

BMSY Series

Low Speed High Torque Hydraulic Motors



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The BMSY Low Speed High Torque Geroler Motors are available with displacements from 80 - 475cc/rev.

They are very compact & efficient in design with high pressure seals.

The BMSY's have a continuous speed range of 27~800rpm and continuous torque up to 910Nm, depending on displacement.

We offer various shaft and mounting options, BSPP Ports, and an optional case drain.

The BMSY range of motors come standard with tapered roller bearings. These bearings permit high axial and radial forces offering a smooth operation during low pressure start up and high pressure operation.

Applications commonly include:

- Augers
- Harvesters
- Seeders
- Conveyors
- Concrete Equipment
- Lawn Mowers
- Marine
- Anchors
- Industrial Sweepers
- Machine Tools
- Rail Equipment
- Forestry
- Winches
- Many more



Replaces: OMS, MS, MSS, MGS/GMS, HR, WS

Max. Operating Pressure MPa		Speed Range rpm	Max. Output Power kW
Continuous	Intermittent		
21	22.5	27~800	18.1

Specifications

		BMSY80	BMSY100	BMSY125	BMSY160	BMSY200	BMSY250	BMSY315	BMSY400	BMSY475
Displacement (cm ³ /rev)		80.6	100.8	125	154	194	243	311	394	475
Max Speed (rpm)	Cont	800	748	600	470	375	300	240	185	155
	Int	988	900	720	560	450	360	280	225	185
Max Torque (N-m)	Cont	225	290	365	485	586	708	880	880	910
	Int	305	390	480	590	705	860	1000	980	990
Max Output (Kw)	Cont	16	18	18	18.1	18.1	18	17	11	9
	Int	20	22	23	25	24	23.8	20.2	12	11
Max Pressure Drop (Mpa)	Cont	20.5	20.5	20.5	21	21	20	20	16	14
	Int	27.5	27.5	27.5	26	25	25	24	19	15
	Peak	29.5	29.5	29.5	28	27	27	26	21	17.5
Max Flow (L/min)	Cont	65	75	75	75	75	75	75	75	75
	Int	80	90	90	90	90	90	90	90	90
Max Inlet Pressure	Cont	25	25	25	25	25	25	25	25	25
	Int	30	30	30	30	30	30	30	30	30
Weight (Kg)		9.8	10	10.3	10.7	11.1	11.6	12.3	13.2	14.3



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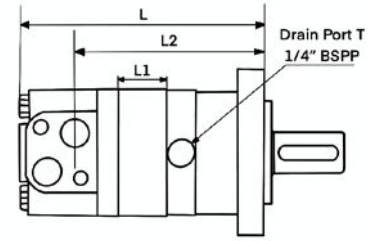
Standard Model

Part Number	Displacement	Mount	Shaft	Ports	L	L1	L2
BMSY80-E2-G-D	80	SAE A 2 Bolt	1 1/4" Parallel Key	1/2" BSPP	170	16	126.5
BMSY100-E2-G-D	100				174	20	130.5
BMSY125-E2-G-D	125				179	25	135.5
BMSY160-E2-G-D	160				181	27	137.5
BMSY200-E2-G-D	200				188	34	144.5
BMSY250-E2-G-D	250				196	42	152.5
BMSY315-E2-G-D	315				208	54	164.5
BMSY400-E2-G-D	400				223	69	179.5
BMSY475-E2-G-D	475				237	83	193.5

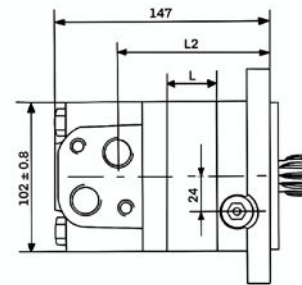
Options

Mount Type	
E2	SAE A 2 Bolt Mount
E4	4 Bolt Square Mount
D	4 Bolt Circle Flange (Short Motor Only)
Shaft Type	
A	Ø 25mm Metric Keyed Shaft 8 x 7 x 32
B	Ø 32mm Metric Keyed Shaft 10 x 8 x 45
D	Ø 1" (25.4mm) Keyed Shaft 10 x 8 x 45
F	Ø 1 1/4" (31.75mm) SAE C 14T Splined Shaft
G	Ø 1 1/4" (31.75mm) Keyed Shaft 7.96 x 7.96 x 31.75
S1	1" SAE 6B Splined Shaft
SL	1 3/8" 6T Long Splined Shaft
Omit	Short Shaft 12-DP12/24 (Short Motor Only)
Seal Kit	
BMSY-SK	Seal Kit
Options	
SD	Speed Sensor - On Request

BMSY



BMSYS



Series			Displacement	-	Flange		-	Shaft		-	Ports				
BMSY	Omit	Standard	80	E2	Standard SAE A 2 Bolt	A	25mm Metric Parallel Key 8x7x32	D	1/2" BSPP	S	7/8" UNO				
			100												
			160												
	S	Short Motor	200									E4	4 Bolt Square Mount	B	32mm Metric Parallel Key 10x8x45
			250												
			315												
			400	D	4 Bolt Circle Flange (Short Motor Only)	D	1" Keyed Parallel Key 6.35x6.35x25.4								
			475												
								G	1 1/4" (31.75mm) Parallel Key 7.96x7.96x31.75						
	F	SAE C 14T Splined 14-DP12/24													
			S1	1" SAE 6B Splined Shaft											
					SL	1 3/8" 6T Long Splined Shaft									
	Omit	Short Shaft 12-DP12/24 (Short Motor Only)													



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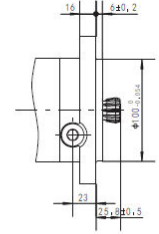
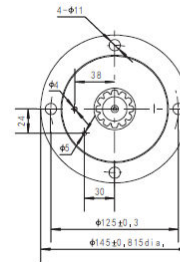
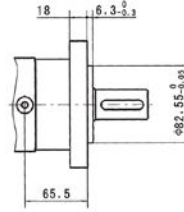
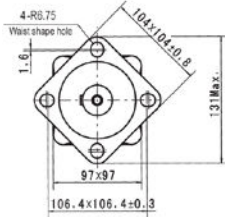
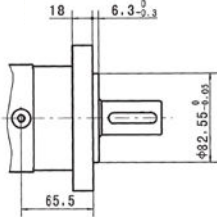
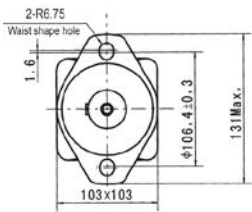


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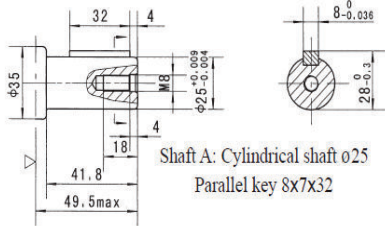
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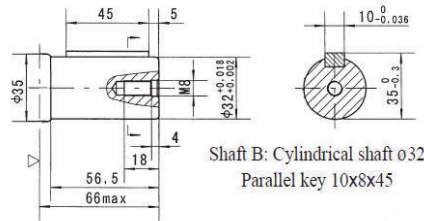
E2 SAE A 2 Bolt Mount

E4 4 Bolt Square Mount 3/8" UNC

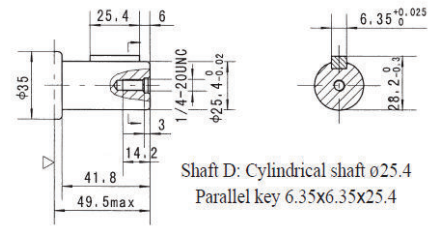
D 4 Bolt Circle Flange (Short Motor)



Shaft A: Cylindrical shaft ø25
 Parallel key 8x7x32



Shaft B: Cylindrical shaft ø32
 Parallel key 10x8x45

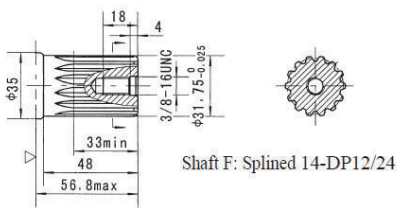


Shaft D: Cylindrical shaft ø25.4
 Parallel key 6.35x6.35x25.4

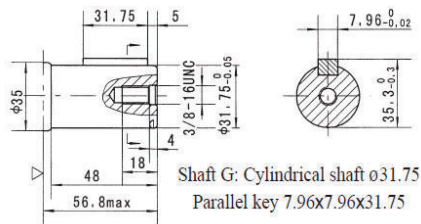
A 25mm Metric Keyed Shaft

B 32mm Metric Keyed Shaft

D 1" (25.4mm) Keyed Shaft



Shaft F: Splined 14-DP12/24



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

F 1 1/4" SAE C 14T Splined Shaft

G 1 1/4" Keyed Shaft



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Performance Data

int. Torque Nm
 cont. Speed rpm

BMSY80 [80.6cm³/rev.]
 Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	20.5	22.5	
Flow L/min	15	35 180	80 174	120 168	158 164	195 158	228 151	249 143
	30	35 362	80 352	120 346	158 338	195 330	232 322	260 310
	40	35 487	79 480	119 468	155 457	193 446	227 438	250 425
	50	30 612	77 603	117 592	153 581	192 572	224 558	248 542
	60	28 735	77 726	117 718	153 703	192 687	224 673	243 646
	Max. cont	65	26 794	75 786	116 773	151 760	188 744	217 722
Max. int	80	24 981	72 968	109 955	142 925	176 893	206 870	227 832

BMSY100 [100.8cm³/rev.]
 Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	20.5	22.5	
Flow L/min	15	48 146	95 144	150 139	200 135	250 130	282 120	310 105
	30	45 291	94 289	146 278	198 274	250 269	290 258	317 242
	40	43 387	89 384	142 374	196 359	248 350	288 335	316 320
	50	40 486	88 483	135 473	194 462	247 450	286 430	315 420
	60	37 588	88 584	132 574	185 562	244 550	283 538	312 520
	Max. cont	75	35 740	80 735	130 720	180 705	240 696	279 676
Max. int	90	30 850	75 840	124 810	170 787	236 770	271 750	303 747

BMSY125 [125cm³/rev.]
 Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	20.5	22.5	
Flow L/min	15	55 115	120 113	176 110	245 104	309 98	345 90	375 84
	30	55 231	120 228	175 223	250 214	315 202	364 188	404 172
	40	53 312	118 309	178 290	250 289	315 278	364 262	403 235
	50	50 391	115 386	176 378	248 365	315 352	362 339	397 308
	60	45 469	113 461	171 450	241 437	308 425	358 400	397 372
	Max. cont	75	45 588	110 574	167 560	240 544	306 526	352 505
Max. int	90	40 710	105 696	162 680	237 661	301 646	343 628	378 610

BMSY160 [154cm³/rev.]
 Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	21	22.5	
Flow L/min	15	70 93	142 91	215 89	298 85	372 80	435 76	476 58
	30	73 189	151 187	225 181	312 176	382 170	456 162	492 153
	40	75 252	152 250	228 246	314 239	383 234	454 228	488 212
	50	70 313	148 310	225 306	305 298	372 293	445 285	480 272
	60	68 378	143 376	218 370	296 362	370 353	442 346	480 332
	Max. cont	75	62 475	140 469	211 461	291 450	365 441	439 432
Max. int	90	59 567	131 561	202 554	286 543	357 532	425 520	460 509

Torque Nm
 Speed rpm



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Performance Data

int. Torque Nm
cont. Speed rpm

BMSY200 [194cm³/rev.]
Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	21	22.5	
Flow L/min	15	87 74	179 73	273 71	371 68	471 64	562 60	610 48
	30	91 150	190 148	288 143	386 140	489 134	572 128	618 119
	40	94 198	193 195	296 192	394 188	498 183	584 178	645 167
	50	90 248	191 246	292 241	389 236	493 230	580 223	634 212
	60	85 300	185 295	279 288	382 281	483 273	575 263	622 251
Max. cont	75	78 374	176 370	271 364	370 360	472 352	561 340	610 331
Max. int	90	68 443	163 440	265 435	361 428	456 424	545 413	599 400

BMSY250 [243cm³/rev.]
Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	20	22.5	
Flow L/min	15	110 59	231 58	351 56	462 53	585 50	681 46	778 35
	30	116 119	236 117	359 114	475 108	597 102	700 92	790 80
	40	118 162	241 159	363 156	480 150	599 143	706 134	796 121
	50	111 203	234 201	352 197	472 191	591 182	693 173	788 158
	60	106 244	224 242	345 237	462 230	582 220	685 208	772 194
Max. cont	75	101 303	214 299	340 294	454 285	570 272	670 260	760 244
Max. int	90	93 363	209 359	335 354	447 348	559 340	657 328	749 303

BMSY315 [311cm³/rev.]
Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	17.5	20	22.5	
Flow L/min	15	148 48	304 47	456 45	613 43	762 41	879 39	978 27
	30	155 95	314 93	465 91	635 89	778 86	884 82	988 67
	40	160 127	321 125	479 121	650 117	796 115	906 109	997 91
	50	155 159	314 157	465 153	638 149	780 145	886 142	988 128
	60	151 187	306 185	453 181	620 176	765 169	886 157	976 143
Max. cont	75	146 238	300 236	445 232	613 227	755 224	875 220	966 196
Max. int	90	135 286	284 283	436 278	601 272	740 265	863 257	952 232

BMSY400 [394cm³/rev.]
Pressure (MPa)

Max. Cont Max Int.

	3.5	7	10.5	14	16	17.5	
Flow L/min	15	186 37	379 36	578 35	779 33	896 31	986 29
	30	190 75	388 73	590 71	791 68	905 65	991 61
	40	195 99	394 97	596 95	797 93	912 90	998 85
	50	191 125	388 123	587 118	785 114	904 109	983 102
	60	186 149	388 146	587 142	785 137	904 131	983 122
Max. cont	75	181 187	372 183	576 177	770 171	891 164	973 153
Max. int	90	176 226	367 221	571 214	766 208	883 199	965 183

Torque Nm
Speed rpm



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Performance Data

int. Torque Nm
 cont. Speed rpm

BMSY475 [475cm³/rev.]
 Pressure (MPa)

Max. Cont Max. Int

	3.5	7	10.5	14	15		
Flow L/min	15	218 30	439 29	661 28	892 27	995 25	
	30	223 61	450 60	676 58	910 56	1002 53	
	40	228 82	461 80	689 77	927 74	1017 68	
	50	224 103	456 101	682 97	920 92	1008 86	
	60	220 123	451 121	677 118	913 112	998 105	
Max. cont	75	212 155	443 153	664 147	901 140	980 132	
Max. int	90	196 186	421 184	643 178	877 170	959 157	

Torque Nm
 Speed rpm



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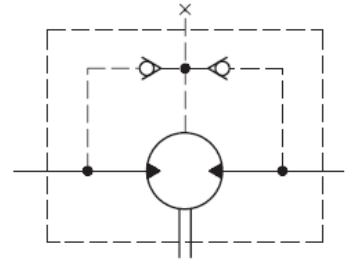
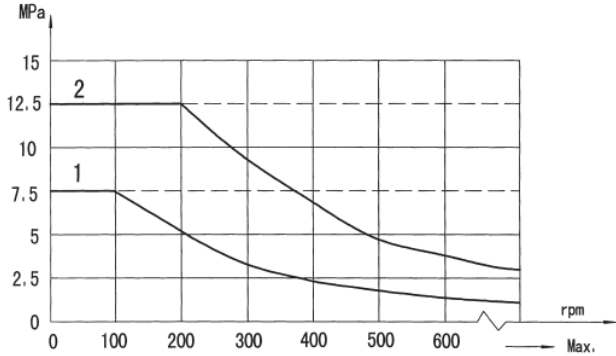
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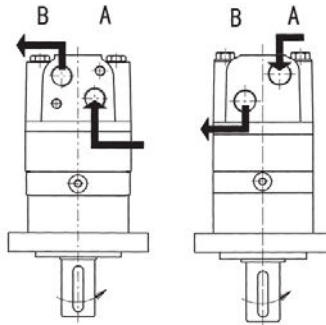
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Permissible Shaft Seal Pressure



Direction of Shaft Rotation: Standard

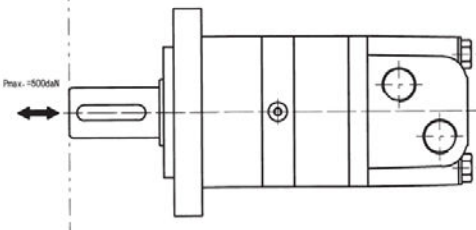
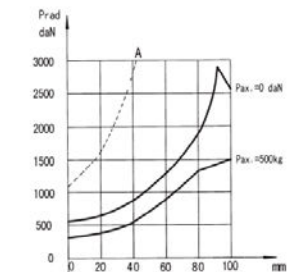
- When facing shaft end of motor, shaft to rotate:
- Clockwise when port "A" is pressurised
 - Counter-clockwise when port "B" is pressurised.



Oil Flow in drain line

Pressure Drop (MPa)	Viscosity (mm ² /s)	Oil Flow in the Drain Line (L/min)
14	20	1.5
	35	1
21	20	3
	35	2

Axial and Radial Forces



The output shaft runs in tapered bearings that permit high axial and radial forces. Curve "A" shows max radial shaft load. Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage. The two other curves apply to a B10 bearing life 3000 hours at 200rpm.