Edition: B/07
Publication: 18/09/07

### **BMP-BMR-BMH**



### Usage Guide

In order to make the motors working in optimal situation, we recommend the following:

- 1. Oil temperature :normal 20℃~60℃ upper limit 90℃ (no more than one hour).
- 2. Filtering and oil cleanliness :a return filter should be installed in the system with a fineness in the range of  $10\sim30\mu m$  and a piece of magnet should be installed at the bottom of the tank to prevent grits into the system. The max solid contamination grade of the oil is no more than 19/16.
- 3. Viscosity:  $42\sim74$  mm<sup>2</sup>/s at  $40^{\circ}$ C of oil temperature ,according to the condition to choose an applicable hydraulic oil.
- 4. The motors can be operated in parallel or series. When the pressure of the back exceeds 2Mpa,it is necessary to install an external drain line to the tank.
- 5. For BMP and BMR series motors, the type of output shaft may be chosen in demand.
  - 5.1. The output shaft permits a radial force with the radial bearing.
  - 5.2. The output shaft doesn't permit the radial force without the radial bearing. When the radial force acts on the shaft, the force must be discharged.
- 6. The optimal operation situation should be at the  $1/3\sim2/3$  of the rated operation situation.
- 7. In order to obtain a longer life of operating motor should operate motors at first for one hour under 30% of rated pressure. In any case, be sure to fill up with hydraulic oil inside motor before increasing load.

#### Specification Data of Hydraulic Motor

distribution type	model	displacement	Max. operating pressure	speed range	Max. output power
distribution type	model	(cm³/rev.)	(MPa)	(rpm)	(kw)
	ВМР	50~400	16.5	30~879	10
axial distribution	BMR	50~375	20	30~970	15
axiai distribution	вмн	200~500	20	30~430	17

#### - NOTICE -

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# **BMR Series Hydraulic Motor**

BMR series motor adapt the advanced Gerolor 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 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 Specification

Туре	BMR BMRS 50	BMR BMRS 80	BMR BMRS 100	B M R B M R S 125	BMR BMRS 160	BMR BMRS 200	B M R B M R S 250	BMR BMRS 315	B M R B M R S 375	
Geometric displaceme	nt (cm³/rev.)	51.3	80.6	100.8	124.9	157.2	199.2	252	314.5	370
	rated	755	750	600	475	375	300	240	190	160
Max. speed (rpm)	cont.	970	940	750	600	470	375	300	240	200
	rated	100	160	200	250	320	330	352	360	420
	cont.	100	190	240	292	363	358	352	360	420
Max. torque (N*m)	int.	126	220	280	340	430	448	470	470	548
	rated	7.7	12.3	12.3	12.0	12.3	10	9	7	6.5
	cont.	7.7	15	15	14	14	11	9	7	8.6
Max. output (kW)	int.	9.7	17	17	16	16	14	12	9	12
	rated	14	14	14	14	14	12	11	8.5	8.5
Max. pressure	cont.	14	17.5	17.5	17.5	16.5	13	11	8.5	8.5
drop (MPa)	int.	17.5	20	20	20	20	17.5	14	11.5	11.5
	cont.	40	60	60	60	60	60	60	60	60
Max. flow (L/min)	int.	50	75	75	75	75	75	75	75	75
Weight (kg)		6.7	6.9	6.9	7.2	7.5	8.0	8.5	9	9.3

- st Rated speed and rated torque:output value of speed and torque under rated flow and rated pressure.
- \* 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.



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### PERFORMANCE DATA

		BMR	50 [51	.3cm <sup>3</sup>	/rev.]				
		Press	ure (	MPa)			Max.cont.		Max.int.
		5	7	9	10	12	14	16	17.5
		35	45	61	67	77	88		
	5	95	84	76	73	69	46		
		36	46	62	69	80	95	108	120
	10	184	176	165	162	150	130	111	84
(L/min)		35	49	63	73	88	100	109	123
Ę	15	283	277	269	261	250	230	211	185
		34.5	47	61	69	83	96	109	126
Flow	20	377	375	365	361	346	330	308	276
윤		34	45	61	69	81	96	109	126
	25	476	468	460	453	438	423	395	361
		33	44	60	67	80	95	108	126
	30	576	569	561	554	542	531	500	465
		31	42	59	66	80	93	107	124
	35	669	665	657	654	638	623	598	561
		30	41	58	66	79	92	106	122
Max.cont.	40	760	758	753	750	738	724	700	670
		29.5	40	57	65	78	90	105	121
Max.int.	45	856	856	850	845	835	815	799	780

		BMR	BMR 80 [80.6cm <sup>3</sup> /rev.]										
		Press	ure (	MPa)			Max.cont.		Max.int.				
		5	7	9	10	12	14	16	17.5				
		55	77	98	107	130	149	170	180				
	10	115	109	106	101	91	75	53	45				
		50	81.6	105	118	132	160	178	189				
	20	239	235	227	224	209	196	172	160				
(L/min)		48	74	97	114	131	150	179	190				
Ę	30	364	360	357	345	332	321	300	284				
_		45	71	95	105	128	149	177	188				
Flow	40	488	483	475	472	460	447	420	408				
픈		42	70	90	98	125	147	171	187				
	50	619	615	607	598	593	568	547	535				
		38	63	85	95	118	142	169	185				
	60	740	725	721	715	707	688	667	657				
		36	58	80	89	112	139	164	179				
x.cont.	70	860	853	839	837	823	811	790	776				
		29	56	77	85	110	133	161	177				
ax.int.	75	925	915	910	899	888	871	853	837				

		BMR	100 [1	00.8c	m³/rev	.]			
		Press	ure (	MPa)			Max.cont.		Max.int.
		5	7	9	10	12	14	16	17.5
		70	100	122	138	159	182	210	222
	10	99	95	87	84	74	63	52	44
		68	95	123	143	165	200	221	238
	20	199	194	188	182	175	162	150	138
(L/min)		62	94	121	140	164	194	220	240
Æ	30	299	294	288	284	278	263	249	236
=		59	88	119	134	161	192	218	238
≥	40	400	398	387	385	380	366	350	336
Flow		55	83	117	125	157	185	217	235
	50	498	496	488	484	475	464	450	436
		48	79	110	119	152	180	214	233
	60	599	595	587	585	579	569	552	538
		43	70	100	112	142	170	201	229
Max.cont.	70	699	693	687	683	679	668	648	636
		39	63	97	105	140	167	197	227
Max.int.	75	748	741	737	735	720	7,13	697	686

		BMR	125 [1	BMR 125 [124.9cm³/rev.]											
		Press	ure (	Mpa)			Max.com	t.	Max.int.						
		5	7	9	10	12	14	16	17.5						
		90	122	160	173	205	237	258	270						
	10	73	71	66	63	55	42	23	14						
		85	118	159	172	208	250	278	292						
	20	154	152	150	145	138	123	109	91						
(L/min)		82	107	158	164	206	241	277	291						
Ę.	30	237	236	233	226	219	207	192	170						
., ., ., .,		79	105	150	161	204	238	275	289						
Flow	40	315	313	309	307	302	297	272	254						
F		75	96	145	160	198	236	262	282						
	50	398	397	395	391	381	368	353	337						
		62	95	139	158	183	222	254	279						
	60	475	473	471	470	463	450	427	416						
		59	83	125	150	178	212	250	262						
Aax.cont.	70	554	553	551	550	546	538	514	500						
		56	80	122	145	172	205	245	261						
Max.int.	75	598	597	593	590	586	577	551	537						

		Press	ure (	MPa)			Max.cont.		Max.int
		5	7	9	10	12	14	16	17.5
		115	160	203	220	260	300	340	362
	10	58	55	52	50	44	38	34	26
Ì		114	160	205	230	265	320	355	380
	20	119	115	111	108	103	95	84	76
,		105	158	202	221	261	305	344	378
	30	184	181	177	172	165	153	134	130
1		100	145	196	218	257	299	340	374
	40	246	244	239	237	230	218	199	184
		90	140	190	209	250	295	336	366
	50	307	305	302	300	292	280	262	244
		84	136	180	199	240	286	330	360
	60	370	368	364	362	355	342	334	304
Ì		65	120	164	180	223	280	320	350
ont.	70	435	434	430	427	416	405	335	366
		59	116	158	175	220	272	314	342
int.	75	465	462	458	456	447	433	416	395

		BMR	200 [1	99.2c	m³/rev	.]		
		Press	ure (	MPa)		Max.cont.		Max.int.
		5	7	9	10.5	12	14	17.5
		148	205	255	290	327	370	442
	10	49	47	45	43	40	30	24
		140	202	250	323	330	411	448
120000	20	99	97	93	90	86	78	65
(L/min)		130	193	241	307	325	377	445
E,	30	149	146	140	136	131	122	105
		125	186	232	305	313	390	436
Flow	40	200	197	192	188	181	170	149
H		120	177	225	295	305	382	427
	50	250	247	242	238	231	218	193
		110	166	221	285	292	372	419
	60	300	298	291	287	282	268	236
		98	150	205	244	278	331	410
Max.cont.	70	350	347	342	338	331	318	282
		85	141	199	235	268	323	400
Max.int.	75	375	372	366	362	357	343	310

cont.

	BMR 250 [252cm³/rev.]											
		Press	ure (	MPa)			Max.cont.		Max.int.			
		3	5	7	10	11	14	17.5				
		115	180	251	295	350	380	470	535			
	10	40	38	37	35	32	30	22	16			
		110	178	252	294	352	385	470	548			
	20	79	78	75	74	70	68	57	48			
(L/min)		100	170	248	285	348	381	469	545			
-	30	120	119	117	116	110	107	95	79			
=		91	159	232	268	332	366	460	530			
Flow	40	158	157	156	154	151	148	130	110			
프		81	148	216	252	320	352	453	521			
	50	200	198	196	195	163	160	152	147			
		75	132	201	235	305	340	433	505			
	60	241	240	239	237	232	228	210	180			
		50	117	189	220	290	320	412	495			
Max.cont.	70	280	279	277	276	271	268	250	215			
		42	105	180	211	281	310	405	486			
Max.int.	75	300	299	298	297	295	289	272	239			

		Press	ure (	(MPa)		Max.cont.		Max.int
		3	5	6.5	8	9	13	13.5
		135	215	279	343	383	515	550
	10	31	29	28	27	27	24	22
		133	216	289	349	380	508	552
	20	62	61	60	58	57	52	50
Ē		125	205	275	341	375	494	543
(L/min)	30	95	92	91	90	88	81	79
		113	195	267	335	367	485	526
FIOW	40	123	121	120	118	117	106	104
Ĭ		92	170	253	321	352	474	511
	50	155	154	152	149	147	137	133
		80	160	231	305	334	458	492
	60	190	187	193	179	176	163	157
		57	136	215	285	320	444	480
.cont.	70	222	220	217	212	208	192	185
		55	124	205	269	308	427	469
x.int.	75	235	234	.231	227	225	408	201

		Press		MPa)		Max.cont.		Max.int		
		3	5	6.5	8	9	13	13.5		
Ī		160	270	340	420	470	550	610		
	10	26	25	24	22	21	19	17		
		159	260	340	410	470	540	605		
	20	53	52	51	49	47	42	37		
Ē.		150	255	330	400	450	530	600		
된	30	79	78	77	75	73	67	60		
=		135	240	310	375	430	520	590		
Flow (L/min)	40	106	105	104	102	99	93	85		
유		120	230	295	360	420	505	570		
	50	134	132	131	129	126	120	110		
		98	210	275	340	390	490	550		
	60	159	158	157	155	153	147	135		
		75	175	250	320	370	465	530		
Max.cont.	70	187	186	185	183	180	175	160		
		65	160	230	310	360	450	515		
Max.int.	75	200	199	198	195	192	187	178		
				Forque Speed	(N+m) (rpm					

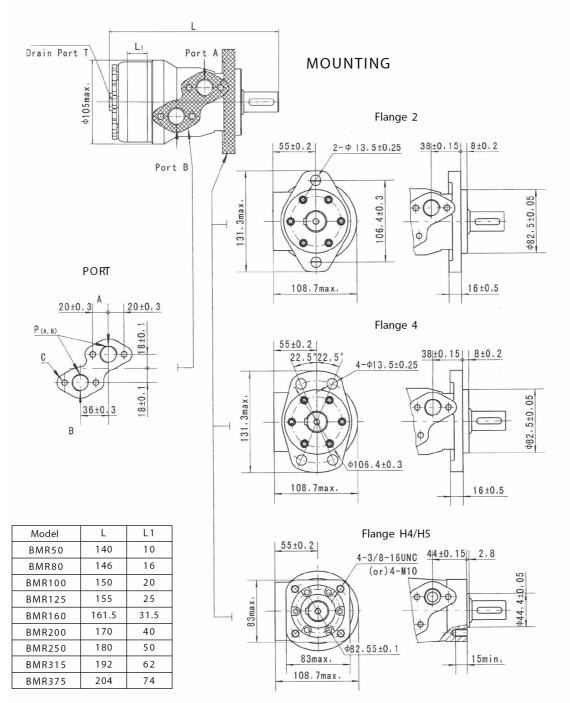
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#### BMR DIMENSIONS AND MOUNTING DATA



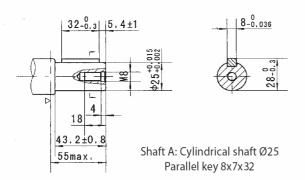
Code Mounting	D (depth)	M (depth)	S (depth)	P (depth)	R (depth)
P(A,B)	G1/2 (15)	M22 x 1.5 (15)	7/8-14 O-ring (17)	1/2-14NPTF (15)	PT(RC)1/2 (15)
С	4-M8 (13)	4-M8 (13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8 (13)
Т	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF (12)	7/16-20UNF (12)	PT(RC)1/4 (9.7)

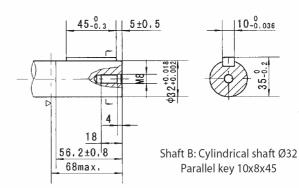
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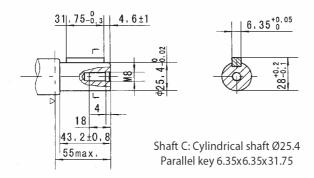


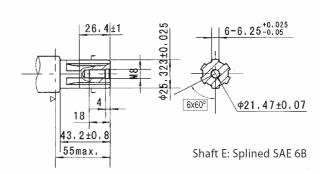
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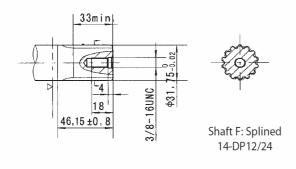
#### SHAFT EXTENSIONS FOR BMR MOTORS

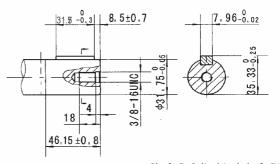


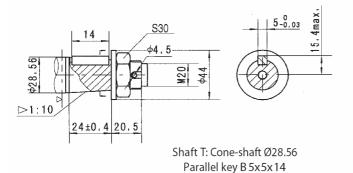






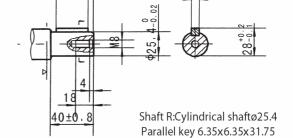






Shaft G: Cylindrical shaft Ø31.75 Parallel key 7.96x7.96x31.75

6.35 0 05



 $31.5 - 6.34 \cdot 6 \pm 1$ 

Tightening torque:100  $\pm$  10Nm

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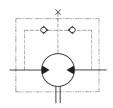
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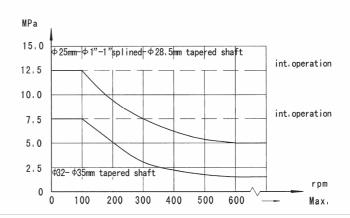


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#### BMR、BMRS Series Hydraulic Motor

### Permissible shaft seal pressure

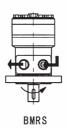




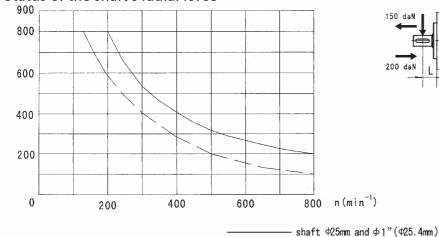
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.

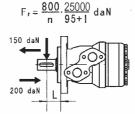
#### Direction of shaft rotation











Fr =Radial Force (daN)

L ⊐Distance (mm)

n =Speed (rpm)

Rhomb-flange L=30mm Square-flange L=24mm

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shaft ¢32mm



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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.

Paint Unusually Function  No Paint None Standard  None Blue N Big radial force  Black AX Big axial force  Silver gray 0 No case drain	
N N O O O O O O O O O O O O O O O O O O	
ion Direction Standard Opposite	
None R	
Port and Drain Port  G1/2 Manifold Mount  4-M8, G1/4  M22 × 1.5 Manifold Mount  4-M8, M14 × 1.5  7/8-14 O-ring manifold  4-5/16-18UNC, 7/16-20UNF  1/2-14 NPTF  Manifold 4-5/16-18UNC,  7/16-20UNF  PT(Rc)1/2 Manifold 4-M8,  PT(Rc)1/4  G1/2, G1/4  7/8-14 O-ring 7/16-20UNF  (G1/4)  1/2-14 NPTF, 7/16-20UNF  (G1/4)  3/4-16 O-ring, 7/16-20UNF  (G1/4)	P1 (kc) 1/2 P1 (kc) 1/4 Ø10 O-ring manifold 4×5/16-18 7/16-20UNF(G1/4) Ø10 O-ring manifold 4×M8 7/16-20UNF(G1/4) M18 × 1.5, M10 × 1 M22 × 1.5, M10 × 1
	M M M B B A 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
Output Shaft  Shaft @25,parallel Key  8 × 7 × 32  Shaft @32,parallel Key  10 × 8 × 45  Shaft @25,4,parallel Key  6.35 × 6.35 × 31.75  Shaft @25,4,palined Key SAE 6B  Short shaft @25,4,parallel Key  6.35 × 6.35 × 31.75  Shaft @31.75,parallel Key  7.96 × 7.96 × 31.75  Cone-Shaft @28.56, parallel  Key B5 × 5 × 14  Shaft @25,4,Woodruff Key  Ø25,4 × 6.35  Sub-shaft @25,4,splined Key  SAE 6B  Shaft @25,4 parallel key  6.35 × 6.35  Sub-shaft @25,4,pin hole @10.3  Shaft @25,4, pin hole @8	Shaft @22.22, parilel key 6.35 × 6.35 × 25.4 Shaft @22.22, splined key 13-DP16/32 Cone shaft @25.4 , woodruff key @25.4 × 6.35 Shaft @25,parallel Key 8 × 7 × 28 Shaft @25,parallel Key 7 × 7 × 32
4 8 U H X H U X Y 4 X I I	D 1 2 1
Flange  2-Ø13.5Rhomb-flange, pilot Ø82.5 × 8 4-Ø13.5Rhomb-flange, pilot Ø82.5 × 8 4-3/8-16 Square-flange, pilot Ø44 × 2.8 4-M10 Square-flange, pilot Ø44.4 × 2.8 pilot Ø82.5 × 2.8 q-Ø13.5Rhomb-flange, pilot Ø82.5 × 2.8	4-M10 Square-flange, pilot Ø44.4×2.8 4-Ø11Rectangle-flange, pilot Ø80 × 5 4-Ø11Rectangle-flange, pilot Ø85 × 5
2 4 H H H H H H H H H H H H H H H H H H	H 5 Z 3 Z 5 Z 5
Disp. 50 80 1100 1125 160 250 315 375	

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Order Information

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