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BMP Series Gerotor Gear Type – Hydraulic Orbital Motors – Axil Distribution Motors

BMP SERIES HYDRAULIC MOTOR

BMP series motor are small volume, economical type, which is designed with shaft distribution flow, which adapt the Gerotor gear set design and provide compact volume, high power and low weight.

Characteristic features:

* Advanced manufacturing devices for the Gerotor gear set, which provide small volume, high efficiency and long life.
* Shaft seal can bear high pressure of motor of which can be used in parallel or in series.
* Advanced construction design, high power and low weight.

Main Specification

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

Type		BMP BMPH BMPW 36	BMP BMPH BMPW 50	BMP BMPH BMPW 80	BMP BMPH BMPW 100	BMP BMPH BMPW 125	BMP BMPH BMPW 160	BMP BMPH BMPW 200	BMP BMPH BMPW 250	BMP BMPH BMPW 315	BMP BMPH BMPW 400	BMP BMPH BMPW 500
Geometric displacement (cm^3/rev.)		36	51.7	77.7	96.2	120.2	157.2	194.5	240.3	314.5	389.5	486.5
Max. speed (rpm)	cont.	1500	1150	770	615	490	383	310	250	192	155	120
	int.	1650	1450	960	770	615	475	385	310	240	190	150
Max. torque (N•m)	cont.	55	100	146	182	236	302	360	380	375	360	385
	int.	76	128	186	227	290	370	440	460	555	525	560
	peak	96	148	218	264	360	434	540	550	650	680	680
Max. output (kW)	cont.	8.0	10.0	10.0	11.0	10.0	10.0	10.0	8.5	7.0	6.0	5.0
	int.	11.5	12.0	12.0	13.0	12.0	12.0	12.0	10.5	8.5	7.0	6.0
Max. pressure drop (MPa)	cont.	12.5	14	14	14	14	14	14	11	9	7	6
	int.	16.5	17.5	17.5	17.5	17.5	17.5	17.5	14	14	10.5	9
	peak	22.5	22.5	22.5	22.5	22.5	22.5	22.5	18	16	14	12
Max. flow (L/min)	cont.	55	60	60	60	60	60	60	60	60	60	60
	int.	60	75	75	75	75	75	75	75	75	75	75
Weight (kg)		5.6	5.6	5.7	5.9	6.0	6.2	6.4	6.7	6.9	7.4	8

* 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

BMP 50 [51.7cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16	17.5 (Max.int.)
8	20	41	56	69	89	95		
	151	**134**	**115**	**90**	**56**	**42**		
15	19	40	56	71	91	100	112	120
	286	**274**	**261**	**243**	**204**	**182**	**139**	**102**
20	18	39	55	71	92	101	117	128
	382	**373**	**361**	**348**	**318**	**309**	**287**	**251**
30	17	38	55	71	91	98	116	124
	573	**568**	**558**	**535**	**503**	**488**	**462**	**440**
35	17	38	54	69	89	98	117	124
	670	**661**	**652**	**640**	**606**	**589**	**562**	**548**
45	14	36	53	67	88	98	114	123
	863	**858**	**849**	**837**	**807**	**788**	**764**	**746**
55	12	33	50	65	85	96	111	121
	1055	**1042**	**1028**	**1010**	**979**	**963**	**947**	**920**
Max.cont. 60	10	32	47	64	83	94	108	119
	1150	**1143**	**1126**	**1111**	**1079**	**1065**	**1043**	**1015**
Max.int. 75	6	25	42	56	76	87	101	112
	1440	**1430**	**1416**	**1395**	**1367**	**1351**	**1335**	**1312**

BMP 80 [77.7cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16	17.5 (Max.int.)
8	32	62	85	104	129	144		
	97	**87**	**74**	**55**	**33**	**22**		
15	32	63	84	107	126	144	165	
	186	**181**	**170**	**154**	**132**	**118**	**86**	
20	31	63	84	107	132	146	168	185
	251	**243**	**236**	**225**	**207**	**196**	**178**	**155**
30	31	62	83	106	131	146	168	186
	381	**379**	**368**	**355**	**332**	**316**	**285**	**263**
35	30	59	81	102	130	144	167	185
	443	**435**	**426**	**415**	**397**	**383**	**361**	**342**
45	25	58	79	100	126	142	165	182
	570	**564**	**554**	**543**	**526**	**509**	**483**	**458**
55	23	57	78	97	124	140	161	179
	696	**685**	**672**	**656**	**643**	**630**	**602**	**579**
Max.cont. 60	20	53	75	94	120	137	160	177
	761	**753**	**744**	**736**	**720**	**706**	**681**	**660**
Max.int. 75	14	44	67	87	112	151	169	169
	948	**940**	**931**	**920**	**906**	**890**	**871**	**854**

Torque (N•m) 87
Speed (rpm) **920**

BMP 160 [157.2cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16	17.5 (Max.int.)
8	62	120	170	212	263	290		
	49	**48**	**46**	**42**	**26**	**14**		
15	60	122	172	215	264	294	340	
	93	**91**	**88**	**85**	**76**	**68**	**48**	
20	57	120	170	214	262	290	340	371
	125	**123**	**120**	**117**	**110**	**106**	**92**	**81**
30	53	115	164	206	259	288	335	368
	187	**184**	**181**	**178**	**175**	**168**	**155**	**139**
35	49	110	160	202	255	284	328	362
	220	**216**	**213**	**209**	**205**	**202**	**192**	**176**
45	44	102	154	196	248	278	321	358
	283	**280**	**276**	**272**	**267**	**260**	**250**	**238**
55	40	99	148	191	243	272	316	351
	345	**342**	**340**	**336**	**331**	**328**	**320**	**303**
Max.cont. 60	33	94	144	188	236	267	308	345
	377	**374**	**371**	**367**	**363**	**359**	**353**	**342**
Max.int. 75	19	80	124	170	216	252	296	325
	473	**469**	**465**	**459**	**453**	**447**	**440**	**424**

BMP 315 [314.5cm³/rev.]

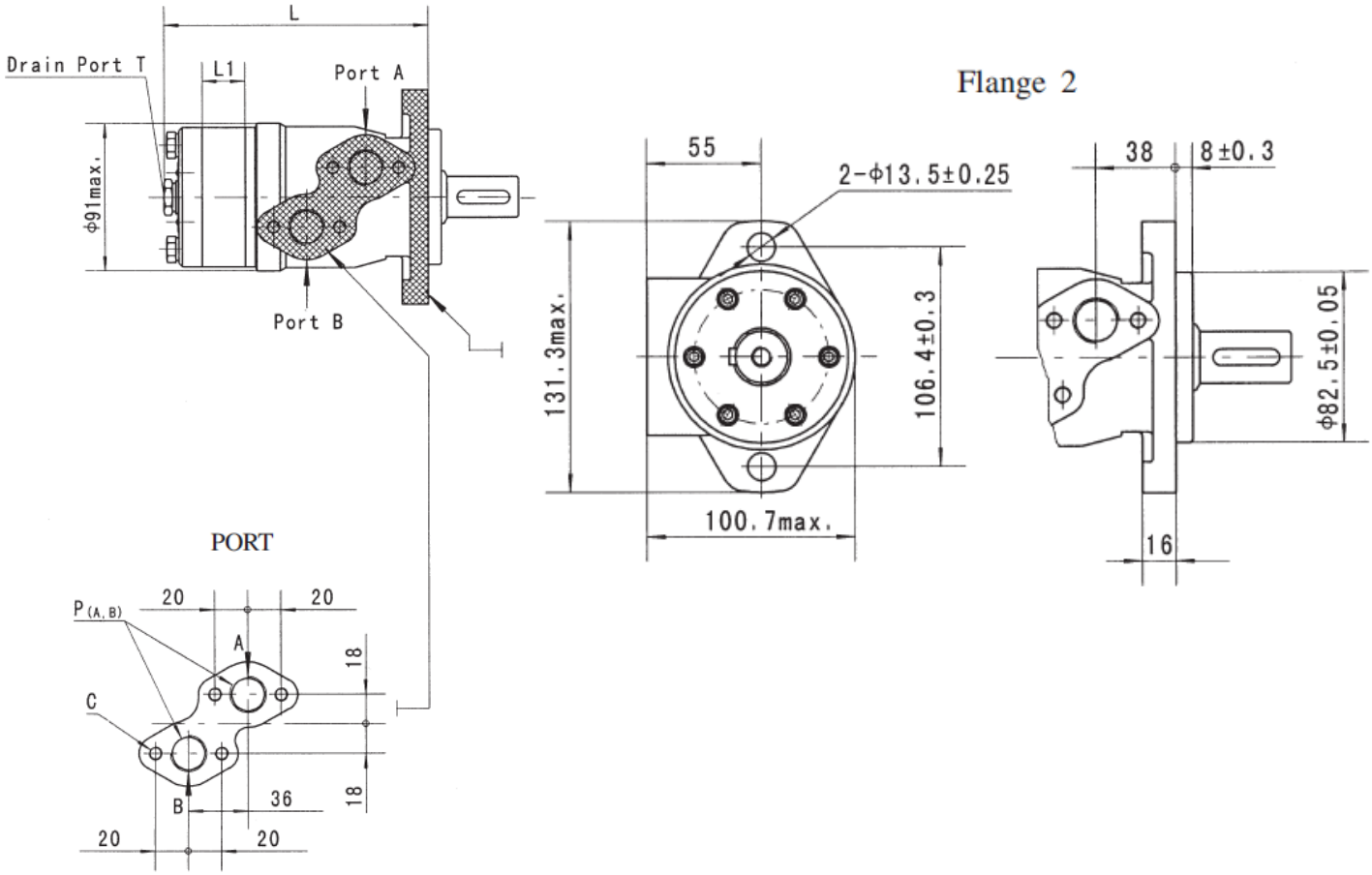
Pressure (MPa)

Flow (L/min)	3	5	7	9	10	12.5 (Max.cont.)	14 (Max.int.)
8	123	215	292	368	405		
	25	**23**	**21**	**17**	**11**		
15	118	211	287	367	404	495	568
	47	**46**	**44**	**40**	**28**	**21**	**10**
20	110	205	278	360	395	494	566
	62	**61**	**60**	**57**	**46**	**40**	**36**
30	101	196	271	349	388	490	565
	94	**93**	**91**	**88**	**76**	**68**	**65**
35	96	188	264	341	382	478	557
	109	**107**	**106**	**104**	**96**	**89**	**84**
45	89	180	254	337	372	468	553
	141	**140**	**138**	**135**	**127**	**120**	**115**
55	76	166	239	325	362	457	548
	173	**172**	**170**	**167**	**160**	**152**	**143**
Max.cont. 60	65	154	227	308	348	443	529
	188	**186**	**184**	**182**	**178**	**172**	**163**
Max.int. 75	40	120	201	279	323	418	497
	236	**234**	**232**	**228**	**226**	**223**	**214**

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BMP DIMENSIONS AND MOUNTING DATA

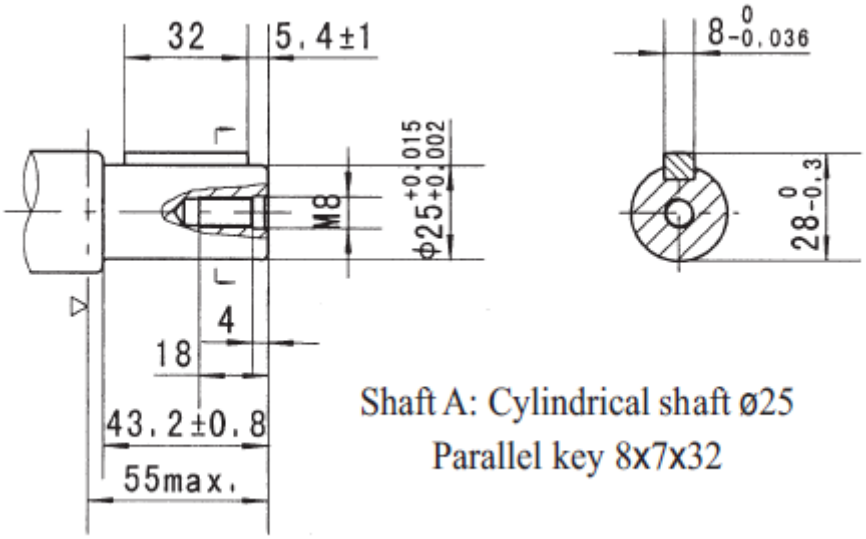


Model	L	L1
BMP36	137	7
BMP50	137	7
BMP80	140.5	10.5
BMP100	143	13
BMP125	146	16
BMP160	151	21
BMP200	157	26
BMP250	162	32
BMP315	172	42
BMP400	182	52
BMP500	195	65

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)
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)

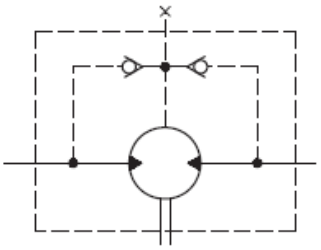
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BMP SHAFT EXTENSIONS DIMENSIONS DATA

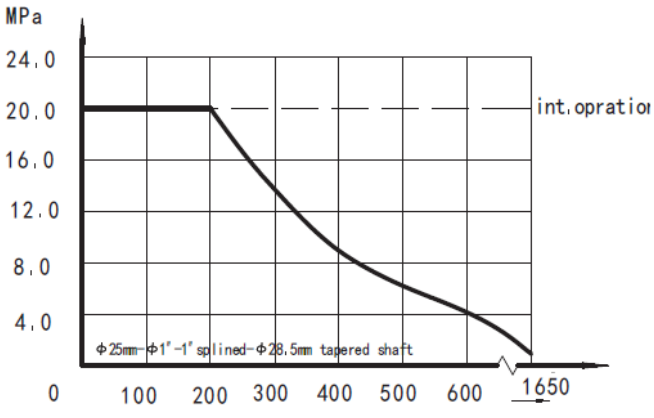


Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32

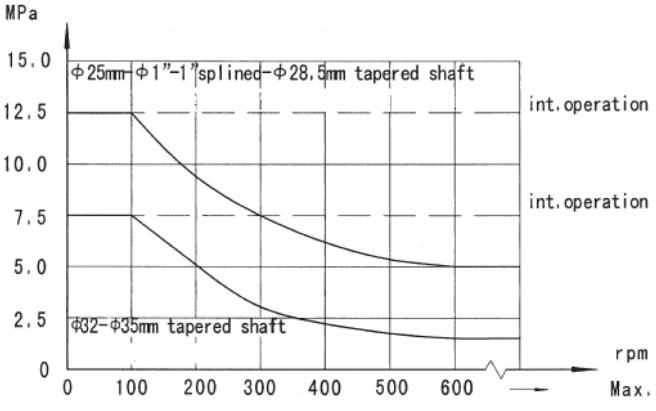
BMP、BMPH Series Hydraulic Motor



Permissible shaft seal pressure



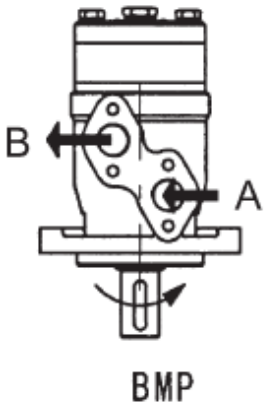
High pressure shaft seal



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.

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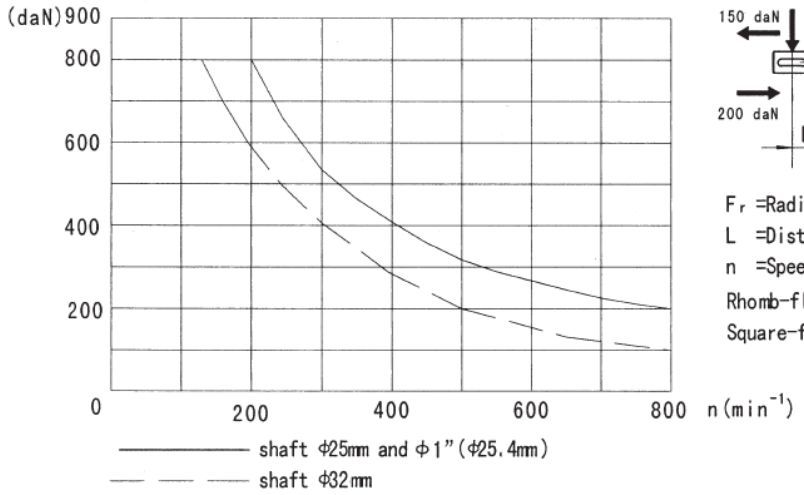
Direction of shaft rotation: Standard



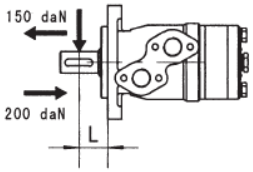
BMP

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)



$$F_r = \frac{800}{n} \cdot \frac{25000}{95+L} \text{ daN}$$



F_r =Radial Force (daN)
L =Distance (mm)
n =Speed (rpm)
Rhomb-flange L=30mm
Square-flange L=24mm

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 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