REN-TEK

C9:

BMM, BMP, BMR, BMH, BMJ Series & Valves

CONTENT

The manufacturer reserves the right to change the technical specifications without notice

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USAGE GUIDE

For optimal working, we recommend the following:

1. Oil Temperature
   Normal: 20^0c – 60^0c
   Maximum: 90^0c (maximum one hour)

2. Filtering & Oil Cleanliness
   System Filtration: 10µm nominal.
   A magnet should be installed in the filter or at the bottom of the tank to prevent ingress into the system.

3. Viscosity
   Based on external ambient temperature and type of application.
   Recommended Oil Viscosity is 32 – 74mm^2/s.

4. The motors can be operated in Parallel or Series.
   When the pressure of the case exce eds 20 Bar, it is recommended to install an external drain line to the tank.

5. Various output shaft and flange options are available.

5.1 Various Manifold Mount Valving available.

6. The optimal operation condition should be at the 1/3 – 2/3 of the rated operation.

7. In order to obtain a longer life, operating motor should operate for first hour under 30% of rated pressure.
   Motor must be filled with oil prior to being put under load.

SPECIFICATION DATA OF HYDRAULIC MOTOR

Distribution Type	Model	Displacement (cm^3/rev.)	Max. Operating Pressure (Bar)	Speed Range (rpm)	Max. Output Power (kw)
Axial Distribution	BMP	36 - 500	225	30 – 1650	13
	BMR	36 – 375	200	30 – 1220	17
	BMH	200 - 500	225	30 - 430	18.5
	BMM	8 - 50	200	30 – 2450	3.2
	BMJ	65 - 375	200	30 – 842	17.9

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BMM SERIES HYDRAULIC MOTOR

BMM Series compact design providing high torque capacity from a small package giving a high power to weight ratio.

Characteristic Features:

- Advanced manufacturing design of the Gerotor gear set, which provide hydraulic circuits, high efficiency and long life
- High pressure shaft seals sllow for use in both Parallel & Series circuits
- Advanced design giving both high power and low weight

Main Specifications

Type		BMM					
		8	12	20	32	40	50
Geometric Displacement (cm^3/rev.)		8.2	12.9	19.9	31.6	39.8	50.3
Max. Speed (rpm)	Rated.	1537	1256	814	513	452	358
	Cont.	1950	1550	1000	630	500	400
	Int.	2450	1940	1250	800	630	500
Max. Torque (Nm)	Rated.	8	13	19	31	37	33
	Cont.	11	16	25	40	45	46
	Int.	15	23	35	57	70	88
	Peak	21	33	51	64	82	100
Max. Output (kW)	Rated.	1.3	1.7	1.7	1.7	1.7	1.2
	Cont.	1.8	2.4	2.4	2.4	2.2	1.8
	Int.	2.6	3.2	3.2	3.2	3.2	3.2
Max. Pressure Drop (Bar)	Rated.	90	90	90	90	8.5	60
	Cont.	100	100	100	100	90	70
	Int.	140	140	140	140	140	140
	Peak	200	200	200	160	160	160
Max. Flow (L/min)	Rated.	14	18	18	18	20	20
	Cont.	16	20	20	20	20	20
	Int.	20	25	25	25	25	25
Weight (kg)		1.9	2	2.1	2.2	2.3	2.4

Type		Max. Inlet Pressure
BMM 8-50 (Bar)	Cont.	175
	Int.	225

- 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 seconds per minute

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PERFORMANCE DATA

BMM8 [8.2cm³/rev.]

Flow (L/min)	Pressure (Bar) 35	50	70	100	Max.Cont 120	Max.Int. 140
2	3 228	5 218	8 206	10 156	12 111	14 58
4	3 474	5 471	7 463	11 426	13 391	15 331
8	3 953	5 946	7 926	11 884	13 855	15 816
12	2 1444	5 1426	7 1402	10 1360	13 1324	15 1288
15 (Max. Cont.)		4 1912	7 1900	10 1861	12 1833	14 1780
20 (Max. Int.)		0 2432	6 2395	10 2350	11 2328	14 2281

BMM12.5 [12.9cm³/rev.]

Flow (L/min)	Pressure (Bar) 35	50	Max. Cont. 70	100	Max.Int. 120	140
2	6 140	8 136	11 119	16 68	19 35	
4	6 296	8 289	12 274	17 229	19 200	23 145
8	5 605	8 596	12 583	17 543	20 514	24 469
12	5 912	8 905	11 895	16 859	20 834	24 784
15	5 1152	7 1144	11 1136	16 1102	19 1078	23 1036
20 (Max. Cont.)	3 1542	7 1532	10 1521	15 1500	19 1482	22 1437
25 (Max. Int.)	2 1910	6 1891	9 1878	14 1848	18 1828	22 1788

BMM20 [19.9cm³/rev.]

Flow (L/min)	Pressure (Bar) 17	35	50	Max.Cont 70	100	Max.Int. 120	140
2	3 99	9 96	14 89	19 74	26 42	30 21	
4	4 197	9 191	14 182	19 178	26 134	31 112	36 74
8	4 398	9 395	13 391	19 377	27 340	31 319	36 288
12	3 596	8 594	13 588	18 579	26 545	31 523	37 493
15	3 745	8 741	12 738	17 728	25 695	30 684	36 660
20 (Max. Cont.)	1 998	6 995	11 991	19 985	24 962	29 1916	35 1885
25 (Max. Int.)		4 1247	9 1245	14 1242	23 1189	28 1180	33 1176

BMM32 [31.6cm³/rev.]

Flow (L/min)	Pressure (Bar) 17	35	Max. Cont. 50	70	100	Max.Int. 120	140
2	7 61	24 57	34 52	45 46	63 16		
4	7 125	24 240	34 227	46 211	65 162	77 133	91 97
8	7 248	23 242	33 238	46 229	65 205	78 193	92 166
12	6 376	21 372	31 366	45 360	65 336	77 320	92 295
15	4 472	20 469	30 465	43 459	63 438	76 426	91 403
20 (Max. Cont.)	3 629	16 626	27 623	40 615	60 597	73 582	87 563
25 (Max. Int.)	1 786	13 784	24 782	37 778	57 761	69 748	83 727

Cont
Int.

PERFORMANCE DATA

BMM40 [39.8cm³/rev.]

Pressure (Bar)		Max.Cont				Max.Int.	
		35	50	70	85	100	120
Flow (L/min)	2	16 45	27 40	36 34	44 28	51 17	
	4	16 96	27 93	37 85	44 79	52 65	62 52
	8	15 197	26 195	36 182	44 176	52 166	63 154
	12	14 293	25 287	35 282	43 277	51 268	62 257
	15	13 371	24 365	34 360	42 355	50 347	62 338
Max. Cont.	20	10 497	21 492	31 487	39 480	48 472	59 1463
Max. Int.	25	7 622	19 617	29 612	37 607	44 600	56 591

Torque (Nm) 37
Speed (rpm) 607

Cont
Int.

BMM50 [50.3cm³/rev.]

Pressure (Bar)		Max. Cont.			Max.Int.	
		15	30	50	70	100
Flow (L/min)	2	11 37	23 33	36 27	50 22	
	4	11 76	22 73	36 68	50 63	70 55
	8	11 157	21 154	35 149	50 145	71 137
	12	11 237	20 234	33 231	49 226	71 218
	15	10 296	18 295	32 294	47 288	69 282
Max. Cont.	20	8 395	14 395	29 393	44 390	64 381
Max. Int.	25	4 498	10 496	25 494	40 490	59 484

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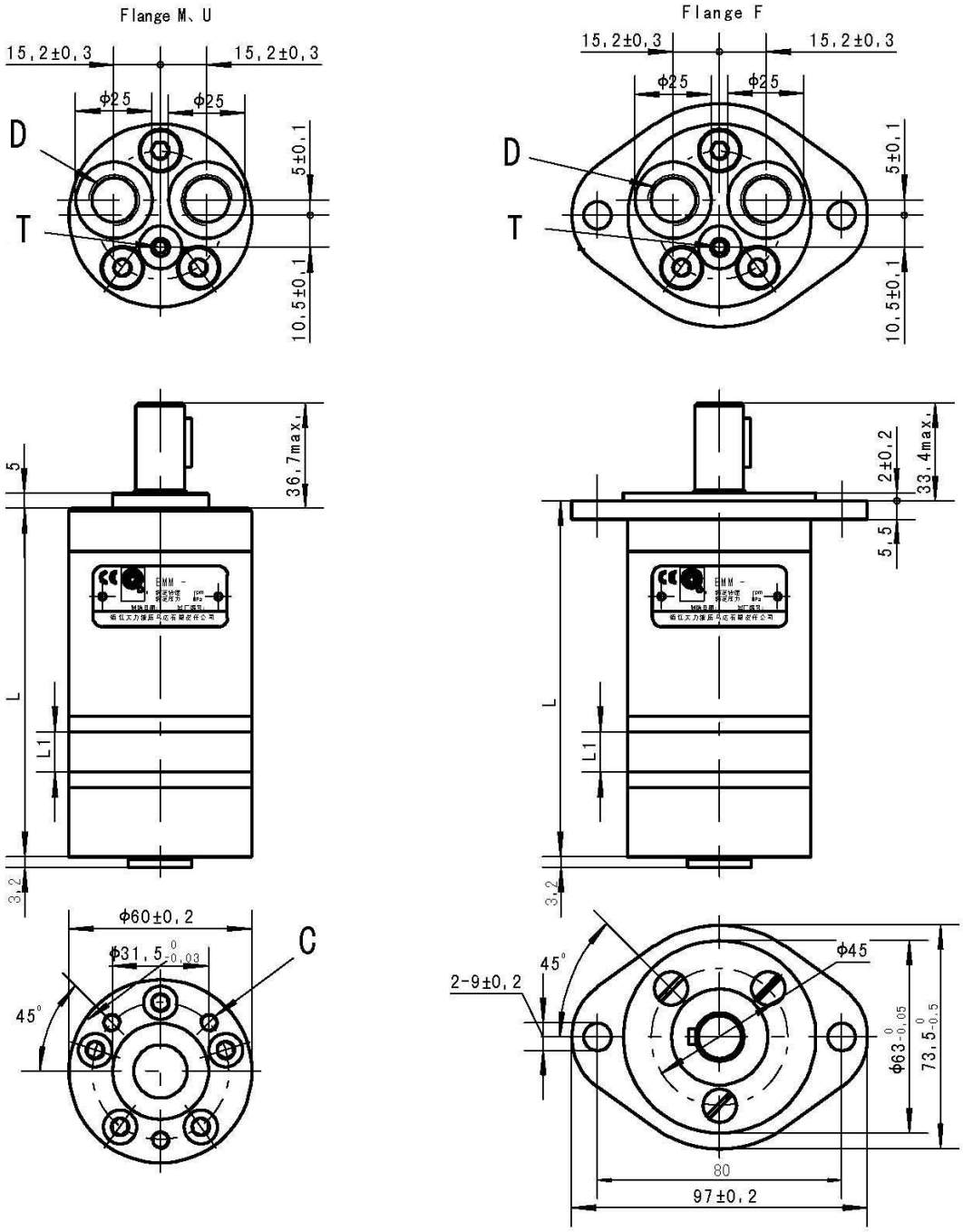
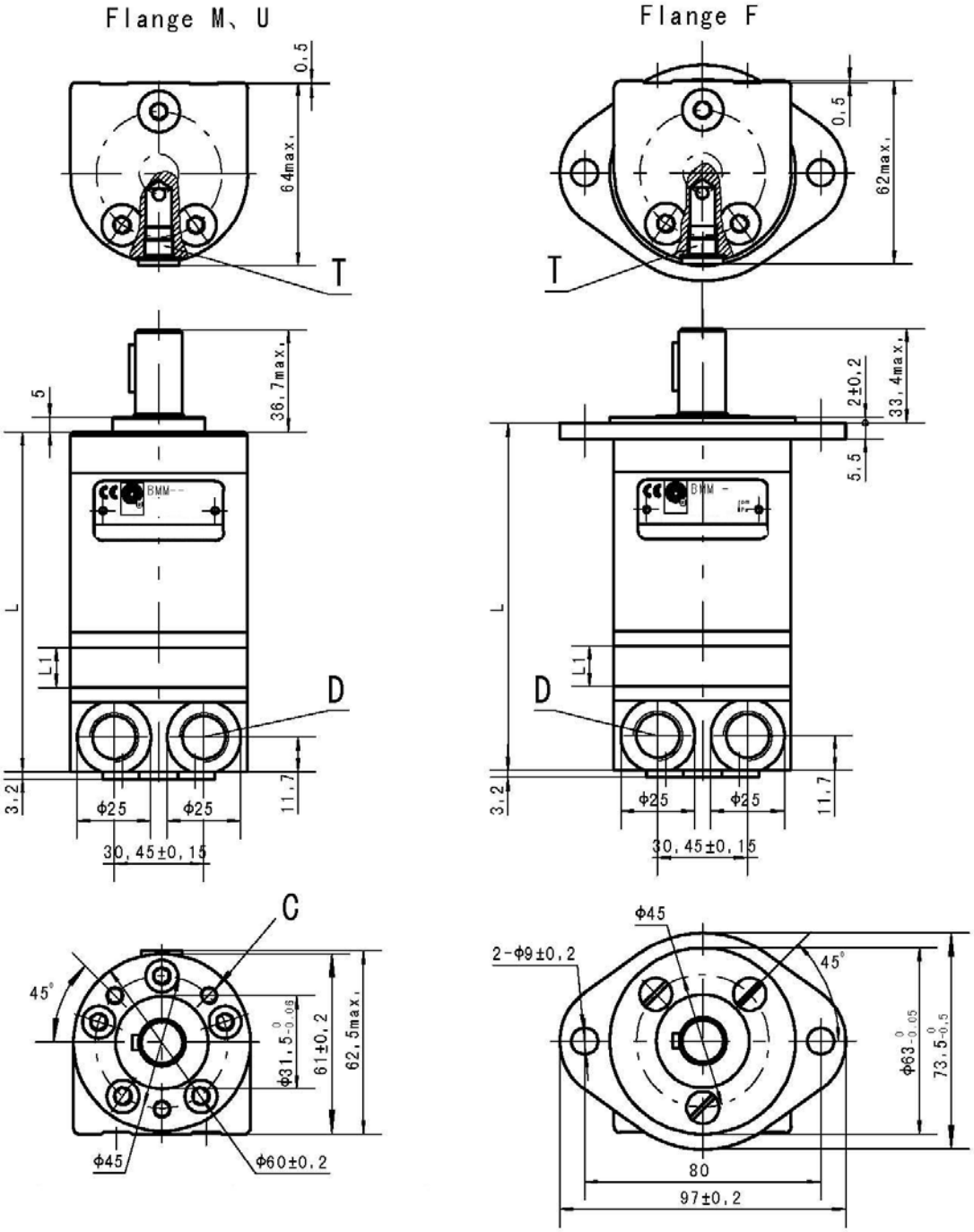
BMM END PORT DIMENSIONS & MOUNTING DATA



	M, U		F	
MODEL	L	L1	L	L1
BMM8	104	3.5	107	3.5
BMM12.5	106	5.5	109	5.5
BMM20	109	8.5	112	8.5
BMM32	114	13.5	117	13.5
BMM40	118	17	118	17
BMM50	122	21.5	125	21.5

Mounting	M, U				F			
Code	1E	(Depth)	1U	(Depth)	1E	(Depth)	1U	(Depth)
C	M6	(10)	¼-28UNF-2B	(10)	-	-	-	-
D	G3/8	(12)	9/16-18UNF	(12)	G3/8	(12)	9/16-18UNF	(12)
T	G1/8	(8)	3/8-24UNF	(8)	G1/8	(8)	3/8-24UNF	(8)

BMM SIDE PORT DIMENSIONS & MOUNTING DATA

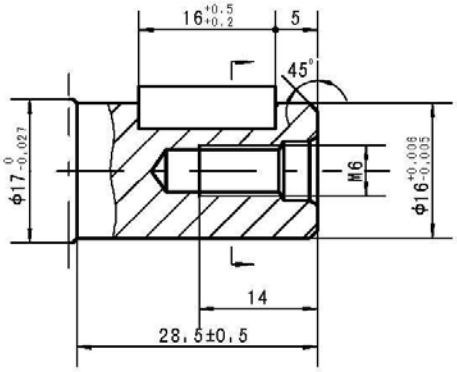


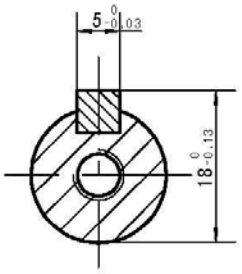
	M, U		F	
MODEL	L	L1	L	L1
BMM8	105	3.5	109	3.5
BMM12.5	107	5.5	111	5.5
BMM20	110	8.5	114	8.5
BMM32	115	13.5	119	13.5
BMM40	118	17	118	17
BMM50	123	21.5	127	21.5

Mounting Code	M, U				F			
	E	(Depth)	U	(Depth)	E	(Depth)	U	(Depth)
C	M6	(10)	¼-28UNF-2B	(10)	-	-	-	-
D	G3/8	(12)	9/16-18UNF	(12)	G3/8	(12)	9/16-18UNF	(12)
T	G1/8	(8)	3/8-24UNF	(8)	G1/8	(8)	3/8-24UNF	(8)

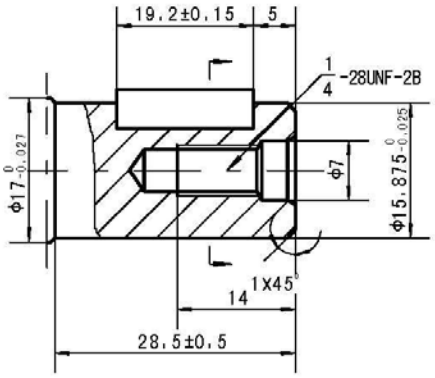
SHAFT EXTENSIONS FOR BMM MOTORS

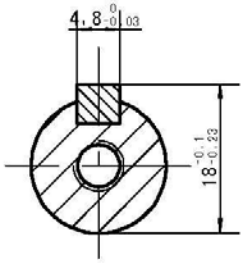
Shaft A:Cylindrical shaft ϕ16
Parallel key 5x5x16



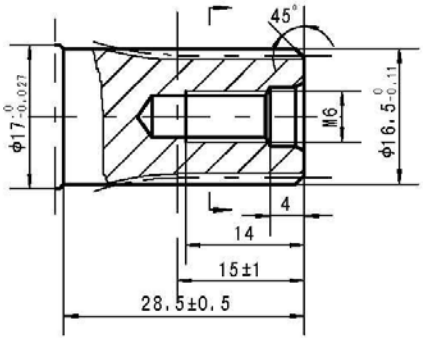


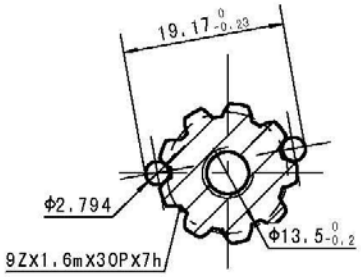
Shaft B:Cylindrical shaft ϕ15.875
Parallel key 4.8X4.8X19.35





Shaft C:Involute splined shaft
B17X14



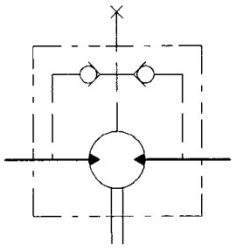


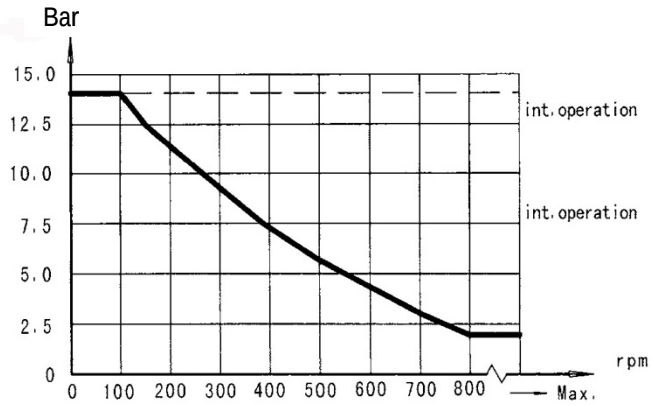
▷ Motor Mounting Surface

BMM SERIES HYDRAULIC MOTOR

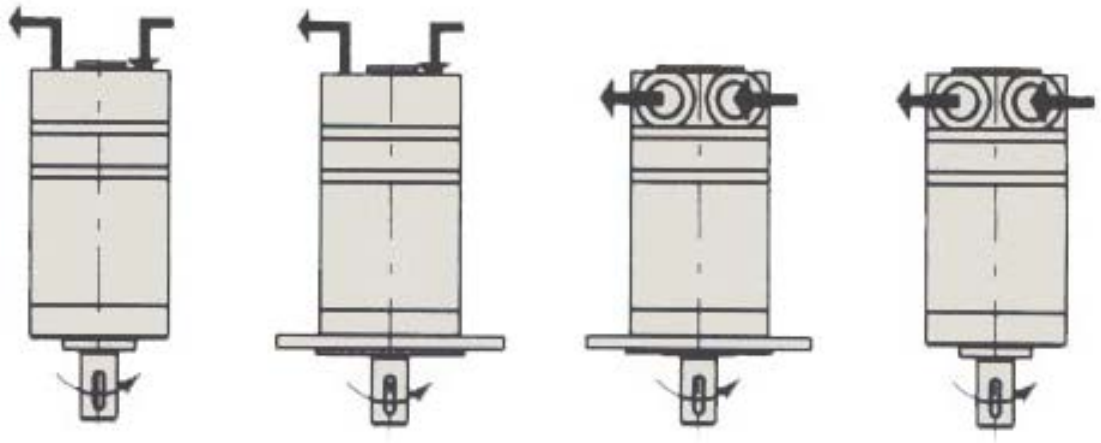
PERMISSIBLE SHAFT SEAL PRESSURE

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.



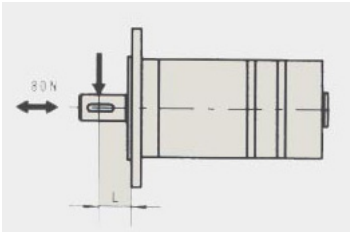


DIRECTION OF SHAFT ROTATION



STATUS OF THE SHAFT'S RADIAL FORCE

$$F_r = \frac{130400}{61.5+L} \quad N$$



F_r = Radial Force (N)
L = Distance (mm)
N = Speed (rpm)
Rhomb-Flange L = 15mm
Square-Flange L = 20mm

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BMM SERIES HYDRAULIC MOTOR – ORDER INFORMATION

1		2		3		4	
Code	Displacement	Code	Output Flange	Code	Shaft	Code	Port
8	8	M U F	3-M6 Circle-Flange, Pilot 31.5x5 3-1/4-28UNF Circle Flange, Pilot 31.5x5 2-9 Rhomb-Flange, Pilot 63x2	A B C	Shaft ∅16, Parallel Key 5x5x16 Shaft ∅15.875, Parallel Key 4.8x4.8x19.35 3/8” Shaft ∅16.5, Involute B17x14, DIN5482	E U 1E 1U	G 3/8, G 1/8 9/16-18UNF, 3/8-24UNF Rear Port G 3/8, G 1/8 Rear Port 9/16-18UNF, 3/8-24UNF
12.5	12.5						
16	16						
20	20						
32	32						
40	40						
50	50						

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BMP SERIES HYDRAULIC MOTOR

BMP series motors are medium speed, high torque motors designed on an internal gear design consisting of a rotor and stator. These motors are suitable for long operating periods at moderate pressures.

Characteristic Features:

- Advanced manufacturing design for the Gerotor gear set, which provide high starting torque, high efficiency and long life
- Motors have high pressure shaft seals which can be used in Parallel or Series
- Smooth running over the entire speed range

Main Specifications

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

TYPE		BMP, BMPH & BMPW										
		36	50	80	100	125	160	200	250	315	400	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 (Nm)	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 (Bar)	Cont.	125	140	140	140	140	140	140	110	90	70	60
	Int.	165	175	175	175	175	175	175	140	140	105	90
	Peak	225	225	225	225	225	225	225	180	160	140	120
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

Technical data for BMP with 31.75 and 32 shaft

TYPE		BMP, BMPH & BMPW										
		36	50	80	100	125	160	200	250	315	400	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 (Nm)	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 (Bar)	Cont.	125	140	140	140	140	140	140	140	120	95	70
	Int.	165	175	175	175	175	175	175	175	140	115	90
	Peak	225	225	225	225	225	225	225	225	225	180	130
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 seconds per minute

REN-TEK

PERFORMANCE DATA

BMP36 [36cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	70	80	100	110	125	165
								Max.Cont.	Max.Int.
8		13 214	25 205	29 200	34 194	43 187	48 179		
15		13 406	25 398	29 391	34 383	43 374	48 366	56 353	75 324
20		13 541	24 534	29 528	34 521	43 513	48 500	56 486	76 458
30		12 814	24 804	29 792	34 778	43 763	48 749	56 726	76 701
35		12 952	23 944	28 930	34 913	43 897	48 879	56 858	76 833
40		12 1090	23 1078	28 1064	32 1048	41 1024	47 998	55 977	75 943
45		11 1232	22 1218	26 1196	32 1175	41 1149	46 1118	54 1080	74 1044
Max Cont.	55	6 1505	15 1494	22 1480	28 1466	37 1438	44 1406	52 1367	71 1309
Max Int.	60	3 1650	11 1640	18 1626	20 1603	30 1571	38 1536	49 1502	67 1446

BMP50 [51.7cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	160	175
								Max.Cont.	Max.Int.
8		20 151	41 134	56 115	69 90	89 56	95 42		
15		19 286	40 274	56 261	71 243	91 204	100 182	112 139	120 102
20		18 382	39 373	55 361	71 348	92 318	101 309	117 287	128 251
30		17 573	38 568	55 558	71 535	91 503	98 488	116 462	124 440
35		17 670	38 661	54 652	69 640	89 606	98 589	117 562	124 548
45		14 863	36 858	53 849	67 837	88 807	98 788	114 764	123 746
55		12 1055	33 1042	50 1028	65 1010	85 979	96 963	111 947	121 920
Max Cont.	60	10 1150	32 1143	47 1126	64 1111	83 1079	94 1065	108 1043	119 1015
Max Int.	75	6 1440	25 1430	42 1416	56 1395	76 1367	87 1351	101 1335	112 1312

BMP80 [77.7cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	160	175
								Max.Cont.	Max.Int.
8		32 97	62 87	85 74	104 55	129 33	144 22		
15		32 186	63 181	84 170	107 154	126 132	144 118	165 86	
20		31 251	63 243	84 236	107 225	132 207	146 196	168 178	185 155
30		31 381	62 379	83 368	106 355	131 332	146 316	168 285	186 263
35		30 443	59 435	81 426	102 415	130 397	144 383	167 361	185 342
45		25 570	58 564	79 554	100 543	126 526	142 509	165 483	182 458
55		23 696	57 685	78 672	97 656	124 643	140 630	161 602	179 579
Max Cont.	60	20 761	53 753	75 744	94 736	120 720	137 706	160 681	177 660
Max Int.	75	14 948	44 940	67 931	87 920	112 906	151 890	169 871	169 854

BMP100 [96.2cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	160	175
								Max.Cont.	Max.Int.
8		40 81	77 75	105 69	130 57	161 36	180 24		
15		39 152	77 149	106 145	130 140	160 122	180 103	208 81	
20		36 204	74 200	104 195	128 190	161 177	179 166	205 148	227 133
30		33 308	72 304	103 298	125 290	160 280	177 268	203 255	225 231
35		30 360	70 352	98 343	122 331	159 320	176 306	202 294	224 275
45		29 462	67 458	95 451	118 443	155 433	174 419	200 402	220 383
55		25 566	64 558	93 549	116 540	152 529	170 515	198 498	217 478
Max Cont.	60	22 618	60 611	91 601	114 589	149 580	167 570	194 558	213 540
Max Int.	75	15 771	54 763	83 755	106 744	141 735	160 724	186 708	205 693

BMP125 [120.2cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	160	175
								Max.Cont.	Max.Int.
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	290 94
30		46 243	96 239	132 234	164 227	209 216	232 202	264 189	287 176
35		42 284	92 279	130 274	160 269	206 259	229 247	260 231	284 222
45		37 370	89 362	125 355	157 348	201 340	224 327	261 310	281 296
55		33 452	84 446	122 438	152 431	196 420	218 412	252 402	275 384
Max Cont.	60	29 490	78 482	117 475	146 468	191 459	215 448	248 439	272 427
Max Int.	75	18 615	66 606	107 598	133 586	179 575	202 563	236 549	260 528

BMP160 [157.2cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	160	175
								Max.Cont.	Max.Int.
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	371 81
30		53 187	115 184	164 181	206 178	259 175	288 168	335 155	368 139
35		49 220	110 216	160 213	202 209	255 205	284 202	328 192	362 176
45		44 283	102 280	154 276	196 272	248 267	278 260	321 250	358 238
55		40 345	99 342	148 340	191 336	243 331	272 328	316 320	351 303
Max Cont.	60	33 377	94 374	144 371	188 367	236 363	267 359	308 353	345 342
Max Int.	75	19 473	80 469	124 465	170 459	216 453	252 447	296 440	325 424

Cont. | Int.

Torque (Nm) 124 Speed (rpm) 465

REN-TEK

PERFORMANCE DATA

BMP200 [194.5cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	Max.Cont. 160	Max.Int. 175
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	422 57
30		70 151	153 149	200 147	245 145	315 142	350 139	398 131	417 120
35		66 177	149 175	194 173	232 171	297 168	343 166	386 160	415 149
45		63 228	146 226	190 224	230 221	294 218	340 215	383 210	410 198
55		54 280	140 278	181 276	224 274	286 271	334 269	371 263	400 250
Max Cont.	60	38 304	127 302	164 300	212 297	270 294	325 291	356 286	395 272
Max Int.	75	22 382	96 378	145 374	192 371	235 368	293 364	321 360	367 350

BMP250 [240.3cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	60	80	100	125	140	Max.Cont. 160	Max.Int. 175
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	565 38
30		85 123	180 120	259 118	320 114	400 106	448 98	513 87	561 76
35		77 143	176 141	252 139	311 135	389 128	436 122	504 112	557 101
45		70 185	168 182	243 178	300 174	377 168	428 161	495 152	543 139
55		63 226	159 223	237 218	290 213	369 209	417 202	483 193	531 185
Max Cont.	60	60 248	150 246	228 243	280 239	358 233	407 226	473 215	520 207
Max Int.	75	34 309	128 306	202 302	264 297	342 292	387 286	448 278	488 264

BMP315 [314.5cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	50	70	90	100	125	Max.Cont. 140
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

BMP400 [389.5cm³/rev.]

Pressure (Bar)

Flow (L/Min)		30	45	55	65	80	100	Max.Cont. 125
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 (Nm) 234 Speed (rpm) 185

BMP500 [486.5cm³/rev.]

Pressure (Bar)

Flow (L/Min)		15	30	45	60	70	80	Max.Cont. 90
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	447 144

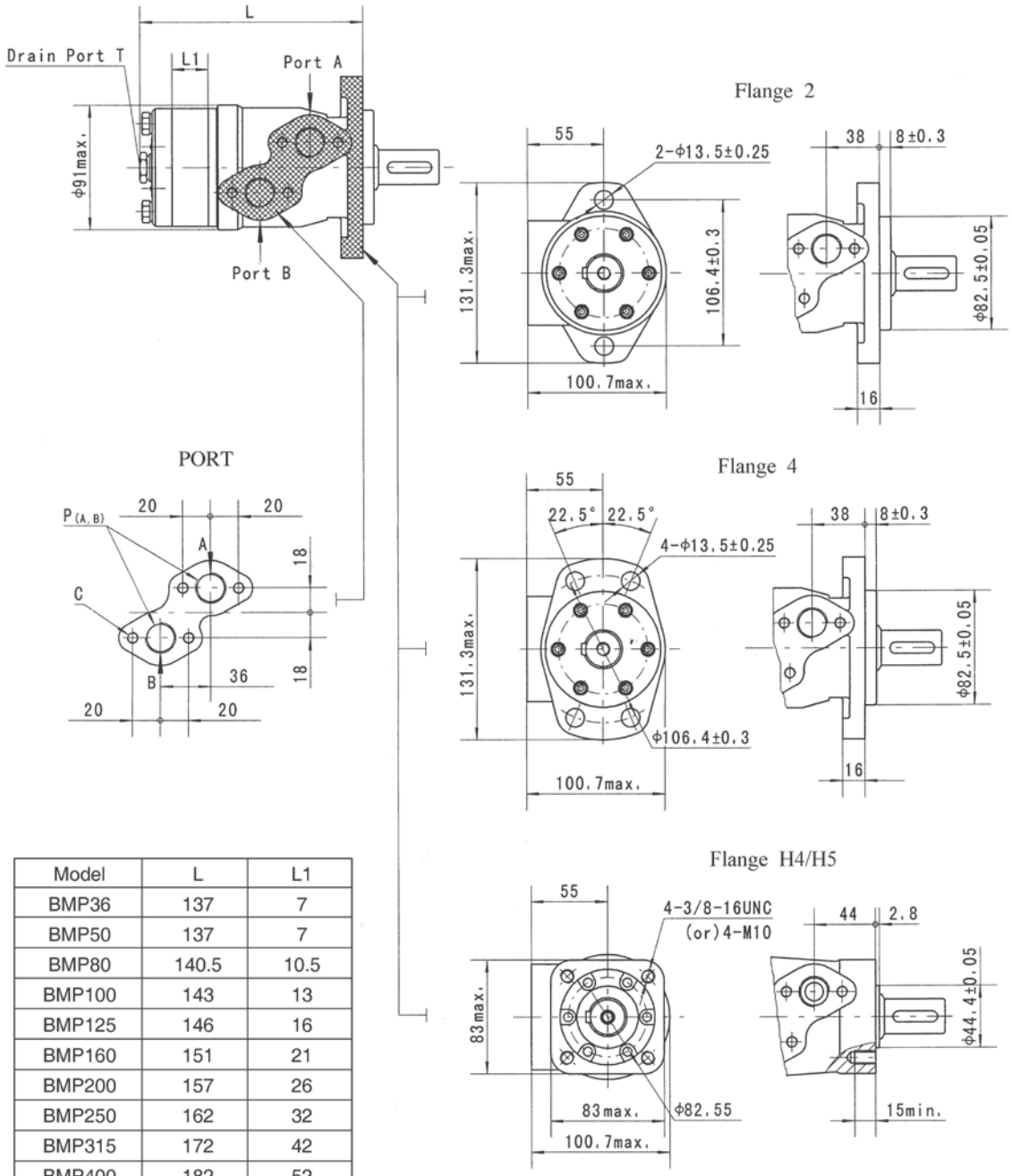
⇧

Cont. | Int.

Torque (Nm) 312 Speed (rpm) 149

BMP DIMENSIONS AND MOUNTING DATA

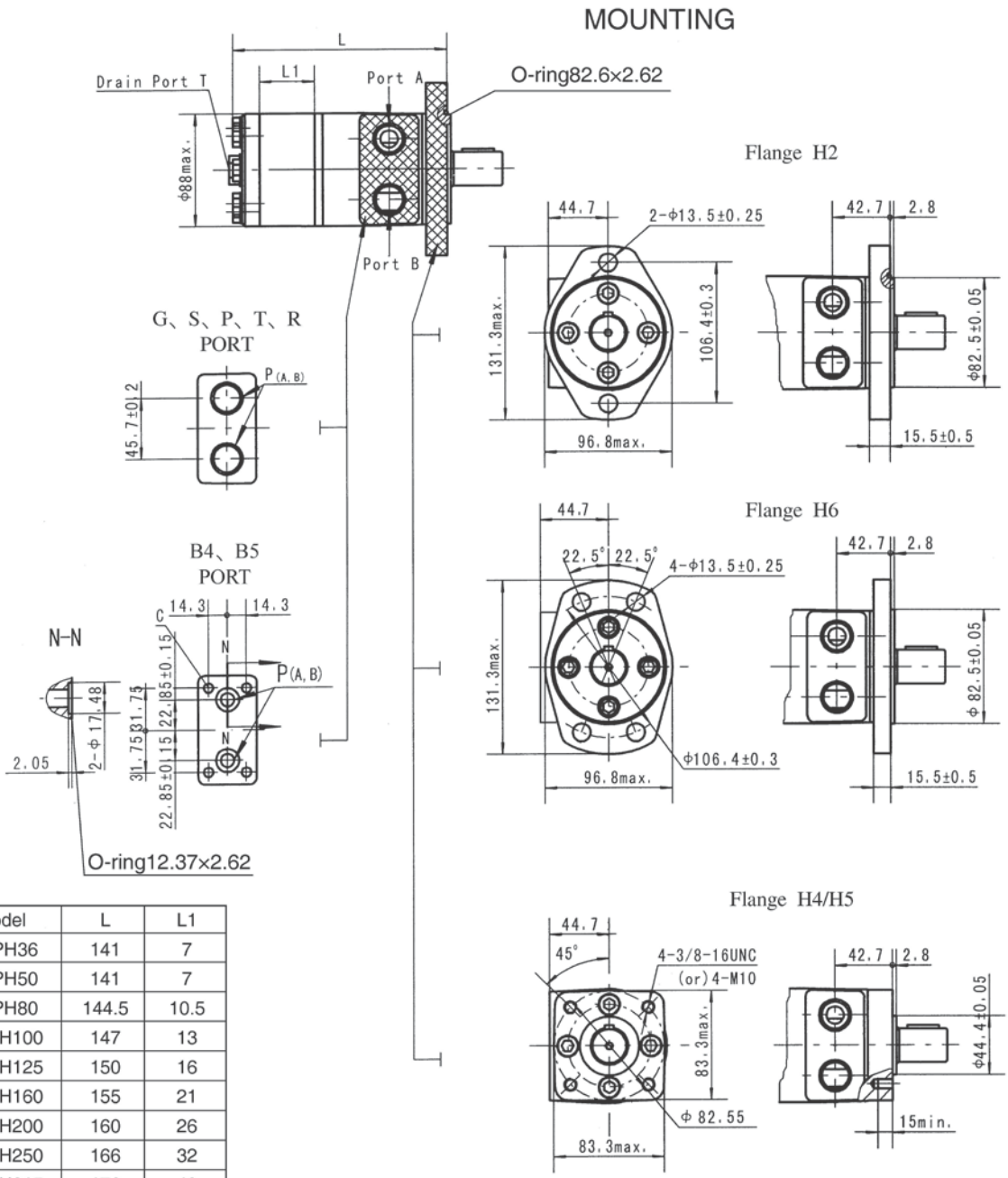
MOUNTING



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)

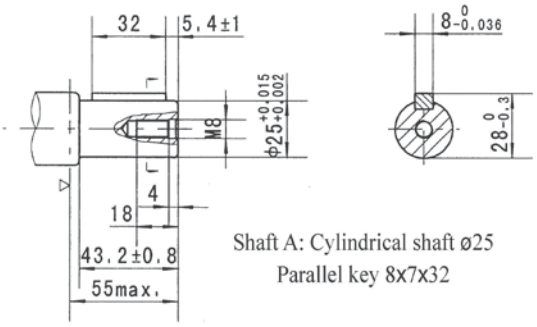
BMPH DIMENSIONS AND MOUNTING DATA



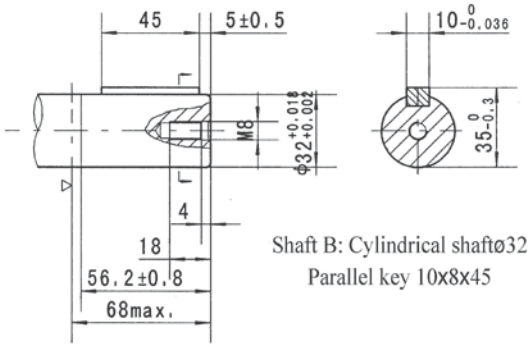
Model	L	L1
BMPH36	141	7
BMPH50	141	7
BMPH80	144.5	10.5
BMPH100	147	13
BMPH125	150	16
BMPH160	155	21
BMPH200	160	26
BMPH250	166	32
BMPH315	176	42
BMPH400	186	52
BMPH500	199	65

Code / Mounting	G (depth)	S (depth)	P (depth)	T (depth)	R (depth)	B4 (depth)	B5 (depth)
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)

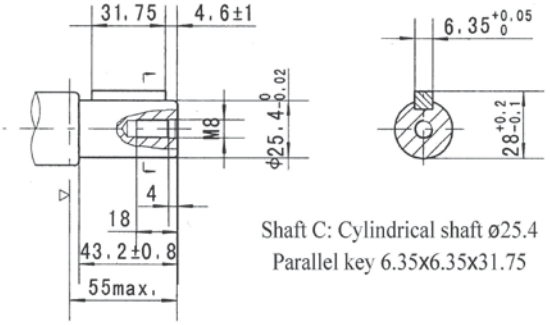
BMP SHAFT EXTENSIONS DIMENSIONS DATA



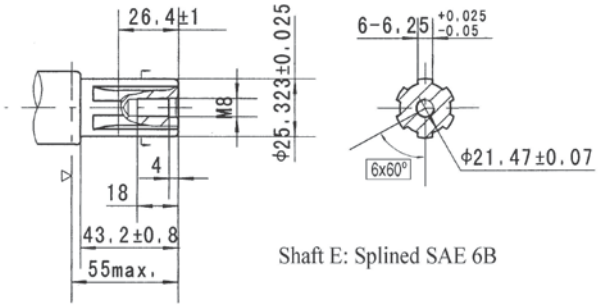
Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32



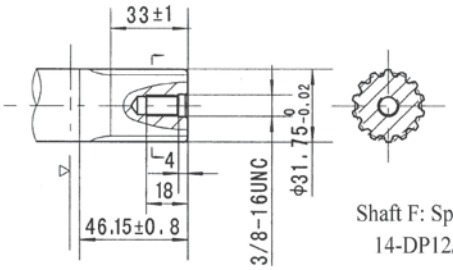
Shaft B: Cylindrical shaftø32
Parallel key 10x8x45



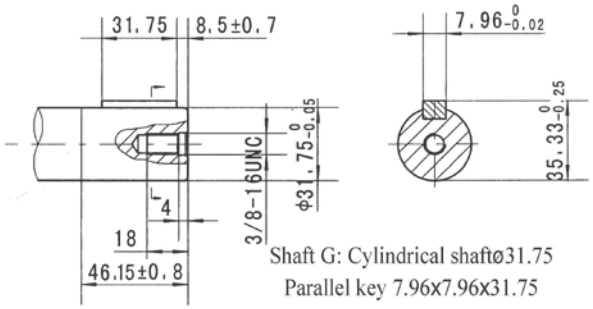
Shaft C: Cylindrical shaft ø25.4
Parallel key 6.35x6.35x31.75



Shaft E: Splined SAE 6B



Shaft F: Splined
14-DP12/24

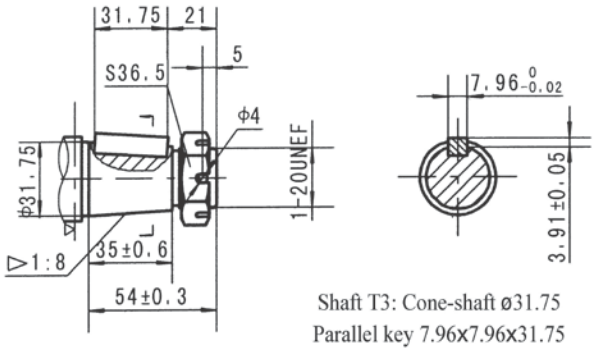


Shaft G: Cylindrical shaftø31.75
Parallel key 7.96x7.96x31.75

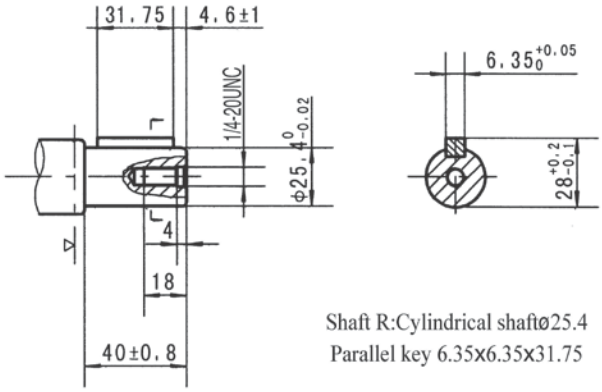
▷ Motor Mounting Surface

REN-TEK

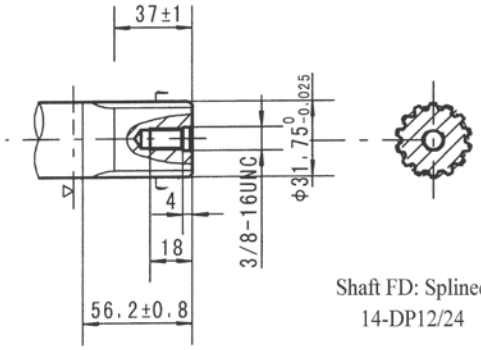
BMP SHAFT EXTENSIONS DIMENSIONS DATA



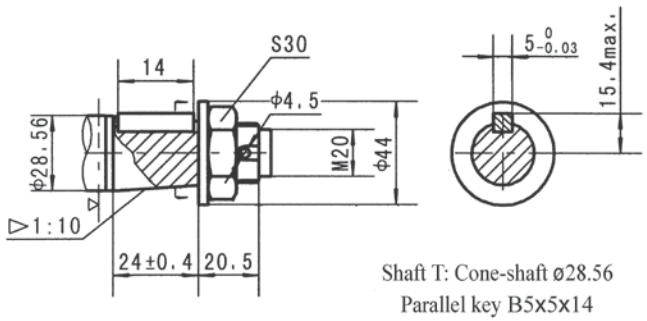
Shaft T3: Cone-shaft ø31.75
Parallel key 7.96x7.96x31.75
Tightening torque:200 ± 10Nm



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



Shaft FD: Splined
14-DP12/24

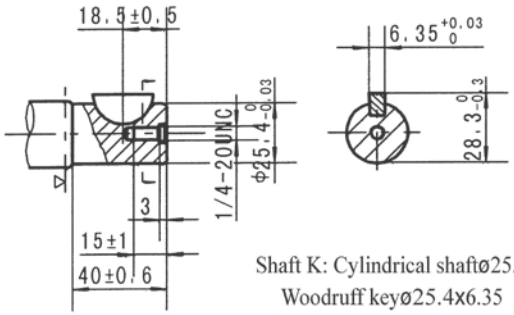


Shaft T: Cone-shaft ø28.56
Parallel key B5x5x14
Tightening torque:100 ± 10Nm

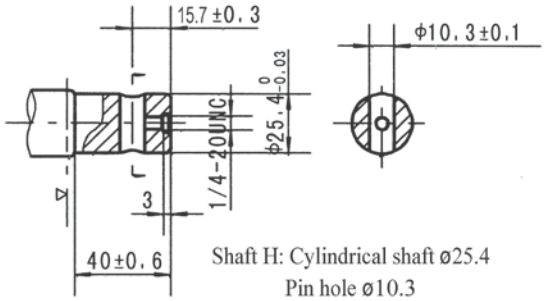
▷ Motor Mounting Surface

REN-TEK

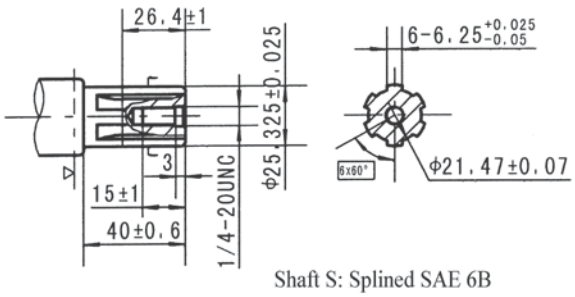
BMPH SHAFT EXTENSIONS DIMENSIONS DATA



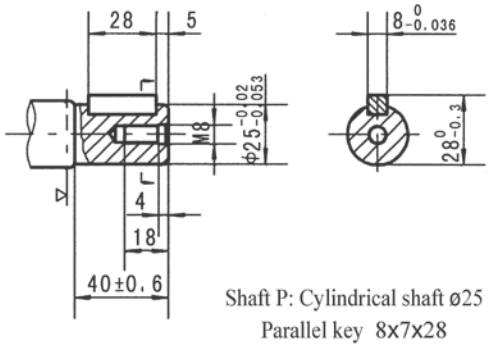
Shaft K: Cylindrical shaftø25.4
Woodruff keyø25.4x6.35



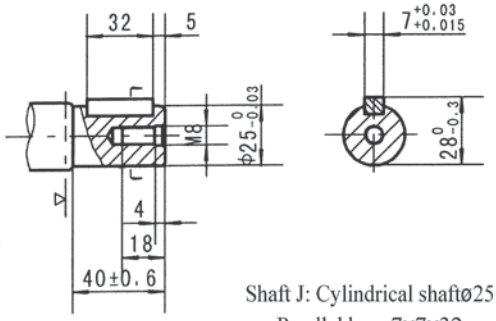
Shaft H: Cylindrical shaft ø25.4
Pin hole ø10.3



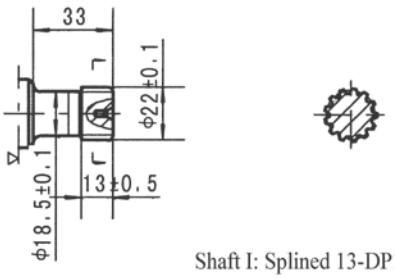
Shaft S: Splined SAE 6B



Shaft P: Cylindrical shaft ø25
Parallel key 8x7x28



Shaft J: Cylindrical shaftø25
Parallel key 7x7x32

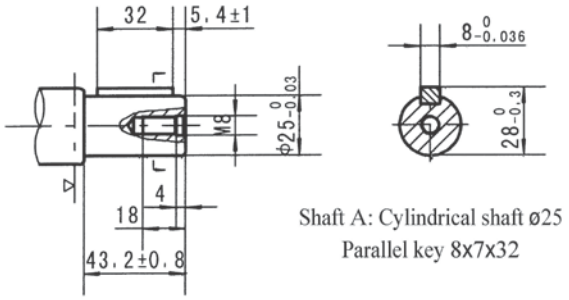


Shaft I: Splined 13-DP16/32

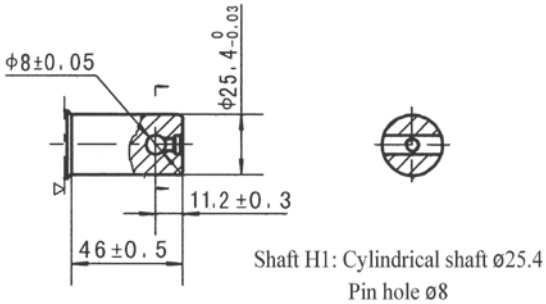
▷ Motor Mounting Surface

REN-TEK

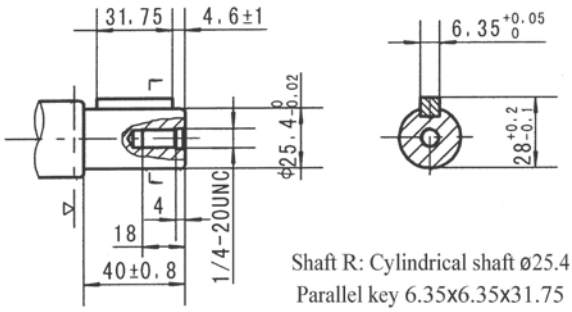
BMPH SHAFT EXTENSIONS DIMENSIONS DATA



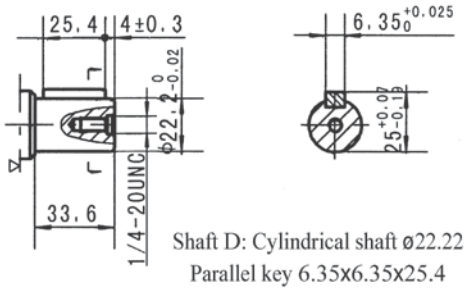
Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32



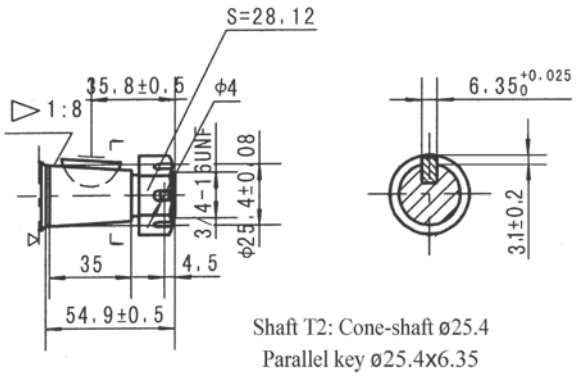
Shaft H1: Cylindrical shaft ø25.4
Pin hole ø8



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



Shaft D: Cylindrical shaft ø22.22
Parallel key 6.35x6.35x25.4

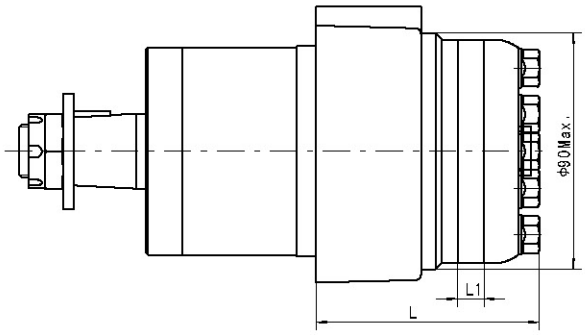


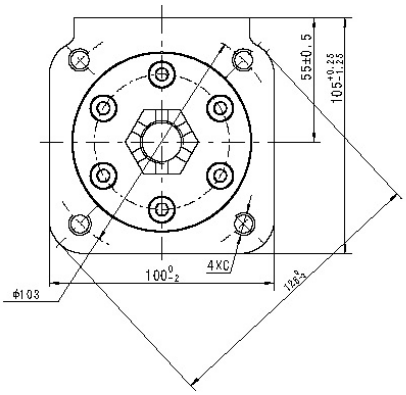
Shaft T2: Cone-shaft ø25.4
Parallel key ø25.4x6.35
Tightening torque:200 ± 10Nm

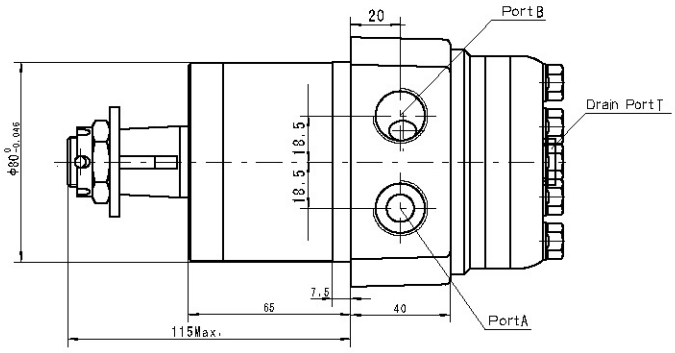
▷ Motor Mounting Surface

REN-TEK

BMPW DIMENSIONS & MOUNTING DATA







Model	L	L1
BMPW50	81	7
BMPW80	84.5	10.5
BMPW100	87	13
BMPW125	90	16
BMPW160	95	21
BMPW200	100	26
BMPW250	106	32
BMPW315	116	42
BMPW400	126	52
BMPW500	139	65

Code / Mounting	G (depth)	S (depth)	M (depth)
P(A,B)	G1/2 (15)	7/8-14 O-ring (17)	M22×1.5 (15)
T	G1/4 (12)	7/16-20UNF (12)	M14×1.5 (12)
C	4×M10(20)	4×3/8-16UNC(20)	4×M10(20)

REN-TEK

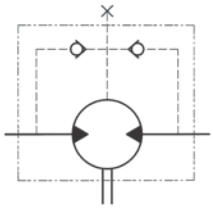
BMPW

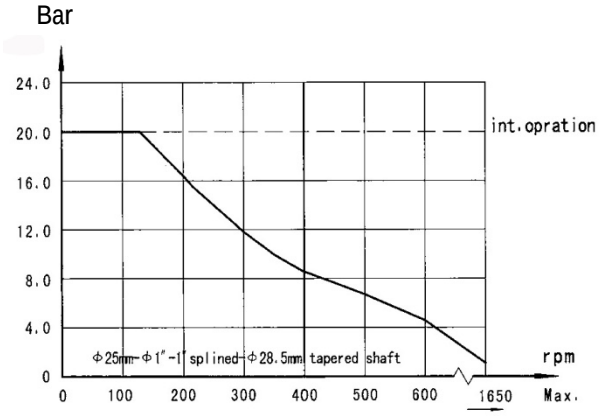
ORDER INFORMATION

1	2	3		4		5		6		7		8	
Code	Disp	Flange		Output Shaft		Main Port & Drain Port		Rotation Direction		Paint		Special Function	
BMPW	50 80 100 125 160 200 250 315 400 500	Omit	Wheel-Flange Pilot ∅80x7.5	A C E T	Shaft ∅25k6, Parallel Key 8x7x32 Shaft ∅25.4, Parallel Key 6.35x6.35x31.75 Shaft ∅25.4, Splined Key SAE 6B Cone Shaft ∅28.56, Parallel Key B5x5x14	G S M	G1/2, G1/4 7/8-14 Oring, 7/16-20UNF M22x1.5, M14x1.5	Omit R	Standard Opposite	00 Omit B S	No Paint Blue Black Silver Grey	Omit N O	Standard High radial force No case drain

BMP, BMPH, BMPW SERIES HYDRAULIC MOTOR

PERMISSIBLE SHAFT SEAL PRESSURE

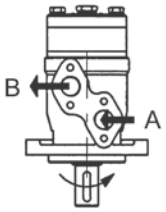




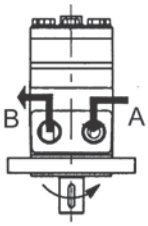
In applications without drain line, the shaft seal pressure is equal to the pressure in the return line.
When applications use the drain line, the pressure behind the output shaft seal equals the pressure in drain line.

DIRECTION OF SHAFT ROTATION

When facing shaft end of motor, shaft to rotate:
Clockwise when Port “A” is pressurised
Counter-clockwise Port “B” is pressurised

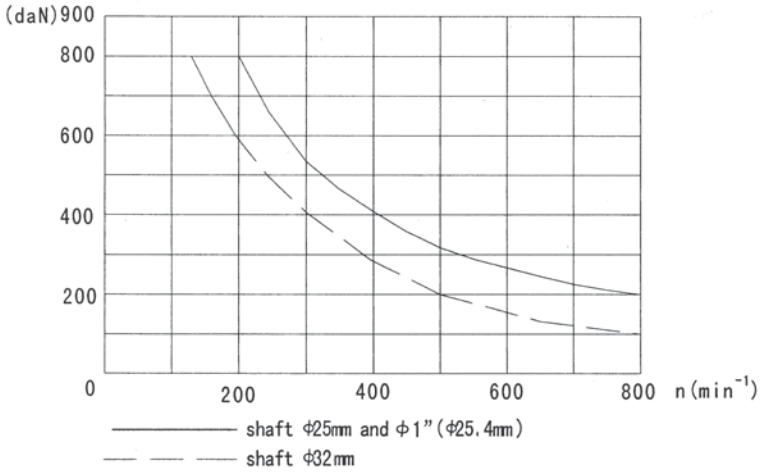


BMP

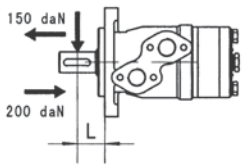


BMPH

STATUS OF THE SHAFT’S RADIAL FORCE



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



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

REN-TEK

ORDER INFORMATION

1	2		3		4		5		6		7		8
Code	Disp.		Flange		Output Shaft		Port & Drain Port		Rotation Direction		Paint		Unusual Function
BMP	36	2 4 H4 H5	2-∅13.5 Rhomb-Flange, Pilot ∅82.5x8 4-∅13.5 Rhomb-Flange, Pilot ∅82.5x8 4-3/8-16 Square-Flange, Pilot ∅44.4x2.8 4-M10 Square-Flange, Pilot ∅44.4x2.8	A	Shaft ∅25, Parallel Key 8x7x32	D	G1/2 Manifold Mount 4xM8, G1/4	Omit R	Standard Opposite	00 Omit B S	No Paint Blue Black Silver Grey	Omit N AX O F LS	Standard Large Radial Force Large Axial Force No Case Drain Free Running Low Speed
	50			B	Shaft ∅32, Parallel Key 10x8x45								
	80			C	Shaft ∅25.4, Parallel Key 6.35x6.35x31.75	M	M22x1.5 Manifold Mount 4xM8, M14x1.5						
	100			E	Shaft ∅25, Splined Tooth SEA 6B								
	125			R	Short shaft ∅25.4, Parallel Key 6.35x6.35x31.75	S	7/8-14 O-Ring Manifold 4x5/16-18UNC, 7/16-20UNF						
	160			F	Shaft ∅31.75, Splined Tooth 14-DP12/24								
	200			FD	Long Shaft ∅31.75, Splined Tooth 14-DP12/24								
	250			G	Shaft ∅31.75, Parallel Key 7.96x7.96x31.75	P	1/2-14 NPFT Manifold 4x5/16-18UNC, 7/16-20UNF						
	315			T	Cone Shaft ∅28.56, Parallel Key B5x5x14								
	400			T3	Cone Shaft ∅31.75, Parallel Key 7.96x7.96x25.4								
	500					R	PT(Rc)1/2 Manifold 4xM8,PT(Rc)1/4						

1	2		3		4		5		6		7		8
Code	Disp.		Flange		Output Shaft		Port & Drain Port		Rotation Direction		Paint		Unusual Function
BMPH	36	H2 H4 H4 H5	2-∅13.5 Rhomb-Flange, Pilot ∅82.5x2.8 4-∅13.5 Rhomb-Flange, Pilot ∅82.5x2.8 4-3/8-16 Square-Flange, Pilot ∅44.4x2.8 4-M10 Square-Flange, Pilot ∅44.4x2.8	K	Shaft ∅25.4, Woodruff Key ∅25.4x6.35			Omit R	Standard Opposite	00 Omit B S	No Paint Blue Black Silver Grey	Omit N AX O F LS	Standard Large Radial Force Large Axial Force No Case Drain Free Running Low Speed
	50			S	Shaft ∅25.4, Splined Tooth SEA 6B	G	G1/2 G1/4						
	80			A	Shaft ∅25, Parallel Key 8x7x32	S	7/8-14 O-Ring 7/16-20UNF (G1/4)						
	100			R	Shaft ∅25.4, Parallel Key 6.35x6.35x31.75	P	1/2-14 NPTF, 7/16-20UNF (G1/4)						
	125			H	Shaft ∅25.4, Pin Hold ∅10.3	T	3/4-16 O-Ring, 7/16-20UNF						
	160			H1	Shaft ∅25.4, Pin Hole ∅8	R	PT(Rc)1/2 PT(Rc)1/4						
	200			D	Shaft ∅22.22, Parallel Key 6.35x6.35x25.4	B4	∅10 O-Ring Manifold 4x5/16-18UNC, 7/16-20UNF(G1/4)						
	250			I	Shaft ∅22.22, Splined Tooth 13-DP16/32								
	315			T2	Cone Shaft ∅25.4, Woodruff Key ∅25.4x6.35	B5	∅10 O-Ring Manifold 4xM8 7/16-20UNF(G1/4)						
	400			P	Shaft ∅25, Parallel Key 8x7x28								
	500			J	Shaft ∅25, Parallel Key 7x7x32								

REN-TEK

BMR SERIES HYDRAULIC MOTOR

BMR Series motors are medium speed high torque motors designed on an internal gear design consisting of a rotor and stator. These motors are suitable for long operating periods at moderate pressures.

Characteristic Features:

- Advanced manufacturing design for the Geroler gear set, which provide high starting torque, high efficiency and long life
- Motors have high pressure shaft seals which can be used in Parallel or Series
- Smooth running over the entire speed range

Main Specifications

Type		BMR & BMRS									
		36	50	80	100	125	160	200	250	315	375
Geometric Displacement (cm^3/rev.)		36	51.3	80.6	100.8	124.9	157.2	199.2	252	314.5	370
Max. Speed (rpm)	Cont.	1085	755	750	600	475	375	300	240	190	160
	Int.	1220	970	940	750	600	470	375	300	240	200
Max. Torque (Nm)	Rated	69	100	160	200	250	320	330	352	360	420
	Cont.	69	100	190	240	292	363	358	352	360	420
	Int.	88	126	220	280	340	430	448	470	470	548
Max. Output (kW)	Rated	7.5	7.7	12.3	12.3	12.0	12.3	10	9	7	6.5
	Cont.	7.5	7.7	15	15	14	14	11	9	7	8.6
	Int.	9.4	9.7	17	17	16	16	14	12	9	12
Max. Pressure Drop (Bar)	Rated	140	140	140	140	140	140	120	110	85	85
	Cont.	140	140	175	175	175	165	130	110	85	85
	Int.	175	175	200	200	200	200	175	140	115	115
Max. Flow (L/min)	Cont.	40	40	60	60	60	60	60	60	60	60
	Int.	50	50	75	75	75	75	75	75	75	75
Weight (kg)		6.7	6.7	6.9	6.9	7.2	7.5	8.0	8.5	9	9.3

- Rated Speed & 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 seconds per minute

REN-TEK

PERFORMANCE DATA

BMR50 [51.3cm³/rev.]

Pressure (Bar)

Flow (L/min)	50	70	90	100	120	140	Max.Cont. 160	Max.Int. 175
5	35	45	61	67	77	88		
	95	84	76	73	69	46		
10	36	46	62	69	80	95	108	120
	184	176	165	162	150	130	111	84
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	308	276
25	34	45	61	69	81	96	109	126
	476	468	460	453	438	423	395	361
30	33	44	60	67	80	95	108	126
	576	569	561	554	542	531	500	465
35	31	42	59	66	80	93	107	124
	669	665	657	654	638	623	598	561
Max. Cont. 40	30	41	58	66	79	92	106	122
	760	758	753	750	738	724	700	670
Max. Int. 45	29.5	40	57	65	78	90	105	121
	856	856	850	845	835	815	799	780

BMR80 [80.6cm³/rev.]

Pressure (Bar)

Flow (L/min)	50	70	90	100	120	140	Max.Cont. 160	Max.Int. 175
10	55	77	98	107	130	149	170	180
	115	109	106	101	91	75	53	45
20	50	81.6	105	118	132	160	178	189
	239	235	227	224	209	196	172	160
30	48	74	97	114	131	150	179	190
	364	360	357	345	332	321	300	284
40	45	71	95	105	128	149	177	188
	488	483	475	472	460	447	420	408
50	42	70	90	98	125	147	171	187
	619	615	607	598	593	568	547	535
60	38	63	85	95	118	142	169	185
	740	725	721	715	707	688	667	657
Max. Cont. 70	36	58	80	89	112	139	164	179
	860	853	839	837	823	811	790	776
Max. Int. 75	29	56	77	85	110	133	161	177
	925	915	910	899	888	871	853	837

BMR100 [100.8cm³/rev.]

Pressure (Bar)

Flow (L/min)	50	70	90	100	120	140	Max.Cont. 160	Max.Int. 175
10	70	100	122	138	159	182	210	222
	99	95	87	84	74	63	52	44
20	68	95	123	143	165	200	221	238
	199	194	188	182	175	162	150	138
30	62	94	121	140	164	194	220	240
	299	294	288	284	278	263	249	236
40	59	88	119	134	161	192	218	238
	400	398	387	385	380	366	350	336
50	55	83	117	125	157	185	217	235
	498	496	488	484	475	464	450	436
60	48	79	110	119	152	180	214	233
	599	595	587	585	579	569	552	538
Max. Cont. 70	43	70	100	112	142	170	201	229
	699	693	687	683	679	668	648	636
Max. Int. 75	39	63	97	105	140	167	197	227
	748	741	737	735	720	713	697	686

Torque (Nm) 167
Speed (rpm) 713

Cont
Int.

BMR125 [124.9cm³/rev.]

Pressure (Bar)

Flow (L/min)	50	70	90	100	120	140	Max.Cont. 160	Max.Int. 175
10	90	122	160	173	205	237	258	270
	73	71	66	63	55	42	23	14
20	85	118	159	172	208	250	278	292
	154	152	150	145	138	123	109	91
30	82	107	158	164	206	241	277	291
	237	236	233	226	219	207	192	170
40	79	105	150	161	204	238	275	289
	315	313	309	307	302	297	272	254
50	75	96	145	160	198	236	262	282
	398	397	395	391	381	368	353	337
60	62	95	139	158	183	222	254	279
	475	473	471	470	463	450	427	416
Max. Cont. 70	59	83	125	150	178	212	250	262
	554	553	551	550	546	538	514	500
Max. Int. 75	56	80	122	145	172	205	245	261
	598	597	593	590	586	577	551	537

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PERFORMANCE

BMR160 [157.2cm³/rev.]

Pressure (Bar)

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

BMR200 [199.2cm³/rev.]

Pressure (Bar)

Flow (L/min)	50	70	90	105	120	140 (Max.Cont.)	175 (Max.Int.)
10	148	205	255	290	327	370	442
	49	47	45	43	40	30	24
20	140	202	250	323	330	411	448
	99	97	93	90	86	78	65
30	130	193	241	307	325	377	445
	149	146	140	136	131	122	105
40	125	186	232	305	313	390	436
	200	197	192	188	181	170	149
50	120	177	225	295	305	382	427
	250	247	242	238	231	218	193
60	110	166	221	285	292	372	419
	300	298	291	287	282	268	236
Max. Cont. 70	98	150	205	244	278	331	410
	350	347	342	338	331	318	282
Max. Int. 75	85	141	199	235	268	323	400
	375	372	366	362	357	343	310

BMR250 [252cm³/rev.]

Pressure (Bar)

Flow (L/min)	30	50	70	80	100	110	140 (Max.Cont.)	175 (Max.Int.)
10	115	180	251	295	350	380	470	535
	40	38	37	35	32	30	22	16
20	110	178	252	294	352	385	470	548
	79	78	75	74	70	68	57	48
30	100	170	248	285	348	381	469	545
	120	119	117	116	110	107	95	79
40	91	159	232	268	332	366	460	530
	158	157	156	154	151	148	130	110
50	81	148	216	252	320	352	453	521
	200	198	196	195	163	160	152	147
60	75	132	201	235	305	340	433	505
	241	240	239	237	232	228	210	180
Max. Cont. 70	50	117	189	220	290	320	412	495
	280	279	277	276	271	268	250	215
Max. Int. 75	42	105	180	211	281	310	405	486
	300	299	298	297	295	289	272	239

BMR315 [314.5cm³/rev.]

Pressure (Bar)

Flow (L/min)	30	50	65	80	90	130 (Max.Cont.)	135 (Max.Int.)
10	135	215	279	343	383	515	550
	31	29	28	27	27	24	22
20	133	216	289	349	380	508	552
	62	61	60	58	57	52	50
30	125	205	275	341	375	494	543
	95	92	91	90	88	81	79
40	113	195	267	335	367	485	526
	123	121	120	118	117	106	104
50	92	170	253	321	352	474	511
	155	154	152	149	147	137	133
60	80	160	231	305	334	458	492
	190	187	193	179	176	163	157
Max. Cont. 70	57	136	215	285	320	444	480
	222	220	217	212	208	192	185
Max. Int. 75	55	124	205	269	308	427	469
	235	234	231	227	225	408	201

Torque (Nm) 205
Speed (rpm) 231

Cont
Int.

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PERFORMANCE

BMR375 [370cm³/rev.]

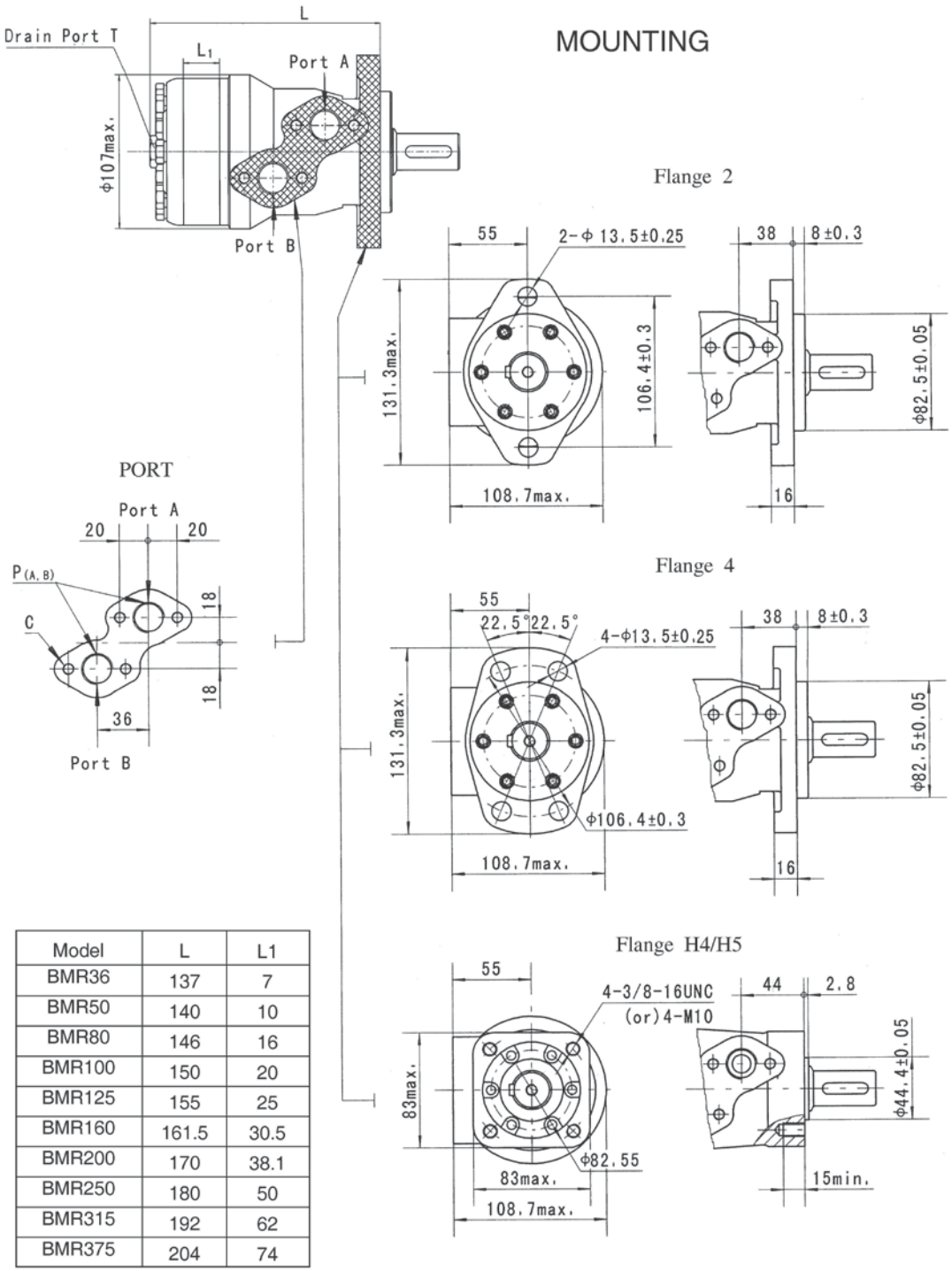
Pressure (Bar)

Flow (L/min)	30	50	65	80	90	130	135
					Max.Cont.		Max.Int.
10	160	270	340	420	470	550	610
	26	25	24	22	21	19	17
20	159	260	340	410	470	540	605
	53	52	51	49	47	42	37
30	150	255	330	400	450	530	600
	79	78	77	75	73	67	60
40	135	240	310	375	430	520	590
	106	105	104	102	99	93	85
50	120	230	295	360	420	505	570
	134	132	131	129	126	120	110
60	98	210	275	340	390	490	550
	159	158	157	155	153	147	135
Max. 70	75	175	250	320	370	465	530
Cont.	187	186	185	183	180	175	160
Max. 75	65	160	230	310	360	450	515
Int.	200	199	198	195	192	187	178

Cont
Int.

Torque (Nm) 230
Speed (rpm) 198

BMR DIMENSIONS AND MOUNTING DATA



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 / 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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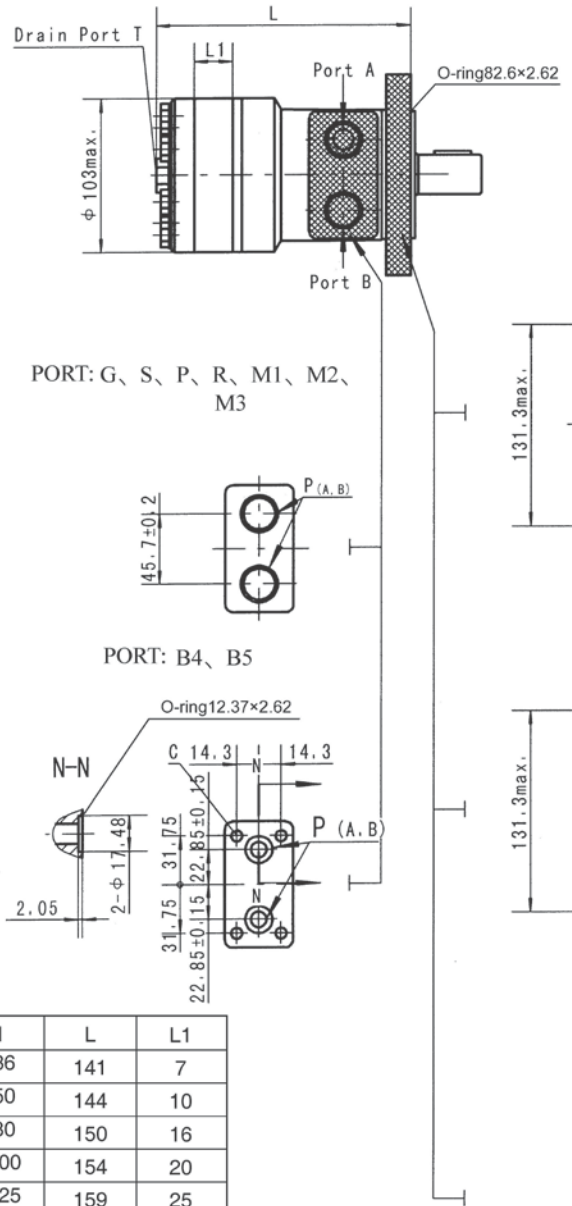
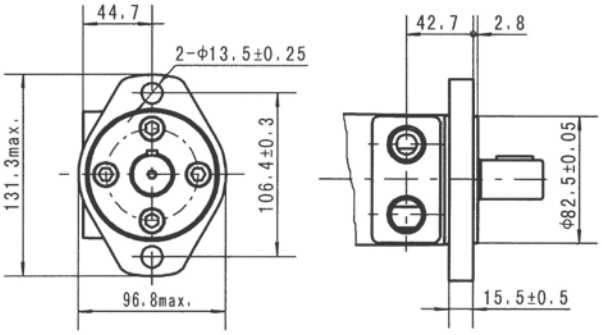
BMRS DIMENSIONS AND MOUNTING DATA

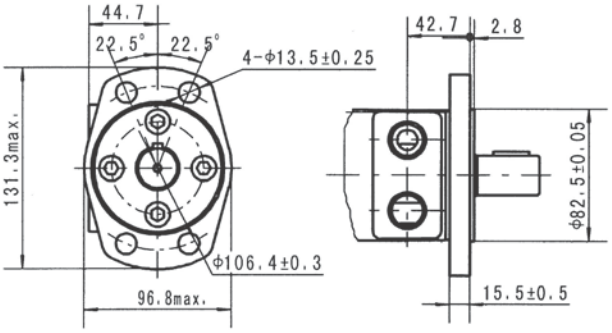
MOUNTING



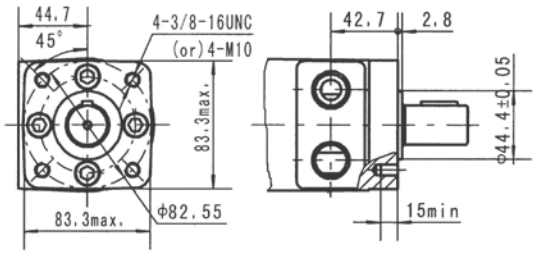
Flange H2



Flange H6



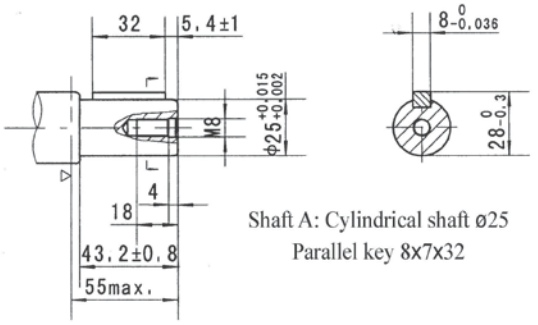
Flange H4/H5



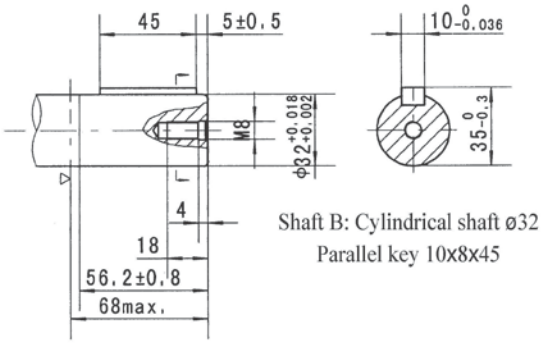
Model	L	L1
BMRS36	141	7
BMRS50	144	10
BMRS80	150	16
BMRS100	154	20
BMRS125	159	25
BMRS160	165.5	30.5
BMRS200	174	38.1
BMRS250	184	50
BMRS315	196	62
BMRS375	208	74

Code / Mounting	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)

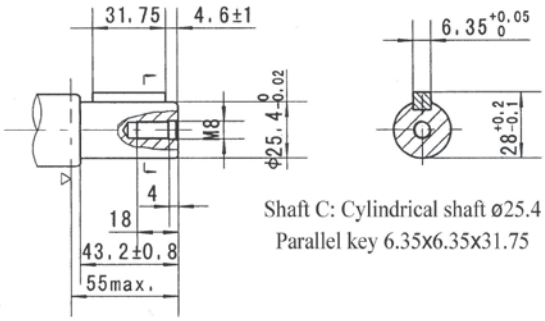
BMR SHAFT EXTENSIONS DIMENSIONS DATA



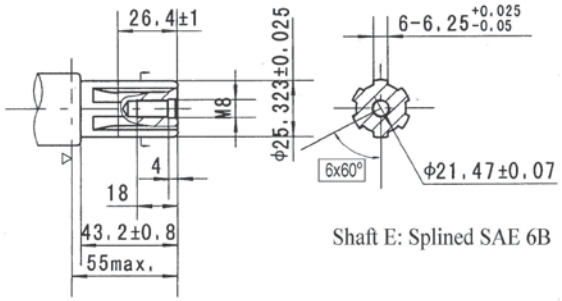
Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32



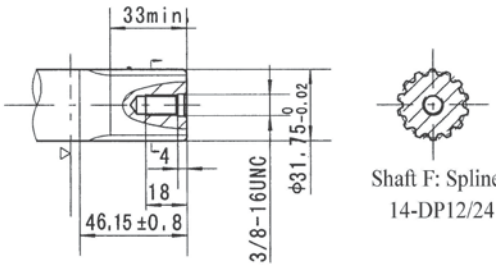
Shaft B: Cylindrical shaft ø32
Parallel key 10x8x45



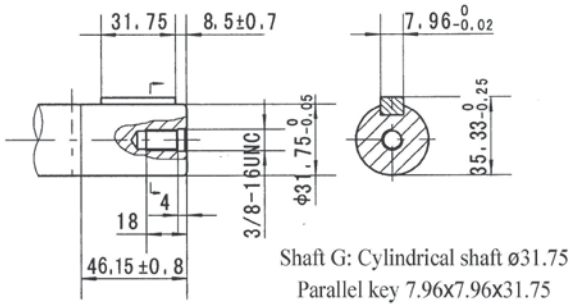
Shaft C: Cylindrical shaft ø25.4
Parallel key 6.35x6.35x31.75



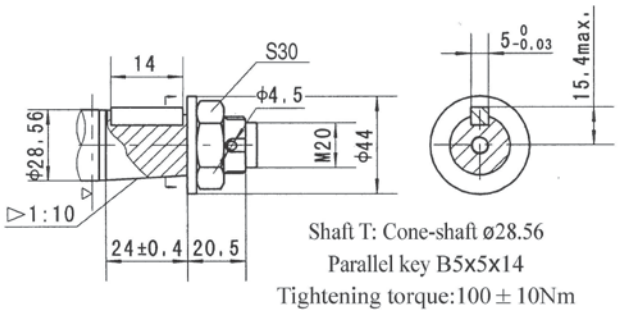
Shaft E: Splined SAE 6B



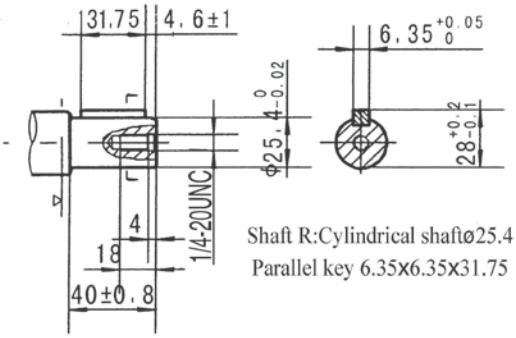
Shaft F: Splined
14-DP12/24



Shaft G: Cylindrical shaft ø31.75
Parallel key 7.96x7.96x31.75



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

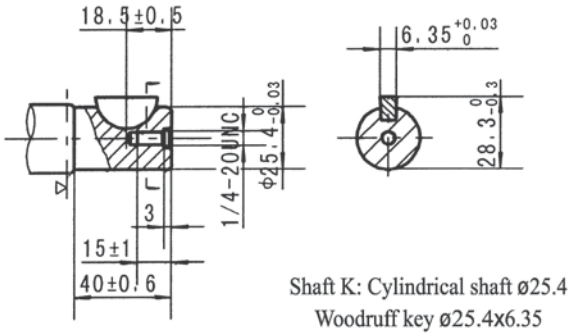


Shaft R:Cylindrical shaftø25.4
Parallel key 6.35x6.35x31.75

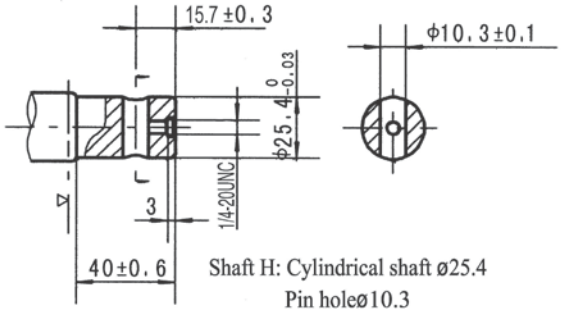
▷ Motor Mounting Surface

REN-TEK

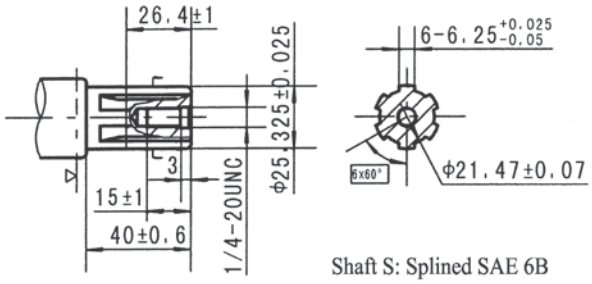
BMRS SHAFT EXTENSIONS DIMENSIONS DATA



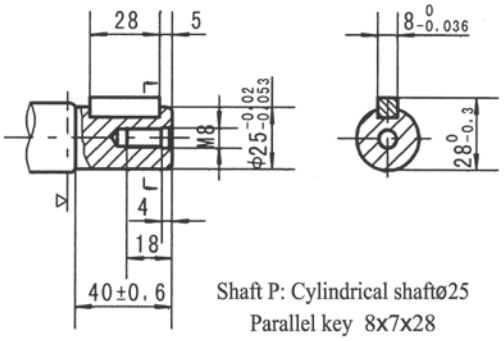
Shaft K: Cylindrical shaft ø25.4
Woodruff key ø25.4x6.35



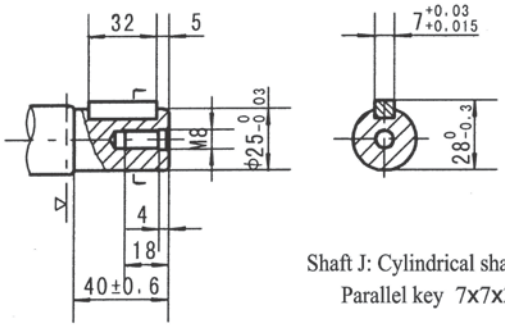
Shaft H: Cylindrical shaft ø25.4
Pin holeø10.3



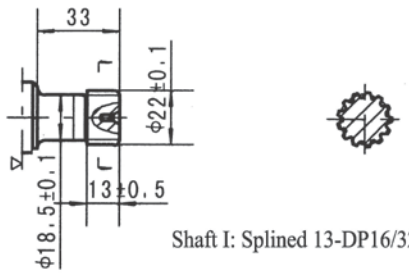
Shaft S: Splined SAE 6B



Shaft P: Cylindrical shaftø25
Parallel key 8x7x28



Shaft J: Cylindrical shaft ø25
Parallel key 7x7x32

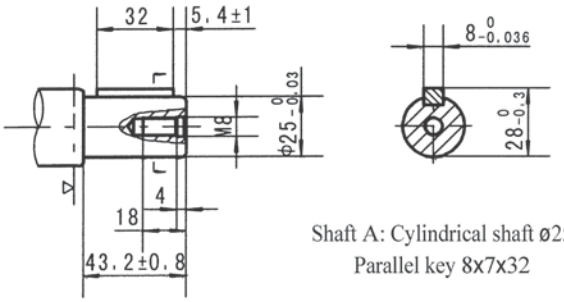


Shaft I: Splined 13-DP16/32

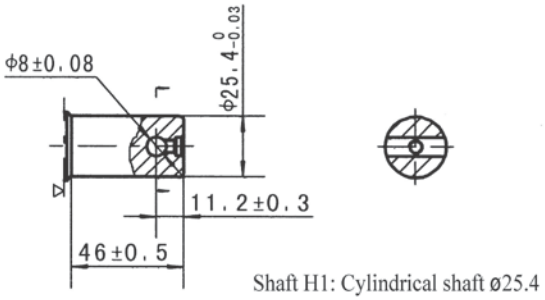
▷ Motor Mounting Surface

REN-TEK

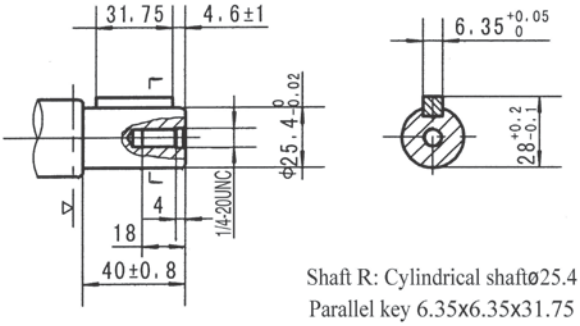
BMRS SHAFT EXTENSIONS DIMENSIONS DATA



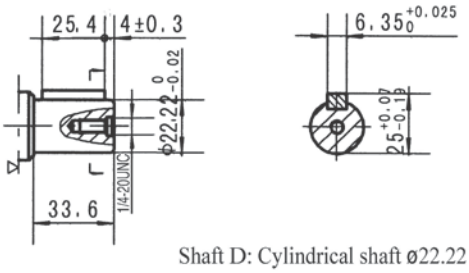
Shaft A: Cylindrical shaft ø25
Parallel key 8x7x32



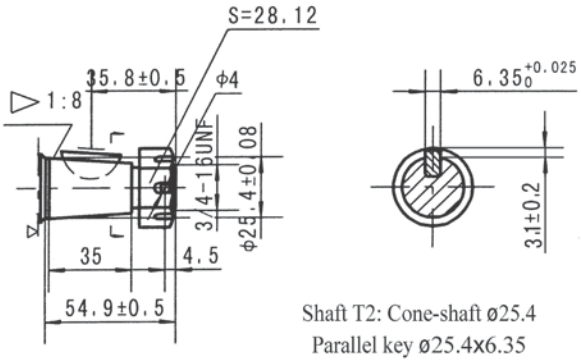
Shaft H1: Cylindrical shaft ø25.4
Pin hole ø8



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



Shaft D: Cylindrical shaft ø22.22
Parallel key 6.35x6.35x25.4

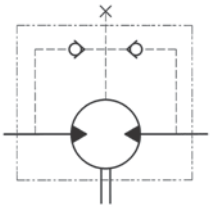


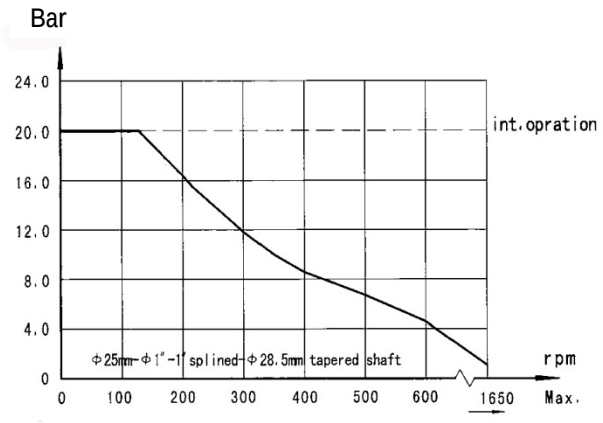
Shaft T2: Cone-shaft ø25.4
Parallel key ø25.4x6.35
Tightening torque:200 ± 10Nm

▷ Motor Mounting Surface

BMR, BMRS SERIES HYDRAULIC MOTOR

PERMISSIBLE SHAFT SEAL PRESSURE

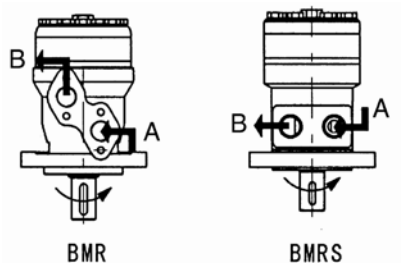




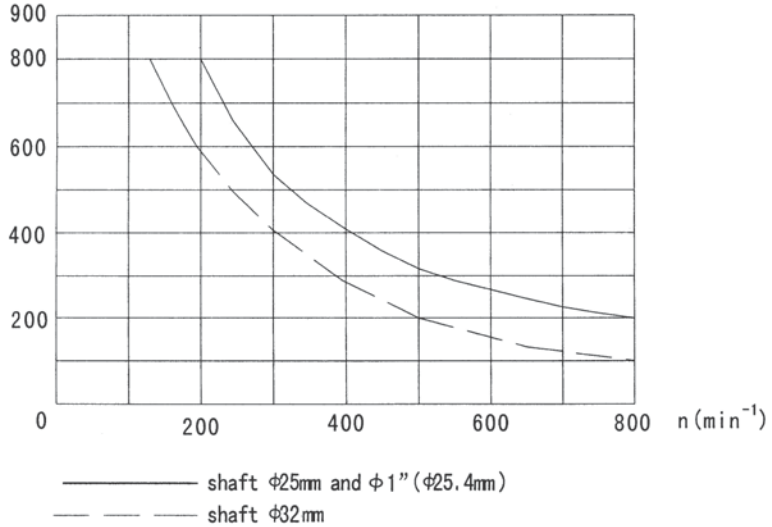
In applications without drain line, the shaft seal pressure is equal to the pressure in the return line.
When applications use the drain line, the pressure behind the output shaft seal equals the pressure in drain line.

DIRECTION OF SHAFT ROTATION

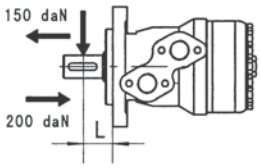
When facing shaft end of motor, shaft to rotate:
Clockwise when Port “A” is pressurised
Counter-clockwise Port “B” is pressurised



STATUS OF THE SHAFT’S RADIAL FORCE



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



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

REN-TEK

ORDER INFORMATION

1	2		3		4		5		6		7		8
Code	Disp.		Flange		Output Shaft		Port & Drain Port		Rotation Direction		Paint		Unusual Function
BMR	36	2	2-∅13.5 Rhomb-Flange, Pilot ∅82.5x8	A	Shaft ∅25, Parallel Key 8x7x32	D	G1/2 Manifold Mount 4xM8, G1/4	Omit	Standard	00	No Paint	Omit	Standard
	50	4	4-∅13.5 Rhomb-Flange, Pilot ∅82.5x8	B	Shaft ∅32, Parallel Key 10x8x45	M	M22x1.5 Manifold Mount 4xM8, M14x1.5	R	Opposite	Omit	Blue	N	Large Radial Force
	80	H4	4-3/8-16 Square-Flange, Pilot ∅44.4x2.8	C	Shaft ∅25.4, Parallel Key 6.35x6.35x31.75	S	7/8-14 O-Ring Manifold 4-5/16-18UNC, 7/16-20UNF			B	Black	AX	Large Axial Force
	100	H5	4-M10 Square-Flange, Pilot ∅44.4x2.8	E	Shaft ∅25, Splined Tooth SEA 6B	P	1/2-14 NPFT Manifold 4-5/16-18UNC, 7/16-20UNF			S	Silver Grey	O	No Case Drain
	125			R	Short shaft ∅25.4, Parallel Key 6.35x6.35x31.75	R	PT(Rc)1/2 Manifold 4-M8,PT(Rc)1/4					F	Free Running
	160			F	Shaft ∅31.75, Splined Tooth 14-DP12/24							LS	Low Speed
	200			FD	Long Shaft ∅31.75, Splined Tooth 14-DP12/24								
	250			G	Shaft ∅31.75, Parallel Key 7.96x7.96x31.75								
	315			T	Cone Shaft ∅28.56, Parallel Key B5x5x14								
	400			T3	Cone Shaft ∅31.75, Parallel Key 7.96x7.96x25.4								

1	2		3		4		5		6		7		8
Code	Disp.		Flange		Output Shaft		Port & Drain Port		Rotation Direction		Paint		Unusual Function
BMRS	36	H2	2-∅13.5 Rhomb-Flange, Pilot ∅82.5x2.8	K	Shaft ∅25.4, Woodruff Key ∅25.4x6.35	D	G1/2 Manifold Mount 4-M8, G1/4	Omit	Standard	00	No Paint	Omit	Standard
	50	H6	4-∅13.5 Rhomb-Flange, Pilot ∅82.5x2.8	S	Sub-Shaft ∅25.4, Splined Tooth SAE 6B	M	M22x1.5 Manifold Mount 4-M8,M14x1.5	R	Opposite	Omit	Blue	N	Large Radial Force
	80	H4	4-3/8-16 Square-Flange, Pilot ∅44.4x2.8	A	Shaft ∅25, Parallel Key 6.35x6.35x31.75	S	7/8-14 O-Ring Manifold 4-5/16-18UNC, 7/16-20UNF			B	Black	AX	Large Axial Force
	100	H5	4-M10 Square-Flange, Pilot ∅44.4x2.8	R	Shaft ∅25.4, Splined Tooth SAE 6B	P	1/2-14 NPTF Manifold 4-5/16-16-18UNC, 7/16-20UNF			S	Silver Grey	O	No Case Drain
	125			H	Short Shaft ∅25.4, Parallel Key 6.35x6.35x31.75	R	PT(Rc)1/2 Manifold 4-M8, PT(Rc)1/4					F	Free Running
	160			H1	Shaft ∅31.75, Splined Tooth 14-DP12/24							LS	Low Speed
	200			D	Long Shaft ∅31.75, Splined Tooth 14-DP12/24								
	250			I	Shaft ∅31.75, Parallel Key 7.96x7.96x31.75								
	315			T2	Cone Shaft ∅28.56, Parallel Key B5x5x14								
	375			P									
				J									

REN-TEK

BMH SERIES HYDRAULIC MOTOR

BMH Series motors are medium speed, high torque motors designed on an internal gear design consisting of a rotor and stator. These motors are suitable for long operating periods at moderate pressures.

Characteristic Features:

- Advanced manufacturing design of the Geroler gear set, which provide high starting torque, high efficiency and long life
- Motors have high pressure shaft seals which can be used in Parallel or Series
- Smooth running over the entire speed range

Main Specifications

Type		BMH				
		200	250	315	400	500
Geometric Displacement (cm^3/rev.)		203.2	255.9	316.1	406.4	489.2
Max. Speed (rpm)	Cont.	366	290	236	183	155
	Int.	439	348	282	220	166
Max. Torque (Nm)	Cont.	510	621	740	850	830
	Int.	579	702	827	990	1040
	Peak	651	790	930	1092	1170
Max. Output (kW)	Cont.	16	16	14	12.5	11
	Int.	18.5	18.5	15.5	15	14
Max. Pressure Drop (Bar)	Cont.	175	175	175	155	125
	Int.	200	200	200	190	160
	Peak	225	225	225	210	180
Max. Flow (L/min)	Cont.	75	75	75	75	75
	Int.	90	90	90	90	90
Weight (kg)		10.5	11	11.5	12.3	13

Type		Max. Inlet Pressure	Max. Return Pressure with Drain Line
BMH 200-500 (Bar)	Cont.	175	175
	Int.	200	200
	Peak	225	225

- 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 seconds per minute
- Technical data BMH with 35mm cylindrical, 1 ¼ in splined and 35mm tapered shaft

REN-TEK

PERFORMANCE DATA

BMH200 [203.2cm³/rev.]

Flow (L/min) \ Pressure (Bar)	35	70	105	140	175	200
5	98	194	284			
	25	25	22			
10	101	204	301	391	482	
	43	41	36	29	14	
20	99	201	304	402	509	576
	100	97	93	85	69	56
30	97	197	300	402	510	579
	145	143	139	130	114	101
40	90	190	292	399	507	578
	200	200	200	188	168	153
50	82	183	284	392	500	571
	248	246	244	235	213	199
60	73	174	274	384	493	563
	292	290	287	279	260	244
70	63	163	264	374	481	554
	352	350	349	338	318	301
Max. Cont. 75	59	157	259	366	475	547
	366	365	363	355	335	319
80	53	150	253	358	466	538
	381	381	380	371	352	338
Max. Int. 90	39	140	241	348	456	526
	443	437	434	426	407	392

Max.Cont Max.Int.

BMH250 [255.9cm³/rev.]

Flow (L/min) \ Pressure (Bar)	35	70	90	120	145	175	200
5	121	246	318	398			
	19	19	18	14			
10	130	258	331	425	515	595	
	34	33	31	29	23	12	
20	130	258	332	432	520	621	702
	78	77	76	73	65	53	42
30	122	251	327	429	520	621	700
	115	113	111	105	96	84	75
40	115	240	323	422	513	616	698
	157	157	156	150	139	127	114
50	105	232	314	411	505	606	687
	196	195	192	185	173	159	147
60	94	220	302	401	496	596	676
	232	230	226	218	206	192	180
70	81.4	209	288	389	484	582	666
	274	274	274	266	252	238	222
Max. Cont. 75	72	203	280	381	475	574	659
	290	289	287	279	266	251	236
80	66	194	273	371	467	566	651
	303	302	298	290	279	264	249
Max. Int. 90	49	178	256	355	453	552	634
	348	347	345	337	325	309	292

Max. Cont. Max.Int.

REN-TEK

PERFORMANCE DATA

BMH315 [316.1cm³/rev.]

Flow (L/min)	Pressure (Bar) 35	75	100	135	155 Max.Cont	175	200 Max.Int.
5	155 16	325 13					
10	163 27	342 24	454 18	556 14			
20	169 63	349 61	469 55	582 48	664 40	733 32	809 19
30	165 93	344 89	470 82	580 77	669 67	740 59	824 46
40	154 126	337 126	465 119	577 111	663 99	737 88	827 73
50	141 159	325 155	455 148	568 139	656 126	728 115	824 98
60	121 187	312 186	440 179	555 169	643 154	715 143	812 124
70	103 222	298 222	425 215	541 205	631 187	703 176	800 157
Max. Cont. 75	94 236	287 233	417 224	529 215	623 196	696 184	792 166
80	82 246	277 244	406 236	518 228	611 210	688 197	784 174
Max. Int. 90	62 282	256 280	386 275	496 266	593 248	669 234	767 209

Torque (Nm) 593
Speed (rpm) 248

Cont
Int.

BMH400 [406.4cm³/rev.]

Flow (L/min)	Pressure (Bar) 35	60	105	125 Max. Cont.	155	190 Max.Int.
5	196 13	348 13	516 10			
10	205 22	363 21	546 21	702 17	859 11	
20	209 50	366 49	543 46	708 41	874 36	988 31
30	201 73	357 72	542 70	706 63	864 56	984 51
40	195 99	346 98	532 96	701 86	858 77	973 71
50	173 123	332 122	518 118	687 107	848 97	958 90
60	154 146	319 144	501 141	688 128	833 115	944 106
70	138 174	305 173	480 169	649 156	814 141	925 130
Max. Cont. 75	128 183	294 181	466 177	637 163	802 149	911 138
80	113 192	277 191	451 188	621 174	786 158	899 144
Max. Int. 90	90 220	256 220	433 215	595 202	767 183	881 165

REN-TEK

PERFORMANCE DATA

BMH500 [500cm³/rev.]

Pressure (Bar)

Flow (L/min)	25	50	85	100	125	160
					Max.Cont	Max.Int.
5	165 11	317 11	516 8			
10	178 20	335 19	555 17	669 15	791 13	969 9
20	177 42	331 42	559 41	673 38	799 36	988 29
30	172 64	320 63	553 61	663 57	792 53	983 47
40	163 85	309 85	541 83	654 79	783 75	971 67
50	146 103	296 103	523 103	635 97	768 93	954 85
60	121 124	275 124	502 123	614 117	747 113	934 103
70	97 148	256 148	482 148	597 140	729 134	917 122
Max. Cont. 75	79 155	240 155	469 155	582 152	714 144	902 130
80	60 166	226 166	453 166	570 159	701 153	884 139
Max. Int. 90	34 166	201 165	421 164	550 157	673 156	869 155

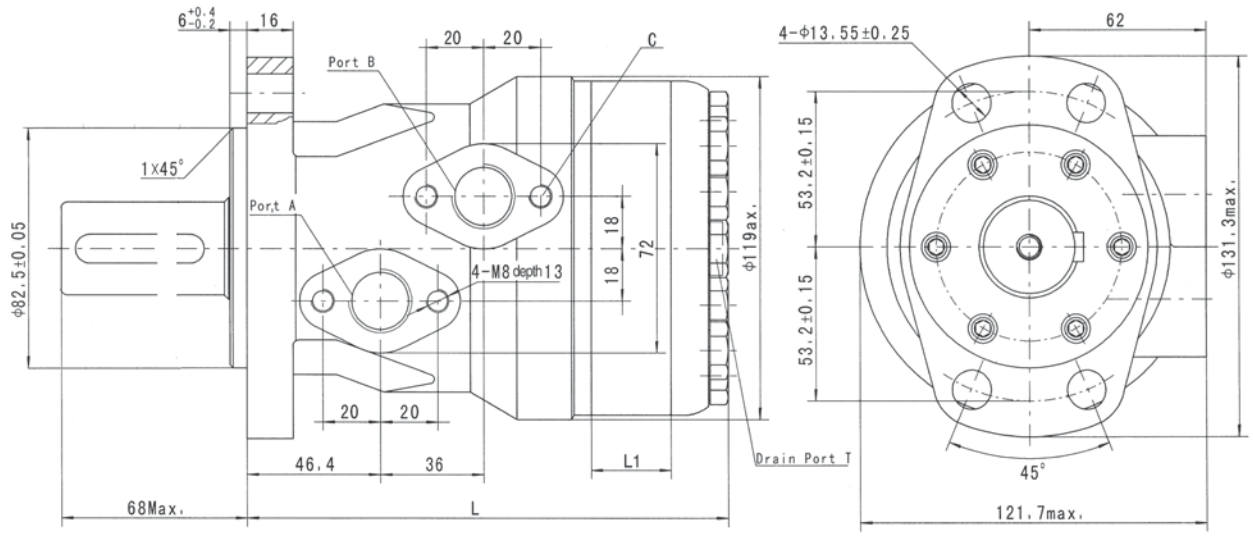
Torque (Nm) 673
Speed (rpm) 156

Cont
Int.

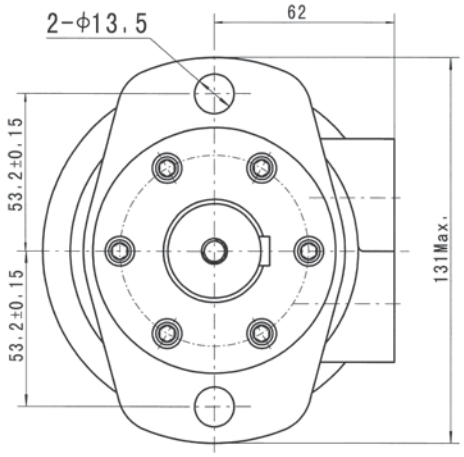
REN-TEK

BMH DIMENSIONS AND MOUNTING DATA

Flange 4



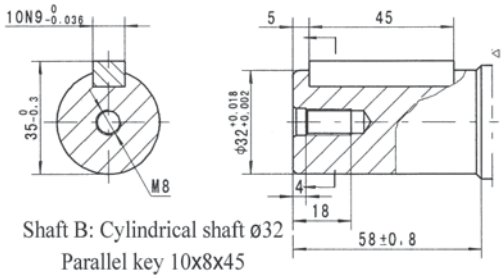
Flange 2



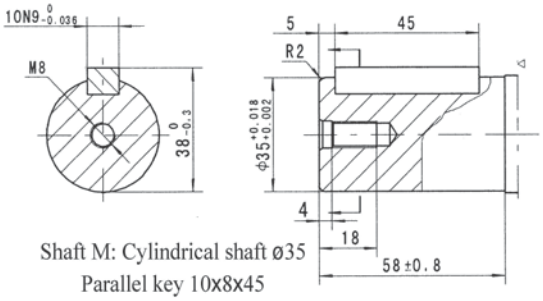
Model	L	L1
BMH-160	162	21
BMH-200	168	27
BMH-250	175	34
BMH-315	184	42
BMH-400	195	54
BMH-500	206	65

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 (15)	1/2-14NPTF (15)	PT(RC)1/2 (15)
C	4-M8 (13)	4-M8 (13)	4-M8 (13)	4-M8 (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 1/4

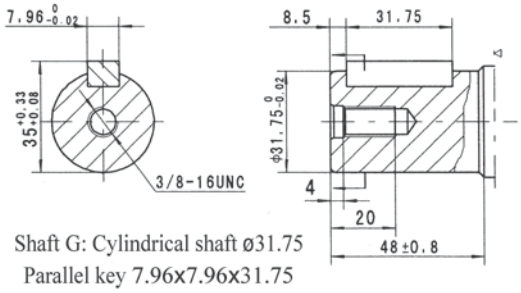
BMH SHAFT EXTENSIONS DIMENSIONS DATA



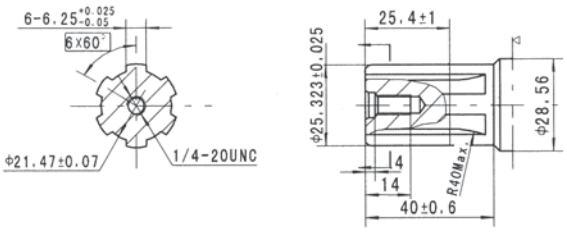
Shaft B: Cylindrical shaft ø32
Parallel key 10x8x45



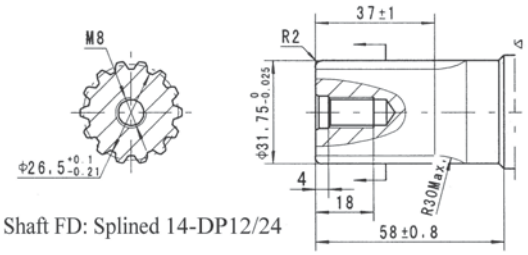
Shaft M: Cylindrical shaft ø35
Parallel key 10x8x45



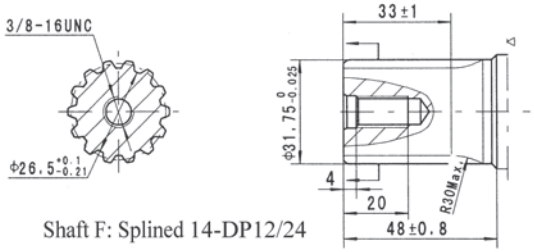
Shaft G: Cylindrical shaft ø31.75
Parallel key 7.96x7.96x31.75



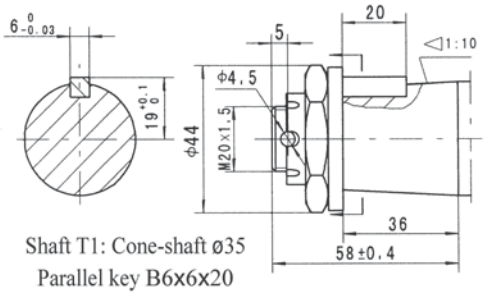
Shaft S: Splined SAE 6B



Shaft FD: Splined 14-DP12/24



Shaft F: Splined 14-DP12/24



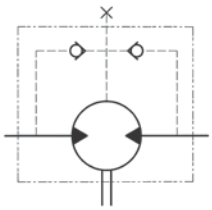
Shaft T1: Cone-shaft ø35
Parallel key B6x6x20
Tightening torque:200 ± 10Nxm

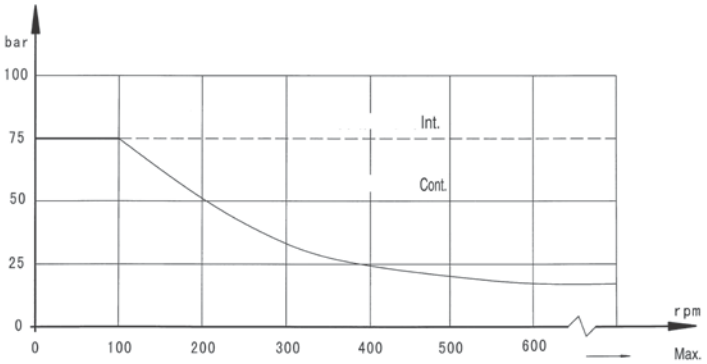
REN-TEK

BMH SERIES HYDRAULIC MOTOR

PERMISSIBLE SHAFT SEAL PRESSURE

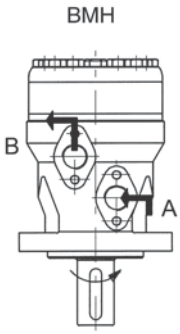
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line.
When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.





DIRECTION OF SHAFT ROTATION: STANDARD

When facing shaft end of motor, shaft to rotate:
Clockwise when Port “A” is pressurised
Counter-clockwise Port “B” is pressurised

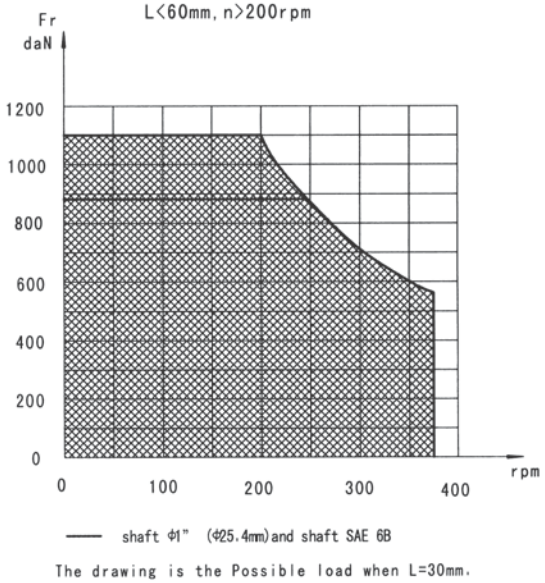


STATUS OF THE SHAFT’S RADIAL FORCE

Status of the shaft's radial force

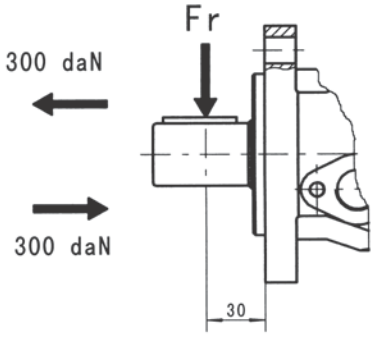
$$F_r = \frac{1100}{n} \times \frac{25000}{103.5+L} \text{ daN}$$

L<60mm, n>200rpm



shaft φ1" (φ25.4mm) and shaft SAE 6B

The drawing is the Possible load when L=30mm.



F_r =Radial Force (daN)
L =Distance (mm)
n =Speed (rpm)

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ORDER INFORMATION

1	2		3		4		5		6		7		8
Code	Disp.		Flange		Output Shaft		Port & Drain Port		Rotation Direction		Paint		Unusual Function
BMH	160 200 250 315 400 500	2 4	2-∅13.5 Rhomb-Flange, Pilot ∅82.5x8 4-∅13.5 Rhomb-Flange, Pilot ∅82.5x8	B M F FD G T1 S	Shaft ∅32, Parallel Key 10x8x45 Shaft ∅35, Parallel Key 10x8x45 Shaft ∅31.75, Splined Key 14-DP12/24 Long Shaft ∅31.75, Splined Key 14-DP12/24 Shaft ∅32, Parallel Key 7.96x7.96x31.75 Cone Shaft ∅35, Parallel Key B6x6x20 Shaft ∅25.4, Parallel Key SAE 6B	D M S P R	G1/2 Manifold Mount 4xM8, G1/4 M22x1.5 Manifold Mount 4xM8, M14x1.5 7/8-14 O-Ring Manifold Mount 4xM8, 7/16-20UNF 1/2-14 NPFT Manifold Mount 4xM8, 7/16-20UNF PT(Rc)1/2 Manifold Mount 4-M8,PT(Rc)1/4	Omit R	Standard Opposite	00 Omit B S	No Paint Blue Black Silver Grey	Omit O F LS	Standard No Drain Free Running Low Speed

REN-TEK

BMJ SERIES HYDRAULIC MOTOR

BMJ series motors have an advanced Geroller gear set, designed to accommodate high speed flow and pressure. These units have good stability at low speed, keeping high volumetric efficiency.

Features

- Advanced design for the Geroller gear set, allowing low pressure start-up, provides smooth and reliable operation together with high efficiency
- Output shaft fitted with needle roller bearings permitting high axial and radial forces
- Advanced design in flow distribution automatically compensating resulting in high volume efficiency and long life, providing smooth and reliable operation
- Low leakage rate, accurate internal timing. Commutator rotates 6x faster than shaft output speed giving high precision and reduces life-cycle cost, maintaining high volume efficiencies and ability to run smoothly at low speed

Specification

Type		65	80	100	125	160	200	230	250	295	315	375
Geometric Displacement (cm^3/rev)		66.8	81.3	101.6	127	157.2	193.6	226	257	287.8	314.5	370
Max Speed (rpm)	Cont	667	543	439	350	283	229	247	216	196	178	152
	Int	842	689	553	441	355	289	328	287	254	235	199
Max Torque (Nm)	Cont	126	157	191	245	307	382	378	381	393	448	439
	Int	176	215	268	335	422	520	528	543	547	587	613
Max Output (kW)	Cont	8.3	8.8	7.9	8.9	8.9	9	9.9	9.3	8.7	8	7.6
	Int	13.9	14.4	13.5	14.1	15.6	15.7	17.9	16.5	15.6	14.3	14
Max Pressure (Bar)	Cont	140	140	140	140	140	140	120	110	100	100	90
	Int	190	190	190	190	190	190	165	155	145	135	125
	Peak	200	200	200	200	200	200	180	180	170	160	160
Max Flow (L/min)	Cont	45	45	45	45	45	45	57	57	57	57	57
	int	57	57	57	57	57	57	75	75	75	75	75

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 seconds per minute

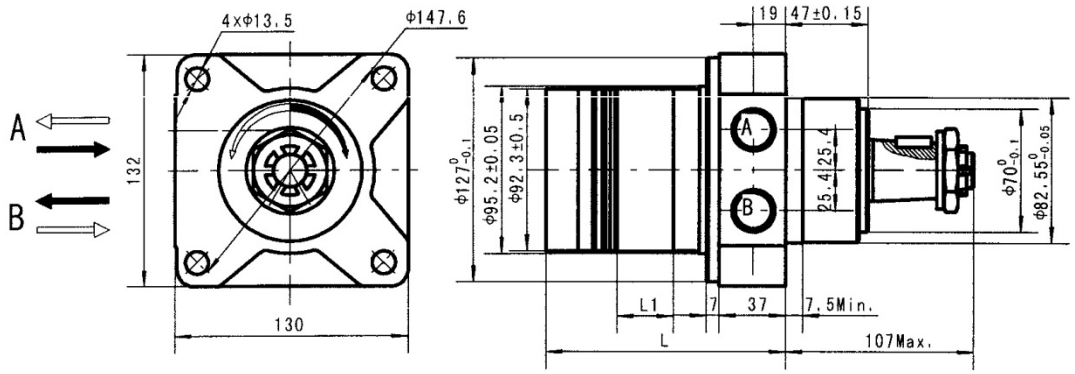
REN-TEK

BMJ SERIES HYDRAULIC MOTOR

Dimensions Mounting Data

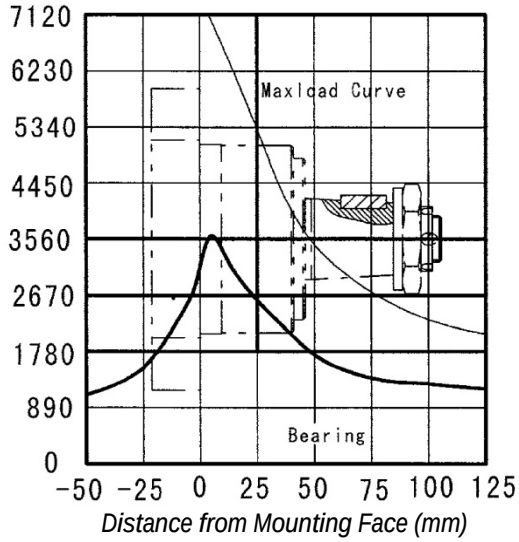
Wheel Mount

Code: WS Ports A, B, 7/8 – 14 O-Ring
Code: WD Ports A, B, G1/2
Code: WM Ports A, B, M22x1.5



Displacement (cm³/rev)	65	80	100	125	160	200	230	250	295	315	375
L1 (mm)	13	16	20	25	30.5	38.1	44	50	56	62	74
L (mm)	115	118	122	127	132.5	140	146	152	158	164	176
Weight (kg)	9	9.1	10.4	10.6	10.9	11.3	11.8	12.2	12.6	12.9	13.4

Side Load (daN)



The bearing curve represents allowable bearing loads for an L_{10} bearing life at $3x10^6$ revolutions

The maximum load curve is defined by bearing static load capacity. This curve should not be exceeded at any time including shock loads

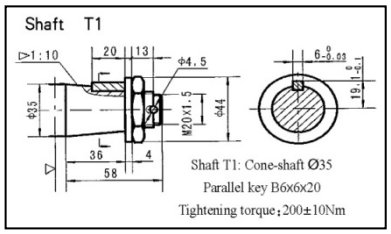
REN-TEK

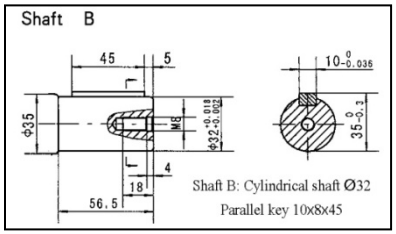
ORDER INFORMATION

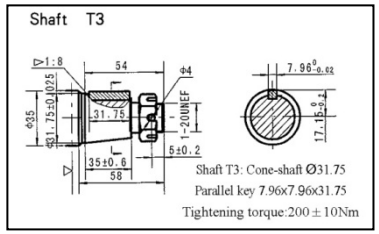
BMJ	1	2	3	4	5	6	7

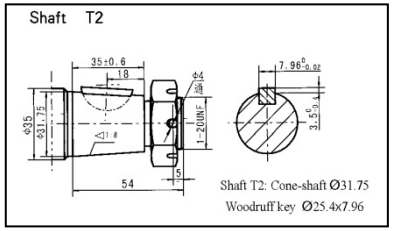
1	2	3		4		5		6		7	
Code	Disp	Flange, Pilot, Ports		Output Shaft		Rotation Direction		Paint		Unusually Function	
Omit	65 80 100 125 160 200 230 250 295 315 375	WS WD WM	4-∅13.5 Wheel-Flange, Pilot ∅82.55x7, Port 7/8-14 O-Ring 4-∅13.5 Wheel-Flange, Pilot ∅82.55x7, Port G1/2 4-∅13.5 Wheel-Flange, Pilot ∅82.55x7, Port M22x1.5	T1 T2 T3 T4 B	Cone-Shaft ∅35, Parallel Key B6x6x20 Cone-Shaft ∅31.75, Woodruff Key ∅25.4x7.96 Cone-Shaft ∅31.75, Parallel Key 7.96x7.96x31.75 Cone-Shaft ∅31.75, Parallel Key 7.96x7.96x25.4 Cylindrical Shaft ∅32, Parallel Key 10x8x45	Omit R	Standard Opposite	00 Omit B S	No Paint Blue Black Silver Grey	Omit	Standard

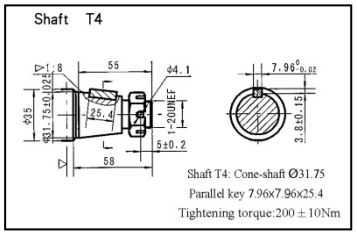
Shaft Extensions for Dimensions Data









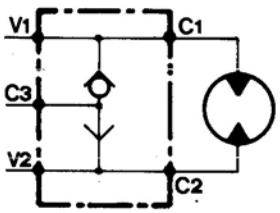


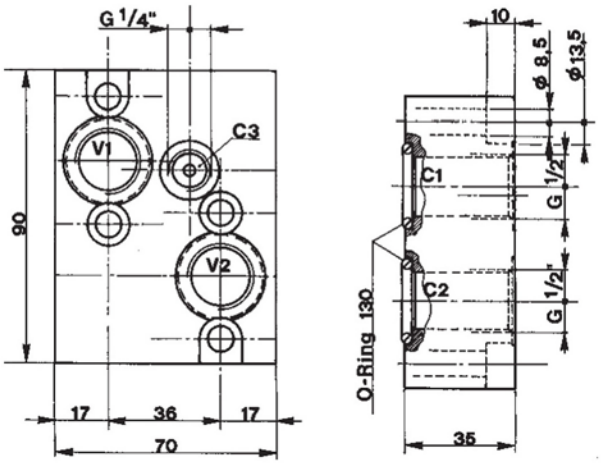
▷ Motor Mounting Surface

REN-TEK

VALVES FOR HYDRAULIC MOTORS

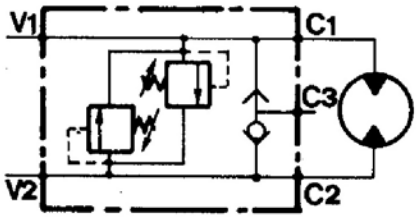
SHUTTLE VALVE

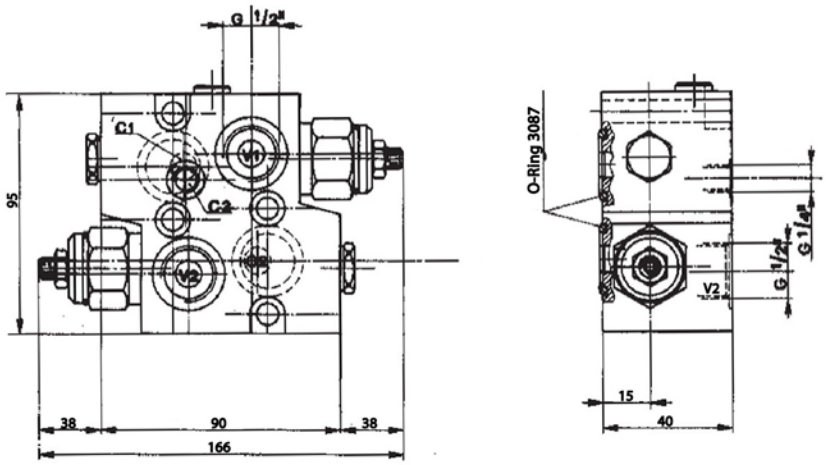




Code: VSEFMDSE
Max Flow 50L/min
Max Pressure 350 Bar
V1 – V2 ½" BSPP
C3 ¼" BSPP

CROSSLINE RELIEF WITH BRAKE RELEASE SHUTTLE VALVE





Code: VS50FMDISE / 1Y04B
50-130 Bar Adjustment

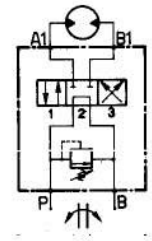
Code: VS50FMDISE / 1Z04B
100-280 Bar Adjustment

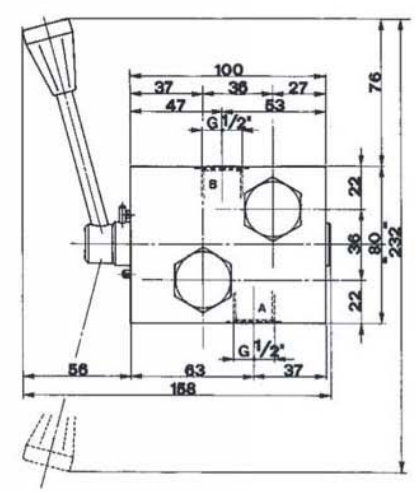
Max Flow 50L/min
Max Pressure 250 Bar
V1 – V2 ½" BSPP
C3 ¼" BSPP

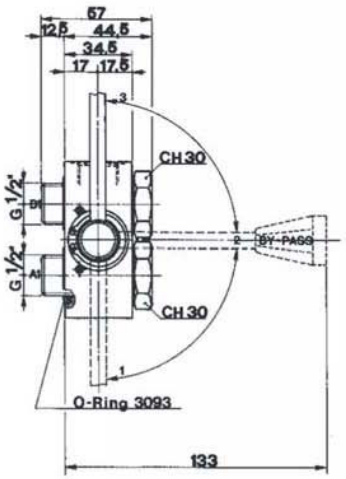
REN-TEK

VALVES FOR HYDRAULIC MOTORS

ROTARY DIRECTIONAL VALVE WITH RELIEF

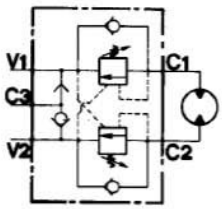


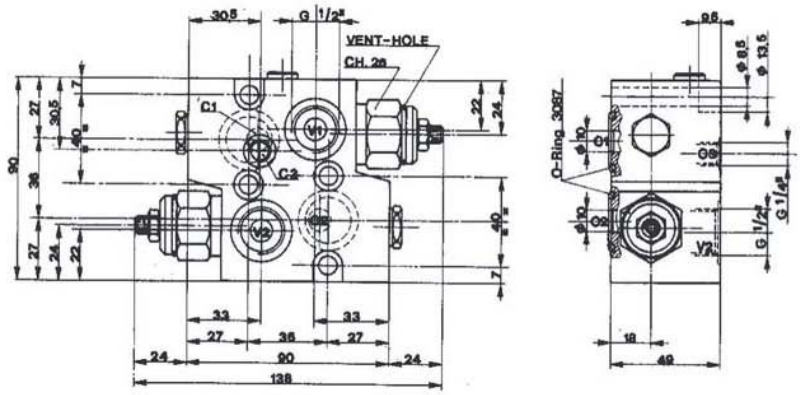




Code: VIB50FMDVS04B
Max Flow 35L/min
Max Pressure 50-130 Bar
V1 – V2 ½" BSPP

DUAL OVERCENTRE VALVE WITH BRAKE RELEASE SHUTTLE VALVE





Code: VB048FMDSECA12AX
Pilot Ratio 7:1
Adjustment 30-120 Bar
Max Flow 50L/min
V1 – V2 ½" BSPP
C3 ¼" BSPP