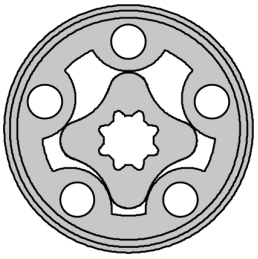
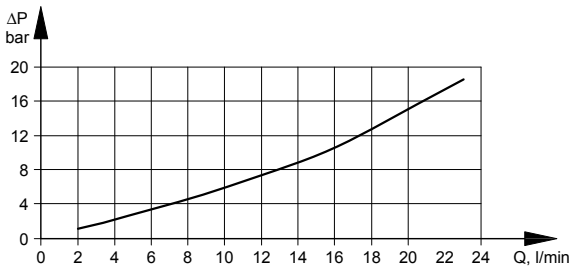
HYDRAULIC MOTORS OM



GENERAL

Displacement, (cm³/rev)	8.2 ÷ 50
Max. Speed, (RPM)	1950 ÷ 400
Max. Torque, (daNm)	1.1 ÷ 4.5
Max. Output, (kW)	1.8 ÷ 2.4
Max. Pressure Drop, (bar)	100 ÷ 70
Max. Oil Flow, (l/min)	16 ÷ 20
Min. speed, (RPM)	50 ÷ 20
Pressure fluid	Mineral based - HLP (DIN 51524) or HM (ISO 6743/4)
Temperature range, (°C)	-30 ÷ 90
Optimal Viscosity range, (mm²/s)	20 ÷ 75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

PRESSURE LOSSES

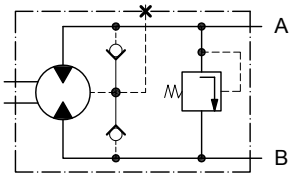


SPECIFICATION DATA

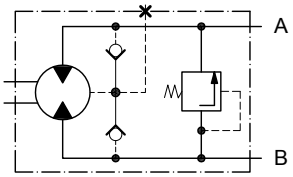
Type				OM 8	OM 12.5	OM 20	OM 32	OM 40	OM 50
Displacement [cm³/rev.]				8,2	12,9	20	31,8	40	50
Max. Speed, [RPM]	**cont.**			1950	1550	1000	630	500	400
	int.			2440	1940	1250	790	625	500
Max. Torque [daNm]	**cont.**			1,1	1,6	2,5	4	4,1	4.5
	int.			1,5	2,3	3,5	5,7	5,7	5.8
	peak			2,1	3,3	5,1	6,4	6,6	8
Max. Output [kW]	**cont.**			1,8	2,4	2,4	2,4	1,8	1,7
	int.			2,6	3,2	3,2	3,2	3,0	2,1
Max. Pressure Drop [bar]	**cont.**			100	100	100	100	80	70
	int.			140	140	140	140	110	90
	peak			200	200	200	200	140	125
Max. Oil Flow [l/min]	**cont.**			16	20	20	20	20	20
	int.			20	25	25	25	25	25
Max. Inlet Pressure, [bar]	**cont.**			140	140	140	140	140	140
	int.			175	175	175	175	175	175
	peak			225	225	225	225	225	225
Max. Return Pressure w/o Drain Line or Max. Pressure in Drain Line, [bar]	**cont.**	**0-100**	**RPM**	140	140	140	140	140	140
	cont.	**100-400**	**RPM**	100	100	100	100	100	100
	cont.	**400-800**	**RPM**	50	50	50	50	50	-
	cont.	**>800**	**RPM**	20	20	20	-	-	-
	int.	**0-max.**	**RPM**	140	140	140	140	140	140
Max. Return Pressure with Drain Line [bar]	**cont.**			140	140	140	140	140	140
	int.			175	175	175	175	175	175
	peak			225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shift, [bar]				4	4	4	4	4	4
Min. Starting Torque [daNm]	**at max**	**press.**	**drop cont.**	0,7	1,2	2,1	3,4	3,3	3,7
	at max	**press.**	**drop int.**	1,0	1,7	2,9	4,8	4,6	4,8
Min. Speed, [RPM]				50	40	30	30	25	20
Weight, avg. [kg]	**OM**			1,9	2	2,1	2,2	2,3	2,5
	OMF(S)			2,3	2,4	2,5	2,6	2,7	2,9
	OMFS			2,7	2,8	2,9	3,0	3,1	3,3
	OMP			2,5	2,6	2,7	2,8	2,9	3,1
	OMPF			2,7	2,8	2,9	3,0	3,1	3,3
	OMD			2,6	2,7	2,8	2,9	3,0	3,2
	OMDF			2,8	2,9	3,0	3,1	3,2	3,4

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.

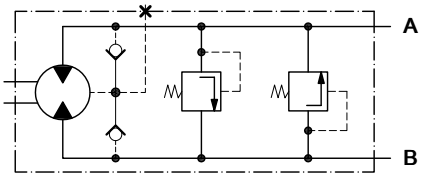
OMP Series with Integrated Internal Crossover Relief Valve A→B, Δp=100 bar (50 bar)



OMP Series with Integrated Internal Crossover Relief Valve B→A, Δp=100 bar (50 bar)

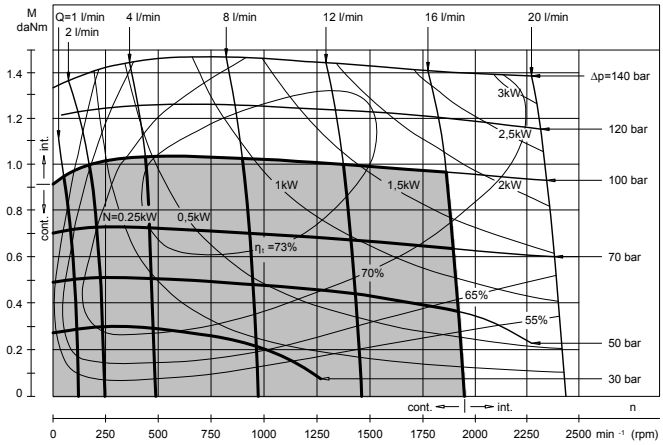


OMD Series with Integrated Internal Crossover Relief Valve B↔A, Δp=100 bar (50 bar)

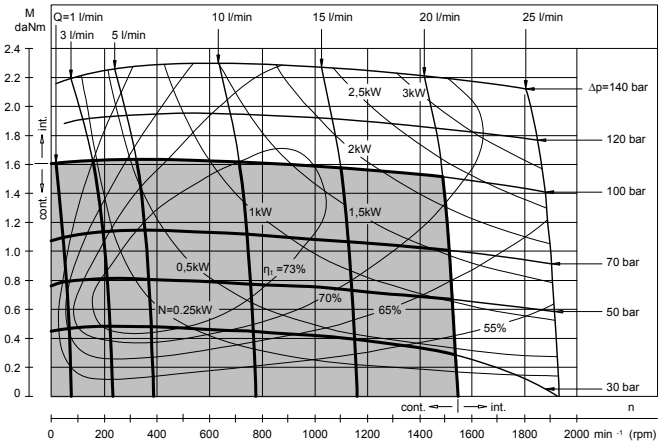


FUNCTION DIAGRAMS

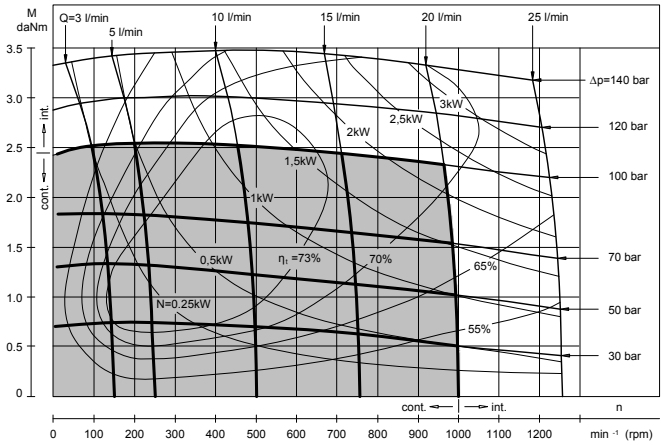
OM 8



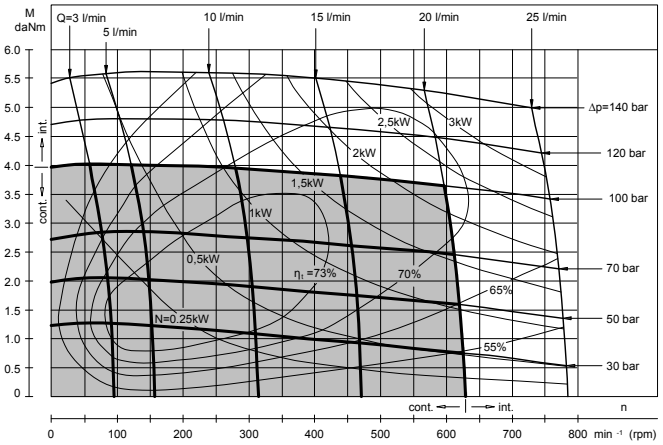
OM 12.5



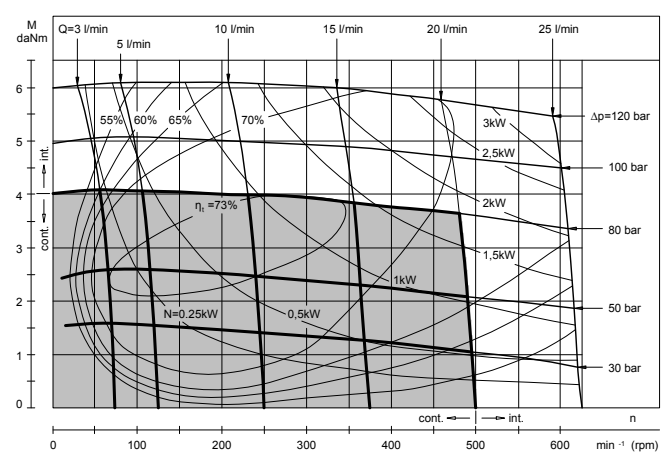
OM 20



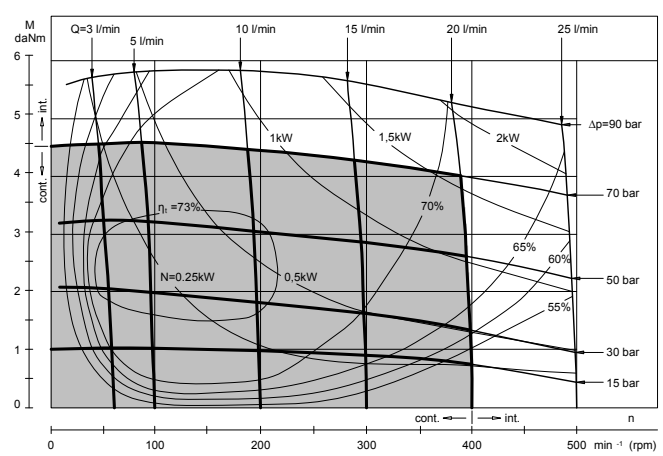
OM 32



OM 40

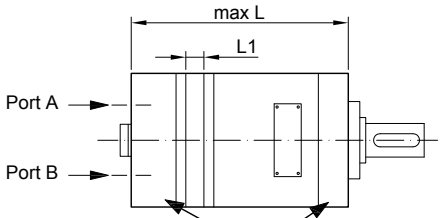


OM 50



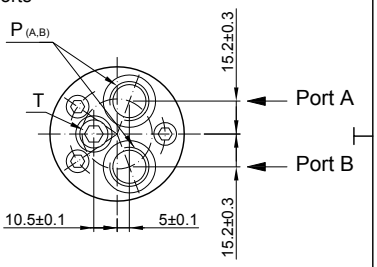
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

DIMENSIONS AND MOUNTING DATA

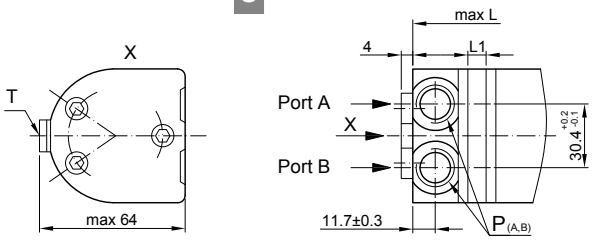


PORTING

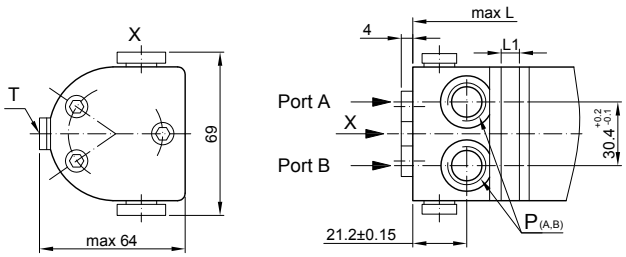
Rear Ports



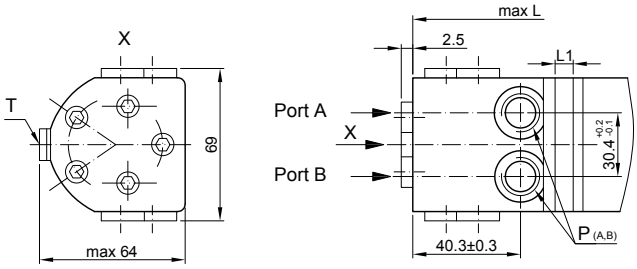
S Side Ports



P Side Ports with
Single Crossover Relief Valve

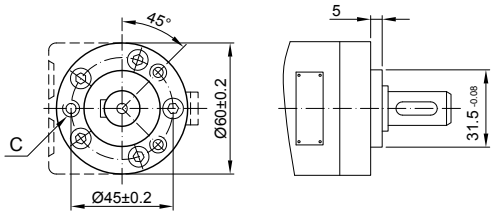


D Side Ports with
Dual Crossover Relief Valve

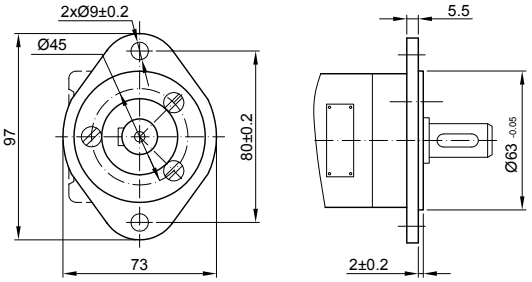


MOUNTING

Three Bolts Mount



F Oval Mount (2 Holes)



C : 3xM6-12mm depth

$P_{(A,B)}$:2xG3/8 or (M18x1,5)-12mm depth

T :G1/8 or (M10x1)-10mm depth

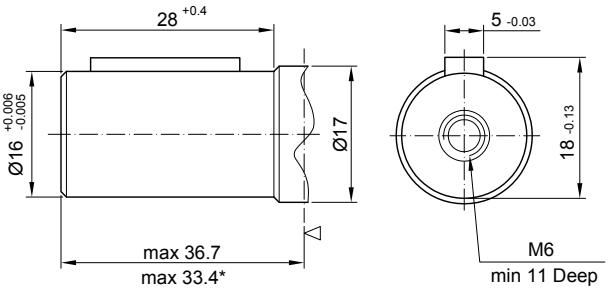
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation
Viewed from Shaft End
Port **B** Pressurized - **CW**
Port **A** Pressurized - **CCW**

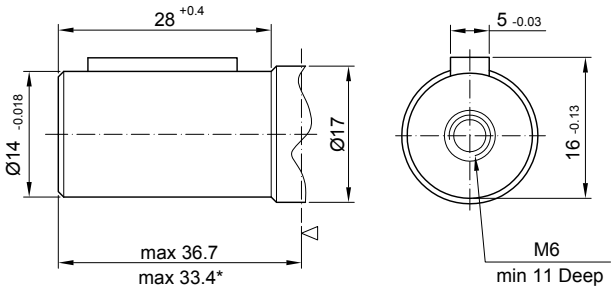
Type	L , mm	Type	L , mm	Type	L , mm	Type	L , mm	L1 , mm
OM 8	104	**OMS 8**	105	**OMP 8**	115	**OMD 8**	134	3.5
OM 12.5	106	**OMS 12.5**	107	**OMP 12.5**	117	**OMD 12.5**	136	5.5
OM 20	109	**OMS 20**	110	**OMP 20**	120	**OMD 20**	139	8.5
OM 32	114	**OMS 32**	115	**OMP 32**	125	**OMD 32**	144	13.5
OM 40	117.5	**OMS 40**	118.5	**OMP 40**	128.5	**OMD 40**	147.5	17
OM 50	121.5	**OMS 50**	122.5	**OMP 50**	132.5	**OMD 50**	151.5	21

SHAFT EXTENSIONS

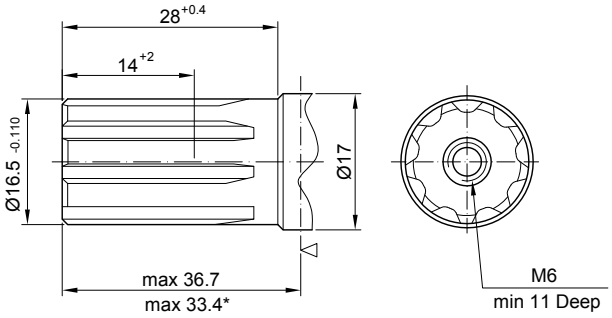
C Ø16 straight, Parallel key 5x5x16 DIN 6885
Max. Torque 3,9 daNm



CK Ø14 Straight, Paralle key 5x5x16 DIN 6885
Max. Torque 3 daNm

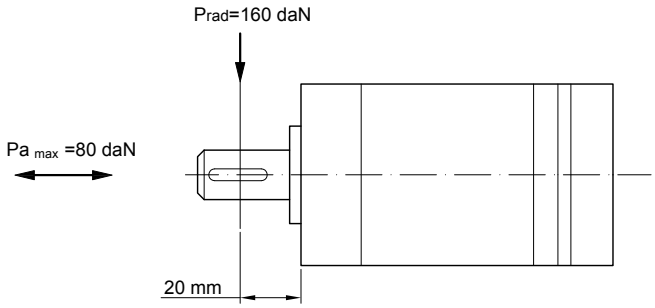


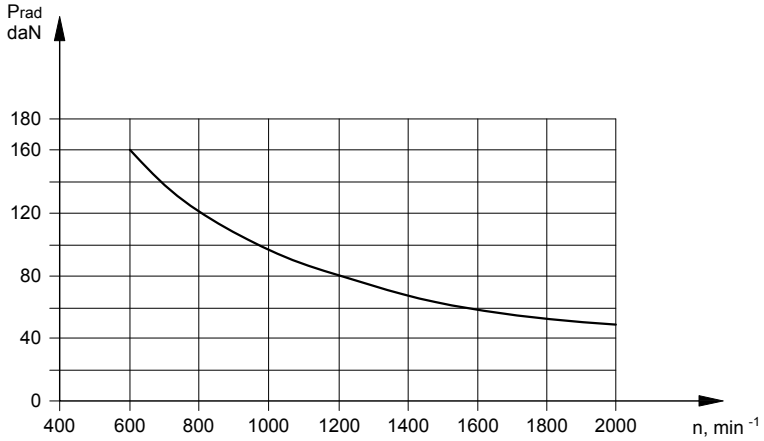
SH Ø16,5 Splined, B17x14 DIN 5482
Max. Torque 4,4 daNm



▽ Motor Mounting Surface
* For F Mounting

PERMISSIBLE SHAFT LOAD





The permissible radial shaft load (Prad) is calculated from the distance (L) between the point of load application and the mounting surface:

$$P_{rad} = \frac{130040}{(61.5+L)}, \text{ (daN)}$$

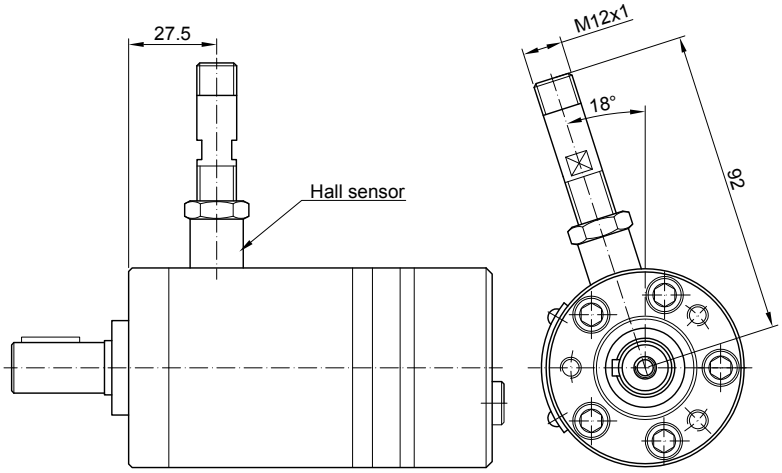
(L in mm; L ≤ 80)

The drawing shows the permissible radial load when L=20 mm.

If the calculated shaft load exceeds the permissible, a flexible coupling must be used.

HYDRAULIC MOTORS WITH SPEED SENSOR TYPE OM...RS

Meta Hydraulic is introducing hydraulic motor with a new generation of speed sensor. The electric output signal is a standard voltage signal that can be used for regulating the speed of a motor.
The speed is measured by a sensor in accordance with the Hall principle. Signal processing and amplification are performed in the sensor housing. Connection is provided in the housing by a Plug connector M12 Series.



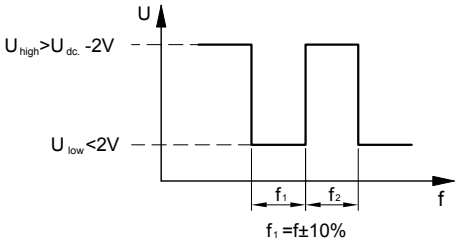
This performance is applicable for all motors of OM series. The main technical features correspond to the standard motors series OM.

DIFFERENTIAL HALL SENSOR

TECHNICAL DATA

Frequency range	3...20 000 Hz
Output	PNP
Power supply	10...36 VDC
Current input	20 mA (@24 VDC)
Current load	500 mA (@24 VDC;24°C)
Ambient Temperature	minus 40... plus 125°C
Protection	IP 67
Plug connector	M12-Series
Mounting principle	ISO 6149
Pulses per revolution	30

OUTPUT SIGNAL

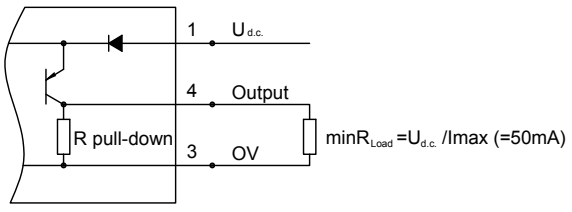


$f_1 = f \pm 10\%$

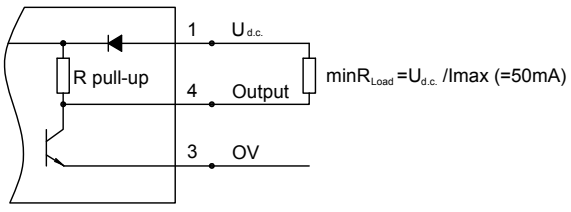
Load max.: $I_{high} = I_{low} < 50mA$
No load current, max: 20 mA

WIRING DIAGRAM

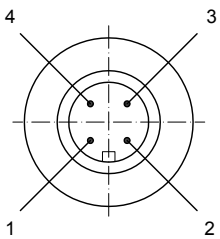
PNP



NPN



STICK TYPE



Terminal No.	Connection
1	Ud.c.
2	No connection
3	0V
4	Output signal

ORDER CODE

	1	2	3	4	5	6	7	8	9	10	11	12
OM												

1	Adjustment Option
omit	without valve
P	Side ports with single crossover relief valve
D	Side ports with dual crossover relief valve

2	Mounting Flange
omit	Three bolts mount
F	Oval mount, two holes

3	Port type (not valid for P and D version)
omit	Rear ports
S	Side ports

4	Displacement code
8	8,2 [cm³/rev]
12.5	12,9 [cm³/rev]
20	20 [cm³/rev]
32	31,8 [cm³/rev]
40	40 [cm³/rev]
50	50 [cm³/rev]

5	Shaft Extensions
C	ø16 straight Parallel key 5x5x16 DIN 6885
VC	ø16 straight Parallel key 5x5x16 DIN 6885 with corrosion resistant bushing
CK	ø14 straight, Parallel key 5x5x16 DIN 6885
SH	ø16,5 splined, B17x14 DIN 5482

6	Ports
omit	BSPP (ISO 228)
M	Metric (ISO 262)

7	Line to control *
L	B → A (left running)
R	A →B (right running)

8	Valve Rated Pressure**
/50	Δp=50 bar
/100	Δp=100 bar

9	Speed Monitoring
omit	none
RS-P	with speed sensor (PNP pull-down resistor)
RS-N	with speed sensor (NPN pull-up resistor)

10	Rotation
omit	Standard Rotation
R	Reverse Rotation

11	Option (Paint)
omit	no paint
P	Painted
PC	Corrosion Protected Paint

12	Design Series
omit	Factory specified

The permissible output torque for shafts must not be exceeded
* For " P " option useful only
** For "P" and "D" option useful only