

Hydraulic Orbital Motors

BK2 /BMER

BMH/ BMM/BMR/BMSY/BMT/BMV

BMK2/BMK4/BMK6/BMK10



BMP & BMPH Series Hydraulic Motor

■ Introduction



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.

BMP & BMPH Series Hydraulic Motor

■ 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 (cm³/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.

BMP & BMPH Series Hydraulic Motor

■ Performance Data

BMP 125 [120.2cm³/rev.]

Pressure (MPa)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

Flow (L/min)	Max.cont.								Max.int.	
	3	6	8	10	12.5	14	16	17.5		
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)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

Flow (L/min)	Max.cont.								Max.int.	
	3	6	8	10	12.5	14	16	17.5		
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)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

Flow (L/min)	Max.cont.								Max.int.	
	3	6	8	10	12.5	14	16	17.5		
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)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

Flow (L/min)	Max.cont.								Max.int.	
	3	6	8	10	12.5	14	16	17.5		
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		

□ cont.
■ int.

Torque (N·m) 128
Speed (rpm) 306

BMP & BMPH Series Hydraulic Motor

■ Performance Data

BMP 125 [120.2cm³/rev.]

Pressure (MPa)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

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

BMP 160 [157.2cm³/rev.]

Pressure (MPa)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

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

BMP 200 [194.5cm³/rev.]

Pressure (MPa)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

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

BMP 250 [240.3cm³/rev.]

Pressure (MPa)

	3	6	8	10	12.5	14	16	17.5
--	---	---	---	----	------	----	----	------

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

□ cont.
■ int.

Torque (N·m) 128
Speed (rpm) 306

BMP & BMPH Series Hydraulic Motor

■ Performance Data

BMP 315 [314.5cm³/rev.]

Pressure (MPa)

		Max.cont.						Max.int.	
		3	5	7	9	10	12.5	14	
Flow (L/min)	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	

BMP 400 [389.5cm³/rev.]

Pressure (MPa)

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

Torque (N·m) 234
Speed (rpm) 185

BMP500[486.5cm³/rev.]

Pressure (MPa)

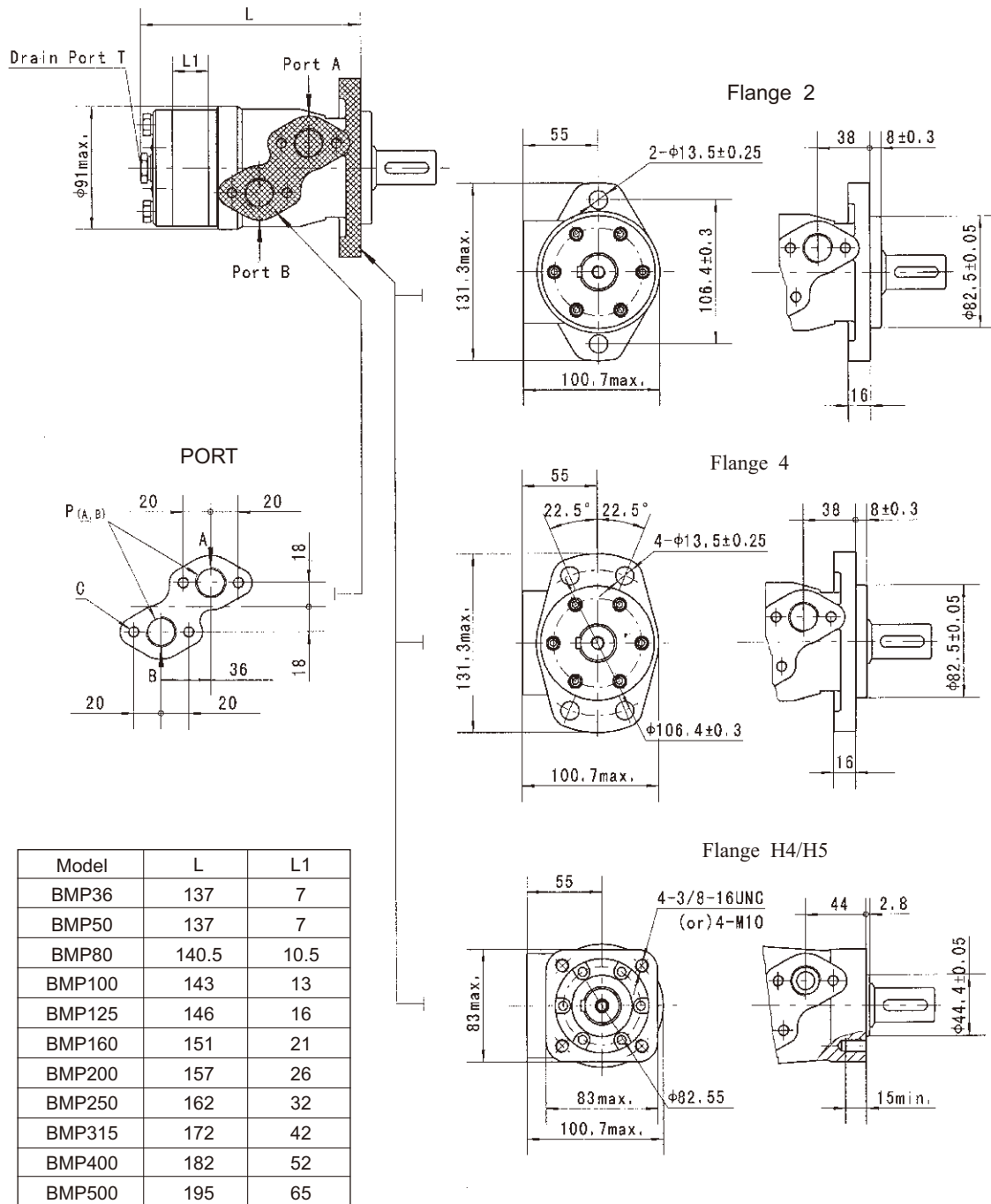
		Max.cont.						Max.int.	
		1.5	3	4.5	6	7	8	9	
Flow (L/min)	4	96	194	285					
		7	6	4					
	8	98	201	304	391	443	512	574	
		15	15	14	14	12	9	7	
	15	96	192	284	380	421	496	550	
		30	30	29	28	26	23	22	
	20	96	191	280	372	418	493	546	
		40	40	40	39	37	33	31	
	30	91	185	272	360	412	486	541	
		61	60	60	58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

cont.
int.

Torque (N·m) 389
Speed (rpm) 147

BMP & BMPH Series Hydraulic Motor

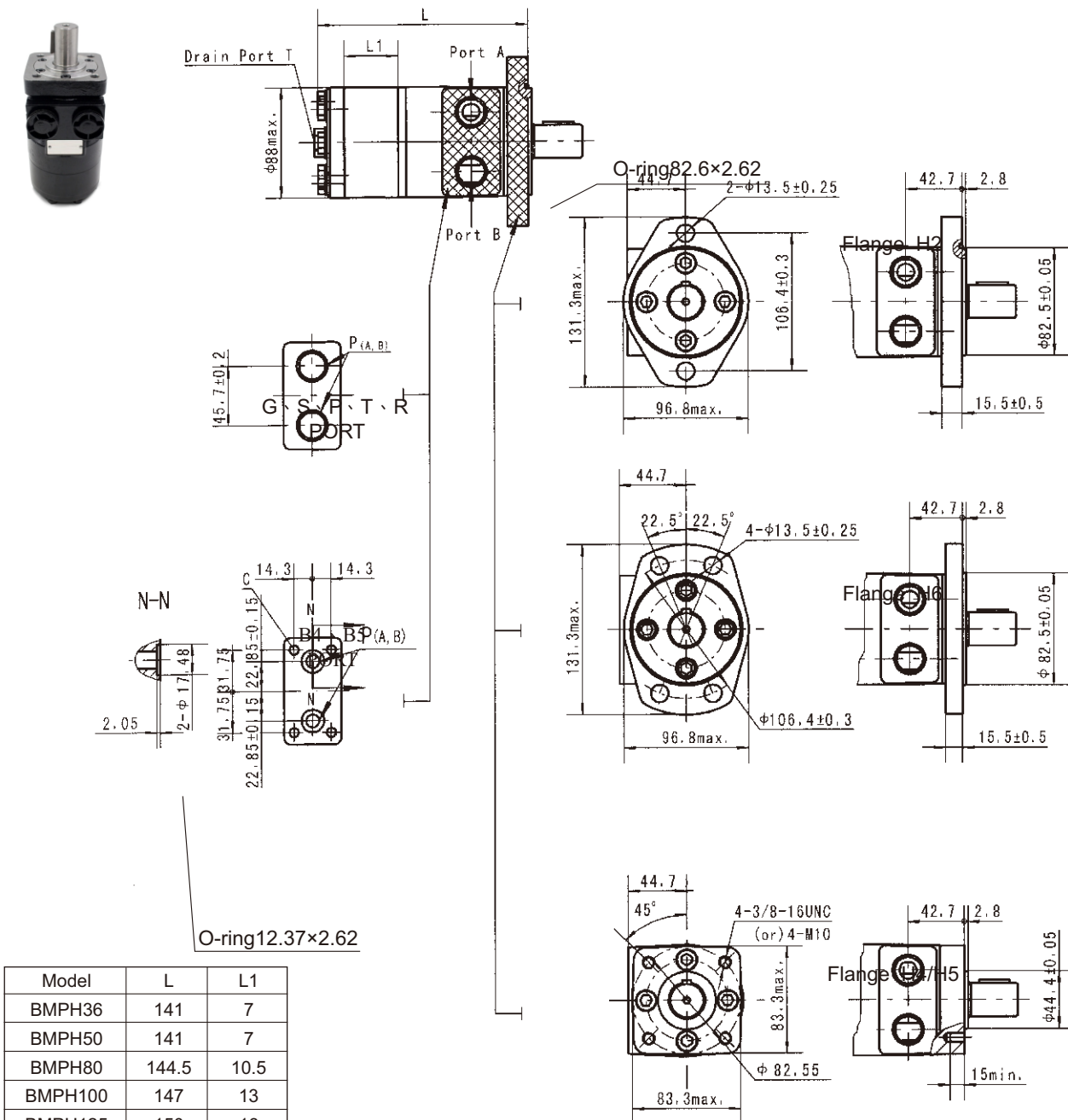
■ BMP / Dimensions and Mounting Data



Code	D (depth)	M (depth)	S (depth)	P (depth)	R (depth)
Mounting					
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 & BMPH Series Hydraulic Motor

■ BMPH / Dimensions and Mounting Data

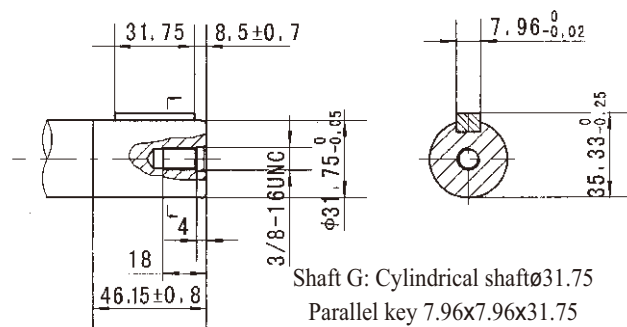
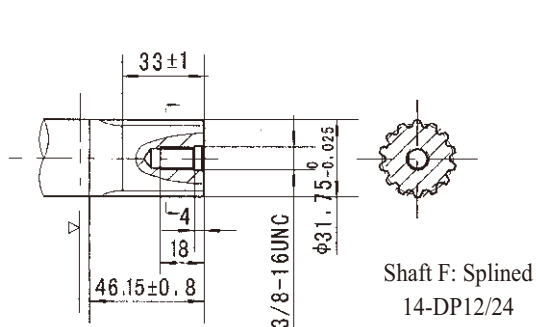
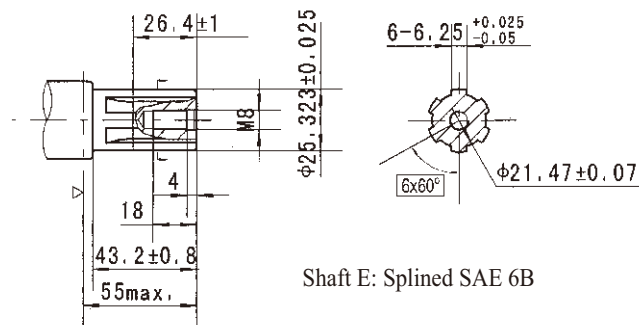
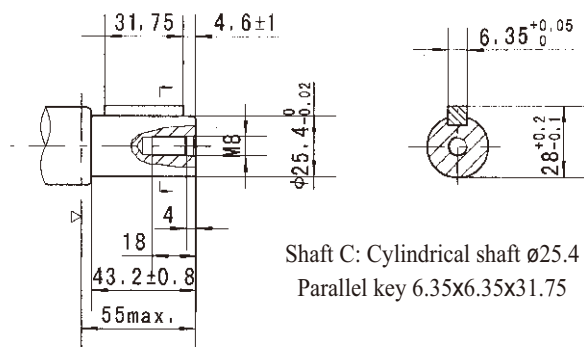
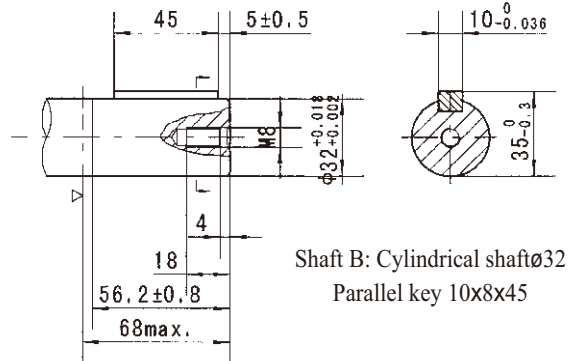
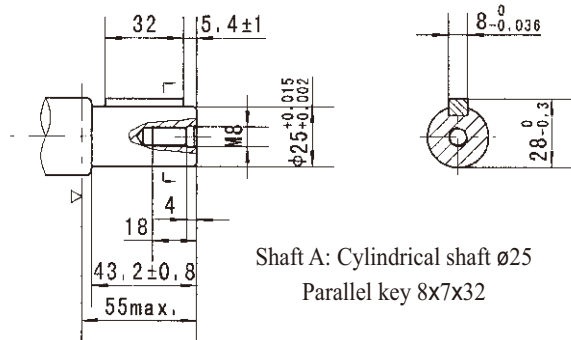


Note: The size L of the BMPH N1 should be increased by 2mm.

Code	G (depth)	S (depth)	P (depth)	T (depth)	R (depth)	B4 (depth)	B5 (depth)
Mounting							
P(A,B)	G1/2 (15)	7/8-14 O-ring (17)	1/2-14NPTF (15)	3/4-16 O-ring (15)	PT(RC)1/2 (15)	ø10	ø10
T	G1/4 (12)	7/16-20UNF (12)	7/16-20UNF (12)	7/16-20UNF(12)	PT(RC)1/4 (9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

BMP & BMPH Series Hydraulic Motor

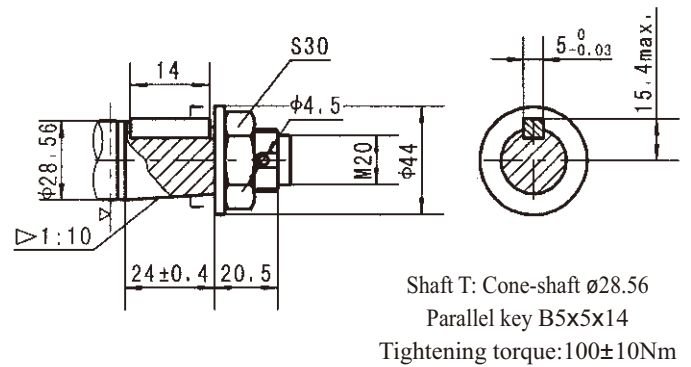
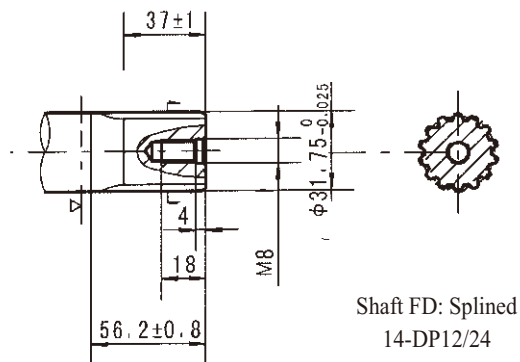
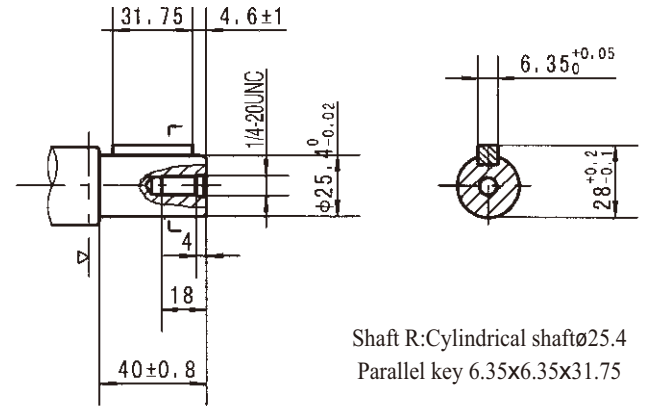
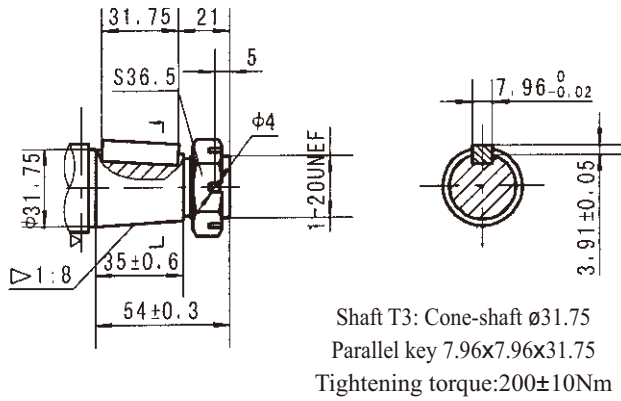
■ BMP / Shaft Extensions Dimensions Data



▷ Motor Mounting Surface

BMP & BMPH Series Hydraulic Motor

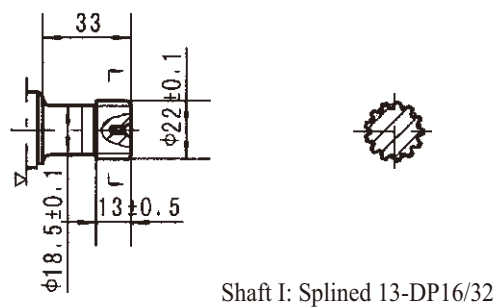
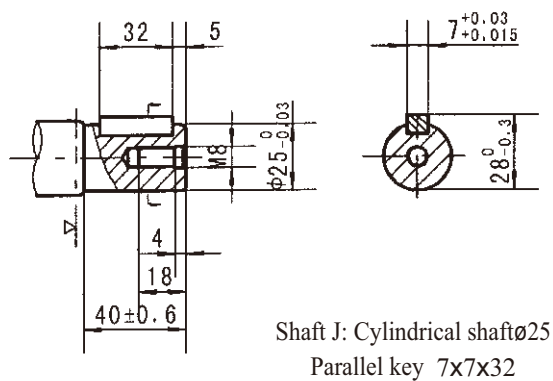
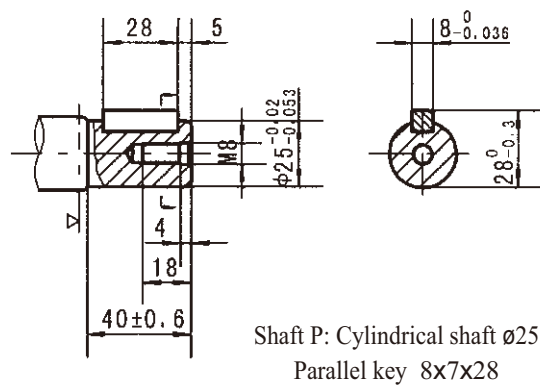
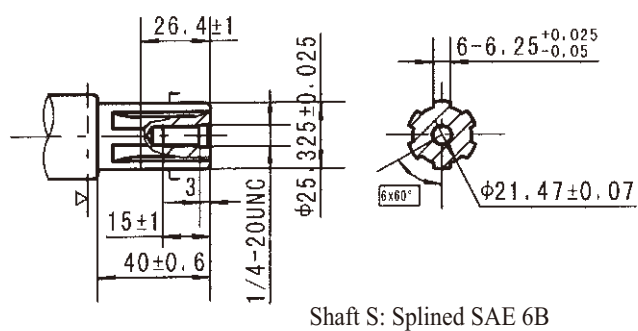
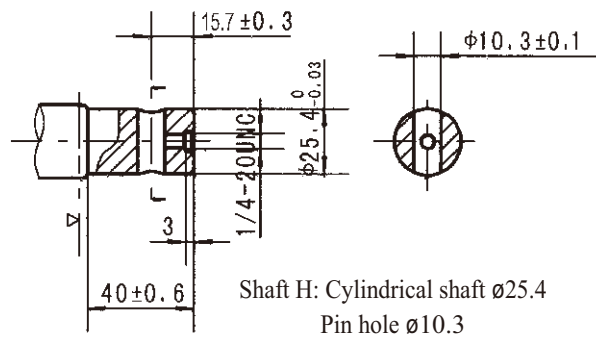
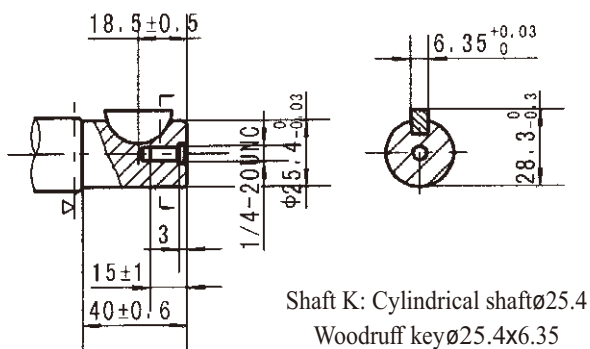
■ BMP/ Shaft Extensions Dimensions Data



▷ Motor Mounting Surface

BMP & BMPH Series Hydraulic Motor

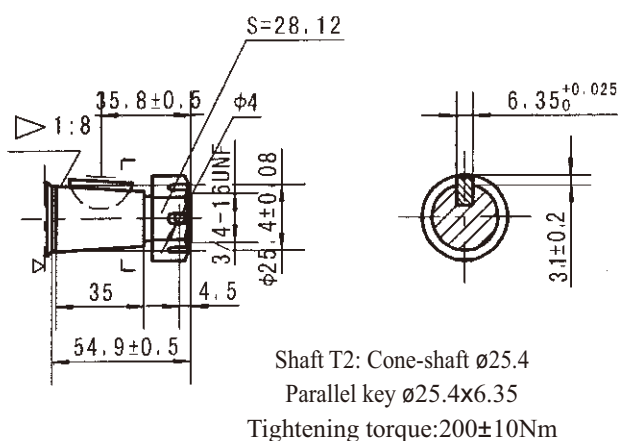
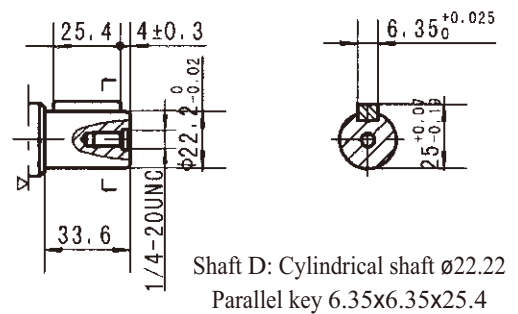
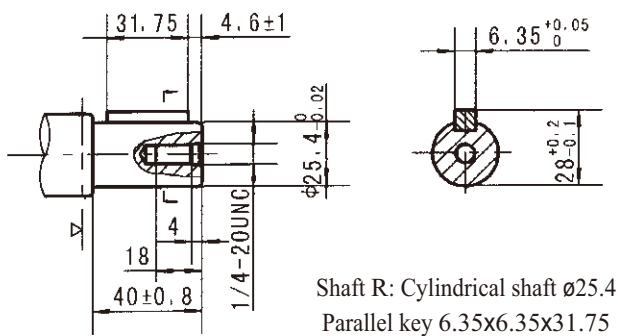
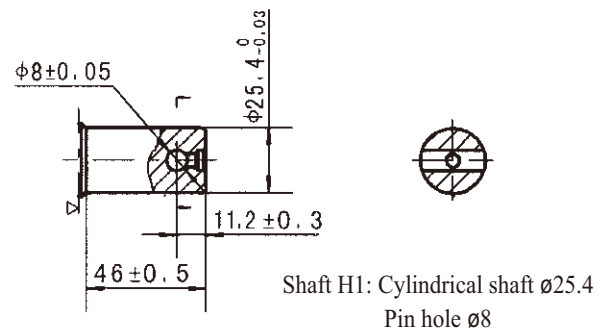
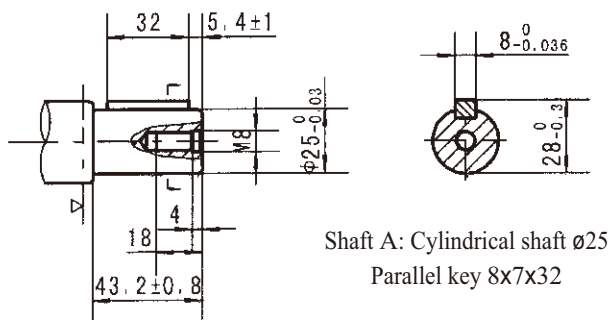
■ BMPH/ Shaft Extensions Dimensions Data



▷ Motor Mounting Surface

BMP & BMPH Series Hydraulic Motor

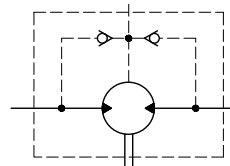
■ BMPH/ Shaft Extensions Dimensions Data



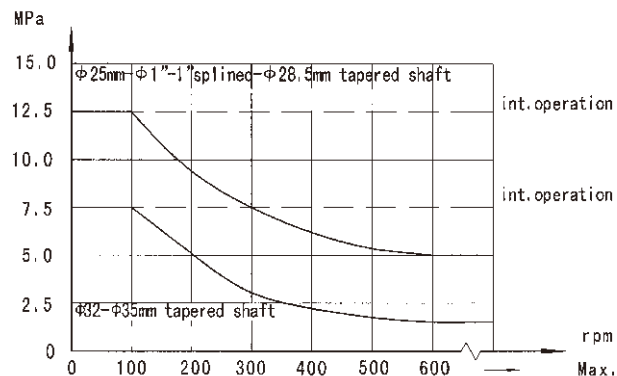
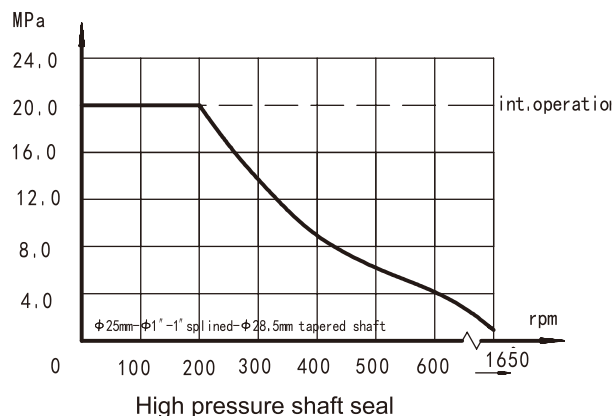
▷ Motor Mounting Surface

BMP & BMPH Series Hydraulic Motor

■ BMP& BMPH Series Hydraulic Motor



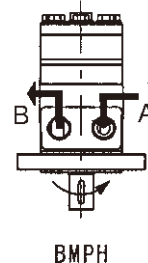
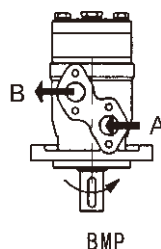
Permissible shaft seal pressure



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.

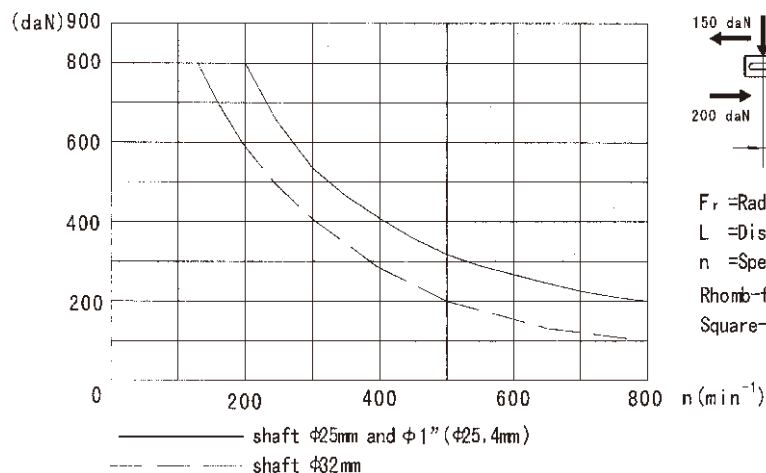
Direction of shaft rotation: Standard

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

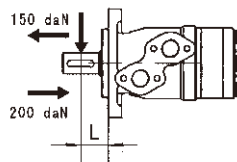


Status of the shaft's radial force

(Standard motor with journal bearing)



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



F_r = Radial Force (daN)
 L = Distance (mm)
 n = Speed (rpm)
Rhomb-flange $L=30\text{mm}$
Square-flange $L=24\text{mm}$

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 Code

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

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.