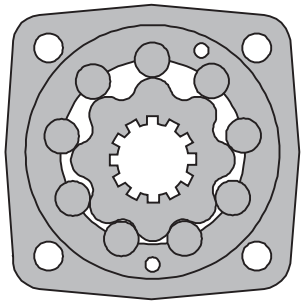
# HYDRAULIC MOTORS OV

## APPLICATION

» Conveyors;
» Metal working machines;
» Machines for agriculture;
» Road building machines;
» Mining machinery;
» Food industries;
» Special vehicles;
» Plastic and rubber machinery etc.



## CONTENTS



## OPTIONS

» Model- Disc valve, roll-gerotor
» Flange and wheel mount;
» Short motor;
» Tacho and speed sensor connection;
» Side ports;
» Shafts- straight, splined and tapered;
» Metric and BSPP ports;
» Other special features.

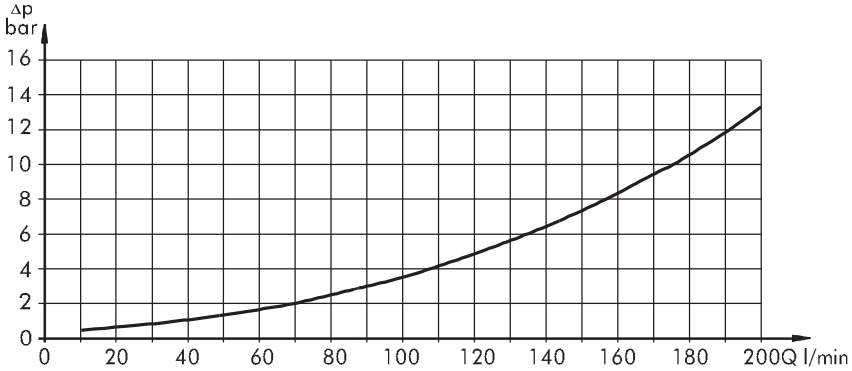
## GENERAL

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

### Oil flow in drain line

| Pressure drop (bar) | Viscosity ($mm^2$/s) | Oil flow in drain line (l/min) |
|---|---|---|
| 140 | 20 | 3 |
| | 35 | 2 |
| 210 | 20 | 6 |
| | 35 | 4 |

### Pressure Losses



## SPECIFICATION DATA

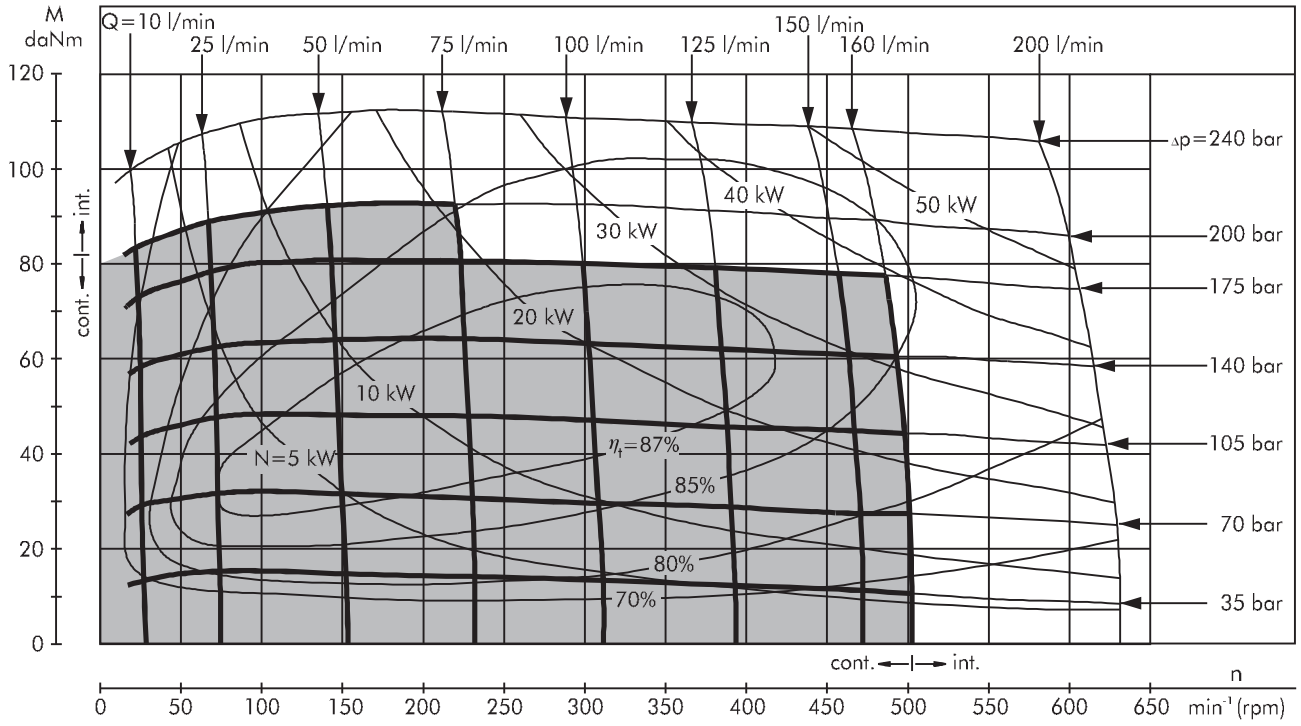
| Type | | OV 315 | OV 400 | OV 500 | OV 630 | OV 800 |
|---|---|---|---|---|---|---|
| **Displacement [cm³/rev.]** | | 314.5 | 400,9 | 499,6 | 629,1 | 801,8 |
| **Max. Speed, [RPM]** | cont. | 510 | 500 | 400 | 315 | 250 |
| | Int.* | 630 | 600 | 480 | 380 | 300 |
| **Max. Torque [daNm]** | cont. | 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 without 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 Shaft, [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.
*** For speeds of 5 RPM lower than given, consult factory or your regional manager.

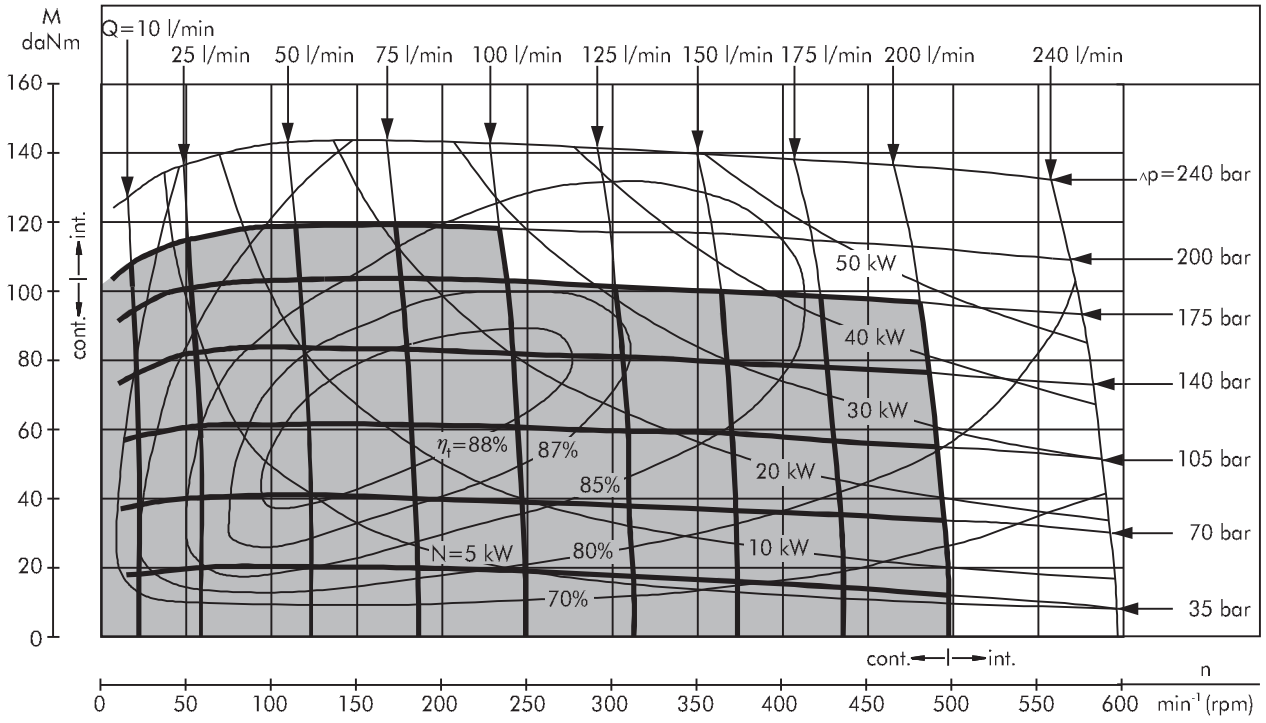
1) Intermittent speed and intermittent pressure must not occur simultaneously.
2) Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3) Recommend using a premium quality, anti-wear type mineral based hydraulic oil, HLP(DIN51524) or HM(ISO6743/4). If using synthetic fluids consult the factory for alternative seal materials.
4) Recommended minimum oil viscosity 13 mm²/s at 50ºC.
5) Recommended maximum system operating temperature is 82ºC.
6) To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

## FUNCTION DIAGRAMS

### OV 315



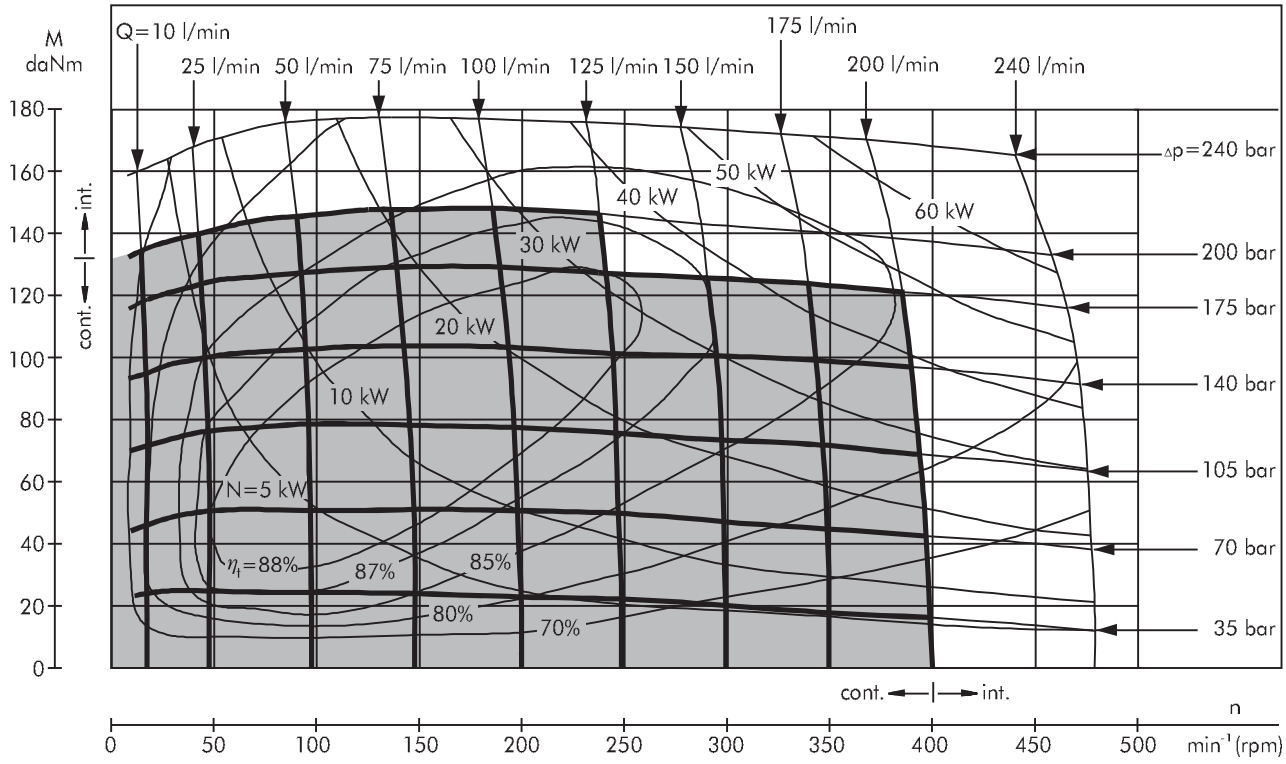

### OV 400



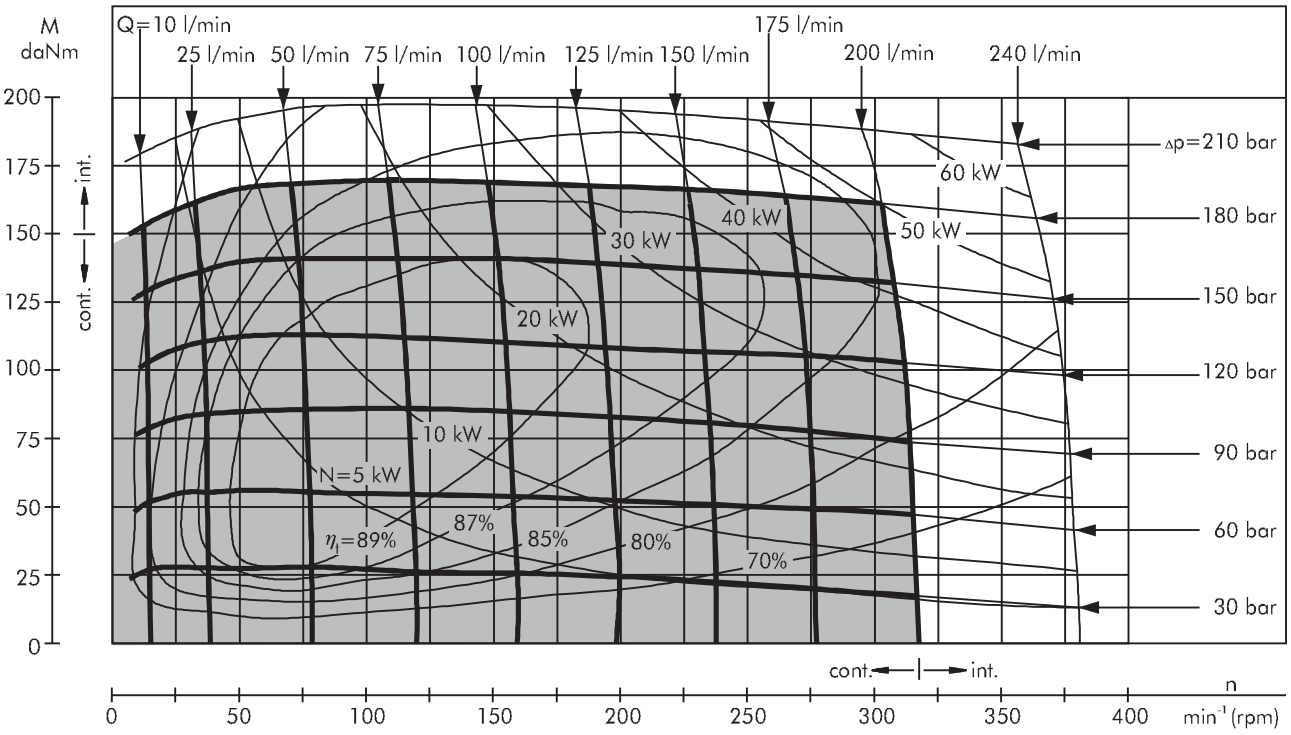

The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

## FUNCTION DIAGRAMS

### OV 500



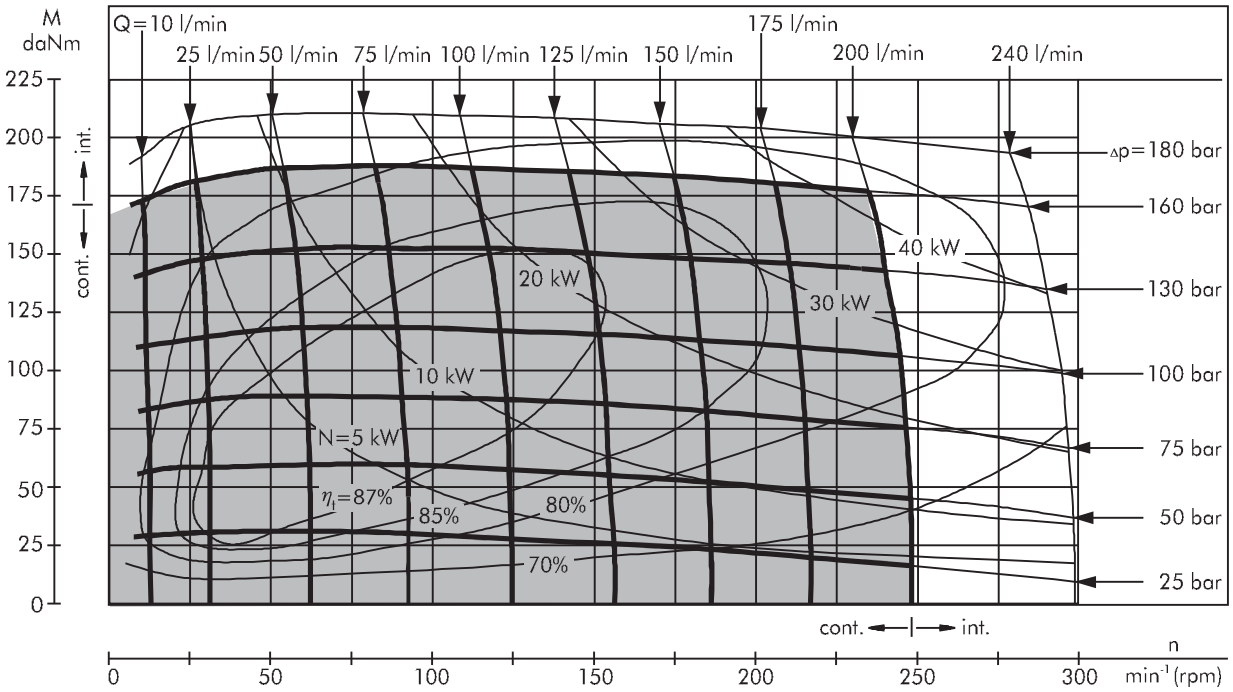

### OV 630




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

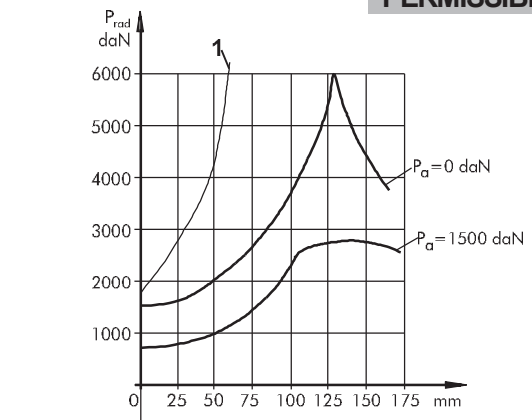
## FUNCTION DIAGRAMS

### OV 800

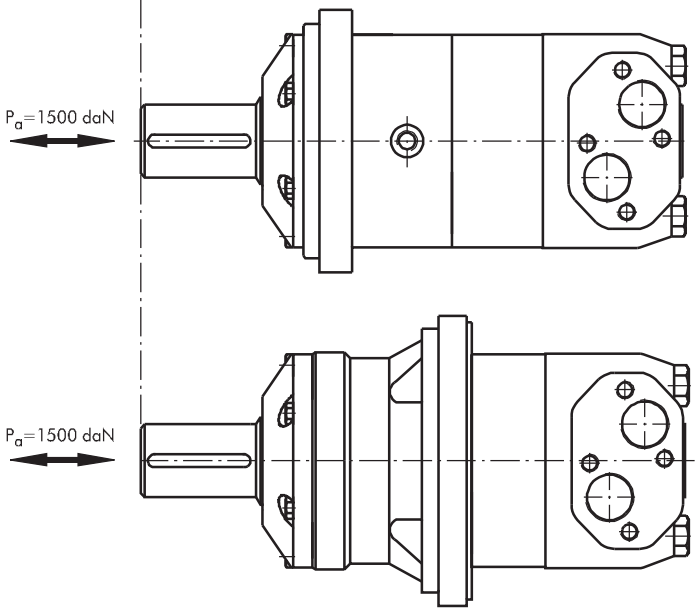



The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

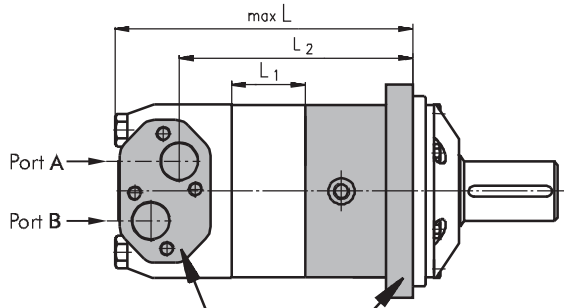
## PERMISSIBLE SHAFT LOADS




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.

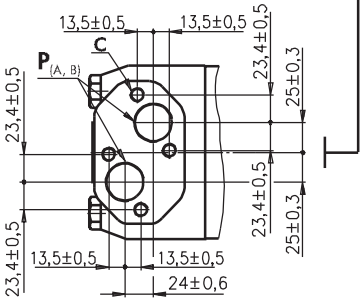


## DIMENSIONS AND MOUNTING DATA

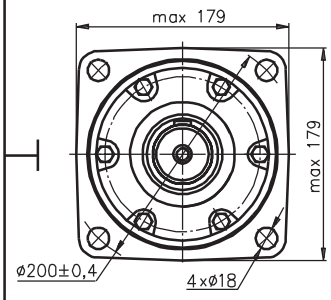



### Porting

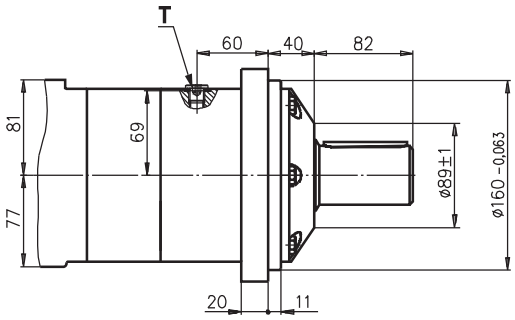
Side Ports



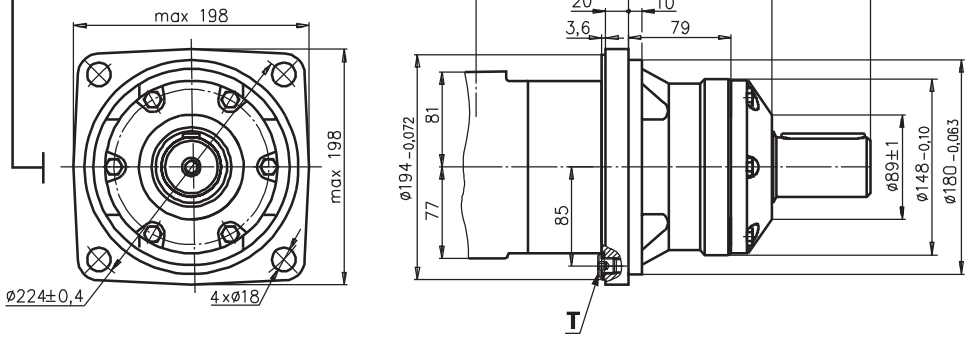

### Mounting




Square Mount (4 Holes)




**W** Wheel Mount




**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**

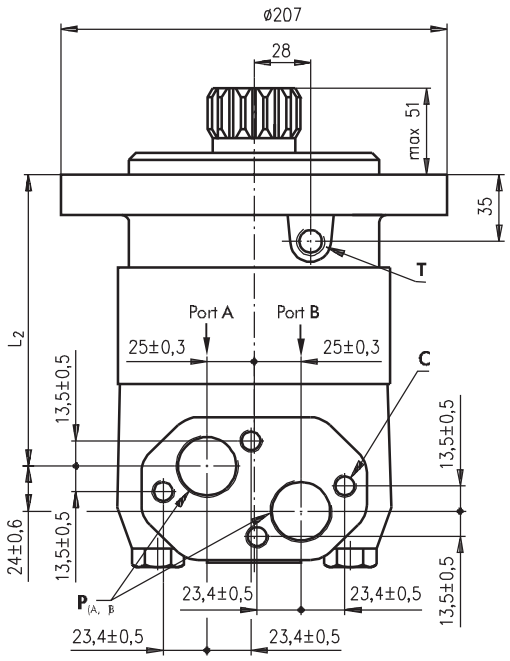
**C:** 4xM12- 12 mm depth
**$P_{(A,B)}$:** 2xG1 - 20 mm depth
**T:** G 1/4 - 12 mm depth

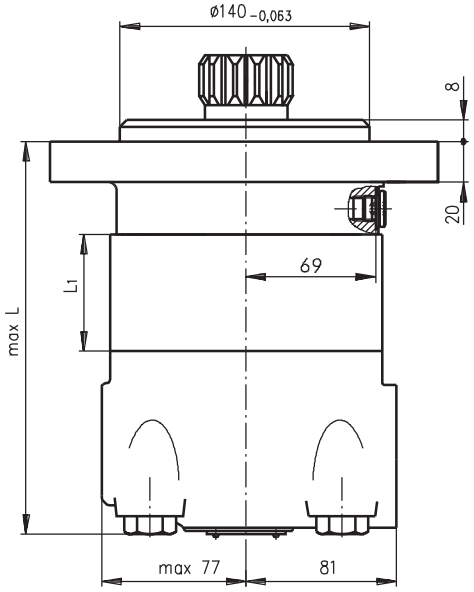
| Type | L, mm | $L_2$, mm | Type | L, mm | $L_2$, mm | *$L_1$, mm |
|---|---|---|---|---|---|---|
| **OV 315** | 214,5 | 160 | **OVW 315** | 146 | 92 | 22,0 |
| **OV 400** | 221,5 | 167 | **OVW 400** | 153 | 99 | 29,0 |
| **OV 500** | 229,5 | 175 | **OVW 500** | 161 | 107 | 37,0 |
| **OV 630** | 240,0 | 186 | **OVW 630** | 172 | 118 | 47,5 |
| **OV 800** | 254,0 | 200 | **OVW 800** | 185 | 132 | 61,5 |

* The width of the gerolor is 3,5 mm greater than $L_1$.

## DIMENSIONS AND MOUNTING

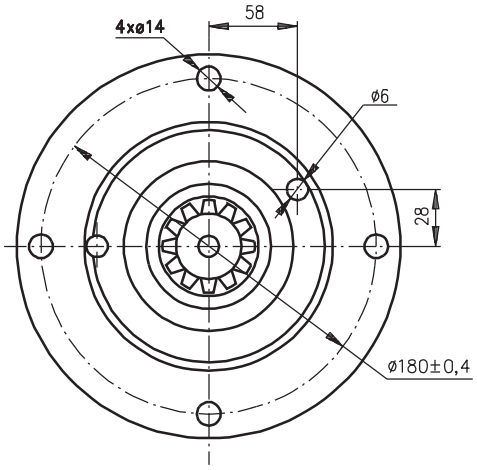
**S** Short Mount




| Type | L, mm | *$L_1$, mm | $L_2$, mm |
|---|---|---|---|
| **OVS 315** | 171 | 22,0 | 117 |
| **OVS 400** | 179 | 29,0 | 124 |
| **OVS 500** | 186 | 37,0 | 132 |
| **OVS 630** | 197 | 47,5 | 143 |
| **OVS 800** | 211 | 61,5 | 157 |

**C:** 4xM12- 12 mm depth
**$P_{(A,B)}$:** 2xG1 - 20 mm depth
**T:** G 1/4 - 12 mm depth



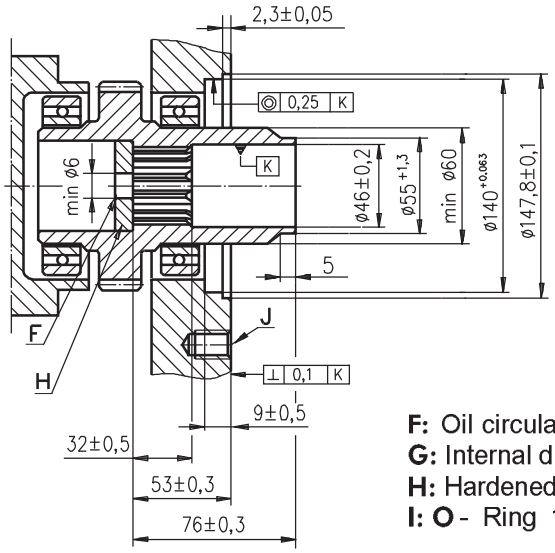

* The width of the gerolor is 3,5 mm greater than $L_1$.

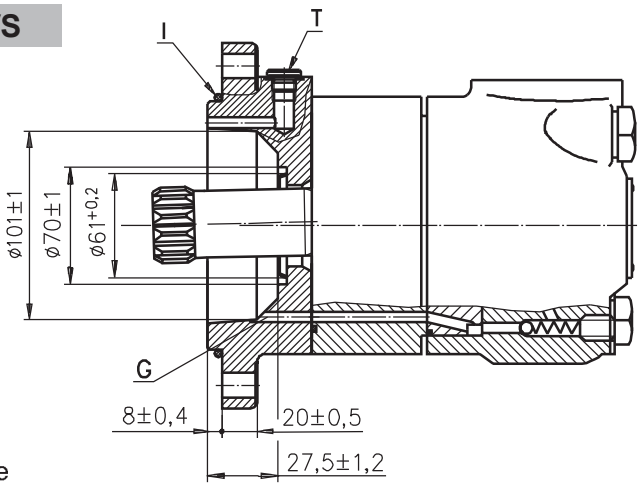
**Standard Rotation**
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

## 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

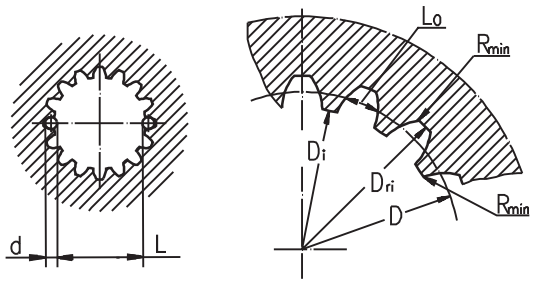
A drain line ought to be used when pressure in the return line can exceed the permissible pressure. It can be connected for OVS at the drain port of the motor.

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

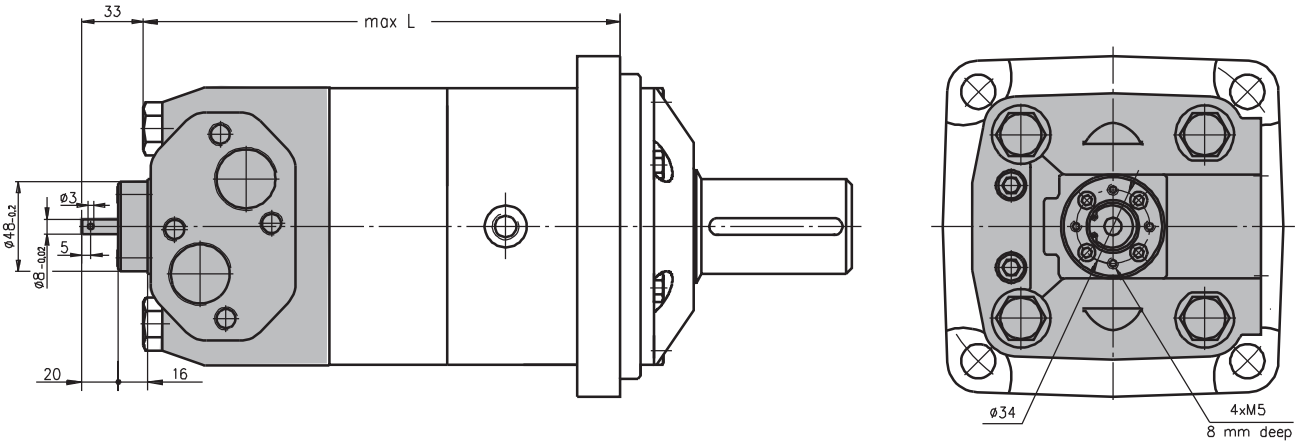
*Standard ANSI B92.1-1976, class 5*
*[m=2.54;corrected x.m=+1,0]*

| Fillet Root Side Fit | | mm |
|---|---|---|
| Number of Teeth | z | 16 |
| Diametral Pitch | DP | 10/20 |
| Pressure Angle | | $30^{O}$ |
| 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 |




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

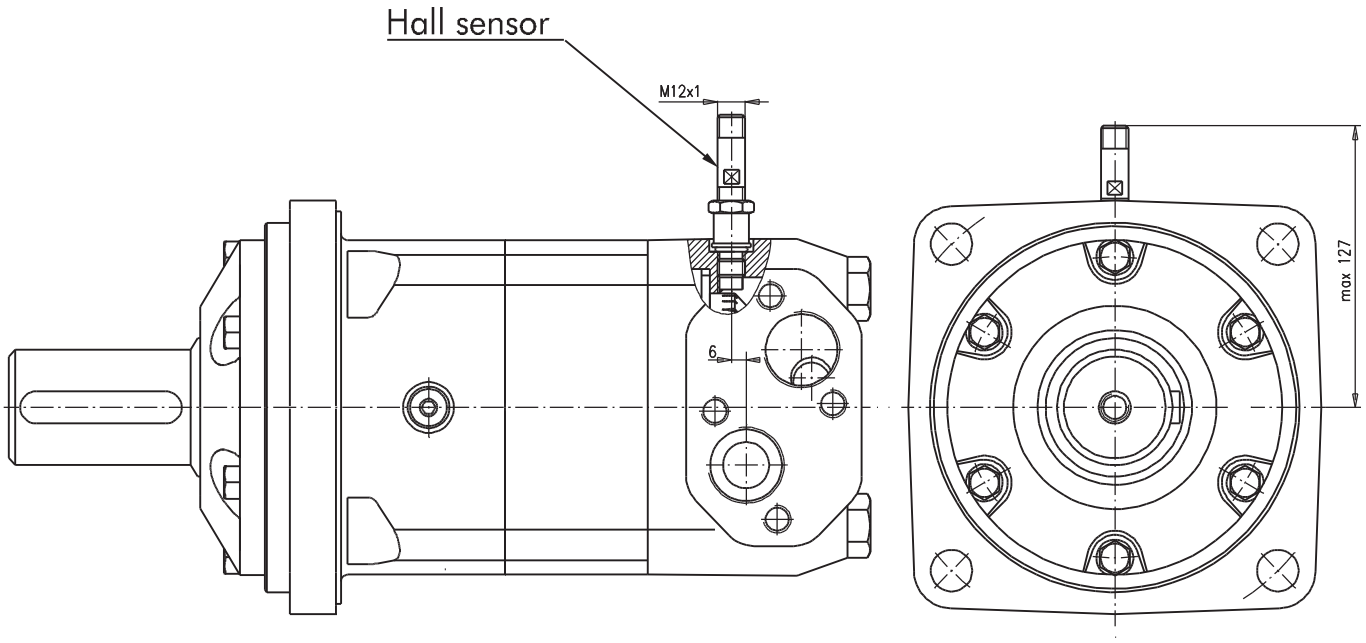
## MOTORS WITH TACHO CONNECTION - Option "T"



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



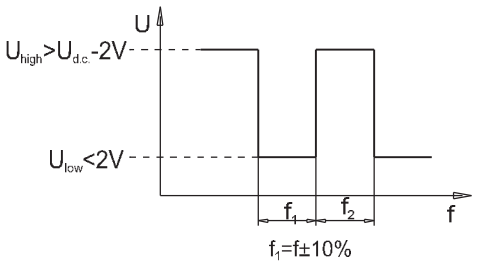

This performance is applicable for all motors of OV series. The main technical features correspond to the standard motors series OV.

# 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$^0$C) |
| Ambient Temperature | minus 40... plus 125$^0$C |
| Protection | IP 67 |
| Plug connector | M12-Series |
| Mounting principle | ISO 6149 |
| Pulses per revolution | 102 |

## Output signal

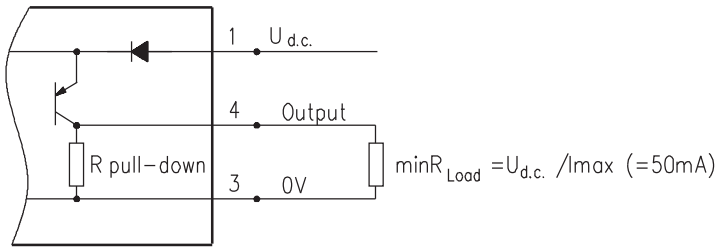



Load max.:$I_{high}$=$I_{low}$<50mA

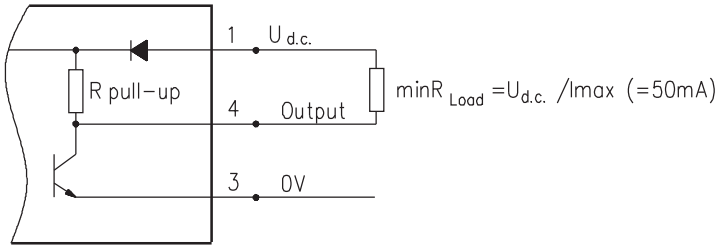
No load current, max: 20 mA

## Wiring diagram

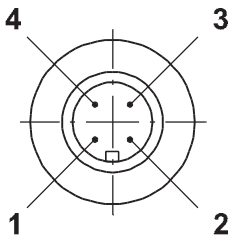
### PNP




### NPN



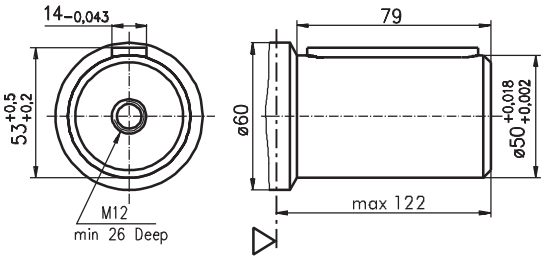

### Stik type



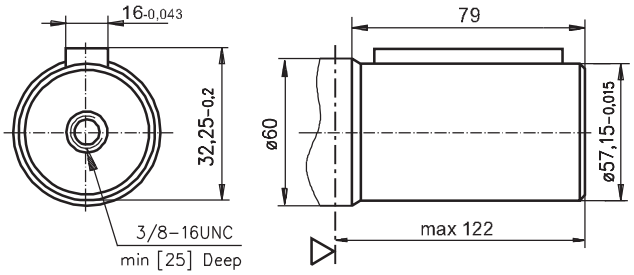

| Terminal No. | Connection |
|---|---|
| 1 | $U_{d.c.}$ |
| 2 | No connection |
| 3 | 0V |
| 4 | Output signal |

## SHAFT EXTENSIONS

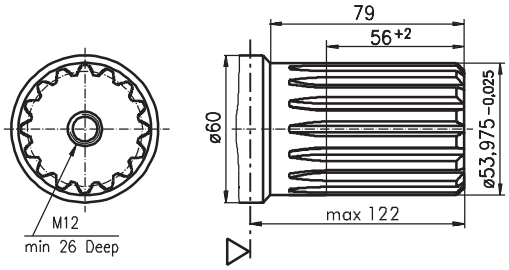
**C** - ø50 straight, Parallel key A14x9x70 DIN 6885



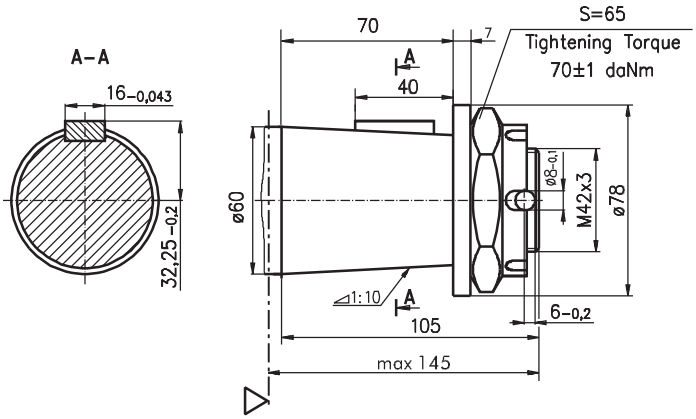

**CO** - ø2¼"[57,15] straight,Parallel key ½ "x½"x 2¼" BS46




**SH** -ø2 1/8"splined, 16 DP 8/16 ANSI B92.1-1976




**K** -tapered 1:10, Parallel key B16x10x32 DIN 6885




∇ - Motor Mounting Surface

## ORDER CODE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| OV | | | | | | | | |

**Pos.1 - Mounting Flange**

omit - Square mount, four holes

| | |
|---|---|
| **S** | - Short mount |
| **W*** | - Wheel mount |

**Pos.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] |

**Pos.3 - Shaft extensions****

| | |
|---|---|
| **C** | - ø50 straight, Parallel key A14x9x70 DIN6885 |
| **CO** | - ø2¼ straight, Parallel key ½ "x½"x 2¼" BS46 |
| **K** | - ø60 tapered 1:10, Parallel key B16x10x32 DIN6885 |
| **SH** | - ø2 1/8" splined, ANSI B92.1-1976 |

**Pos. 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) |

**Pos. 5 - Special Features**

omit - none

| | |
|---|---|
| **LL** | -Low Leakage |
| **LSV** | - Low Speed Valve |

**Pos. 6 - Rotation**

omit - Standard Rotation

| | |
|---|---|
| **R** | - Reverse Rotation |

**Pos. 7 - Option (Paint)*****

omit - no Paint

| | |
|---|---|
| **P** | - Painted |
| **PC** | - Corrosion Protected Paint |

**Pos. 8 - Design Series**

omit - Factory specified

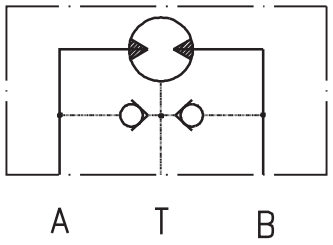
**NOTES:**

* The motor type OVW is only available with shaft type **C, CO, K**.
** The permissible output torque for shafts must be not exceeded!
*** Color at customer's request.
The hydraulic motors are mangano- phosphatized as standard.

# Hydraulic motors with Dual shaft type ORB160

## INTRODUCTION

Meta Hydraulic introduces a new series of hydraulic motors, type ORB with two shafts, which are based on well-known OR motors.




## OPTIONS

- » Model-Spool valve, roll-gerotor;
- » Dual shaft;
- » Oval flange;
- » Side port;
- » Straight shafts;
- » BSPP ports;
- » Other special features

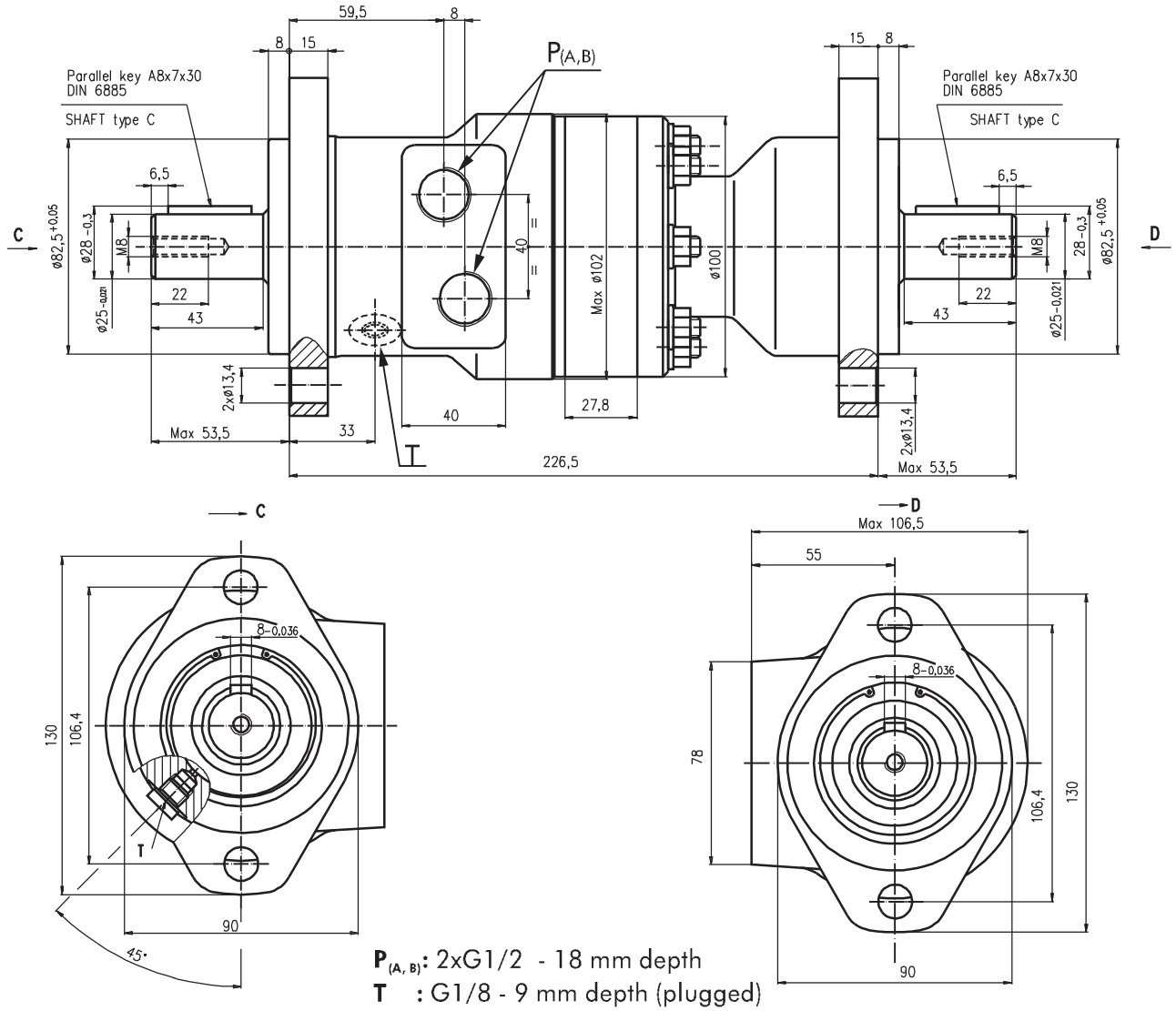
## APPLICATION

- » Conveyors;
- » Feeding mechanism of robots and manipulators;
- » Metal working machines;
- » Textile machines;
- » Machines for agriculture;
- » Food industries;
- » Mining machinery, etc.

## SPECIFICATION DATA

| Type | | | ORB 160 | ORB 160 LSV |
|---|---|---|---|---|
| Displacement, $cm^3/rev.$ | | | 159,6 | 159,6 |
| Max. Speed, | cont. | | 375 | 200 |
| RPM | int. | | 470 | 300 |
| Max. Torque, | cont. | | 29 | 29 |
| daNm | int. | | 35 | 35 |
| Max. Torque "A"Shaft, | cont. | | 20 | 20 |
| daNm | int. | | 23 | 23 |
| Max. Torque "B"Shaft, | cont. | | 20 | 20 |
| daNm | int. | | 23 | 23 |
| Max. Pressure Drop, | cont. | | 150 | 150 |
| bar | int. | | 190 | 190 |
| Max. Oil Flow, | cont. | | 60 | 32 |
| lpm | int. | | 75 | 48 |
| Max. Return Pressure | cont. | 0 - 100 RPM | 75 | 75 |
| without Drain Line, bar | cont. | 100-200 RPM | 40 | 40 |
| | cont. | 200-500 RPM | 20 | 20 |
| | int. | 0 - max RPM | 75 | 75 |

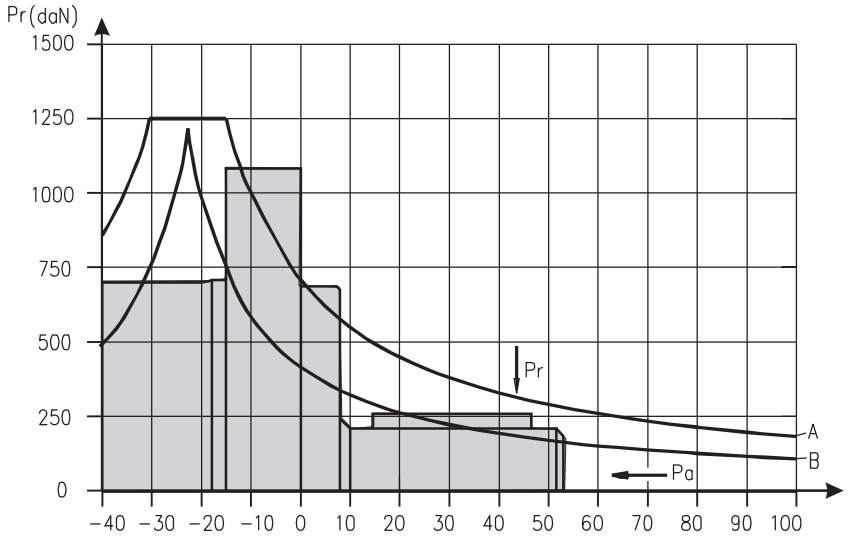
## OUTLINE DIMENSINS REFERENCE




**P**$_{(A, B)}$: 2xG1/2 - 18 mm depth
**T** : G1/8 - 9 mm depth (plugged)

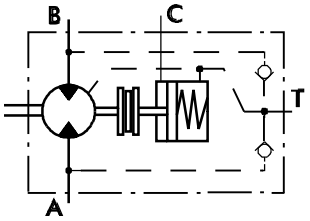
## PERMISSIBLE SHAFT LOADS

The load diagrams are valid for an average bearings life of 1600 hrs at 200 r.p.m. with mineral base lubricating containing antiwear additives (ref. ISO 281 (3.3) standard).
The "A" curve gives the maximum static load affordable by the bearings.
The "B" curve gives the radial load top limit without axial load of 200 daN.



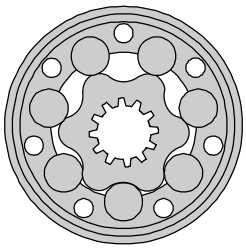

Pa Max=210daN

# HYDRAULIC MOTOR-BRAKE ORBR




## APPLICATION

- » Conveyors
- » Feeding mechanism of robots and manipulators
- » Metal working machines
- » Textile machines
- » Machines for agriculture
- » Food industries
- » Mining machinery etc.



## CONTENTS



## OPTIONS

- » Model- Spool valve, roll-gerotor;
- » Fully integrated friction disk brake;
- » Side port;
- » Shaft - straight;
- » BSPP ports.

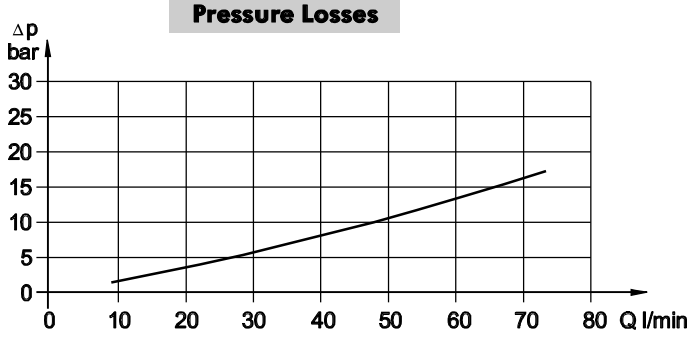
## GENERAL

| | |
|---|---|
| **Displacement, [$cm^3$/rev.]** | 80,3÷397 |
| **Max. Speed, [RPM]** | 150÷500 |
| **Max. Torque, [daNm]** | 19,5÷55 |
| **Max. Output, [kW]** | 2,2÷16 |
| **Max. Pressure Drop, [bar]** | 45÷175 |
| **Max. Oil Flow, [l/min]** | 40÷60 |
| **Min. Speed, [RPM]** | 10 |
| **Permissible Shaft Loads, [daN]** | $P_a$=200 |
| **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) |

**Oil flow in drain line**

| Pressure drop (bar) | Viscosity ($mm^2$/s) | Oil flow in drain line (l/min) |
|---|---|---|
| 100 | 20 | 2,5 |
| | 35 | 1,8 |
| 140 | 20 | 3,5 |
| | 35 | 2,8 |

**Pressure Losses**



## SPECIFICATION DATA

| Type | | ORBR 80 | ORBR 100 | ORBR 125 | ORBR 160 C | ORBR 160 CB | ORBR 200 C | ORBR 200 CB |
|---|---|---|---|---|---|---|---|---|
| Displacement, cm.³/rev. | | 80,3 | 99,8 | 125,7 | 159,6 | | 199,8 | |
| Max. Speed, | Cont. | 500 | 500 | 475 | 375 | | 300 | |
| [min⁻¹] | Int.* | 600 | 600 | 600 | 470 | | 375 | |
| Max. Torque | Cont. | 19,5 | 24 | 30 | 30 | 39 | 30 | 45 |
| [daNm] | Int.* | 22 | 28 | 34 | 39 | 43 | 39 | 50 |
| | Peak**) | 27 | 32 | 37 | 46 | 46 | 56 | 56 |
| Max. Output | Cont. | 16,6 | 18,6 | 12,5 | 10 | 11,5 | 7,8 | 11 |
| [kW] | Int.* | 16 | 16 | 14,5 | 12,5 | 14 | 12,4 | 13 |
| Max. Pressure | Cont. | 175 | 175 | 175 | 135 | 175 | 105 | 175 |
| Drop, [bar] | Int.* | 200 | 200 | 200 | 175 | 200 | 145 | 200 |
| | Peak** | 225 | 225 | 225 | 225 | 225 | 225 | 225 |
| Max. Oil Flow | Cont. | 40 | 50 | 60 | 60 | | 60 | |
| [l/min] | Int.* | 48 | 60 | 75 | 75 | | 75 | |
| Max. Inlet | Cont. | 175 | | | | | | |
| Pressure | Int.* | 200 | | | | | | |
| [bar] | Peak** | 225 | | | | | | |
| Max. Starting Pressure [bar] | | 10 | 10 | 9 | 7 | | 5 | |
| Min. Starting | At max.press.dropCont | 15 | 20 | 25 | 24 | 32 | 26 | 41 |
| Torque, [daNm] | At max.press.dropInt.* | 17 | 23 | 28 | 32 | 37 | 33 | 46 |
| Min. Speed***, [min⁻¹] | | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Static Torque of Brake, [daNm] | | 55 | | | | | | |
| Min. Brake Release Pressure****, [bar] | | 21 | | | | | | |
| Max.Opening Pressure, [bar] | | 200 | | | | | | |
| Weight, [kg] | | 11,0 | 11,2 | 11,4 | 11,6 | 11,7 | 12,2 | 12,3 |

* 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 10 RPM or lower, consult factory or your regional manager.

**** Motor-brakes must always have a drain line. The brake release pressure is the difference between the pressure in the brake release line and the pressure in the drain line.

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. Recommended 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 temperatures.
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 10-15 minutes.

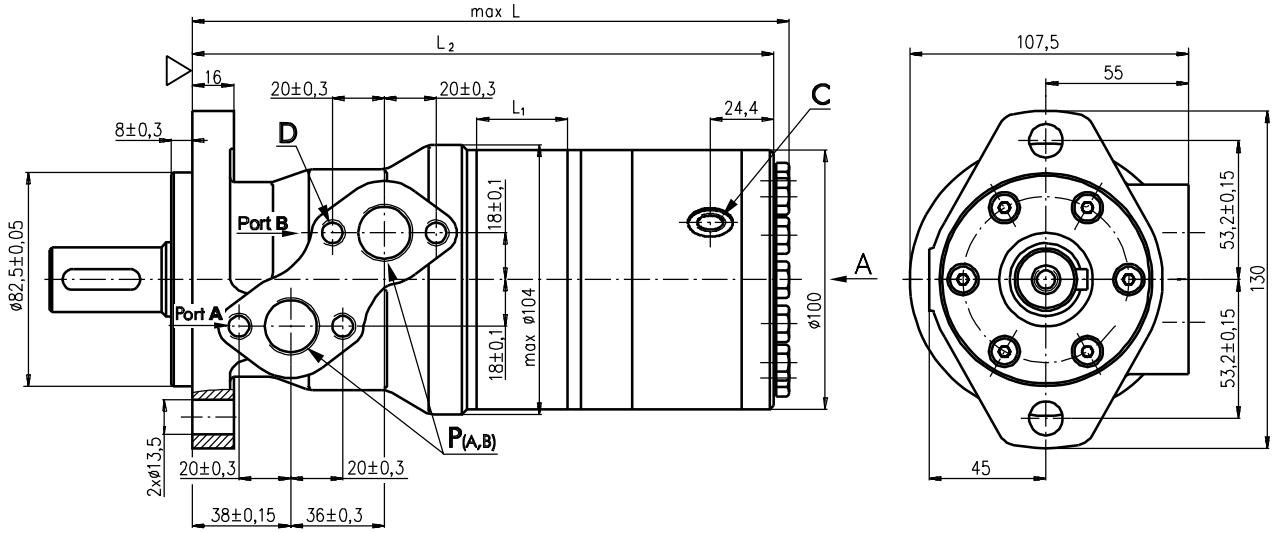
## SPECIFICATION DATA (continued)

| Type | | ORBR 250 C | ORBR 250 CB | ORBR 315 C | ORBR 315 CB | ORBR 400 C | ORBR 400 CB |
|---|---|---|---|---|---|---|---|
| **Displacement, cm.³/rev.** | | 250,1 | | 315,7 | | 397 | |
| **Max. Speed,** | Cont. | 240 | | 190 | | 150 | |
| **[min⁻¹]** | Int.* | 300 | | 240 | | 190 | |
| **Max. Torque** | Cont. | 30 | 54 | 30 | 55 | 30 | 55 |
| **[daNm]** | Int.* | 39 | 57 | 42 | 57 | 43 | 57 |
| | Peak**) | 60 | 71 | 61 | 71 | 60 | 70 |
| **Max. Output** | Cont. | 6.2 | 10 | 4,5 | 9 | 2,2 | 7 |
| **[kW]** | Int.* | 9.5 | 11 | 7,5 | 10 | 5,6 | 8,7 |
| **Max. Pressure** | Cont. | 85 | 175 | 65 | 135 | 45 | 105 |
| **Drop, [bar]** | Int.* | 115 | 185 | 90 | 145 | 75 | 115 |
| | Peak** | 200 | 225 | 150 | 180 | 120 | 140 |
| **Max. Oil Flow** | Cont. | 60 | | | | | |
| **[l/min]** | Int.* | 75 | | | | | |
| **Max. Inlet** | Cont. | 175 | | | | | |
| **Pressure** | Int.* | 200 | | | | | |
| **[bar]** | Peak** | 225 | | | | | |
| **Max. Starting Pressure [bar]** | | 5 | | 5 | | 5 | |
| **Min. Starting** | At max.press.drop Cont | 24 | 50 | 26 | 50 | 24 | 44 |
| **Torque, [daNm]** | At max.press.drop Int.* | 31 | 51,5 | 35 | 51,8 | 38 | 50 |
| **Min. Speed***, [min⁻¹]** | | 10 | 10 | 10 | 10 | 10 | 10 |
| **Static Torque of Brake, [daNm]** | | 55 | | | | | |
| **Min. Brake Release Pressure****, [bar]** | | 21 | | | | | |
| **Max.Opening Pressure, [bar]** | | 200 | | | | | |
| **Weight, [kg]** | | 12,6 | 12,7 | 13,3 | 13,4 | 14 | 14,1 |

* 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.
*** For speeds of 10 RPM or lower, consult factory or your regional manager.
**** Motor-brakes must always have a drain line. The brake release pressure is the difference between the pressure in the brake release line and the pressure in the drain line.

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. Recommended 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 temperatures.
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 10-15 minutes.

## OUTLINE DIMENSIONS REFERENCE

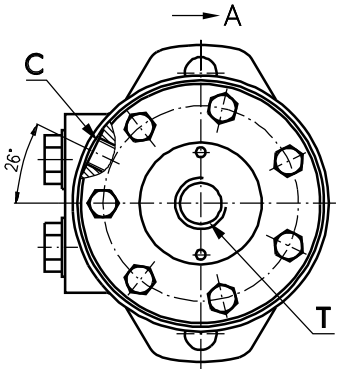



**D** : 4xM8 - 13 mm depth
**C** : G1/4 - 12 mm depth
**$P_{(A,B)}$**: 2xG1/2 - 15 mm depth
**T** : G1/4 - 10 mm depth

| Type | $L_1$, mm | $L_2$, mm | $L_{max}$, mm |
|---|---|---|---|
| ORBR 80 | 14,0 | 205,5 | 213,5 |
| ORBR 100 | 17,4 | 209,0 | 217,0 |
| ORBR 125 | 21,8 | 213,5 | 221,5 |
| ORBR 160 | 27,8 | 219,5 | 227,5 |
| ORBR 200 | 34,8 | 226,5 | 234,5 |
| ORBR 260 | 43,5 | 235,0 | 243,0 |
| ORBR 315 | 54,8 | 246,5 | 254,5 |
| ORBR 400 | 69,4 | 261,0 | 269,0 |

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

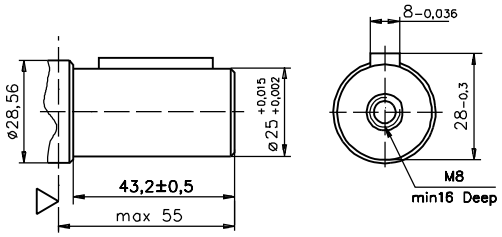
**Reverse Rotation**
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**



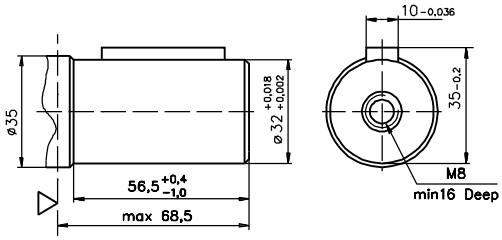

▽- Motor Mounting Surface

## SHAFT EXTENSIONS

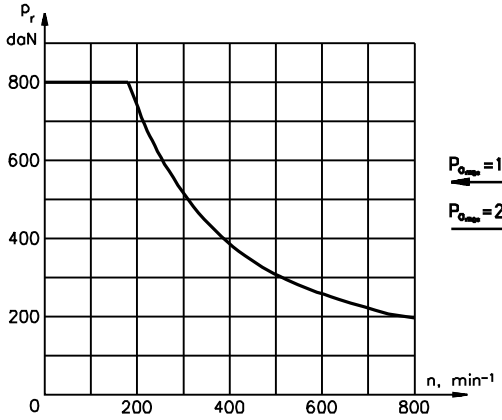
**C** - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm

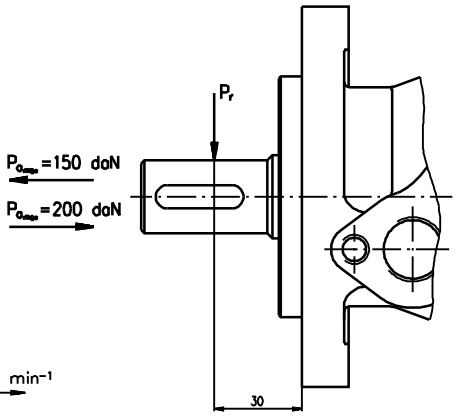



**CB** - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



## PERMISSIBLE SHAFT LOADS

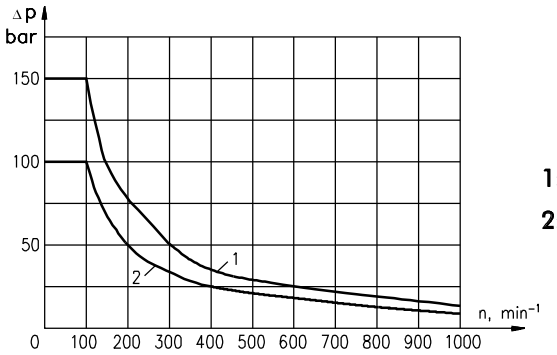



For Rotation speed n≥200 min$^{-1}$ and distance L≠30 mm the radial load could be calculated by

$$P_r = \frac{800}{n} \times \frac{25\,000}{95+L}, \text{ daN}$$

## MAX. PERMISSIBLE SHAFT SEAL PRESSURE




1: Drawing for "C" shaft

2: Drawing for "CB" shaft

## ORDER CODE

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| ORBR | | | | |

**Pos.1 - Displacement code**

| | |
|---|---|
| **80** | - 80,3 [cm$^3$/rev] |
| **100** | - 99,8 [cm$^3$/rev] |
| **125** | - 125,7 [cm$^3$/rev] |
| **160** | - 159,6 [cm$^3$/rev] |
| **200** | - 199,8 [cm$^3$/rev] |
| **250** | - 250,1 [cm$^3$/rev] |
| **315** | - 315,7 [cm$^3$/rev] |
| **400** | - 397,0 [cm$^3$/rev] |

**Pos. 2 - Shaft Extensions***

| | |
|---|---|
| **C** | - ø25 straight, Parallel key A8x7x32 DIN 6885 |
| **CB** | - ø32 straight, Parallel key A10x8x45 DIN 6885 |

**Pos. 3 - Design Series**

omit - Factory specified

**Pos. 4 - Design Series**

omit - Factory specified

**NOTES:**

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

The hydraulic motors are mangano phosphatized as standard.