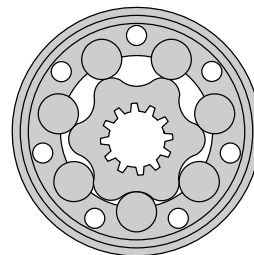


HYDRAULIC MOTORS MH



CONTENTS

Specification data 39
 Function diagrams 40÷42
 Permissible shaft loads 43
 Dimensions and mounting ... 44
 Shaft extensions 45
 Order code 45

OPTIONS

- » Model- Spool valve, roll-gerotor
- » Flange mount
- » Shafts- straight, splined and tapered
- » Metric and BSPP ports
- » Other special features

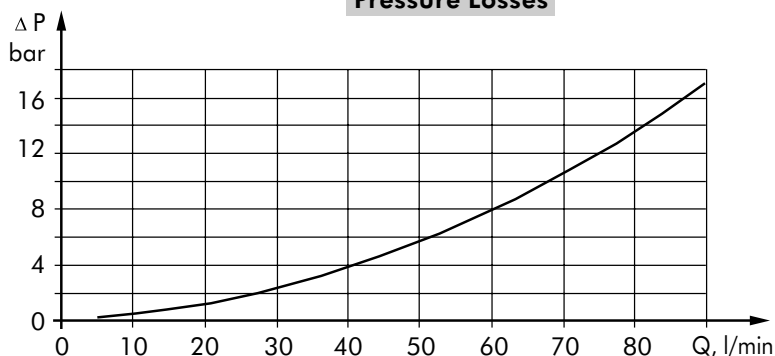
GENERAL

| | | |
|--------------------------|-------------------------|---|
| Displacement, | [cm ³ /rev.] | 201,3 ÷ 502,4 |
| Max. Speed, | [RPM] | 150 ÷ 370 |
| Max. Torque, | [daNm] | 51 ÷ 85 |
| Max. Output, | [kW] | 11 ÷ 16 |
| Max. Pressure Drop, | [bar] | 175 ÷ 125 |
| Max. Oil Flow, | [l/min] | 75 |
| Min. Speed, | [RPM] | 5 ÷ 10 |
| 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 | MH | | | | | |
|---|---------------------------|------|-------|-------|-------|-----|
| | 200 | 250 | 315 | 400 | 500 | |
| Displacement, [cm ³ /rev.] | 201,3 | 252 | 314,9 | 396,8 | 502,4 | |
| Max. Speed, [RPM] | cont. | 370 | 295 | 235 | 185 | 150 |
| | int.* | 445 | 350 | 285 | 225 | 180 |
| Max. Torque [daNm] | cont. | 51 | 61 | 74 | 84 | 85 |
| | int.* | 58 | 70 | 82 | 98 | 104 |
| | peak** | 64 | 79 | 98 | 109 | 117 |
| Max. Output, [kW] | cont. | 16 | 16 | 14 | 12,5 | 11 |
| | int.* | 18,5 | 18,5 | 15,5 | 15 | 14 |
| Max. Pressure Drop [bar] | cont. | 175 | 175 | 175 | 155 | 125 |
| | int.* | 200 | 200 | 200 | 190 | 160 |
| | peak** | 225 | 225 | 225 | 210 | 180 |
| Max. Oil Flow [l/min] | cont. | 75 | 75 | 75 | 75 | 75 |
| | int.* | 90 | 90 | 90 | 90 | 90 |
| Max. Inlet Pressure [bar] | cont. | 200 | 200 | 200 | 200 | 200 |
| | int.* | 225 | 225 | 225 | 225 | 225 |
| | peak** | 250 | 250 | 250 | 250 | 250 |
| Max. Starting Pressure with Unloaded Shaft, [bar] | 5 | 5 | 5 | 5 | 5 | |
| Min. Starting Torque [daNm] | at max. press. drop cont. | 39 | 52 | 66 | 72 | 72 |
| | at max. press. drop int.* | 45 | 59 | 73 | 88 | 88 |
| Min. Speed***, [RPM] | 10 | 10 | 8 | 5 | 5 | |
| Weight, avg. [kg] | 10,5 | 11 | 11,5 | 12,3 | 13 | |

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

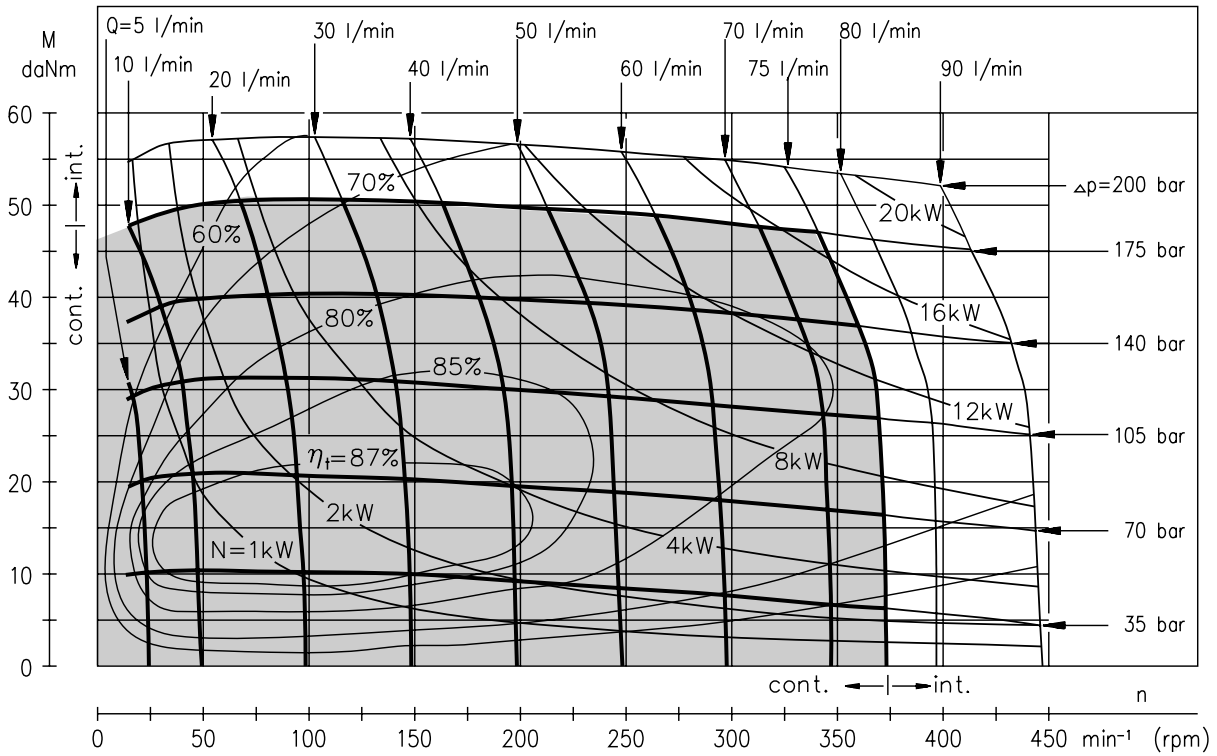
** Peak load: the permissible values may occur for max. 1% of every minute.

*** For speeds of 5 RPM lower than given, consult factory or your regional manager.

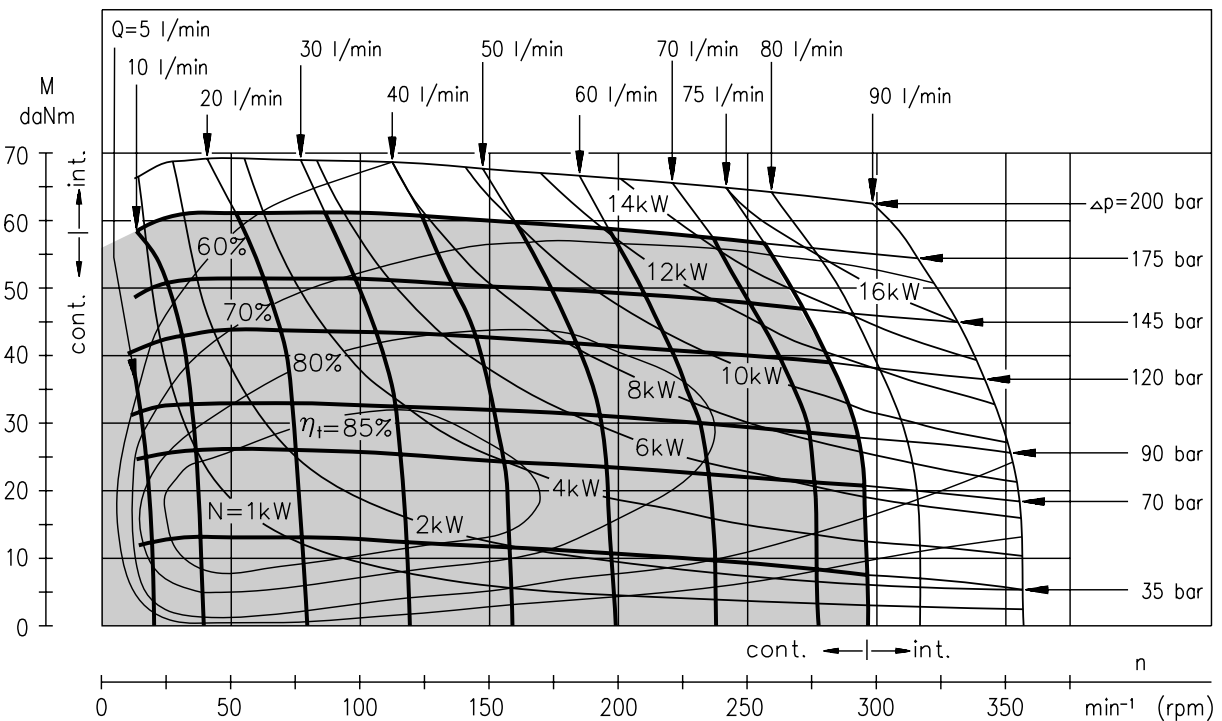
- 1) Intermittent speed and intermittent pressure must not occur simultaneously.
- 2) Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- 3) Recommend using a premium quality, anti-wear type mineral based hydraulic oil, HLP(DIN51524) or HM(ISO6743/4).
If using synthetic fluids consult the factory for alternative seal materials.
- 4) Recommended minimum oil viscosity 13 mm²/s at 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 10-15 minutes.

FUNCTION DIAGRAMS

MH 200



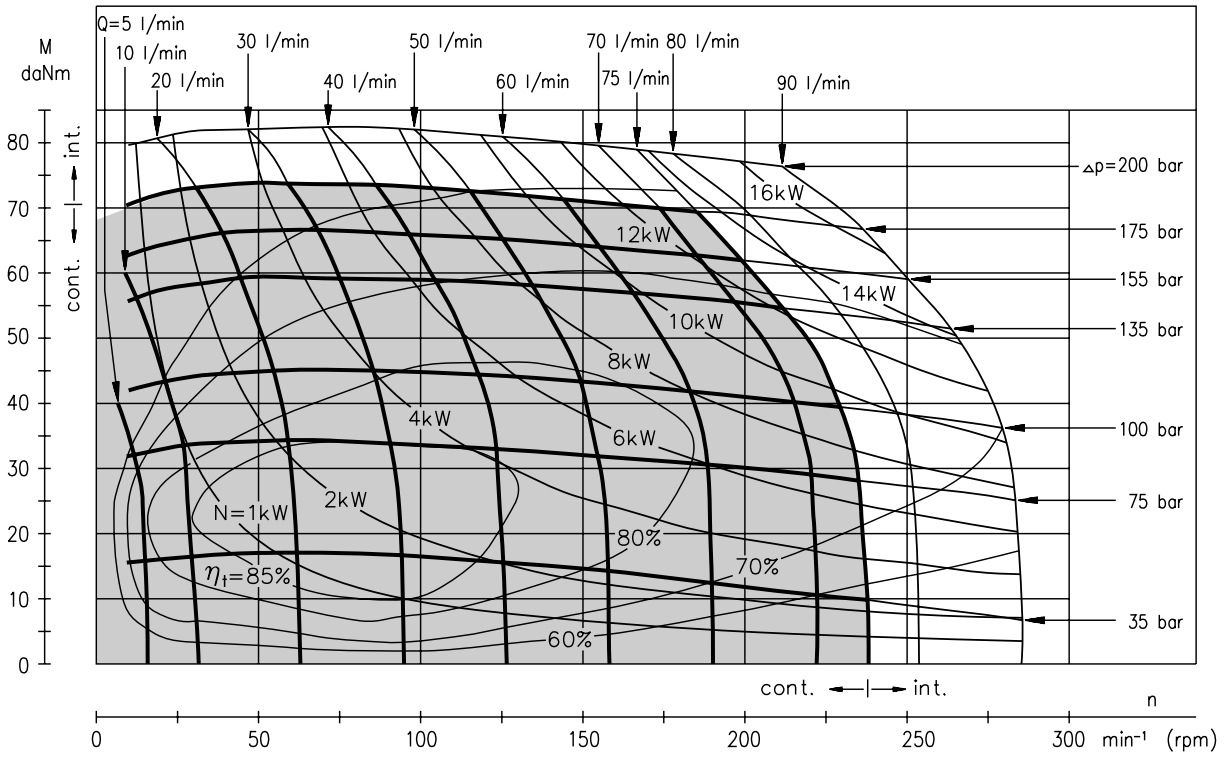
MH 250



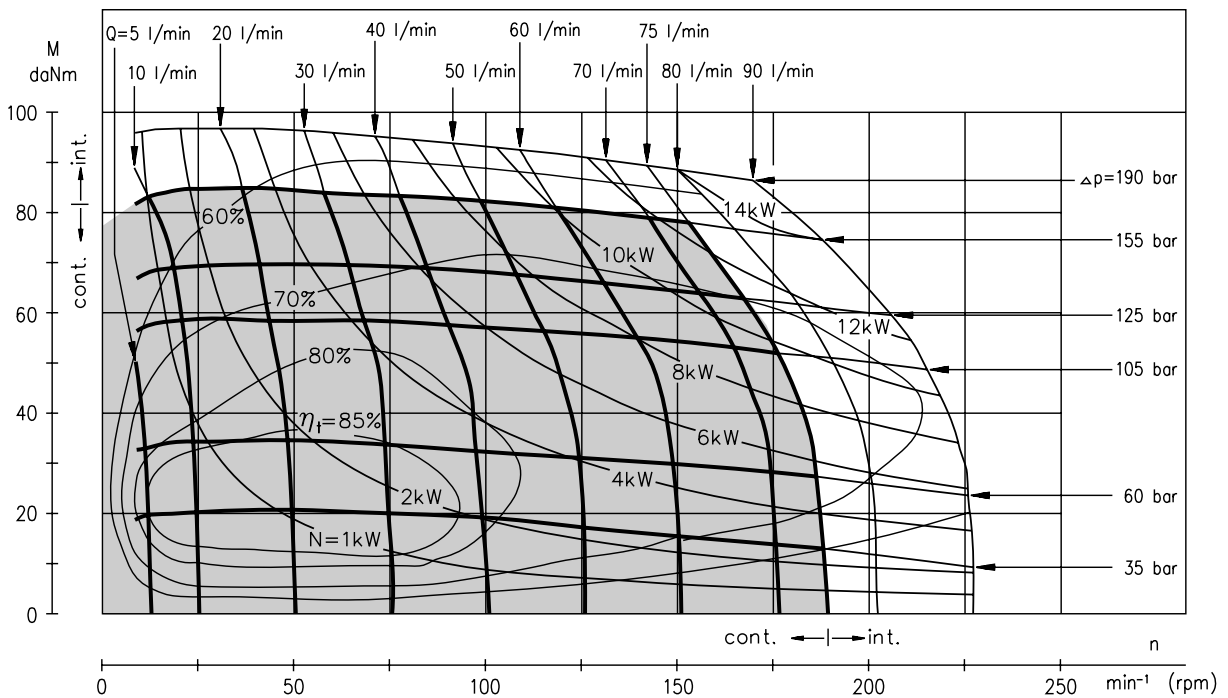
The function diagrams data was collected at back pressure 5 ÷ 10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

MH 315



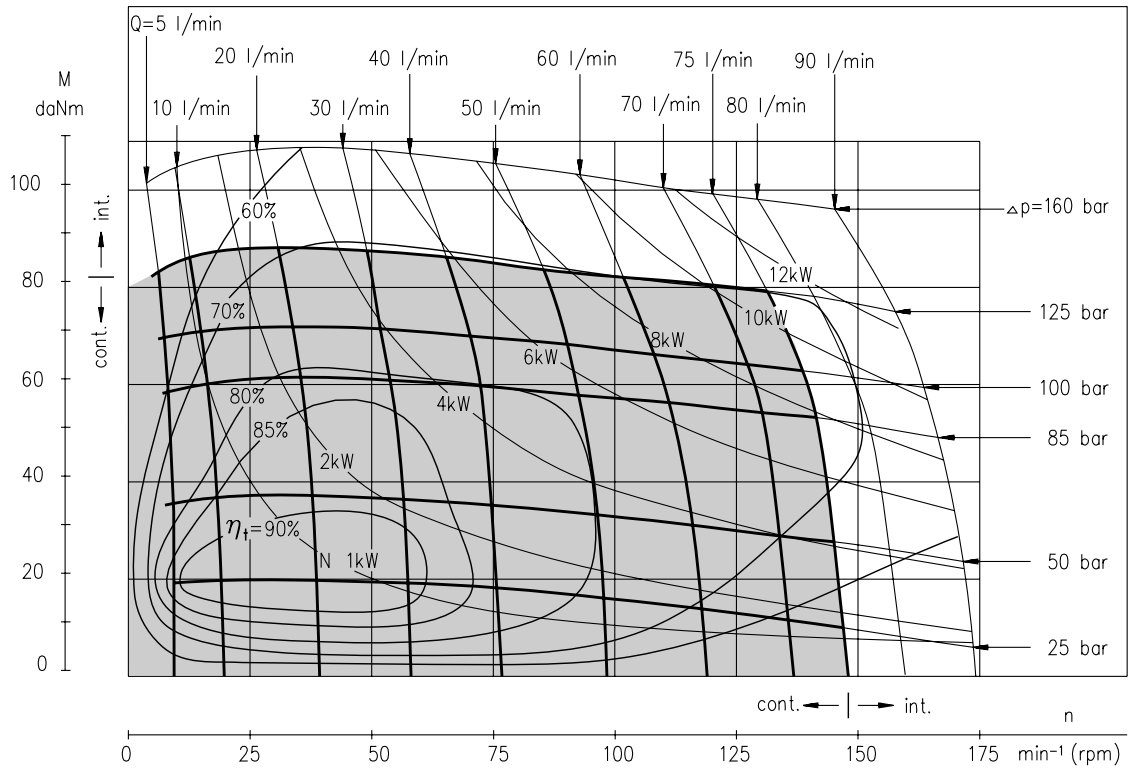
MH 400



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

MH 500



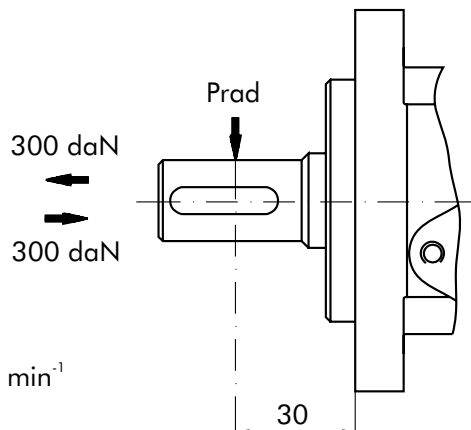
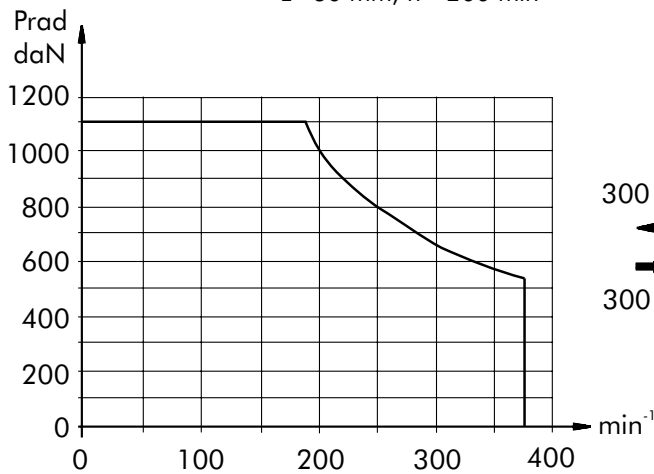
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

PERMISSIBLE SHAFT LOADS FOR MH MOTORS

The permissible radial shaft load P_{rad} depends on the speed (RPM) and distance (L) from the point of load to the mounting flange.

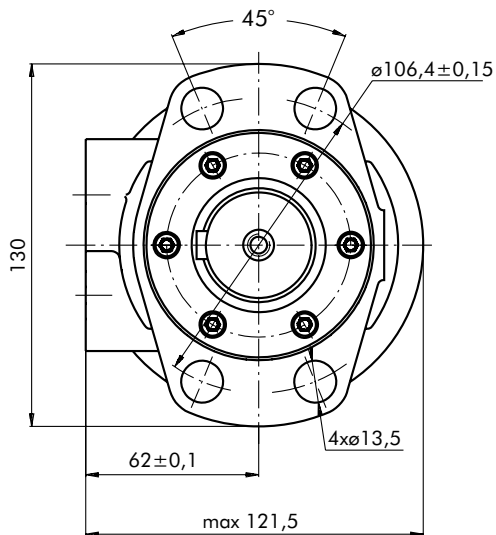
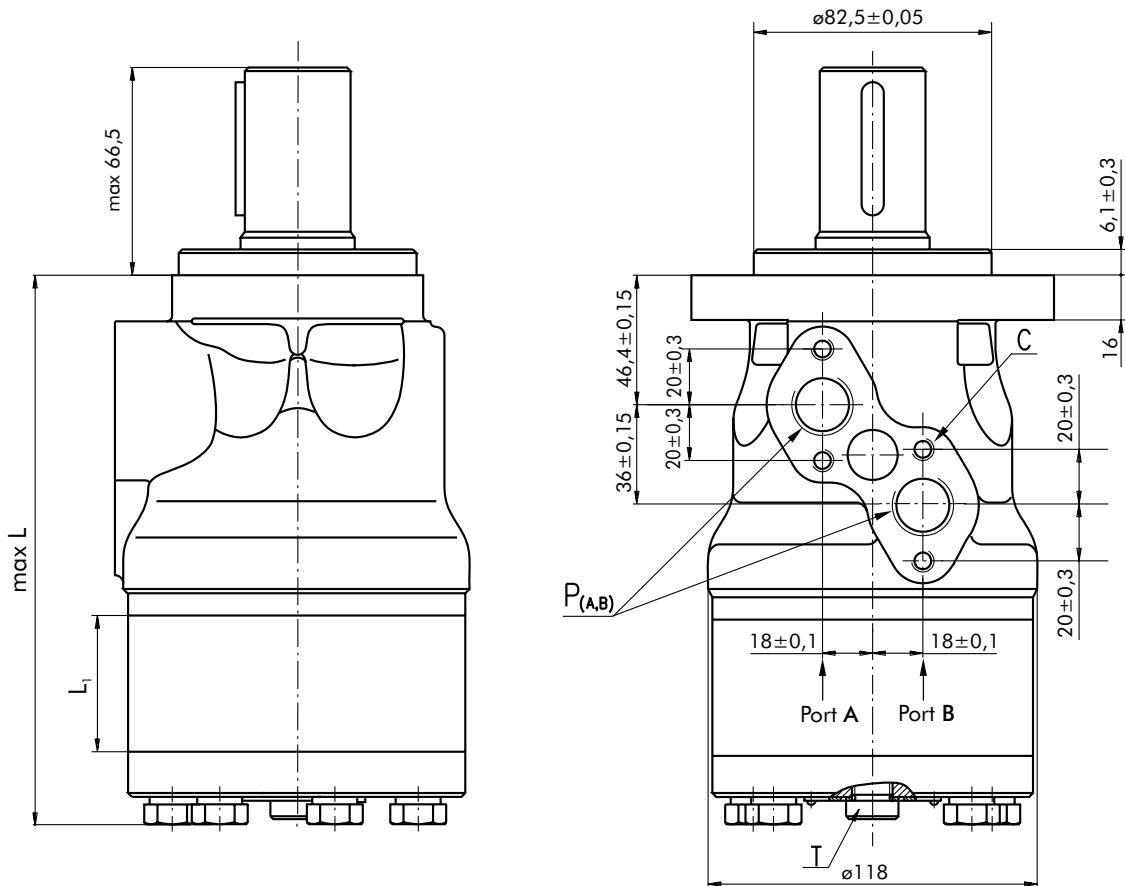
$$\text{Radial Shaft Load } P_{\text{rad}} = \frac{1100}{n} \times \frac{25000}{103,5+L}, \text{ daN}^*$$

*L < 60 mm; n ≥ 200 min⁻¹



DIMENSIONS AND MOUNTING DATA

Magneto Maunt (4 holes)



| Type | L, mm | L ₁ , mm |
|--------|-------|---------------------|
| MH 200 | 169 | 27,8 |
| MH 250 | 176 | 34,8 |
| MH 315 | 184 | 43,5 |
| MH 400 | 196 | 54,8 |
| MH 500 | 211 | 69,4 |

- C** : 4xM8-13 mm depth
- P_(A,B)**: 2xG1/2 or 2xM22x1,5-15 mm depth
- T** : G1/4 or M14x1,5-12 mm depth (plugged)

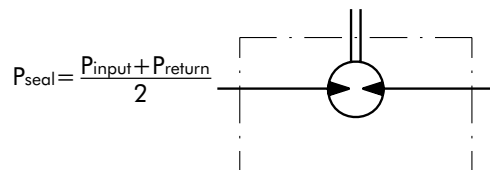
Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

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

**MAX. PERMISSIBLE SHAFT SEAL PRESSURE
FOR MH MOTORS**

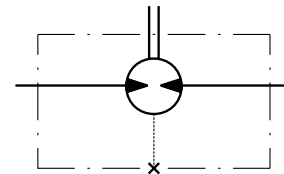
**MH...U1 motors with high pressure seal
and without drain connection:**

The shaft seal pressure equals the average
of input pressure and return pressure.



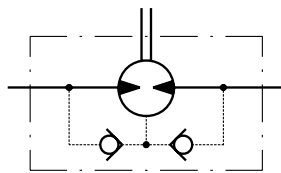
**MH...U motors with high pressure seal
and drain connection:**

The shaft seal pressure equals the pressure
in the drain line.



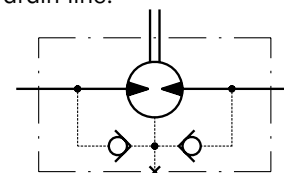
**MH...1 motors with standard shaft seal
and without drain connection:**

The shaft seal pressure never exceeds
the pressure in the return line.

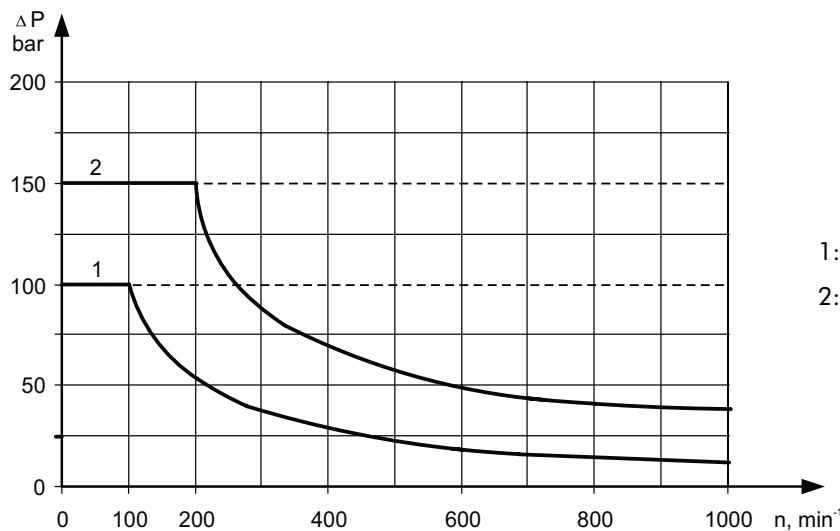


**MH... motors with standard shaft seal
and with drain connection:**

The shaft seal pressure equals the pressure
in the drain line.



**Max. return pressure without drain line or
max. pressure in the drain line**

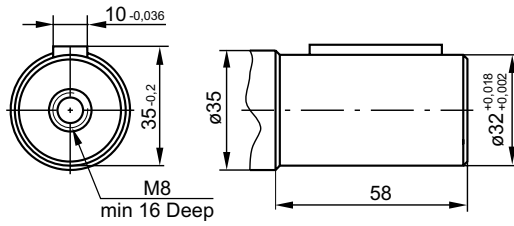


- 1: Drawing for Standard Shaft Seal
- 2: Drawing for High Pressure Seal ("U" Seal)

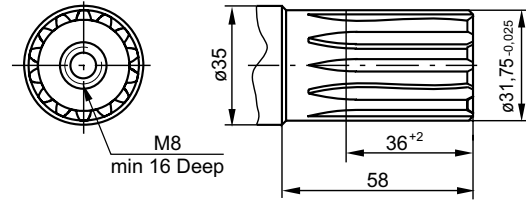
- - continuous operations
- - - - intermittent operations

SHAFT EXTENSIONS

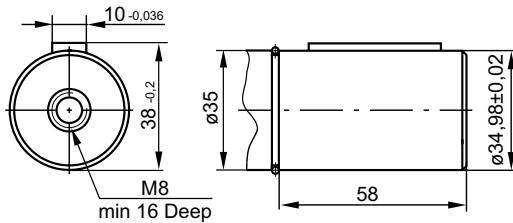
C - $\varnothing 32$ straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm



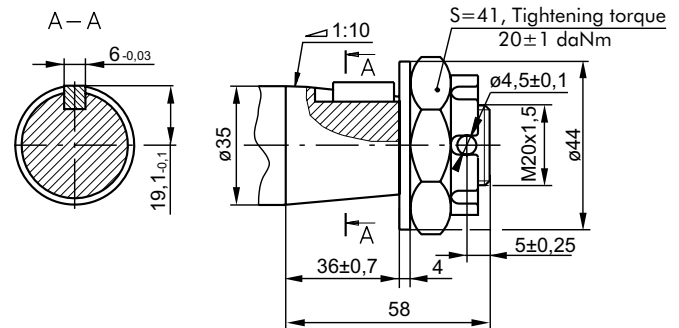
SH - $\varnothing 1\frac{1}{4}$ " splined 14T, DP 12/24 ANSI B92.1-1976
Max. Torque 95 daNm



CB - $\varnothing 35$ straight, Parallel key A10x8x45 DIN 6885
Max. Torque 95 daNm



K - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm



ORDER CODE

| | | | | | | | |
|------------|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| M H | | | | | | | |

Pos. 1 - Displacement code

| | |
|------------|--------------------------------|
| 200 | - 201,3 [cm ³ /rev] |
| 250 | - 252,0 [cm ³ /rev] |
| 315 | - 314,9 [cm ³ /rev] |
| 400 | - 396,8 [cm ³ /rev] |
| 500 | - 502,4 [cm ³ /rev] |

Pos. 2 - Shaft Extensions *

| | |
|-----------|--|
| C | - $\varnothing 32$ straight, Parallel key A10x8x45 DIN 6885 |
| SH | - $\varnothing 1\frac{1}{4}$ " splined 14T ANSI B92.1-1970 |
| CB | - $\varnothing 35$ straight, Parallel key A10x8x45 DIN 6885 |
| K | - $\varnothing 35$ tapered 1:10, Parallel key B6x6x20 DIN 6885 |

Pos. 3 - Shaft Seal Version (see page 44)

| | |
|----------|---|
| omit | - Standard shaft seal |
| U | - High pressure shaft seal (without check valves) |

Pos. 4 - Drain Port

| | |
|----------|----------------------|
| omit | - with drain port |
| 1 | - without drain port |

Pos. 5 - Ports

| | |
|----------|--------------------|
| omit | - BSPP (ISO 228) |
| M | - Metric (ISO 262) |

Pos. 6 - Special Features (see page 46)

Pos. 7 - Design Series

| | |
|------|---------------------|
| omit | - Factory specified |
|------|---------------------|

NOTES:

- * The permissible output torque for shafts must be not exceeded!
- The hydraulic motors are mangano-phosphatized as standard.