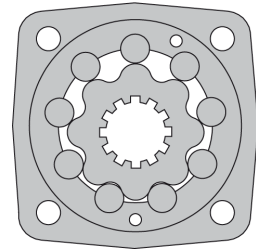


# HYDRAULIC MOTORS OT



## OIL FLOW IN DRAIN LINE

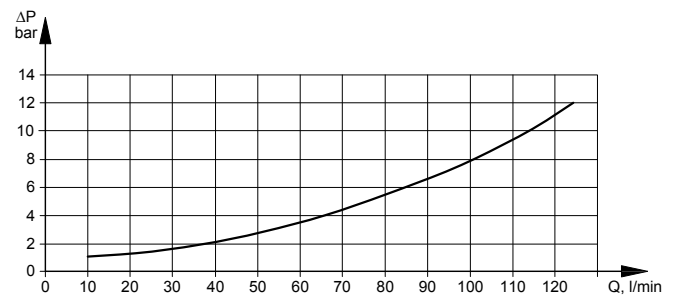
Pressure drop (bar)	Viscosity (mm <sup>2</sup> /s)	Oil flow in drain line (l/min)
140	20	1,5
	35	1
210	20	3
	35	2



## GENERAL

Displacement, (cm <sup>3</sup> /rev)	161,1 ÷ 725
Max. Speed, (RPM)	625 ÷ 175
Max. Torque, (daNm)	47 ÷ 125
Max. Output, (kW)	20,2 ÷ 33,5
Max. Pressure Drop, (bar)	200 ÷ 115
Max. Oil Flow, (l/min)	100 ÷ 125
Min. speed, (RPM)	10 ÷ 5
Permissible Shaft Loads, (daN)	P <sub>rad</sub> = 1700; P <sub>a</sub> =1000
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, (°C)	- 30 ÷ 90
Optimal Viscosity range, (mm <sup>2</sup> /s)	20 ÷ 75
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

## PRESSURE LOSSES



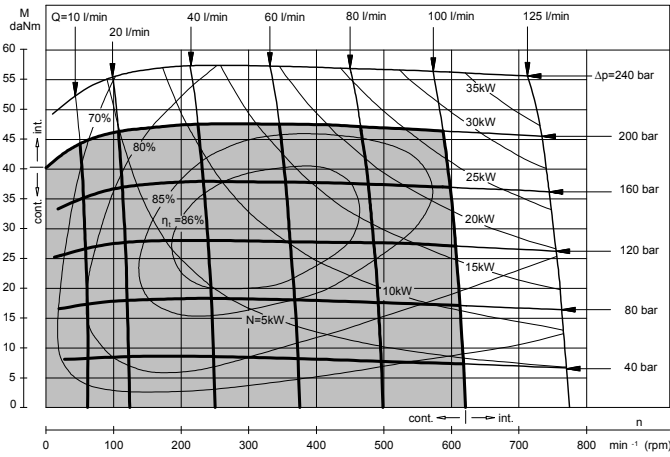
## SPECIFICATION DATA

Type	OT 160	OT 200	OT 250	OT 315	OT 400	OT 500	OT 630	OT 725
Displacement [cm <sup>3</sup> /rev.]	161,1	201,4	251,8	326,3	410,9	523,6	612,3	725
Max. Speed, [RPM]	cont.	625	625	500	380	305	240	206
	int.	780	750	600	460	365	285	247
Max. Torque [daNm]	cont.	47	59	73	95	108	122	123
	int.	56	71	88	114	126	137	138
	peak	66	82	102	133	144	160	161
Max. Output [kW]	cont.	26,5	33,5	33,5	33,5	30	26,5	24,3
	int.	32	40	40	40	35	30	27,5
Max. Pressure Drop [bar]	cont.	200	200	200	200	180	160	140
	int.	240	240	240	240	210	180	160
	peak	280	280	280	280	240	210	190
Max. Oil Flow [l/min]	cont.	100	125	125	125	125	125	125
	int.	125	150	150	150	150	150	151,4
	cont.	210	210	210	210	210	210	210
Max. Inlet Pressure, [bar]	int.	250	250	250	250	250	250	250
	peak	300	300	300	300	300	300	300
	Max. Return Pressure w/o Drain Line or Max. Pressure in Drain Line, [bar]	cont.	0-100	RPM	75	75	75	75
cont.		100-300	RPM	40	40	40	40	40
cont.		>300	RPM	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	140	140
	int.	175	175	175	175	175	175	175
	peak	210	210	210	210	210	210	210
Max. Starting Pressure with Unloaded Shift, [bar]		10	10	10	10	10	10	10
Min. Starting Torque [daNm]	at max press.	drop cont.	34	43	53	74	84	95
	at max press.	drop int.	41	52	63	89	97	106
Min. Speed, [RPM]		10	9	8	7	6	5	5
Weight, [kg]	OT	20	20,5	21	22	23	24	25
	OTW	22	22,5	23	24	25	26	27
	OTS	15	15,5	16	17	18	19	20

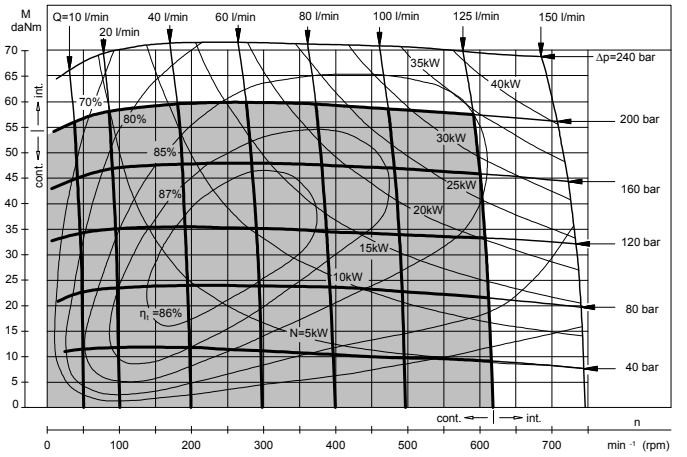
Intermittent operation: the permissible values may occur for max. 10% of every minute.  
Peak load: the permissible values may occur for max. 1% of every minute.

# FUNCTION DIAGRAMS

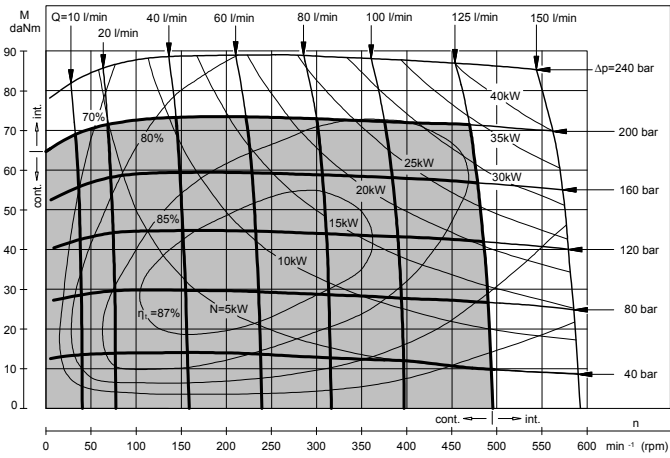
**OT 160**



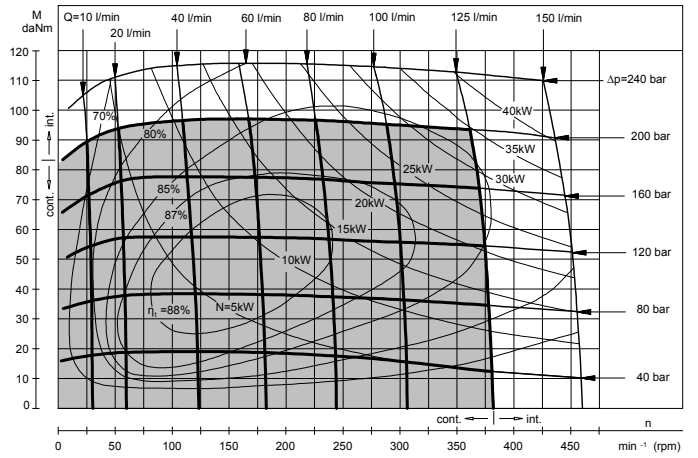
**OT 200**



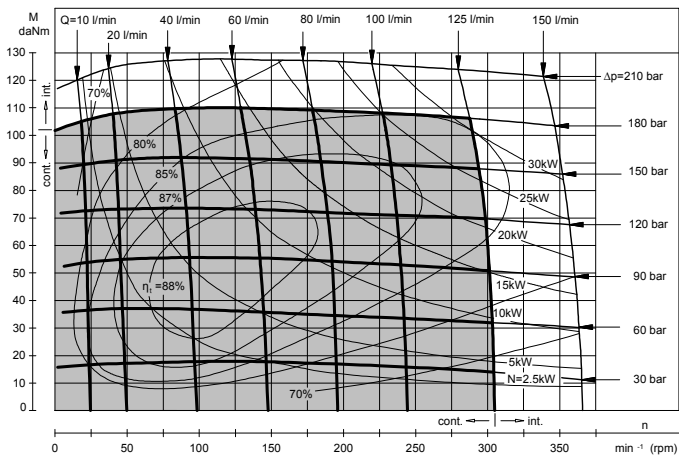
**OT 250**



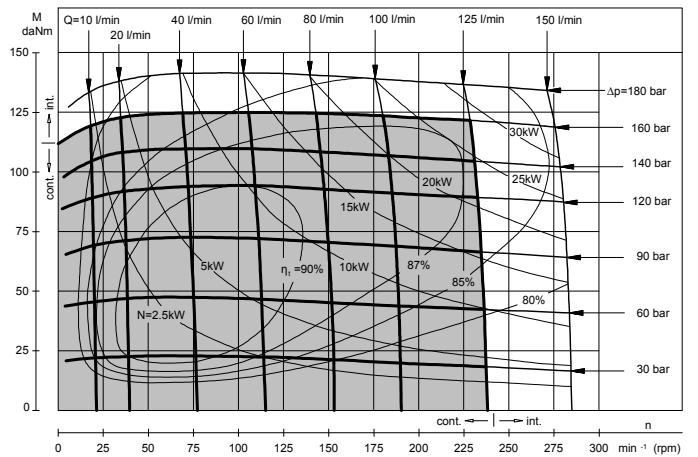
**OT 315**



**OT 400**



**OT 500**

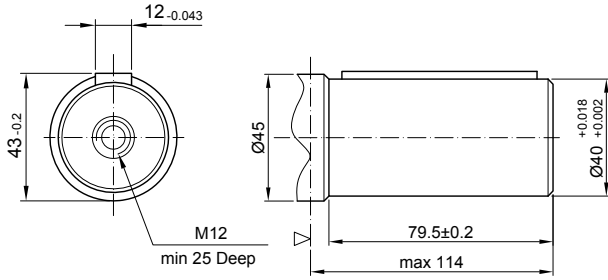


The function diagrams data was collected at back pressure  $5 \pm 10$  bar and oil with viscosity of 32 mm<sup>2</sup>/s at 50° C.

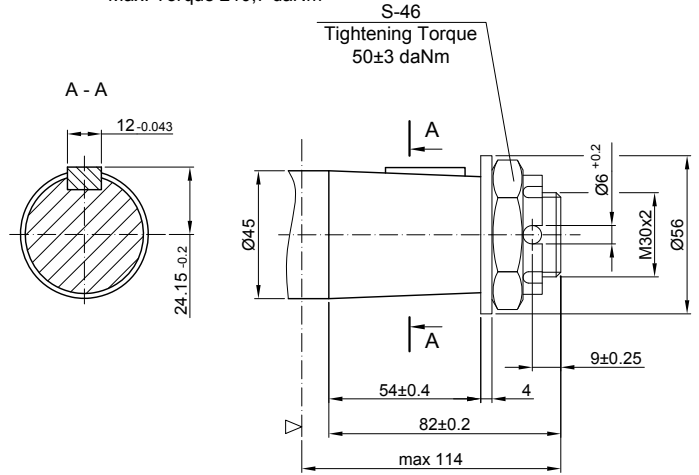


## SHAFT EXTENSIONS

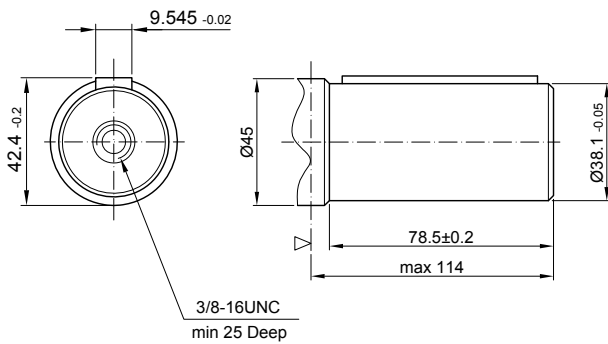
**C** Ø40 straight, Parallel key A12x8x70 DIN 6885  
Max. Torque 132,8 daNm



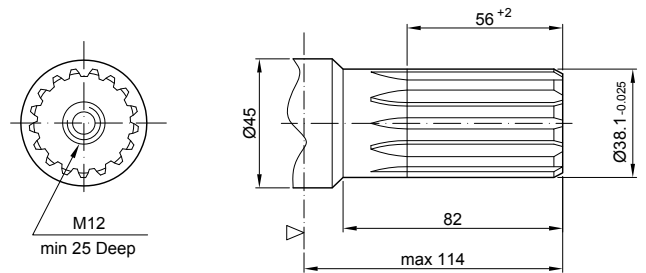
**K** tapered 1:10, Parallel key B12x8x28 DIN 6885  
Max. Torque 210,7 daNm



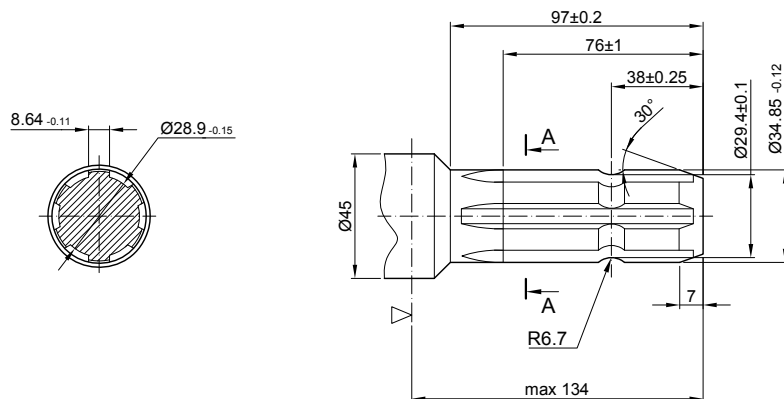
**CO** Ø1 1/2" straight, Parallel key 3/8"x3/8"x2 1/4" BS46  
Max. Torque 132,8 daNm



**SH** Ø1 1/2" splined 17T, DP12/24 ANSI B92.1-1976  
Max. Torque 132,8 daNm

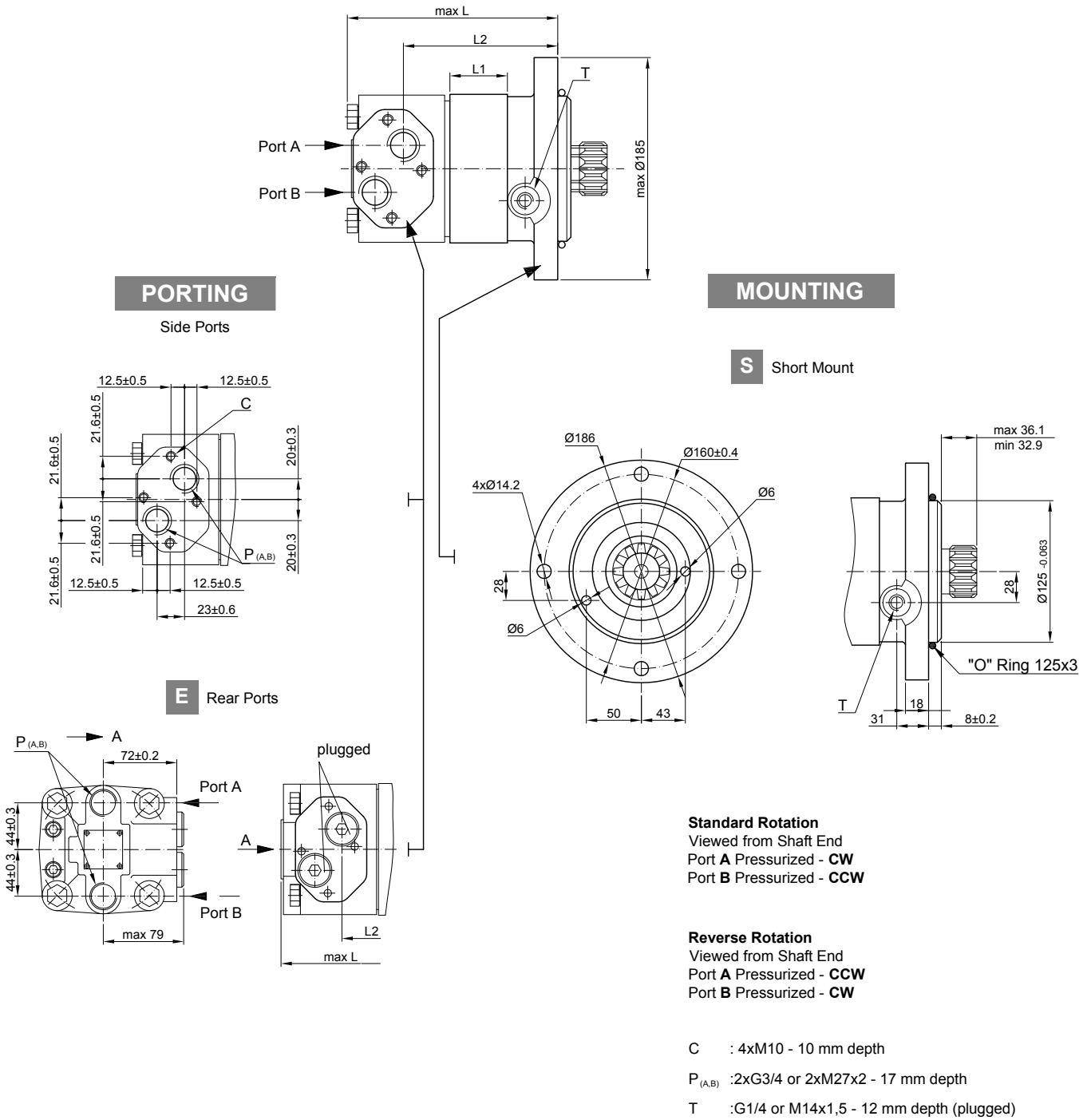


**SL** Ø34.85 p.t.o. DIN 9611 Form 1  
Max. Torque 77 daNm



▽ Motor Mounting Surface

## DIMENSIONS AND MOUNTING DATA

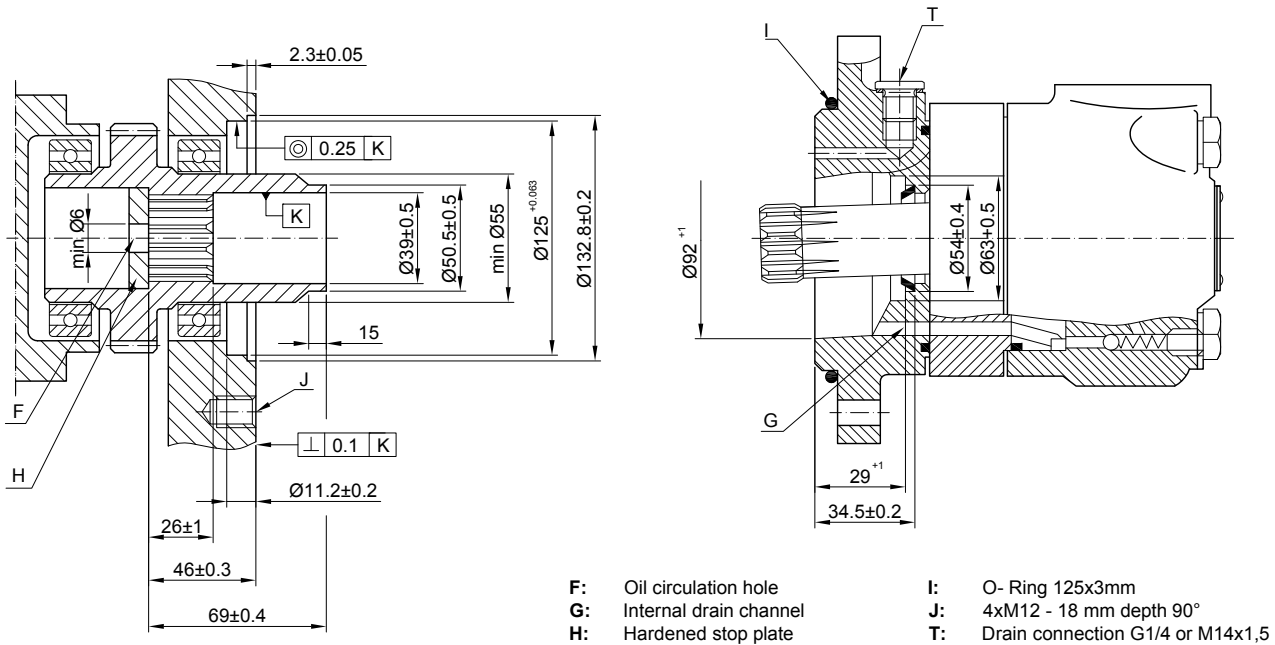


Type	L , mm	L2 , mm	Type	L , mm	L1 , mm
OTS 160	144	94	OTSE 160	154	12
OTS 200	149	99	OTSE 200	159	16,5
OTS 250	154	104	OTSE 250	164	22
OTS 315	161	111	OTSE 315	171	29
OTS 400	170	120	OTSE 400	180	38
OTS 500	189	139	OTSE 500	199	56,3
OTS 630	198,5	146,5	OTSE 630	208,5	72,5
OTS 725	216	167	OTSE 725	226	86,5

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

## DIMENSIONS OF THE ATTACHED COMPONENT

### OTS

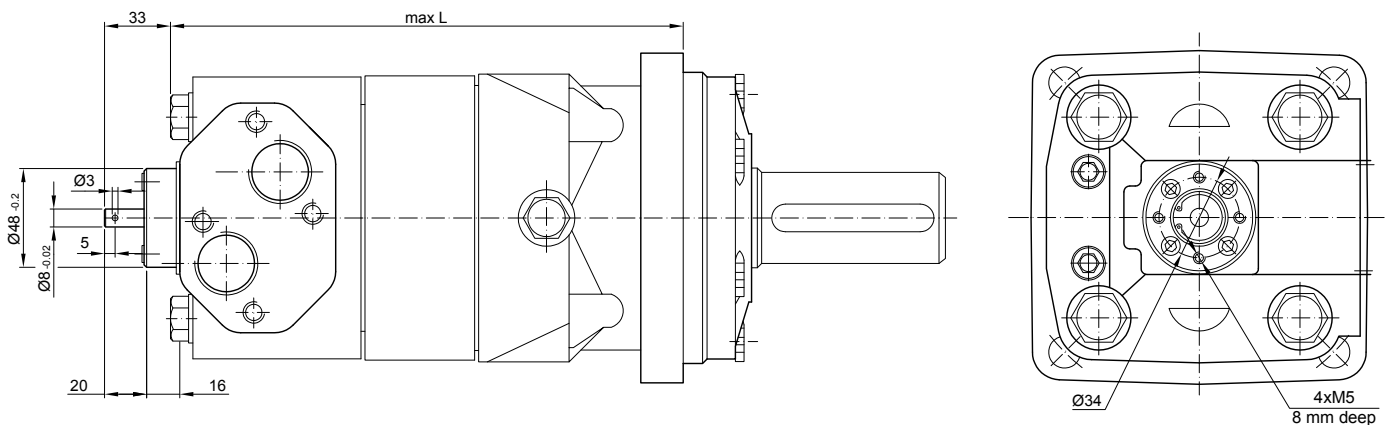


## DRAIN CONNECTION

A drain line ought to be used when pressure in the return line can exceed the permissible pressure. It can be connected:

- For OTS at the drain port of the motor;
  - For OTV at the drain connection of the attached component. The maximum pressure in the drain line is limited by the attached component and its shaft seal.
- 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 attached component and its seal.

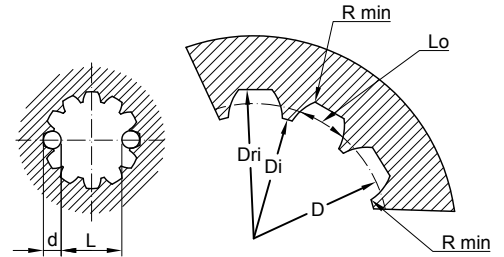
## MOTORS WITH TACHO CONNECTION - Option "T"



## INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

Standard ANSI B92.1-1976, class 5  
[m=2.1166; corrected x.m=+1,0]

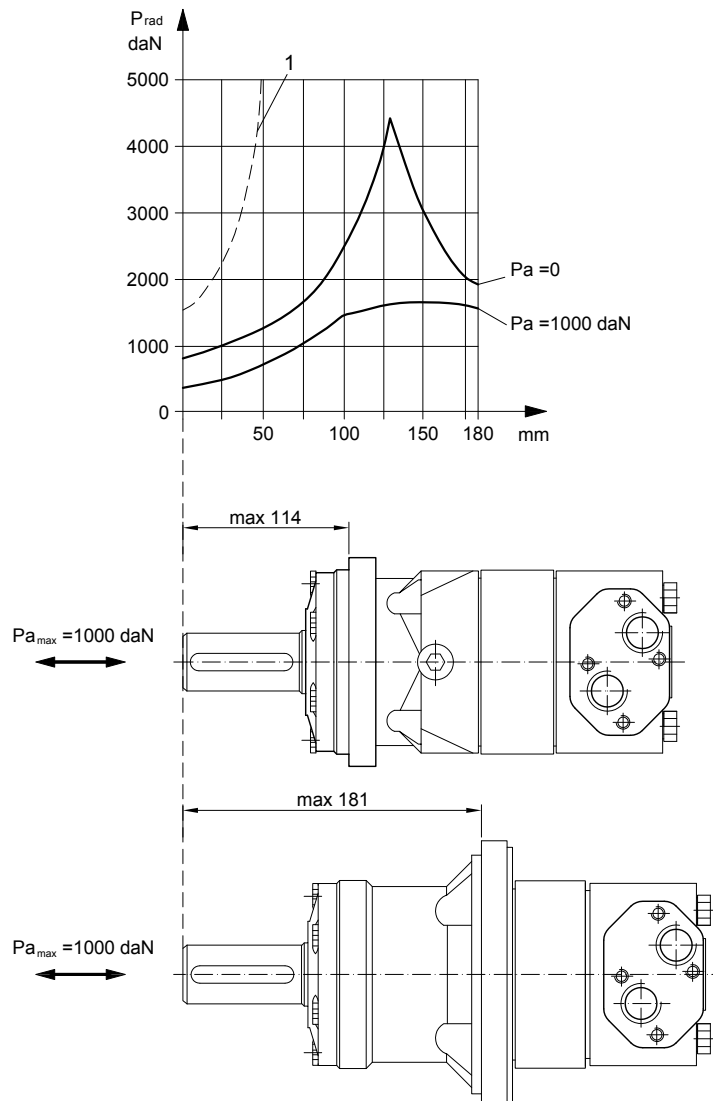
Fillet Root Side Fit	mm	
Number of Teeth	z	16
Diametral Pitch	DP	12 / 24
Pressure Angle		30°
Pitch Dia.	D	33,8656
Major Dia.	Dri	38,4 <sup>+0.4</sup>
Minor Dia.	Di	32,15 <sup>+0.04</sup>
Space Width [Circular]	Lo	4,516±0,037
Fillet Radius	Rmin	0,5
Max. Measurement between Pin	L	26,9 <sup>+0.10</sup>
Pin Dia.	d	4,835±0,001



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

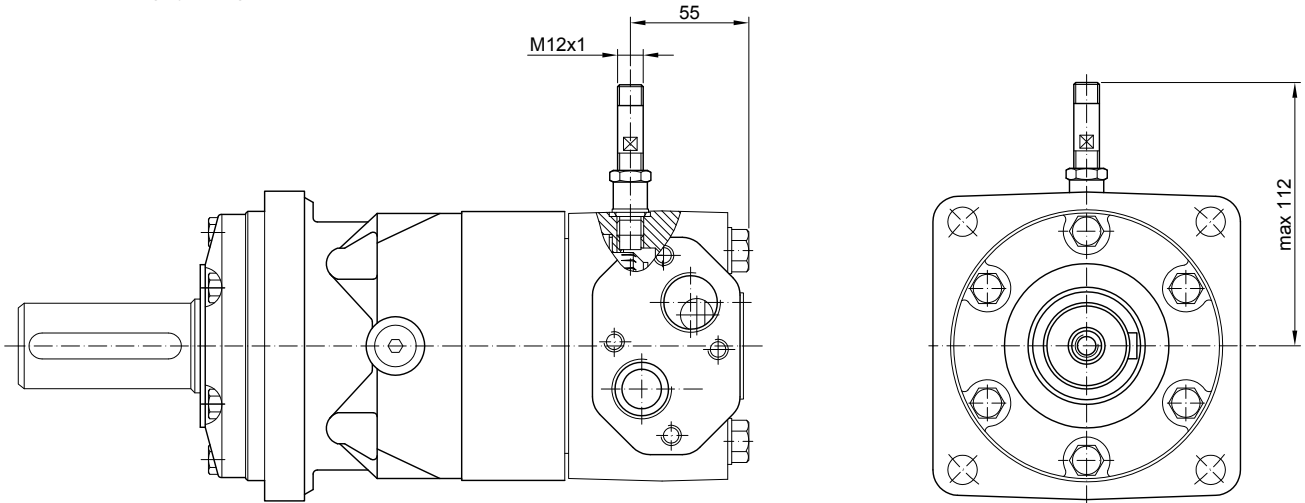
## PERMISSIBLE SHAFT LOADS

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 OT...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.



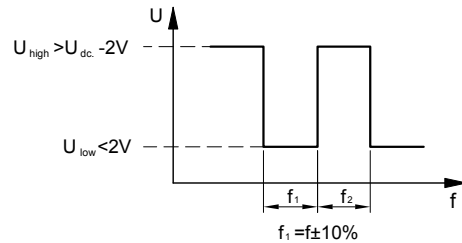
This performance is applicable for all motors of OT series. The main technical features correspond to the standard motors series OT.

## 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	84

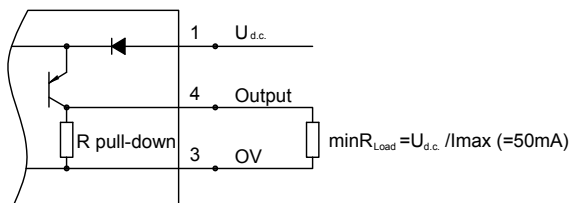
### OUTPUT SIGNAL



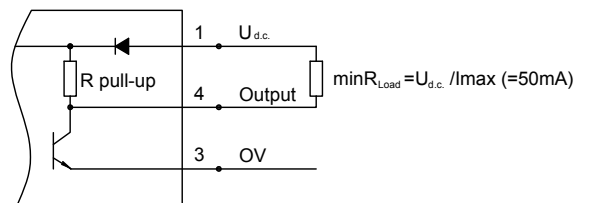
Load max.:  $I_{high} = I_{low} < 50\text{mA}$   
No load current, max: 20 mA

## WIRING DIAGRAM

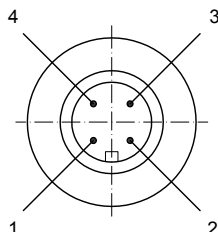
### PNP



### NPN



## STICK TYPE



Terminal No.	Connection
1	U <sub>d.c.</sub>
2	No connection
3	0V
4	Output signal



## ORDER CODE

	1	2	3	4	5	6	7	8	9	10
<b>OT</b>										

<b>1</b>	<b>Mounting Flange</b>
<b>omit</b>	Square mount, four holes
<b>S</b>	Short mount
<b>W</b>	Wheel mount
<b>2</b>	<b>Port type</b>
<b>omit</b>	Side ports
<b>E</b>	Rear ports
<b>3</b>	<b>Displacement code</b>
<b>160</b>	161,1 [cm <sup>3</sup> /rev]
<b>200</b>	201,4 [cm <sup>3</sup> /rev]
<b>250</b>	251,8 [cm <sup>3</sup> /rev]
<b>315</b>	326,3 [cm <sup>3</sup> /rev]
<b>400</b>	410,9 [cm <sup>3</sup> /rev]
<b>500</b>	523,6 [cm <sup>3</sup> /rev]
<b>630</b>	612,3 [cm <sup>3</sup> /rev] (w/o Function diagram)
<b>725</b>	725,0 [cm <sup>3</sup> /rev] (w/o Function diagram)
<b>4</b>	<b>Shaft Extensions</b>
<b>C</b>	ø40 straight, Parallel key A12x8x70 DIN6885
<b>CO</b>	ø1 1/2" straight, Parallel key 3/8"x3/8"x2 1/4" BS46
<b>K</b>	ø45 tapered 1:10, Parallel key B12x8x28 DIN6885
<b>SL</b>	ø34,85 p.t.o. DIN 9611 Form 1
<b>SH</b>	ø1 1/2" splined 17T ANSI B92.1 - 1976

<b>5</b>	<b>Ports</b>
<b>omit</b>	BSPP (ISO 228)
<b>M</b>	Metric (ISO 262)
<b>6</b>	<b>Speed Monitoring</b>
<b>omit</b>	none
<b>T</b>	with tacho connection (only for side ports)
<b>RS-P</b>	with speed sensor (PNP pull-down resistor)
<b>RS-N</b>	with speed sensor (NPN pull-up resistor)
<b>7</b>	<b>Special Features</b>
<b>omit</b>	none
<b>LL</b>	Low Leakage
<b>LSV</b>	Low Speed Valve
<b>8</b>	<b>Rotation</b>
<b>omit</b>	Standard Rotation
<b>R</b>	Reverse Rotation
<b>9</b>	<b>Option (Paint)</b>
<b>omit</b>	no paint
<b>P</b>	Painted
<b>PC</b>	Corrosion Protected Paint
<b>10</b>	<b>Design Series</b>
<b>omit</b>	Factory specified

The permissible output torque for shafts must not be exceeded!