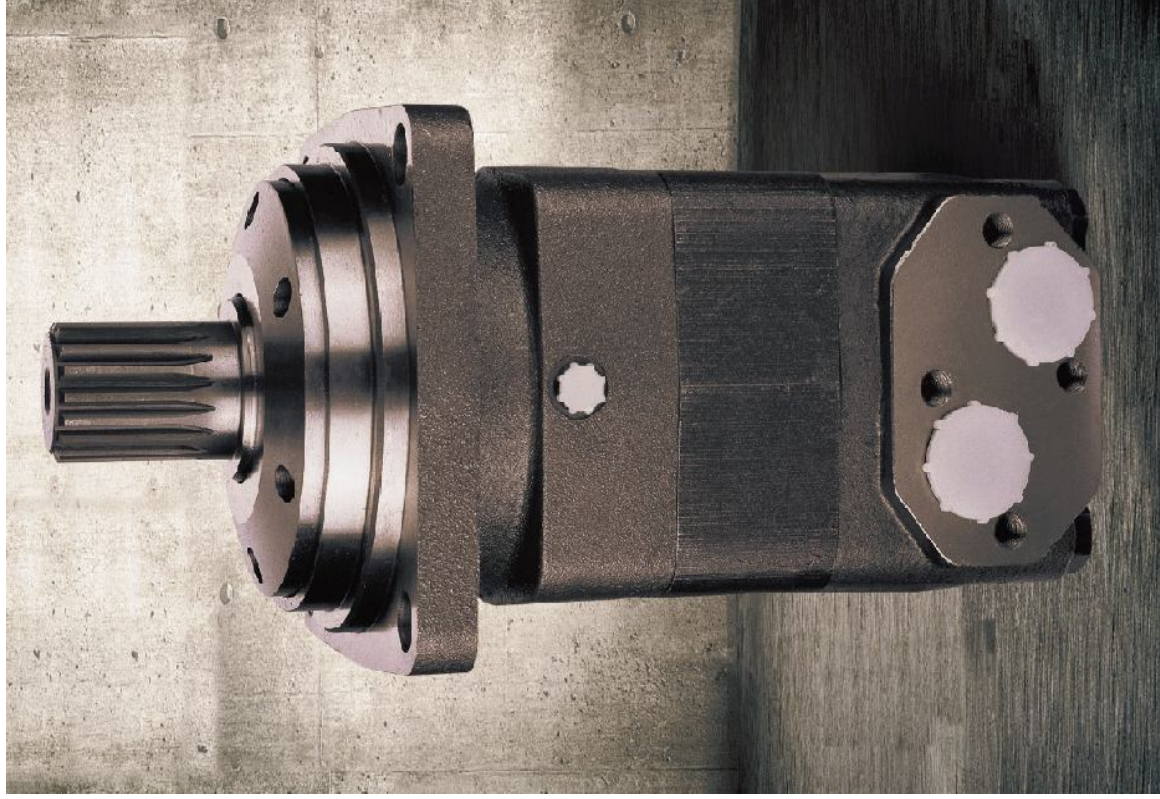


## BM ORBIT HYDRAULIC MOTORS



# INDEX

## BM ORBIT HYDRAULIC MOTORS

1. ORBIT HYDRAULIC MOTOR WITH SPOOL VALVE	
BMR, BMRW MOTOR	01-07
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INTRODUCTION



This series of motor, with its shell made of ductile cast iron of adequate intensity, can be applied to situations with less load and interval operation, widely to agriculture, forestry, plastics, machine tools and min machines, such as the mould height adjustment of the injection molding machine, the cleaner, the saw the worktable etc.

CHARACTERISTICS

- 1 The output shaft, with the deep groove ball bearing, can bear certain axial force and radial force.
- 2 With the axial oil distribution structure, it is of smaller size and less weight.
- 3 With two inner check valves, no drain connection.
- 4 With cycloid group with the roller, it has a small friction and high mechanical efficiency.

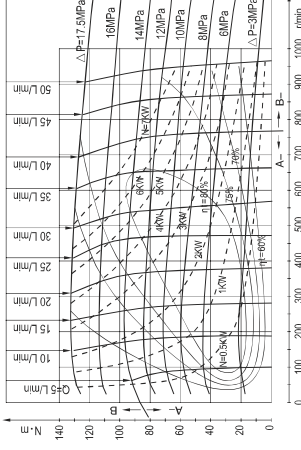
TECHNICAL DATA

TYPE	BMR-50 BMRW-50	BMR-80 BMRW-80	BMR-100 BMRW-100	BMR-125 BMRW-125	BMR-160 BMRW-160	BMR-200 BMRW-200	BMR-250 BMRW-250	BMR-315 BMRW-315	BMR-400 BMRW-400
Displacement(ml/r)	51.7	80.5	100.5	126.3	160.8	200.9	252.6	321.5	401.9
Max. Pressure Drop (Mpa)	cont.	14	14	14	14	14	11	9	7
	int.	17.5	17.5	17.5	17.5	17.5	14	11	9
	peak.	20	20	20	20	20	16	13	11
Max. torque (N.m)	cont.	93	152	194	237	310	369	380	380
	int.	118	189	236	296	378	450	470	470
	peak.	135	216	270	338	433	509	540	540
Speed. Range(cont.)(r/min)	10-775	10-750	10-600	9-475	7-375	5-300	5-240	5-190	5-160
Max. Flow(cont.)(L/min)	40	60	60	60	60	60	60	60	60
Max. Output Power(cont.)(Kw)	7	10	10	10	10	8	6	5	4
Weight (kg)	6.5	6.9	7.0	7.3	7.5	8.0	8.5	9.0	11

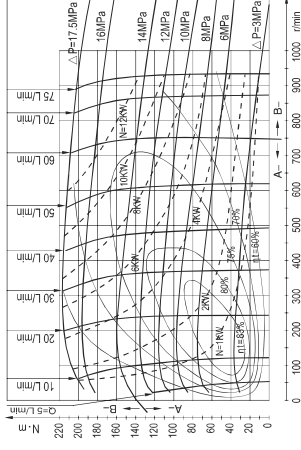
Intermittent operation the permissible values may occur for max. 10% of every minute  
Peak load: the permissible values may occur for max. 1% of every minute

FUNCTION DIAGRAMS

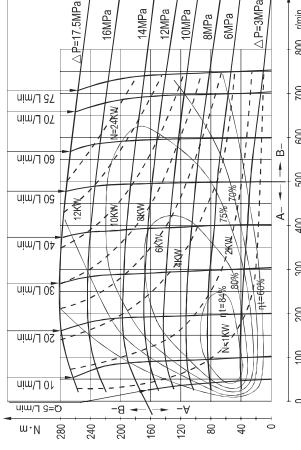
BMR-50



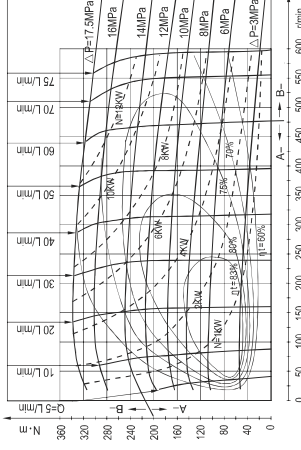
BMR-80



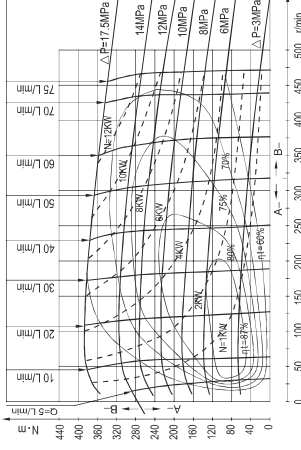
BMR-100



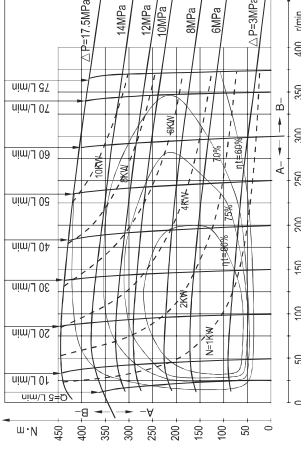
BMR-125



BMR-160

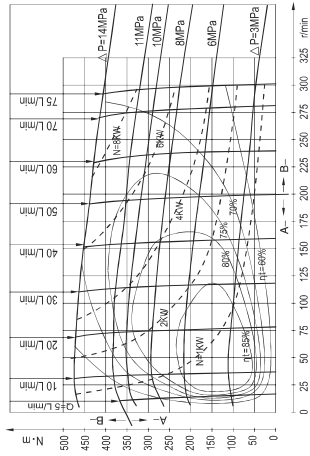


BMR-200

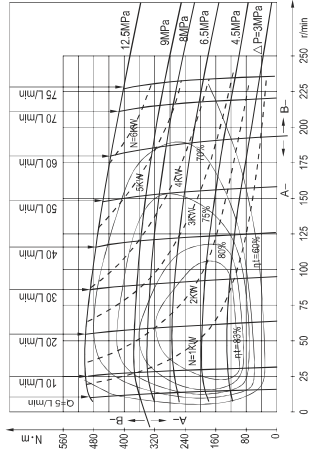


FUNCTION DIAGRAMS

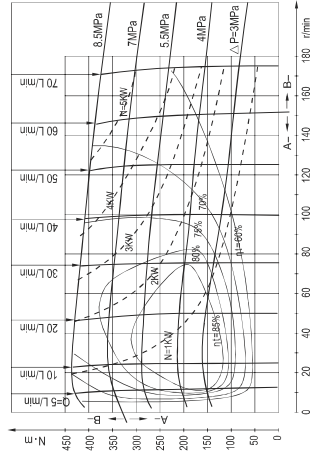
BMR-250



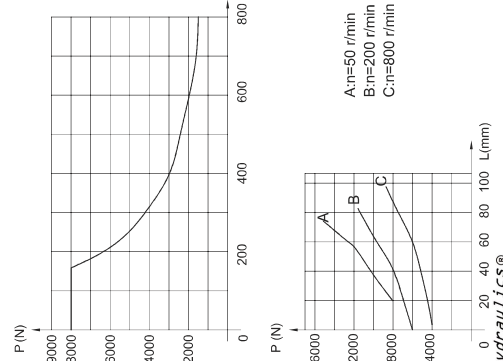
BMR-315



BMR-400

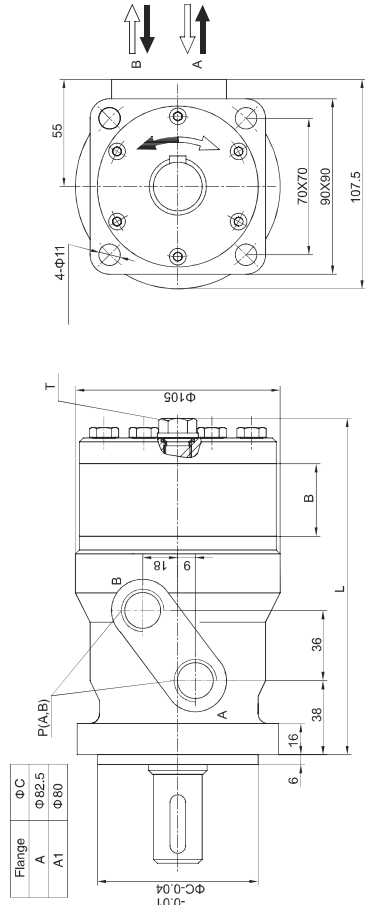


PERMISSIBLE SHAFT LOADS

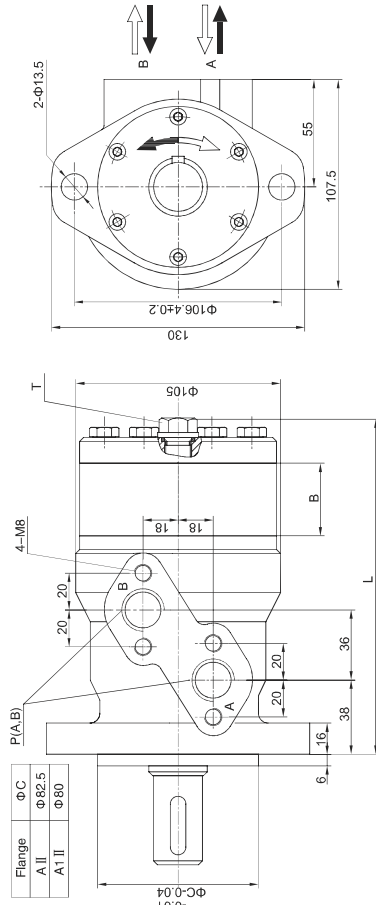


Installation

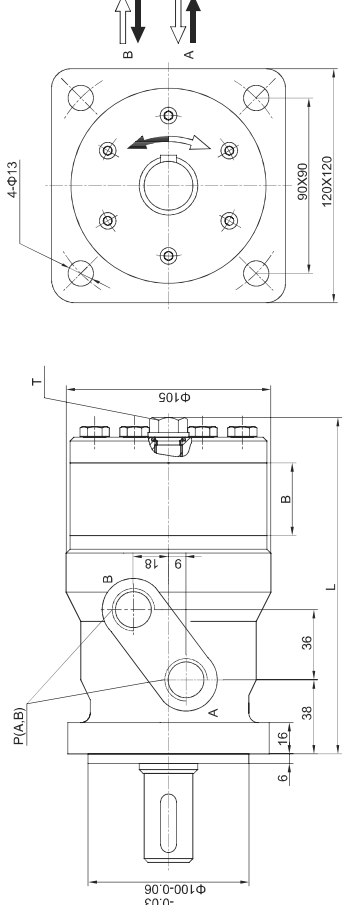
A, A1 Version Square flange



A II, A1 II Version 2-hole oval flange

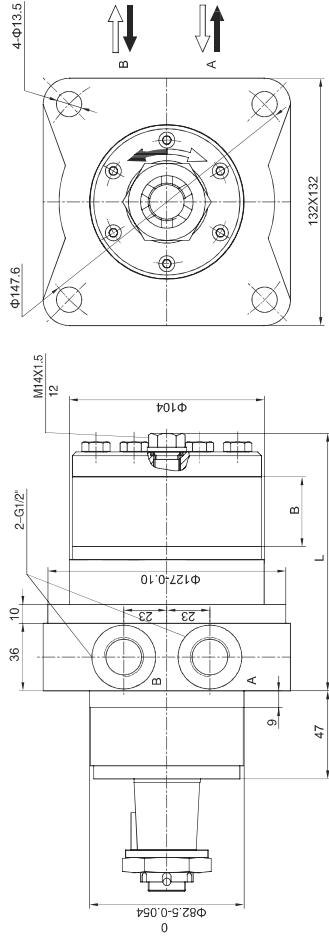


A2 III Version Square flange





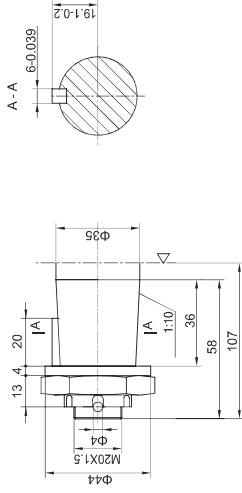
**Installation**



TYPE	BMRW-50	BMRW-80	BMRW-100	BMRW-125	BMRW-160	BMRW-200	BMRW-250	BMRW-315	BMRW-400
L	108	113	117	121	127	134	143	155	169
B	9	14	17.5	22	28	35	44	56	70

**SHAFT VERSION**

Z:  $\phi$ 35 Tapered shaft, taper: 1:10, parallel key B6X6X20



**ORDERING CODE**

BMRW	-	A	Y	/
1	2	3		

1	Displacement
50, 80, 100, 125, 160, 200, 250, 315, 400	

2	Shaft
Z	$\phi$ 35, 1:10, B6X6X20

3	Special Features
T	

**INTRODUCTION**

This series of motor are small volume economical type, which is designed with Spool Valve, which adapt the gerotor gear set design and provide compact volume, high power and low weight.

**CHARACTERISTICS**

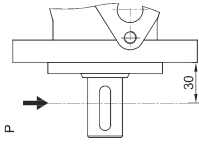
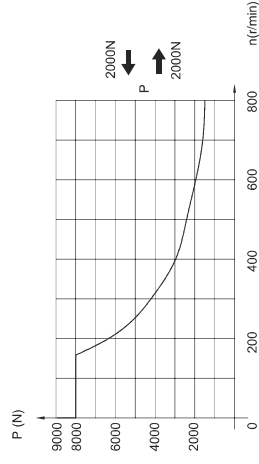
- 1 Advanced manufacturing devices for the Gerotor gear set, which provide small volume, high efficiency and long life.
- 2 Shaft seal can bear high pressure of motor of which can be used in parallel or in series.
- 3 Advanced construction design, high power and low weight.

**TECHNICAL DATA**

TYPE	BMP-50	BMP-80	BMP-100	BMP-125	BMP-160	BMP-200	BMP-250	BMP-315	BMP-400
Displacement(ml/r)	52.9	79.3	98.2	120.9	158.7	196.4	241.8	317.3	392.9
Max. Pressure Drop (Mpa)	cont.	14	14	14	14	14	11	9	7
	int.	17.5	17.5	17.5	17.5	17.5	14	11	9
	peak.	20	20	20	20	20	16	13	11
Max. torque (N.m)	cont.	89	150	191	235	307	378	378	378
	int.	110	185	231	292	376	440	465	465
	peak.	130	215	268	336	430	506	537	537
Speed Range(cont.)(r/min)	10-800	10-770	9-615	9-480	8-385	7-310	5-250	5-195	5-155
Max. Flow(cont.)(L/min)	40	60	60	60	60	60	60	60	60
Max. Output Power(cont.)(Kw)	7	10	10	10	10	8	6	5	4
Weight (kg)	5.6	5.7	5.9	6.0	6.2	6.4	6.6	6.9	7.4

Intermittent operation the permissible values may occur for max. 10% of every minute  
Peak load: the permissible values may occur for max. 1% of every minute

**PERMISSIBLE SHAFT LOADS**





## INTRODUCTION

### FEATURES AND APPLICATIONS

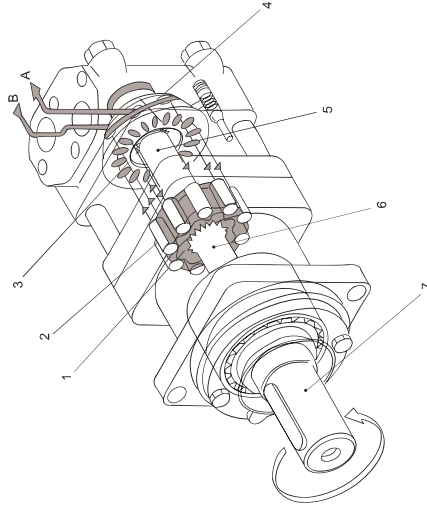


BM hydraulic motor is one type of high torque low speed hydraulic motors, with high efficiency and long life. BM motor has a wide speed range, high starting torque and rotating stable at high speed Compact and light, it can be connected to working machine directly, adapted to all kinds of low speed heavy load facilities.

BM hydraulic motors are widely applied in agriculture machinery, fishing machinery, plastic industry, mining, and construction machinery.

### WORKING PRINCIPLE

1. orbit cam
2. roll
3. distributor
4. auxiliary plate
5. distributor shaft
6. transmission shaft
7. output shaft



Shown as the drawing, high pressure oil goes into the motor's housing through the inlet, passing the auxiliary plate, distributor, then the working space between the orbit cam and rolls. Pressed by the high pressure oil, orbit cam rotates from the high pressure side to the low pressure side. The orbit cam makes rotation and revolution against the rolls, at the same time, high pressure oil is distributed continuously, thus, the output shaft can also rotate continuously.

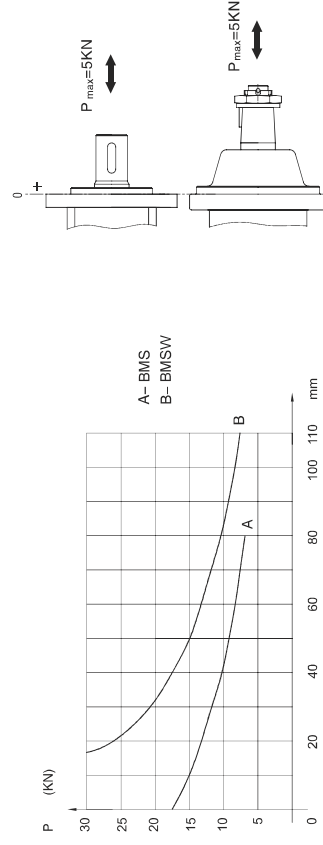
The output speed can be controlled by adjusting the inlet flow capability of the motor, and the rotating direction can be changed by exchanging the flow direction.

## TECHNICAL DATA

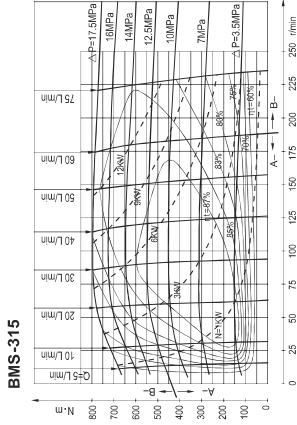
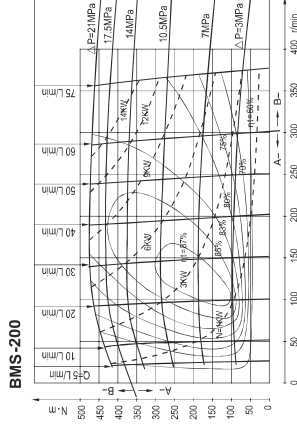
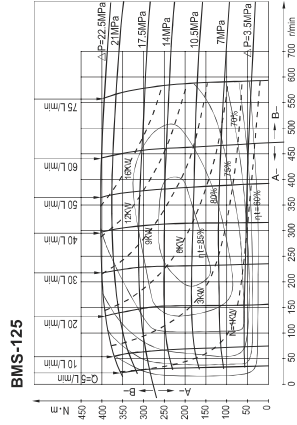
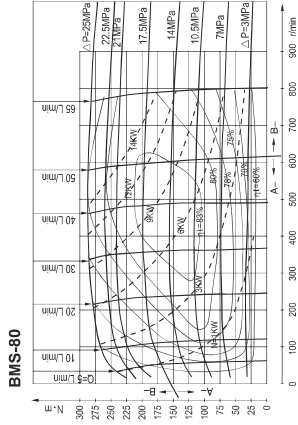
TYPE	BMS-80	BMS-100	BMS-125	BMS-160	BMS-200	BMS-250	BMS-315	BMS-400
	BMSS-80 BMSW-80	BMSS-100 BMSW-100	BMSS-125 BMSW-125	BMSS-160 BMSW-160	BMSS-200 BMSW-200	BMSS-250 BMSW-250	BMSS-315 BMSW-315	BMSS-400 BMSW-400
Displacement(ml/r)	80.5	100.5	126.3	160.8	200.9	262.6	321.5	401.9
Max. Pressure Drop (Mpa)	cont.	17.5	17.5	16	16	12.5	12.5	10
	int.	20	20	20	20	20	16	14
	peak.	22.5	22.5	22.5	22.5	22.5	20	17.5
Max.torque (N.m)	cont.	194	242	303	358	438	440	551
	int.	218	283	345	429	540	580	625
	peak.	271	318	373	459	576	700	831
Speed.Range(cont.)(r/min)	10-810	10-750	9-600	7-470	6-375	6-300	5-240	5-180
	Max.Flow(cont.)(L/min)	65	75	75	75	75	75	75
Max.Output.Power(cont.)(Kw)	14	16	16	14	14	11	10	8
	Weight (kg)	9.8	10.0	10.3	10.7	11.1	11.6	12.3
								13.1

Intermittent operation the permissible values may occur for max. 10% of every minute  
Peak load: the permissible values may occur for max. 1% of every minute

## PERMISSIBLE SHAFT LOADS



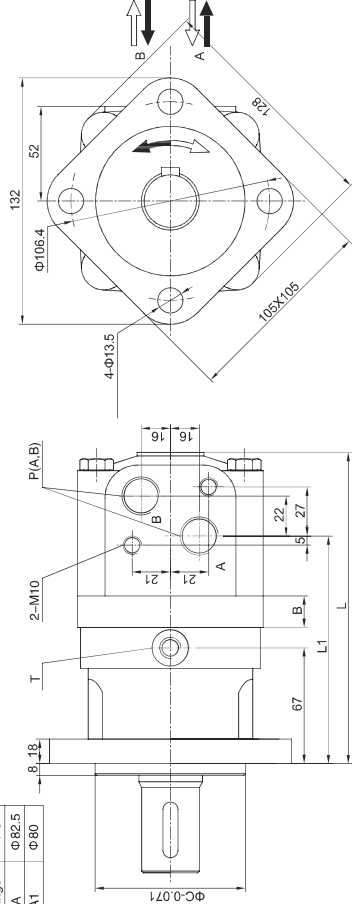
FUNCTION DIAGRAMS



Installation

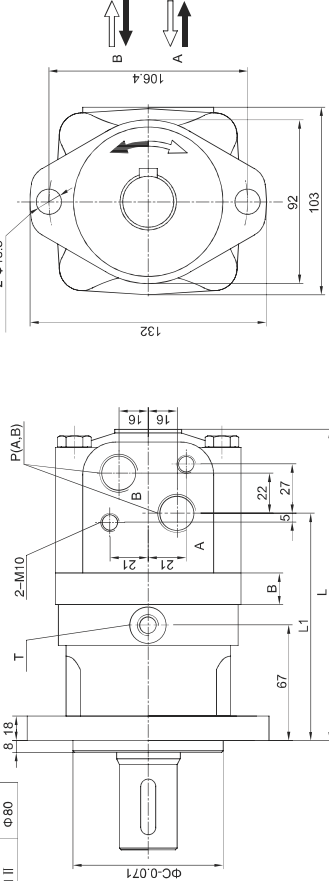
A,A1 Version Square flange

Flange	$\Phi C$
A	$\Phi 82.5$
A1	$\Phi 80$



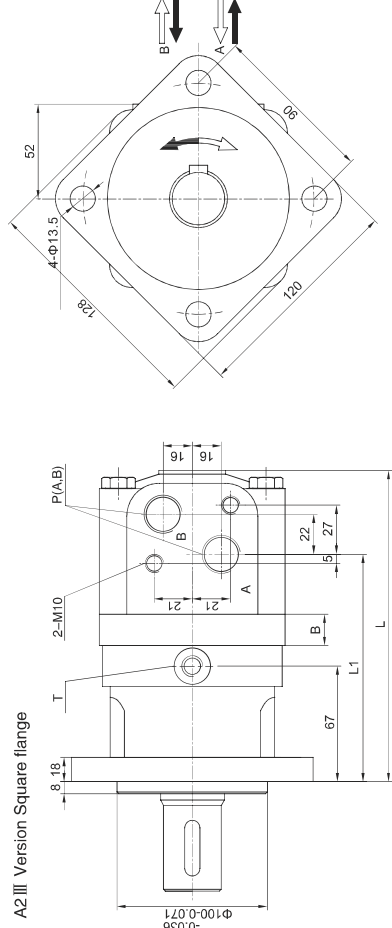
A II, A1 II Version 2-hole oval flange

Flange	$\Phi C$
A II	$\Phi 82.5$
A1 II	$\Phi 80$



A2 III Version Square flange

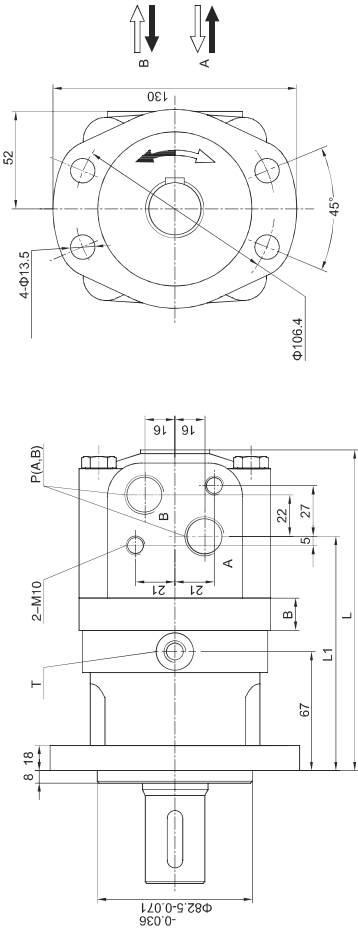
Flange	$\Phi C$
A2 III	$\Phi 100-0.071$





Installation

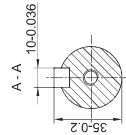
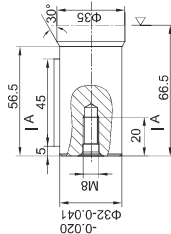
AIV Version 4-hole oval flange



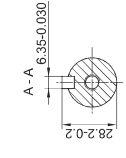
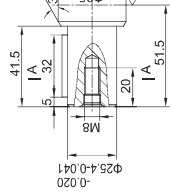
TYPE	BMS-80	BMS-100	BMS-125	BMS-160	BMS-200	BMS-250	BMS-315	BMS-400
L	167	170	175	181	188	197	208	222
L1	124	127	132	138	145	154	166	180
B	11	14.5	19	25	32	41	53	67

SHAFT VERSION

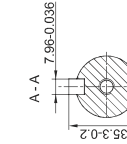
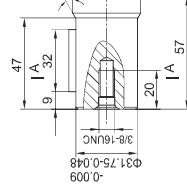
P: Φ32 Cylindrical shaft, parallel key 10X8X45



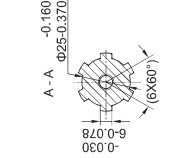
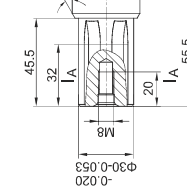
P3: Φ25.4 Cylindrical shaft, parallel key 6.35X6.35X32



P5: Φ31.75 Cylindrical shaft, parallel key 7.96X7.96X32

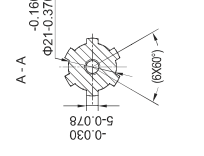
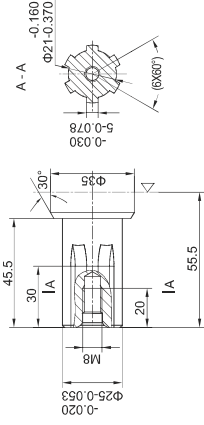


H1: Φ30 Splined shaft, 6-30X25X6

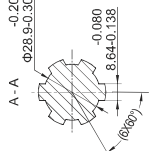
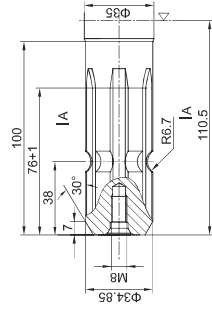


SHAFT VERSION

H2: Φ25 Splined shaft, 6-25X21X5



H3: Φ34.85 Splined shaft, 6-34.85X28.9X8.64



ORDERING CODE

1	2	3	4	5
BMS	-			

1 Displacement

80, 100, 125, 160, 200, 250, 315, 400

2 Shaft

P	Φ32, 10X8X45
P3	Φ25.4, 6.35X6.35X32
P5	Φ31.75, 7.96X7.96X32
H1	Φ30, 6-30X25X6
H2	Φ25, 6-25X21X5
H3	Φ34.85, 6-34.85X28.9X8.64

3 Mounting Flange

A	4-Φ13.5, Φ82.5
A1	4-Φ13.5, Φ80
AII	2-Φ13.5, Φ82.5
AIII	2-Φ13.5, Φ80
AIV	4-Φ13.5, Φ100
AIV	4-Φ13.5, Φ82.5

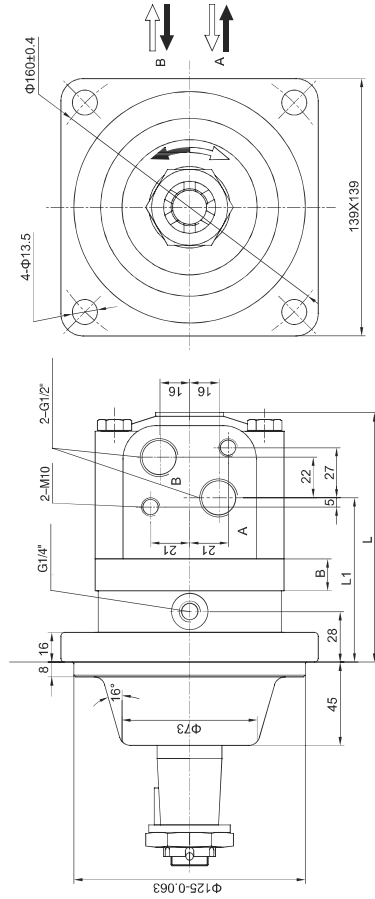
4 Ports

Y	P(A,B)	T
Y1	G1/2	G1/4
Y2	M18X1.5	M14X1.5
Y5	M22X1.5	M14X1.5
Y8	7/8-14UNF	7/16-20UNF
Y8	NPT 1/2	G1/4

5 Special Features

T

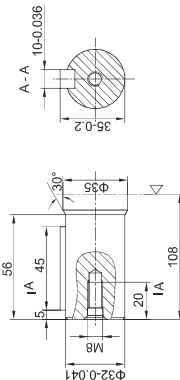
Installation



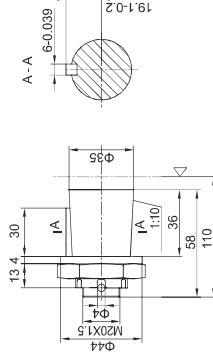
TYPE	BMSW-80	BMSW-100	BMSW-125	BMSW-160	BMSW-200	BMSW-250	BMSW-315	BMSW-400
L	129	132	137	143	150	159	169	183
L1	83	86	91	97	104	113	125	139
B	11	14.5	19	25	32	41	53	67

SHAFT VERSION

P: φ32 Cylindrical shaft, parallel key 10X8X45



Z: φ35 Tapered shaft, taper: 1:10, parallel key C6X6X30



ORDERING CODE

1 2 3  
BMSW - A Y /

1 Displacement

80, 100, 125, 160, 200, 250, 315, 400

2 Shaft

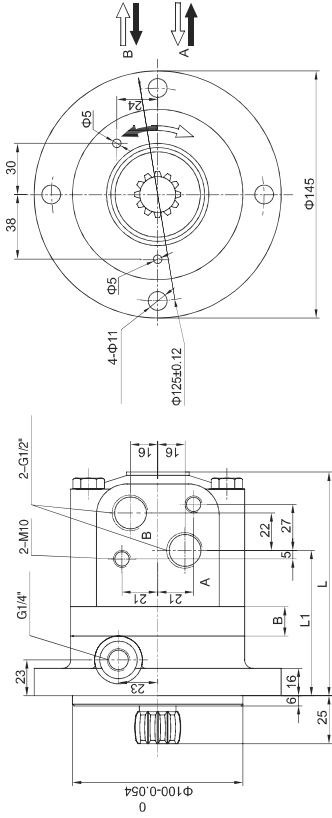
P φ32 , 10X8X45

Z φ35 , 1:10, C6X6X30

3 Special Features

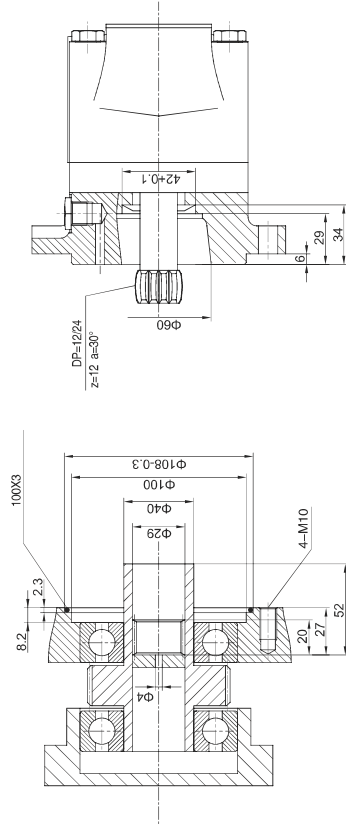
T

Installation



TYPE	BMSS-80	BMSS-100	BMSS-125	BMSS-160	BMSS-200	BMSS-250	BMSS-315	BMSS-400
L	122	126	130	136	143	152	164	178
L1	79	83	87	93	100	109	121	135
B	11	14.5	19	25	32	41	53	67

DIMENSIONS OF THE ATTACHED COMPONENT



ORDERING CODE

1 2  
BMSS - /

1 Displacement

80, 100, 125, 160, 200, 250, 315, 400

2 Special Features

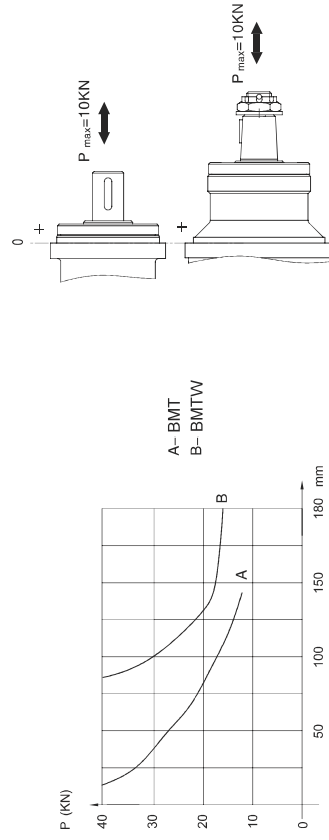
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TECHNICAL DATA

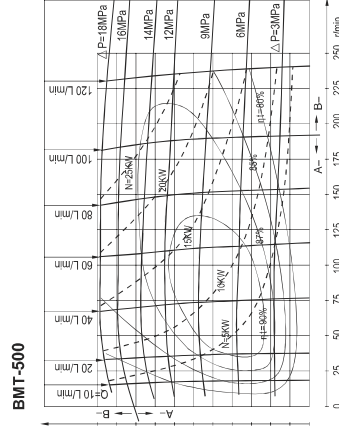
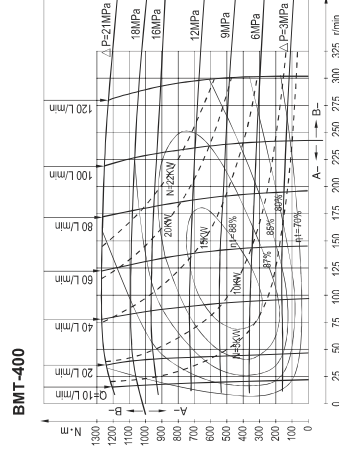
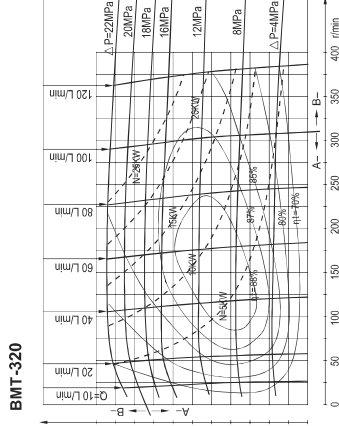
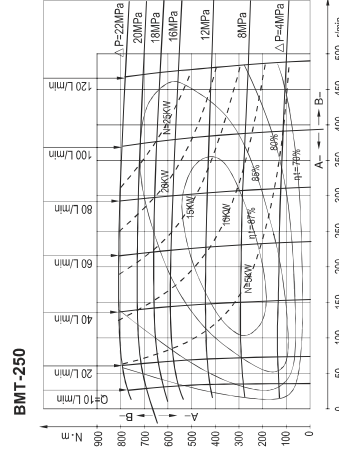
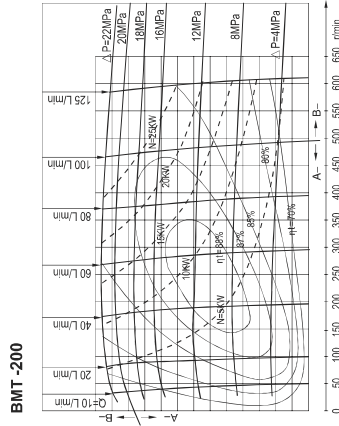
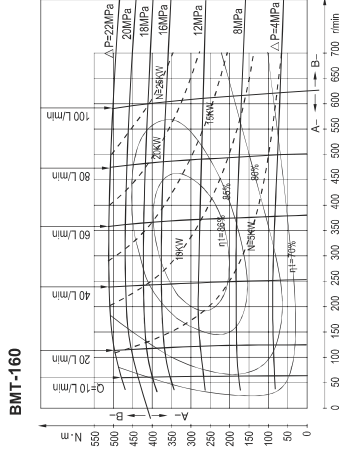
TYPE	BMT-160 BMTS-160 BMTW-160	BMT-200 BMTS-200 BMTW-200	BMT-250 BMTS-250 BMTW-250	BMT-320 BMTS-320 BMTW-320	BMT-400 BMTS-400 BMTW-400	BMT-500 BMTS-500 BMTW-500
Displacement(ml/r)	158.8	200.8	252.2	317.5	401.6	535.3
Max. Pressure Drop (Mpa)	cont.	20	20	20	18	16
	int.	24	24	24	21	18
	peak.	28	28	28	24	21
Max. torque (N.m)	cont.	450	561	710	1008	1121
	int.	559	714	883	1143	1377
	peak.	663	818	1021	1322	1431
Speed. Range(cont.)(r/min)	10-625	9-625	8-500	7-380	6-305	5-240
Max. Flow(cont.)(L/min)	100	125	125	125	125	125
Max. Output Power(cont.)(Kw)	20.1	25.2	25.2	25.2	22	31
Weight (kg)	20.3	20.8	21.4	22.4	23	24

Intermittent operation the permissible values may occur for max. 10% of every minute  
 Peak load: the permissible values may occur for max. 1% of every minute

PERMISSIBLE SHAFT LOADS



FUNCTION DIAGRAMS





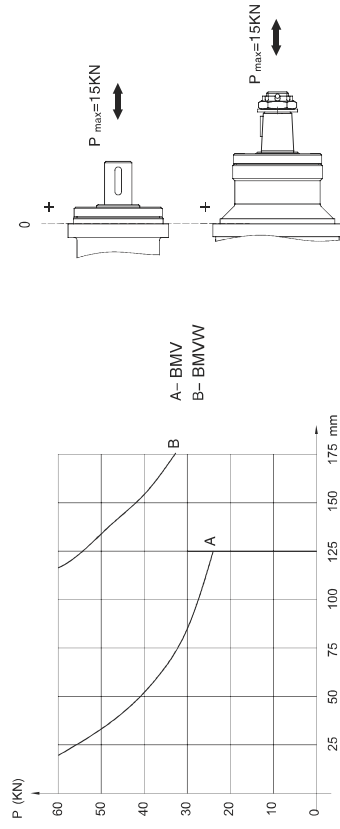


TECHNICAL DATA

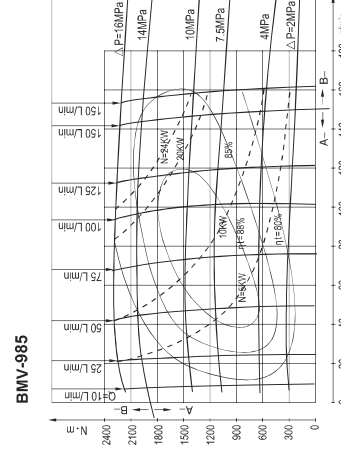
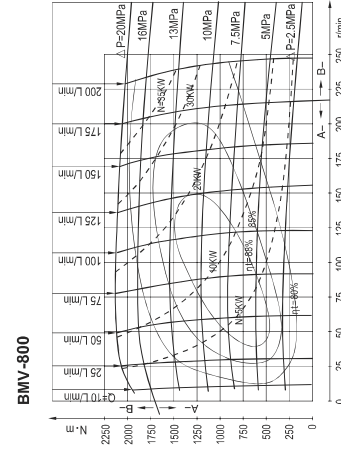
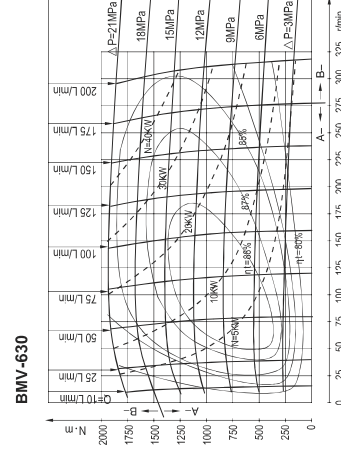
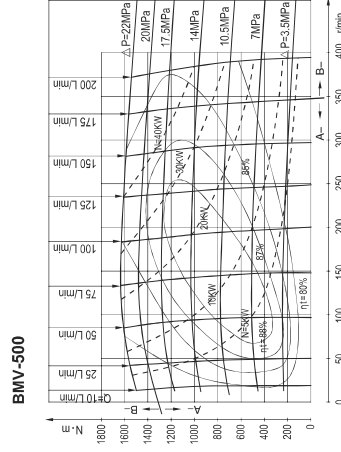
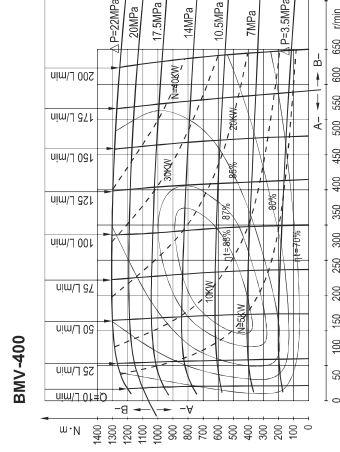
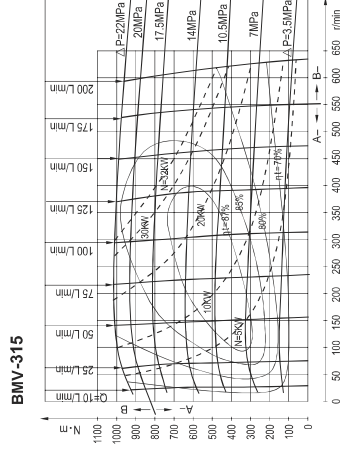
TYPE	BMV-315 BMVS-315 BMVW-315	BMV-400 BMVS-400 BMVW-400	BMV-500 BMVS-500 BMVW-500	BMV-630 BMVS-630 BMVW-630	BMV-800 BMVS-800 BMVW-800	BMV-985 BMVS-985 BMVW-985	
Displacement(ml/r)	314.9	399.7	496.6	617.8	787.4	969.1	
cont.	20	20	20	18	16	14	
int.	24	24	24	21	18	16	
peak.	28	28	28	24	21	18	
cont.	873	1108	1385	1570	1773	1900	
int.	1119	1440	1783	1951	2122	2133	
peak.	1293	1650	2060	2249	2481	2399	
Speed,Range(cont.)(r/min)	10-630		9-500	8-400	6-315	5-250	5-160
Max.Flow(cont.)(L/min)	200		200	200	200	200	160
Max.Output.Power(cont.)(Kw)	32		40	40	35	24	24
Weight (kg)	30.7		31.5	32.4	33.6	35.2	37.2

Intermittent operation the permissible values may occur for max. 10% of every minute  
Peak load: the permissible values may occur for max. 1% of every minute

PERMISSIBLE SHAFT LOADS

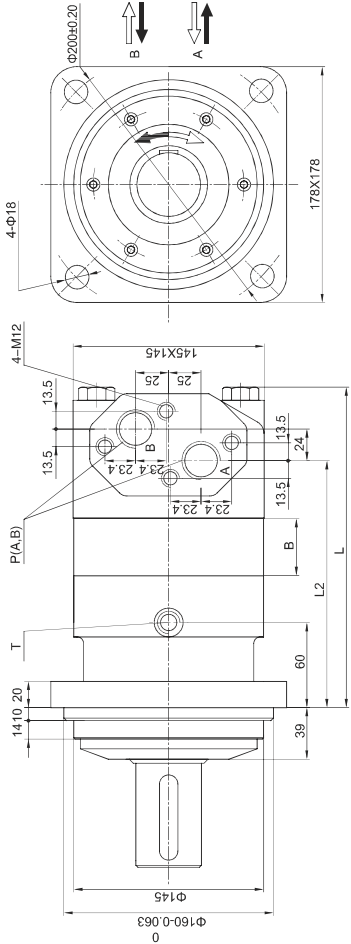


FUNCTION DIAGRAMS

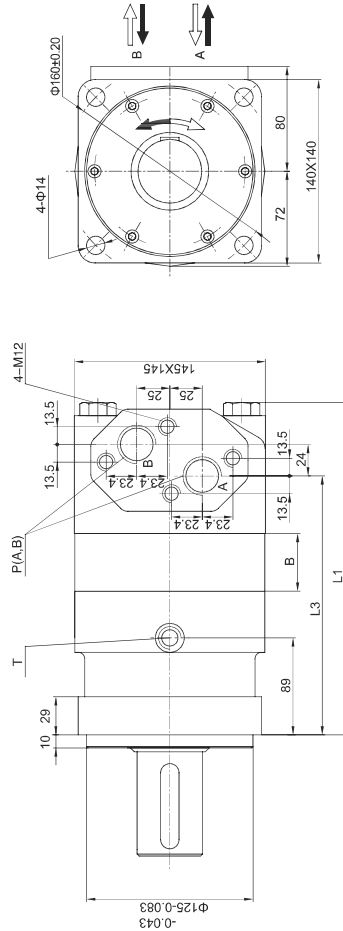


### Installation

#### A Version Square flange



#### A1 Version Square flange



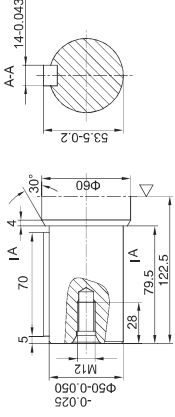
TYPE	BMW-315	BMW-400	BMW-500	BMW-630	BMW-800	BMW-985
L	214	221	229	239	253	268
L1	244	251	259	269	283	298
L2	156	163	171	181	195	210
L3	186	193	201	211	225	240
B	19	26	34	44	58	73

### SHAFT VERSION

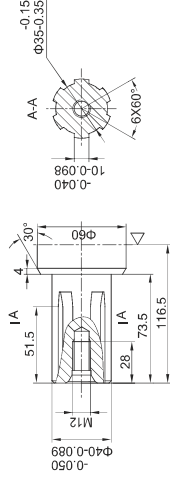
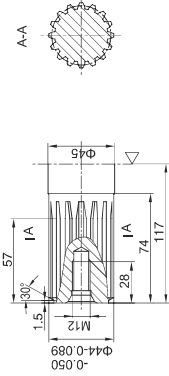
#### Only match with A flange

P:  $\phi$  50 Cylindrical shaft, parallel key 14X9X70

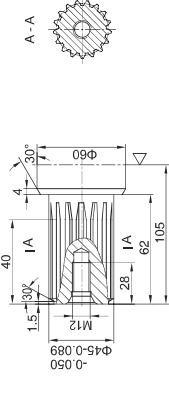
H5:  $\phi$  40 Splined shaft, 6-40X35X10



K2:  $\phi$  44 Involute splined shaft, Modulus 2.5 Teeth 16 Pressure angle 30°



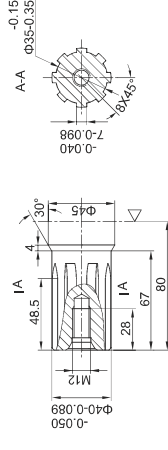
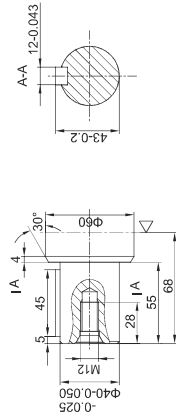
K3:  $\phi$  45 Involute splined shaft, Modulus 2.5 Teeth 17 Pressure angle 30°



#### Only match with A1 flange

P1:  $\phi$  40 Cylindrical shaft, parallel key 12X8X45

H4:  $\phi$  40 Splined shaft, 8-40X35X7



### ORDERING CODE

BMW	-						
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1 Displacement
315, 400, 500, 630, 800, 985

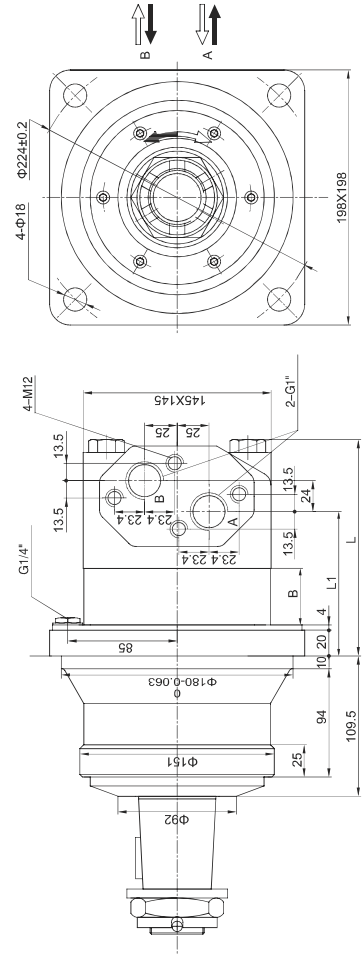
2 Shaft
P $\phi$ 50, 14X9X70
P1 $\phi$ 40, 12X8X45
H4 $\phi$ 40, 8-40X35X7
H5 $\phi$ 40, 6-40X35X10
K2 $\phi$ 44, m2.5 z16 $\alpha$ 30°
K3 $\phi$ 45, m2.5 z17 $\alpha$ 30°

3 Mounting Flange
A 4- $\phi$ 18, $\phi$ 160
A1 4- $\phi$ 14, $\phi$ 125

4 Ports
P(A,B) T
Y G1" G1/4"
Y1 G3/4" G1/4"
Y2 M33X2 M14X1.5
Y3 M27X2 M14X1.5
Y4 M22X1.5 M14X1.5
Y5 M18X1.5 M14X1.5

5 Special Features
T

Installation

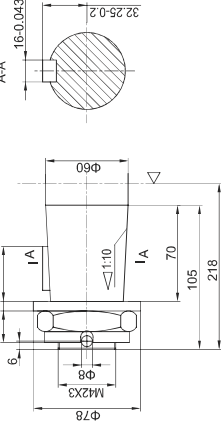
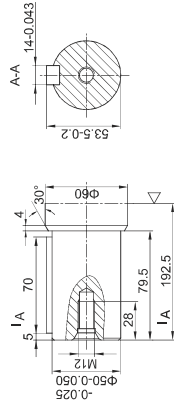


TYPE	BMWV-315	BMWV-400	BMWV-500	BMWV-630	BMWV-800	BMWV-985
L	146	153	161	172	185	200.5
L1	86	93	101	111	125	140
B	19	26	34	44	58	73

SHAFT VERSION

P: Φ50 Cylindrical shaft, parallel key 14X9X70

Z: Φ60 Tapered shaft, taper:1:10, parallel key B16X10X32



ORDERING CODE

BMWV - A Y / 3

1 Displacement

315, 400, 500, 630, 800, 985

2 Shaft

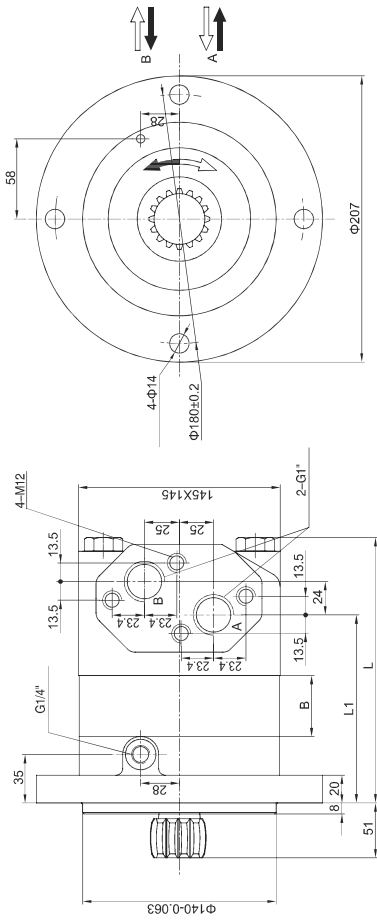
P Φ50, 14X9X70

Z Φ60, 1:10, B16X10X32

3 Special Features

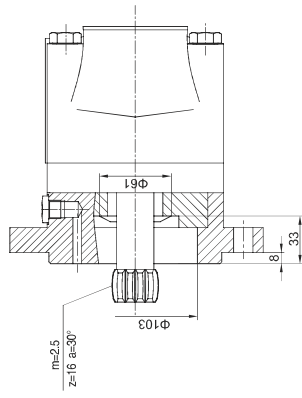
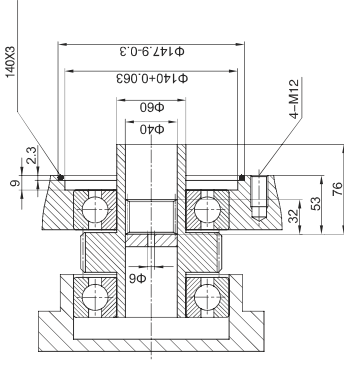
T

Installation



TYPE	BMVS-315	BMVS-400	BMVS-500	BMVS-630	BMVS-800	BMVS-985
L	167	174	182	192	206	221
L1	110	117	125	135	149	164
B	19	26	34	44	58	73

SHAFT VERSION



ORDERING CODE

BMVS - / 2

1 Displacement

315, 400, 500, 630, 800, 985

2 Special Features

T





