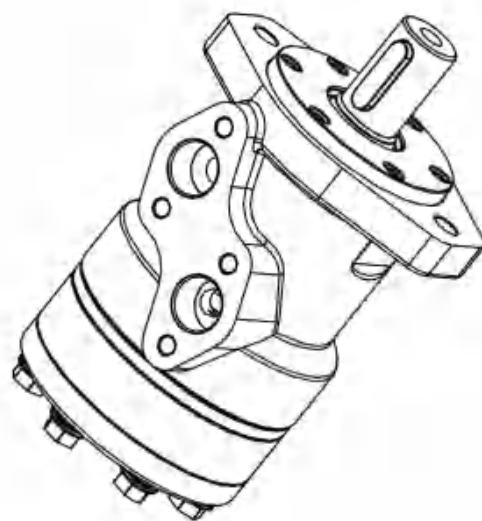

BM2 SERIES ORBIT HYDRAULIC MOTOR



CONTENT

The BM2 series Orbit hydraulic motor is a type of axial flow hydraulic motor.

This series of motors uses a column mounted rotating stator pair and has a construction that can work under high pressure and automatically compensate, making the entire machine highly efficient and long-lasting.



FEATURES

- Adopting advanced stator parameter design, it has low starting pressure, high efficiency, good retention, and smooth operation.
- Adopting high-pressure shaft sealing, it can bear high back pressure and allows for series and parallel use.
- The linkage shaft construction is specially designed, and the motor has a long service life.
- Special flow distribution system parameter design can meet low noise requirements.
- The motor has a compact construction and is easy to install.



MAIN TECHNICAL PARAMETERS

- Rated speed and torque refer to the output value under rated flow and pressure.
- Continuous value refers to the maximum value at which the capacity motor can operate continuously.
- Intermittent value refers to the maximum value at which the capacity motor operates for 6 seconds within 1 minute.
- The peak value refers to the maximum value at which the capacity motor operates for 0.6 seconds within 1 minute.

Model		BM2 BM2H BMRWN 25	BM2 BM2H BMRWN 40	BM2 BM2H BMRWN 50	BM2 BM2H BMRWN 63	BM2 BM2H BMRWN 80	BM2 BM2H BMRWN 100	BM2 BM2H BMRWN 125	BM2 BM2H BMRWN 160	BM2 BM2H BMRWN 200	BM2 BM2H BMRWN 250	BM2 BM2H BMRWN 315	BM2 BM2H BMRWN 400	BM2 BM2H BMRWN 500
Actual displacement (cm ³ /rev)		25	39.4	49	62.7	78.7	97.3	122.7	158	194.6	244	306.3	393.3	489.4
Max. speed (rpm)	Rated	1300	985	790	615	670	542	430	330	265	216	172	134	108
	Continuous	1550	1100	990	780	743	598	476	375	310	238	190	148	119
	Intermittent	1780	1380	1210	947	940	763	605	470	385	304	242	189	152
Max. torque (N.m)	Rated	42	75	94	120	150	186	235	320	330	337	348	433	540
	Continuous	42	75	94	120	190	238	300	380	450	520	531	597	740
	Intermittent	58	91	120	153	220	272	343	430	500	588	665	712	860
	Peak value	71	112	145	186	233	289	365	460	560	660	810	856	960
Max. output power (KW)	Continuous	5.5	8.5	9.5	15	12.5	13	12.5	12.5	11	10	9	7.5	7.5
	Intermittent	7	9.8	11.2	17	15	15	14.5	14	13	12	10	9	9
Max. operating pressure difference (MPa)	Rated	12.5	14	14	14	14	14	14	14	12	11	8.5	8.5	8.5
	Continuous	12.5	14	14	14	17.5	17.5	17.5	17.5	17.5	17.5	13.5	11.5	11.5
	Intermittent	16.5	16.5	17.5	17.5	20	20	20	20	20	20	17.5	15	13
	Peak value	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	21	17.5	15
Max. flow rate (L/min)	Rated	35	40	40	40	55	55	55	55	55	55	55	55	55
	Continuous	40	45	50	50	60	60	60	60	60	60	60	60	60
	Intermittent	45	55	60	60	75	75	75	75	75	55	75	75	75

PERFORMANCE PARAMETER

BM2-25 [25cm³/rev.]

		Pressure(MPa)					Continuous maximum		Intermittent maximum	
		2	3	5	7	9	10	12.5	14.0	16.5
Flow (L/min)	4	7 151	11 144	17 132	25 152	32 102	34 83			
	8	6 300	14 288	17 271	25 252	32 227	35 215	44 193	49 173	57 155
	15	5.5 580	9.5 565	16 547	25 526	31 501	35 470	44 458	50 435	57 395
	20	4 777	9 765	15 746	24 720	30 695	35 665	44 648	50 626	57 593
	30	4 1166	8 1150	14 1123	22 1100	29 1068	32 1040	44 1015	48 1000	55 962
Continuous maximum	35	4 1360	8 1340	14 1310	22 1281	29 1246	32 1212	43 1184	48 1165	55 1122
	40	3.5 1572	8 1555	13 1540	21 1520	28 1500	31 1480	42 1455	47 1417	55 1378
Intermittent maximum	45	3 1771	7 1750	11 1719	20 1685	27 1656	30 1625	41 1584	45 1540	53 1470

BM2-40 [39.4cm³/rev.]

		Pressure(MPa)					Continuous maximum		Intermittent maximum	
		2	3	5	7	9	10	12.5	14.0	16.5
Flow (L/min)	4	11 96	17 91	27 84	40 73	50 65	53 55			
	8	10 190	16 182	27 171	40 160	51 144	55 136	69 122	78 110	91 99
	15	9 393	15 358	25 347	39 333	49 318	56 298	70 290	79 276	90 250
	20	7 493	14 485	24 473	38 457	48 441	55 422	70 411	79 397	90 376
	30	7 740	13 729	23 712	35 697	46 678	51 660	69 644	77 634	87 610
Continuous maximum	40	5.5 998	12 987	21 977	33 965	45 952	49 939	67 924	74 899	86 874
	45	4 1124	11 1110	19 1090	32 1069	44 1050	48 1030	65 1005	72 977	84 932
Intermittent maximum	55		9 1370	16 1350	29 1325	38 1297	44 1267	60 1239	67 1214	79 1187

BM2-50 [49cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5		
Flow (L/min)	5	35 93	45 84	61 76	67 73	77 69	88 46				
	10	36 186	46 178	62 166	69 162	80 153	95 136	108 118	120 97		
	15	35 283	49 277	63 269	73 261	88 250	100 230	109 211	123 185		
	20	34.5 377	47 375	61 365	69 361	83 346	96 330	109 302	126 270		
	30	33 576	44 569	60 561	67 554	80 542	95 531	108 500	126 465		
	40	30 760	41 758	58 753	66 750	79 738	92 724	106 700	122 670		
Continuous maximum	45	29.5 856	40 853	57 849	65 845	78 835	90 815	105 796	121 770		
	50	26 950	37 940	53 925	60 906	73 880	85 852	99 832	114 801		
Intermittent maximum	60	20 1138	33 1124	48 1100	56 1075	69 1056	81 1028	95 1006	109 970		

BM2-63 [62.7cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5		
Flow (L/min)	5	44 84	58 67	76 61	85 61	99 57	113 55				
	10	45 149	59 135	77 133	83 130	97 125	110 120				
	15	44 224	60 220	75 218	81 215	99 213	108 210	128 207			
	20	42 298	55 295	76 292	81 286	93 280	104 276	125 270	140 265		
	30	40 447	53 440	73 334	82 330	91 326	100 320	123 315	135 310		
	40	38 596	52 593	72 585	80 580	85 572	95 568	115 560	130 550		
Continuous maximum	45	35 671	48 665	70 660	77 654	80 650	95 642	110 634	128 624		
	50	31 745	45 740	65 735	73 730	75 725	90 720	105 715	120 710		
Intermittent maximum	60	27 942	42 938	58 933	70 928	90 923	112 916	136 910	158 902		

BM2-80 [78.7cm³/rev.]

		Pressure(MPa)									Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20		
Flow (L/min)	5	50 59	64 56	88 50	108 44	133 38						
	10	54 118	77 113	99 106	108 97	129 86	150 79	173 56				
	20	57 238	78.0 234	102 227	111 216	134 203	155 190	177 178	196 154	225 135		
	30	54 360	75 352	100 340	108 332	131 316	152 302	176 290	195 274	223 250		
	40	48 480	73 470	96 458	105 445	127 430	148 418	172 403	190 388	220 359		
	50	42 604	70 595	93 582	102 570	124 556	147 540	170 521	188 504	218 487		
Continuous maximum	60	37 726	66 715	89 704	98 692	121 678	144 663	166 647	184 622	213 594		
	70	32 845	60 834	83 820	95 802	116 789	140 767	160 754	177 730	208 705		
Intermittent maximum	75	21 910	50 895	78 881	90 867	111 852	135 830	154 806	171 787	200 756		

Torque (N·m) 90
Speed (rpm) 867

BM2-100 [97.3cm³/rev.]

		Pressure(MPa)									Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20		
Flow (L/min)	5	63 47	88 44	114 40	129 36	149 28						
	10	65 97	91 94	119 90	132 85	151 77	179 60	202 44				
	20	62 198	90 194	117 188	130 181	148 173	177 165	200 157	227 146	261 124		
	30	60 300	88 295	114 288	127 279	146 270	176 258	199 248	224 235	257 217		
	40	54 403	84 396	111 382	124 372	145 362	176 348	198 335	222 329	255 311		
	50	46 505	75 500	105 493	117 482	143 470	175 456	195 440	217 424	248 408		
Continuous maximum	60	36 608	67 600	100 587	114 574	137 560	170 548	190 534	210 524	240 501		
	70	30 710	62 702	95 692	112 679	134 658	168 656	188 645	205 635	235 608		
Intermittent maximum	75	22 763	55 755	89 744	106 728	130 714	162 700	183 681	200 665	229 648		

Continuous
Intermittent

BM2-125 [122.7cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20	
Flow (L/min)	5	73 37	106 32	140 26	161 20	183 13					
	10	81 76	114 73	150 62	170 50	195 37	220 26	244 20			
	20	79 158	113 156	147 153	168 149	193 143	222 132	250 121	283 108	320 76	
	30	76 239	112 236	145 232	165 226	191 212	220 208	248 190	281 174	317 142	
	40	69 320	110 318	143 314	162 309	189 303	218 290	247 280	280 261	315 226	
Continuous maximum	50	60 403	101 400	138 396	159 392	188 383	215 373	245 357	277 340	311 303	
	60	50 484	94 480	131 476	154 472	184 464	212 442	241 425	272 413	309 365	
	70	39 565	87 562	125 558	150 553	180 548	207 539	233 527	268 504	302 446	
Intermittent maximum	75	31 607	76 604	121 599	143 591	174 580	200 566	226 551	253 539	289 497	

BM2-160 [158cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20	
Flow (L/min)	5	104 26	146 23	190 20	210 16	245 10					
	10	107 59	150 56	195 50	216 45	250 37	290 30	335 22			
	20	102 121	151 118	198 115	220 113	257 108	298 102	342 97	370 90	420 78	
	30	97 184	146 178	190 173	217 170	256 164	295 155	340 143	368 128	416 103	
	40	89 246	140 241	185 235	210 228	252 220	290 210	335 194	363 177	412 150	
Continuous maximum	50	72 310	128 307	179 300	202 295	244 287	284 278	327 262	358 247	409 210	
	60	60 374	116 367	170 359	198 354	240 346	279 338	321 323	352 306	400 265	
	70	49 437	107 430	164 421	193 415	233 403	271 393	309 381	344 365	390 318	
Intermittent maximum	75	36 472	98 463	152 450	185 441	226 431	265 420	300 405	334 389	379 365	

BM2-200 [194.6cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20	
Flow (L/min)	5	132 24	181 22	238 18	262 13	310 10					
	10	135 49	186 47	240 45	264 43	315 38	356 33	403 24			
	20	131 99	183 97	238 94	260 92	314 88	358 83	404 74	438 64	498 56	
	30	126 149	178 147	233 144	254 141	311 135	355 126	402 113	431 105	486 91	
	40	112 200	169 197	228 194	250 191	307 185	352 174	400 160	426 151	477 127	
Continuous maximum	50	95 252	156 249	221 246	246 243	300 238	350 228	398 212	421 194	470 161	
	60	78 304	145 301	213 298	238 294	289 286	342 276	386 262	412 243	459 218	
	70	67 355	135 353	206 349	228 340	277 329	336 316	375 300	408 288	453 257	
Intermittent maximum	75	58 382	125 379	197 373	220 362	270 350	321 337	360 322	398 312	442 278	

Torque (N·m) 220
Speed (rpm) 362

BBM2-250 [244cm³/rev.]

		Pressure(MPa)								Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5	20	
Flow (L/min)	5	168 18	234 17	293 15	329 12	392 10					
	10	171 38	237 36	298 32	331 29	394 24	447 19	505 11			
	20	168 78	235 76	296 75	327 73	393 68	446 60	500 55	537 52	612 44	
	30	156 118	226 115	293 112	319 110	385 104	440 95	497 87	529 80	598 67	
	40	138 160	215 158	289 156	317 153	381 148	430 137	493 125	525 114	594 94	
Continuous maximum	50	119 200	200 197	278 194	311 181	370 175	424 166	484 155	515 145	477 120	
	60	99 242	185 239	270 236	302 233	357 226	410 213	470 197	495 188	556 161	
	70	85 284	171 280	254 277	290 273	343 262	402 251	461 235	479 217	539 180	
Intermittent maximum	75	60 305	160 302	246 298	277 294	334 285	397 273	456 259	468 245	522 219	

Continuous
Intermittent

BM2-315 [306.3cm³/rev.]

		Pressure(MPa)						Continuous maximum	Intermittent maximum
		5	7	9	10	12	14	16	17.5
Flow (L/min)	5	207 13.5	291 11.5						
	10	210 29	294 28	369 26	407 25	471 22	531 18	600 13	
	20	207 62	292 61	366 59	403 57	468 54	530 51	598 47	637 44
	30	197 94	285 92	362 89	398 87	463 84	523 81	591 75	631 69
	40	189 126	277 124	355 121	395 116	460 110	520 104	587 97	627 88
Continuous maximum	50	170 160	260 156	343 152	379 145	445 136	507 124	576 113	622 104
	60	156 192	237 188	327 183	361 178	430 169	493 157	565 145	606 139
Intermittent maximum	70	138 225	227 221	312 215	345 208	415 197	475 185	542 172	592 164
	75	120 240	204 236	292 230	327 224	402 216	464 207	524 190	561 177

BM2-400 [393.3cm³/rev.]

		Pressure(MPa)						Continuous maximum	Intermittent maximum
		3	4.5	5.5	6.5	8	10	12.5	14
Flow (L/min)	5	158 12	239 10						
	10	162 23	243 22	293 22	347 20	419 18	512 16	631 15	689 12
	20	155 48	239 47	289 46	342 45	414 43	505 40	625 37	680 31
	30	146 74	222 73	282 72	337 71	410 69	498 65	622 61	672 48
	40	130 100	219 98	276 96	330 94	405 92	492 89	611 85	655 68
Continuous maximum	50	108 124	193 122	250 120	311 117	388 114	469 111	601 108	627 93
	60	93 149	172 147	226 145	290 144	373 140	458 134	583 126	619 117
Intermittent maximum	70	93 174	154 173	206 173	266 170	351 168	438 163	563 155	598 144
	75	58 189	129 188	188 187	248 152	330 183	421 179	540 172	583 164

BM2-500 [489.4cm³/rev.]

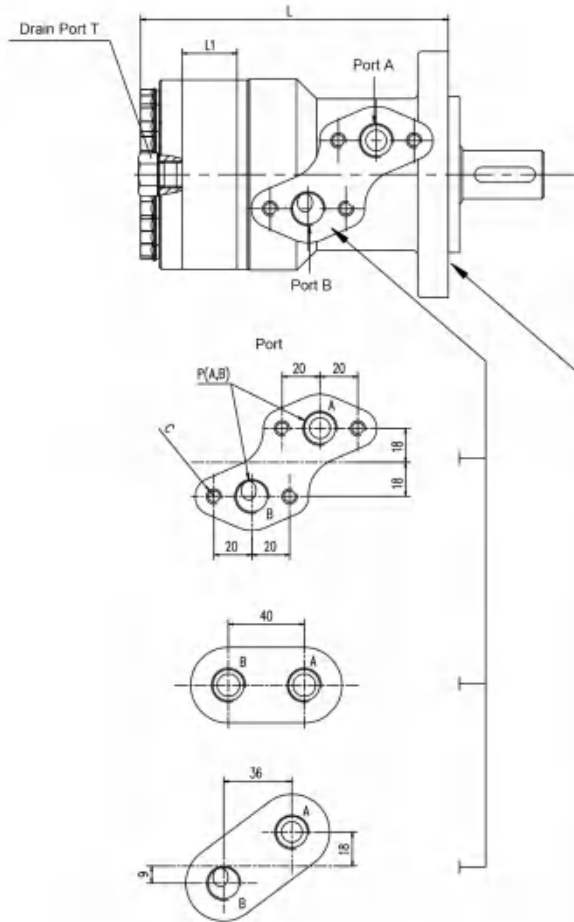
		Pressure(MPa)						Continuous maximum	Intermittent maximum
		3	4.5	6	8	10	12	13	
Flow (L/min)	5	196 9	298 8						
	10	201 19	303 18	399 16	521 15	638 13	754 12	796 9	
	20	192 38	298 37	393 36	515 34	629 32	746 30	786 25	
	30	182 59	275 58	387 57	510 55	619 52	742 49	777 39	
	40	161 80	272 79	379 75	504 74	612 71	730 68	756 54	
Continuous maximum	50	134 99	240 98	357 94	482 92	583 89	718 86	724 74	
	60	115 120	214 118	333 115	464 113	570 107	697 101	715 94	
Intermittent maximum	70	115 140	191 139	305 137	437 135	545 131	672 124	691 115	
	75	72 152	160 151	285 149	410 147	523 144	645 138	673 132	

Continuous
Intermittent

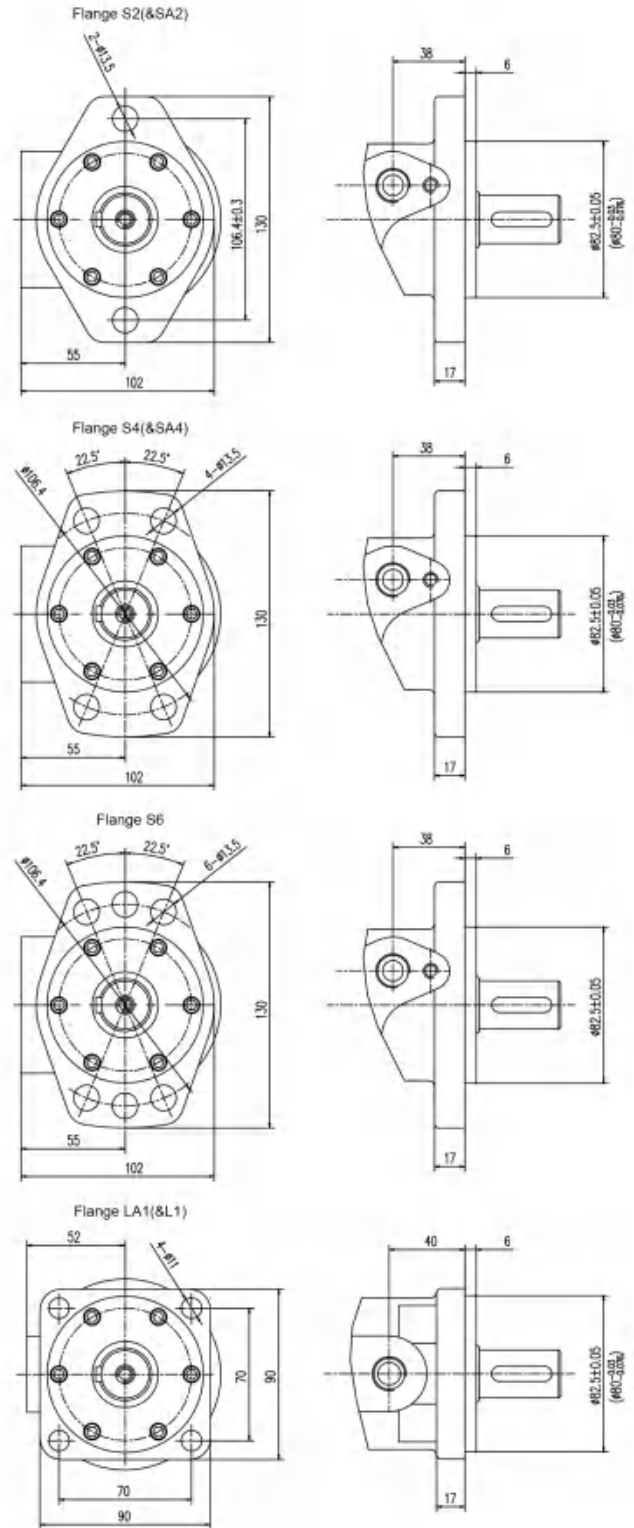
Torque (N•m) 410
Speed (rpm) 147



BM2 INSTALLATION

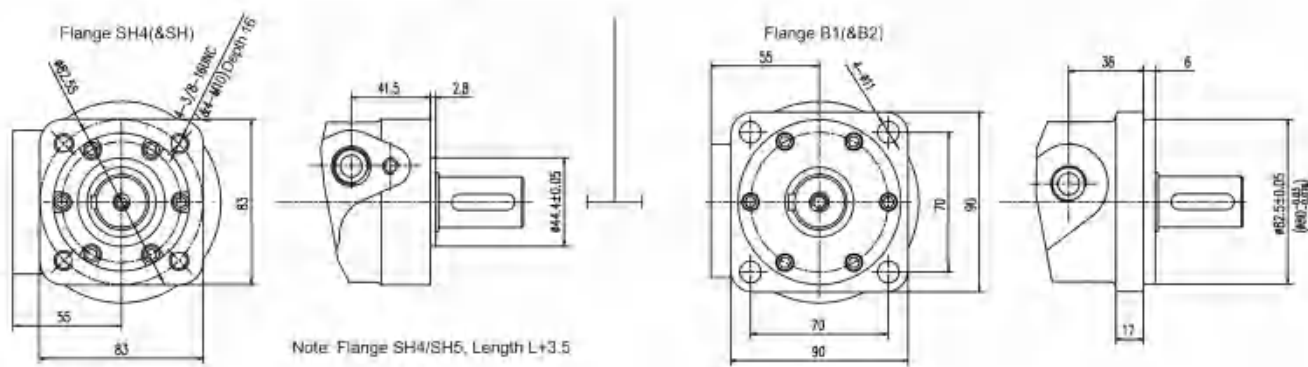


CONNECTION DIMENSION

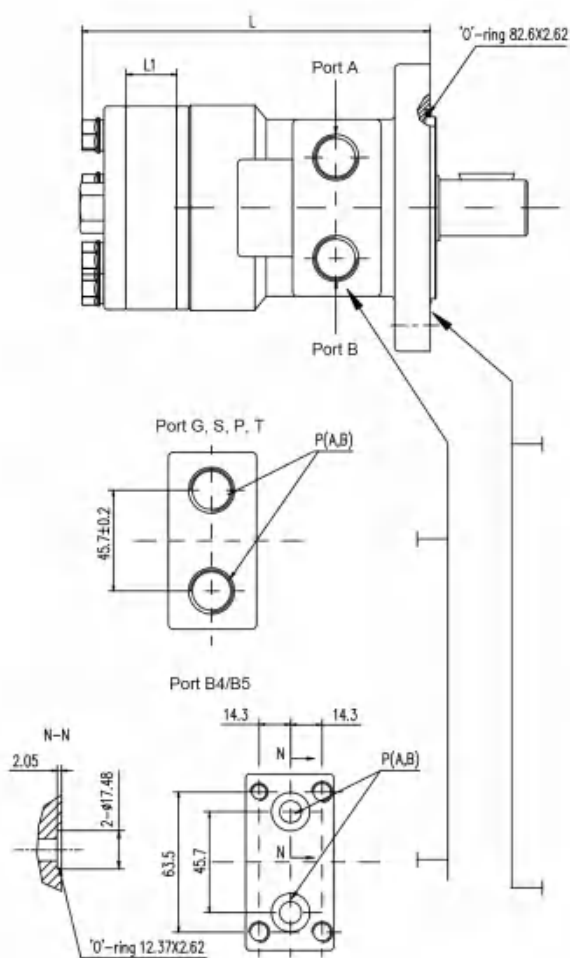


Model	L	L1	Model	L	L1
BM2-25	140.5	7	BM2-125	156	22.5
BM2-40	140.5	7	BM2-160	162.5	29
BM2-50	142.5	9	BM2-200	169	35.5
BM2-63	145	11.5	BM2-250	178	44.5
BM2-80	148	14.5	BM2-315	189.5	56
BM2-100	151.5	18	BM2-400	205.5	72
			BM2-500	223	89.5

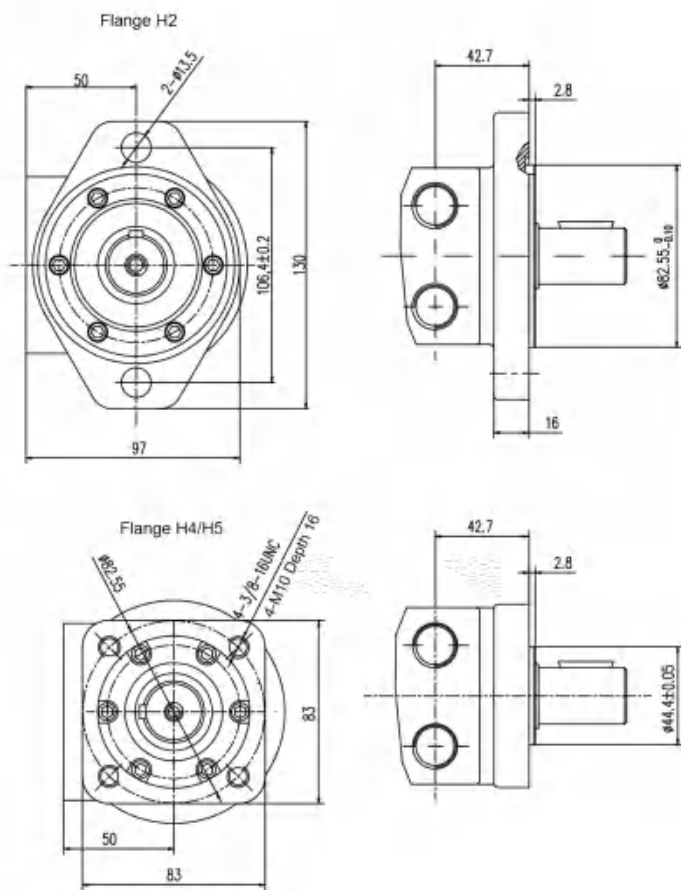
Code	Connection method	P(A/B)	C	T
G (Depth)		G1/2(15)	4-M8(13)	G1/4(12)
M (Depth)		M22X1.5(15)	4-M8(13)	M14X1.5(12)
MA (Depth)		M18X1.5(15)	4-M8(13)	M14X1.5(12)
P (Depth)		1/2-14NPTF(15)	4-5/16-18UNC(13)	7/16-20UNF(12)
R (Depth)		ZG1/2(15)	4-M8(13)	G1/4(12)
S (Depth)		7/8-14UNF'O'-ring(17)	4-5/16-18UMC(13)	7/16-20UNF(12)
F (Depth)		G3/8(15)	4-M8(13)	G1/4(12)



BM2H INSTALLATION



CONNECTION DIMENSION



Model	L	L1
BM2H-25	144	7
BM2H-40	144	7
BM2H-50	146	9
BM2H-63	148.5	11.5
BM2H-80	151.5	14.5
BM2H-100	155	18

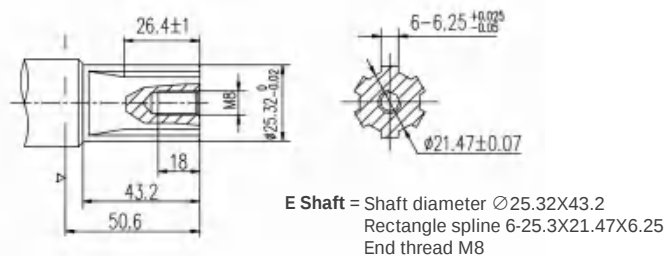
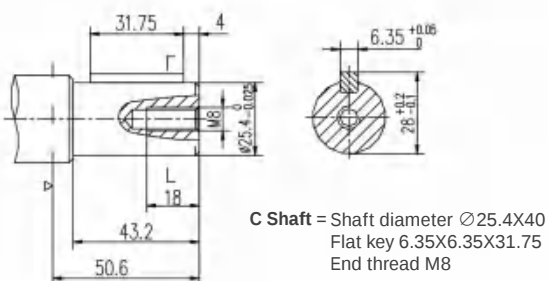
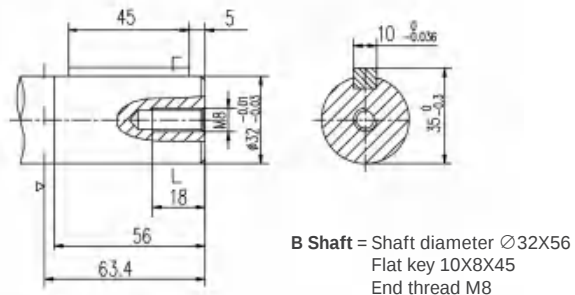
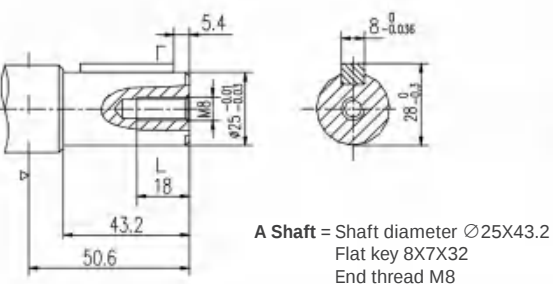
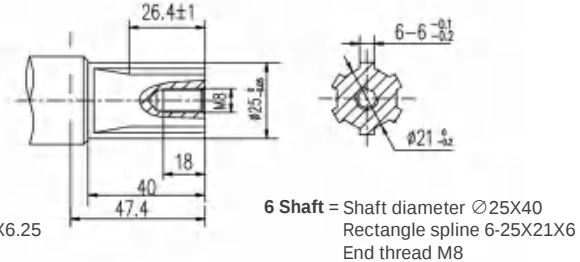
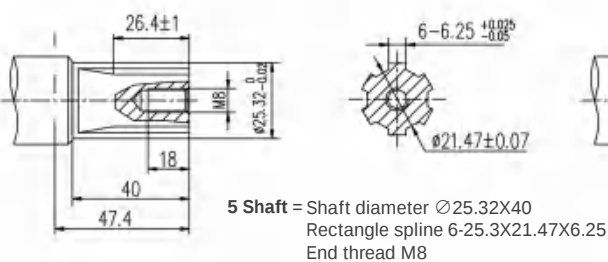
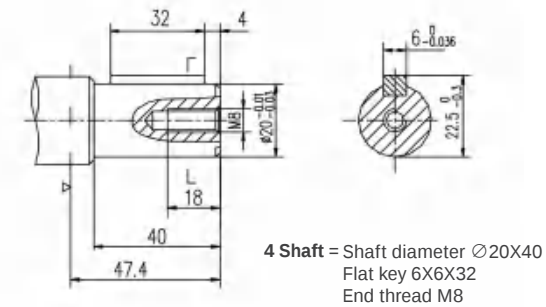
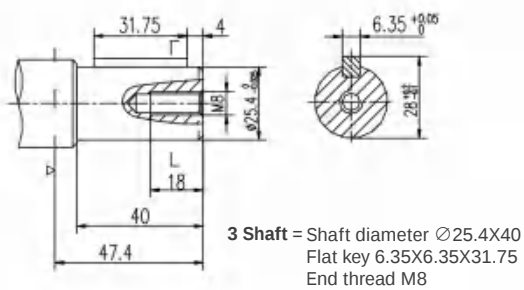
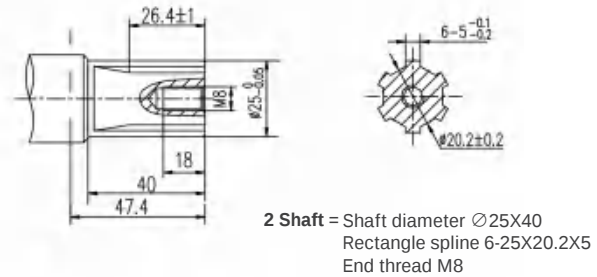
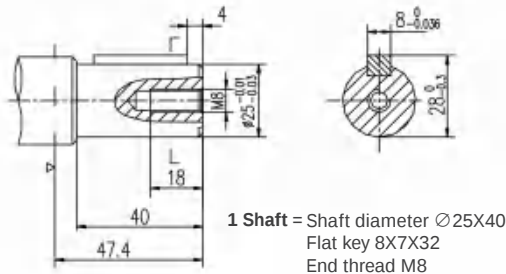
Model	L	L1
BM2H-125	159.5	22.5
BM2H-160	166	29
BM2H-200	172.5	35.5
BM2H-250	181.5	44.5
BM2H-315	193	56
BM2H-400	209	72
BM2H-500	226.5	89.5

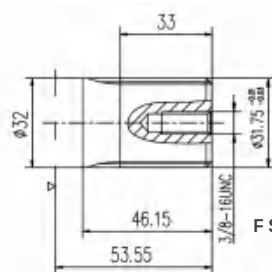
Connection method	P(A/B)	C	T
Code			
G (Depth)	G1/2(15)	/	G1/4(12)
S (Depth)	7/8-14UNF'O-ring(17)	/	7/16-20UNF(12)
P (Depth)	1/2-14NPTF(15)	/	7/16-20UNF(12)
T (Depth)	3/4-16UNF'O-ring(15)	/	7/16-20UNF(12)
B4 (Depth)	Ø10	4-5/16-18UMC(13)	7/16-20UNF(12)
B5 (Depth)	Ø10	4-M8(13)	G1/4(12)



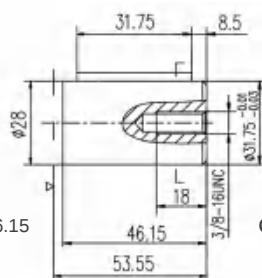
BM2/BM2H SHAFT EXTENSION

CONNECTION DIMENSION

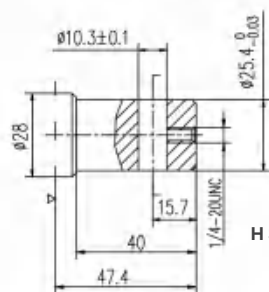




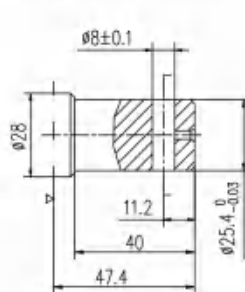
F Shaft = Shaft diameter $\varnothing 31.75 \times 46.15$
Spline 14-DP12/24
End thread 3/8-16UNC



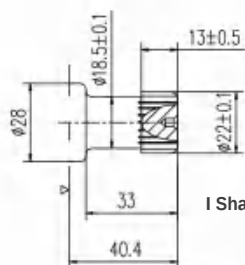
G Shaft = Shaft diameter $\varnothing 31.75 \times 46.15$
Flat key 7.96X7.96X31.75
End thread 3/8-16UNC



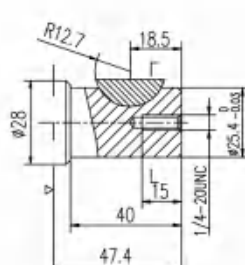
H Shaft = Shaft diameter $\varnothing 25.4 \times 40$
Pin hole $\varnothing 10.3$
End thread 1/4-20UNC



H1 Shaft = Shaft diameter $\varnothing 25.4 \times 40$
Pin hole $\varnothing 8$



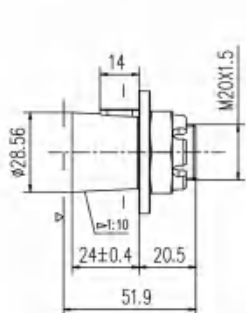
I Shaft = Spline 13-DP16/32



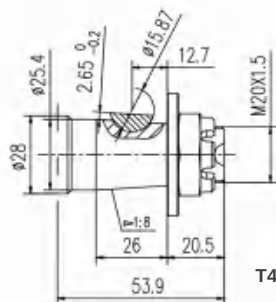
K Shaft = Shaft diameter $\varnothing 25.4 \times 40$
Semicircle key $\varnothing 25.4 \times 6.35$
End thread 1/4-20UNC



T3 Shaft = Shaft diameter $\varnothing 31.78$
Flat key 7.96X7.96X31.75
Nut tightening torque 200 $\pm$ 10N.m



T Shaft = Shaft diameter $\varnothing 28.56$
Flat key B5X5X14
Nut tightening torque 100 $\pm$ 10N.m



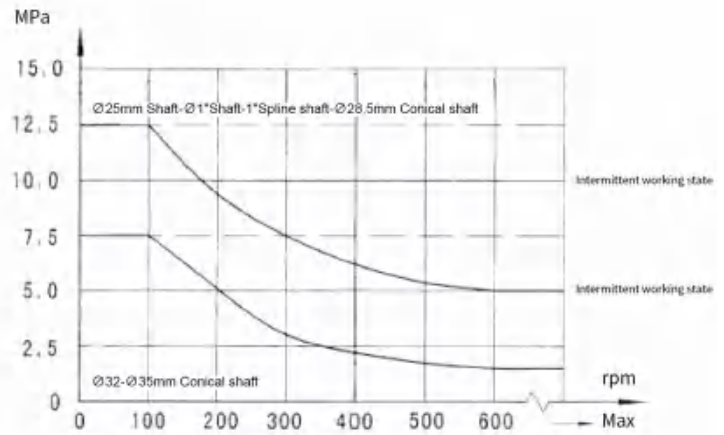
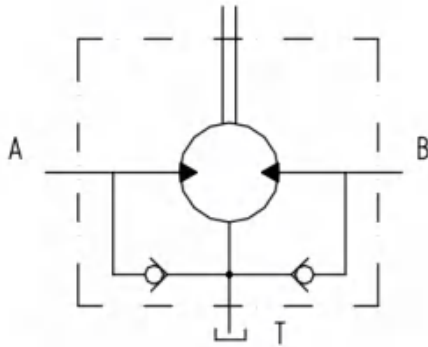
T4 Shaft = Shaft diameter $\varnothing 25.4$
Semicircle key $\varnothing 15.87 \times 4.76$
Nut tightening torque 100 $\pm$ 10N.m

BM2H type motor shaft end to flange face distance minus 3.2 mm



BM2/BM2H SERIES ORBIT HYDRAULIC MOTOR

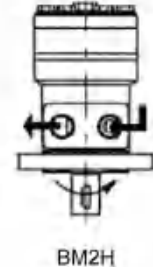
The allowable pressure that the output shaft sealing ring can withstand



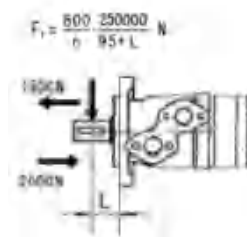
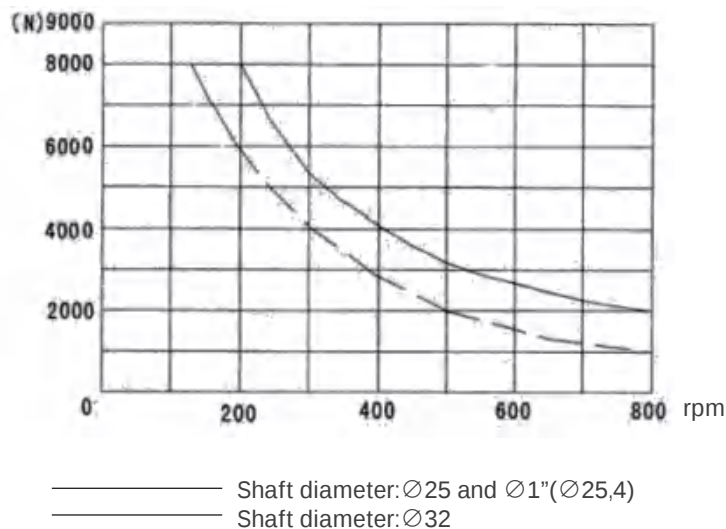
In the use of non-leakage oil pipes, the pressure on the output shaft sealing ring is slightly higher than the pressure in the return oil pipeline. When using an external leakage oil pipe, the pressure on the output shaft sealing ring is the same as the pressure in the external leakage oil pipe.

The rotation direction of the output shaft

When facing the direction of motor shaft extension, when the A port is high-pressure oil, the output shaft rotates clockwise. On the contrary, rotate counterclockwise.



The radial force of the output bearing



F_r = Radial Force (N)
 L = Distance (mm)
 n = Speed (rpm)
Diamond Flange L = 30mm
Square Flange L = 24mm

Flow rate of drain port

The following table shows the standard configuration motor. When the pressure of the oil return pipe is less than 0.5 to 1MPa, the maximum flow rate of drain port.

Operating differential pressure (MPa)	Oil kinematic viscosity (mm ² /s)	Flow rate of drain port (L/min)
10	20	2.5
	35	1.8
14	20	3.5
	35	2.8



ORDERING DETAILS

BM2

Position Displacement

Displacement CC/R

40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500

Flange and Pilot

S2 = 2-φ13.5 Rhombic flange, pilot φ82.5x6

SA2 = 2-φ13.5 Rhombic flange, pilot φ80x6

S4 = 4-φ13.5 Rhombic flange, pilot φ82.5x6

SA4 = 4-φ13.5 Rhombic flange, pilot φ80x6

S6 = 6-φ13.5 Rhombic flange, pilot φ82.5x6

SH4 = 4-3/8-16 UNC Square flange, pilot φ44.4x2.8

S type port

L1 = 4-φ11 Square flange, pilot φ80x6

LA1 = 4-φ11 Square flange, pilot φ82.55x6

L type port(Straight port)

B1 = 4-φ11 Square flange, pilot φ82.55x6

B2 = 4-φ11 Square flange, pilot φ80x6

B type port(Oblique oil port)

Shaft

1 = Straight shaft φ25, flat key 8x7x32, Lenght 40

2 = Rectangular spline shaft 6-25x20.2x5, Lenght 40

3 = Straight shaft φ25.4, flat key 6.35x6.35x31.75 (M8), Lenght 40

4 = Straight shaft φ20, flat key 6x6x32, Lenght 40

5 = Rectangular spline shaft 6-25.32x21.47x6.25, Lenght 40

6 = Rectangular spline shaft 6-25x21x6, Lenght 40

20 = Rectangular spline shaft 6-30x26x6, With slot, Lenght 40, M8

P2 = Straight shaft φ30, flat key 8x7x32, Lenght 43

A = Straight shaft φ25, flat key 8x7x32, Lenght 43.2

B = Straight shaft φ32, flat key 10x8x45, Lenght 56

C = Straight shaft φ25.4, flat key 6.35x6.35x31.75, Lenght 43.2

E = Rectangular spline shaft 6-25.32x21.47x6.25, Lenght 43.2, M8

F = Shaft diameter φ31.75, Length 46.15, Sine 14-DP12/24, 3/8-16UNC

G = Straight shaft φ31.75, flat key 7.96x7.96x31.75, Lenght 46

T3 = Cone shaft φ31.75, Taper 1:8, Cone lenght 35, flat key 7.96x7.96x31.75



Special Function

Omit = Standard

H = High pressure shaft seal

Paint Color

00 = No paint

Omit = Blue

B = Black

S = Aluminium paint

Rotation Direction

Omit = Standard

R = Opposite

Oil Port

G = G1/2, G1/4, Plate-type 4-M8

M = M22x1.5, M14x1.5, Plate-type 4-M8

MA = M18x1.5, M14x1.5, Plate-type 4-M8

R = ZG1/2, G1/4, Plate-type 4-M8

S = 7/8-14UNF 'O'-ring, 7/16-20UNF, Plate-type 4-5/16-18UNC

P = 1/2-14NPTF, 7/16-20UNF, Plate-type 4-5/16-18UNC

F = G3/8, Leakage port G1/4, Plate-type 4-M8

L and B series code (straight and Oblique oil port Conical axisφ31.75, taper1:8, Cone length35,Flat key7.96x7.96x31.75) flange and stop housing, with no plate connection thread on the oil port surface