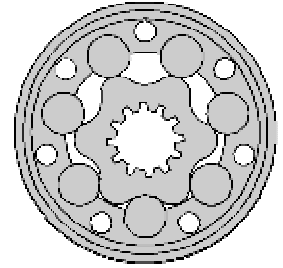


# HYDRAULIC MOTORS MH



## APPLICATION

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



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## OPTIONS

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

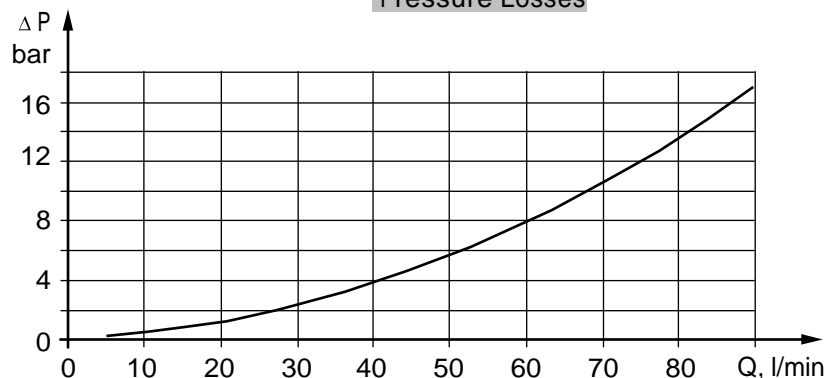
## GENERAL

Displacement, [cm <sup>3</sup> /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 <sup>2</sup> /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 <sup>2</sup> /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 <sup>3</sup> /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.

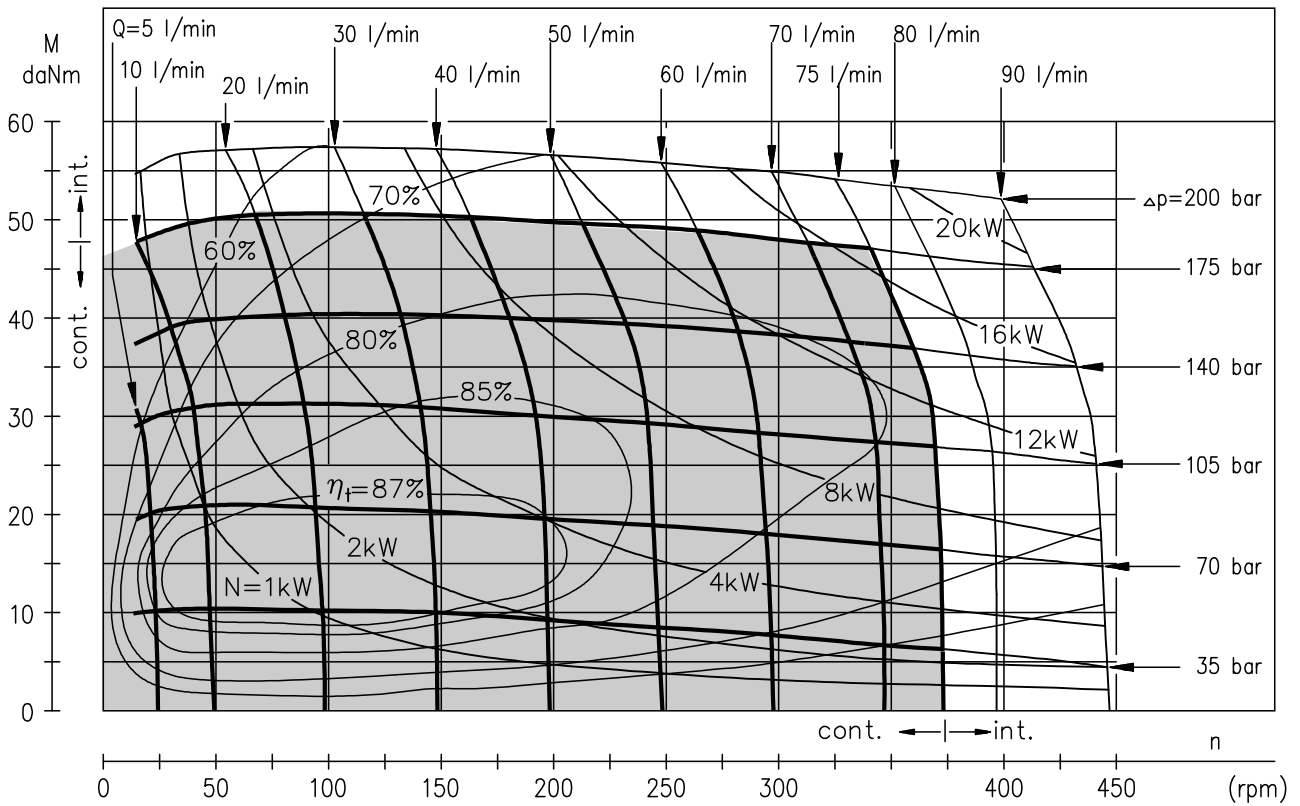
\*\* Peak load: the permissible values may occur for max. 1% of every minute.

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

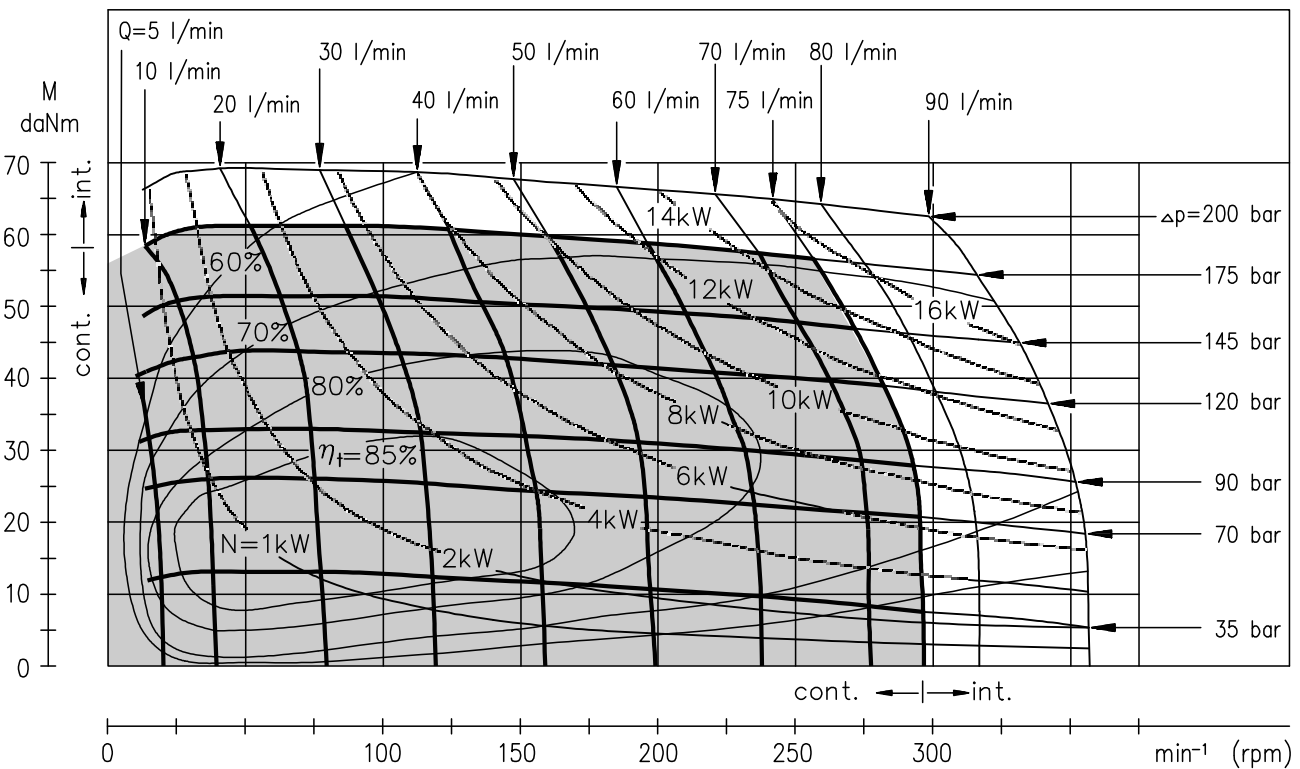
- 1) Intermittent speed and intermittent pressure must not occur simultaneously.
- 2) Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- 3) Recommend using a premium quality, anti-wear type mineral based hydraulic oil, HLP(DIN51524) or HM(ISO6743/4).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



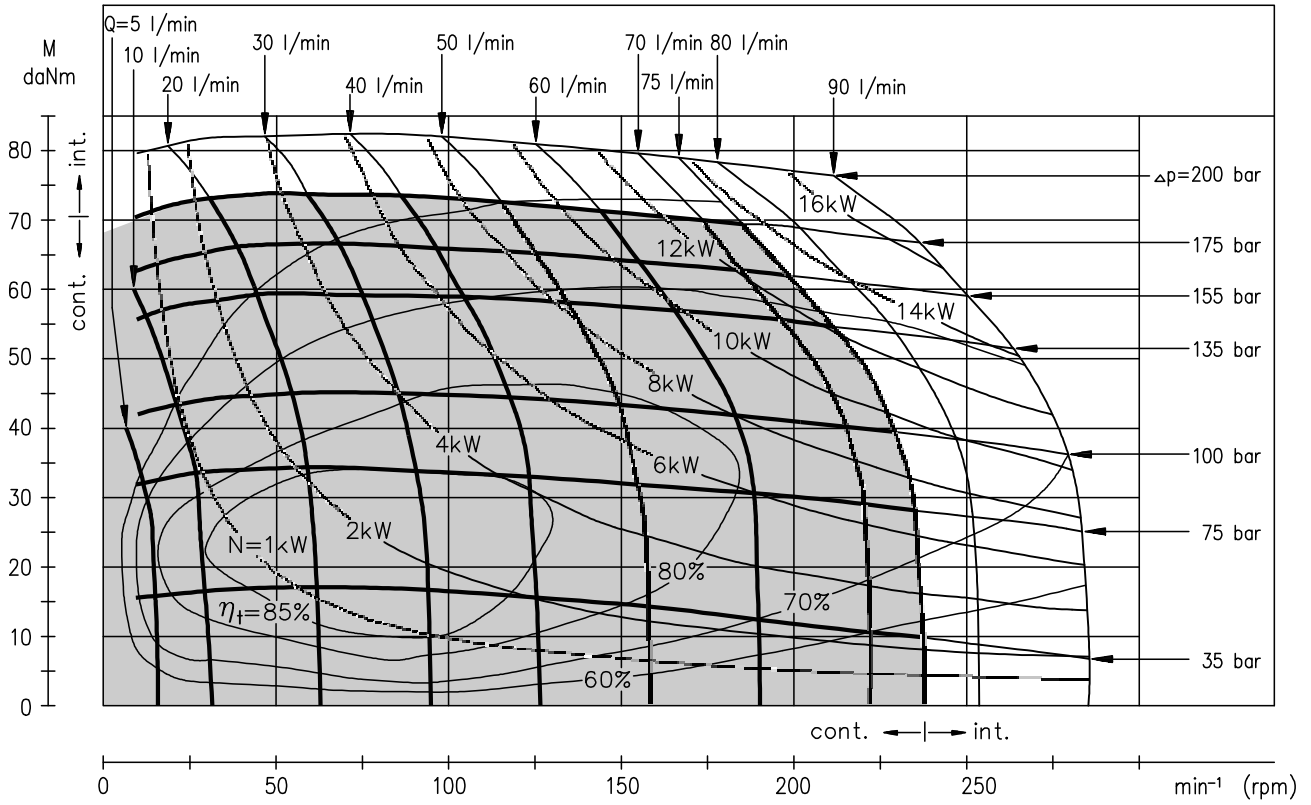
**MH 250**



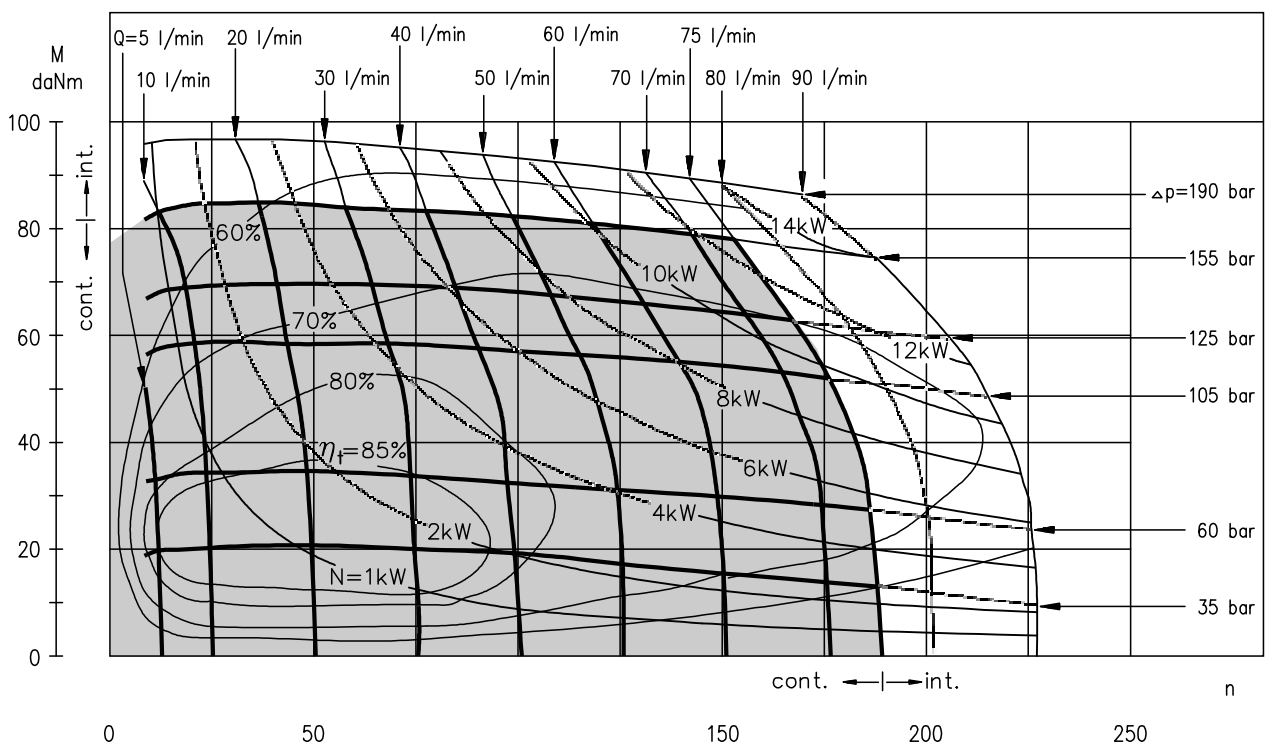
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm<sup>2</sup>/s at 50° C.

**FUNCTION DIAGRAMS**

**MH 315**



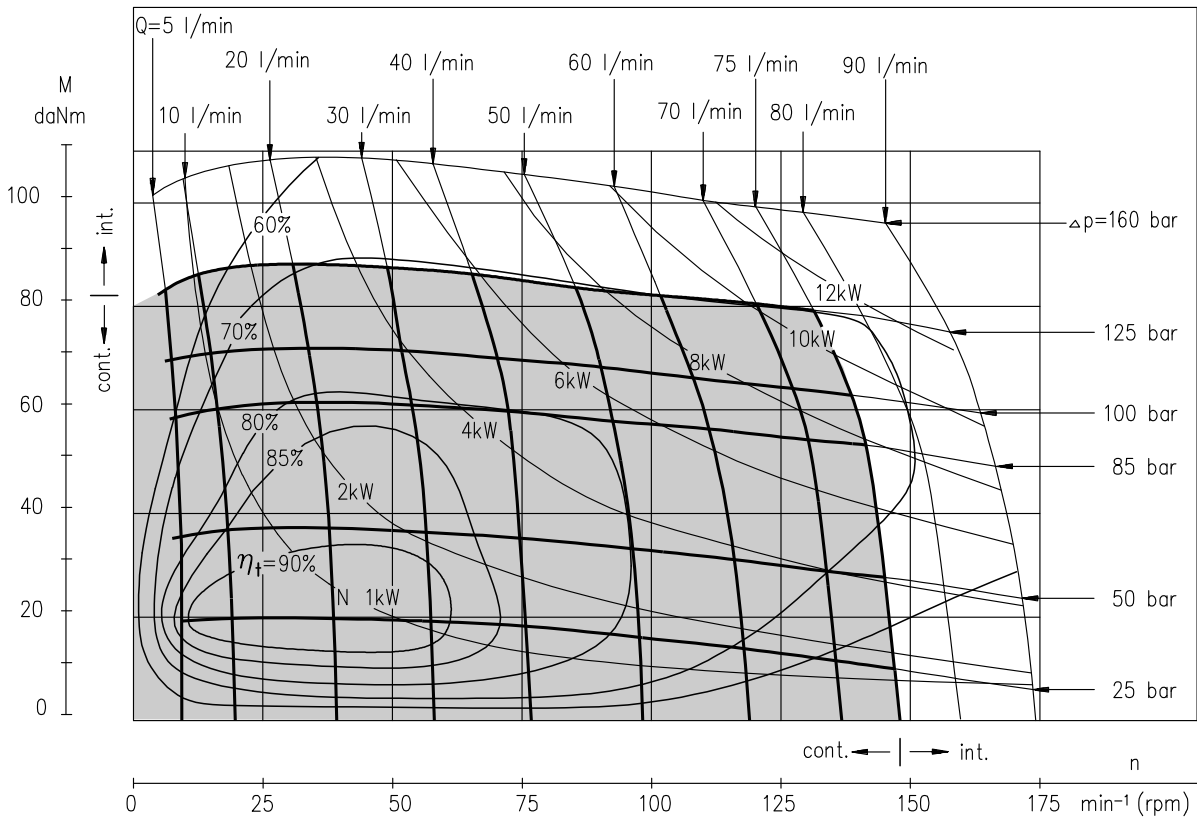
**MH 400**



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

**FUNCTION DIAGRAMS**

**MH 500**



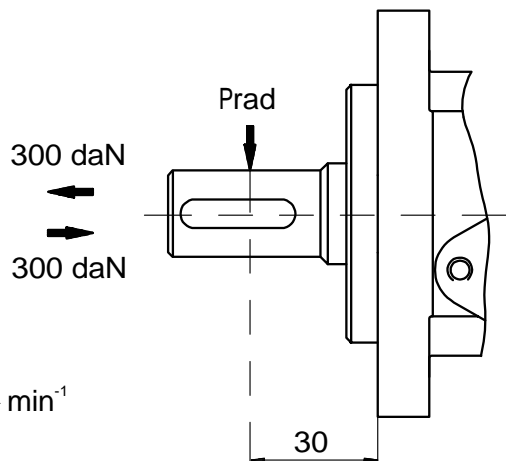
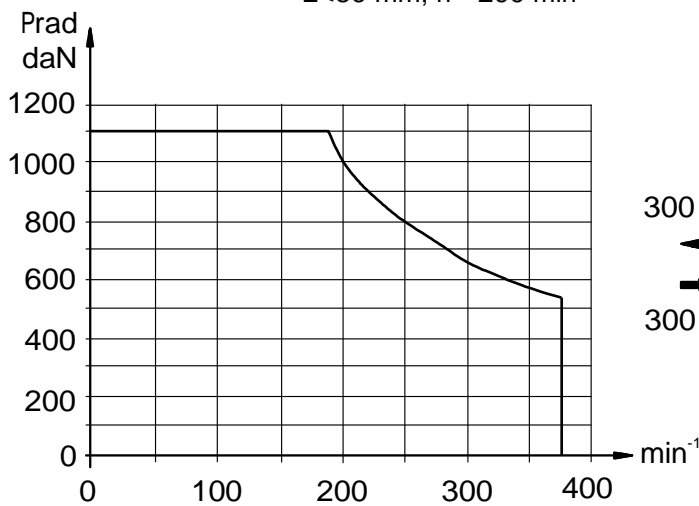
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm<sup>2</sup>/s at 50° C.

**PERMISSIBLE SHAFT LOADS FOR MH MOTORS**

The permissible radial shaft load P<sub>rad</sub> 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<sup>-1</sup>



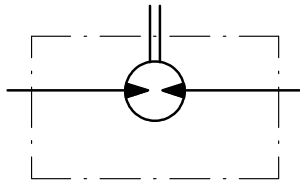


**MAX. PERMISSIBLE SHAFT SEAL PRESSURE FOR MH MOTORS**

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

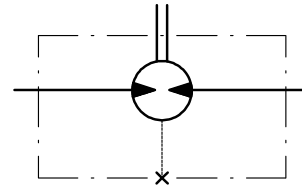
The shaft seal pressure equals the average of input pressure and return pressure.

$$P_{\text{seal}} = \frac{P_{\text{input}} + P_{\text{return}}}{2}$$



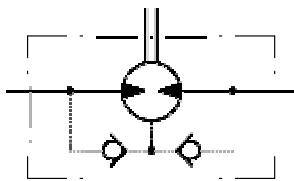
*MH...U motors with high pressure seal and drain connection:*

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



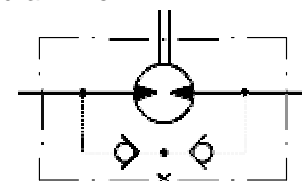
*MH...1 motors with standard shaft seal and without drain connection:*

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

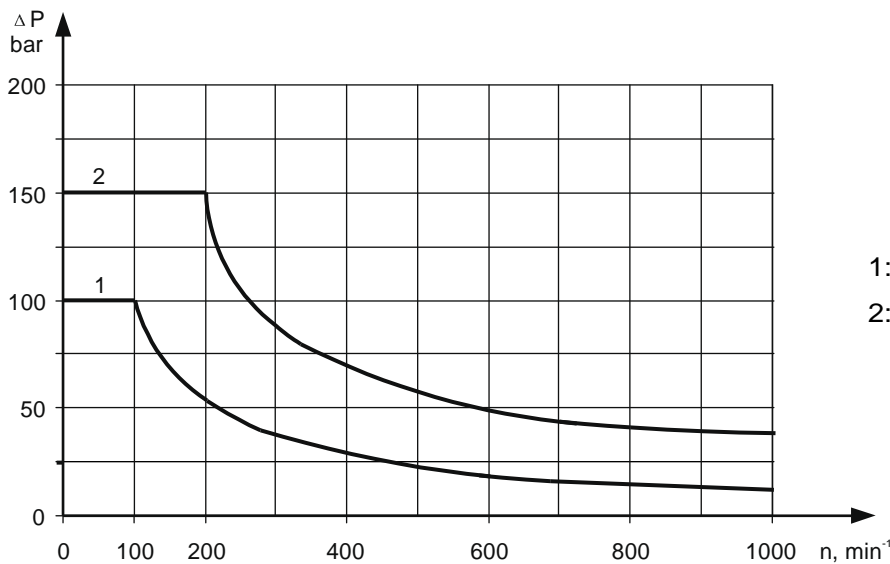


*MH... motors with standard shaft seal and with drain connection:*

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



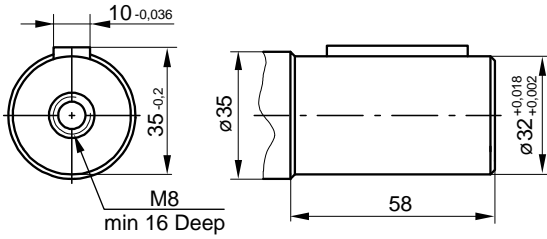
Max. return pressure without drain line or max. pressure in the drain line



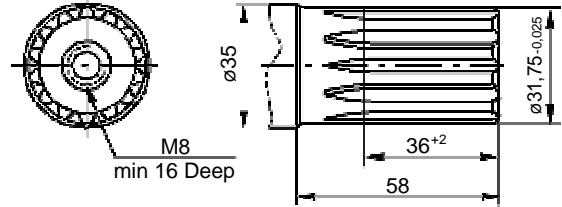
1: Drawing for Standard Shaft Seal  
2: Drawing for High Pressure Seal ("U" Seal)

**SHAFT EXTENSIONS**

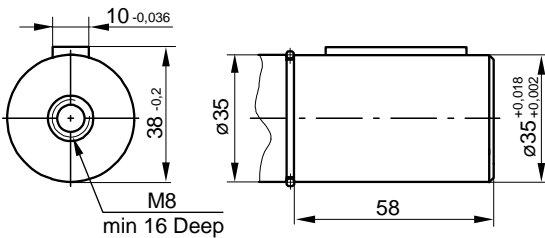
**C** -  $\varnothing 32$  straight, Parallel key A10x8x45 DIN 6885  
Max. Torque 77 daNm



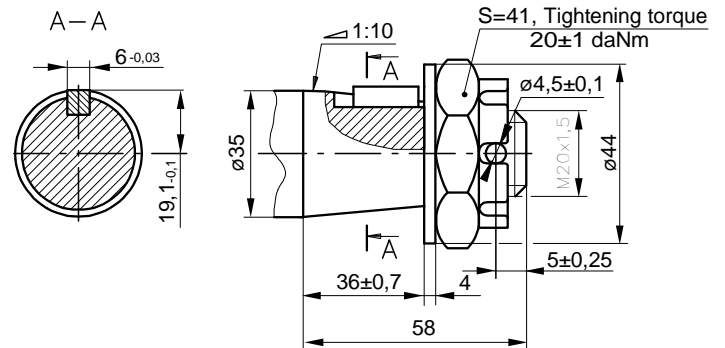
**SH** -  $\varnothing 1\frac{1}{4}$ " splined 14T, DP 12/24 ANSI B92.1-1976  
Max. Torque 95 daNm



**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
MH							

**Pos.1** - Displacement code

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

**Pos.2** - Shaft Extensions \*

C	- $\varnothing 32$ straight, Parallel key A10x8x45 DIN 6885
SH	- $\varnothing 1\frac{1}{4}$ " splined 14T ANSI B92.1-1976
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
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**NOTES:**

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

The hydraulic motors are mangano-phosphatized as standard.



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