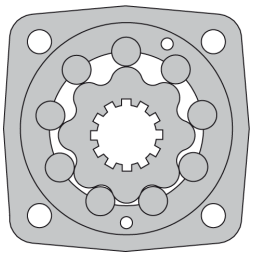
HYDRAULIC MOTORS OV

OIL FLOW IN DRAIN LINE

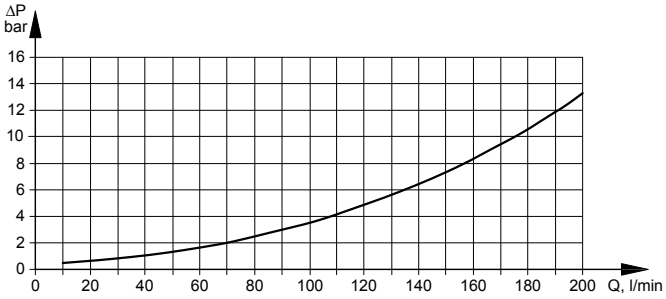
Pressure drop (bar)	Viscosity (mm²/s)	Oil flow in drain line (l/min)
140	20	3
	35	2
210	20	6
	35	4



GENERAL

Displacement, (cm³/rev)	314,5 ÷ 801,8
Max. Speed, (RPM)	510 ÷ 250
Max. Torque, (daNm)	92 ÷ 188
Max. Output, (kW)	42,5 ÷ 53,5
Max. Pressure Drop, (bar)	200 ÷ 160
Max. Oil Flow, (l/min)	160 ÷ 200
Min. speed, (RPM)	10 ÷ 5
Permissible Shaft Loads, (daN)	P_{rad}= 2800; P_a=1500
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



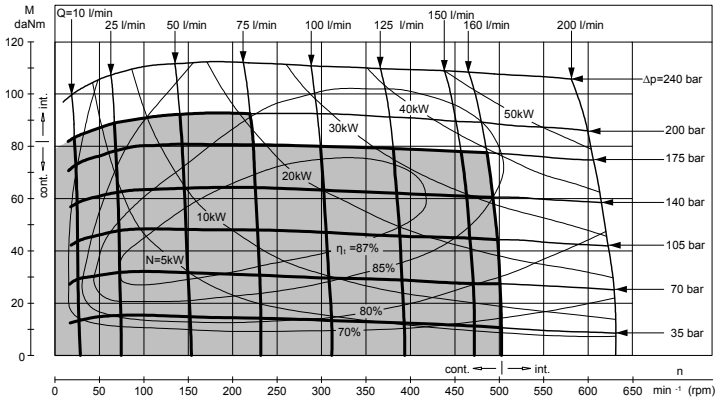
SPECIFICATION DATA

Type				OV 315	OV 400	OV 500	OV 630	OV 800
Displacement [cm³/rev.]				314,5	400,9	499,6	629,1	801,8
Max. Speed, [RPM]	**cont.**			510	500	400	315	250
	int.			630	600	480	380	300
Max. Torque [daNm]	**cont.**			92	118	146	166	188
	int.			111	141	176	194	211
	peak			129	164	205	221	247
Max. Output [kW]	**cont.**			42,5	53,5	53,5	48	42,5
	int.			51	64	64	56	48
Max. Pressure Drop [bar]	**cont.**			200	200	200	180	160
	int.			240	240	240	210	180
	peak			280	280	280	240	210
Max. Oil Flow [l/min]	**cont.**			160	200	200	200	200
	int.			200	240	240	240	240
Max. Inlet Pressure, [bar]	**cont.**			210	210	210	210	210
	int.			250	250	250	250	250
	peak			300	300	300	300	300
Max. Return Pressure w/o Drain Line or Max. Pressure in Drain Line, [bar]	**cont.**	**0-100**	**RPM**	60	60	60	60	60
	cont.	**100-300**	**RPM**	30	30	30	30	30
	cont.	**>300**	**RPM**	20	20	20	20	20
	int.	**0-max.**	**RPM**	75	75	75	75	75
Max. Return Pressure with Drain Line [bar]	**cont.**			140	140	140	140	140
	int.			175	175	175	175	175
	peak			210	210	210	210	210
Max. Starting Pressure with Unloaded Shift, [bar]				8	8	8	8	8
Min. Starting Torque [daNm]	**at max**	**press.**	**drop cont.**	71	91	113	133	151
	at max	**press.**	**drop int.**	85	109	136	155	170
Min. Speed, [RPM]				10	9	8	6	5
Weight, [kg]	**OV**			31,8	32,6	33,5	34,9	36,5
	OVW			32,4	33,2	34,1	35,5	37,1
	OVS			22,7	23,5	24,4	25,6	27,7

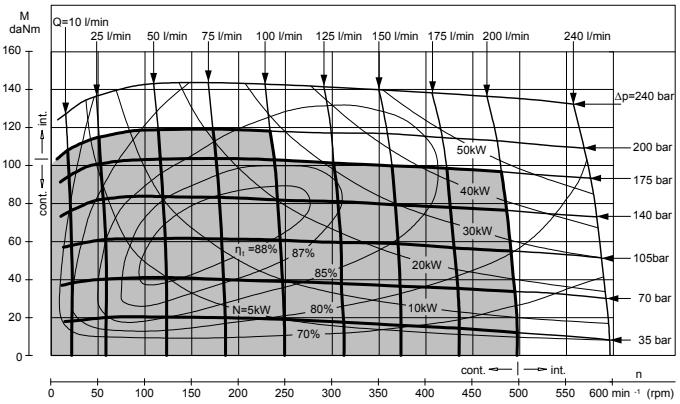
Intermittent operation: the permissible values may occur for max. 10% of every minute.
Peak load: the permissible values may occur for max. 1% of every minute.

FUNCTION DIAGRAMS

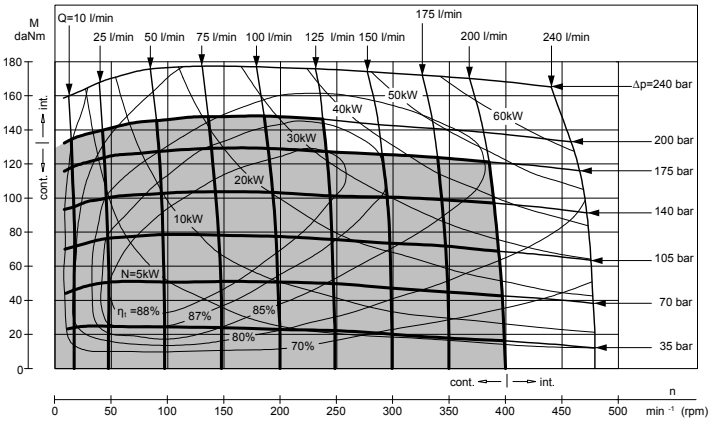
OV 315



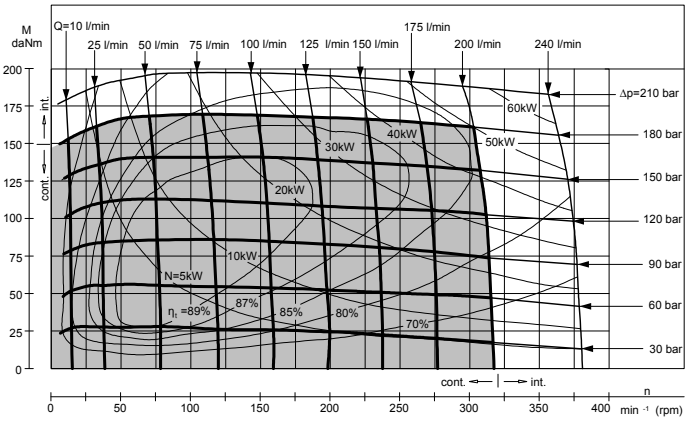
OV 400



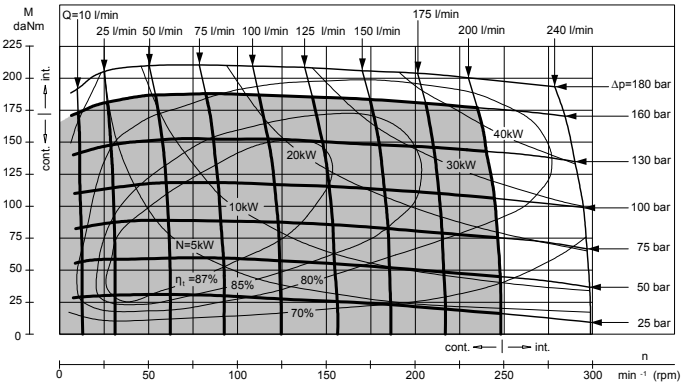
OV 500



OV 630

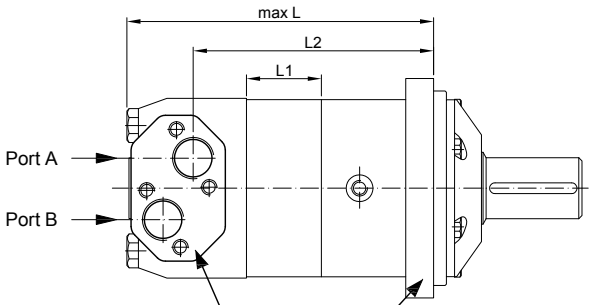


OV 800



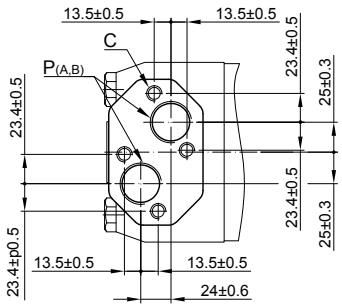
The function diagrams data was collected at back pressure 5 ÷ 10 bar
and oil with viscosity of 32 mm²/s at 50° C.

DIMENSIONS AND MOUNTING DATA



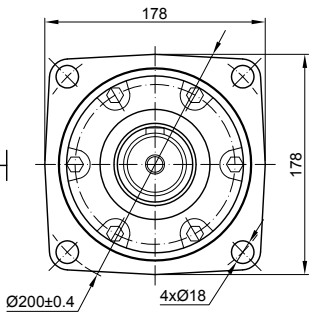
PORTING

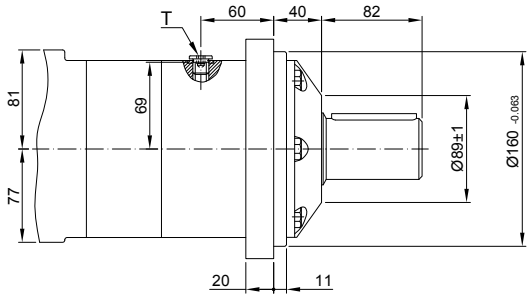
Side Ports



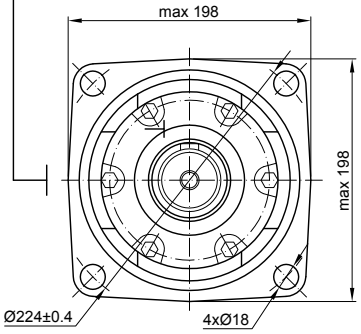
MOUNTING

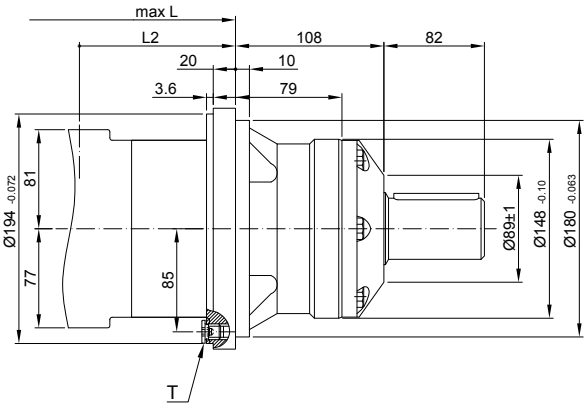
Square Mount (4 Holes)





W Wheel Mount





C : 4xM12 - 12 mm depth

$P_{(A,B)}$:2xG1 - 15 mm depth

T :G1/4 - 12 mm depth

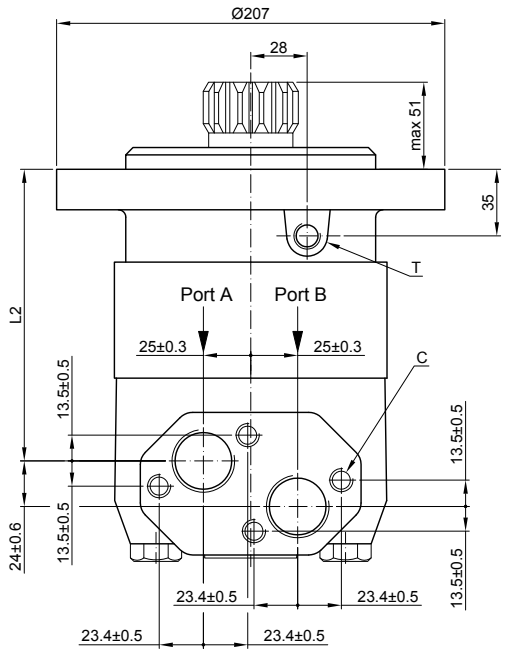
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

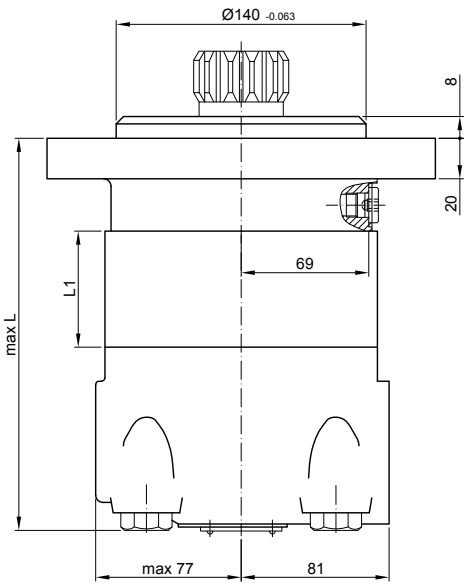
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

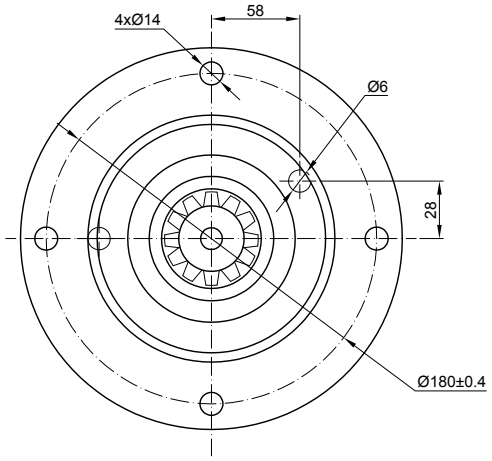
Type	L , mm	L2 , mm	Type	L , mm	L2 , mm	*L1 , mm
OV 315	211	158	**OVW 315**	146	86	19
OV 400	218	165	**OVW 400**	153	93	26
OV 500	226	173	**OVW 500**	161	101	34
OV 630	237	185	**OVW 630**	172	111	44
OV 800	251	198	**OVW 800**	185	125	58

DIMENSIONS AND MOUNTING DATA

S Short Mount







Type	L , mm	L1 , mm	L2 , mm
OVS 315	167	19	110
OVS 400	174	26	117
OVS 500	182	34	125
OVS 630	192	44	135
OVS 800	206	58	149

The width of the gerolor is 3,5 mm greater than L1 .

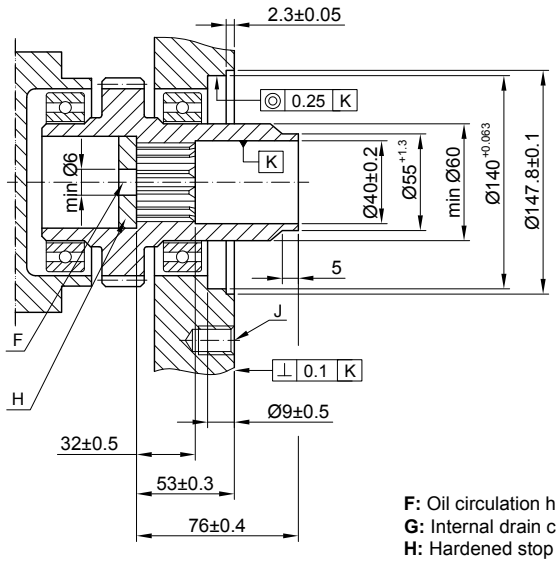
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

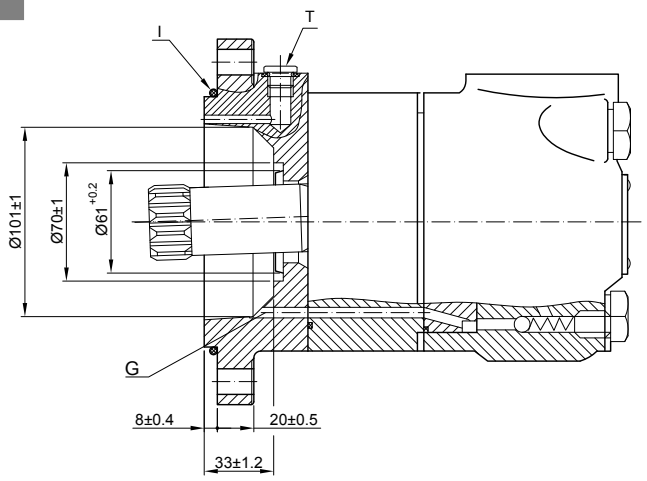
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

C : 4xM12 - 12 mm depth
$P_{(A,B)}$:2xG1 - 15 mm depth
T :G1/4 - 12 mm depth

DIMENSIONS OF THE ATTACHED COMPONENT

OVS





F: Oil circulation hole
G: Internal drain channel
H: Hardened stop plate
I: O - Ring 140x3mm

J: 4xM12 - 18 mm depth, 90°
T: Drain connection G1/4 -12 mm depth

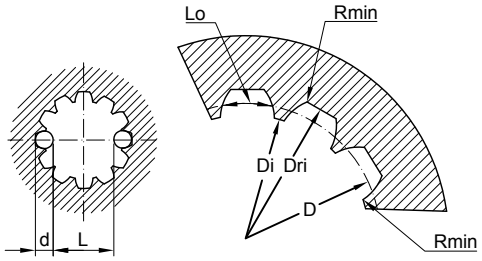
DRAIN CONNECTION

A drain line ought to be used when pressure in the return line can exceed the permissible pressure. It can be connected for OVS at the drain port of the motor. The drain line must be possible for oil to flow freely between motor and attached component and must be led to the tank. The maximum pressure in the drain line is limited by the attachedcomponent and its seal.

INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

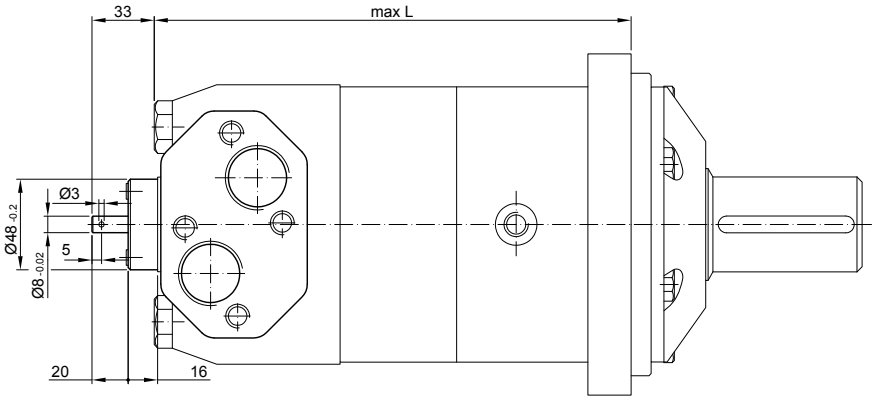
Standard ANSI B92.1-1976, class 5
[m=2.54; corrected x.m=+1,0]

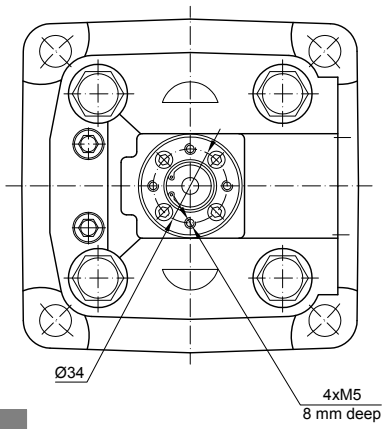
Fillet Root Side Fit		mm
Number of Teeth	z	16
Diametral Pitch		10 / 20
Pressure Angle		30°
Pitch Dia.	D	40,640
Major Dia.	Dri	$45{,}2^{+0.4}$
Minor Dia.	Di	$38{,}5^{+0.039}$
Space Width [Circular]	Lo	5,18±0,037
Fillet Radius	Rmin	0,4
Max. Measurement between Pin	L	$32{,}47^{+0.15}$
Pin Dia.	d	5,5±0,001



Hardering Specification:
HRC 60±2
HRC 52
0,7±0,2 mm effective case depth
Material 20 MoCr4 DIN 17210 or better

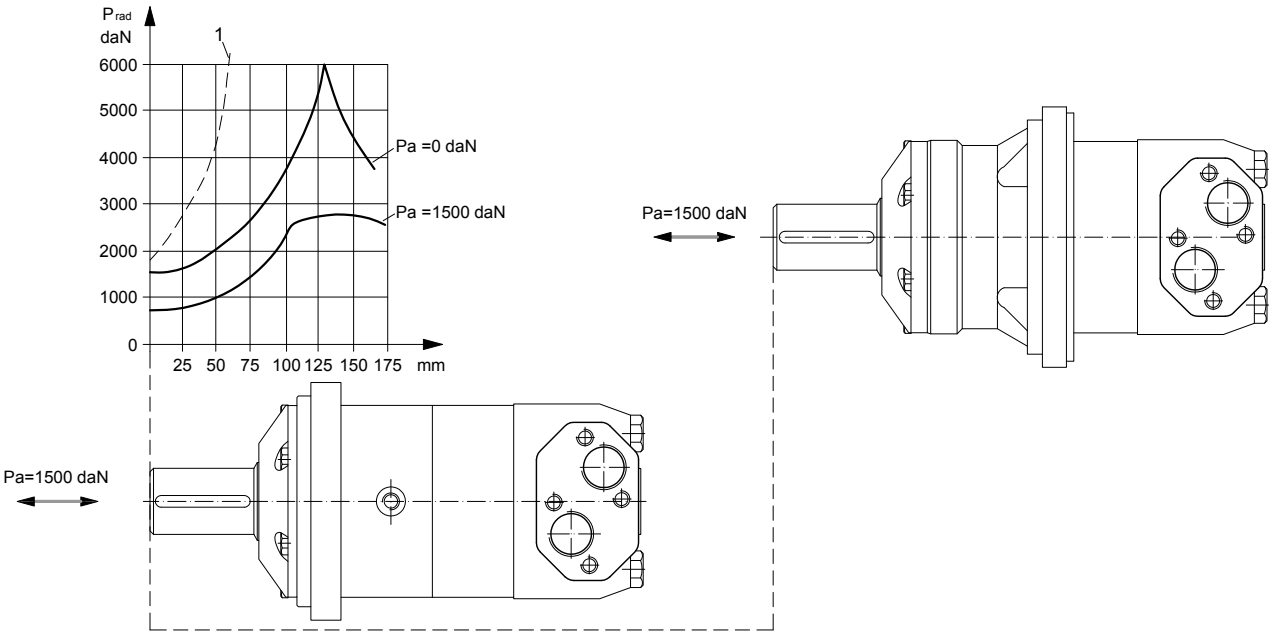
MOTORS WITH TACHO CONNECTION - Option "T"





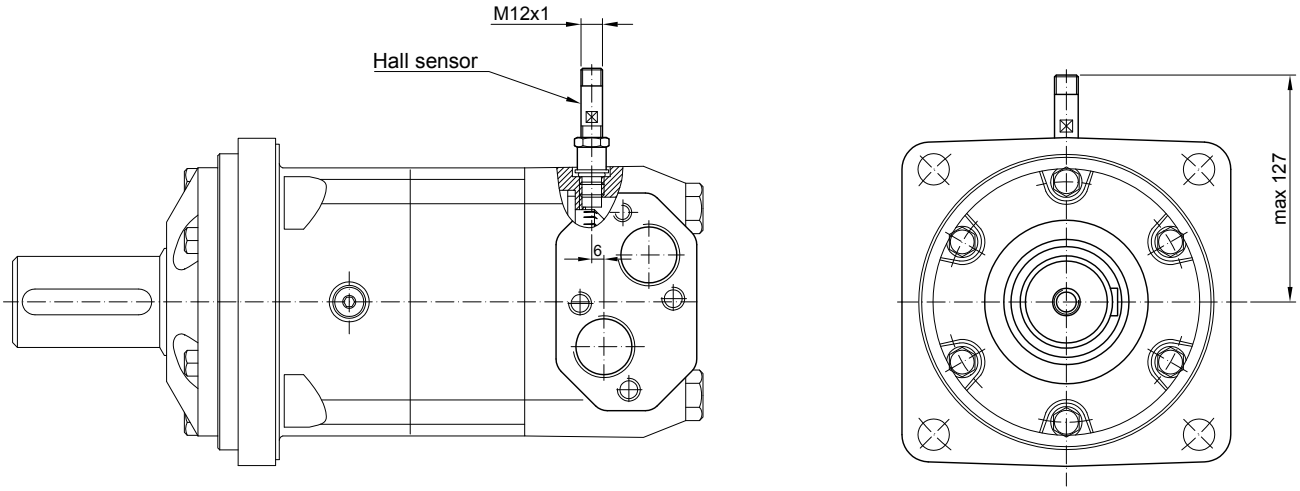
PERMISSIBLE SHAFT LOADS

The output shaft runs in tapered bearings that permit high axial and radial forces. Curve " **1** " shows max. radial shaft load. Any shaft load exceeding the values quoted in the curve will seriously reduce motor life. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.



HYDRAULIC MOTORS WITH SPEED SENSOR TYPE OV...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.



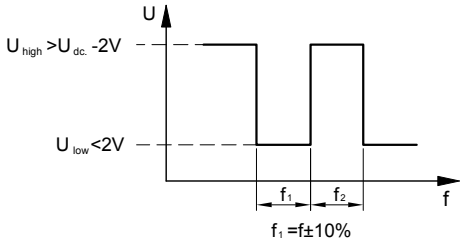
This performance is applicable for all motors of OV series. The main technical features correspond to the standard motors series OV.

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	102

OUTPUT SIGNAL

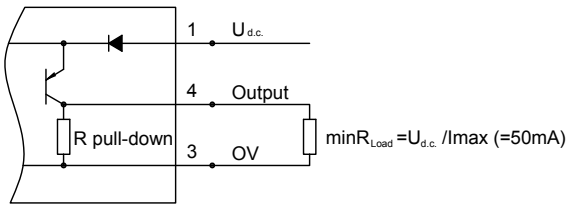


$f_1 = f \pm 10\%$

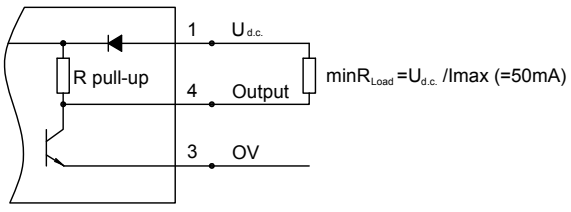
Load max.: $I_{high} = I_{low} < 50mA$
No load current, max: 20 mA

WIRING DIAGRAM

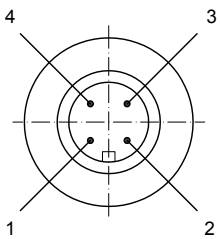
PNP



NPN



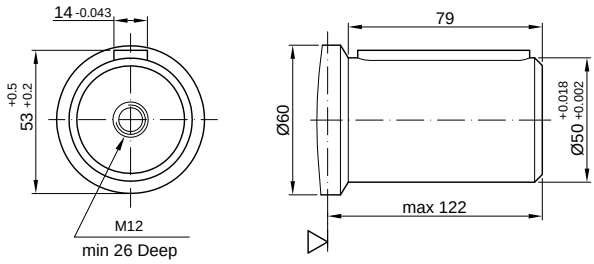
STICK TYPE



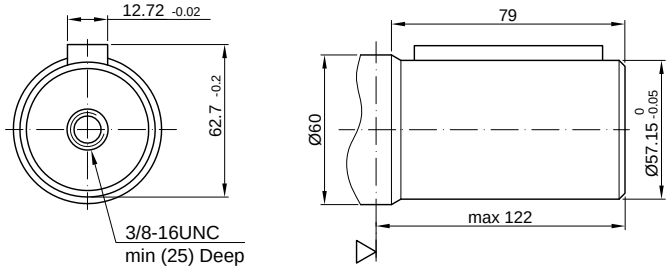
Terminal No.	Connection
1	Ud.c.
2	No connection
3	0V
4	Output signal

SHAFT EXTENSIONS

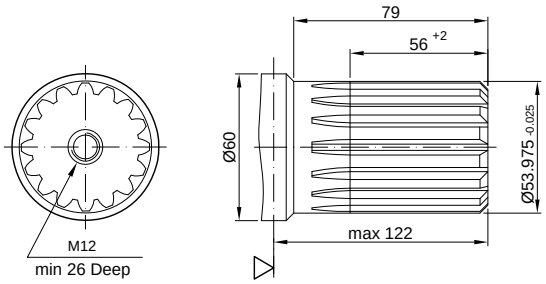
C Ø50 straight, Parallel key A14x9x70 DIN 6885



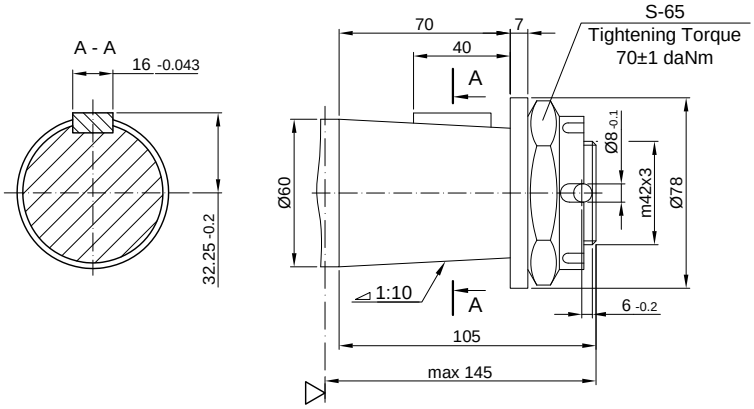
CO Ø2 1/4" (57,15) straight, Parallel key 1/2"x1/2"x2 1/4" BS46



SH Ø2 1/8" splined, 16 DP 8/16 ANSI B92.1-1976



K tapered 1:10, Parallel key B16x10x32 DIN 6885



ORDER CODE

	1	2	3	4	5	6	7	8
OV								

1	Mounting Flange
omit	Square mount, four holes
S	Short mount
W	Wheel mount

2	Displacement code
315	314,5 [cm³/rev]
400	400,9 [cm³/rev]
500	499,6 [cm³/rev]
630	629,1 [cm³/rev]
800	801,8 [cm³/rev]

3	Shaft Extensions
C	ø50 straight, Parallel key A14x9x70 DIN6885
CO	ø2 1/4" straight, Parallel key 1/2"x1/2"x2 1/4" BS46
K	ø60 tapered 1:10, Parallel key B16x10x32 DIN6885
SH	ø2 1/8" splined, ANSI B92.1 - 1976

4	Speed Monitoring
omit	none
T	with tacho connection
RS-P	with speed sensor (PNP pull-down resistor)
RS-N	with speed sensor (NPN pull-up resistor)

5	Special Features
omit	none
LL	Low Leakage
LSV	Low Speed Valve

6	Rotation
omit	Standard Rotation
R	Reverse Rotation

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

8	Design Series
omit	Factory specified