Гидромоторы BMP



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.

Main Specification

Technical data for BMP with 31.75 and 32 shaft

Type		BMP 36	BMP 50	BMP 80	BMP 100	BMP 125	BMP 160	BMP 200	BMP 250	BMP 315	BMP 400	BMP 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	460	475	490	430
	int.	76	128	186	227	290	370	440	570	555	580	560
	peak	96	148	218	264	360	434	540	670	840	840	780
Max. output (kW)	cont.	8.0	10.0	10.0	11.0	10.0	10.0	10.0	8.5	7.0	6.0	6.0
	int.	11.5	12.0	12.0	13.0	12.0	12.0	12.0	10.5	8.5	7.0	7.0
Max. pressure drop (MPa)	cont.	12.5	14	14	14	14	14	14	14	12	9.5	7
	int.	16.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	14	11.5	9
	peak	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	18	13
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	8.0

* 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

BMP 36 [36cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	7	8	10	11	12.5 Max.cont.	16.5 Max.int.
8	13	25	29	34	43	48		
	214	**205**	**200**	**194**	**187**	**179**		
15	13	25	29	34	43	48	56	75
	406	**398**	**391**	**383**	**374**	**366**	**353**	**324**
20	13	24	29	34	43	48	56	76
	541	**534**	**528**	**521**	**513**	**500**	**486**	**458**
30	12	24	29	34	43	48	56	76
	814	**804**	**792**	**778**	**763**	**749**	**726**	**701**
35	12	23	28	34	43	48	56	76
	952	**944**	**930**	**913**	**897**	**879**	**858**	**833**
40	12	23	28	32	41	47	55	75
	1090	**1078**	**1064**	**1048**	**1024**	**998**	**977**	**943**
45	11	22	26	32	41	46	54	74
	1232	**1218**	**1196**	**1175**	**1149**	**1118**	**1080**	**1044**
Max.cont. 55	6	15	22	28	37	44	52	71
	1505	**1494**	**1480**	**1466**	**1438**	**1406**	**1367**	**1309**
	3	11	18	20	30	38	49	67
Max.int. 60	**1650**	**1640**	**1626**	**1603**	**1571**	**1536**	**1502**	**1446**

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**
	6	25	42	56	76	87	101	112
Max.int. 75	**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**
	14	44	67	87	112	151	169	169
Max.int. 75	**948**	**940**	**931**	**920**	**906**	**890**	**871**	**854**

Torque (N•m) 87
Speed (rpm) **920**

BMP 100 [96.2cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 Max.cont.	16	17.5 Max.int.
8	40	77	105	130	161	180		
	81	**75**	**69**	**57**	**36**	**24**		
15	39	77	106	130	160	180	208	
	152	**149**	**145**	**140**	**122**	**103**	**81**	
20	36	74	104	128	161	179	205	227
	204	**200**	**195**	**190**	**177**	**166**	**148**	**133**
30	33	72	103	125	160	177	203	225
	308	**304**	**298**	**290**	**280**	**268**	**255**	**231**
35	30	70	98	122	159	176	202	224
	360	**352**	**343**	**331**	**320**	**306**	**294**	**275**
45	29	67	95	118	155	174	200	220
	462	**458**	**451**	**443**	**433**	**419**	**402**	**383**
55	25	64	93	116	152	170	198	217
	566	**558**	**549**	**540**	**529**	**515**	**498**	**478**
Max.cont. 60	22	60	91	114	149	167	194	213
	618	**611**	**601**	**589**	**580**	**570**	**558**	**540**
	15	54	83	106	141	160	186	205
Max.int. 75	**771**	**763**	**755**	**744**	**735**	**724**	**708**	**693**

cont.
int.

Performance Data

BMP 125 [120.2cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16 (Max.int.)	17.5 (Max.int.)
8	51	98	137	168	208	236		
	63	**60**	**55**	**47**	**28**	**15**		
15	51	101	138	168	209	236	267	
	121	**116**	**110**	**102**	**89**	**73**	**48**	
20	48	98	135	167	211	237	269	290
	162	**158**	**153**	**148**	**137**	**128**	**109**	**94**
30	46	96	132	164	209	232	264	287
	243	**239**	**234**	**227**	**216**	**202**	**189**	**176**
35	42	92	130	160	206	229	260	284
	284	**279**	**274**	**269**	**259**	**247**	**231**	**222**
45	37	89	125	157	201	224	261	281
	370	**362**	**355**	**348**	**340**	**327**	**310**	**296**
55	33	84	122	152	196	218	252	275
	452	**446**	**438**	**431**	**420**	**412**	**402**	**384**
Max.cont. 60	29	78	117	146	191	215	248	272
	490	**482**	**475**	**468**	**459**	**448**	**439**	**427**
Max.int. 75	18	66	107	133	179	202	236	260
	615	**606**	**598**	**586**	**575**	**563**	**549**	**528**

BMP 160 [157.2cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16 (Max.int.)	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 200 [194.5cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16 (Max.int.)	17.5 (Max.int.)
8	79	164	207	250	320	360		
	40	**39**	**38**	**35**	**28**	**22**		
15	78	162	205	250	322	361	410	
	76	**75**	**74**	**71**	**66**	**61**	**51**	
20	76	158	203	247	320	358	403	422
	100	**98**	**97**	**95**	**92**	**89**	**73**	**57**
30	70	153	200	245	315	350	398	417
	151	**149**	**147**	**145**	**142**	**139**	**131**	**120**
35	66	149	194	232	297	343	386	415
	177	**175**	**173**	**171**	**168**	**166**	**160**	**149**
45	63	146	190	230	294	340	383	410
	228	**226**	**224**	**221**	**218**	**215**	**210**	**198**
55	54	140	181	224	286	334	371	400
	280	**278**	**276**	**274**	**271**	**269**	**263**	**250**
Max.cont. 60	38	127	164	212	270	325	356	395
	304	**302**	**300**	**297**	**294**	**291**	**286**	**272**
Max.int. 75	22	96	145	192	235	293	321	367
	382	**378**	**374**	**371**	**368**	**364**	**360**	**350**

BMP 250 [240.3cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	6	8	10	12.5	14 (Max.cont.)	16 (Max.int.)	17.5 (Max.int.)
8	96	190	268	326	403			
	30	**28**	**24**	**21**	**11**			
15	98	194	270	327	405	450	510	
	60	**58**	**54**	**50**	**40**	**30**	**12**	
20	92	188	267	325	405	456	514	565
	82	**80**	**77**	**76**	**69**	**64**	**52**	**38**
30	85	180	259	320	400	448	513	561
	123	**120**	**118**	**114**	**106**	**98**	**87**	**76**
35	77	176	252	311	389	436	504	557
	143	**141**	**139**	**135**	**128**	**122**	**112**	**101**
45	70	168	243	300	377	428	495	543
	185	**182**	**178**	**174**	**168**	**161**	**152**	**139**
55	63	159	237	290	369	417	483	531
	226	**223**	**218**	**213**	**209**	**202**	**193**	**185**
Max.cont. 60	60	150	228	280	358	407	473	520
	248	**246**	**243**	**239**	**233**	**226**	**215**	**207**
Max.int. 75	34	128	202	264	342	387	448	488
	309	**306**	**302**	**297**	**292**	**286**	**278**	**264**

Torque (N•m) 128
Speed (rpm) **306**

cont.

int.

Performance Data

BMP 315 [314.5cm³/rev.]

Pressure (MPa)

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

BMP 400 [389.5cm³/rev.]

Pressure (MPa)

Flow (L/min)	3	4.5	5.5	6.5	8	Max.cont. 10	Max.int. 12.5
8	166 **20**	232 **19**	287 **18**	340 **16**	418 **12**		
15	165 **38**	228 **36**	277 **35**	337 **33**	417 **31**	496 **27**	612 **21**
20	162 **50**	223 **49**	273 **49**	331 **48**	413 **45**	495 **41**	608 **35**
30	154 **76**	216 **75**	266 **74**	318 **73**	405 **71**	486 **67**	600 **60**
35	146 **88**	210 **87**	256 **87**	312 **86**	395 **83**	480 **80**	588 **75**
45	132 **114**	197 **113**	243 **112**	300 **110**	383 **108**	464 **106**	576 **99**
55	117 **139**	184 **137**	227 **136**	283 **135**	363 **135**	450 **132**	552 **123**
Max.cont. 60	102 **153**	163 **152**	215 **150**	272 **148**	347 **146**	436 **143**	532 **138**
Max.int. 75	53 **191**	128 **189**	182 **187**	234 **185**	318 **183**	391 **180**	484 **176**

Torque (N•m) 234
Speed (rpm) **185**

BMP500[486.5cm³/rev.]

Pressure (MPa)

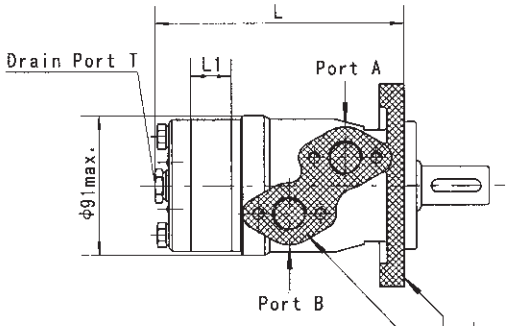
Flow (L/min)	1.5	3	4.5	Max.cont. 6	7	8	Max.int. 9
4	96 **7**	194 **6**	285 **4**				
8	98 **15**	201 **15**	304 **14**	391 **14**	443 **12**	512 **9**	574 **7**
15	96 **30**	192 **30**	284 **29**	380 **28**	421 **26**	496 **23**	550 **22**
20	96 **40**	191 **40**	280 **40**	372 **39**	418 **37**	493 **33**	546 **31**
30	91 **61**	185 **60**	272 **60**	360 **58**	412 **56**	486 **53**	541 **50**
40	86 **81**	172 **80**	261 **80**	343 **79**	408 **76**	480 **73**	538 **70**
50	78 **102**	160 **101**	241 **100**	332 **98**	391 **96**	466 **93**	528 **90**
Max.cont. 60	66 **122**	134 **121**	213 **120**	305 **119**	371 **117**	438 **114**	496 **110**
70	52 **143**	111 **142**	189 **141**	292 **139**	344 **137**	418 **135**	475 **131**
Max.int. 75	35 **153**	83 **152**	154 **151**	241 **150**	312 **149**	389 **147**	448 **144**

cont.
int.

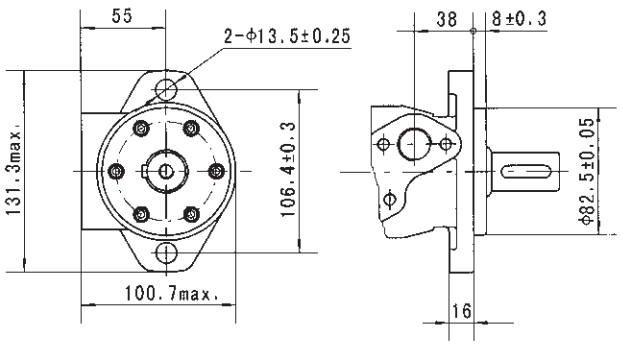
Torque (N•m) 389
Speed (rpm) **147**

BMP DIMENSIONS AND MOUNTING DATA

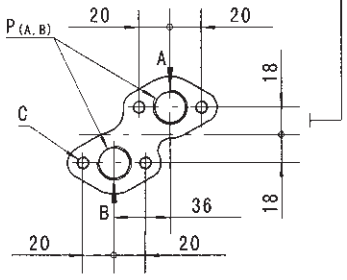
MOUNTING



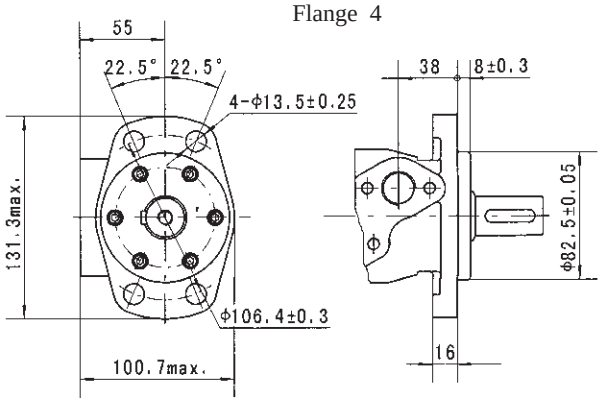
Flange 2



PORT

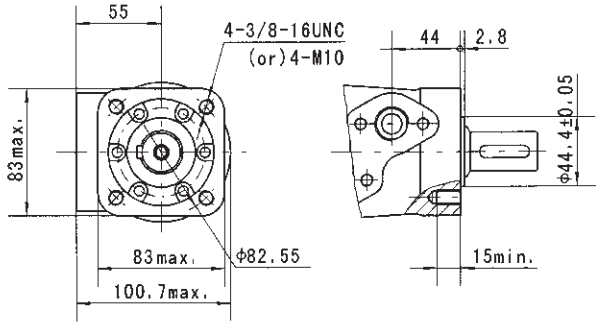


Flange 4



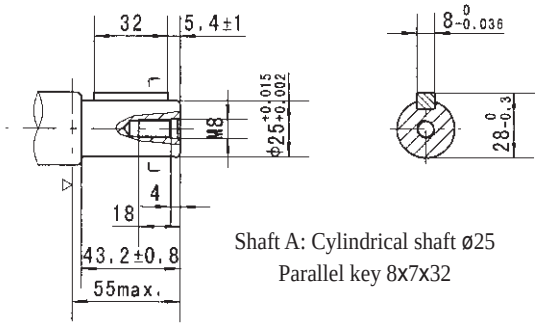
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BMP36	137	7
BMP50	137	7
BMP80	140.5	10.5
BMP100	143	13
BMP125	146	16
BMP160	151	21
BMP200	157	26
BMP250	162	32
BMP315	172	42
BMP400	182	52
BMP500	195	65

Flange H4/H5

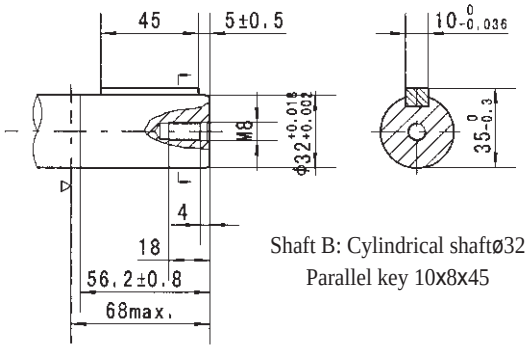


Code / Mounting	D (depth)	M (depth)	S (depth)	P (depth)	R (depth)
P(A,B)	G1/2 (15)	M22 x 1.5 (15)	7/8-14 O-ring (17)	1/2-14NPTF (15)	PT(RC)1/2 (15)
C	4-M8 (13)	4-M8 (13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8 (13)
T	G1/4 (12)	M14 x 1.5 (12)	7/16-20UNF (12)	7/16-20UNF (12)	PT(RC)1/4 (9.7)

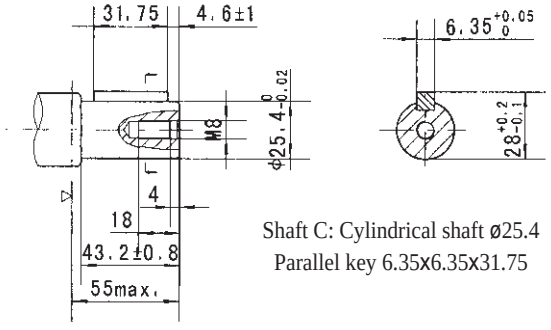
BMP SHAFT EXTENSIONS DIMENSIONS DATA



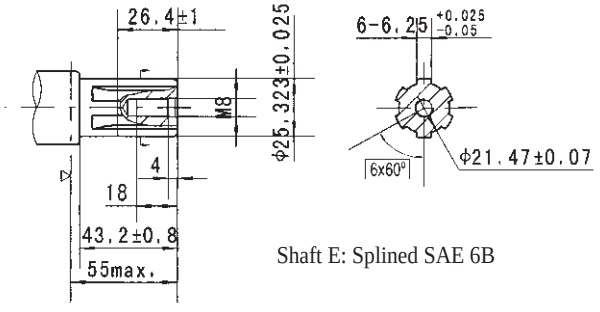
Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32



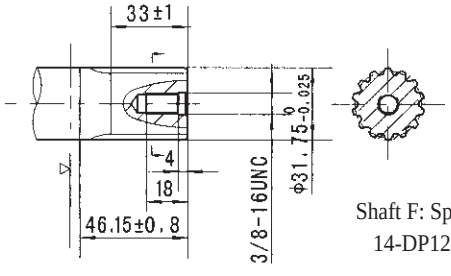
Shaft B: Cylindrical shaftø32
Parallel key 10x8x45



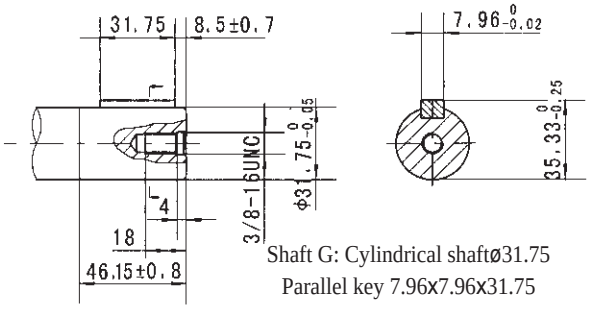
Shaft C: Cylindrical shaft ø25.4
Parallel key 6.35x6.35x31.75



Shaft E: Splined SAE 6B



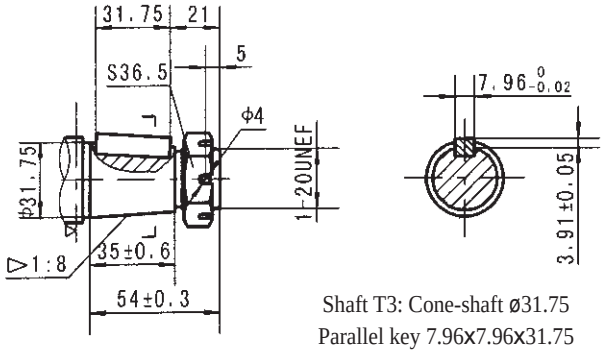
Shaft F: Splined
14-DP12/24



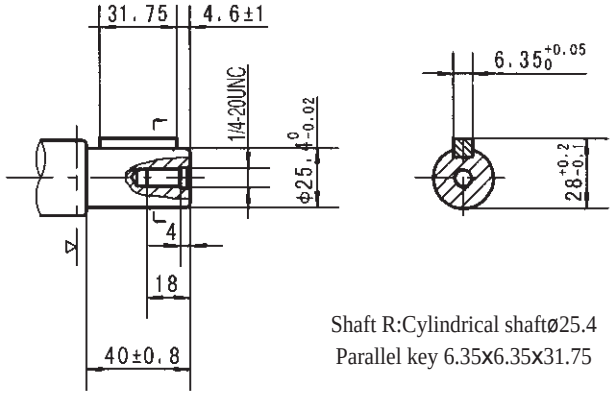
Shaft G: Cylindrical shaftø31.75
Parallel key 7.96x7.96x31.75

▷ Motor Mounting Surface

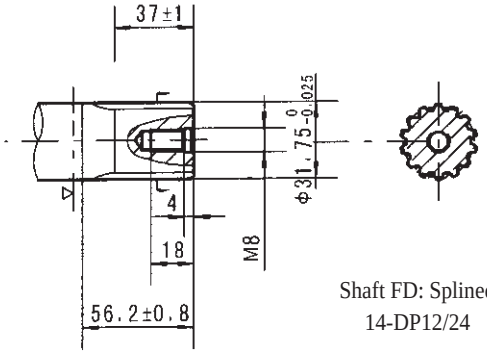
BMP SHAFT EXTENSIONS DIMENSIONS DATA



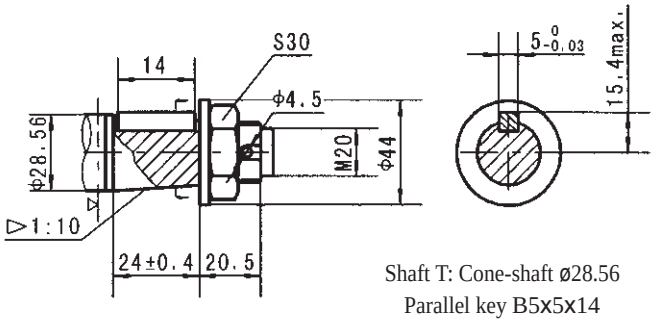
Shaft T3: Cone-shaft ø31.75
Parallel key 7.96x7.96x31.75
Tightening torque:200±10Nm



Shaft R:Cylindrical shaftø25.4
Parallel key 6.35x6.35x31.75



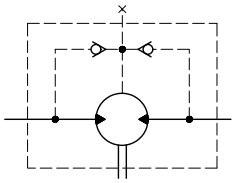
Shaft FD: Splined
14-DP12/24



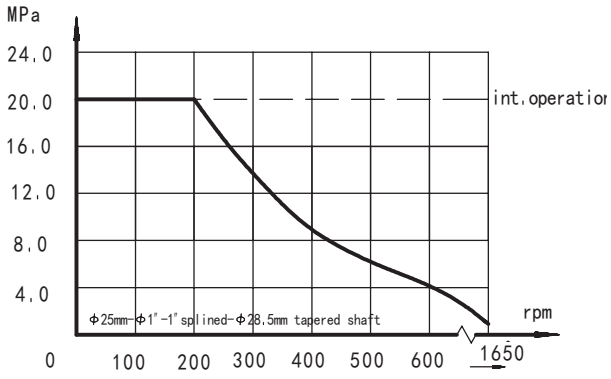
Shaft T: Cone-shaft ø28.56
Parallel key B5x5x14
Tightening torque:100±10Nm

▷ Motor Mounting Surface

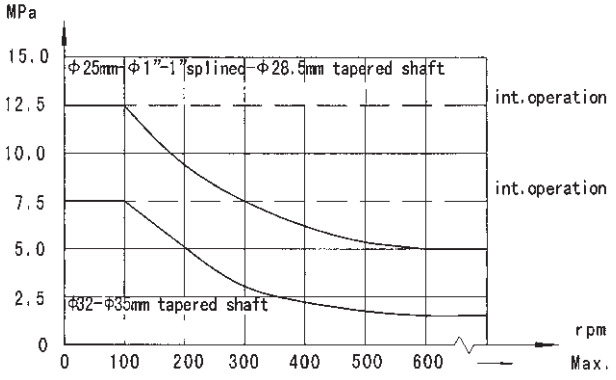
BMP Series Hydraulic Motor



Permissible shaft seal pressure



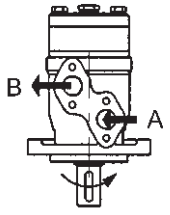
High pressure shaft seal



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.

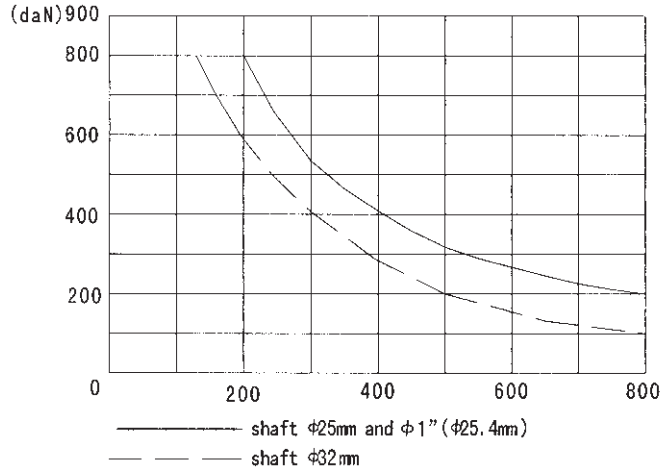
Direction of shaft rotation: Standard

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

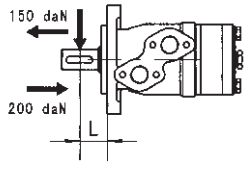


BMP

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

Order Information

1	2	3	4	5	6	7	8
BMP	–	–	–	–	–	–	–

Pos.1	2	3		4		5		6		7		8	
Code	Disp.	Flange		Output Shaft		Ports and Drain Port		Rotation Direction		Paint		Unusually Function	
BMP	36 50 80 100 125 160 200 250 315 400 500	2 4 H4 H5	2-Ø13.5 Rhomb-flange , pilot Ø82.5×8 4-Ø13.5 Rhomb-flange , pilot Ø82.5×8 4-3/8-16 Square-flange , pilot Ø44.4×2.8 4-M10 Square-flange , pilot Ø44.4×2.8	A C E R T B F FD G T3	Shaft Ø25,parallel key 8x7x32 Shaft Ø25.4,parallel key 6.35x6.35x31.75 Shaft Ø25.4,splined tooth SEA 6B Short shaft Ø25.4,parallel key6.35x6.35x31.75 Cone shaft Ø28.56,parallel key B5x5x14 Shaft Ø32,parallel key 10x8x45 Shaft Ø31.75,splined tooth 14-DP12/24 Long shaft Ø31.75,splined tooth14-DP12/24 Shaft Ø31.75, parallel key 7.96x7.96x31.75 Cone shaft Ø31.75,parallel key 7.96x7.96x25.4	D M S P R	G1/2 Manifold Mount 4×M8, G1/4 M22×1.5 Manifold Mount 4×M8, M14×1.5 7/8-14 O-ring manifold 4x5/16-18UNC, 7/16-20UNF 1/2-14 NPTF Manifold 4x5/16-18UNC, 7/16-20UNF PT(Rc)1/2 Manifold 4xM8, PT(Rc)1/4	Omit R	Standard Opposite	00 Omit B S	No paint Blue Black Silver grey	Omit N1 0 F LS	Standard Big radial force No case drain Free Running Low Speed

Note:The shafts of B\F\FD\G\T1\T3 are only suitable for flanges of 2 and 4.