/rev.]

Pressure (MPa)

5	7	9	10	12	Max.cont.		14	16	Max.int.	17.5
---	---	---	----	----	-----------	--	----	----	----------	------

Flow (L/min)	5	215 13	302 11							
	10	218 28	305 27	383 25	422 24	488 21	551 18	622 13		
	20	215 60	303 59	380 57	418 55	485 52	549 49	620 45	660 42	
	30	204 91	296 89	375 86	413 84	480 81	542 78	613 72	654 67	
	40	196 122	287 120	368 117	410 112	477 106	539 100	609 94	650 85	
	50	176 154	270 151	356 147	393 140	461 131	526 120	597 109	645 100	
	Max.cont. 60	162 185	246 182	339 177	374 172	446 163	511 152	586 140	628 134	
	70	143 217	235 213	324 208	358 201	430 190	493 178	562 166	614 158	
	Max.int. 75	125 232	212 228	303 222	339 216	417 208	481 200	543 183	582 171	

Torque (N•m) 481
Speed (rpm) 200

BMR 375 [381.4cm³/rev.]

Pressure (MPa)

3	4.5	5.5	6.5	8	Max.cont.		10	12.5	Max.int.	14
---	-----	-----	-----	---	-----------	--	----	------	----------	----

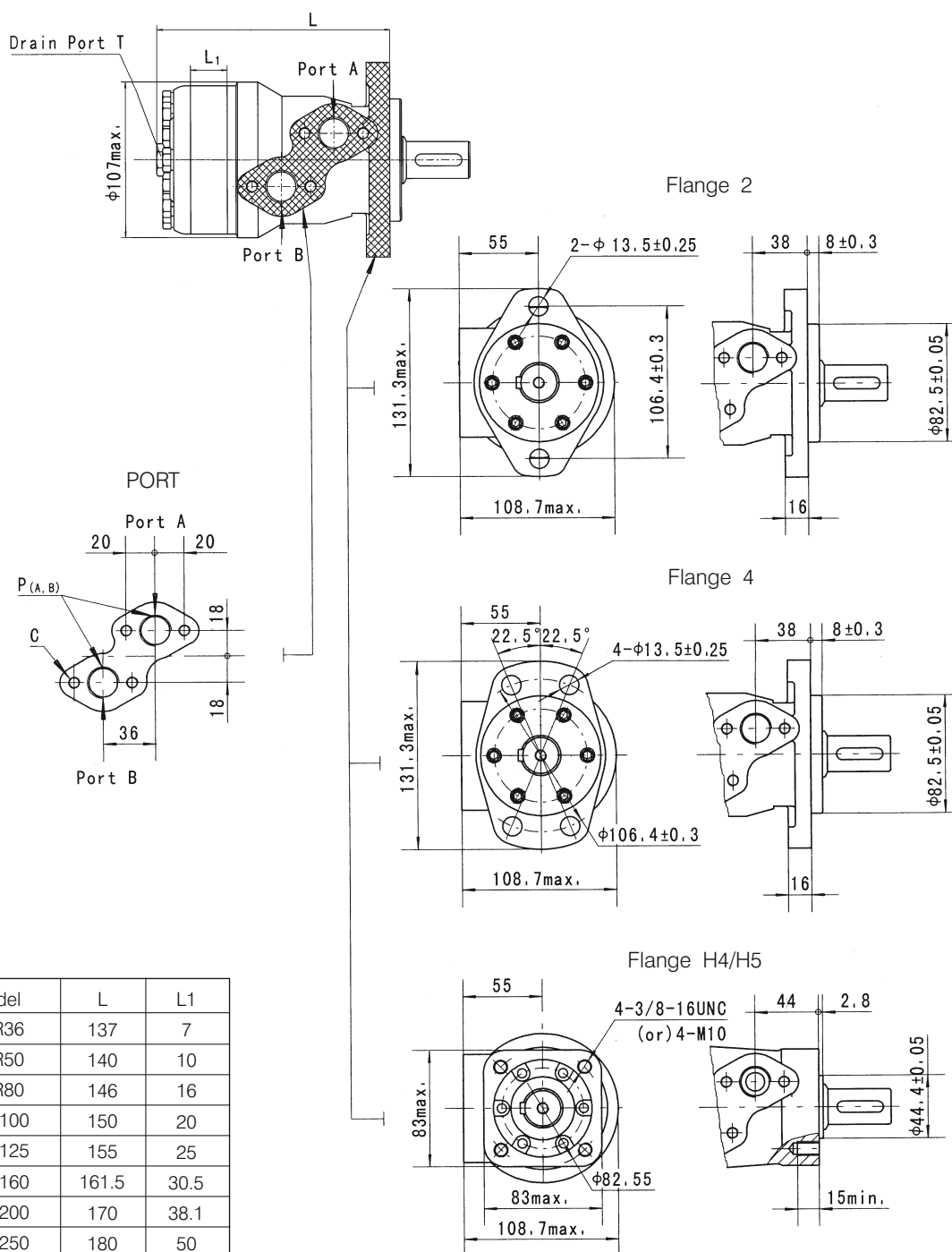
Flow (L/min)	5	153 12	232 10							
	10	157 24	236 23	284 22	337 21	406 19	497 17	612 15	668 12	
	20	150 49	232 48	280 47	332 46	401 44	490 41	606 38	660 32	
	30	142 76	215 75	274 74	327 73	398 71	483 67	603 63	652 50	
	40	126 103	212 101	268 99	320 97	393 95	477 92	593 88	635 70	
	50	105 128	187 126	242 124	302 121	376 118	455 115	583 111	608 96	
	Max.cont. 60	90 154	167 152	229 150	281 148	362 145	444 138	566 130	600 121	
	70	90 180	149 179	200 178	258 176	341 173	425 168	546 160	580 148	
	Max.int. 75	56 195	125 194	182 193	241 191	320 189	408 185	524 178	565 170	

cont.
int.



BMR Dimensions and Mounting Data

MOUNTING



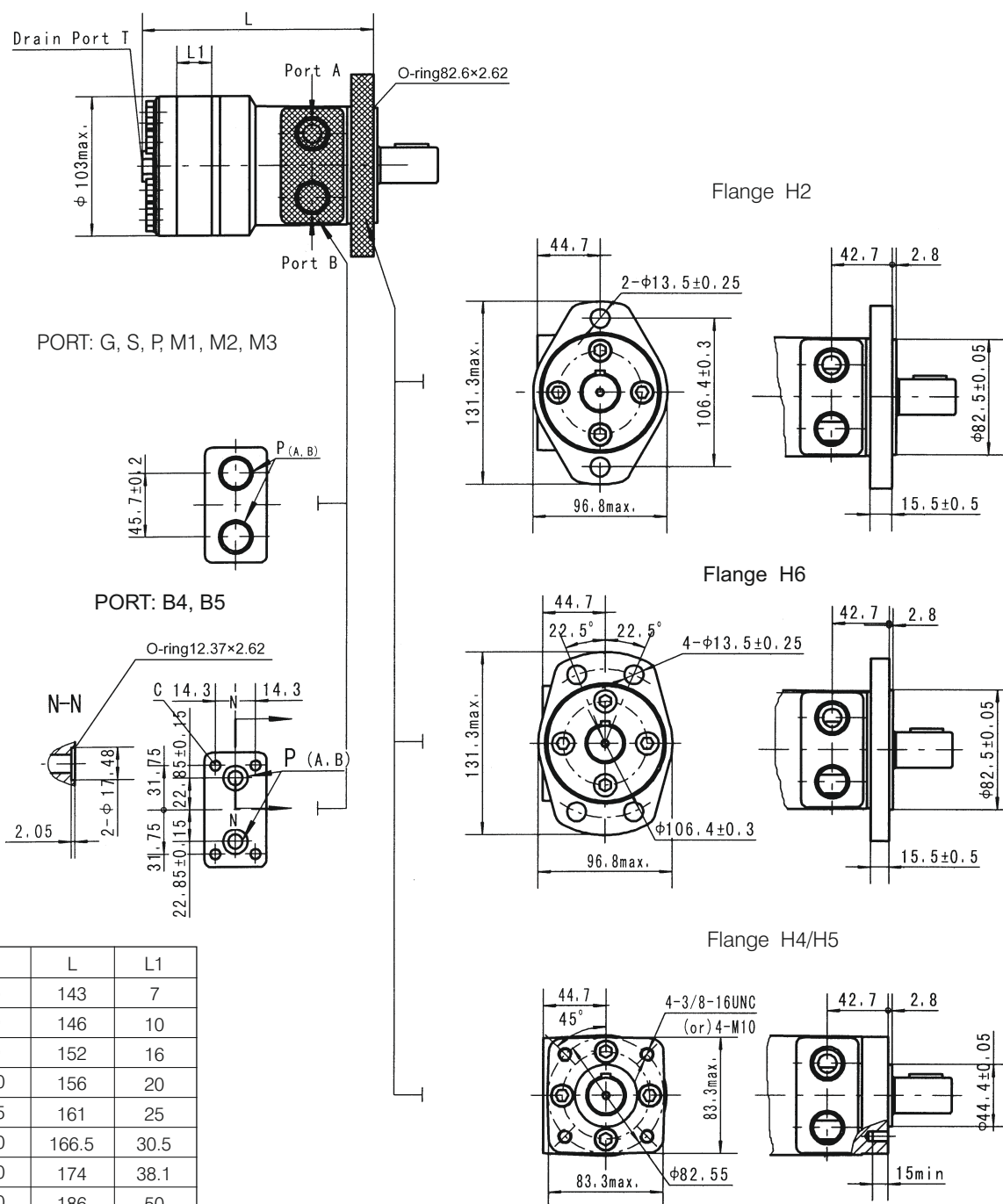
Model	L	L1
BMR36	137	7
BMR50	140	10
BMR80	146	16
BMR100	150	20
BMR125	155	25
BMR160	161.5	30.5
BMR200	170	38.1
BMR250	180	50
BMR315	192	62
BMR375	204	74

Code	D (depth)	M (depth)	S (depth)	P (depth)	R (depth)
P(A,B)	G1/2 (15)	M22 x 1.5 (15)	7/8-14 O-ring (17)	1/2-14NPTF (15)	PT(RC)1/2 (15)
C	4-M8 (13)	4-M8 (13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8 (13)
T	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF (12)	7/16-20UNF (12)	PT(RC)1/4 (9.7)



BMR Shaft Extensions Mounting Data

MOUNTING



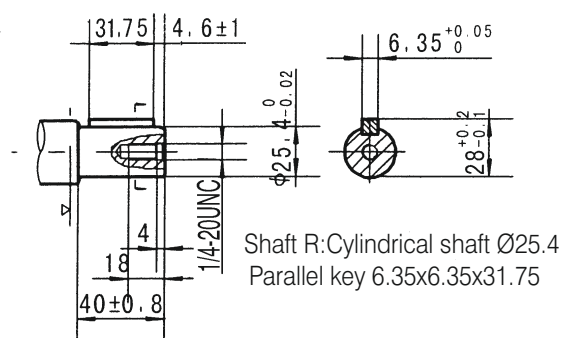
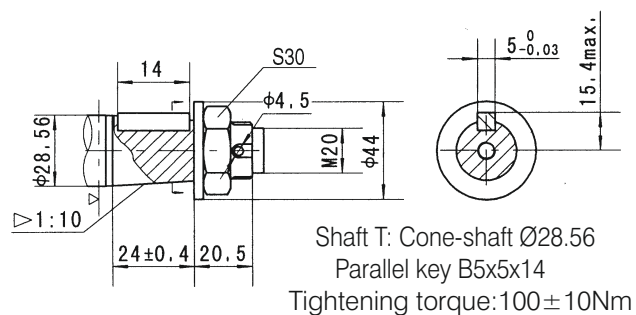
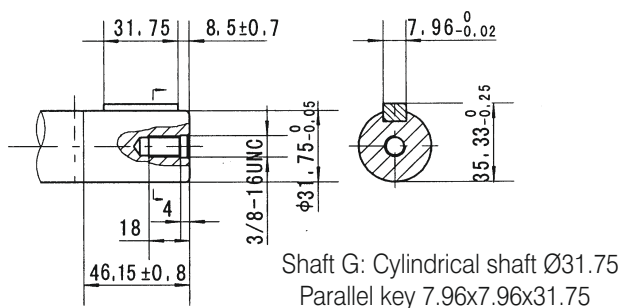
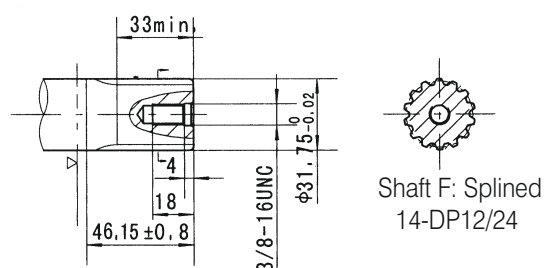
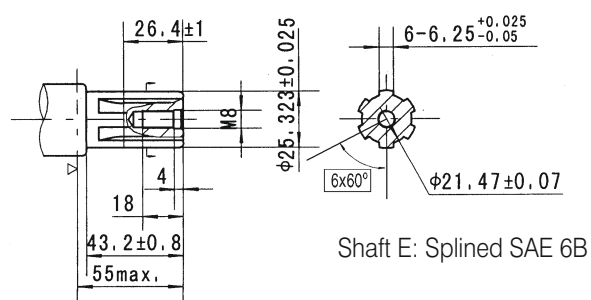
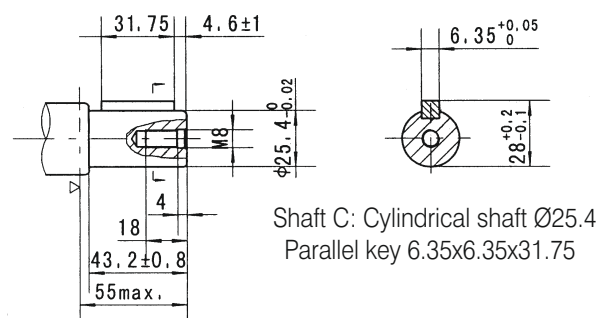
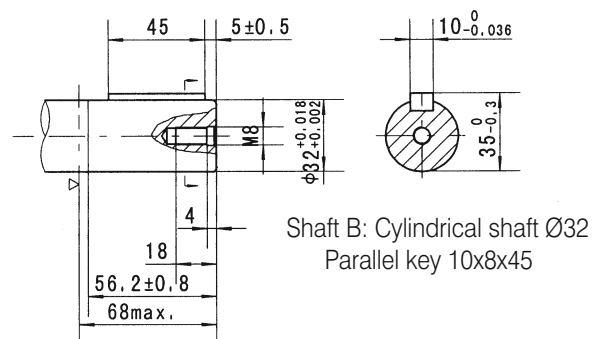
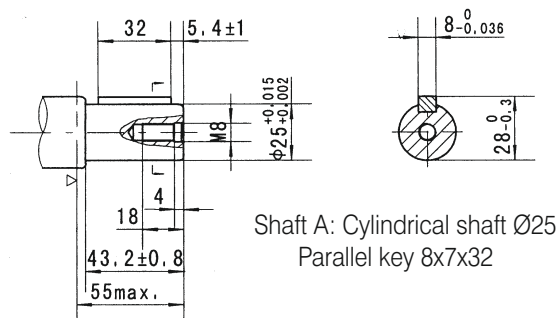
Note: The size L of the BMRS N1 should be increased by 2mm.

Model	L	L1
BMRS36	143	7
BMRS50	146	10
BMRS80	152	16
BMRS100	156	20
BMRS125	161	25
BMRS160	166.5	30.5
BMRS200	174	38.1
BMRS250	186	50
BMRS315	198	62
BMRS375	210	74

Code	G (depth)	S (depth)	P (depth)	R (depth)	M1 (depth)	M2 (depth)	M3 (depth)	B4 (depth)	B5 (depth)
P(A,B)	G1/2 (15)	7/8-14 O-ring (17)	1/2-14NPTF (15)	PT(RC)1/2 (15)	M18 x 1.5 (15)	M20 x 1.5 (15)	M22 x 1.5 (15)	ø10	ø10
T	G1/4 (12)	7/16-20UNF (12)	7/16-20UNF (12)	PT(RC)1/4 (9.7)	M10 x 1 (12)	M10 x 1 (12)	M10 x 1 (12)	7/16-20UNF(12)	G1/4(12)
C	-	-	-	-	-	-	-	4-5/16-18UNC(13)	4-M8(13)



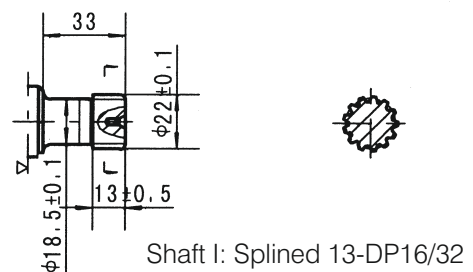
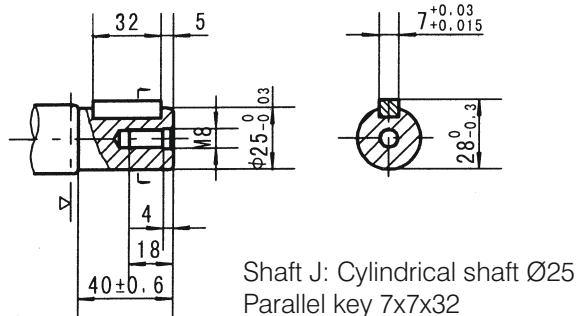
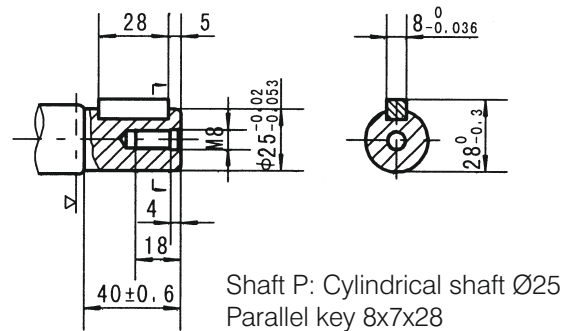
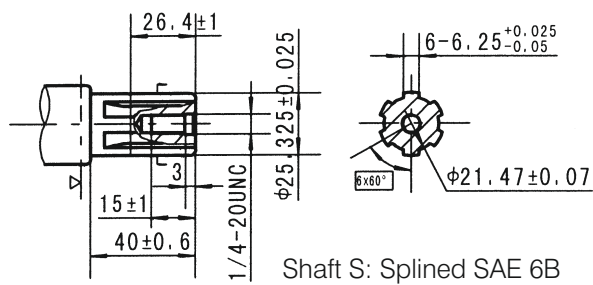
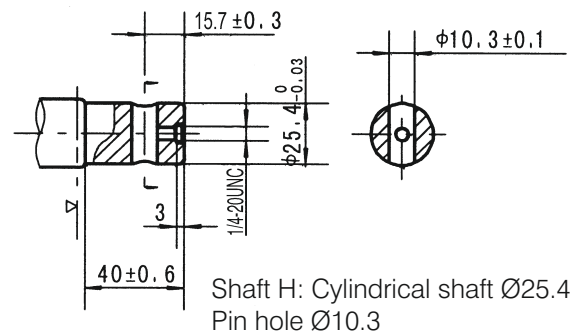
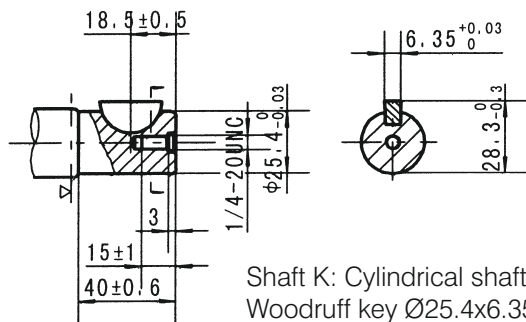
BMR Shaft Extensions and Dimensions Data



▷ Motor Mounting Surface



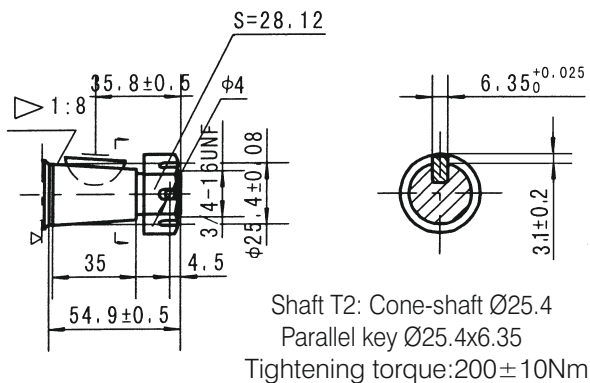
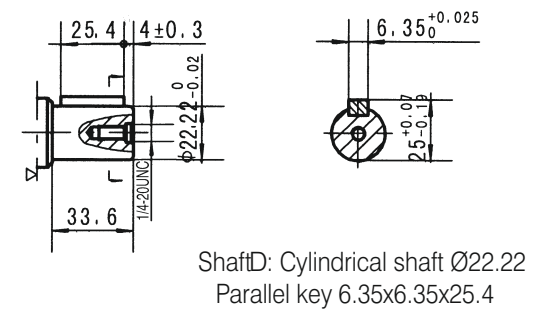
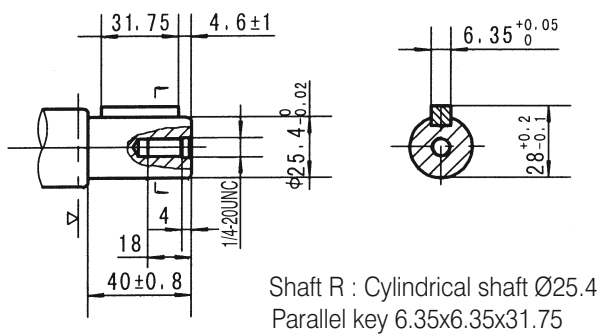
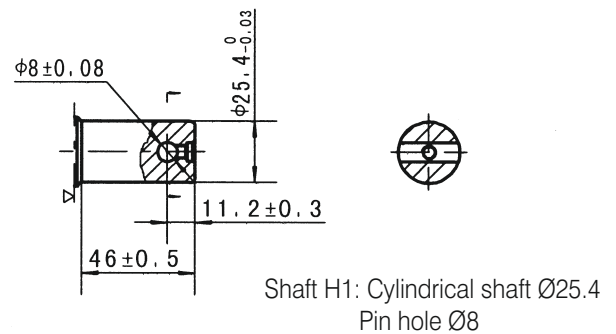
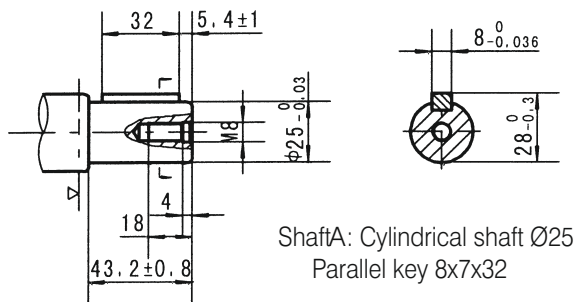
BMRS Shaft Extensions and Dimensions Data



► Motor Mounting Surface



BMRS Shaft Extensions and Dimensions Data

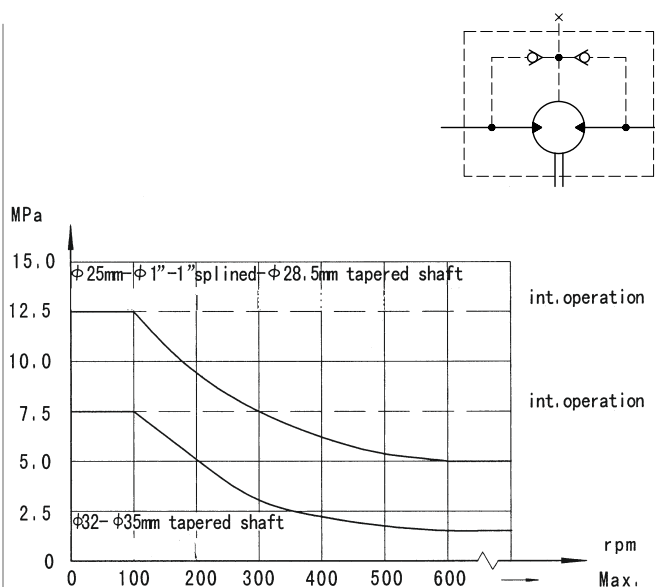
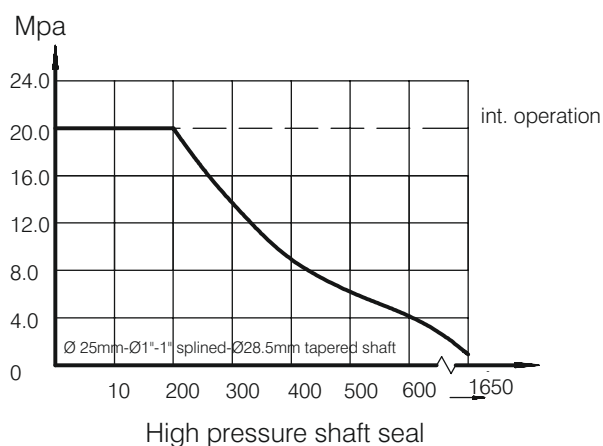


▷ Motor Mounting Surface



BMR, BMRS Series Hydraulic Motor

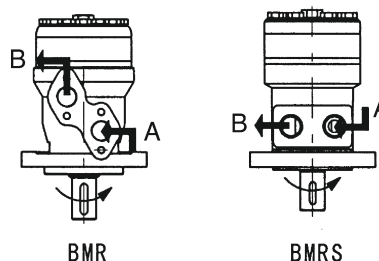
- Permissible shaft seal pressure



In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

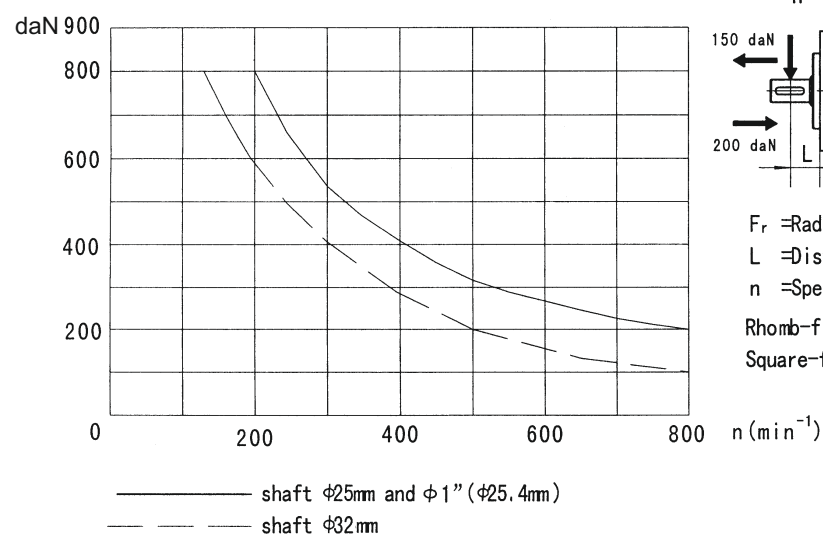
- Direction of shaft rotation : Standard

When facing shaft end of motor, shaft to rotate:
Clockwise when port "A" is pressurized.
Counter-clockwise port "B" is pressurized.



Status of the shaft's radial force

(Standard motor with journal bearing)



Oil flow in drain line

The table shows the Max. oil flow in the drain line at a return pressure less than 0.5-1MPa.

Pressure 33 drop (MPa)	Viscosity (mm ² /s)	Oil flow in the drain line (L/min)
10	20	2.5
	35	1.8
14	20	3.5
	35	2.8



Ordering Code

Pos.1	2	3	4	5	6	7	8
Code	Disp.	Flange	Output Shaft	Ports and Drain Port	Rotation Direction	Paint	Unusually Function
BMR	36	2-Ø13.5Rhomb-flange, pilot Ø82.5×8	A Shaft Ø25.4,parallel Key 8x7x32	D G1/2 Manifold Mount 4-M8, G1/4	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	50		C Shaft Ø25.4,parallel Key 6.35x6.35x31.75	M M22 x1.5 Manifold Mount 4-M8, M14 x1.5			
	80	4-Ø13.5Rhomb-flange, pilot Ø82.5×8	E Shaft Ø25.4,spined tooth SAE 6B	S 7/8-14 O-ring manifold	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	100		R Short shaft Ø25.4,parallel key 6.35x6.35x31.75	4-5/16-18UNC, 7/16-20UNF			
	125	4-3/8-16 Square-flange, pilot Ø82.5×8	B Shaft Ø32,parallel Key 10x8x45	P 1/2-14 NPTF	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	160		F Shaft Ø31.75 spined tooth 14-DP12/24	Manifold 4-5/16-18UNC, 7/16-20UNF			
	200	4-M10 Square-flange, pilot Ø44.4×2.8	FD Long shaft Ø31.75 spined tooth 14-DP12/24	PT(Rc) 1/2 Manifold 4-M8, PT(Rc) 1/4	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	250		G Shaft Ø31.75 parallel Key 7.96x7.96x31.75				
	315	4-M10 Square-flange, pilot Ø44.4×2.8	T Cone-Shaft Ø28.56,parallel Key B5x14				
	375						

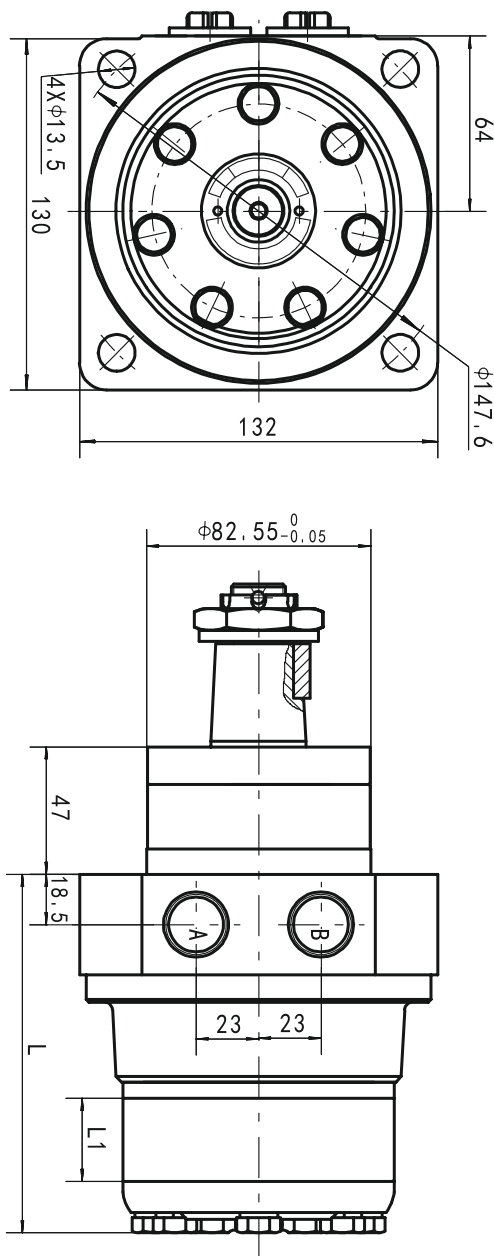
Note:The shafts of B\F\FD\G\T\T3 are only suitable for flanges of 2 and 4.

Pos.1	2	3	4	5	6	7	8
Code	Disp.	Flange	Output Shaft	Ports and Drain Port	Rotation Direction	Paint	Unusually Function
BMRS	36	2-Ø13.5Rhomb-flange, pilot Ø82.5×2.8	K Shaft Ø25.4,Woodruff Key Ø25.4×6.35	G G1/2, G1/4	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	50		S Sub-shaft Ø25.4,spined tooth SAE 6B	S 7/8-14 O-ring 7/16-20UNF (G1/4)			
	80	4-Ø13.5Rhomb-flange, pilot Ø82.5×2.8	A Shaft Ø25.4, parallel key 8×7×32	P 1/2-14 NPTF, 7/16-20UNF (G1/4)	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	100		R Shaft Ø25.4, parallel key 6.35×6.35×31.75	T 3/4-16 O-ring, 7/16-20UNF PT(Rc) 1/2, PT(Rc) 1/4			
	125	4-3/8-16 Square-flange, pilot Ø82.5×2.8	H Sub-shaft Ø25.4,Pin hole Ø10.3	R Ø10 O-ring manifold 4 x5/16- 18, 7/16-20UNF	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	160		H1 Shaft Ø25.4, pin hole Ø8				
	200	4-M10 Square-flange, pilot Ø44.4×2.8	D Shaft Ø22.22, parallel key 6.35×6.35×25.4	B5 Ø10 O-ring manifold 4 xM8, G1/4	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	250		I Shaft Ø22.22, spined tooth 13-DP16/32				
	315	4-M10 Square-flange, pilot Ø44.4×2.8	T2 Cone shaft Ø25.4, woodruff key Ø25.4×6.35	M1 M18 x1.5, M10 x1	Omit Standard R Opposite	00 Omit B S	Omit N1 0 F LS
	375		P Shaft Ø25,parallel Key 8×7×28	M2 M20 x1.5, M10 x1			

Note:When the table is used, please fill the code of left rows in dash area and give us, which the code information is consists of construction, displacement, mounting flange, output shaft and ports. If the specification is not in the table or you have specific requirements, please contact us.



BMRWN Dimensions Mounting Data



Model	L	L1
BMRWN-50	113	10
BMRWN-80	119	16
BMRWN-100	123	20
BMRWN-125	128	25
BMRWN-160	133.5	30.5
BMRWN-200	141	38.1
BMRWN-250	153	50
BMRWN-315	165	62
BMRWN-375	177	74

Mounting	Code	G(depth)	M(depth)	S(depth)	P(depth)
	P(A,B)	G1/2(15)	M2215(15)	7/8-14O-ring(17)	1/2-14NPTF(15)
	C	G1/4(12)	M1415(12)	7/16-20UNF(12)	7/16-20UNF(12)

Order Information

1 BMRWN 2 3 4 5 6 7 8

Pos.1	2	3	4	5	6	7	8
Code	Flange		Output shaft	Ports and drain port	Rotation direction	Paint	Unusually function
BMRWN	50	4-Ø13.5 Wheel Mount , Ø32.5×9.4	T1	D		No paint Blue Black Silver grey	Omit B S
	80		B				
	100		F				
	125		FD				
	160		G				
	200						
	250						
	315						
	375						
			Cone shaft Ø35, parallel key B6×6×20 Shaft Ø32 , parallel key 10×8×4 Shaft Ø31.75, splined key 14-DP12/2 Long Shaft Ø31.75, splined key14-DP12/24 Shaft Ø31.75, parallel key 7.96×7.96×31.75				

Note:When the table is used ,please fill the code of right rows in the table and give us ,which the code information is consists of construction , displacement , mounting flange output shaft and ports . If the specification is not in the table or you have specific requirements , please conact us .

