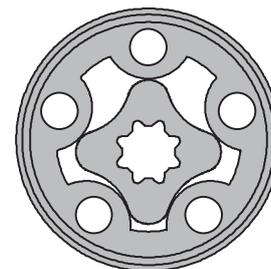


HYDRAULIC MOTORS OM



APPLICATION

- » Conveyors;
- » Textile machines;
- » Mining machinery;
- » Machine tools;
- » Ventilators;
- » Construction plant equipment and access platforms etc.



CONTENTS

Specification dataOM-02
 Function diagrams OM-03+05
 Dimensions and mounting ... OM-06
 Shaft extensions OM-07
 Permissible shaft loadsOM-07
 Order codeOM-10

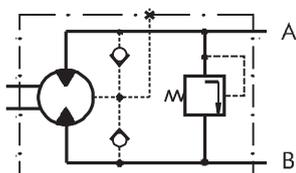
OPTIONS

- » Model - Spool valve, gerotor;
- » With or without flange;
- » Side and rear ports;
- » Series with pressure valve(s)
- » Shafts - straight and splined;
- » Metric and BSPP ports;
- » Other special features.

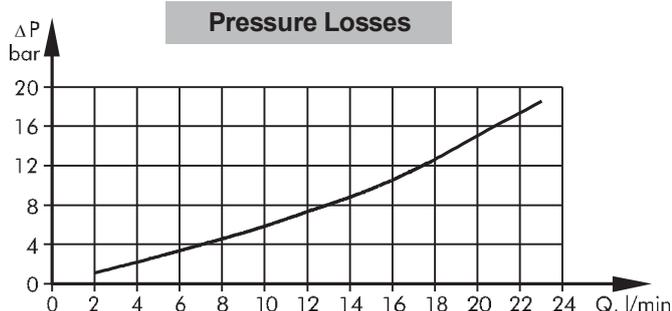
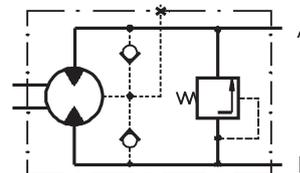
GENERAL

Displacement, [cm ³ /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, [mm ² /s]	20 ÷ 75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

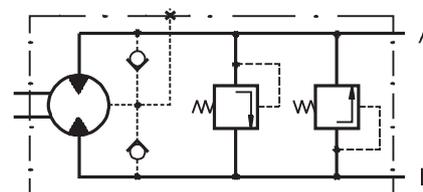
OMP Series with Integrated Internal Crossover Relief Valve
 A → B, Δp = 100 bar (50 bar)



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



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





SPECIFICATION DATA

Type		OM 8	OM 12,5	OM 20	OM 32	OM 40	OM 50
Displacement [cm ³ /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.

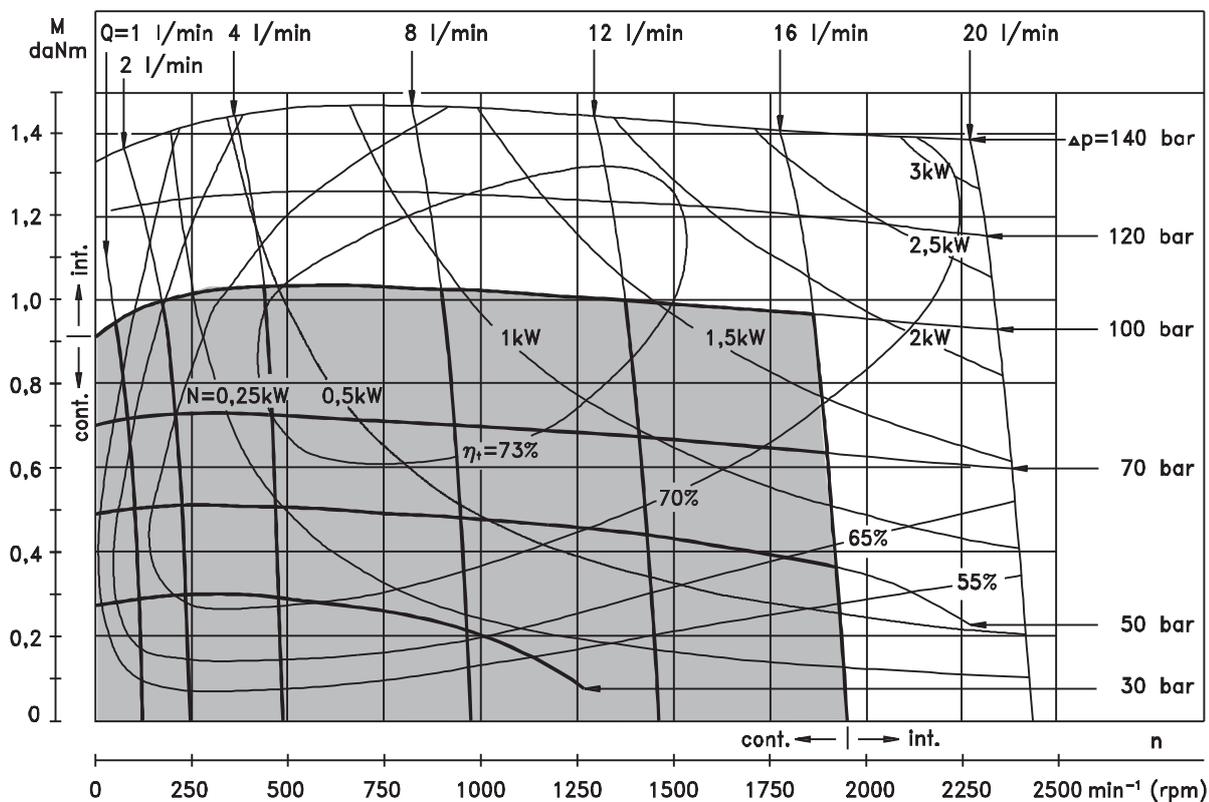
** Peak load: the permissible values may occur for max. 1% of every minute.

*** For speeds of 30 RPM or lower, consult factory or your regional manager.

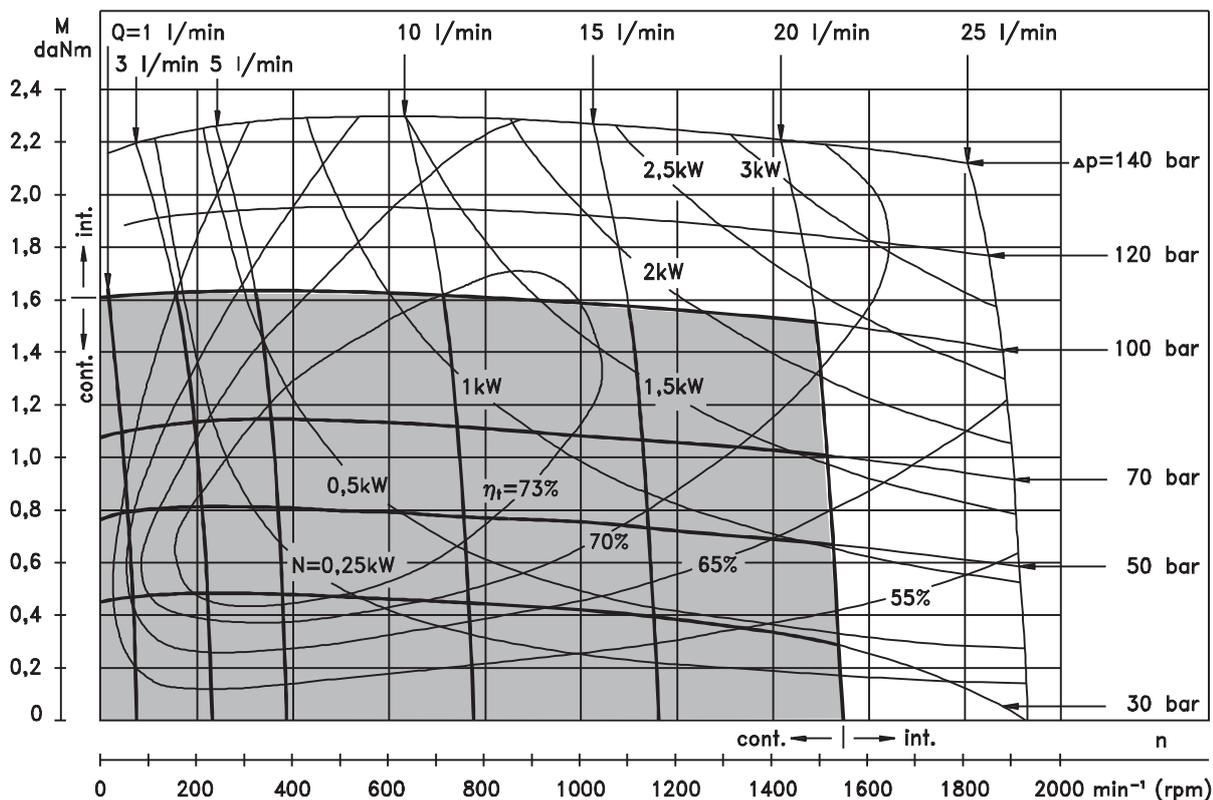
1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).
If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 13 mm²/s at operating temperature 50°C.
5. Recommended maximum system operating temperature is 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 15-30 min.

FUNCTION DIAGRAMS

OM 8



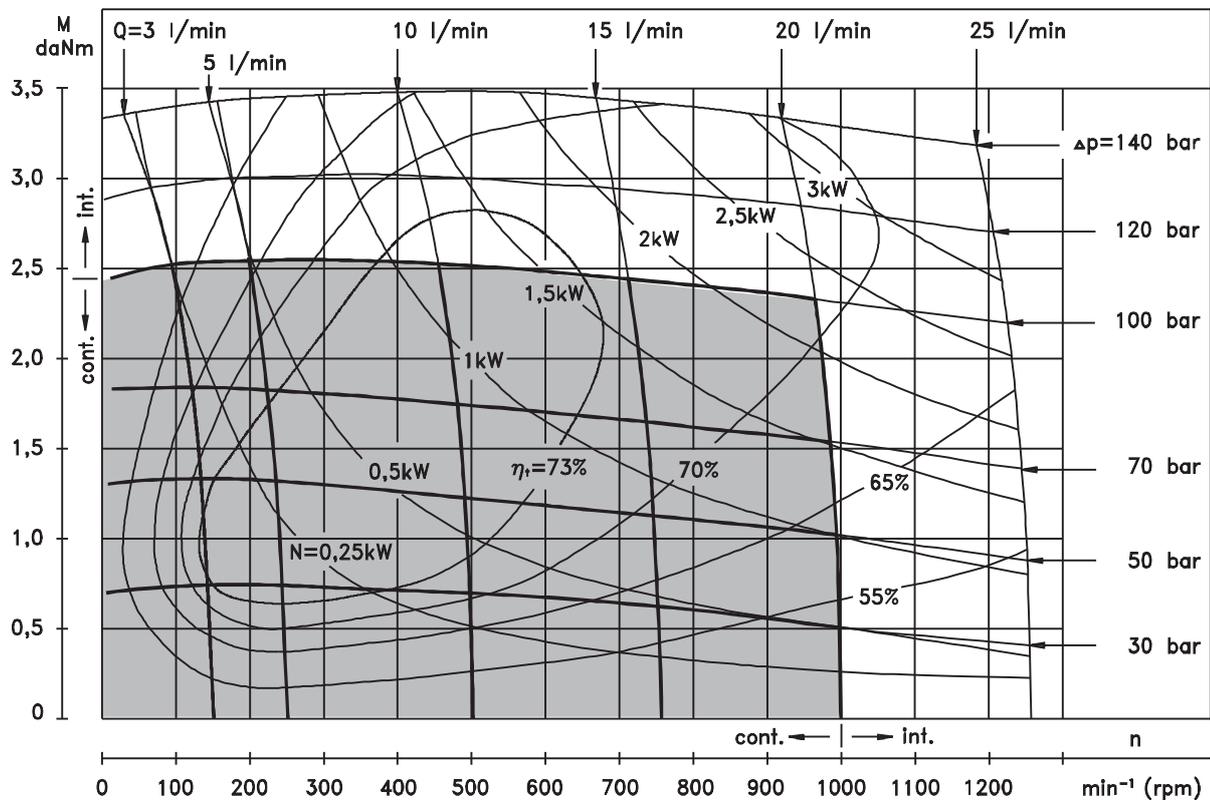
OM 12,5



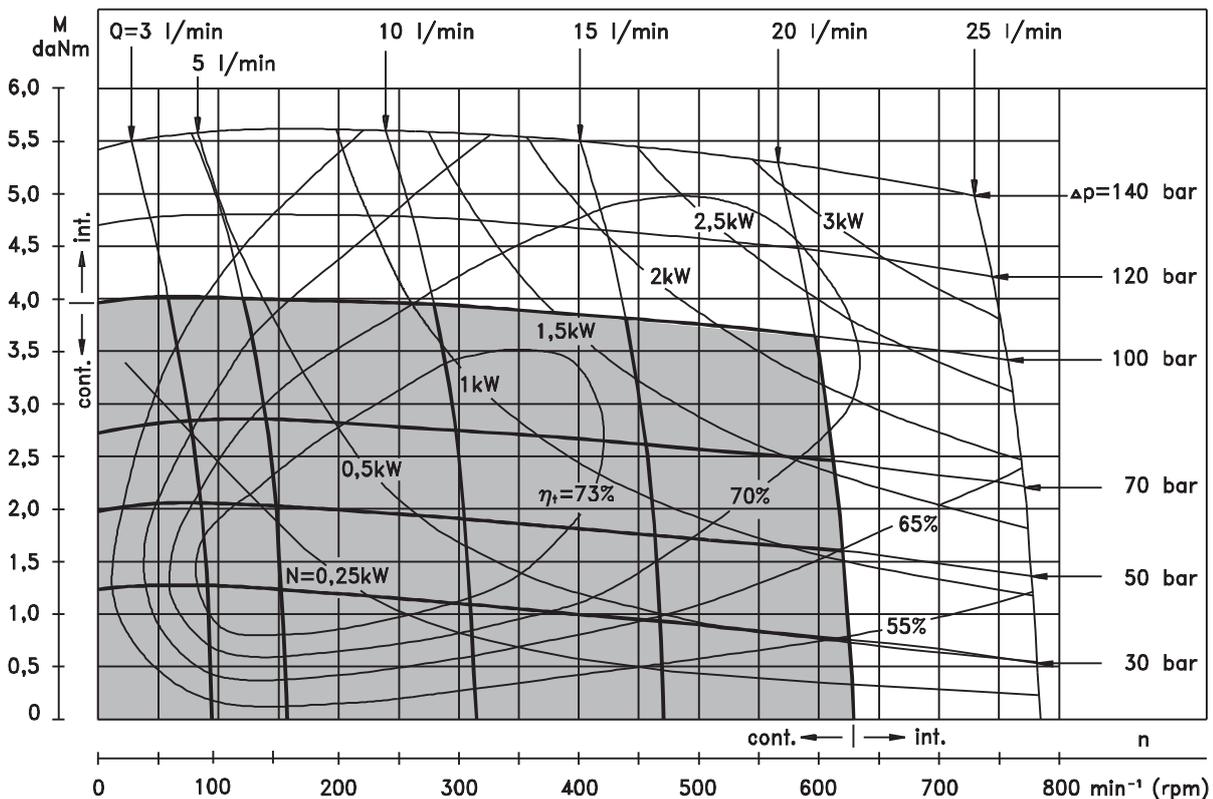
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

OM 20



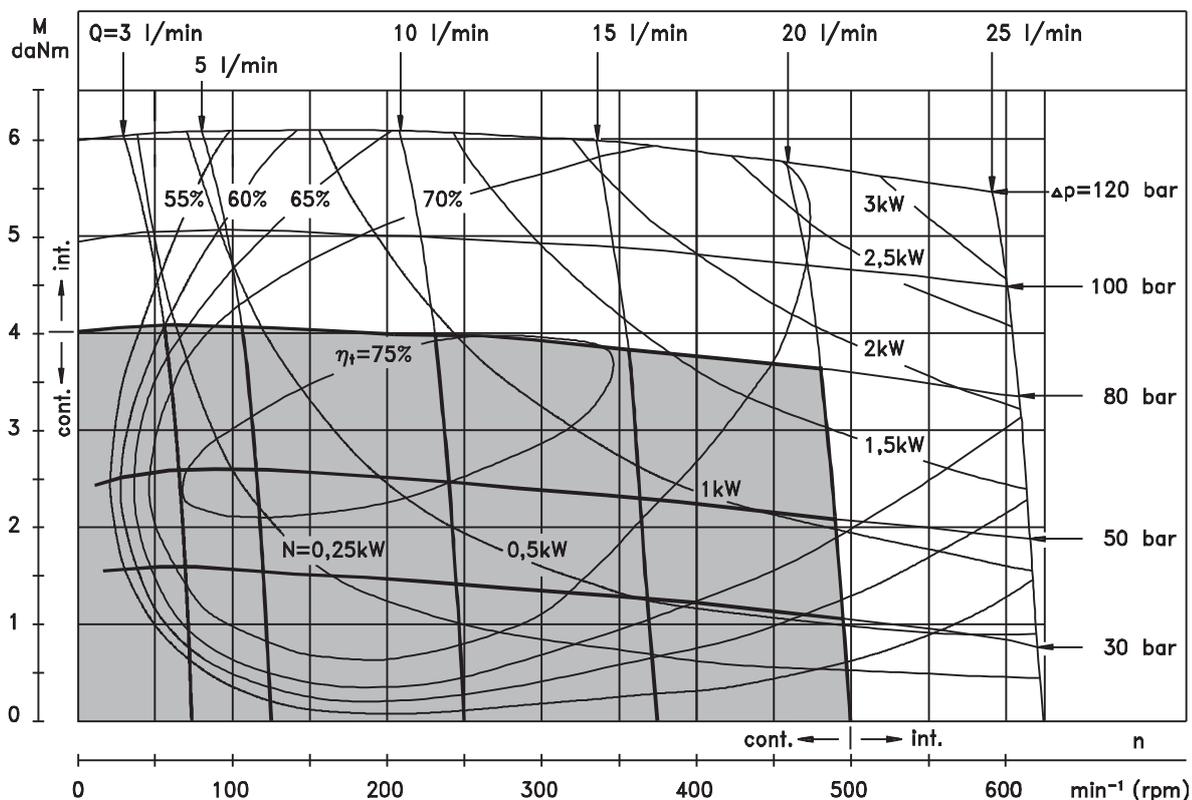
OM 32



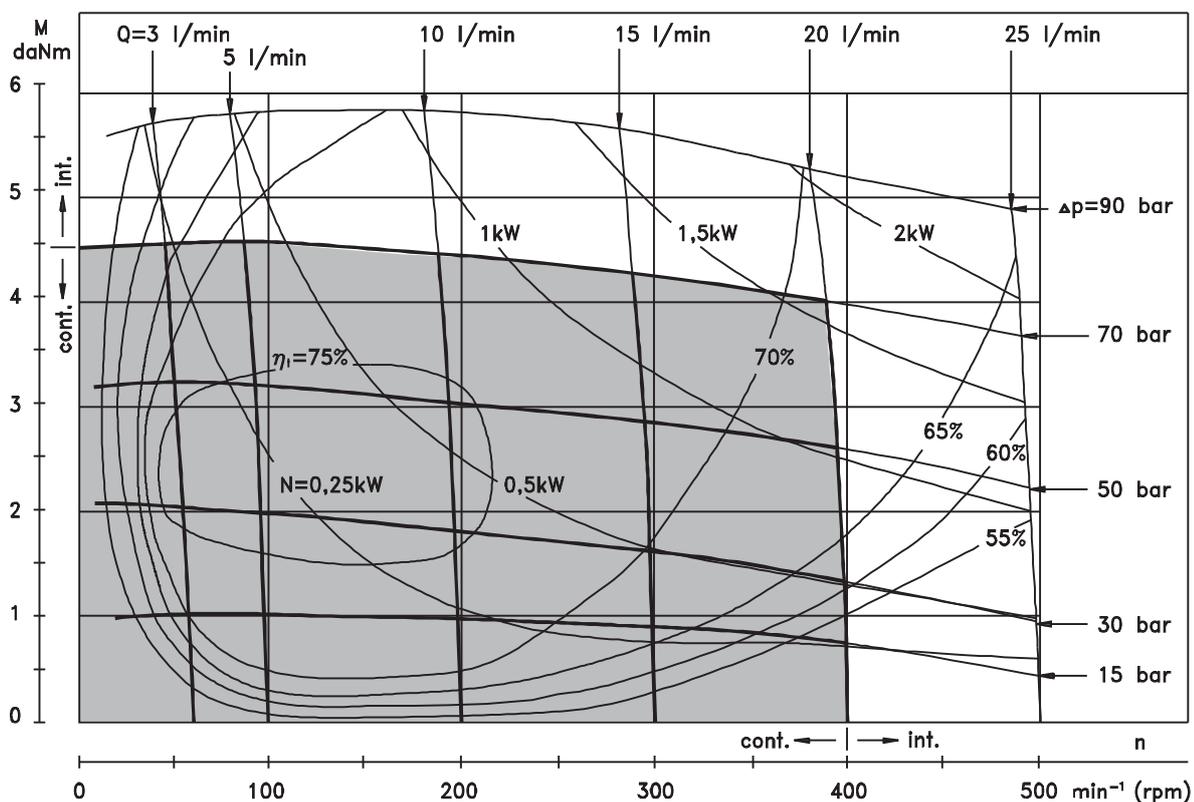
The function diagrams data was collected at back pressure 5 ± 10 bar and oil with viscosity of $32 \text{ mm}^2/\text{s}$ at 50° C .

FUNCTION DIAGRAMS

OM 40

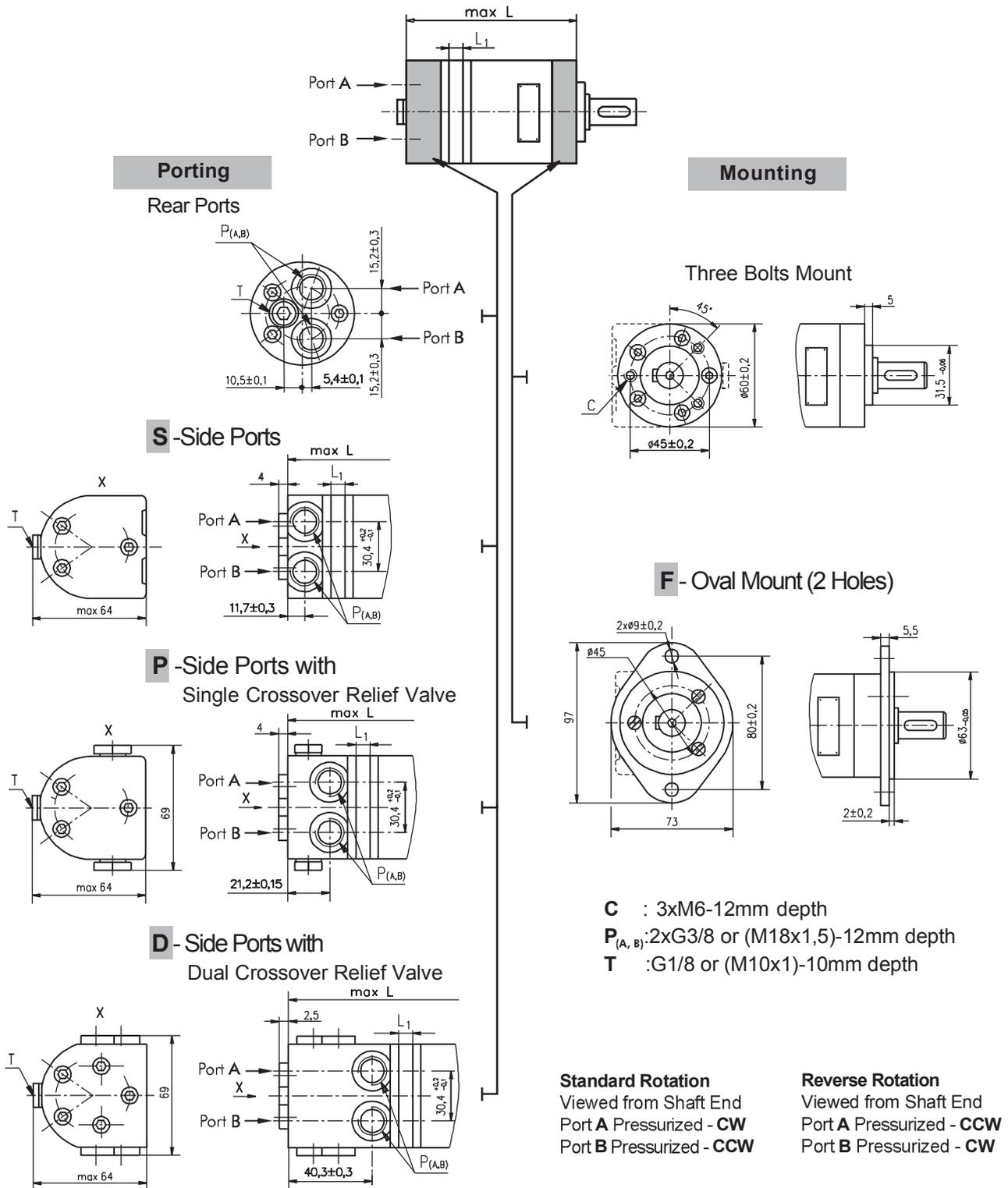


OM 50



The function diagrams data was collected at back pressure $5 \div 10$ bar and oil with viscosity of $32 \text{ mm}^2/\text{s}$ at 50° C .

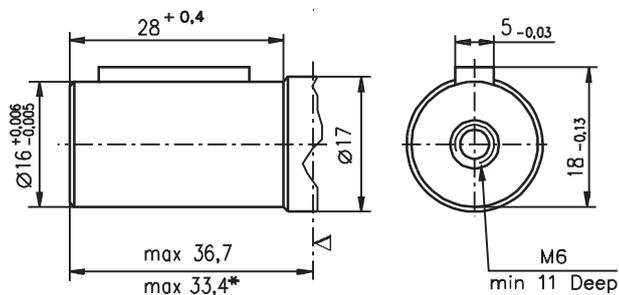
DIMENSIONS AND MOUNTING DATA



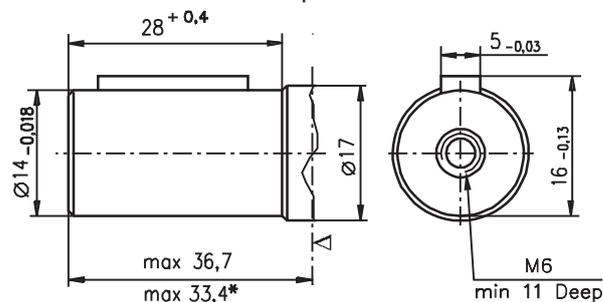
Type	L, mm	Type	L, mm	Type	L, mm	Type	L, mm	L ₁ , mm
OM 8	104	OMS 8	105	OMP 8	115	OMD 8	134	3,5
OM 12,5	106	OMS 12,5	107	OMP 12,5	117	OMD 12,5	136	5,5
OM 20	109	OMS 20	110	OMP 20	120	OMD 20	139	8,5
OM 32	114	OMS 32	115	OMP 32	125	OMD 32	144	13,5
OM 40	117,5	OMS 40	118,5	OMP 40	128,5	OMD 40	147,5	17
OM 50	121,5	OMS 50	122,5	OMP 50	132,5	OMD 50	151,5	21

SHAFT EXTENSIONS

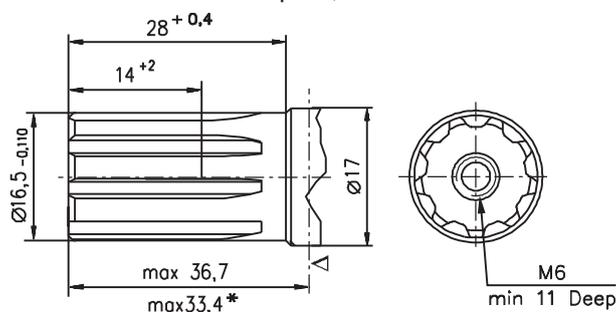
C - $\varnothing 16$ straight, Parallel key 5x5x16 DIN 6885
Max. Torque 3,9 daNm



CK - $\varnothing 14$ Straight, Parallel key 5x5x16 DIN 6885
Max. Torque 3 daNm

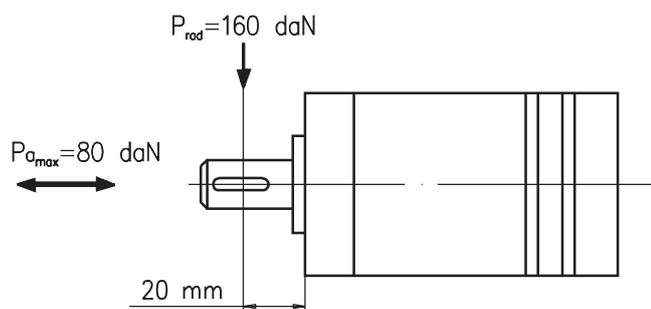


SH - $\varnothing 16,5$ Splined, B17x14 DIN 5482
Max. Torque 4,4 daNm



▽ - Motor Mounting Surface
* For F Mounting

PERMISSIBLE SHAFT LOAD



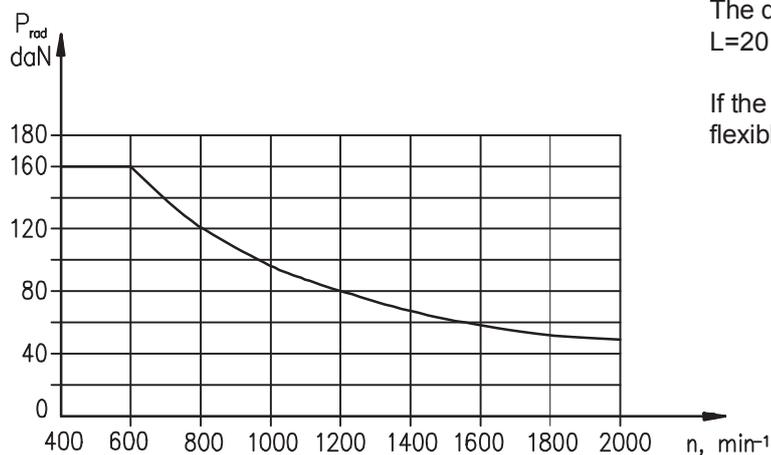
The permissible radial shaft load $[P_{rad}]$ is calculated from the distance $[L]$ between the point of load application and the mounting surface:

$$P_{rad} = \frac{13040}{(61,5+L)}, [daN]$$

$[L$ in mm; $L \leq 80]$

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

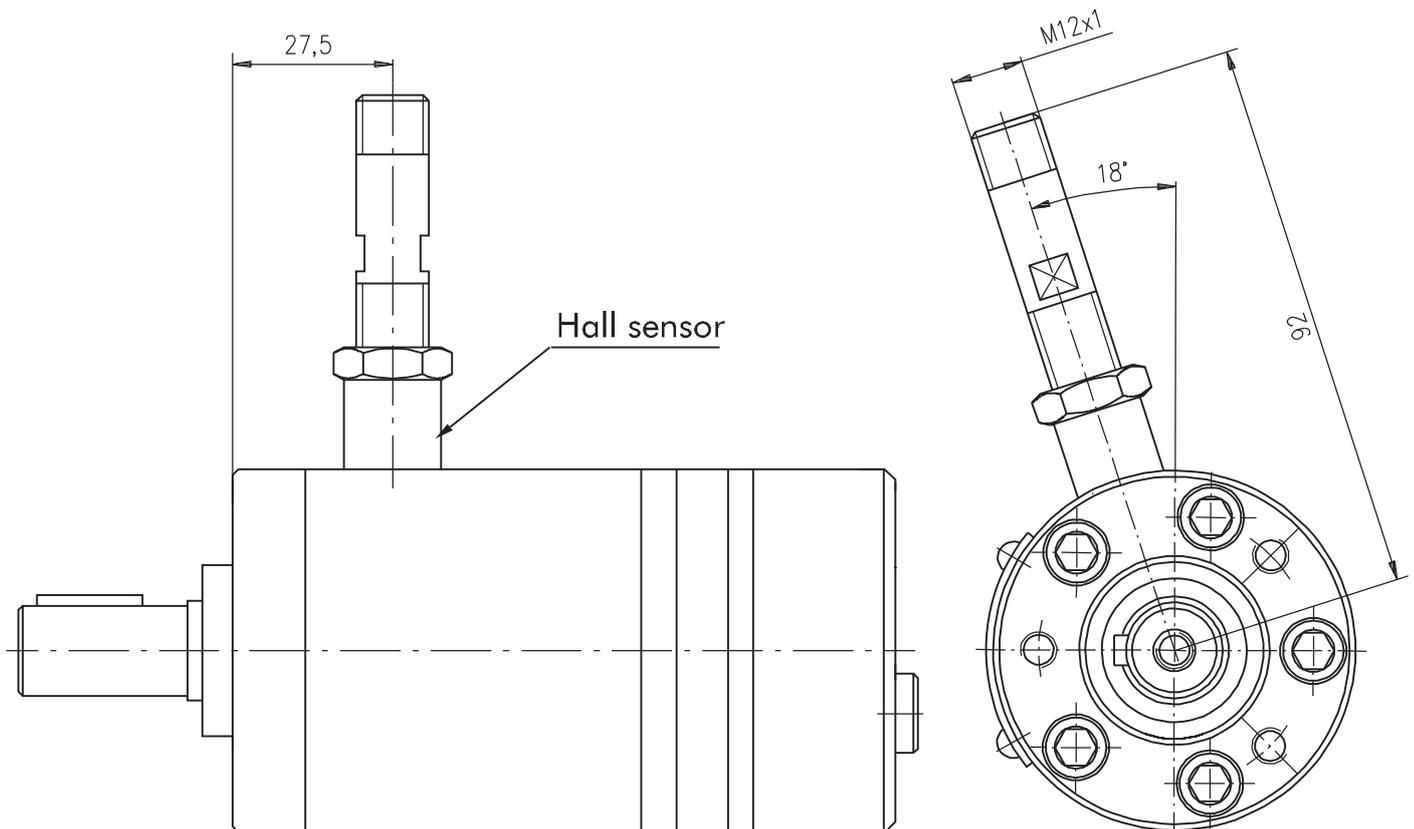
If the calculated shaft load exceeds the permissible, a flexible coupling must be used.



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. A connection is provided in the housing by a Plug connector M12 Series.



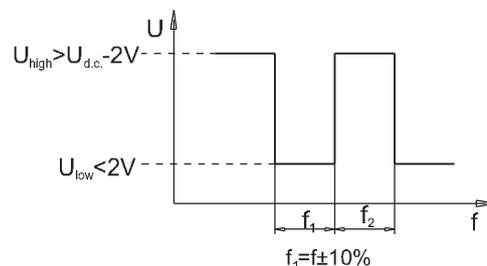
This performance is applicable for all motors of OM series. The main technical features correspond to the standard motors series OM.

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

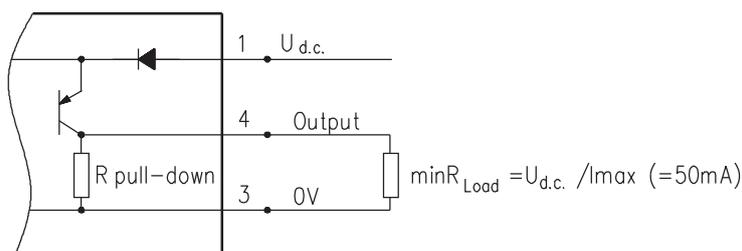


Load max.: $I_{high} = I_{low} < 50\text{mA}$

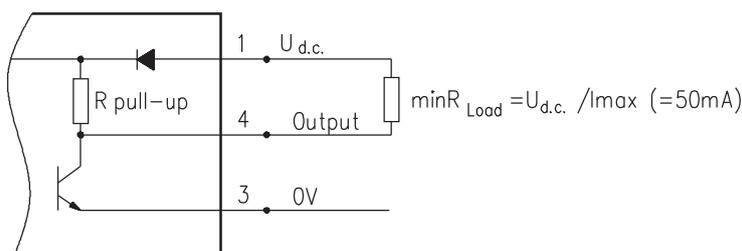
No load current, max: 20 mA

Wiring diagram

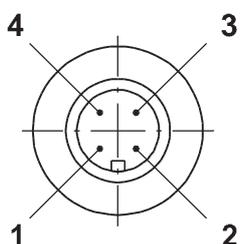
PNP



NPN



Stik type



Terminal No.	Connection
1	$U_{d.c.}$
2	No connection
3	0V
4	Output signal



ORDER CODE

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

Pos.1 - Adjustment Option

omit - without valve

P - Side ports with single crossover relief valve

D - Side ports with dual crossover relief valve

Pos.2 - Mounting Flange

omit - Three bolts mount

F -Oval mount, two holes

Pos.3 - Port type (not valid for P and D version)

omit - Rear ports

S - Side ports

Pos.4 - Displacement code

8 - 8,2 [cm³/rev]

12,5 - 12,9 [cm³/rev]

20 - 20,0[cm³/rev]

32 - 31,8[cm³/rev]

40 - 40,0[cm³/rev]

50 - 50,0[cm³/rev]

Pos. 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

Pos. 6 - Ports

omit - BSPP (ISO 228)

M - Metric (ISO 262)

Pos. 7 - Line to controled ** (see page OM - 01)

L - B→A (left running)

R - A→B (right running)

Pos. 8 - Valve Rated Pressure ***

/50 - Δp=50 bar

/100 - Δp=100 bar

Pos. 9 - Speed Monitoring

omit - none

RS-P - with speed sensor (PNP pull-down resistor)

RS-N - with speed sensor (NPN pull-up resistor)

Pos.10 - Rotation

omit - Standard Rotation

R - Reverse Rotation

Pos.11 - Option (Paint)****

omit - no paint

P - Painted

PC - Corrosion Protected Paint

Pos.12 - Design Series

omit - Factory specified

NOTES:

* The permissible output torque for shafts must be not exceeded!

** For "P" option useful only.

*** For "P" and "D" option useful only.

**** Color at customer's request.

The hydraulic motors are mangano-phosphatized as standard.