

Low Speed, High Torque Motors



Gaudent
Technology



Serving eight key segments - sharing one focus



Alternative Energy

Making energy sources technically practical and economically sound requires the kind of control made possible by high-quality components. When Gaudentech is on the inside, you will experience the reliable, consistent performance to create and capture energy—making renewable energy an every-day energy.



Discrete Manufacturing

Produce at peak efficiency with the superior precision and repeatability of Gaudentech products. Gaudentech hydraulic components provide the precise control and consistent operation required for virtually every step in your manufacturing operation. With Gaudentech, we'll help you redefine the meaning of raw productivity.



Oil & Gas

As the oil & gas industry continues to face further globalization and consolidation, large-scale organizations that can meet your needs in every corner of the world are more difficult to find. At Gaudentech, our portfolio of products is only surpassed by our tremendous reach.



Processing

Whatever your industry, no matter which processes you manage, Gaudentech parts and systems help keep you up and running. Our components make equipment more efficient and easier to use, so you get optimal machine performance and maximum productivity.



Agriculture & Forestry

There's a reason farming and forestry are called "working the land." These segments involve some of the hardest work and longest hours of any sector in the economy. Your productivity and profitability depend on the way you manage time and tasks.



Commercial Vehicles

Gaudentech can make your driving operation more successful. Greater comfort and productivity help increase driver retention, while reduced emissions, leaks, and noise improve environmental performance. Increased efficiencies overall mean lower costs and higher net revenue.



Material Handling

Gaudentech hydraulic systems provide the precise control and consistent operation required for material handling and utility work. With a broad selection of products and solutions built in, Gaudentech helps make you a master of your domain.



Construction & Mining

When you work on a large scale, even the details are big. You need to trust every part of the equipment that lets you handle construction and mining jobs. For reliable components that deliver consistent performance in extreme conditions, turn to Gaudentech.

Understanding and helping our customers succeed

- Listening and understanding to requirements and business drivers
- Delivering solutions with value propositions to solve the critical business needs

Knowing what's important to our customers and integrating that knowledge into the fabric of our business

- ...to deliver innovative, quality products
- ...to respond fast
- ...to provide dedicated customer service and support around the globe

Our strength is global reach with local responsiveness and support

- Customers served in more than 150 countries
- Diverse channels ensure reliable availability and support
- Design and engineering teams provide support for standard products and custom solutions
- Eaton experts offer efficient product and application training



Company Profile

Zoucheng Sanyang Machinery Company Limited is located in Zoucheng City, Shandong Province, the birth place of Confucianism and Mencius, and the origin of culture. The company was established in March 2001 and is a private joint-stock high-tech enterprise that integrates design, manufacturing, sales, service, and technical consulting. It specializes in producing construction machinery and mining hydraulic components. The factory covers an area of 26,000 square meters, with a building area of 15,000 square meters.

The company owns more than 150 advanced mechanical processing centers, CNC machine tools, high-precision grinders, and other high-end and general-purpose processing equipment. It also has more than 50 sets of various precision measuring equipment and instruments, including domestic leading three-coordinate measuring machines, material tensile testing machines, and chemical analyzers. The total fixed assets amount to RMB 60 million yuan. The annual output includes more than 300,000 hydraulic valve components and 120,000 hydraulic cycloidal motors. The company is a long-term strategic partner of Eaton's former JiNing City Company (now Danfoss Ji Ning) in the United States and also an OEM for Eaton's hydraulic valve products.

With advanced product technology, manufacturing processes, and excellent management, Sanyang hydraulic motors, BZZ hydraulic steering gears, and supporting combination valves, diverter valves, manual valve switches, priority flow control valves, and other hydraulic components have won market favor due to their high quality. These products are widely used in plastic machinery, fishing machinery, petroleum machinery, landscaping machinery, construction machinery, and agricultural machinery. We have passed the ISO 9001 quality system certification and have implemented the essence of the ISO 9001 quality system. Continuous quality improvement and achieving "complete customer satisfaction" is our consistent commitment and ongoing goal.

The company has strong technical strength, complete testing means, strong independent development capabilities, and product quality assurance abilities. We can promptly design and develop new products based on market and user requirements, continuously meeting customer needs.

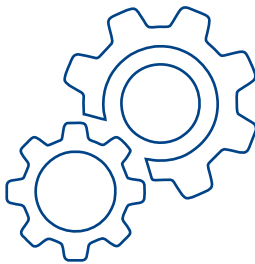


Table of Contents

ONE Hydraulics Orbital Motor of BMP Series

Product Overview	01
Performance Parameters	02-03
Outline and Installation Dimensions	04-05
Installation Dimensions for Shaft Extension	06-07
Other Features	08
Ordering Information	09

TWO Hydraulics Orbital Motor of BMR Series

Product Overview	10
Performance Parameters	11-12
Outline and Installation Dimensions	13-15
Installation Dimensions for Shaft Extension	16-18
Other Features	19
Ordering Information	20

THREE Hydraulics Orbital Motor of BM3 Series

Product Overview	21
Performance Parameters	22
Outline and Installation Dimensions	23
Installation Dimensions for Shaft Extension	24
Ordering Information	25

FOUR Hydraulics Orbital Motor of BM4 Series

Product Overview	26
Performance Parameters	27
Outline and Installation Dimensions	28-32
Installation Dimensions for Shaft Extension	33-35
Other Features	36
Ordering Information	37

FIVE Hydraulics Orbital Motor of BMS Series

Product Overview	38
Performance Parameters	39-40
Outline and Installation Dimensions	41-43
Oil Port Connection Dimensions	44
Installation Dimensions for Shaft Extension	45-46
Other Features	47
Ordering Information	48

SIX Hydraulics Orbital Motor of BMT Series

Product Overview	49
Performance Parameters	50-51
Outline and Installation Dimensions	52-53
Oil Port Connection Dimensions	54
Installation Dimensions for Shaft Extension	55-57
Other Features	58
Ordering Information	59

Hydraulics Orbital Motor of BMP Series

- Flow distribution structure, compact size, and light weight.
- Equipped with deep groove ball bearings, capable of withstanding certain axial and radial forces.
- Pilot-type rotor and stator structure, offering higher oil distribution accuracy and mechanical efficiency.
- Special seals and built-in one-way valve can withstand higher back pressure and allow for series or parallel usage.
- Suitable for medium to low-load operating conditions.



BMP Technical Parameters

Displacement (ml/r)		50	63	80	100	125	160	200	250	315	400
Flow (L/min)	Maximum Continuous	38	45	58	58	58	58	58	58	58	58
	Intermittent	45	53	69	69	69	69	69	69	69	69
Speed (rpm)	Maximum Continuous	698	663	685	560	456	356	285	236	176	145
	Intermittent	853	775	820	671	548	426	341	282	210	173
Pressure (MPa)	Maximum Continuous	12.5	12.5	12.5	12.5	12.5	12.5	11	10	9	9
	Intermittent	14	14	14	14	14	12.5	12.5	12.5	12.5	11
Torque (N.m)	Maximum Continuous	74	87	124	155	194	227	282	302	365	456
	Intermittent	86	98	141	176	221	260	318	383	406	521

- The maximum continuous value refers to the highest value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended Oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the operating fluid.
- The maximum temperature for working oil is 80°C.
- The motor can be used in series or parallel, and the back pressure should not exceed 5MPa during series or parallel operation. If exceeded, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- Before the motor operates at full load, it should undergo a break-in period. It is recommended to run it at less than 30% of the maximum working pressure for 1 hour.

BMP Series-Performance Parameters Table

BMP-50 Pressure (MPa)

	3	6	7	8	10	11	12.5	16.5
8	18	36	42	50	60	72	79	102
	150	147	144	140	137	127	122	90
15	19	37	43	48	61	73	83	105
	290	285	283	276	275	265	256	230
20	17	37	42	50	62	72	80	107
	388	385	381	375	372	365	352	332
30	15	36	42	50	63	70	81	108
	584	578	570	566	560	555	546	516
35	15	35	42	50	63	68	80	106
	680	675	670	662	654	646	640	610
45	14	34	40	48	62	70	80	
	878	868	863	856	849	840	830	
50	13	35	40	48	63			
	970	960	955	950	942			

BMP-63 Pressure (MPa)

	3	6	7	8	10	11	12.5	16.5
8	22	46	54	62	76	91	98	126
	125	124	123	121	118	116	113	72
15	22	46	54	60	76	91	104	132
	233	231	229	227	224	222	219	185
20	20	46	54	63	78	90	100	134
	310	309	307	305	301	298	294	263
30	20	45	53	63	79	88	102	135
	456	463	462	460	457	455	451	409
35	19	44	53	63	79	84	100	133
	543	540	539	537	533	531	528	484
45	18	42	50	60	78	88	100	
	705	702	700	698	695	693	689	
50	16	44	50	60	79			
	781	778	776	774	770			

BMP-80 Pressure (MPa)

	3	6	7	8	10	11	12.5	16.5
8	28	60	70	80	100	110	128	168
	97	93	92	89	84	80	75	50
15	28	61	70	80	100	114	128	170
	184	181	178	174	169	166	160	140
20	27	60	70	80	100	112	129	170
	246	243	240	238	234	230	223	205
30	26	60	69	79	100	110	128	170
	370	366	363	360	354	350	345	323
35	25	58	67	77	100	110	126	170
	432	426	424	420	415	411	405	385
45	23	53	65	77	95	108	124	168
	554	550	546	541	536	530	524	503
50	20	55	65	75	95	105	123	168
	616	608	606	603	599	593	585	560
60	19	53	62	75	95	108		
	741	732	727	722	717	712		
75	16	47	60	70	90			
	825	820	815	810	808			

BMP-100 Pressure (MPa)

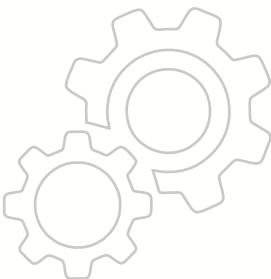
	3	6	7	8	10	11	12.5	16.5
8	35	74	88	100	126	140	160	210
	78	75	73	70	64	68	56	35
15	35	74	85	100	126	140	160	212
	150	145	144	141	137	133	129	110
20	34	74	88	100	125	145	161	212
	197	195	193	190	189	183	178	160
30	33	71	85	95	123	138	158	212
	295	294	293	290	288	283	279	259
35	29	70	81	95	120	135	155	121
	347	345	344	342	337	335	330	310
45	30	66	80	93	120	133	155	208
	445	443	442	439	435	432	426	405
50	25	66	79	93	118	134	152	
	498	495	493	491	485	480	476	
60	22	65	75	93	116	132		
	599	594	589	587	584	577		
75	20	58	75	88	113			
	674	666	663	660	655			

BMP-125 Pressure (MPa)

	3	6	7	8	10	11	12.5	16.5
8	44	94	112	128	158	180	200	263
	60	59	58	56	53	50	45	25
15	44	95	111	127	160	178	205	265
	118	116	115	114	110	108	105	85
20	42	95	108	128	158	175	202	268
	159	157	156	153	150	145	142	129
30	40	92	108	125	156	178	198	265
	236	235	233	230	225	220	218	206
35	38	87	107	122	154	174	195	268
	226	273	273	272	268	265	262	247
45	37	85	102	120	152	173	194	265
	355	352	351	349	345	341	339	322
50	33	85	98	120	149	170	192	
	395	392	390	388	385	384	380	
60	32	83	98	117	148	165		
	476	470	468	465	461	459		
75	25	75	95	110	142			
	594	588	585	582	577			

Torque(N.M): 268
Speed (RPM): 247

Continuous
Intermittent



BMP Series-Performance Parameters Table

BMP-160 Pressure (MPa)

		3	6	7	8	10	11	12.5	16.5
Flow (L/min)	8	56	120	143	160	200	226	245	334
		47	46	45	44	42	40	38	24
	15	56	120	135	160	202	226	245	341
		93	93	92	90	88	86	83	75
	20	55	120	143	160	203	226	245	343
		120	118	117	116	115	114	114	104
	30	54	118	140	160	200	225	242	340
		185	184	183	181	178	176	175	163
	35	53	115	138	157	199	220	242	337
		214	213	212	211	208	207	205	196
	45	52	112	135	156	198	220	238	335
		277	275	274	273	270	268	265	256
50	45	110	132	153	195	215	233		
	308	307	305	303	300	298	296		
60	44	106	130	150	192	214			
	368	366	365	364	362	360			
75	32	95	120	142	183				
	462	458	457	456	453				

BMP-200 Pressure (MPa)

		3	6	7	8	10	11	15
Flow (L/min)	8	75	155	178	204	255	283	385
		38	37	36	35	33	29	12
	15	72	152	180	206	259	265	390
		74	72	71	70	68	66	57
	20	71	151	178	205	255	285	390
		99	98	97	95	94	91	81
	30	70	149	175	200	254	285	388
		148	147	146	145	142	138	126
	35	68	146	172	200	250	280	383
		173	172	171	168	165	163	154
	45	63	142	170	195	248	278	382
		220	219	218	216	213	211	200
	50	58	138	166	195	242	273	
		245	243	242	241	238	263	
	60	56	135	165	190	240		
295		294	293	292	289			
75	42	122	150	178				
	370	365	364	362				

BMP-250 Pressure (MPa)

		3	6	7	8	10	11	15
Flow (L/min)	8	94	195	225	259	326	357	
		30	29	28	27	25	24	
	15	90	193	225	260	326	360	455
		60	59	58	57	55	53	48
	20	89	191	225	258	320	355	455
		78	78	77	76	74	73	65
	30	84	188	220	250	320	354	452
		118	117	117	116	114	112	103
	35	82	184	218	252	316	350	448
		135	134	132	131	127	125	120
	45	79	179	215	246	310	345	442
		179	178	177	176	174	172	163
	50	74	174	210	243	306	338	
		199	196	195	194	192	191	
	60	70	171	206	239	300		
236		235	235	234	230			
75	55	155	190	221				
	295	295	294					

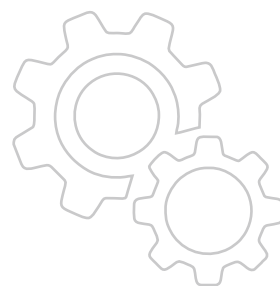
BMP-315 Pressure (MPa)

		3	6	7	8	10	12.5
Flow (L/min)	8	115	244	282	312	388	
		25	24	22	17	13	
	15	116	243	284	324	406	503
		46	46	45	43	40	20
	20	114	242	282	325	405	505
		62	62	61	57	56	44
	30	109	238	276	320	400	500
		93	93	92	90	88	76
	35	105	232	273	314	398	498
		109	108	107	105	103	93
	45	100	225	268	310	390	490
		140	140	138	136	135	125
	50	92	218	262	306	384	486
		156	155	154	153	150	140
	60	89	215	258	300	378	
		188	187	186	18	180	
75	69	195	236	278			
	236	235	233	232			

BMP-400 Pressure (MPa)

		3	6	7	8	10	12.5
Flow (L/min)	8	147 19	305 18	355 17			
	15	147 38	308 37	359 35	406 33	435 32	531 26
	20	144 49	305 49	358 47	408 45	433 43	516 37
	30	137 73	300 73	352 72	400 70	433 68	528 63
	35	135 85	294 85	345 84	395 82	425 80	525 73
	45	130 110	286 110	339 108	390 106	420 105	515 100
	50	117 124	278 124	330 122	382 120	410 119	
	60	112 148	274 148	326 147	378 146	402 145	
	75	88 185	246 185	298 184	350 182		

- ☐ Continuous
- ☒ Intermittent

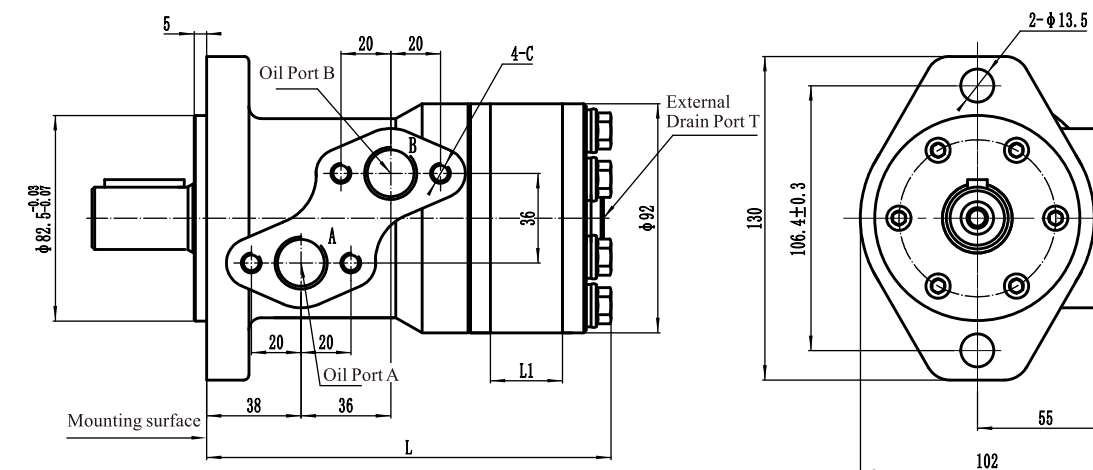


(Torque(N.M): 525
Speed (RPM): 73

Installation Dimensions of BMP Series

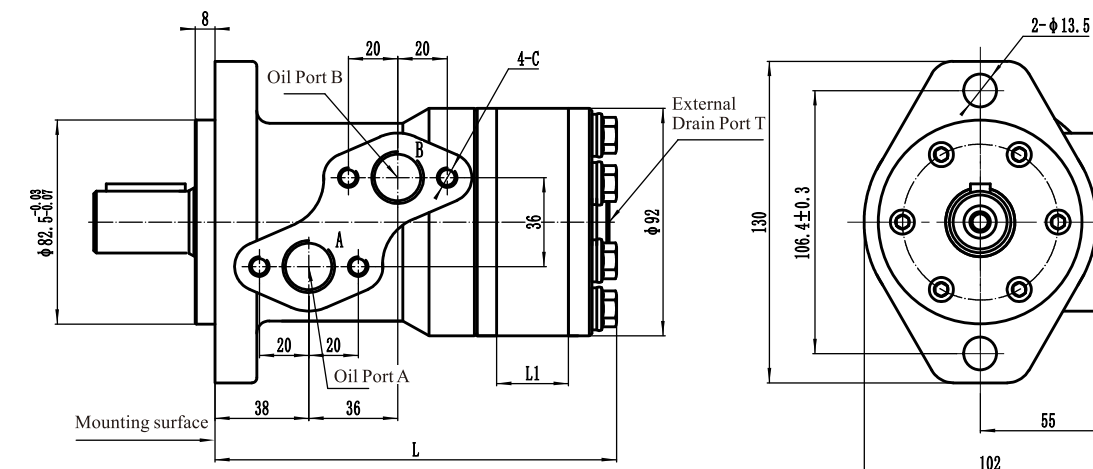
F1

2-hole diamond
flange with S-type
oil port



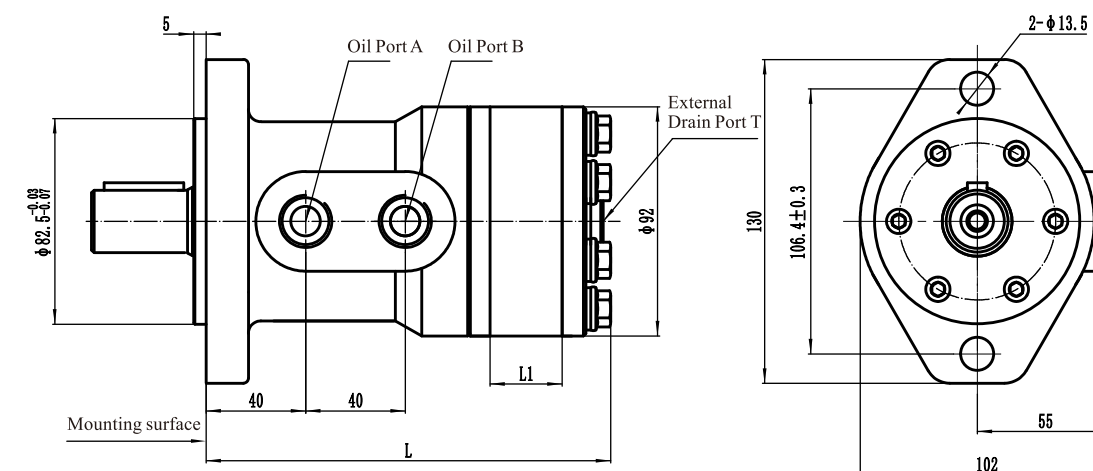
F2

2-hole diamond
flange with
S-type oil port



F3

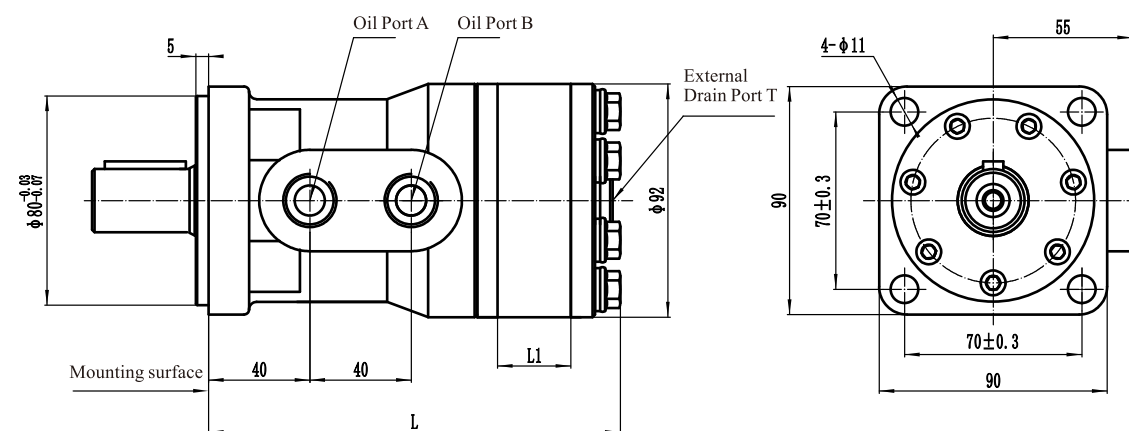
2-hole diamond
flange with
vertical oil port



Installation Dimensions of BMP Series

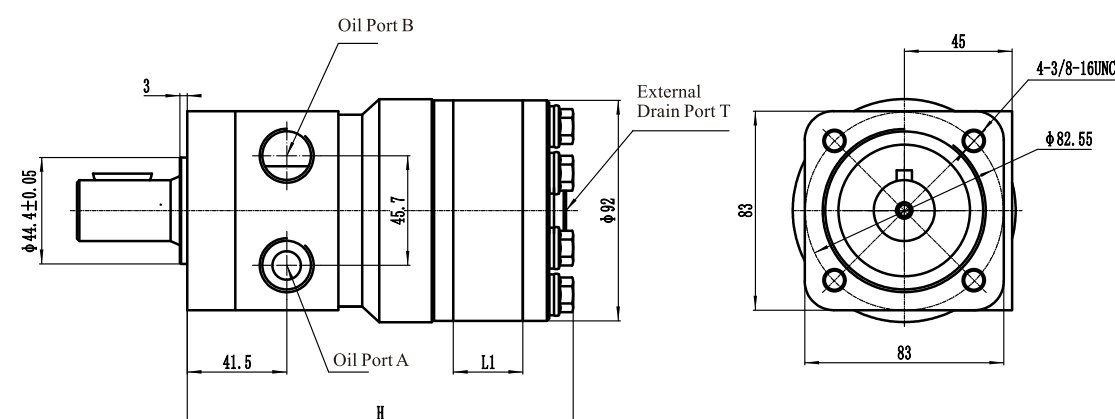
F4

4-hole square flange with vertical oil port



F5

4-thread square flange with horizontal and vertical oil port

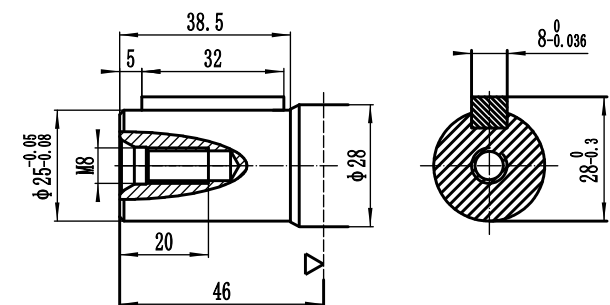


Model	BMP-50	BMP-63	BMP-80	BMP-100	BMP-125	BMP-160	BMP-200	BMP-250	BMP-315	BMP-400
L1	9	11	14.5	17.8	23	29	37	46	57	72
L	143	145	149	152	157	163	171	180	191	206
H	141	143	147	150	155	161	169	178	189	204

Common Thread for A/B		Common Thread for External Drain Port T		Thread C	
A/B-1	G1/2	T1	G1/4	C1	None
A/B-2	7/8-14UNF O-ring	T2	7/16-20UNF O-ring	C2	M8
A/B-3	1/2-14NPTF	T3	M14x1.5		
A/B-4	M18x1.5				
A/B-5	M20x1.5				
A/B-6	G1/2 O-ring				

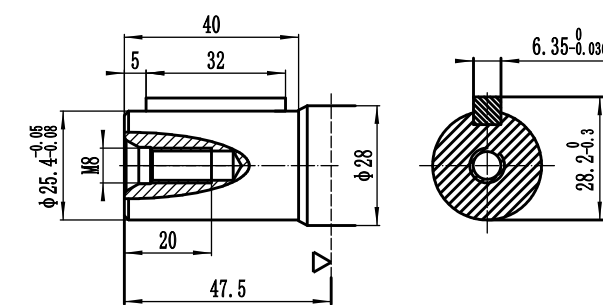
Connection Dimensions for BMP Shaft Extension

P1



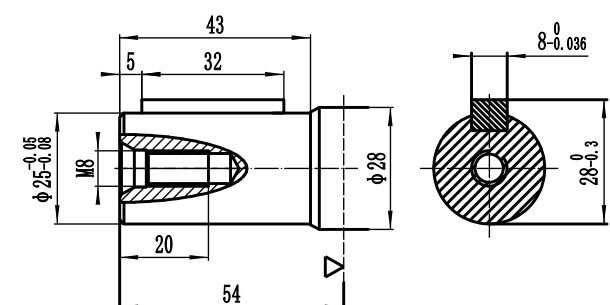
φ25 Cylindrical Shaft
Half-Round Key 8x7x32

P4



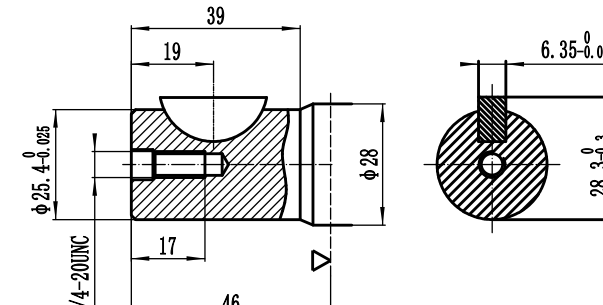
φ25.4 Cylindrical Shaft
Half-Round Key 6.35x6.35x32

P2



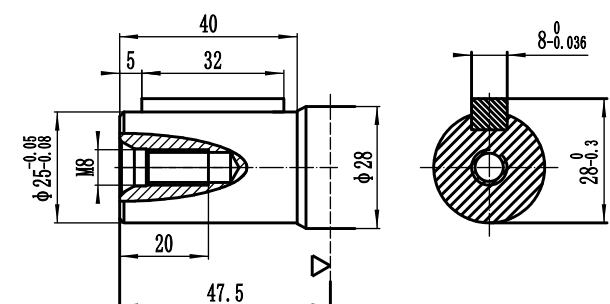
φ25 Cylindrical Shaft
Half-Round Key 8x7x32

P5



φ25.4 Cylindrical Shaft
Flat Key φ25.4x6.35

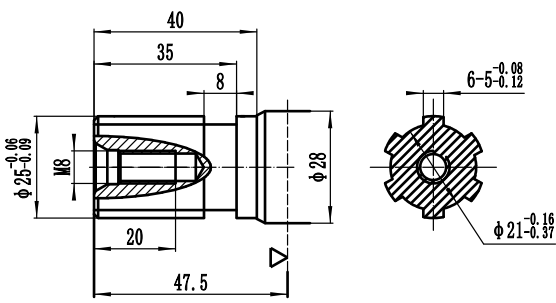
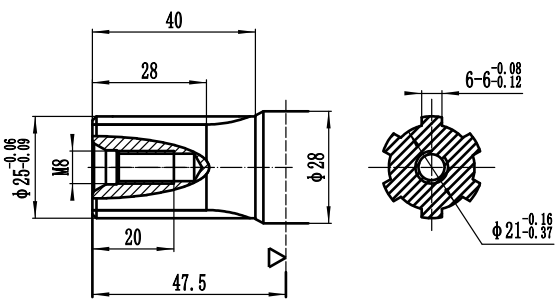
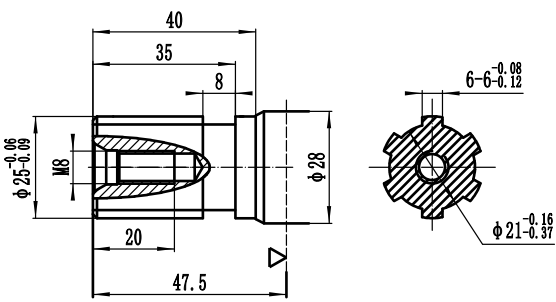
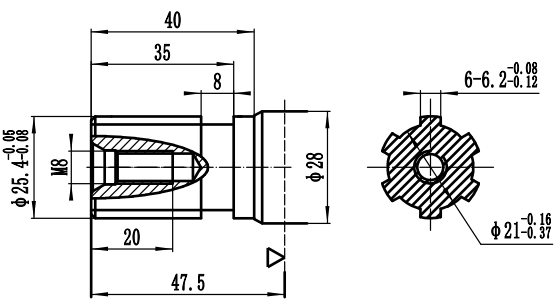
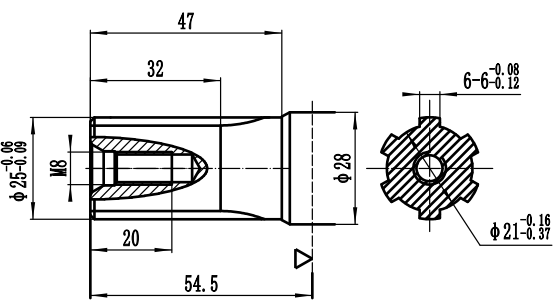
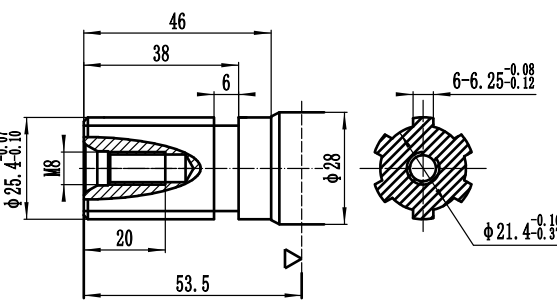
P3



φ25 Cylindrical Shaft
Half-Round Key 8x7x32

Motor Mounting Surface

Connection Dimensions for BMP Shaft Extension

H1  6-25x21x5 Φ25 Rectangular Spline Shaft	H4  6-25x21x6 Φ25 Rectangular Spline Shaft
H2  6-25x21x6 Φ25 Rectangular Spline Shaft	H5  6-25.4x21x6.2 Φ25.4 Rectangular Spline Shaft
H3  6-25x21x6 Φ25 Rectangular Spline Shaft	H6  6-25.4x21.4x6.25 Φ25.4 Rectangular Spline Shaft

Motor Mounting Surface

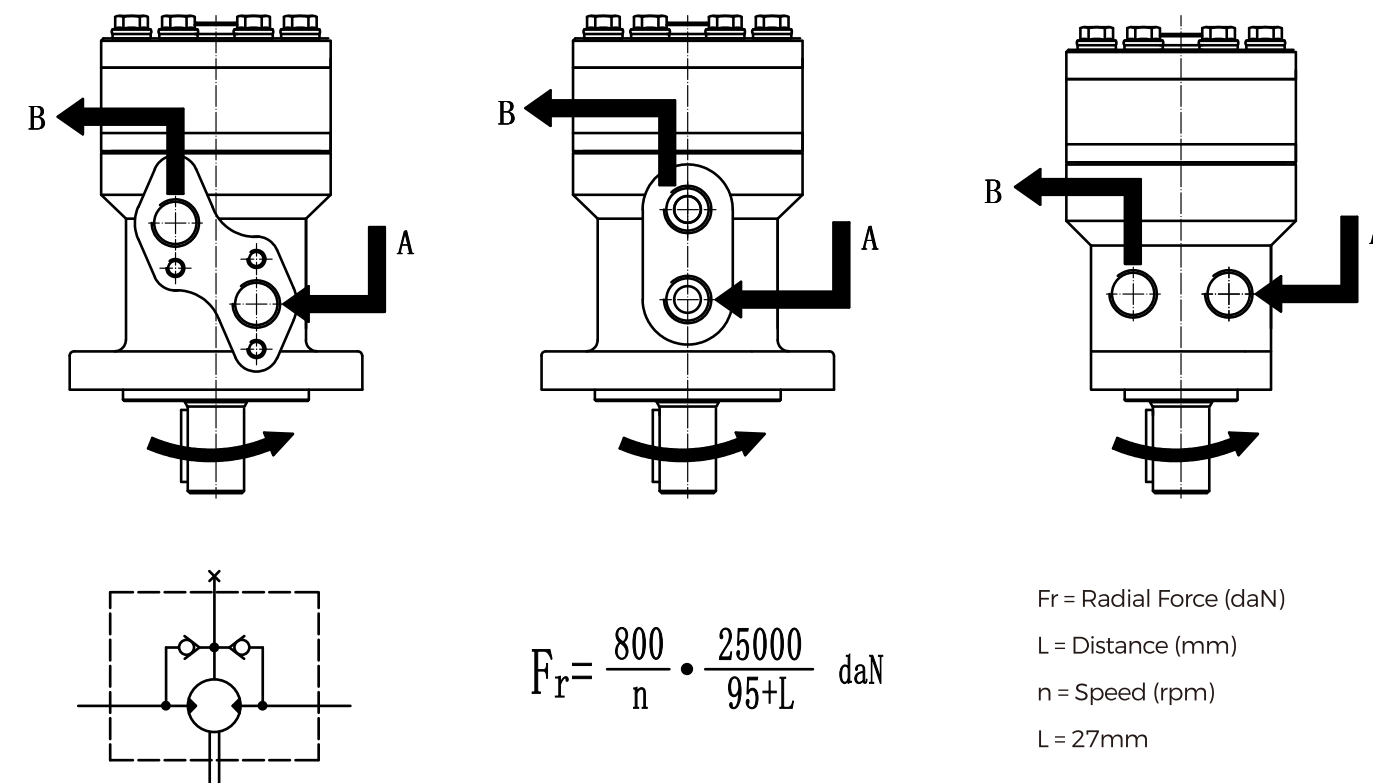


Rotation Direction of Output Shaft : Standard

When facing the motor shaft extension direction, the shaft rotates as follows:

When oil port A is at high pressure, the output shaft rotates clockwise.

When oil port B is at high pressure, the output shaft rotates counterclockwise.



Motor Principle Diagram

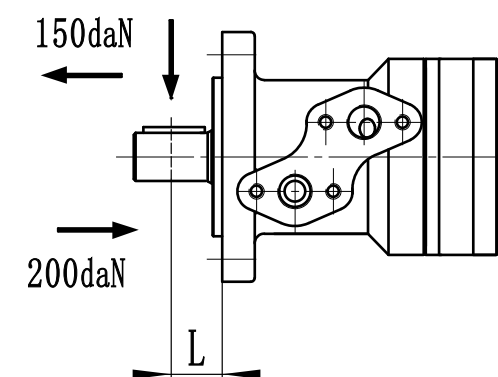
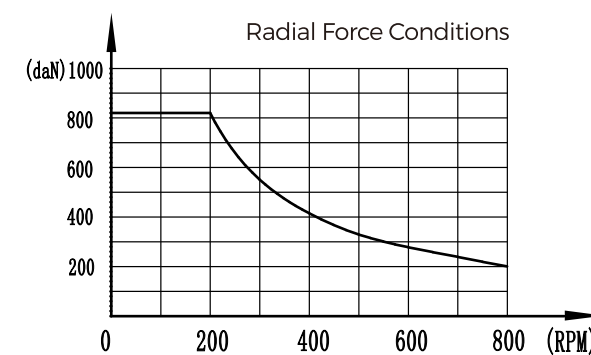
$$F_r = \frac{800}{n} \cdot \frac{25000}{95+L} \text{ daN}$$

Fr = Radial Force (daN)

L = Distance (mm)

n = Speed (rpm)

L = 27mm



Ordering Information for Cycloidal Hydraulic Motor of BMP Series

Ordering Information:



1	Product Series	BMP									
2	Displacement (ml/r)	50	63	80	100	125	160	200	250	315	400

3	
Code	Installation Flanges, Stop Rings
F1	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×5
F2	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×8
F3	2-Ø13.5 2-hole diamond flange with vertical oil port, Installation Stopper Ø82.5×5
F4	4-Ø11 4-hole square flange with vertical oil port, Installation Stopper Ø80×5
F5	4-3/8-16UNC square flange with horizontal and vertical oil port, Installation Stopper Ø44.4×3

4	
Code	Output Shaft
P1	Ø25 flat key shaft, flat key 8×7×32, shaft length 38.5
P2	Ø25 flat key shaft, flat key 8×7×32, shaft length 43
P3	Ø25 flat key shaft, flat key 8×7×32, shaft length 40
P4	Ø25.4 flat key shaft, flat key 6.35×6.35×32, shaft length 40
P5	Ø25.4 flat key shaft, half-round key Ø25.4×6.35, shaft length 39
H1	Ø25 rectangular spline shaft, 6-25×21×5, shaft length 40
H2	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 40
H3	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 47
H4	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 40
H5	Ø25.4 rectangular spline shaft, 6-25.4×21×6.2, shaft length 40
H6	Ø25.4 rectangular spline shaft, 6-25.4×21. 4×6.25, shaft length 46

5	
Code	Oil Port
A/B-1	G1/2
A/B-2	7/8-14UNF O-ring
A/B-3	M18x1.5
A/B-4	M22 x1.5
A/B-5	1/2-14NPTF
A/B-6	G1/2 O-ring

6	
Code	External Drain Port
T0	None
T1	G1/4
T2	7/16-20UNF O-ring
T3	M14X1.5

7	
Code	Thread
C1	None
C2	M8

8	
Code	Rotation
None	Standard
R	Reverse

Hydraulics Orbital Motor of BMR Series

- Flow distribution structure , compact size, and light weight.
- Equipped with deep groove ball bearings, capable of withstanding certain axial and radial forces.
- Pilot-type rotor and stator structure, offering higher oil distribution accuracy and mechanical efficiency.
- Uses special seals and built-in one-way valves, capable of withstanding higher back pressure, and allowing for series or parallel usage.
- Multiple flange, output shaft, and oil port installation configurations available.



BMR Technical Parameters

Displacement (ml/r)		50	63	80	100	125	160	200	250	315	400	500
Flow (L/min)	Maximum Continuous	40	53	58	58	58	58	58	58	58	58	58
	Intermittent	46	58	68	68	68	68	68	68	68	68	68
Speed (rpm)	Maximum Continuous	750	760	653	551	440	344	276	220	175	140	110
	Intermittent	863	832	766	646	516	404	323	258	205	162	128
Pressure (MPa)	Maximum Continuous	14	14	14	14	14	14	12.5	11	9	9	8
	Intermittent	17	17	17	17	17	17	15	13	11	10	9
Torque (N.m)	Maximum Continuous	89	112	142	178	223	285	318	350	360	418	464
	Intermittent	108	136	172	216	270	346	382	416	400	464	500

- The maximum continuous value refers to the maximum value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the working fluid.
- The maximum working oil temperature is 80°C.
- The motor can be used in series or parallel, and when used in series or parallel, the back pressure should not exceed 5 MPa. If it exceeds, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- The motor should undergo a break-in period before operating at full load, recommended to run at less than 30% of the maximum working pressure for 1 hour.

Performance Parameters Table for BMR Series

BMR-50 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	35	45	60	66	78	89	
	10	36	45	63	68	79	95	106 120
	15	185	175	165	162	150	130	110 85
	20	35	49	65	75	88	100	110 120
	25	282	276	265	260	250	230	210 185
	30	34	45	65	69	85	95	110 125
	35	375	375	365	360	345	330	308 275
	40	34	45	60	69	80	98	109 125
	45	475	466	460	450	436	420	395 360
	50	35	45	60	68	80	95	109 125
Flow (L/min)	55	575	570	561	552	541	531	500 465
	60	32	42	59	66	80	93	107
	65	665	663	655	654	635	623	598
	70	30	41	58	66	79	92	105
	75	760	758	753	750	738	725	700
	80	29	40	58	65	78	90	
	85	855	855	850	845	835	814	
	90							
	95							
	100							

Continuous

Intermittent

BMR-63 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	41	60	76	83	98	112	
	10	45	61	77	85	101	118	132 150
	15	146	138	130	125	120	102	87 67
	20	43	61	80	92	110	125	138 150
	25	222	218	209	202	190	160	145 130
	30	43	57	82	87	105	120	129 152
	35	295	594	288	284	272	245	223 195
	40	48	56	76	86	100	122	130 153
	45	375	368	363	355	312	328	255 205
	50	44	56	74	85	100	120	136 157
Flow (L/min)	55	454	450	443	431	427	419	395 367
	60	40	53	74	83	100	117	134
	65	525	523	517	516	501	492	472
	70	37	52	73	82	98	115	
	75	600	298	594	592	583	572	
	80	28	48	70	80	93		
	85	675	675	671	667	659		
	90							
	95							
	100							

BMR-80 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	48	54	84	106	129		
	10	61	58	52	46	40		
	15	56	78	98	107	130	148	170 180
	20	115	108	105	100	91	75	53 45
	25	50	82	105	118	132	160	180 188
	30	238	235	226	223	208	195	173 162
	35	48	75	96	115	130	150	178 190
	40	364	360	356	345	330	320	300 283
	45	45	72	97	105	128	149	177 189
	50	487	482	475	472	460	446	420 409
Flow (L/min)	55	42	70	90	98	125	147	171 187
	60	615	615	606	599	590	568	547 535
	65	40	63	85	95	118	142	169 185
	70	740	724	720	715	705	688	668 657
	75	36	58	82	90	112	139	165
	80	860	852	840	837	820	810	790
	85	29	56	77	85	110	133	
	90	925	915	910	899	886	870	
	95							
	100							

BMR-100 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	64	90	118	134	154		
	10	49	47	46	42	38		
	15	73	99	123	139	160	183	210 223
	20	99	95	86	85	75	62	52 45
	25	68	95	123	143	165	199	220 238
	30	199	195	187	182	175	163	150 138
	35	65	95	120	140	165	194	220 240
	40	299	294	288	285	278	263	249 235
	45	59	88	119	135	161	192	218 238
	50	400	398	387	385	380	366	350 336
Flow (L/min)	55	55	85	118	125	157	185	217 235
	60	499	498	488	484	475	463	451 436
	65	48	79	110	119	150	180	216 235
	70	599	595	587	585	579	568	550 536
	75	43	70	110	112	142	170	200
	80	699	692	687	683	679	668	645
	85	39	63	98	105	140		
	90	748	740	737	735	720		
	95							
	100							

BMR-125 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	74	106	140	163			
	10	37	32	27	21			
	15	90	122	160	175	205	237	259 270
	20	72	71	65	63	55	42	22 14
	25	85	119	158	172	208	250	278 292
	30	155	152	150	145	138	122	109 90
	35	42	108	158	165	206	242	277 291
	40	236	235	233	225	218	206	192 170
	45	79	105	150	161	205	238	275 289
	50	315	312	309	307	302	298	273 254
Flow (L/min)	55	75	95	145	158	196	238	265 285
	60	399	395	393	390	380	368	355 337
	65	60	95	139	155	183	223	254 279
	70	675	475	470	468	463	450	428 416
	75	60	83	125	150	178	212	252
	80	655	552	550	549	545	538	515
	85	55	80	122	145	172	205	
	90	595	593	590	585	582	577	
	95							
	100							

Torque(N.M): 289
Speed (RPM): 254

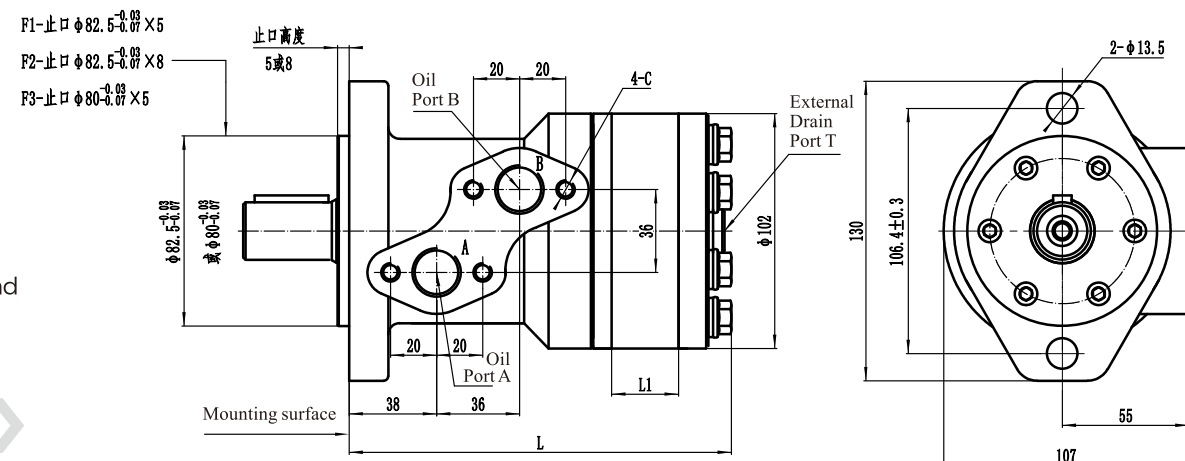
BMR-160 Pressure (MPa)

	5	7	9	10	12	14	16	17.5
Flow (L/min)	5	100	142	188	207			
	10	29	26	21	19			
	15	115	160	205	220	262	330	340 362
	20	57	56	52	50	43	38	34 27
	25	115	160	206	230	265	320	355 380
	30	119	115	110	108	102	95	84 76
	35	105	158	202	220	261	305	344 378
	40	184	180	177	172	165	153	134 130
	45	100	145	195	218	256	299	340 375
	50	247	245	238	236	230	217	199 185
Flow (L/min)	55	92	142	188	209	250	295	336 366
	60	307	305	300	298	290	280	261 244
	65	84	137	180	199	240	286	330 360
	70	369	367	365	361	355	342	334 304
	75	65	120	165	180	223	282	
	80	436	435	430	427	415	402	
	85	60	117	158	175	220		
	90	465	462	459	456	447		
	95							
	100							

Installation Dimensions for BMR Series

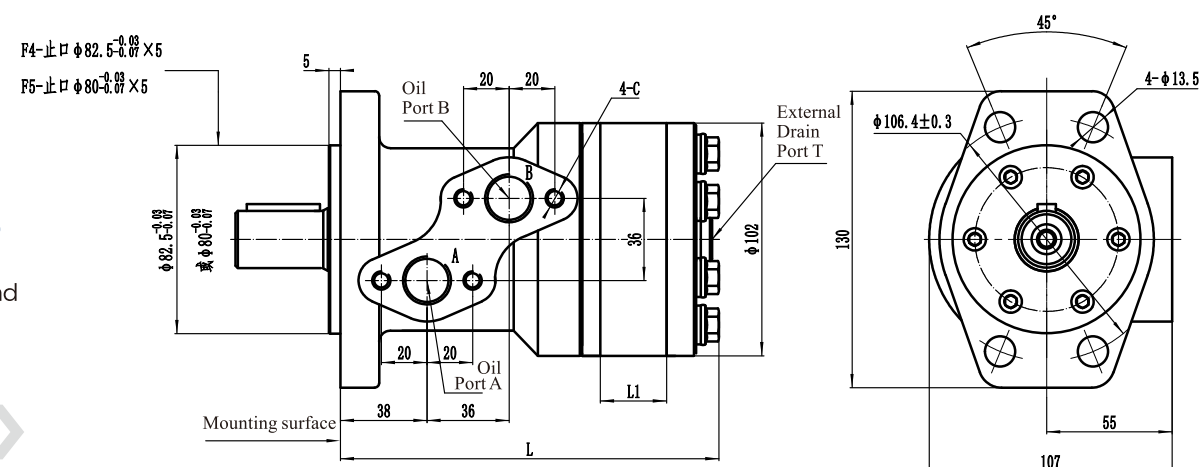
F1-F3

2-hole diamond flange with S-type oil port



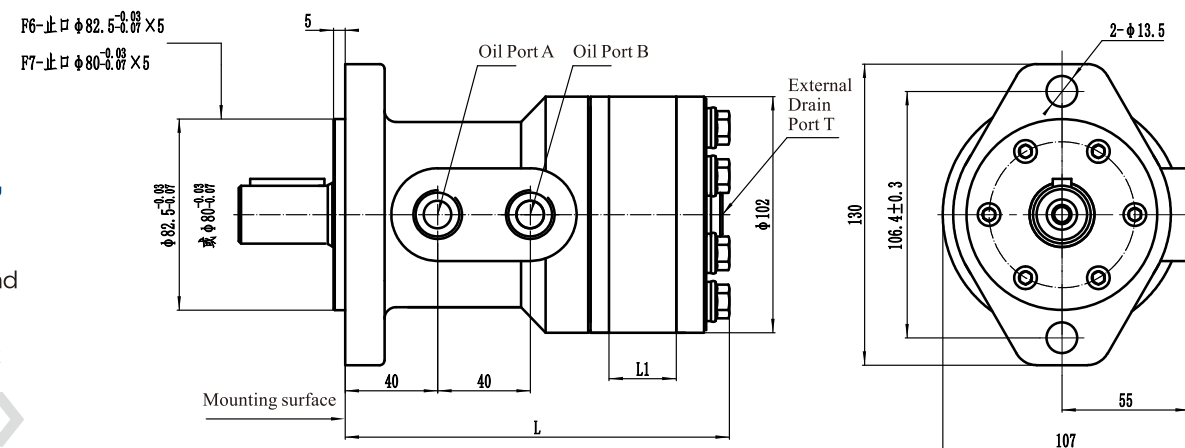
F4-F5

4-hole diamond flange with S-type oil port



F6-F7

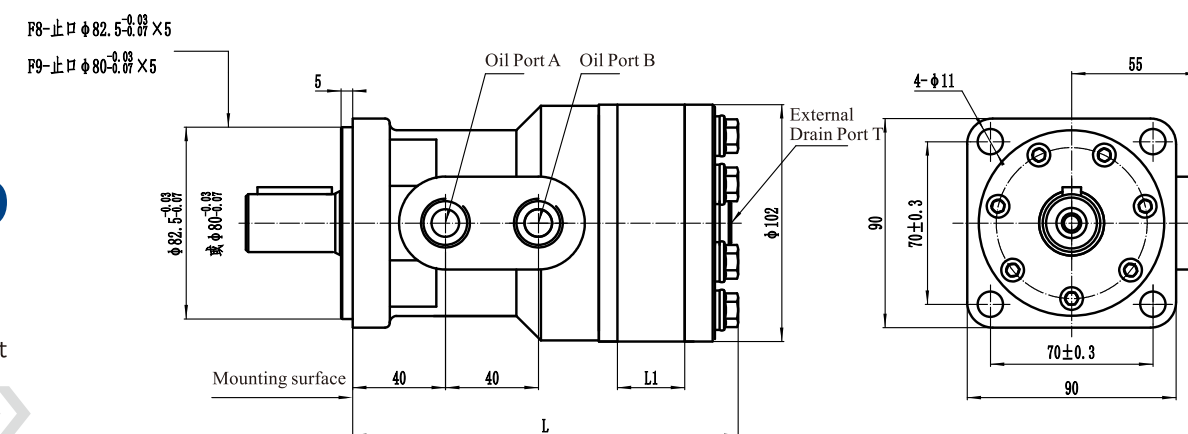
2-hole diamond flange with vertical oil port



Installation Dimensions for BMR Series

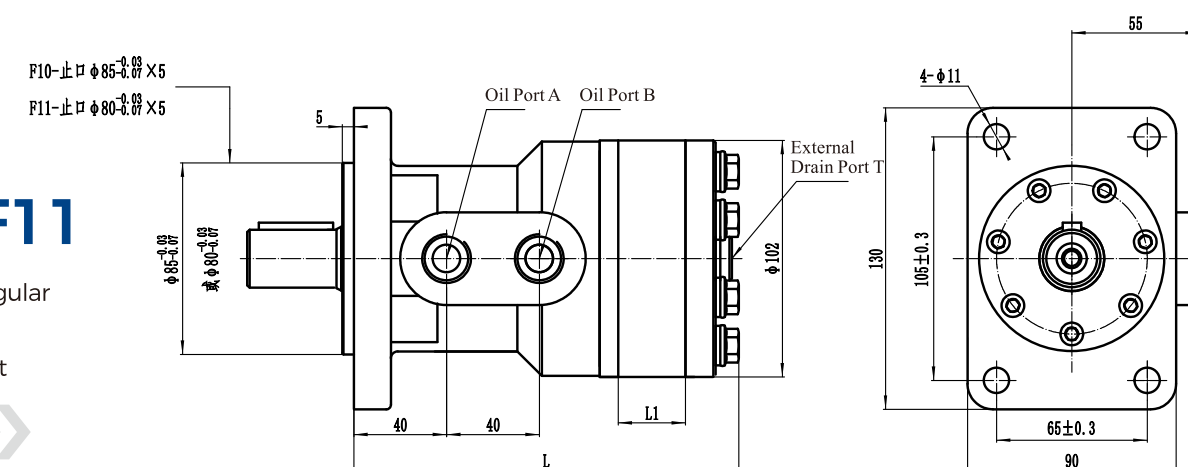
F8-F9

4-hole square flange with vertical oil port



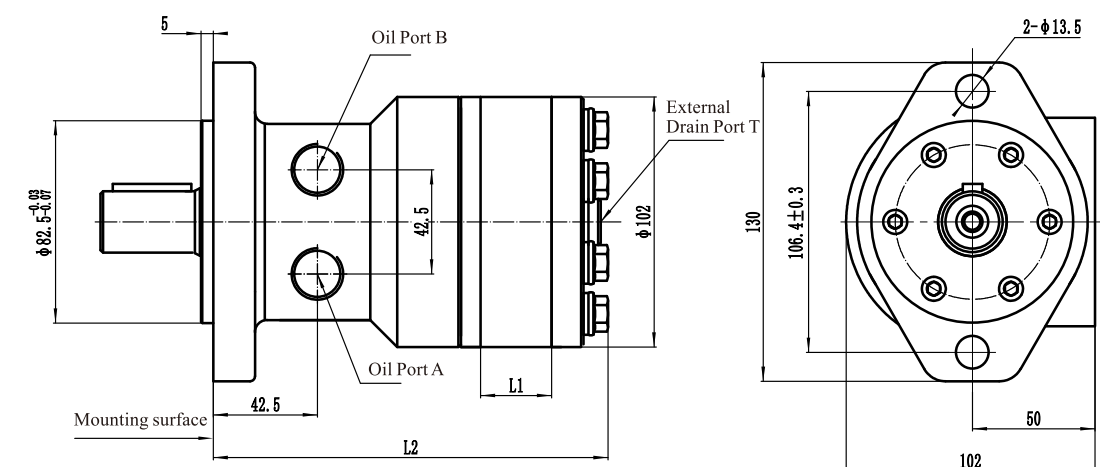
F10-F11

4-hole rectangular flange with vertical oil port



F12

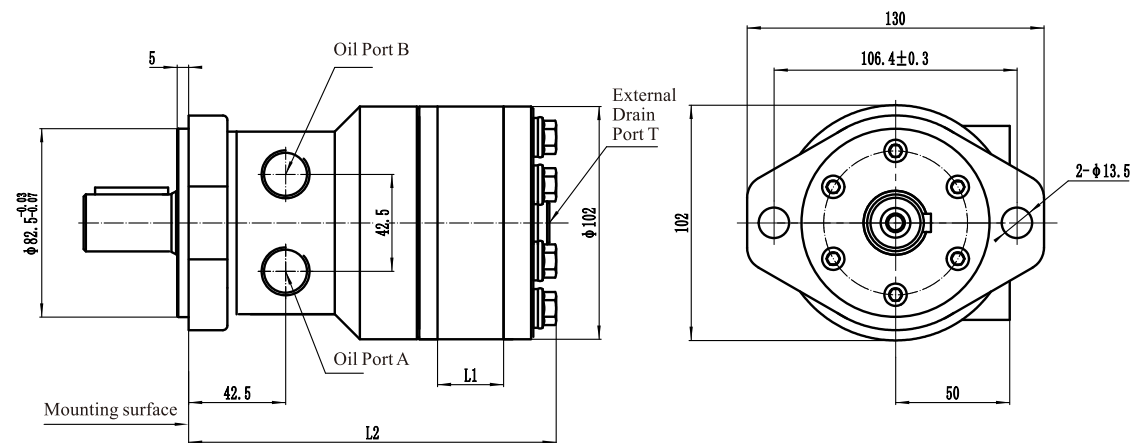
2-hole diamond flange with horizontal and vertical oil port



Installation Dimensions for BMR Series

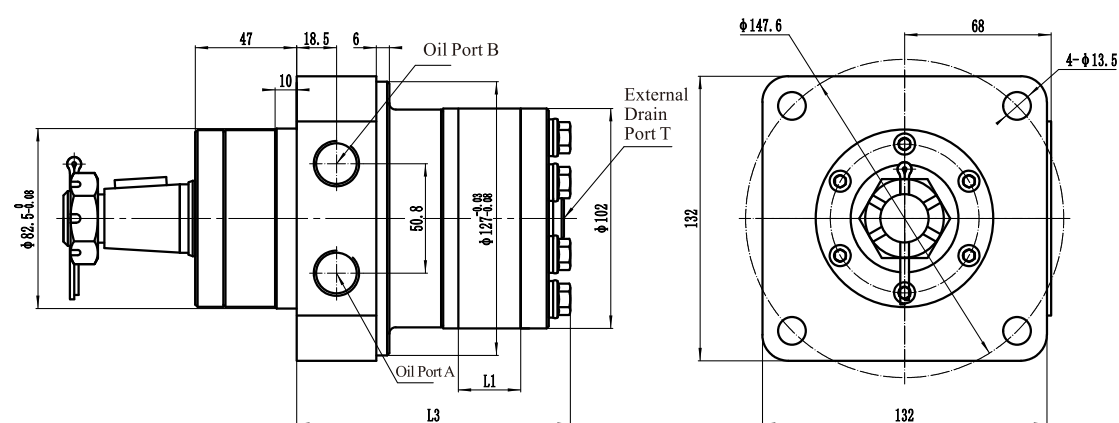
F13

2-hole diamond flange with horizontal and vertical oil port



F14

Wheel motor

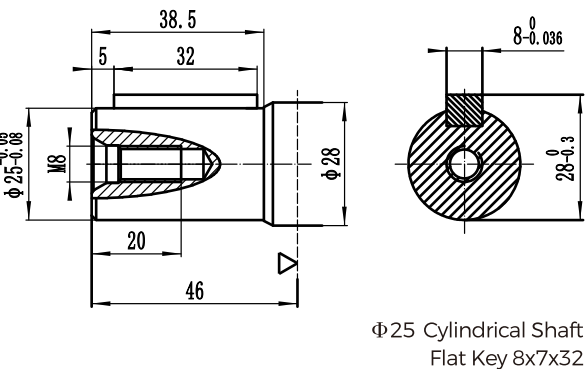


Model	BMR-50	BMR-63	BMR-80	BMR-100	BMR-125	BMR-160	BMR-200	BMR-250	BMR-315	BMR-400	BMR-500
L1	9	11	14.5	17.8	23	29	37	46	57	72	90
L	146	148	152	155	160	166	174	183	194	209	227
L2	141	143	147	150	155	161	169	178	189	204	222
L3	113	115	119	122	127	127	141	150	161	176	194

Common Thread for A/B		Common Thread for External Drain Port T		Thread C	
A/B-1	G1/2	T1	G1/4	C1	None
A/B-2	7/8-14UNF O-ring	T2	7/16-20UNF O-ring	C2	M8
A/B-3	1/2-14NPTF	T3	M14x1.5		
A/B-4	M18x1.5				
A/B-5	M20x1.5				
A/B-6	G1/2 O-ring				

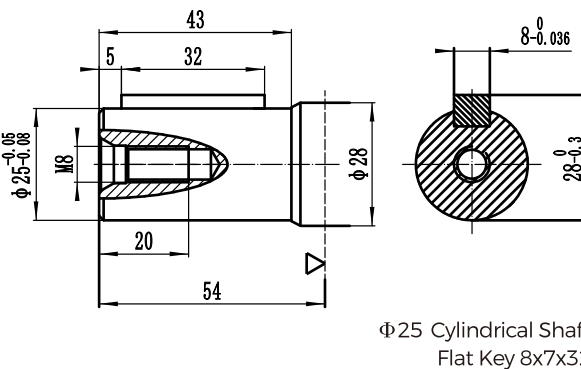
Connection Dimensions for BMR Shaft Extension

P1



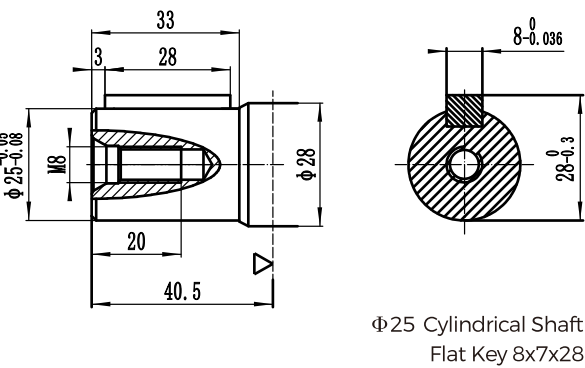
Φ25 Cylindrical Shaft
Flat Key 8x7x32

P4



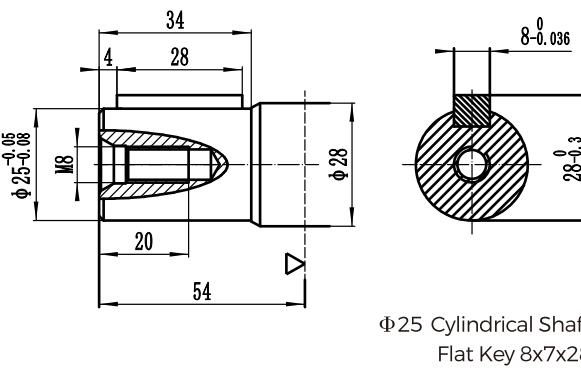
Φ25 Cylindrical Shaft
Flat Key 8x7x32

P2



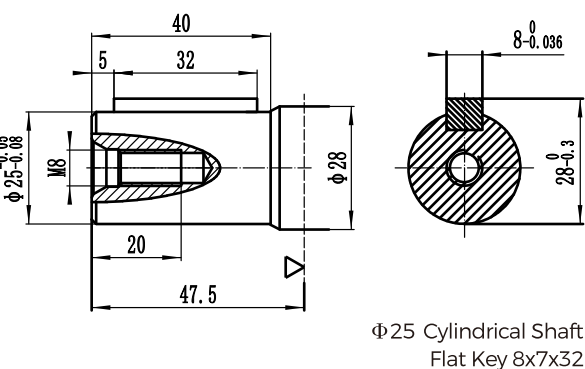
Φ25 Cylindrical Shaft
Flat Key 8x7x28

P5



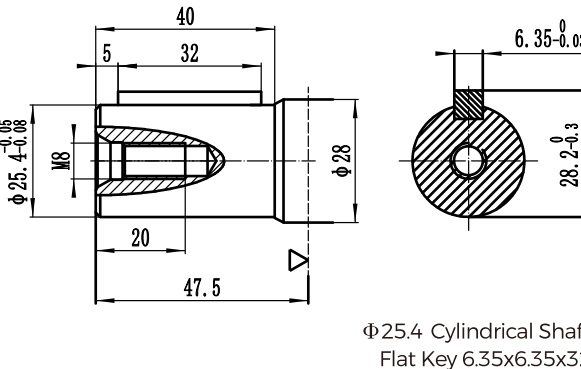
Φ25 Cylindrical Shaft
Flat Key 8x7x28

P3



Φ25 Cylindrical Shaft
Flat Key 8x7x32

P6

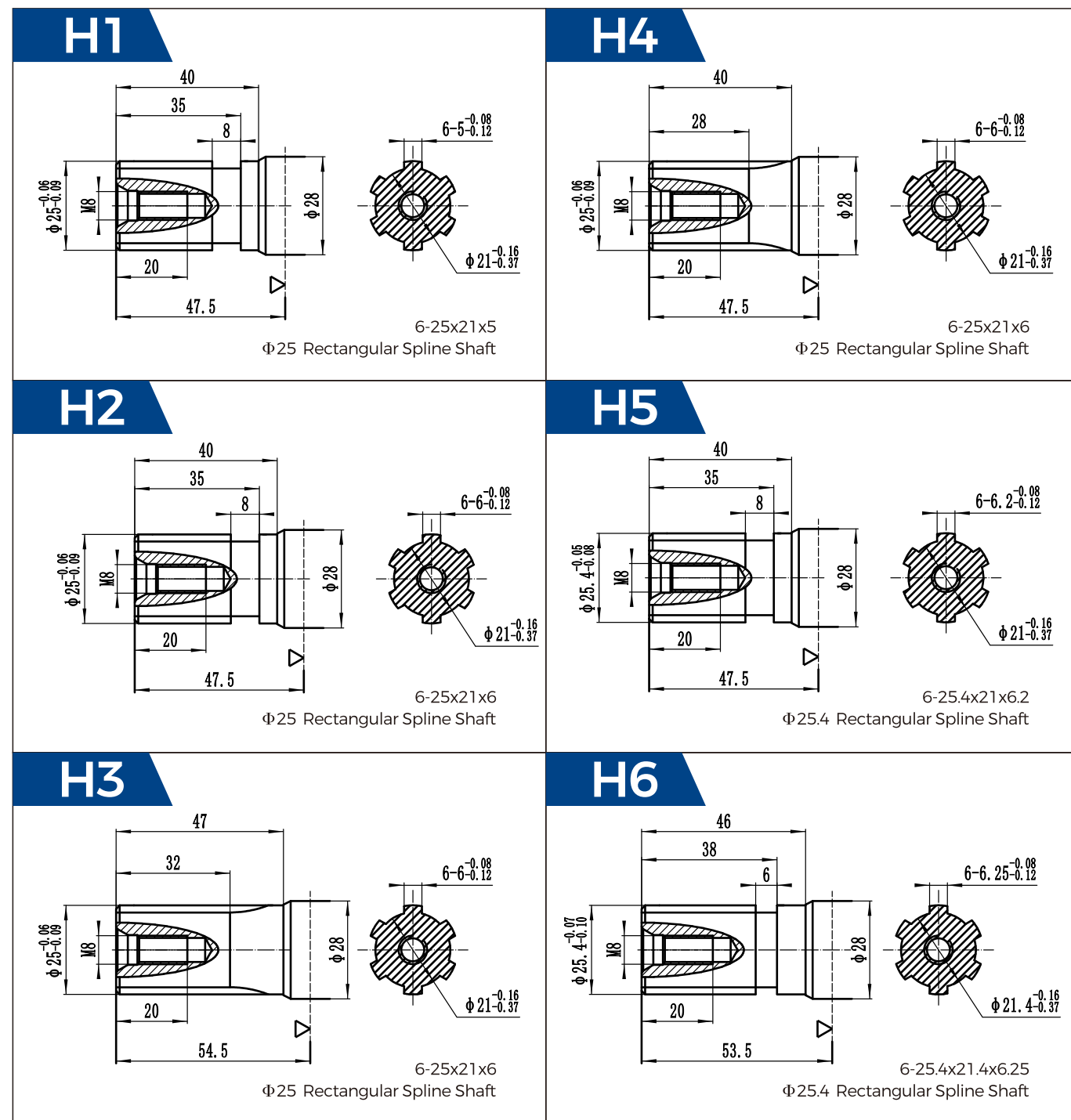


Φ25.4 Cylindrical Shaft
Flat Key 6.35x6.35x32

Motor Mounting Surface



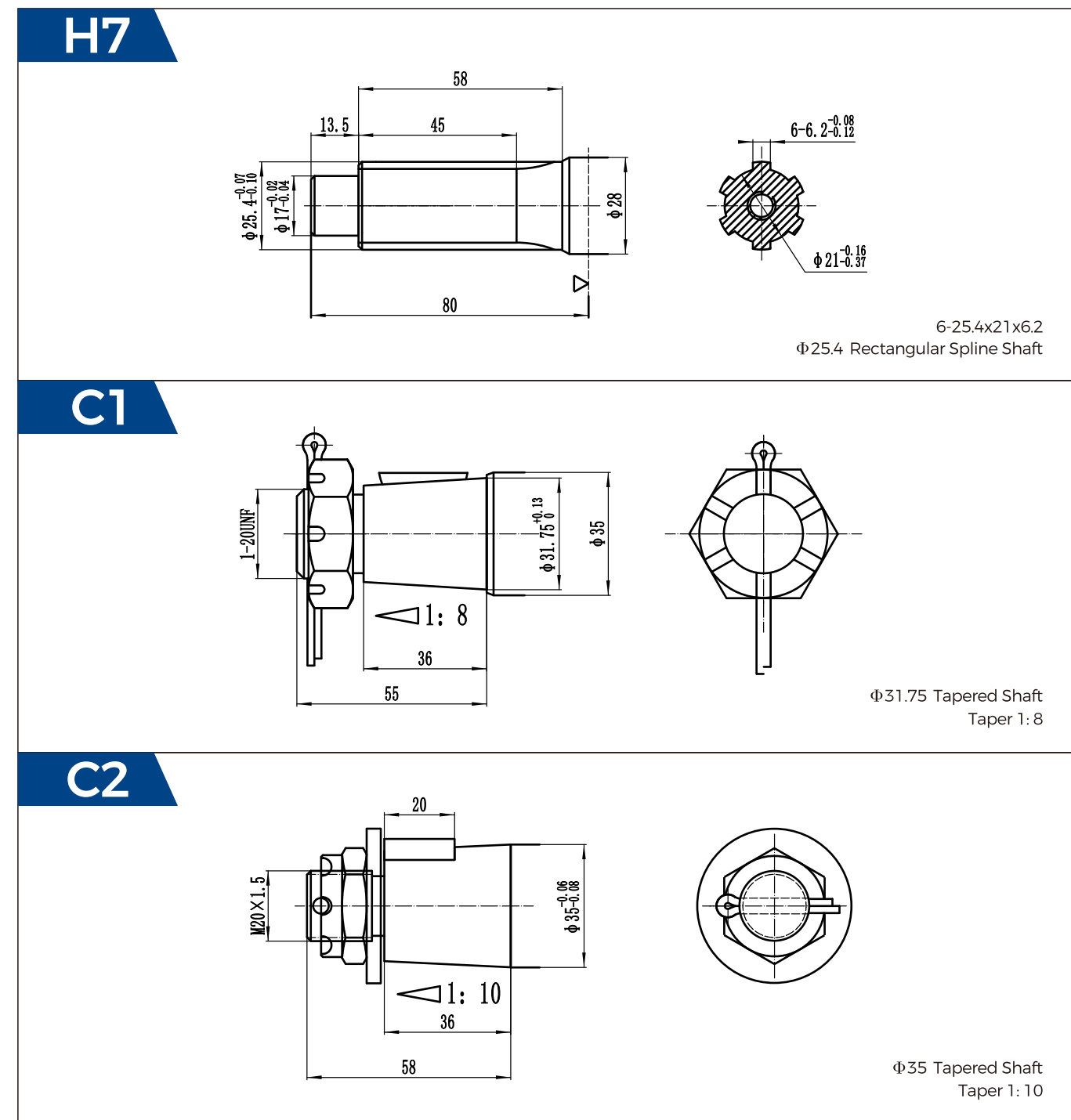
Connection Dimensions for BMR Shaft Extension



Motor Mounting Surface



Connection Dimensions for BMR Shaft Extension



Motor Mounting Surface

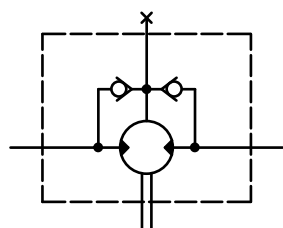
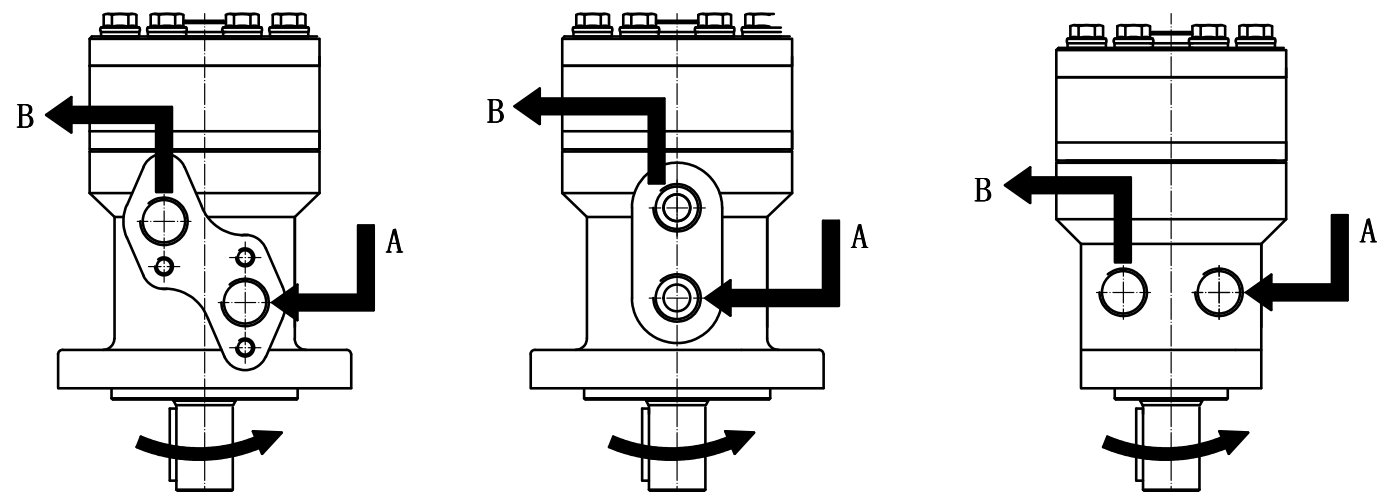


Output Shaft Rotation Direction: Standard

When facing the motor shaft extension direction, the shaft rotates:

When oil port A is at high pressure, the output shaft rotates clockwise.

When oil port B is at high pressure, the output shaft rotates counterclockwise.



Motor Principle Diagram

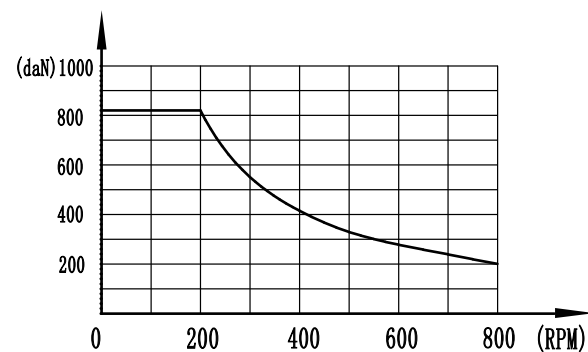
$$F_r = \frac{800}{n} \cdot \frac{25000}{95+L} \text{ daN}$$

F_r = Radial Force (daN)

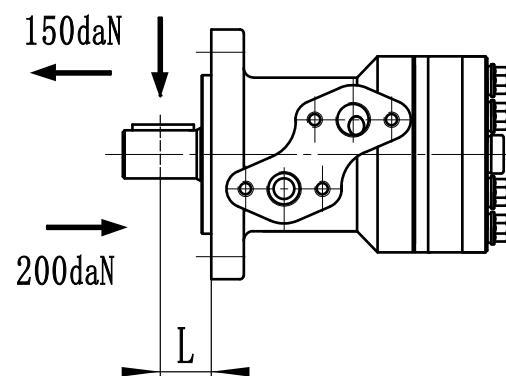
L = Distance (mm)

n = Speed (rpm)

L = 27mm



Output Shaft Radial Force Conditions



Ordering Information for Cycloidal Hydraulic Motor of BMR Series

Ordering Information:

1	2	3	4	5	6	7	8
BMR							

1	Product Series	BMR										
2	Displacement (ml/r)	50	63	80	100	125	160	200	250	315	400	500

3	
Code	Installation Flange, Mount Stopper
F1	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×5
F2	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×8
F3	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø80×5
F4	4-Ø13.5 4-hole diamond flange with S-type oil port, stopper installation Ø82.5×5
F5	4-Ø13.5 4-hole diamond flange with S-type oil port, Installation Stopper Ø80×5
F6	2-Ø13.5 2-hole diamond flange with vertical oil port, Installation Stopper Ø82.5×5
F7	2-Ø13.5 2-hole diamond flange with vertical oil port, Installation Stopper Ø80×5
F8	4-Ø11 4-hole square flange with vertical oil port, Installation Stopper Ø82.5×5
F9	4-Ø11 4-hole square flange with vertical oil port, Installation Stopper Ø80×5
F10	4-Ø11 4-hole square flange with vertical oil port, Installation Stopper Ø85×5
F11	4-Ø11 4-hole square flange with vertical oil port, Installation Stopper Ø80×5
F12	2-Ø13.5 2-hole diamond flange with horizontal and vertical oil port, Installation Stopper Ø82.5×5
F13	2-Ø13.5 2-hole diamond flange with horizontal and vertical oil port (90 degrees), Installation Stopper Ø82.5×5
F14	4-Ø13.5 Wheel motor, Installation Stopper Ø82.5×10

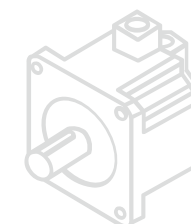
4	
Code	Output Shaft
P1	Ø25 flat key shaft, flat key 8×7×32, shaft length 38.5
P2	Ø25 flat key shaft, flat key 8×7×28, shaft length 33
P3	Ø25 flat key shaft, flat key 8×7×32, shaft length 40
P4	Ø25 flat key shaft, flat key 8×7×32, shaft length 43
P5	Ø25 flat key shaft, flat key 8×7×28, shaft length 34
P6	Ø25.4 flat key shaft, flat key 6.35×6.35×32, shaft length 40
H1	Ø25 rectangular spline shaft, 6-25×21×5, shaft length 40
H2	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 40
H3	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 47
H4	Ø25 rectangular spline shaft, 6-25×21×6, shaft length 40
H5	Ø25.4 rectangular spline shaft, 6-25.4×21×6.2, shaft length 40
H6	Ø25.4 rectangular spline shaft, 6-25.4×21.4×6.25, shaft length 46
H7	Ø25.4 rectangular spline shaft, 6-25.4×21×6, shaft length 58
C1	Ø31.75 tapered shaft, taper 1:8, shaft length 36
C2	Ø35 tapered shaft, taper 1:10, shaft length 36

5	
Code	Oil Port
A/B-1	G1/2
A/B-2	7/8-14UNF O-ring
A/B-3	M18×5
A/B-4	M22×1.5
A/B-5	1/2-14NPTF
A/B-6	G1/2 O-ring

7	
Code	Thread
C1	None
C2	M8

8	
Code	Rotation
None	Standard
R	Reverse

6	
Code	External Drain Port
T0	None
T1	G1/4
T2	7/16-20UNF O-ring
T3	M14×1.5



Hydraulics Orbital Motor of BM3 Series

- Shaft flow distribution structure.
- Equipped with deep groove ball bearings, capable of withstanding certain axial and radial forces.
- Pilot-type rotor and stator structure, offering higher oil distribution accuracy and mechanical efficiency.
- Uses special seals and built-in one-way valves, capable of withstanding higher back pressure, and allows for series or parallel usage.
- Multiple flange, output shaft, and oil port installation configurations available.



BM3 Technical Parameters

Displacement (ml/r)		100	125	160	200	250	315	400
Flow (L/min)	Maximum Continuous	50	50	50	50	50	50	50
	Intermittent	60	60	60	60	60	60	60
Speed (rpm)	Maximum Continuous	400	370	250	200	175	160	120
	Intermittent	500	420	315	250	225	200	140
Pressure (MPa)	Maximum Continuous	12.5	12.5	11	11	10	10	9
	Intermittent	14	13	12.5	12.5	12	12	11
Torque (N.m)	Maximum Continuous	175	230	271	328	384	480	500
	Intermittent	200	340	379	355	410	509	628

- The maximum continuous value refers to the maximum value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the working fluid.
- The maximum working oil temperature is 80°C.
- The motor can be used in series or parallel, and when used in series or parallel, the back pressure should not exceed 5 MPa. If exceeded, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- The motor should undergo a break-in period before operating at full load, recommended to run at less than 30% of the maximum working pressure for 1 hour.

Performance Parameters Table for BM3 Series

Continuous

Intermittent

BM3-100 Pressure (MPa)

	3	5	7	8	10	12.5	15
8	35	59	83	97	121	147	
	75	74	72	70	69	66	
16	35	60	85	98	125	148	173
	150	147	144	141	138	133	128
22	34	59	84	98	125	147	170
	207	202	198	194	189	183	178
30	33	57	82	95	123	143	168
	282	276	270	267	264	258	248
36	32	55	80	93	120	140	165
	338	331	324	320	317	309	295
45	30	52	78	90	113	136	
	423	414	450	400	396	387	
55	25	49	76	88	108	134	
	517	506	495	489	484	473	
65		46	75	85	105		
		611	598	585	578		

BM3-160 Pressure (MPa)

	3	5	7	8	10	12.5
8	56	94	134	155	193	
	47	46	45	44	42	
16	56	95	135	156	195	238
	94	93	91	90	85	82
22	55	94	135	155	193	236
	138	137	135	134	130	125
30	54	93	135	154	193	235
	176	175	173	170	166	160
36	53	92	133	153	191	232
	212	211	210	209	205	200
45	52	90	130	150	187	228
	264	263	260	259	255	250
55	50	86	125	147	180	
	323	322	319	318	313	
65		82	120	141		
		382	380	378		

BM3-200 Pressure (MPa)

	3	5	7	8	10	11	12.5
8	70	118	167	193	242	258	
	38	37	35	34	30	26	
16	72	120	170	195	245	260	294
	75	74	72	71	68	66	60
22	71	120	168	193	244	253	292
	103	102	100	99	95	94	88
30	68	118	166	191	242	251	288
	169	140	138	137	134	131	126
36	65	115	162	187	237	248	280
	212	168	166	164	160	156	150
45		110	156	182	232	242	
		211	209	208	204	200	
55		105	152	180	230	238	
		258	256	255	250	248	
65		100	145	175	225		
		306	305	302	300		

BM3-250 Pressure (MPa)

	3	5	7	8	10	11	12.5
8	87	147	208	242	302		
	30	29	28	27	25		
16	88	150	210	245	306	323	362
	60	59	58	57	55	50	48
22	86	150	210	243	304	320	360
	83	82	80	78	75	73	70
30	84	148	208	240	300	315	355
	113	112	110	109	105	103	100
36	80	143	203	235	295	310	351
	135	134	132	131	127	125	120
45	75	140	200	230	290	305	
	169	168	166	165	160	158	
55		135	195	225	284		
		206	205	203	200		
65		130	190	220			
		244	243	240			

BM3-315 Pressure (MPa)

	3	4	6	8	10	12.5
8	110	148	225	305	380	
	24	23	21	17	13	
16	111	148	227	308	380	450
	48	47	45	42	38	32
22	110	147	226	307	379	448
	66	65	62	61	58	50
30	109	145	222	305	377	444
	90	89	87	85	81	77
36	105	141	219	300	372	440
	107	106	104	102	100	97
45	100	137	215	295	367	
	134	133	131	128	125	
55		130	210	290	360	
		164	162	160	157	
65			200	285		
			190	189		

BM3-400 Pressure (MPa)

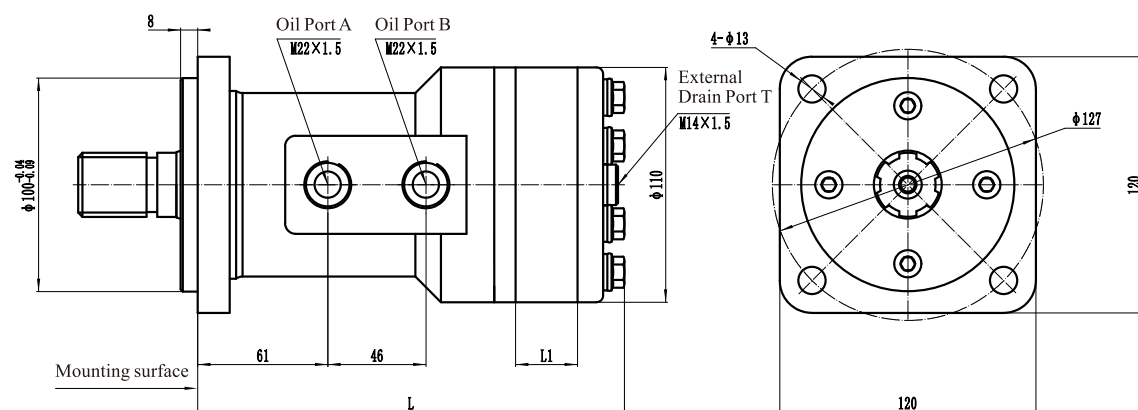
	3	4	6	8	9	11
8	139	188	286	387	435	
	19	18	17	15	12	
16	139	190	288	390	436	513
	38	37	35	33	32	30
22	138	188	288	390	435	510
	53	52	50	48	47	45
30	137	186	286	388	433	508
	71	70	68	66	64	60
36	135	182	282	385	430	505
	85	84	82	80	78	73
45	130	176	277	380	424	
	106	105	103	100	98	
55	123	170	270	372		
	129	128	126	124		
65		160	260			
		150	148			

Torque(N.M): 444
Speed (RPM): 77

Bm3 Installation Dimensions

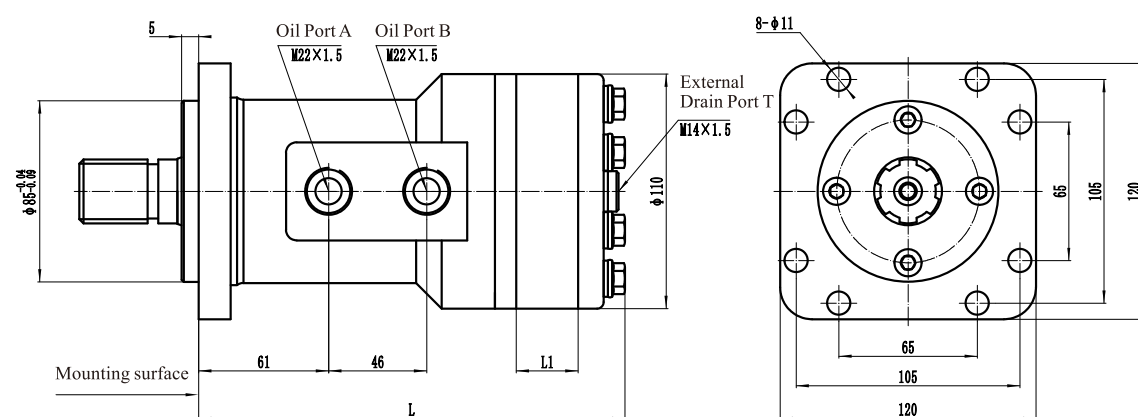
F1

4-hole square flange



F2

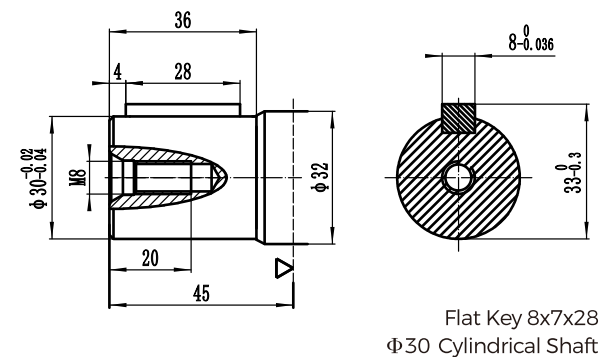
8-hole square flange



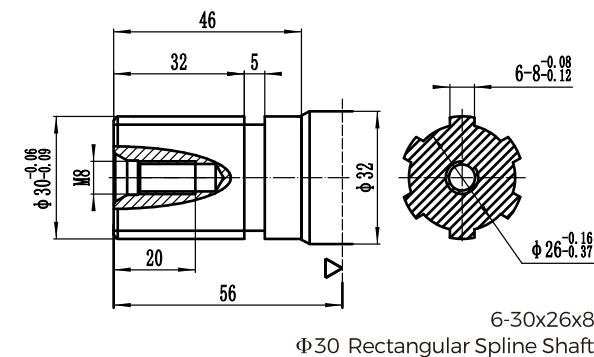
Model	BM3-100	BM3-125	BM3-160	BM3-200	BM3-250	BM3-315	BM3-400
L1	17.8	23	29	37	46	57	72
L	189	194	200	208	217	228	243

Connection Dimensions for BM3 Shaft Extension

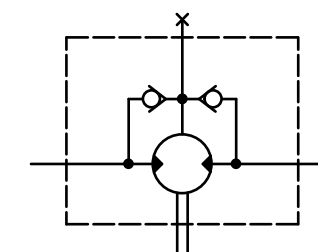
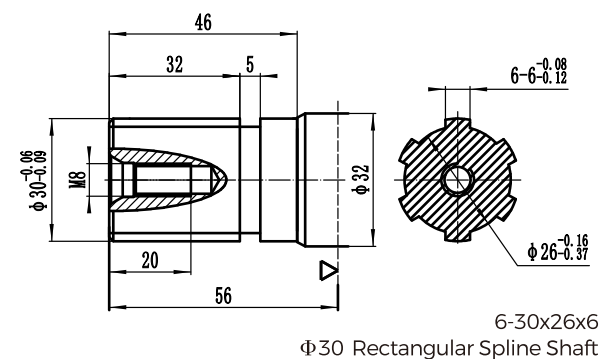
P1



H1



H2



Motor Principle Diagram

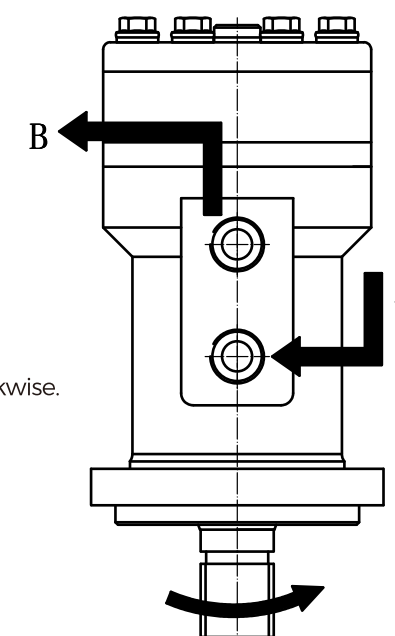
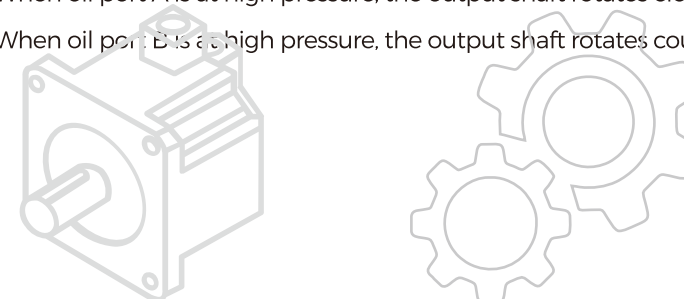
Motor Mounting Surface

Output Shaft Rotation Direction: Standard

When facing the motor shaft extension direction, the shaft rotates:

When oil port A is at high pressure, the output shaft rotates clockwise.

When oil port B is at high pressure, the output shaft rotates counterclockwise.



Ordering Information for Cycloidal Hydraulic Motor of BM3 Series

Ordering Information:



1	Product Series	BM3						
2	Displacement (ml/r)	100	125	160	200	250	315	400

3	
Code	Installation Flanges, Stop Rings
F1	4-Ø13 4-hole square flange with vertical oil port, Installation Stopper Ø100×8
F2	8-Ø11 8-hole square flange with vertical oil port, Installation Stopper Ø85×5

4	
Code	Output Shaft
P1	Ø30 flat key shaft, flat key 8×7×28, shaft length 36
H1	Ø30 rectangular spline shaft, 6-30×26×8, shaft length 46
H2	Ø30 rectangular spline shaft, 6-30×26×6, shaft length 46

5	
Code	Oil Port
A/B-1	M22x1.5

6	
Code	External Drain Port
T0	None
T1	M14x1.5

7	
Code	Rotation
None	Standard
R	Reverse

Hydraulics Orbital Motor of BM4 Series

- Shaft flow distribution structure.
- Equipped with deep groove ball bearings, capable of withstanding certain axial and radial forces.
- Pilot-type rotor and stator structure, offering higher oil distribution accuracy and mechanical efficiency.
- Uses special seals and built-in one-way valves, capable of withstanding higher back pressure, and allows for series or parallel usage.
- Multiple flange, output shaft, and oil port installation configurations available.



BM4 Technical Parameters

Displacement (ml/r)		245	310	390	490	625	800
Flow (L/min)	Maximum Continuous	80	80	80	80	80	80
	Intermittent	100	100	100	100	100	100
Speed (rpm)	Maximum Continuous	320	250	200	156	120	106
	Intermittent	390	300	240	200	150	120
Pressure (MPa)	Maximum Continuous	14	14	14	14	12.5	10
	Intermittent	15	15	15	15	13	12
Torque (N.m)	Maximum Continuous	435	556	698	870	997	1024
	Intermittent	502	664	798	1058	1178	1380

- The maximum continuous value refers to the maximum value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the working fluid.
- The maximum working oil temperature is 80°C.
- The motor can be used in series or parallel, and when used in series or parallel, the back pressure should not exceed 5 MPa. If exceeded, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- The motor should undergo a break-in period before operating at full load, recommended to run at less than 30% of the maximum working pressure for 1 hour.

Performance Parameters Table for BM4 Series

Continuous
Intermittent

BM4-245 Pressure (MPa)

	3.5	7	9	12	14	17.5	20
5	122	248	318	401			
10	129	258	334	426	456	596	
20	127	256	332	430	454	594	693
30	124	252	328	426	455	596	695
40	115	114	112	106	97	86	76
50	114	242	322	421	458	602	690
60	158	158	156	152	142	128	115
70	106	234	316	412	451	598	688
80	196	196	193	186	175	162	147
90	96	222	305	403	448	596	678
	232	231	227	218	208	192	180
	83	214	290	392	443	582	669
	275	274	274	268	254	237	221
	75	206	282	382	438	573	661
	290	290	288	280	266	252	236
	70	195	275	370	436	568	650
	303	303	297	291	280	264	248
	180	258	355	430	552	634	
	348	346	340	325	308	293	

BM4-310 Pressure (MPa)

	3.5	7	10	13.5	15	17.5	20
5	154	325					
10	162	343	455	557			
20	168	350	468	582	629	733	806
30	166	345	472	581	630	742	823
40	93	90	83	77	68	62	48
50	155	338	463	576	627	738	825
60	126	126	120	112	100	90	75
70	142	326	456	569	623	729	824
80	159	156	150	142	125	116	99
90	121	312	440	556	645	714	813
	186	186	180	170	155	142	125
	105	300	426	540	632	704	802
	223	222	216	206	189	178	160
	96	289	420	530	624	696	795
	237	234	225	215	198	186	168
	84	278	408	519	612	689	785
	245	244	263	228	212	198	176
	63	258	388	496	593	668	760
	282	280	275	266	248	234	209

BM4-390 Pressure (MPa)

	3.5	6	10.5	12.5	15	19
5	196	349	518			
10	205	362	545	701	804	
20	208	365	542	707	812	985
30	202	356	541	706	806	984
40	73	72	70	64	56	52
50	196	345	530	702	802	972
60	99	98	96	87	78	72
70	174	332	519	687	796	957
80	124	122	118	107	98	92
90	155	320	500	668	792	945
	147	140	142	130	116	107
	138	305	480	647	790	923
	174	173	170	155	142	130
	132	295	467	634	788	912
	182	182	178	165	150	138
	114	278	452	622	772	895
	193	192	188	175	158	146
	92	255	436	596	752	882
	220	220	215	203	185	166

BM4-490 Pressure (MPa)

	2.5	5	8.5	10	12.5	16
5	164	318	517			
10	178	335	556	669	790	968
20	178	330	560	672	798	986
30	173	320	552	661	792	981
40	63	63	61	58	54	48
50	162	310	542	654	782	972
60	85	85	83	79	75	68
70	146	298	524	635	769	955
80	103	102	102	98	94	86
90	122	276	503	615	746	933
	124	123	123	118	113	104
	98	256	482	598	728	918
	147	147	147	142	136	124
	80	241	470	583	715	901
	156	155	155	152	144	132
	62	223	456	572	700	882
	166	166	166	158	153	141
	36	202	422	550	672	870
	176	175	172	166	160	158

BM4-625 Pressure (MPa)

	3.5	5	7	8.5	10.5	14
5	250	380	510	640	755	
10	260	395	535	670	795	1060
20	275	425	570	710	850	1065
30	30	30	28	27	25	22
40	295	450	605	755	925	1270
50	45	44	44	43	42	37
60	297	450	610	765	920	1330
70	60	59	58	56	55	52
80	285	445	605	760	915	1325
90	76	75	75	73	70	67
	285	440	595	755	915	1325
	93	92	91	90	88	84
	280	430	585	745	905	1320
	106	105	105	102	100	95
	275	415	575	735	895	1315
	116	115	114	113	112	106
	240	400	560	720	880	1300
	124	123	122	121	119	114
	225	380	540	700	855	1250
	142	141	139	138	137	131

BM4-800 Pressure (MPa)

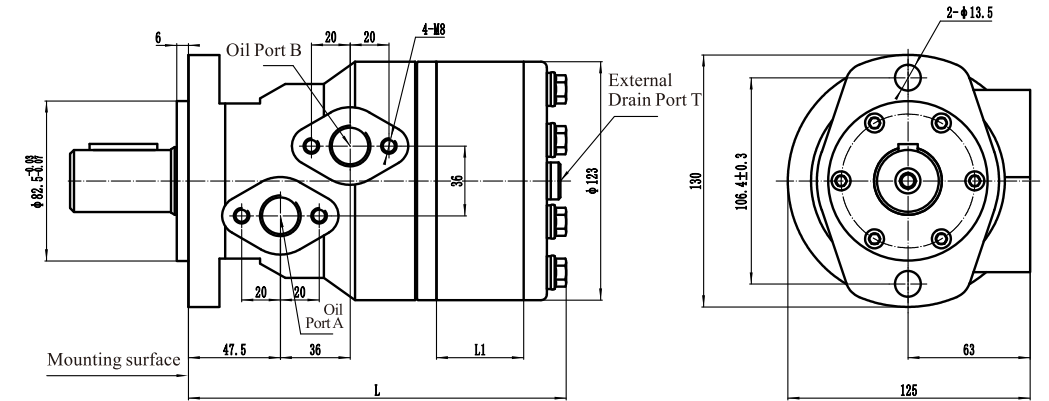
	3.5	5	7	8.5	10.5	13
5	420	590	775	958		
10	420	594	790	972	1176	1407
20	435	608	840	1020	1204	1428
30	420	596	830	1005	1204	1412
40	36	35	35	34	33	29
50	390	595	796	975	1190	1410
60	48	47	47	46	45	43
70	380	545	780	960	1176	
80	60	59	58	56	54	
90	360	525	765	945	1172	
	74	73	71	70	69	
	340	515	750	932	1163	
	84	83	82	80	77	
	325	510	732	910	1140	
	92	91	89	88	87	
	315	475	722	865	1126	
	96	96	95	93	91	
	460	700	860			
	106	104	102			

Torque(N.M): 1325
Speed (RPM): 67

Installation Dimensions for BM4 Series

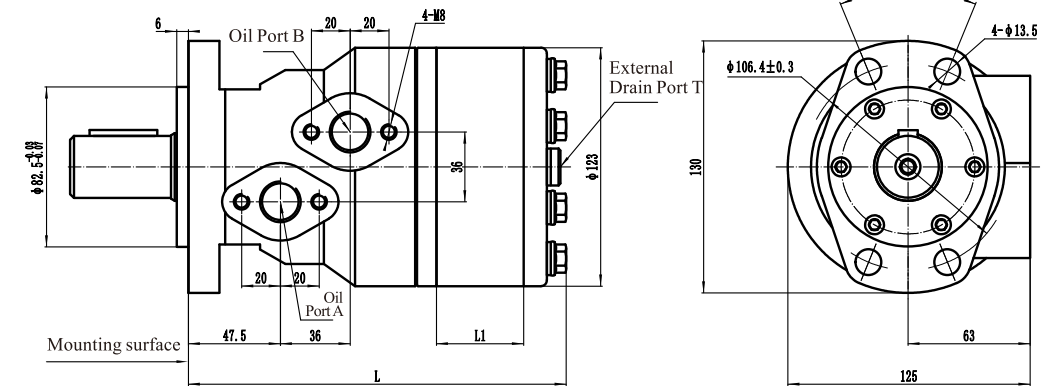
F1

2-hole diamond flange with S-type oil port



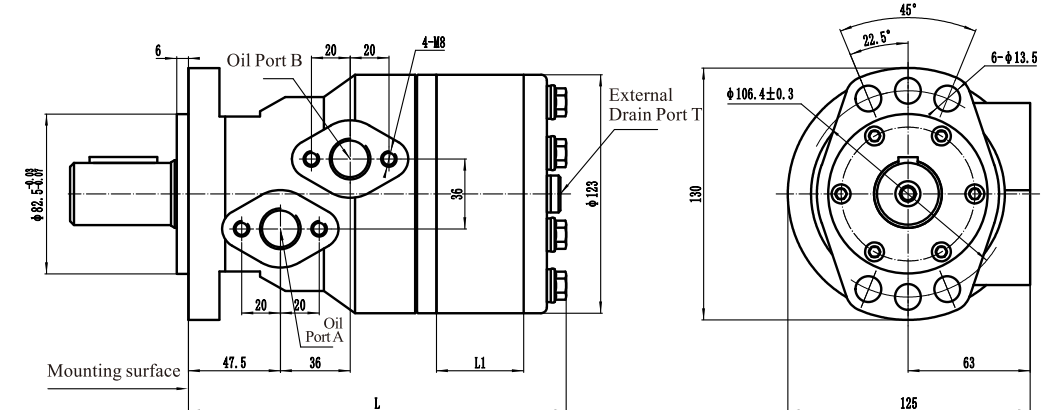
F2

4-hole diamond flange with S-type oil port



F3

6-hole diamond flange with S-type oil port

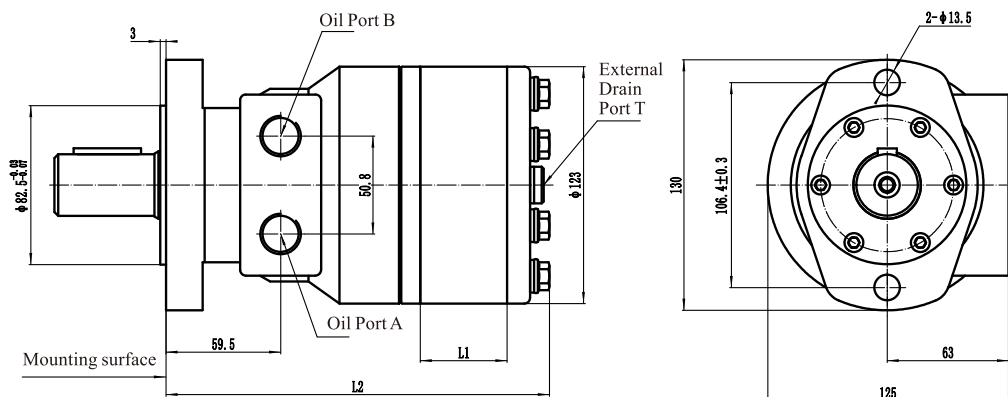


Model	BM4-245	BM4-310	BM4-390	BM4-490	BM4-625	BM4-800
L1	27.3	34.5	45	54.4	69	90
L	178	185	195	205	219	240

Installation Dimensions for BM4 Series

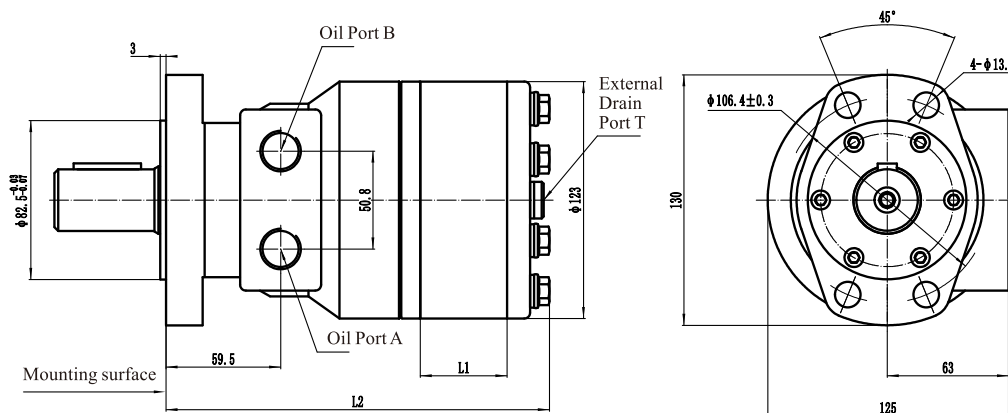
F4

2-hole diamond flange with horizontal and vertical oil port



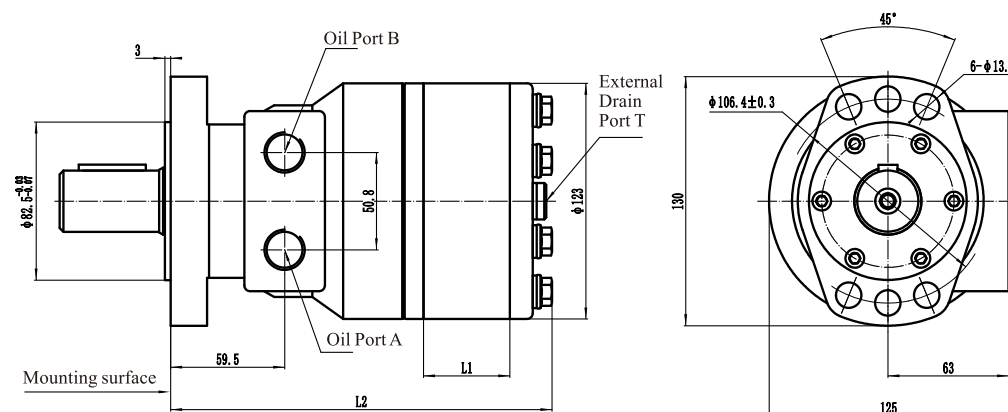
F5

4-hole diamond flange with horizontal and vertical oil port



F6

6-hole diamond flange with horizontal and vertical oil port

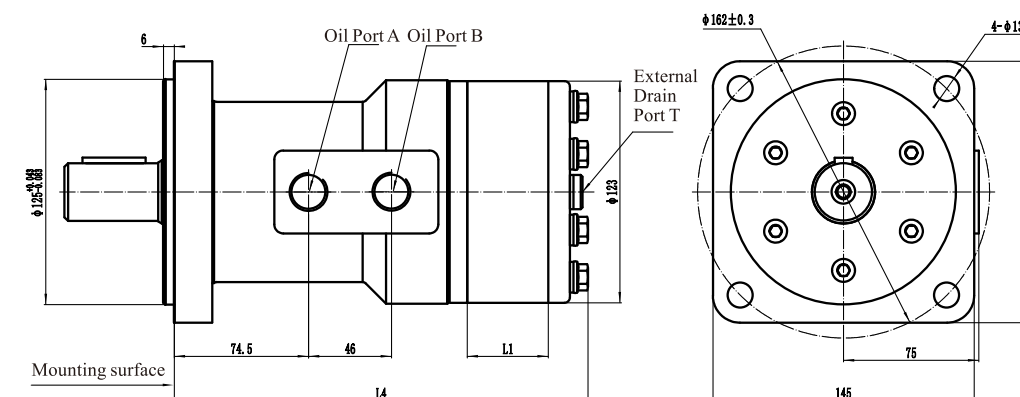


Model	BM4-245	BM4-310	BM4-390	BM4-490	BM4-625	BM4-800
L1	27.3	34.5	45	54.4	69	90
L2	182	189	199	209	223	244

Installation Dimensions for BM4 Series

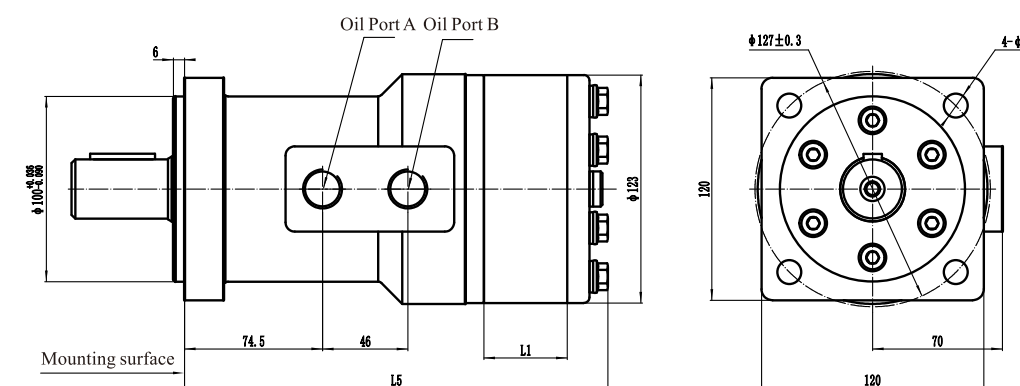
F7

4-hole large square flange



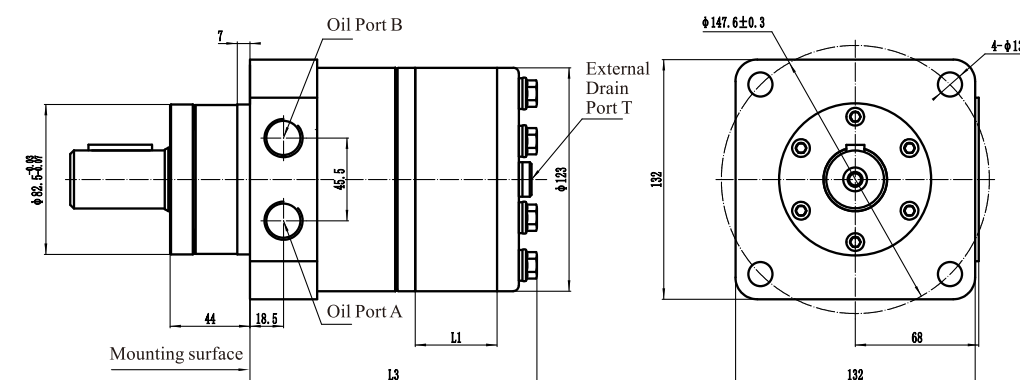
F8

4-hole small square flange



F9

Wheel motor

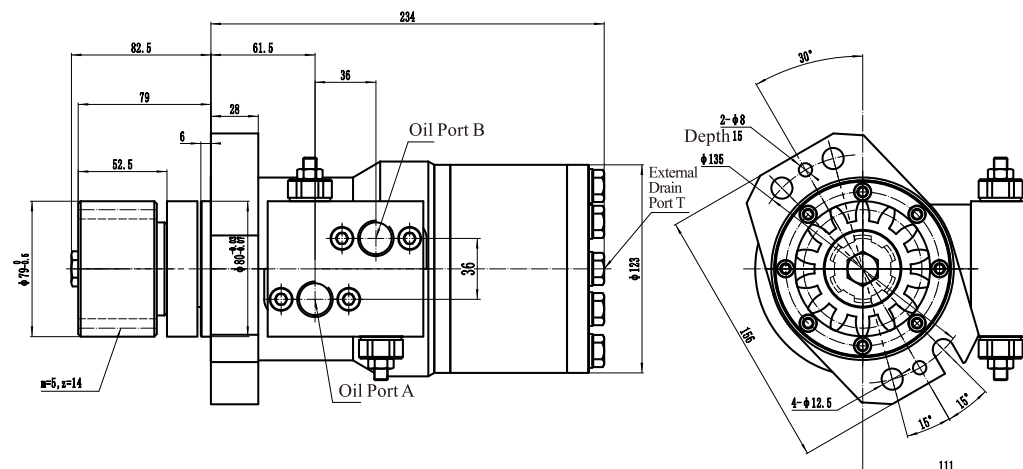


Model	BM4-245	BM4-310	BM4-390	BM4-490	BM4-625	BM4-800
L1	27.3	34.5	45	54.4	69	90
L3	141	148	158	168	182	203
L4	213	220	230	240	254	275
L5	212	219	229	239	253	274

Installation Dimensions for BM4 Series

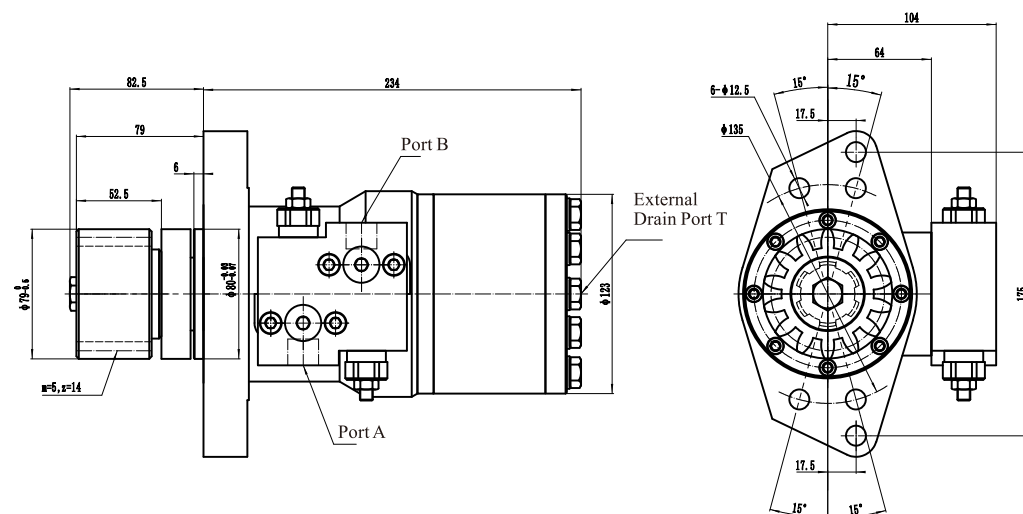
F10

4-Ø12.5
Rotary motor



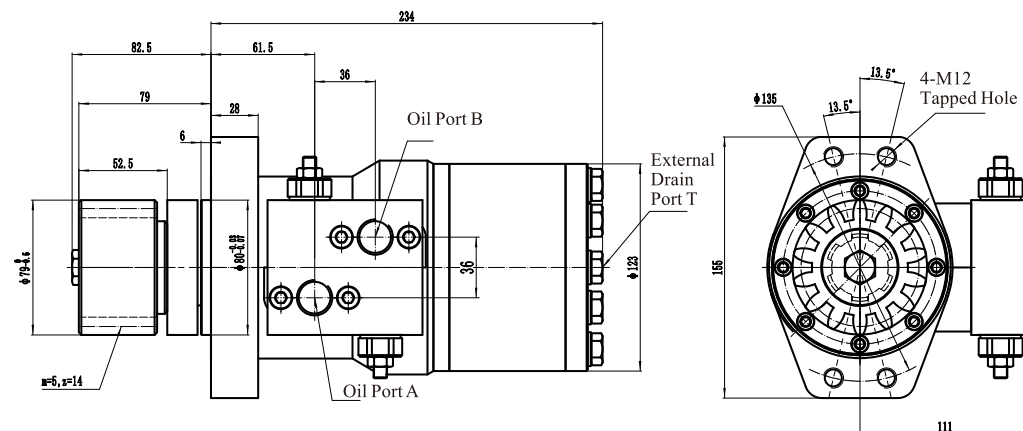
F11

6-Ø12.5
Rotary motor



F12

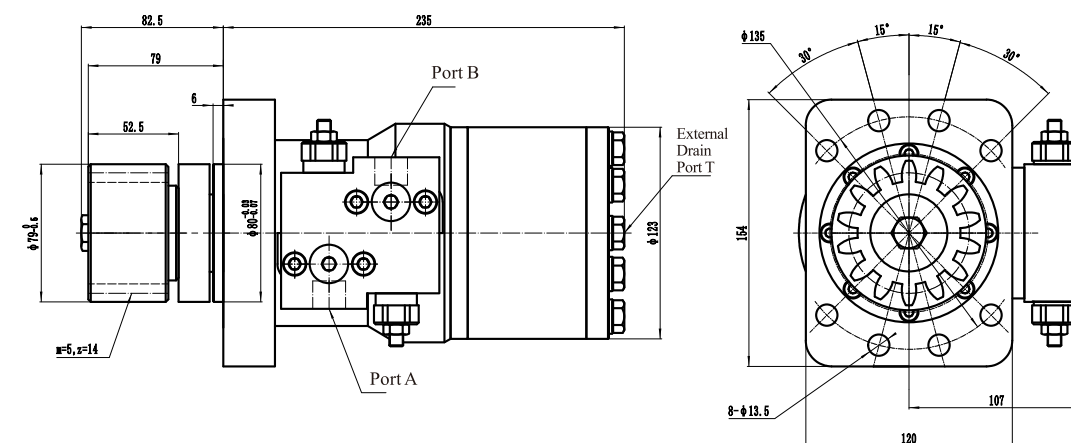
4-M12
Rotary motor



Installation Dimensions for BM4 Series

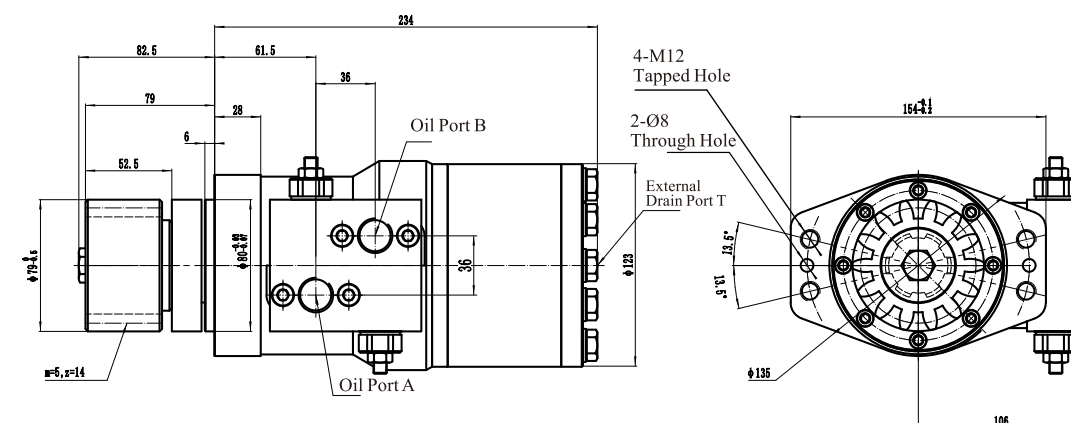
F13

8-Ø13.5
Rotary motor



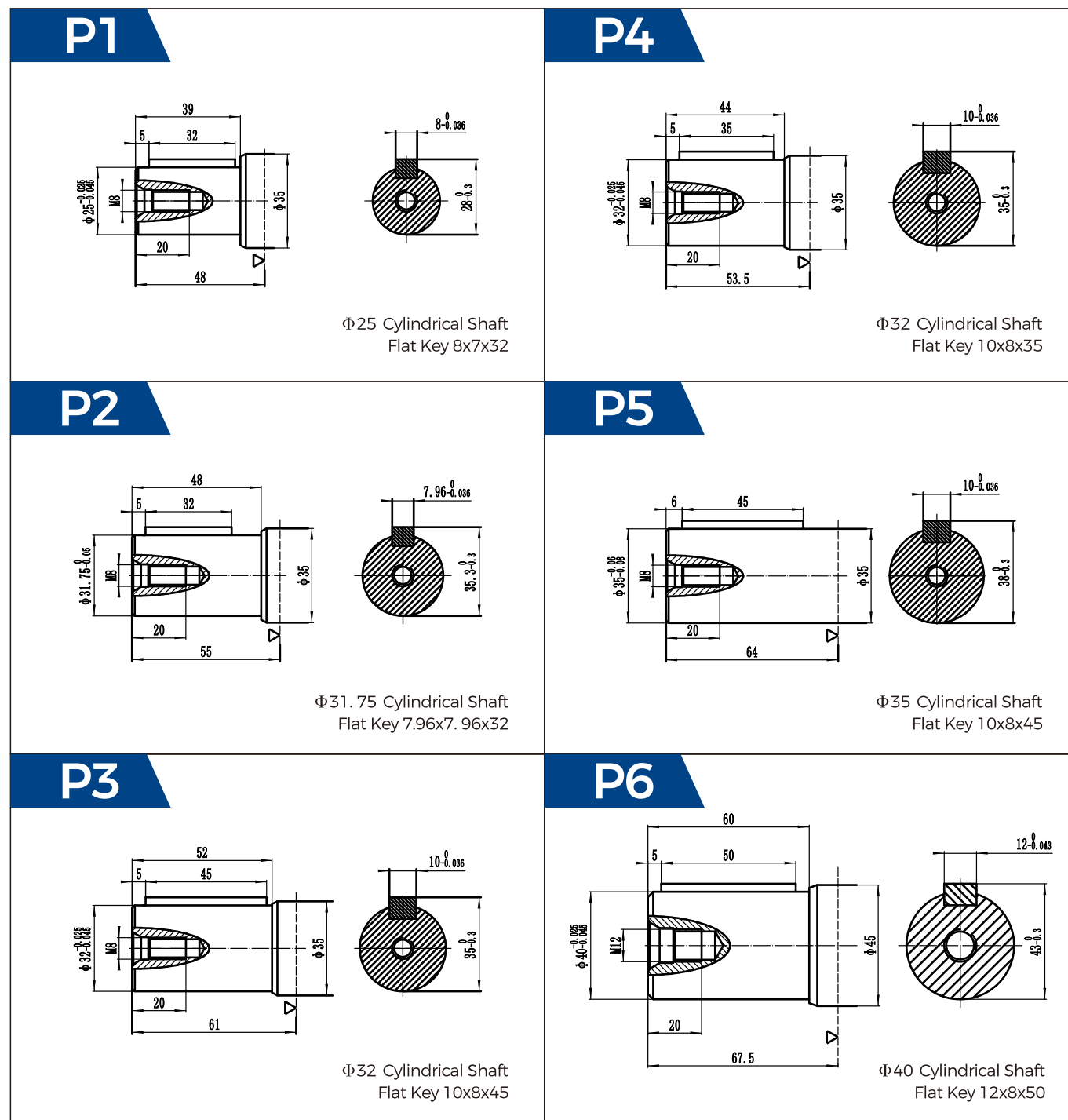
F14

4-M12
Rotary motor



A/B Common Threads		Common Threads for External Drain Port T	
A/B-1	M27x2	T0	None
A/B-2	M22x1.5	T1	G1/4
A/B-3	G3/4	T2	7/16-20UNF O-ring
A/B-4	G1/2	T3	M14x1.5
A/B-5	G3/8		
A/B-6	7/8-14UNF O-ring		

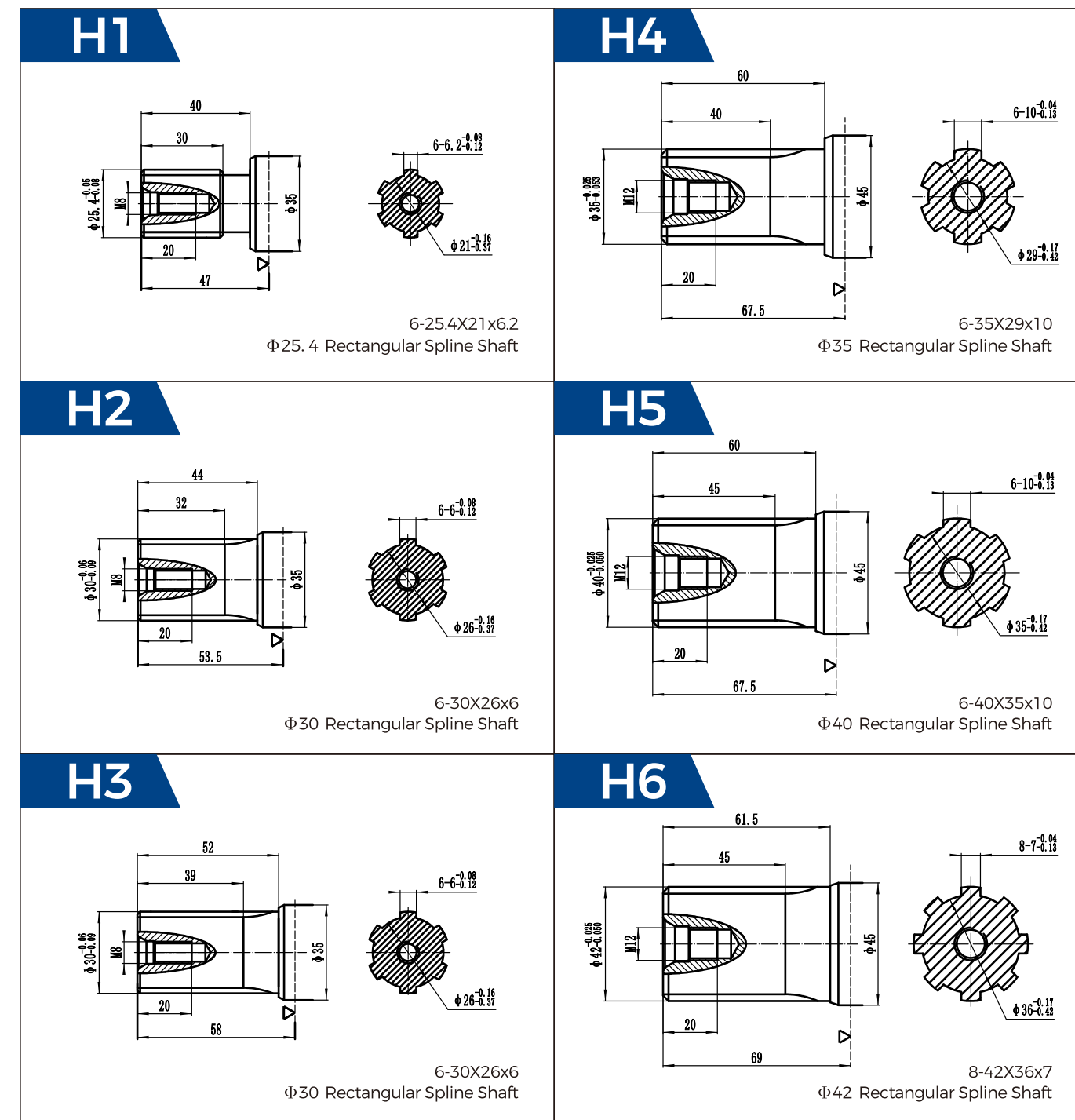
Connection Dimensions for BM4 Shaft Extension



Motor Mounting
Surface



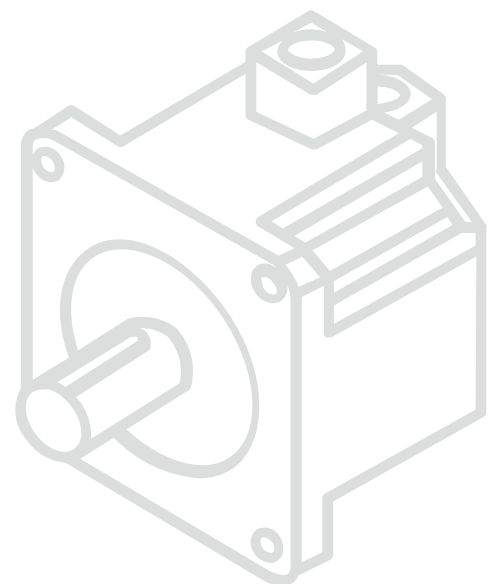
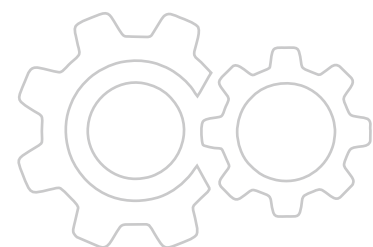
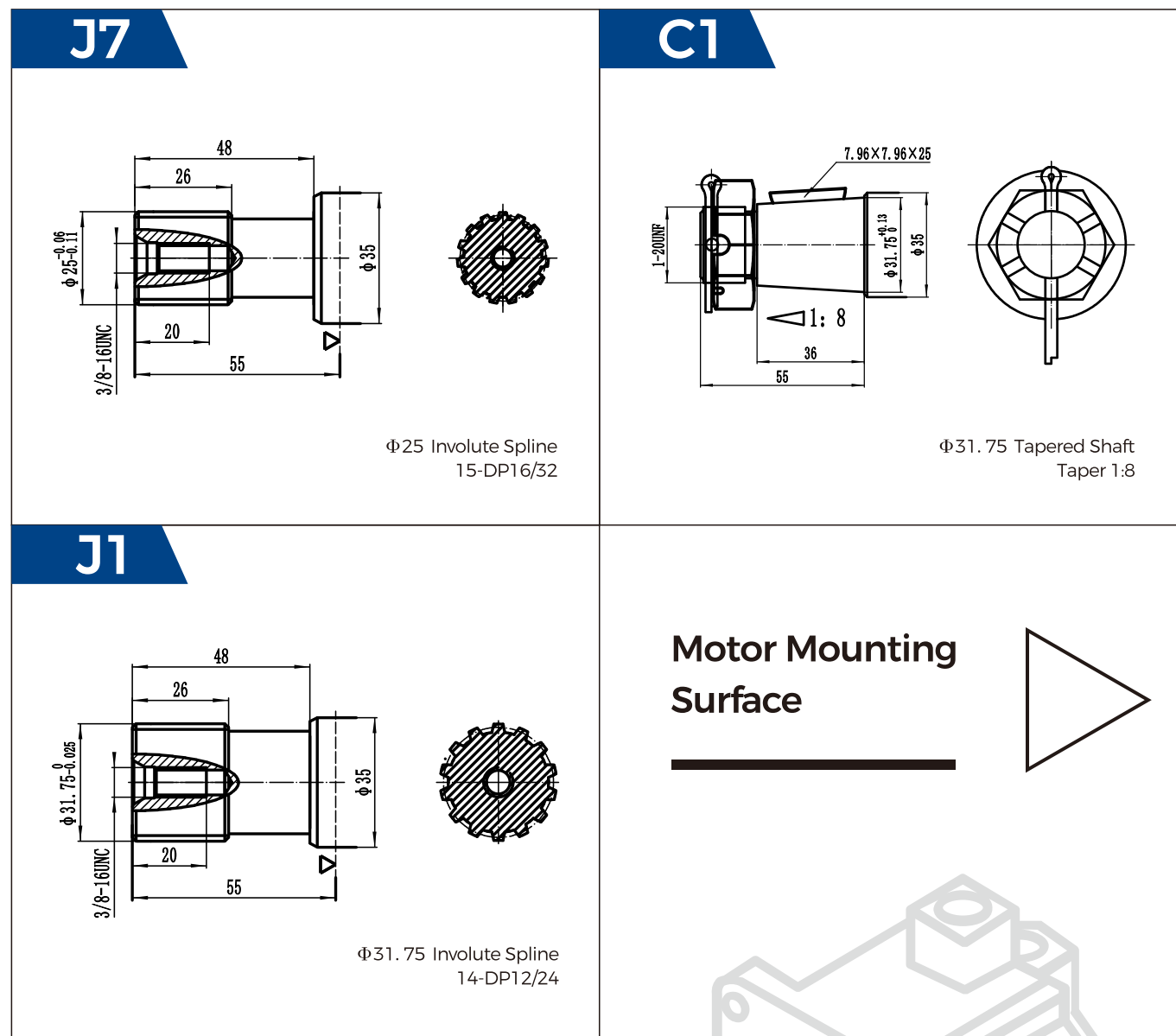
Connection Dimensions for BM4 Shaft Extension



Motor Mounting
Surface



Connection Dimensions for BM4 Shaft Extension

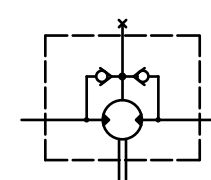
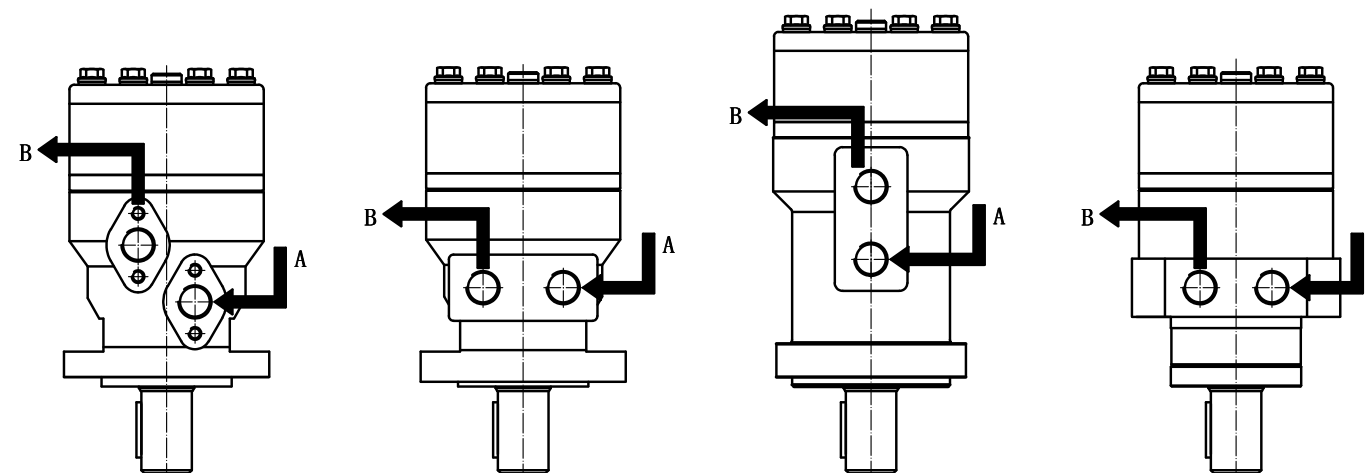


Output Shaft Rotation Direction: Standard

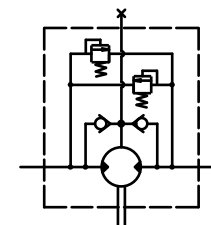
When facing the motor shaft extension direction, the shaft rotates:

When oil port A is at high pressure, the output shaft rotates clockwise.

When oil port B is at high pressure, the output shaft rotates counterclockwise.



Motor Principle Diagram



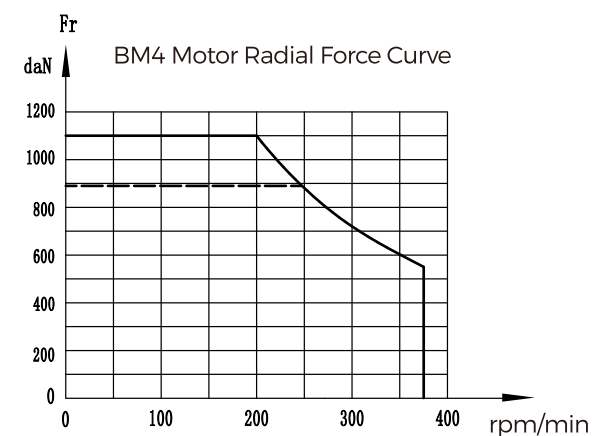
Rotary Motor Principle Diagram

F_r = Radial Force (daN)

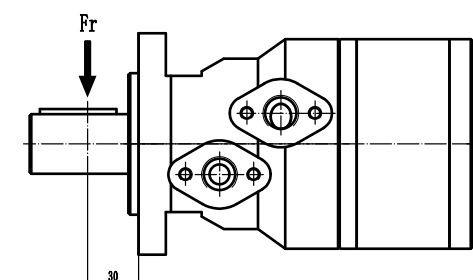
L = Distance (mm)

n = Speed (rpm)

$$F_r = \frac{1100}{n} * \frac{25000}{103.5 + L} \text{ (daN)}$$



$P_{Axial} = 300 \text{ daN}$



The curve shows the allowable radial load when $L=30\text{mm}$ (1.18in).

Ordering Information for Cycloidal Hydraulic Motor of BM4 Series

Ordering Information:



1	Product Series	BM4					
2	Displacement (ml/r)	245	310	390	490	625	800

3	
Code	Installation Flange, Mount Stopper
F1	2-Ø13.5 2-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×6
F2	4-Ø13.5 4-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×6
F3	6-Ø13.5 6-hole diamond flange with S-type oil port, Installation Stopper Ø82.5×6
F4	2-Ø13.5 2-hole diamond flange with horizontal and vertical oil port, Installation Stopper Ø82.5×6
F5	4-Ø13.5 4-hole diamond flange with horizontal and vertical oil port, Installation Stopper Ø82.5×6
F6	6-Ø13.5 6-hole diamond flange with horizontal and vertical oil port, Installation Stopper Ø82.5×6
F7	4-Ø13 4-hole large square flange with vertical oil port, Installation Stopper Ø125×6
F8	4-Ø13 4-hole small square flange with vertical oil port, Installation Stopper Ø100×6
F9	4-Ø13.5 Wheel motor, Installation Stopper Ø82.5×7
F10	4-Ø12.5 Rotary motor, Installation Stopper Ø80
F11	6-Ø12.5 Rotary motor, Installation Stopper Ø80
F12	4-M12 Rotary motor, Installation Stopper Ø80
F13	8-Ø13.5 Rotary motor, Installation Stopper Ø80
F14	4-M12 Rotary motor, Installation Stopper Ø80, rotating 90 degrees

4	
Code	Output Shaft
P1	Ø25 flat key shaft, flat key 8×7×32, shaft length 39
P2	Ø31.75 flat key shaft, flat key 7.96×7.96×32, shaft length 48
P3	Ø32 flat key shaft, flat key 10×8×45, shaft length 52
P4	Ø32 flat key shaft, flat key 10×8×35, shaft length 44
P5	Ø35 flat key shaft, flat key 10×8×45
P6	Ø40 flat key shaft, flat key 12×8×50, shaft length 60
H1	Ø25.4 rectangular spline shaft, 6-25.4×21×6.2, shaft length 40
H2	Ø30 rectangular spline shaft, 6-30×26×6, shaft length 44
H3	Ø30 rectangular spline shaft, 6-30×26×6, shaft length 52
H4	Ø35 rectangular spline shaft, 6-35×29×10, shaft length 60
H5	Ø40 rectangular spline shaft, 6-40×35×10, shaft length 60
H6	Ø42 rectangular spline shaft, 8-42×36×7, shaft length 61.5
J1	Ø25 involute spline shaft DP16/32, 15 teeth, shaft length 48
J2	Ø31.75 involute spline shaft DP12/24, 14 teeth, shaft length 48
C1	Ø31.75 tapered shaft, taper 1:8, shaft length 36

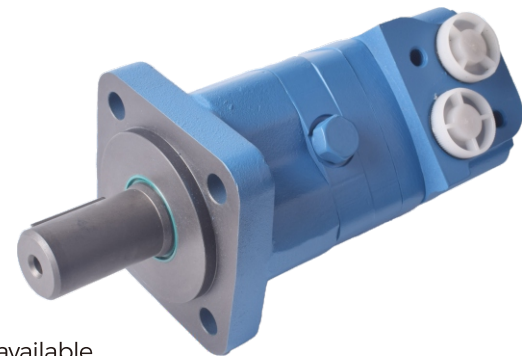
5	
Code	Oil Port
A/B-1	M27×2
A/B-2	M22×1.5
A/B-3	G3/4
A/B-4	G1/2
A/B-5	G3/8
A/B-6	7/8-14UNF O-ring

6	
Code	External Drain Port
T0	None
T1	G1/4
T2	7/16-20UNF O-ring
T3	M14X1.5

7	
Code	Rotation
None	Standard
R	Reverse

Hydraulics Orbital Motor of BMS Series

- End face flow distribution structure, high flow distribution accuracy.
- Advanced rotor and stator parameter design, low starting pressure, high efficiency, and good maintainability.
- Uses tapered roller bearing structure, strong capacity to withstand axial and radial loads, can directly drive working mechanisms, and has a wide range of applications.
- Higher working pressure and large output torque.
- Various flange, output shaft, oil port, and other installation configurations available.



BMS Technical Parameters

Displacement (ml/r)		80	100	125	160	200	245	305	400	500
Flow (L/min)	Maximum Continuous	75	75	75	75	75	75	75	75	75
	Intermittent	85	95	95	115	115	115	115	130	130
Speed (rpm)	Maximum Continuous	850	675	552	430	345	287	231	178	142
	Intermittent	956	855	700	660	529	423	347	308	246
Pressure (MPa)	Maximum Continuous	17.5	17.5	17.5	17.5	17.5	17.5	15	15	12
	Intermittent	28	28	28	25	25	25	21	17	15
Torque (N.m)	Maximum Continuous	178	223	278	356	445	557	580	715	720
	Intermittent	285	356	445	509	636	755	763	840	860

- The maximum continuous value refers to the maximum value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the working fluid.
- The maximum working oil temperature is 80°C.
- The motor can be used in series or parallel, and when used in series or parallel, the back pressure should not exceed 5 MPa. If exceeded, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- The motor should undergo a break-in period before operating at full load, recommended to run at less than 30% of the maximum working pressure for 1 hour.

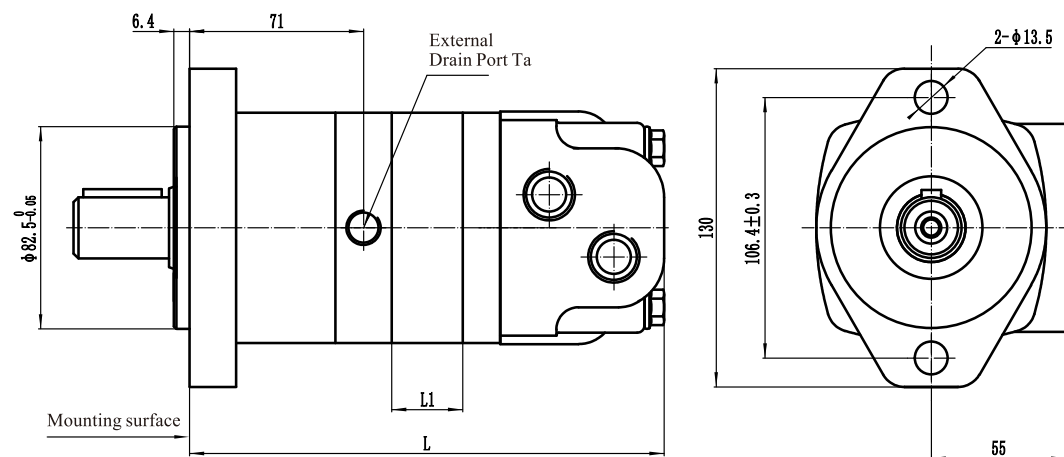
Performance Parameters Table for BMS Series

BMS-80 Pressure (MPa)									
3.5 7 10 14 17 21 24 28									
Flow (L/min)	4	35	75	103	145	176	208	220	245
	8	46	42	38	35	30	23	14	20
	16	95	75	105	152	180	216	236	257
	24	97	90	86	83	78	69	60	49
	32	195	187	182	178	170	126	148	132
	45	35	75	105	152	188	222	256	289
	60	284	280	270	263	258	245	232	210
	75	35	75	103	155	190	230	265	
	85	388	380	371	360	359	345	328	
	95	30	75	101	149	186	228	262	
BMS-100 Pressure (MPa)									
3.5 7 10 14 17 21 24 28									
Flow (L/min)	4	45	89	130	175	208	246		
	8	33	32	30	24	16	6		
	16	46	90	135	180	215	251	278	
	24	75	72	68	55	53	38	30	
	32	152	150	146	140	128	112	99	82
	45	46	93	140	188	231	270	305	356
	60	230	225	218	212	201	176	172	150
	75	42	93	142	186	233	278	310	372
	85	315	310	300	290	275	240	238	225
	95	40	90	141	190	228	285	340	389
BMS-125 Pressure (MPa)									
3.5 7 10 14 17 21 24 28									
Flow (L/min)	4	55	115	172	221	280	325	360	
	8	29	25	21	17	14	10	4	
	16	57	115	172	221	285	326	362	412
	24	61	58	52	46	42	40	31	45
	32	124	120	116	110	106	99	93	83
	45	58	118	180	238	302	352	402	486
	60	185	183	176	166	154	149	140	126
	75	55	120	180	240	312	361	408	508
	85	246	240	235	230	222	218	210	200
	95	50	115	175	236	310	360	406	502
BMS-160 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	65	131	191	260	318	384	428	
	8	23	20	19	13	9	3	2	
	16	70	135	196	265	335	404	460	
	24	47	45	42	36	36	34	28	
	32	145	142	139	128	125	116	107	
	45	74	150	220	300	373	459		
	60	198	196	191	180	182	175		
	75	70	150	221	305	380	458		
	85	282	279	276	265	254	240		
	95	65	145	210	300	375	455		
BMS-200 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	79	160	198	305	370	440		
	8	16	14	12	7	5	2		
	16	86	165	245	325	420	522	570	
	24	37	35	34	27	24	20	13	
	32	90	175	256	345	438	523	596	
	45	78	76	75	68	66	60	53	
	60	91	180	268	360	448	542	610	
	75	116	114	113	105	103	98	90	
	85	91	185	270	371	460	550	620	
	95	160	156	154	150	146	136	130	
BMS-245 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	105	210	312	410	524	630		
	8	13	11	10	6	4	3		
	16	109	215	320	425	545	650	740	
	24	29	27	25	21	19	15	12	
	32	115	225	336	450	565	676	765	
	45	63	57	57	52	51	49	46	
	60	115	230	342	465	580	690	780	
	75	94	90	87	81	77	72	66	
	85	115	235	356	475	600	706		
	95	129	125	121	115	112	105		
BMS-305 Pressure (MPa)									
3.5 7 10 14 17 21									
Flow (L/min)	4	135	260	386	500	610			
	8	12	10	9	6	6			
	16	135	270	390	520	640	768		
	24	25	23	21	19	15	11		
	32	140	280	410	545	675	815		
	45	52	50	48	44	40	34		
	60	145	290	420	560	700	732		
	75	77	75	72	66	60	56		
	85	145	295	428	575	710			
	95	104	120	100	91	85			
BMS-400 Pressure (MPa)									
3.5 7 10 14 17									
Flow (L/min)	4	175	350	496	665	820			
	8	9	8	7	6	5			
	16	180	360	510	695	830			
	24	19	18	17	14	11			
	32	190	375	542	730	866			
	45	39	37	36	34	29			
	60	190	385	550	750	880			
	75	58	56	54	50	46			
	85	190	390	560	765				
	95	80	78	74	70				
BMS-500 Pressure (MPa)									
3.5 7 10 14 15									
Flow (L/min)	15	218	440	660	895	995			
	30	30	29	28	27	25			
	40	225	450	675	910	1002			
	50	61	60	58	56	53			
	60	228	460	680	925	1017			
	75	82	80	77	75	68			
	85	225	456	682	920	1008			
	90	103	100	95	92	85			
	95	220	450	675	910	998			
	100	123	120	110	112	105			
BMS-800 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	79	160	198	305	370	440		
	8	16	14	12	7	5	2		
	16	86	165	245	325	420	522	570	
	24	37	35	34	27	24	20	13	
	32	90	175	256	345	438	523	596	
	45	78	76	75	68	66	60	53	
	60	91	180	268	360	448	542	610	
	75	116	114	113	105	103	98	90	
	85	91	185	270	371	460	550	620	
	95	160	156	154	150	146	136	130	
BMS-1000 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	79	160	198	305	370	440		
	8	16	14	12	7	5	2		
	16	86	165	245	325	420	522	570	
	24	37	35	34	27	24	20	13	
	32	90	175	256	345	438	523	596	
	45	78	76	75	68	66	60	53	
	60	91	180	268	360	448	542	610	
	75	116	114	113	105	103	98	90	
	85	91	185	270	371	460	550	620	
	95	160	156	154	150	146	136	130	
BMS-1200 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	79	160	198	305	370	440		
	8	16	14	12	7	5	2		
	16	86	165	245	325	420	522	570	
	24	37	35	34	27	24	20	13	
	32	90	175	256	345	438	523	596	
	45	78	76	75	68	66	60	53	
	60	91	180	268	360	448	542	610	
	75	116	114	113	105	103	98	90	
	85	91	185	270	371	460	550	620	
	95	160	156	154	150	146	136	130	
BMS-1600 Pressure (MPa)									
3.5 7 10 14 17 21 24									
Flow (L/min)	4	79	160	198	305	370	440		
	8	16	14	12	7	5	2		
	16	86	165	245	325	420	522	570	
	24	37	35	34	27	24	20	13	
	32	90	175	256	345	438	523	596	

Installation Dimensions for BMS Series

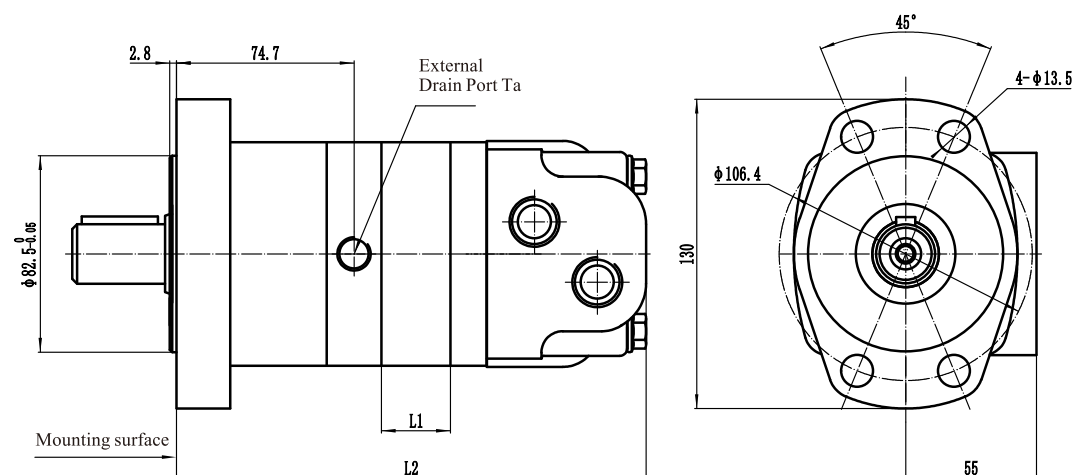
F1

2-hole diamond flange



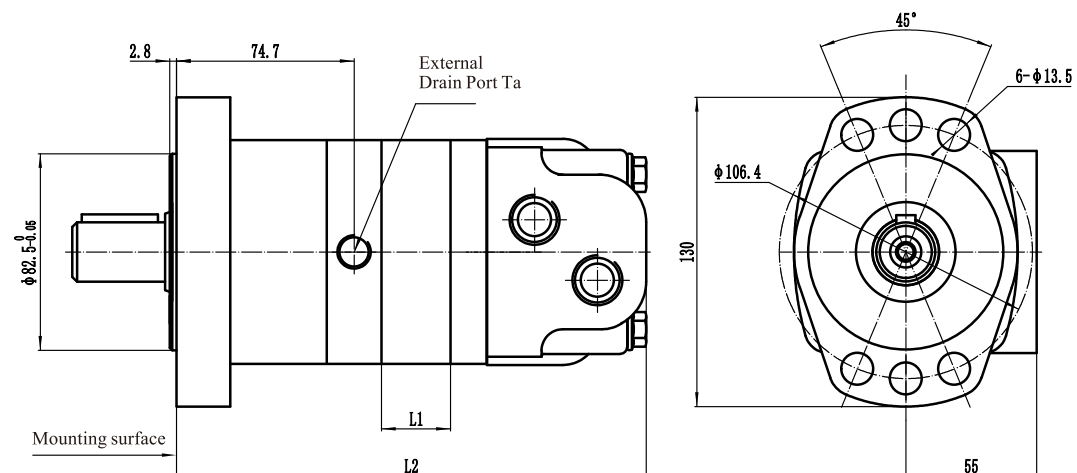
F2

4-hole diamond flange



F3

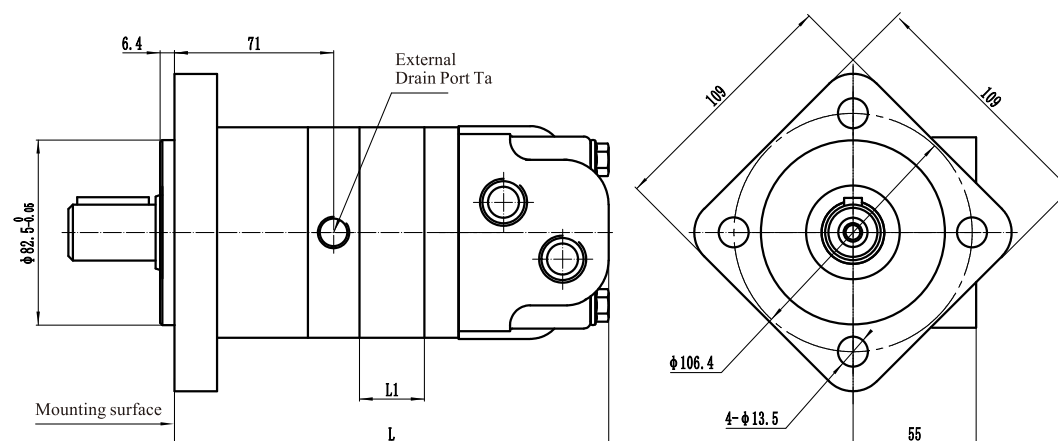
6-hole diamond flange



Installation Dimensions for BMS Series

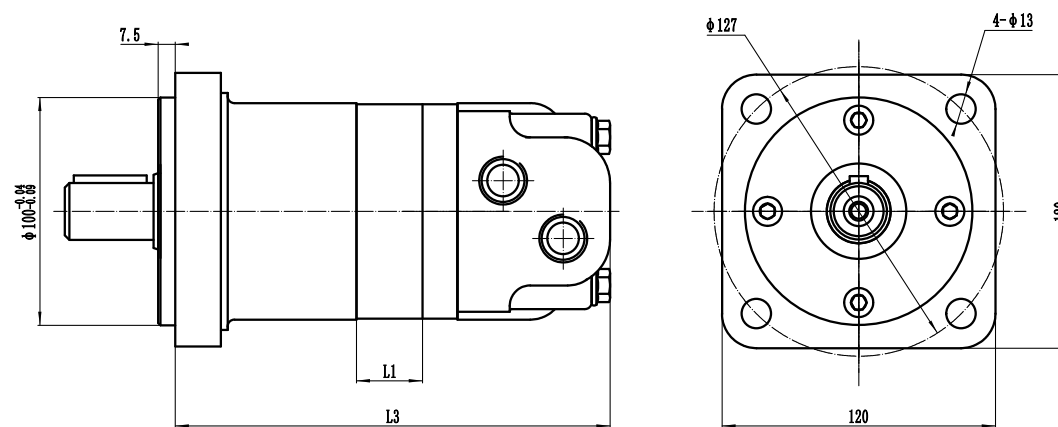
F4

4-hole small square flange



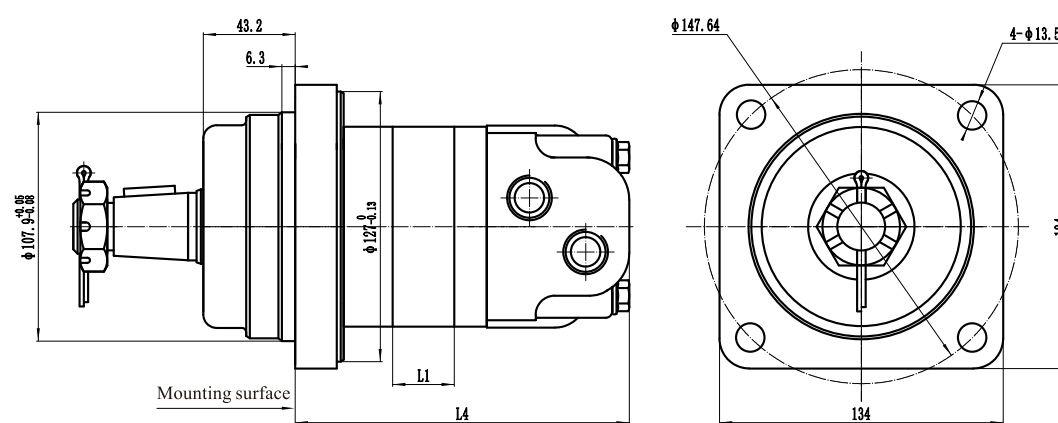
F5

4-hole large square flange



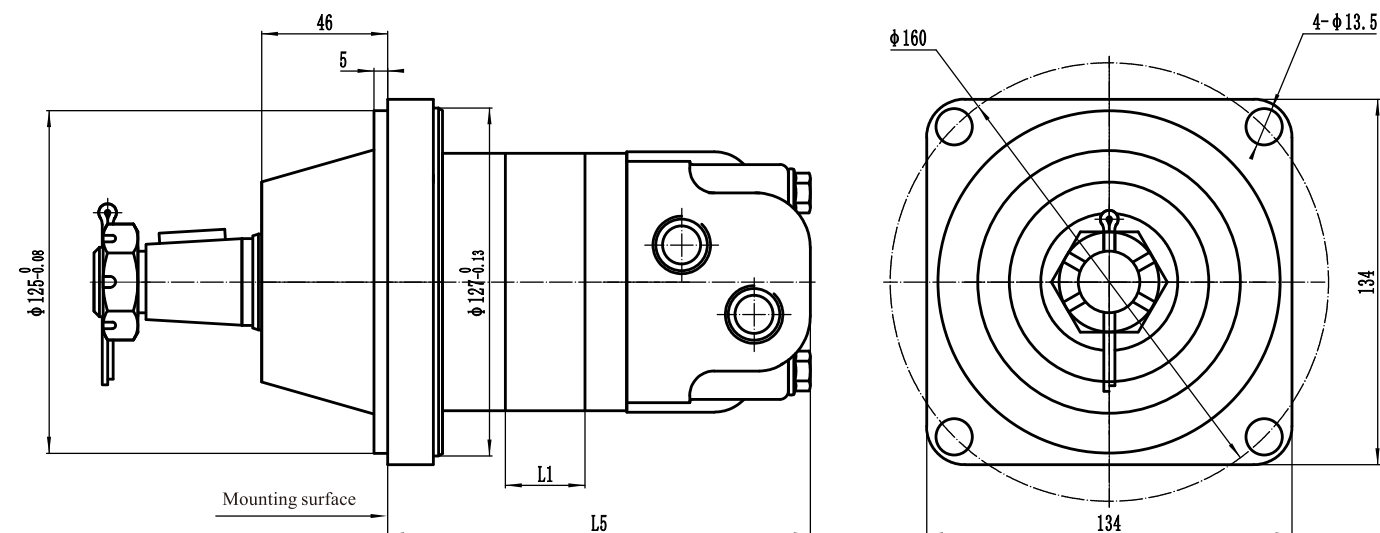
F6

Wheel motor

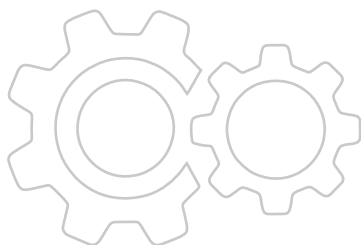


Installation Dimensions for BMS Series

F7 Wheel motor



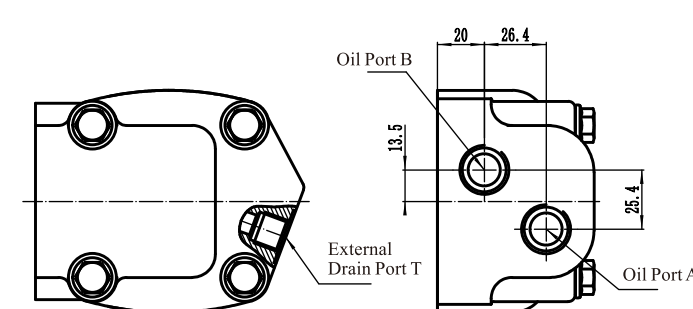
Model	BMS-80	BMS-100	BMS-125	BMS-160	BMS-200	BMS-245	BMS-305	BMS-400	BMS-500
L1	14.5	17.8	23	29	37	46	56	72	90
L	180	183	188	194	202	211	221	237	255
L2	184	187	192	198	206	215	225	241	259
L3	177	180	185	191	199	208	218	234	252
L4	143	146	151	157	165	174	184	200	218
L5	140	143	148	154	162	171	181	197	215



BMS Oil Port Connection Dimensions

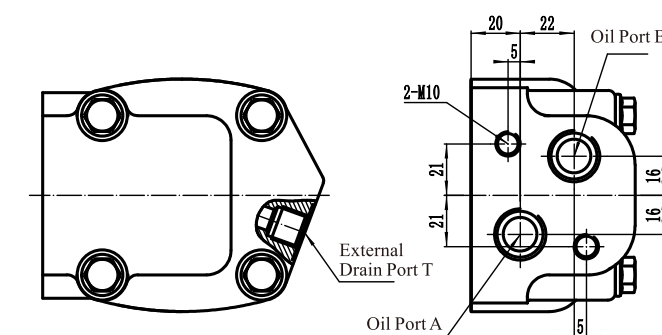
Y1

Standard oil port



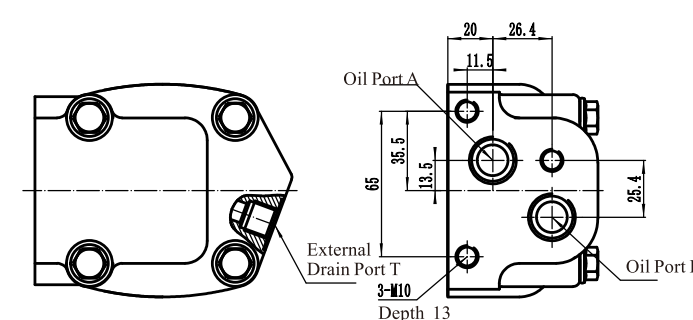
Y2

Plate connection



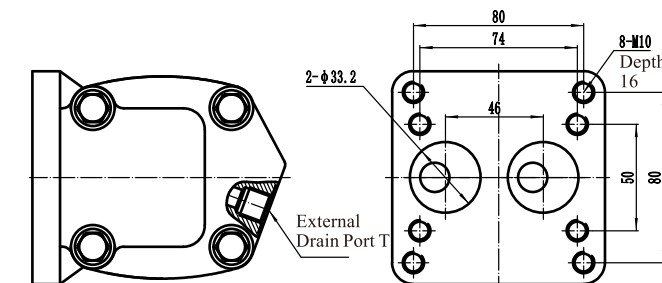
Y3

Plate connection



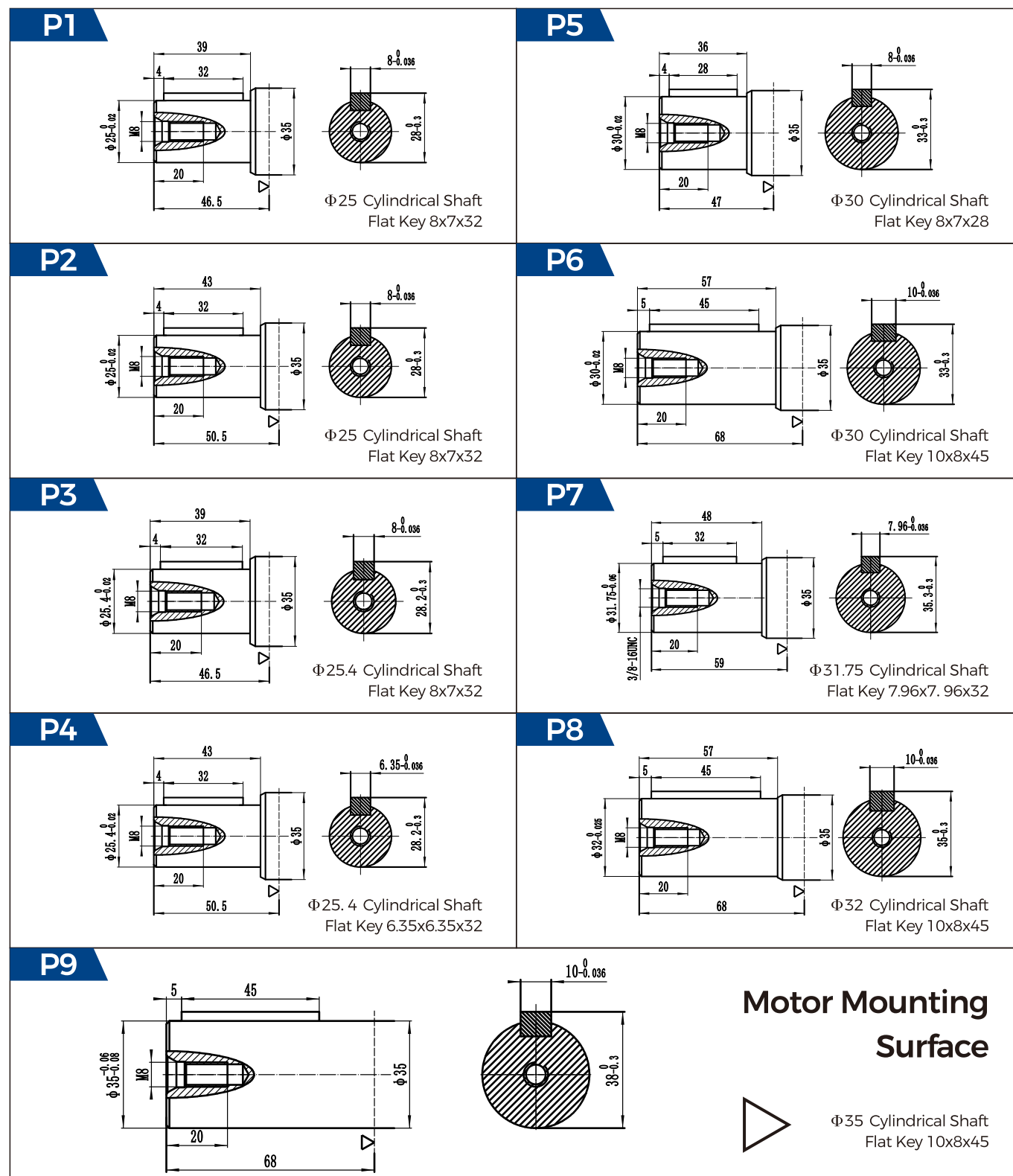
Y4

Plate connection

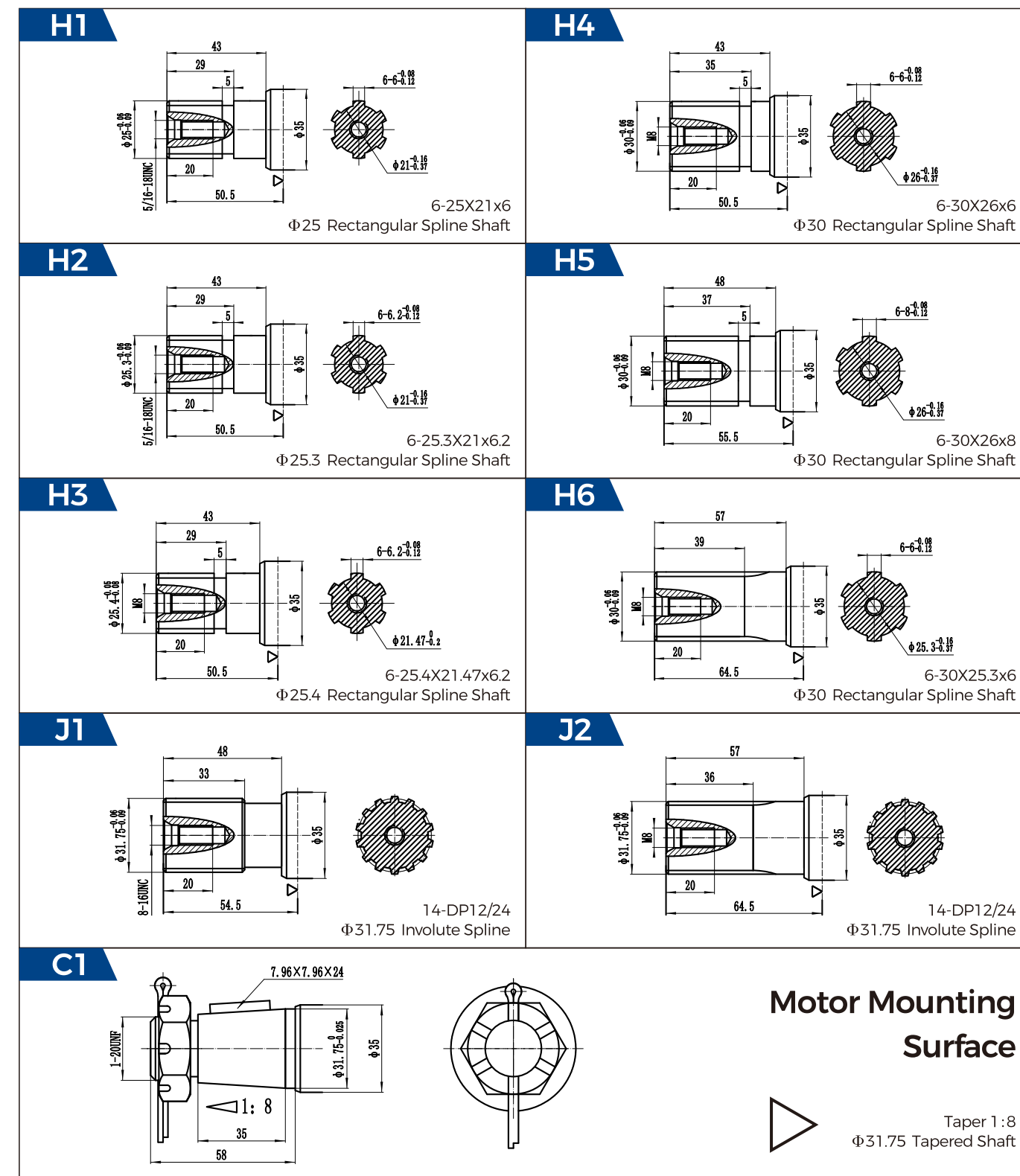


A/B Common Threads		Common Threads for External Drain Port T		Common Threads for External Drain Port Ta	
A/B-1	G1/2	T1	G1/4	Ta1	G1/4
A/B-2	7/8-14UNF O-ring	T2	7/16-20UNF O-ring	Ta2	7/16-20UNF O-ring
A/B-3	M18x1.5	T3	M14x1.5	Ta3	M14x1.5
A/B-4	M22x1.5				

Connection Dimensions for BMS Shaft Extension

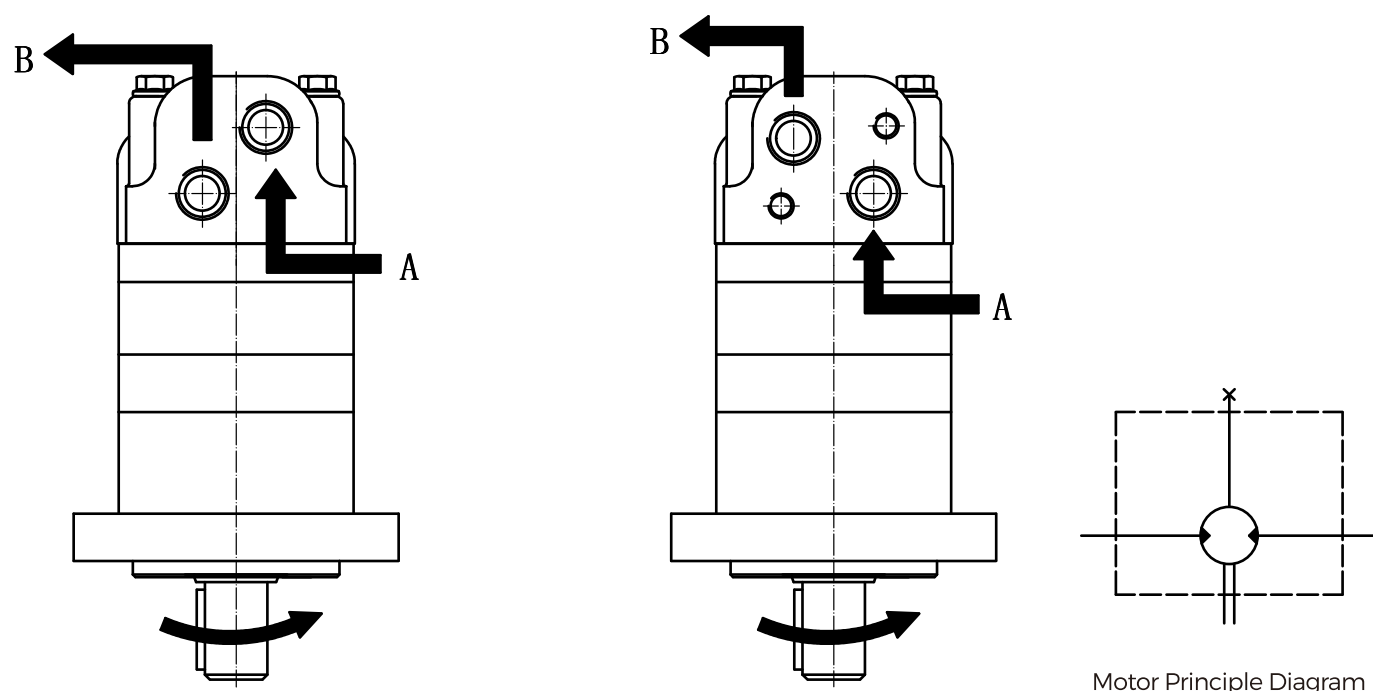


Connection Dimensions for BMS Shaft Extension

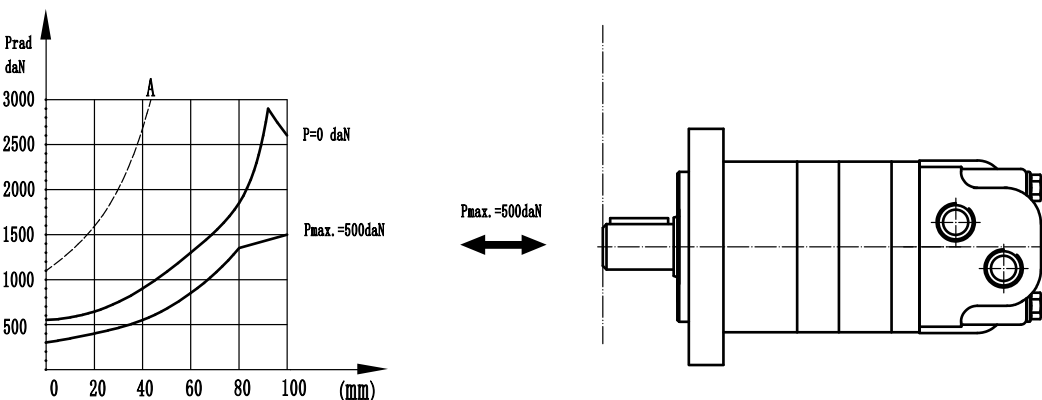


Output Shaft Rotation Direction: Standard

When facing the motor shaft extension direction, the shaft rotates:
 When oil port A is at high pressure, the output shaft rotates clockwise.
 When oil port B is at high pressure, the output shaft rotates counterclockwise.



BMS Shaft and Radial Force Curve



Ordering Information for Cycloidal Hydraulic Motor of BMS Series

Ordering Information:

1	2	3	4	5	6	7	8	9
BMS								

1	Product Series	BMS								
2	Displacement (ml/r)	80	100	125	160	200	250	305	400	500

3	
Code	Installation Flange, Mount Stopper
F1	2-Ø13.5 2-hole diamond flange, Installation Stopper Ø82.5×6.4
F2	4-Ø13.5 4-hole diamond flange, Installation Stopper Ø82.5×2.8
F3	6-Ø13.5 6-hole diamond flange, Installation Stopper Ø82.5×2.8
F4	4-Ø13.5 4-hole small square flange, Installation Stopper Ø82.5×6.4
F5	4-Ø13 4-hole large square flange, Installation Stopper Ø100×7.5
F6	4-Ø13.5 Wheel motor, Installation Stopper Ø107.9×6.3
F7	4-Ø13.5 Wheel motor, Installation Stopper Ø125×5

5	
Code	Oil Port
A/B-1	G1/2
A/B-2	7/8-14UNF O-ring
A/B-3	M18x1.5
A/B-4	M22x1.5

4	
Code	Output Shaft
P1	Ø25 flat key shaft, flat key 8×7×32, shaft length 39
P2	Ø25 flat key shaft, flat key 8×7×32, shaft length 43
P3	Ø25.4 flat key shaft, flat key 8×7×32, shaft length 39
P4	Ø25.4 flat key shaft, flat key 6.35×6.35×32, shaft length 43
P5	Ø30 flat key shaft, flat key 8×7×28, shaft length 36
P6	Ø30 flat key shaft, flat key 10×8×45, shaft length 57
P7	Ø31.75 flat key shaft, flat key 7.96×7.96×32, shaft length 48
P8	Ø32 flat key shaft, flat key 10×8×45, shaft length 57
P9	Ø35 flat key shaft, flat key 10×8×45
H1	Ø25 rectangular Spline Shaft, 6-25×21×6, shaft length 43
H2	Ø25.3 rectangular Spline Shaft, 6-25.3×21×6.2, shaft length 43
H3	Ø25.4 rectangular Spline Shaft, 6-25.4×21×6.2, shaft length 43
H4	Ø30 rectangular Spline Shaft, 6-30×26×6, shaft length 43
H5	Ø30 rectangular Spline Shaft, 6-30×26×8, shaft length 48
H6	Ø30 rectangular Spline Shaft, 6-30×25.3×6, shaft length 57
J1	Ø31.75 involute spline shaft DP12/24, 14 teeth, shaft length 48
J2	Ø31.75 involute spline shaft DP12/24, 14 teeth, shaft length 57
C1	Ø31.75 Tapered Shaft, Taper 1:8, shaft length 35

6	
Code	External Drain Port
T0	None
T1	G1/4
T2	7/16-20UNF O-ring
T3	M14X1.5

7	
Code	Oil Port Types
Y1	Standard oil port
Y2	2-M10 Plate connection
Y3	3-M10 Plate connection
Y4	8-M10 Plate connection

8	
Code	External Drain Port Ta
Ta0	None
Ta1	G1/4
Ta2	7/16-20UNF O-ring
Ta3	M14X1.5

9	
Code	Rotation
None	Standard
R	Reverse

Hydraulics Orbital Motor of BMT Series

- End-face flow distribution structure, high flow distribution accuracy
- Advanced rotor and stator parameter design, low starting pressure, high efficiency, and good maintainability
- Uses tapered roller bearing structure, strong ability to withstand axial and radial loads, can directly drive working mechanisms, with a wide range of applications
- Higher working pressure, large output torque
- Various flange, output shaft, oil port, and other installation configurations available
- Integrated with functions such as overflow valves, balancing valves, etc.

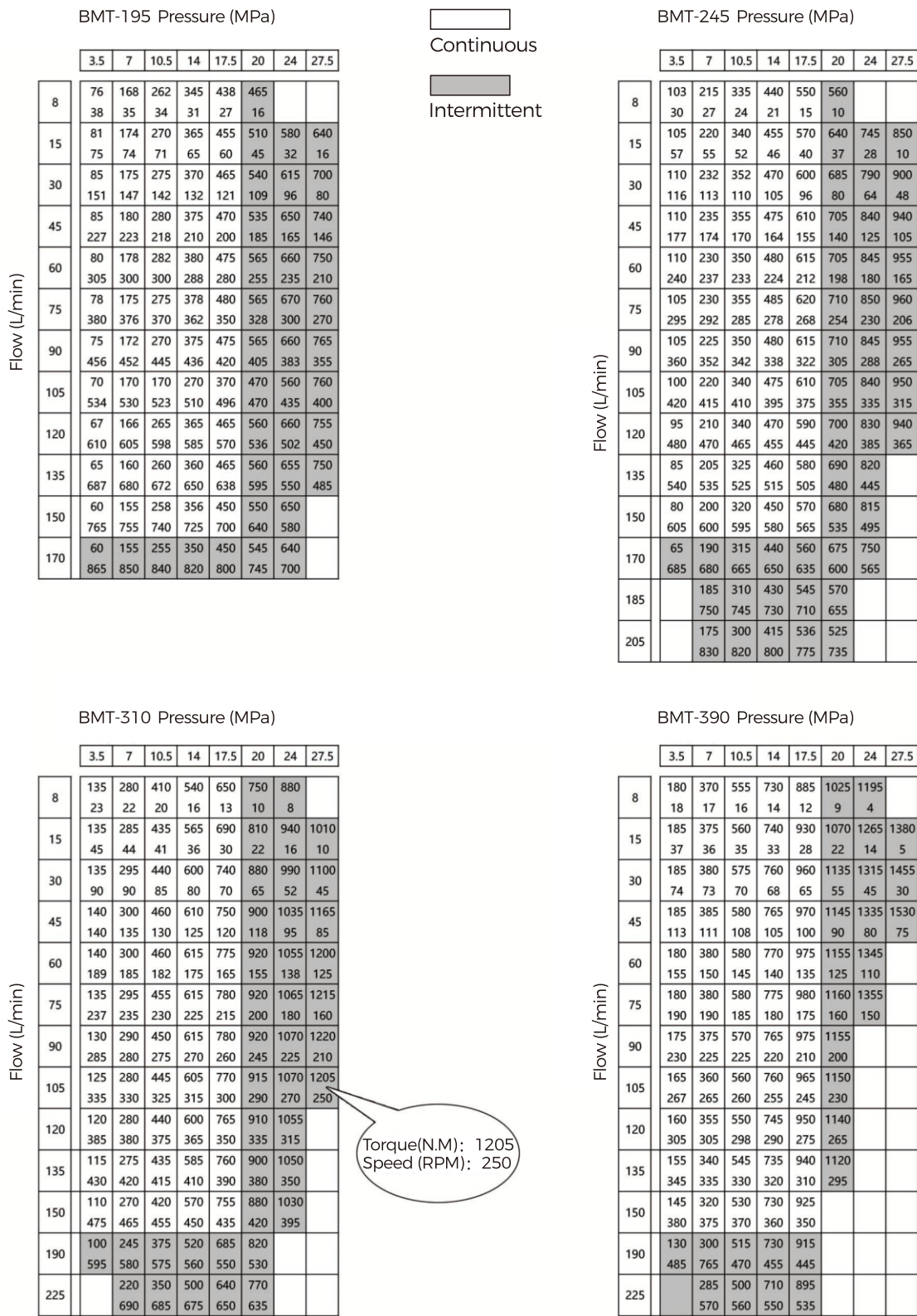


BMT Technical Parameters

Displacement (ml/r)		195	245	310	390	490	625	800	985
Flow (L/min)	Maximum Continuous	150	150	150	150	150	150	150	150
	Intermittent	170	210	225	225	225	225	225	225
Speed (rpm)	Maximum Continuous	775	615	698	387	307	241	184	153
	Intermittent	866	834	485	570	454	355	278	230
Pressure (MPa)	Maximum Continuous	17	17	17	17	17	12	12	12
	Intermittent	27.5	27.5	27.5	27.5	24	14	14	14
Torque (N.m)	Maximum Continuous	475	615	775	965	1215	1125	1380	1570
	Intermittent	770	980	1225	1455	1685	1330	1650	1875

- The maximum continuous value refers to the maximum value at which the motor of this displacement can operate continuously.
- The intermittent value refers to the maximum value at which the motor of this displacement can operate for 6 seconds within 1 minute.
- The motor should not be used simultaneously at maximum pressure and maximum speed.
- Recommended oil: Anti-wear hydraulic oil, with a solid contamination level of ISO 18/15 for the working fluid.
- The maximum working oil temperature is 80°C.
- The motor can be used in series or parallel, and when used in series or parallel, the back pressure should not exceed 5 MPa. If exceeded, it is recommended to connect an External Drain Port pipe, which should preferably be directly connected to the oil tank.
- The motor should undergo a break-in period before operating at full load, recommended to run at less than 30% of the maximum working pressure for 1 hour.

Performance Parameters for Table BMT Series



Performance Parameters for Table BMT Series

BMT-490 Pressure (MPa)

	3.5	7	10.5	14	17.5	20	24	27.5
8	240	475	705	940	1165	1375		
	14	13	12	11	8	5		
15	235	480	720	960	1190	1400	1625	1880
	29	29	28	27	25	21	17	12
30	235	485	735	975	1215	1445	1685	
	59	58	57	55	50	45	35	
45	235	485	735	975	1215	1450		
	90	89	87	85	78	70		
60	235	480	730	975	1220	1460		
	120	120	118	115	108	95		
75	225	470	725	970	1220			
	150	149	145	140	135			
90	220	465	720	965	1215			
	182	180	178	175	168			
105	205	460	710	960	1210			
	212	210	206	201	195			
120	195	450	700	950	1205			
	245	240	235	225	220			
135	175	435	680	935	1170			
	273	275	265	255	250			
150	155	420	665	920	1150			
	305	300	290	285	280			
190	130	360	580	865				
	385	380	375	365				
225		320	555	800				
		455	440	432				

Continuous
Intermittent

BMT-625 Pressure (MPa)

	3.5	7	10.5	14	17.5	20	22.5
8	265	540	805	1050			
	12	11	10	5			
15	280	585	865	1085	1425		
	23	22	21	15	13		
30	295	605	925	1270	1480	1780	
	47	45	42	38	35	30	
45	295	610	920	1330	1465	1770	1890
	71	70	68	65	58	50	25
60	285	605	915	1330	1465		
	94	90	85	83	78		
75	275	595	915	1325			
	119	116	112	105			
90	260	585	905	1310			
	145	140	135	130			
105	255	575	895	1305			
	167	165	160	152			
120	235	560	880	1280			
	191	186	182	175			
135	220	540	855				
	215	212	207				
150	200	525	840				
	239	236	233				
190		465	795				
		300	290				
225		430	740				
		360	348				

BMT-800 Pressure (MPa)

	3.5	5	7	8.5	10.5	12	14	15.5	17.5
8	355	540	725	955	1080	1275	1360		
	9	8	8	7	6	5	4		
15	370	565	758	980	1130	1265	1420	1655	1880
	18	17	17	16	15	14	12	10	9
30	385	590	795	1005	1200	1330	1580	1740	
	35	34	33	32	31	29	28	25	
45	385	590	800	1015	1200	1380	1550		
	55	54	53	52	52	50	48		
60	380	580	790	1015	1200	1345			
	73	72	70	69	67	65			
75	370	575	782	1000	1185	1365			
	92	92	88	87	85	82			
90	360	560	765	990	1170				
	111	110	108	105	102				
105	340	555	750	972	1155				
	129	128	127	125	120				
120	325	545	735	945	1130				
	148	145	143	140	135				
135	305	525	710	910					
	167	165	160	158					
150	270	500	680	880					
	185	183	180	176					
190	300	475	660	855					
	235	233	230	226					
225		423	612	830					
		280	276	272					

Torque(N.M): 1880
Speed (RPM): 9

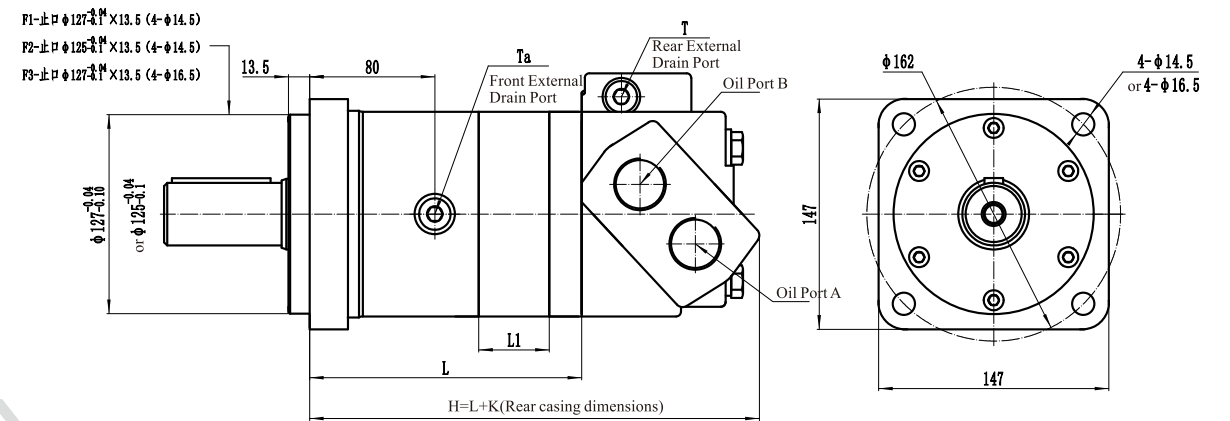
BMT-985 Pressure (MPa)

	3.5	5	7	8.5	10.5	12	14
8	470	695	945	1170	1415	1560	1675
	7	6	6	5	4	3	2
15	485	715	965	1200	1445	1580	1780
	15	15	14	14	13	13	12
30	495	720	995	1235	1480	1640	1860
	30	30	29	28	27	25	23
45	495	720	1000	1250	1490	1700	
	45	44	44	43	42	40	
60	490	715	990	1245	1500		
	60	60	58	56	55		
75	475	710	980	1230	1485		
	76	76	75	73	70		
90	460	705	960	1215	1465		
	91	91	90	88	85		
105	445	690	940	1195	1440		
	106	105	105	103	100		
120	420	665	920	1155			
	122	121	119	116			
135	390	635	890	1120			
	137	136	135	134			
150	360	605	860	1080			
	151	150	148	145			
190	320	575	820	1040			
	192	190	188	185			
225		515	800	1020			
		230	225	224			

Installation Dimensions for BMT Series

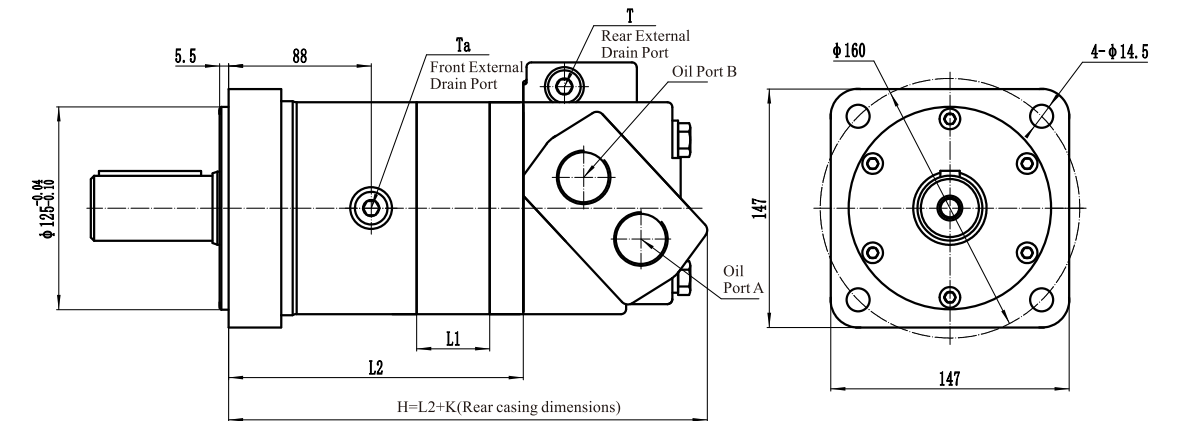
F1-F3

4-hole small square flange



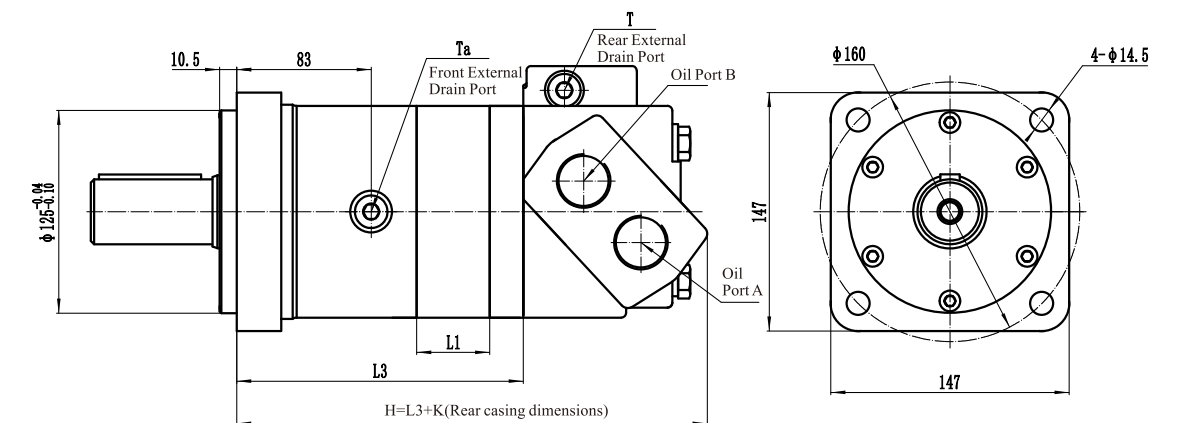
F4

4-hole small square flange



F5

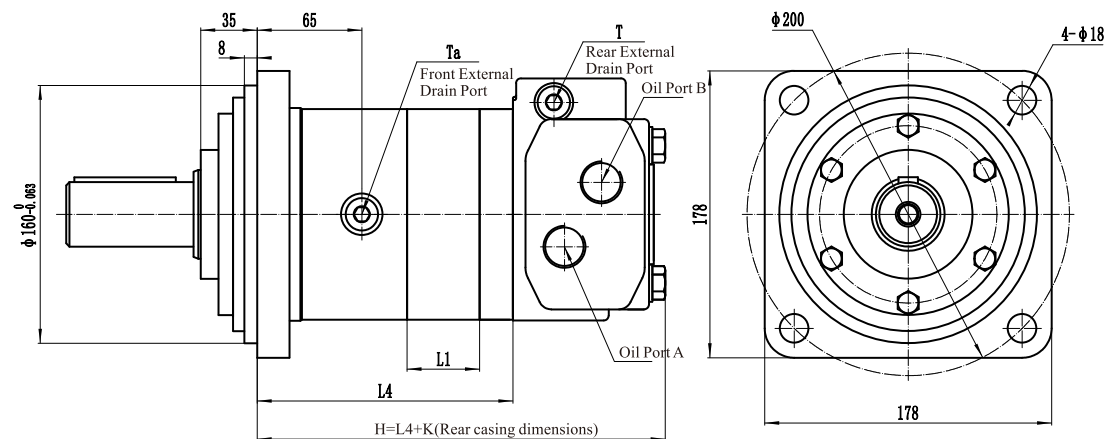
4-hole small square flange



Installation Dimensions for BMT Series

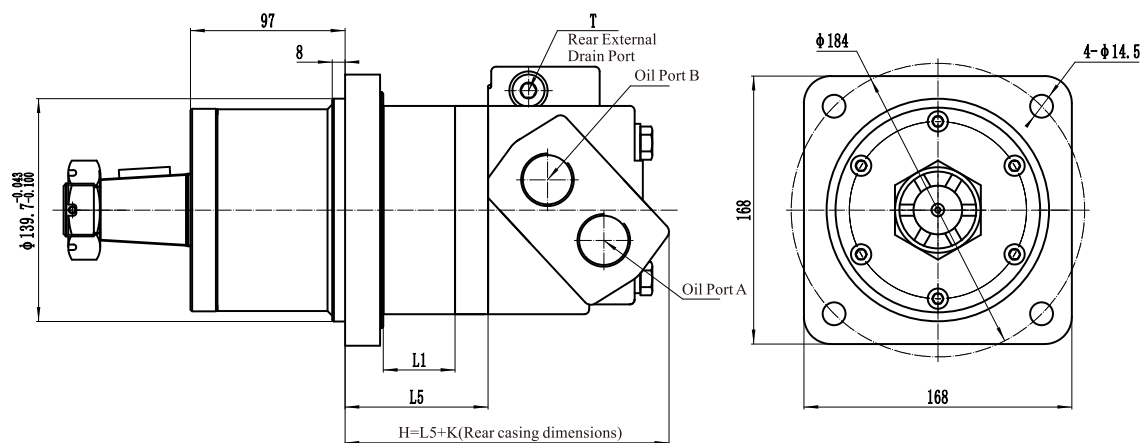
F6

4-hole large
square flange



F7

4-wheel
motor

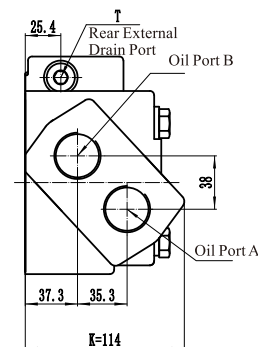


Model	BMT-195	BMT-245	BMT-310	BMT-390	BMT-490	BMT-625	BMT-800	BMT-985
L1	21.7	27.3	34.5	45	54.4	69	90	108.8
L	151	156	164	174	184	198	219	238
L2	159	164	172	182	192	206	227	246
L3	154	159	167	177	187	201	222	241
L4	136	141	149	159	169	183	204	223
L5	67	72	80	90	100	114	135	154

Connection Dimensions for BMT Oil Port

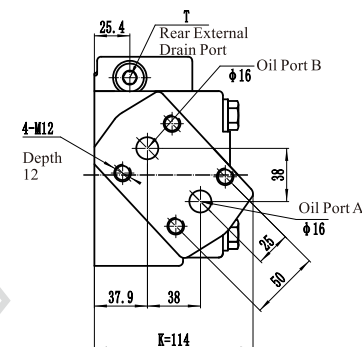
Y1

Standard
oil port



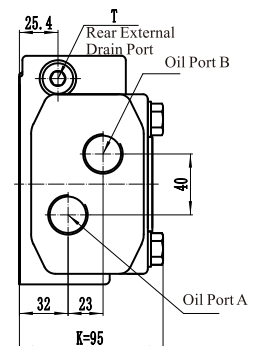
Y2

4M-12
Center
distance
38x38



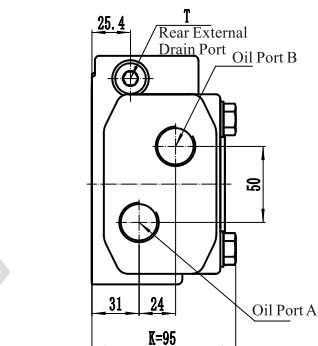
Y3

Center
distance
40x23



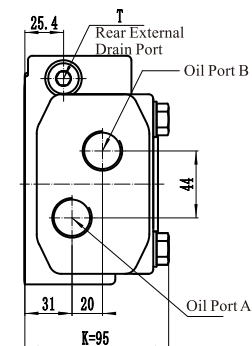
Y4

Center
distance



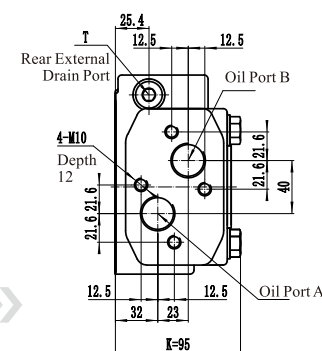
Y5

Center
distance
44x20



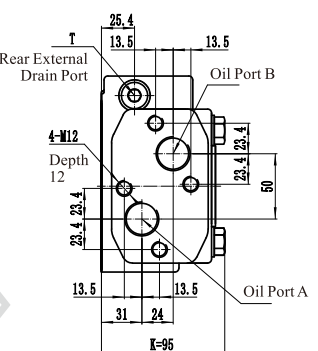
Y6

4M-10
Center
distance
40x23



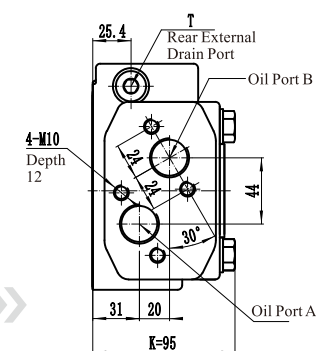
Y7

4M-12
Center
distance
50x24



Y8

4M-10
Center
distance
44x20



A/B Common Threads				Common Thread for Rear External Drain Port T		Common Thread for Front External Drain Port Ta	
A/B-1	M33x2	A/B-6	G3/4	T0	None	Ta0	None
A/B-2	M27x2	A/B-7	G1/2	T1	M14x1.5	Ta1	M14x1.5
A/B-3	M24x1.5	A/B-8	1 1/16-12UN O-ring	T2	G1/4	Ta2	G1/4
A/B-4	M22x1.5	A/B-9	1 5/16-12UN O-ring	T3	7/16-20UNF O-ring	Ta3	7/16-20UNF O-ring
A/B-5	G1			T4	9/16-18UNF O-ring	Ta4	9/16-18UNF O-ring
						Ta5	M10X1

Connection Dimensions for BMT Shaft Extension

P1 $\Phi 40$ Cylindrical Shaft Flat Key 12x8x63	P5 $\Phi 38.1$ Cylindrical Shaft Flat Key 9.52x9.52x57
P2 $\Phi 40$ Cylindrical Shaft Flat Key 12x8x45	P6 $\Phi 38.1$ Cylindrical Shaft Flat Key 9.52x9.52x52
P3 $\Phi 40$ Cylindrical Shaft Flat Key 12x8x70	P7 $\Phi 35$ Cylindrical Shaft Flat Key 10x8x45
P4 $\Phi 50$ Cylindrical Shaft Flat Key 14x9x70	P8 $\Phi 31.75$ Cylindrical Shaft Flat Key 7.96x7.96x42

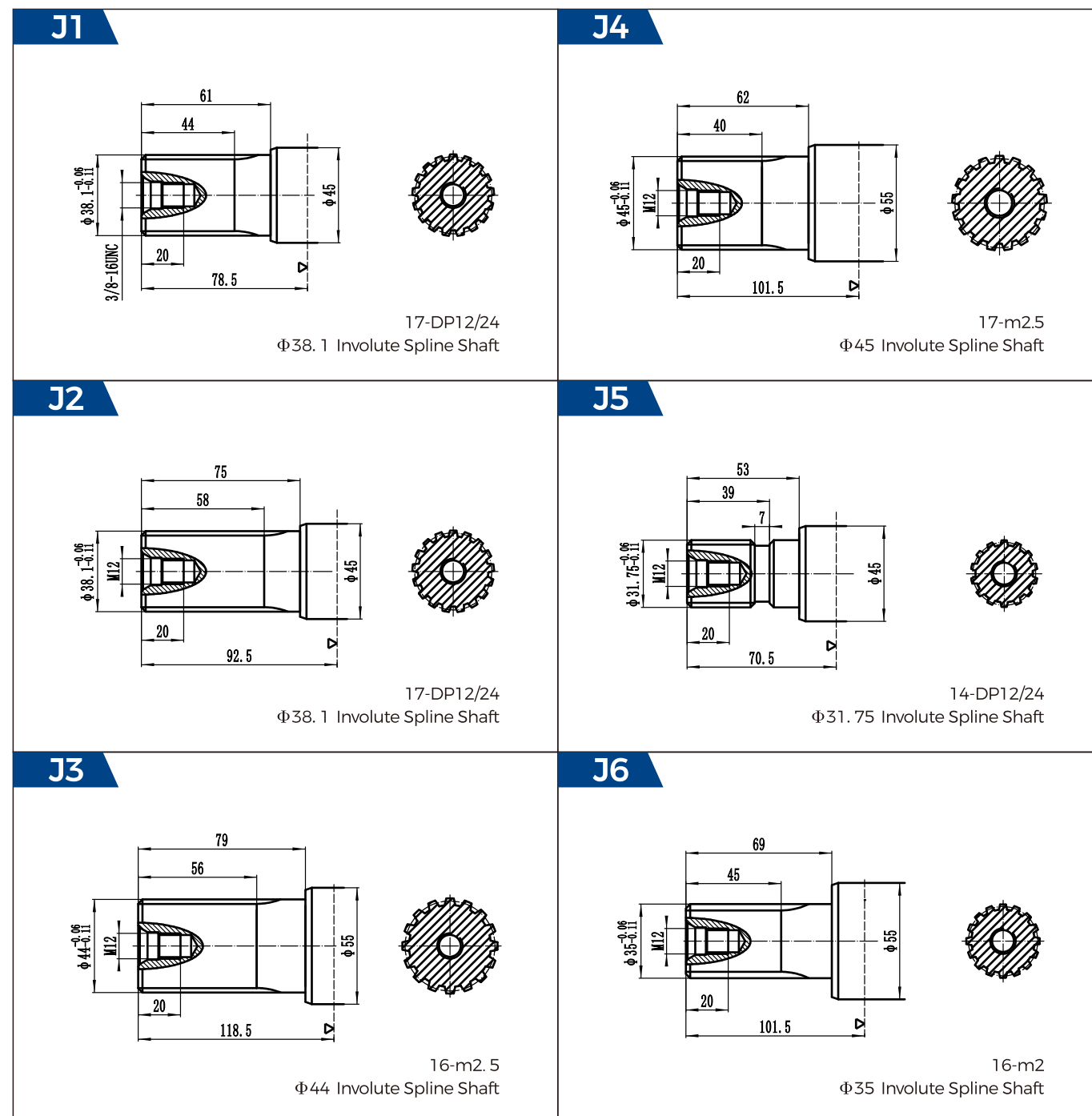
Motor Mounting Surface

Connection Dimensions for BMT Shaft Extension

H1 $\Phi 40$ Rectangular Spline Shaft 6-40X35x10	H5 $\Phi 35$ Rectangular Spline Shaft 6-35X29x10
H2 $\Phi 40$ Rectangular Spline Shaft 6-40X35x10	C1 $\Phi 44.5$ Tapered Shaft Taper 1:8
H3 $\Phi 42$ Rectangular Spline Shaft 8-42X36x7	C2 $\Phi 45$ Tapered Shaft Taper 1:10
H4 $\Phi 35$ Rectangular Spline Shaft 6-35X29x10	

Motor Mounting
Surface

Connection Dimensions for BMT Shaft Extension



Motor Mounting Surface

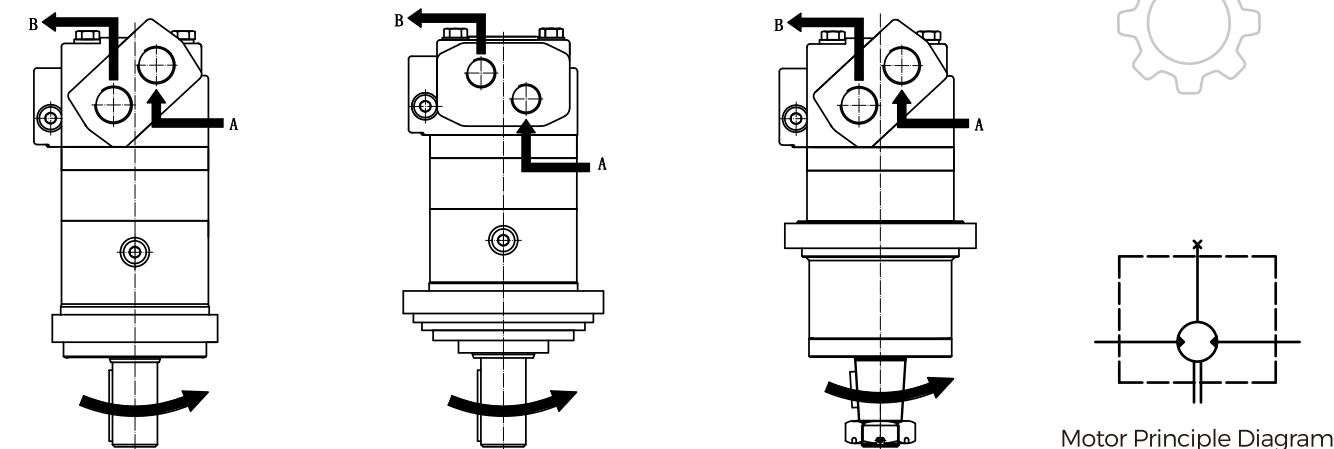


Output Shaft Rotation Direction: Standard

When facing the motor shaft extension direction, the shaft rotates:

When oil port A is at high pressure, the output shaft rotates clockwise.

When oil port B is at high pressure, the output shaft rotates counterclockwise.



BMT Motor Radial Force Curve

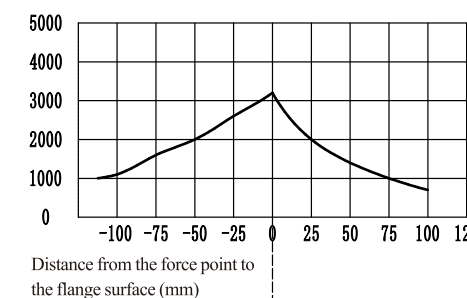
Coordinate data points

Distance (mm)	-100	-75	-50	-25	0	25	50	75	100
Force (daN)	1100	1600	2000	2600	3200	2000	1400	1000	700

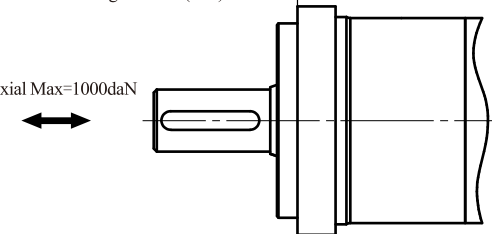
Coordinate data points

Distance (mm)	-175	-150	-125	-100	-85	-75	-50	-25	0	17
Force (daN)	1300	1800	2200	2900	3200	2700	1800	1200	900	800

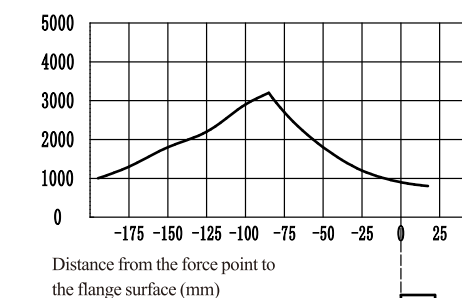
Radial Load--(daN) BMT Conventional Motor



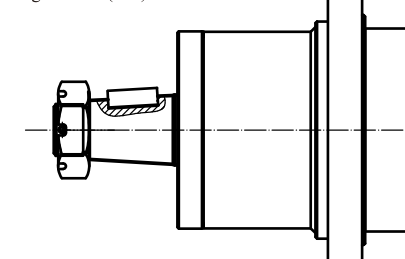
P Axial Max=1000daN



Radial Load--(daN) BMT Wheel Motor



P Axial Max=1000daN



This radial force curve is derived based on the rated torque to ensure the bearing's B10 life under allowable load (2000 hours or 12x10^6 rotations at 100 rpm). For other speed conditions, a specific coefficient must be applied.

Ordering Information for

Cycloidal Hydraulic Motor of BMT Series

Ordering Information:



1	Product Series	BMT							
2	Displacement (ml/r)	195	245	310	390	490	625	800	985

3	
Code	Installation Flange, Mount Stopper
F1	4-Ø14.5 Small square flange Ø162, Installation Stopper Ø127×13.5
F2	4-Ø14.5 Small square flange Ø162, Installation Stopper Ø125×13.5
F3	4-Ø16.5 Small square flange Ø162, Installation Stopper Ø127×13.5
F4	4-Ø14.5 Small square flange Ø160, Installation Stopper Ø125×5.5
F5	4-Ø14.5 Small square flange Ø160, Installation Stopper Ø125×10.5
F6	4-Ø18 Large square flange Ø200, Installation Stopper Ø160×8
F7	4-Ø14.5 Wheel motor, Installation Stopper Ø139.7×8

5	
Code	Oil Port
A/B-1	M33x2
A/B-2	M27x2
A/B-3	M24x1.5
A/B-4	M22x1.5
A/B-5	G1
A/B-6	G3/4
A/B-7	G1/2
A/B-8	1 1/16-12UN O-ring
A/B-9	1 5/16-12UN O-ring

4	
Code	Output Shaft
P1	Ø40 flat key shaft, flat key 12×8×63, shaft length 75
P2	Ø40 flat key shaft, flat key 12×8×45, shaft length 58
P3	Ø40 flat key shaft, flat key 12×8×70, shaft length 79
P4	Ø50 flat key shaft, flat key 14×9×70, shaft length 79
P5	Ø38.1 flat key shaft, flat key 9.52×9.52×57, shaft length 75
P6	Ø38.1 flat key shaft, flat key 9.52×9.52×52, shaft length 61
P7	Ø35 flat key shaft, flat key 10×8×45, shaft length 58
P8	Ø31.75 flat key shaft, flat key 7.96×7.96×42, shaft length 57
H1	Ø40 rectangular Spline Shaft, 6-40×35×10, shaft length 61
H2	Ø40 rectangular Spline Shaft, 6-40×35×10, shaft length 79
H3	Ø42 rectangular Spline Shaft, 8-42×36×7, shaft length 58.5
H4	Ø35 rectangular Spline Shaft, 6-35×29×10, shaft length 62
H5	Ø35 rectangular Spline Shaft, 6-35×29×10, shaft length 76
J1	Ø38.1 involute spline shaft DP12/24, 17 teeth, shaft length 61
J2	Ø38.1 involute spline shaft DP12/24, 17 teeth, shaft length 75
J3	Ø44 involute spline shaft, 16 teeth, modulus 2.5, shaft length 79
J4	Ø45 involute spline shaft, 17 teeth, modulus 2.5, shaft length 62
J5	Ø31.75 involute spline shaft DP12/24, 14 teeth, shaft length 53
J6	Ø35 involute spline shaft, 16 teeth, modulus 2, shaft length 69
C1	Ø44.5 keyed shaft, keyway 1:8, shaft length 54
C2	Ø45 keyed shaft, keyway 1:10, shaft length 54

6	
Code	External Drain Port
T0	None
T1	M14x1.5
T2	G1/4
T3	7/16-20UNF O-ring
T4	9/16-18UNF O-ring

7	
Code	Oil Port Types
Y1	Standard oil port
Y2	4-M12, Ø16, center distance 38×38
Y3	Center distance 40×23
Y4	Center distance 50×24
Y5	Center distance 44×20
Y6	4-M10, center distance 40×23
Y7	4-M12, center distance 50×24
Y8	4-M10, center distance 44×20

9	
Code	Rotation
None	Standard
R	Reverse

8					
Code	External Drain Port	Code	External Drain Port	Code	External Drain Port
Ta0	None	Ta2	G1/4	Ta4	9/16-18UNF O-ring
Ta1	M14x1.5	Ta3	7/16-20UNF O-ring	Ta5	M10x1