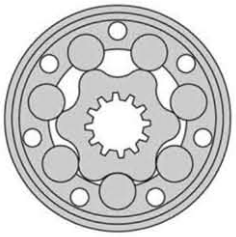
Part number:

HYDROMA HYDRAULICKÉ SYSTÉMY | HIDROMA SISTEMS UKŁADY HYDRAULICZNE | HYDROMA ГИДРАВЛИЧЕСКИЕ СИСТЕМЫ

HYDRAULIC MOTORS MR

APPLICATION

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



CONTENTS

OPTIONS

- Model- Spool valve, roll-gerotor
- Flange mount
- Motor with needle bearing
- Side and rear ports
- Shafts- straight, splined and tapered
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Speed sensoring
- Other special features

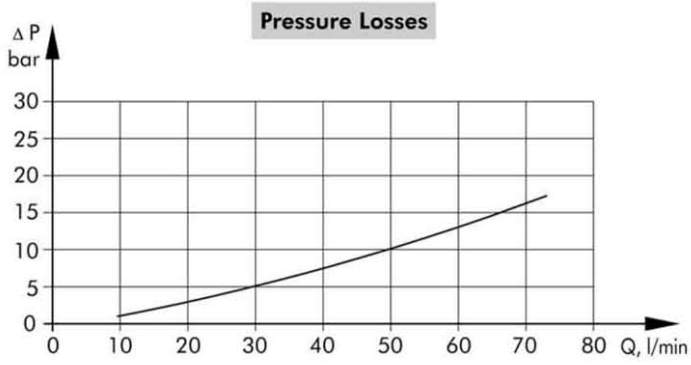
GENERAL

Displacement, [cm^3/rev.]	51,5÷397
Max. Speed, [RPM]	150÷775
Max. Torque, [daNm]	10,1÷61
Max. Output, [kW]	5÷13
Max. Pressure Drop, [bar]	70÷175
Max. Oil Flow, [l/min]	40÷60
Min. Speed, [RPM]	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

Specification Data for MR... motors with C, CO, SH, K and SA shafts.
(ø28,56 sealing diameter)

Type		MR								
		50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**
Displacement, [cm³/rev.]		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
Max. Speed,	cont.	775	750	600	475	375	300	240	190	150
[RPM]	int.*	970	940	750	600	470	375	300	240	190
Max.	cont.	10	20	24	30	39	38,5	39	36	38
Torque	int.*	13	22	28	34	43	46	47	47	47
[daNm]	peak**	17	27	32	37	46	56	60	61	61
Max. Output,	cont.	7	12,5	13	12,5	11,5	9	8	5	4,8
[kW]	int.*	8,5	15	15	14,5	14	12	9,5	8	6,8
Max. Pressure	cont.	140	175	175	175	175	140	110	85	65
Drop	int.*	175	200	200	200	200	175	140	115	90
[bar]	peak**	225	225	225	225	225	225	200	150	115
Max. Oil Flow	cont.	40	60	60	60	60	60	60	60	60
[l/min]	int.*	50	75	75	75	75	75	75	75	75
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175
Pressure	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175
with Drain Line	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	9	7	5	4	3	3
Min. Starting Torque	at max. press. drop cont.	8	15	20	25	32	33	31	31,5	31,5
[daNm]	at max. press. drop int.*	10	17	23	28	37	40	48	50	50
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, avg. [kg]	MR(F)	6,8	6,9	7,2	7,3	7,5	8	8,4	9,1	9,8
For rear ports: +0,650 kg	MRQ(N)	6,2	6,3	6,6	6,8	7,0	7,2	7,8	8,6	9,3

* Intermittent operation: the permissible values may occur for max. 10% of every minute.
** Peak load: the permissible values may occur for max. 1% for every minute.
*** For speeds of 10 RPM or lower, consult factory or your regional manager.

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 - 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 min.

SPECIFICATION DATA (continued)

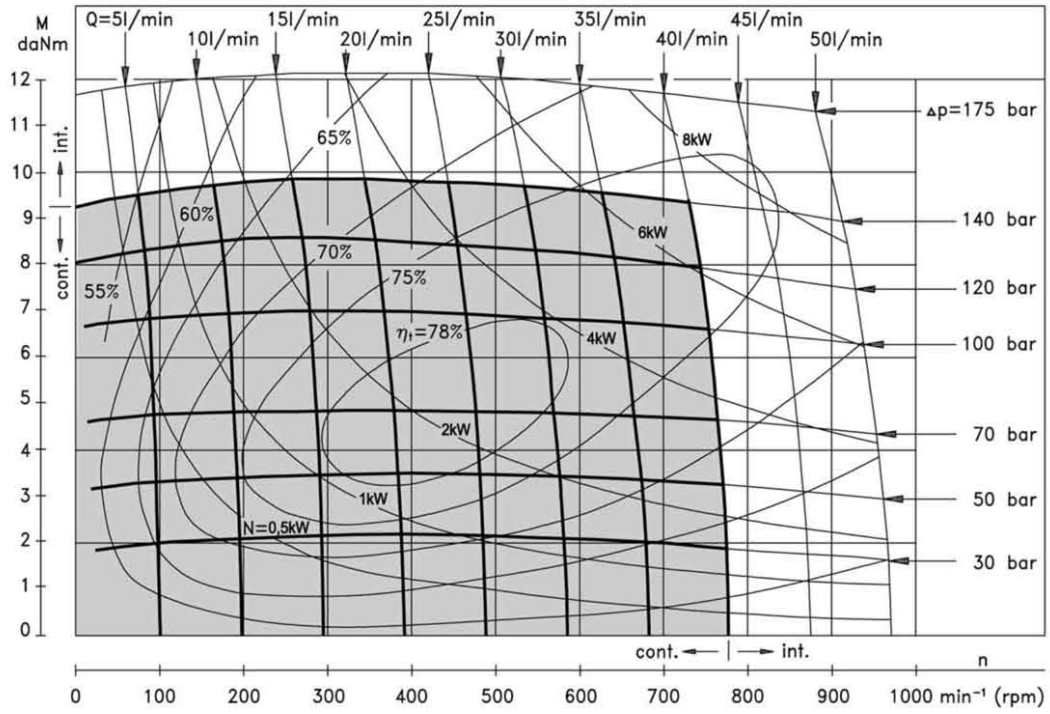
Specification Data for MR... motors with CB, KB, OB and HB shafts.
(ø35 sealing diameter)

Type		MR								
		50	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**
Displacement, [cm^3/rev.]		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
Max. Speed,	cont.	775	750	600	475	375	300	240	190	150
[RPM]	int.*	970	940	750	600	470	375	300	240	190
Max.	cont.	10	20	24	30	39	45	54	55	61
Torque	int.*	13	22	28	34	43	50	61	69	69
[daNm]	peak**	17	27	32	37	46	56	71	84	87
Max. Output,	cont.	7	12,5	13	12,5	11,5	11	10	9	7,8
[kW]	int.*	8,5	15	15	14,5	14	13	12	10	10,6
Max. Pressure	cont.	140	175	175	175	175	175	175	135	110
Drop	int.*	175	200	200	200	200	200	200	175	140
[bar]	peak**	225	225	225	225	225	225	225	210	175
Max. Oil Flow	cont.	40	60	60	60	60	60	60	60	60
[l/min]	int.*	50	75	75	75	75	75	75	75	75
Max. Inlet	cont.	175	175	175	175	175	175	175	175	175
Pressure	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Return Pressure	cont.	175	175	175	175	175	175	175	175	175
with Drain Line	int.*	200	200	200	200	200	200	200	200	200
[bar]	peak**	225	225	225	225	225	225	225	225	225
Max. Starting Pressure with Unloaded Shaft, [bar]		10	10	10	9	7	5	4	3	3
Min. Starting Torque	at max. press. drop cont.	8	15	20	25	32	41	50	50	50
[daNm]	at max. press. drop int.*	10	17	23	28	37	46	55	66	61
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, avg. [kg] For rear ports: +0,650 kg	MR(F)	6,9	7	7,3	7,4	7,6	8,1	8,5	9,2	9,9

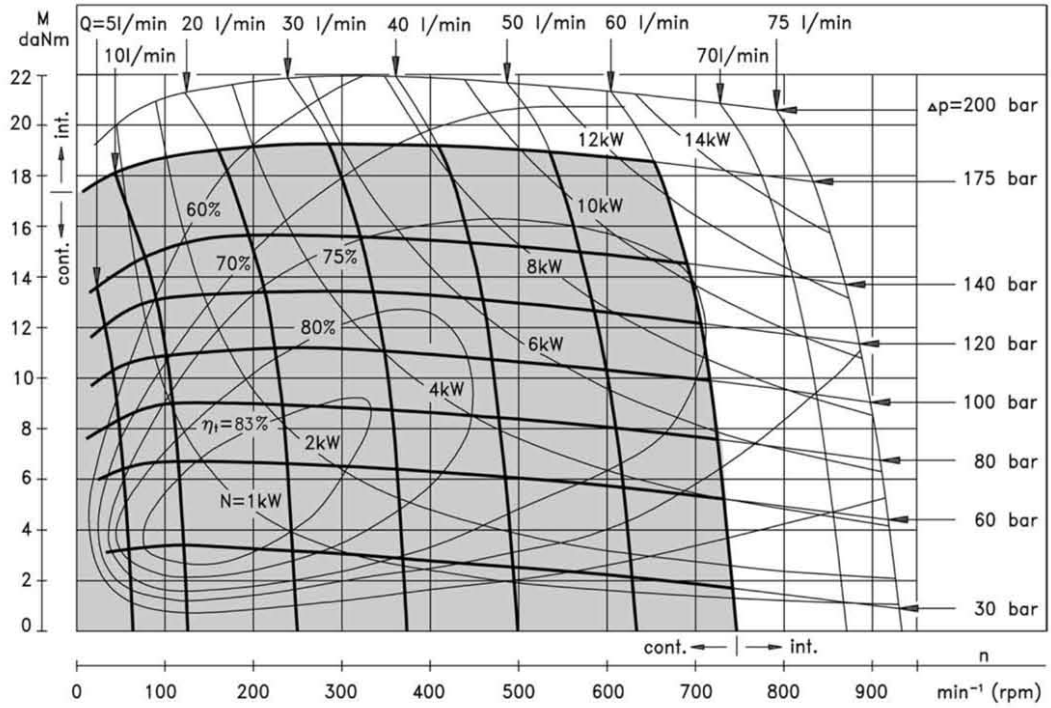
* Intermittent operation: the permissible values may occur for max. 10% of every minute.
** Peak load: the permissible values may occur for max. 1% for every minute.
*** For speeds of 10 RPM or lower, consult factory or your regional manager.
1. Intermittent speed and intermittent pressure drop must 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 mm^2/s at operating temperatures.
5. Recommended maximum system operating temperature - 82°C.
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 min.

FUNCTION DIAGRAMS

MR 50



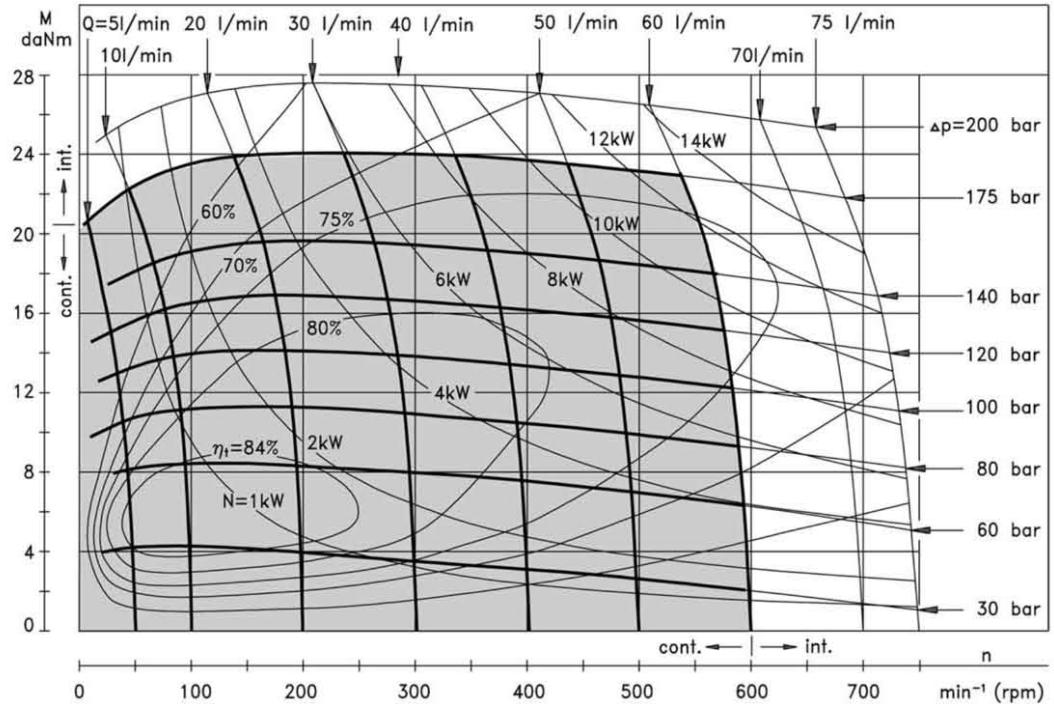
MR 80



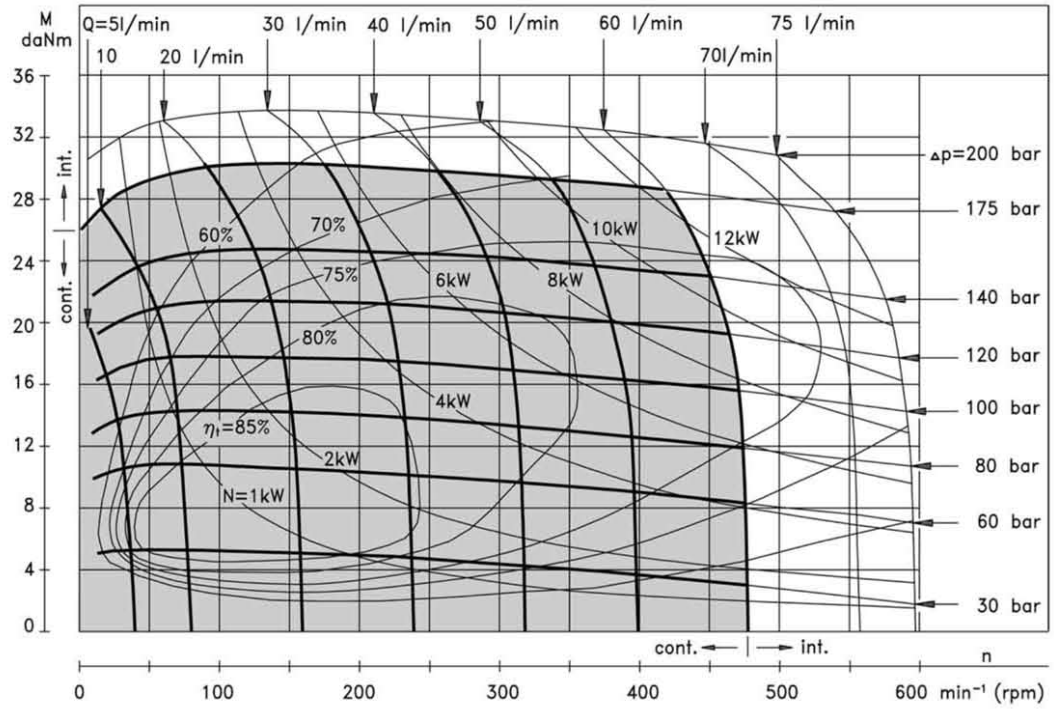
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

MR 100



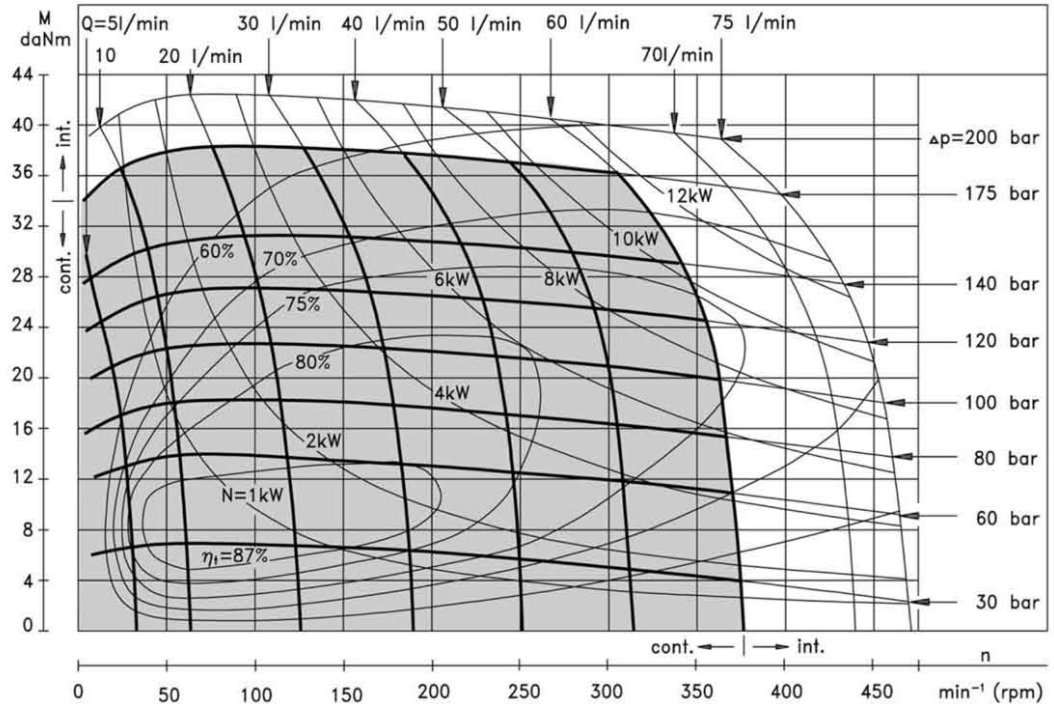
MR 125



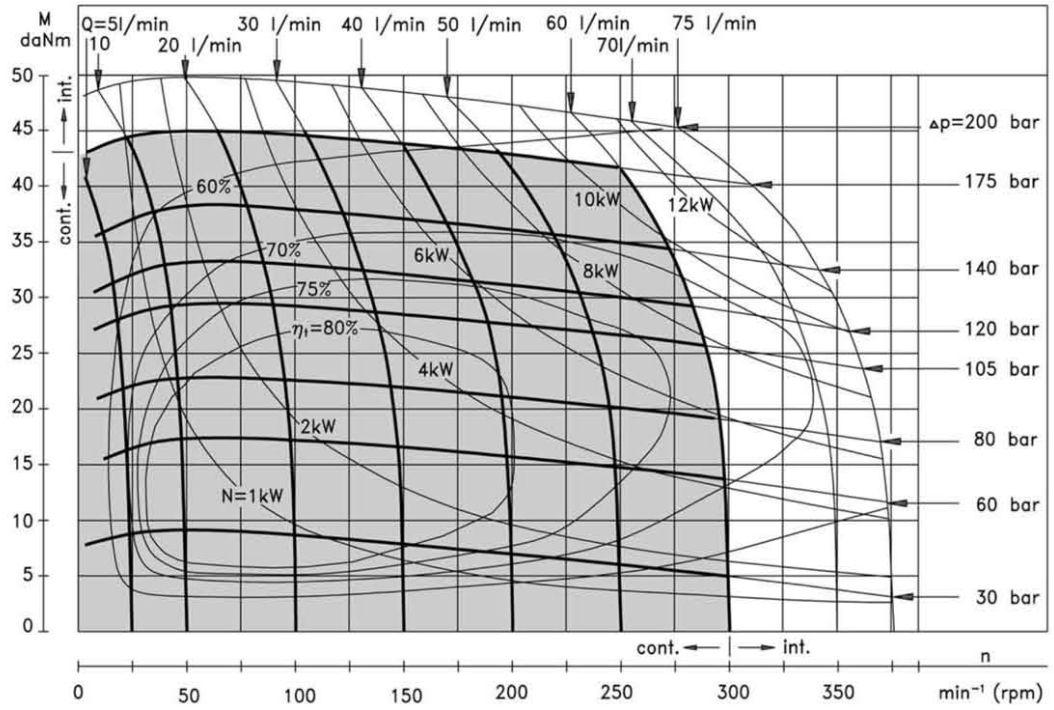
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

MR 160



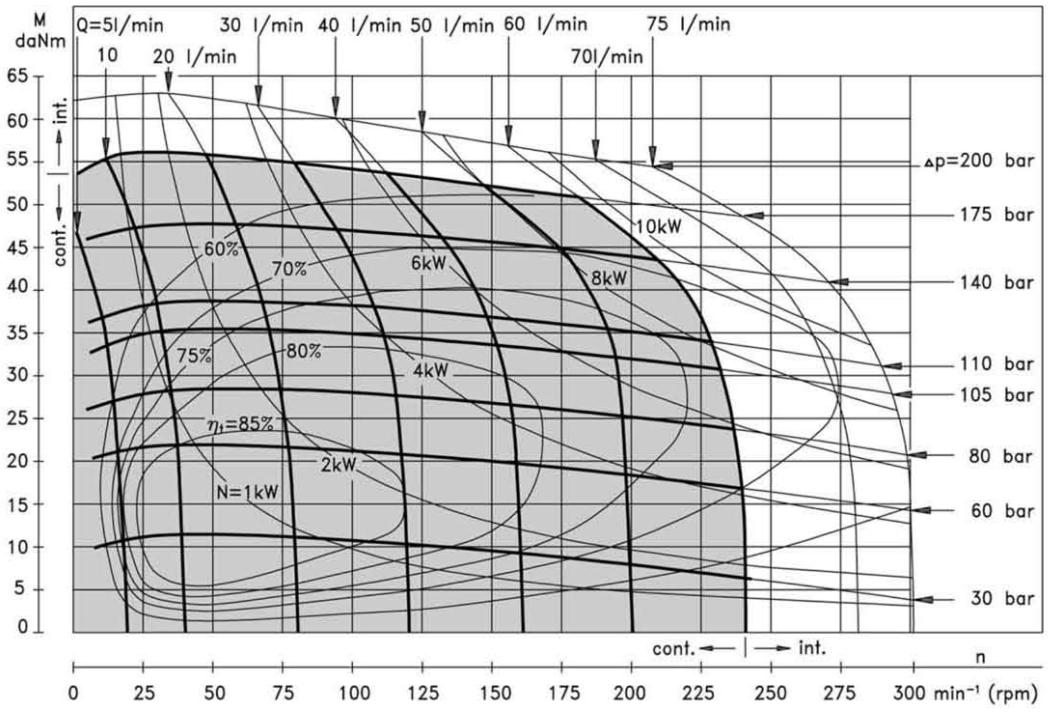
MR 200



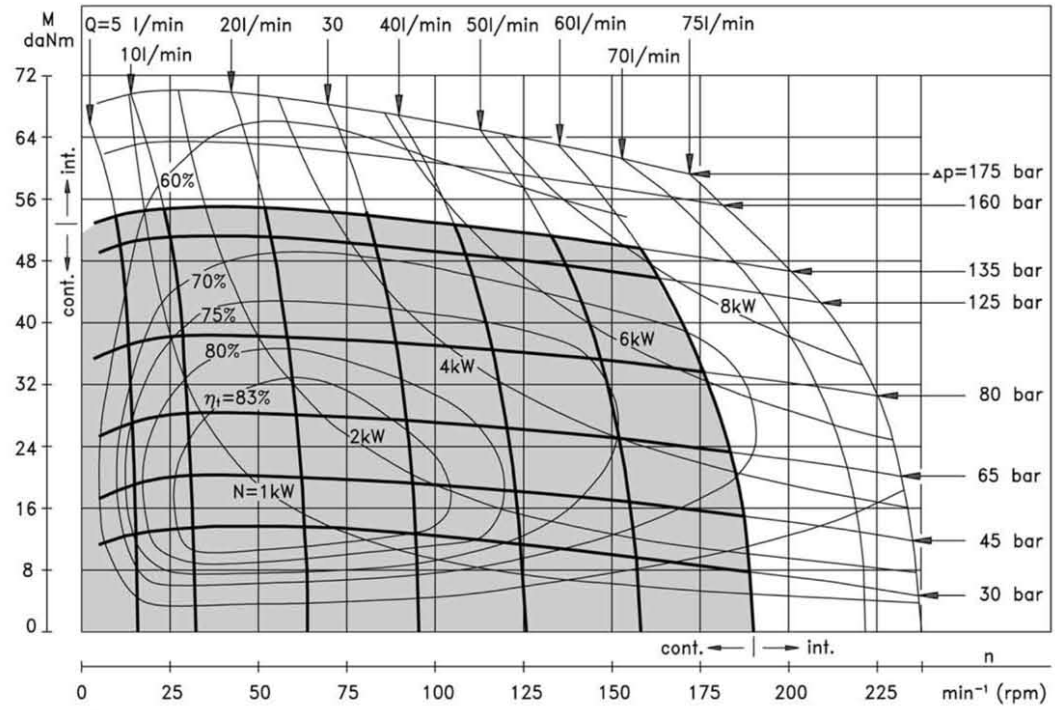
The function diagrams data was collected at back pressure 5÷10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

MR 250



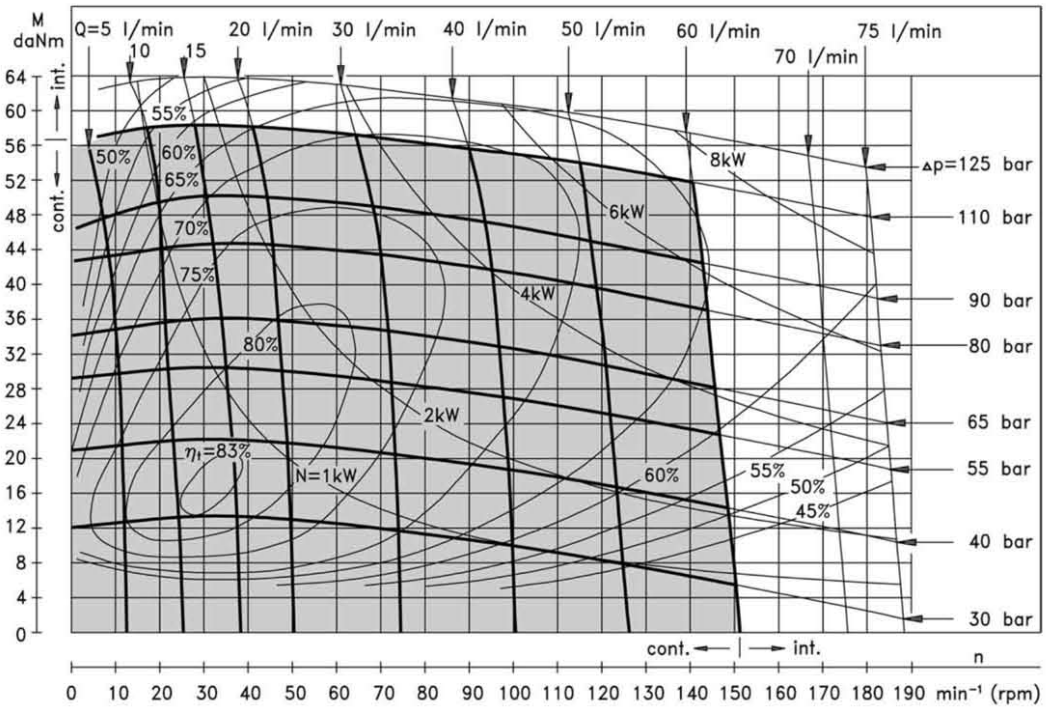
MR 315



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

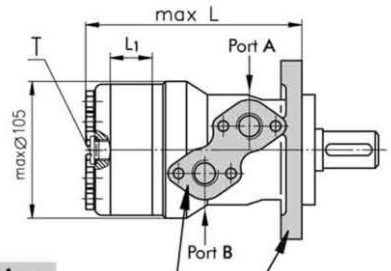
FUNCTION DIAGRAM

MR 400



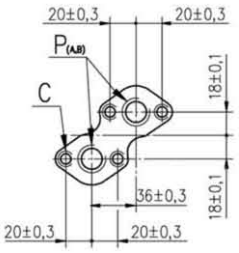
The function diagram data was collected at back pressure 5÷10 bar
and oil with viscosity of 32 mm²/s at 50° C.

DIMENSIONS AND MOUNTING DATA

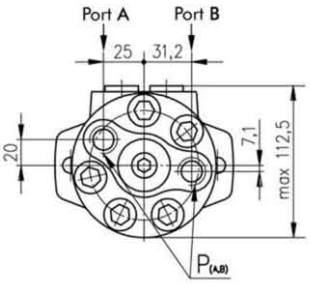


Porting

Side Ports

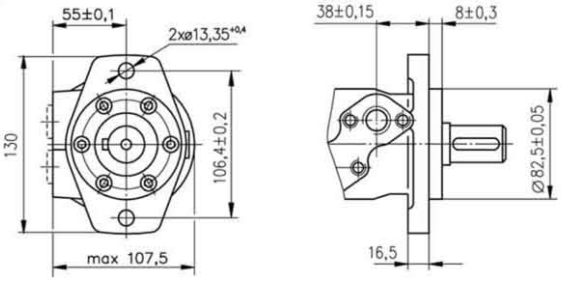


E Rear Ports

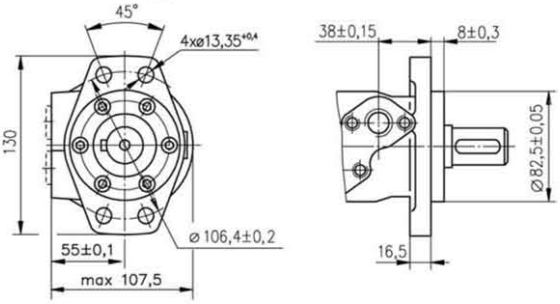


Mounting

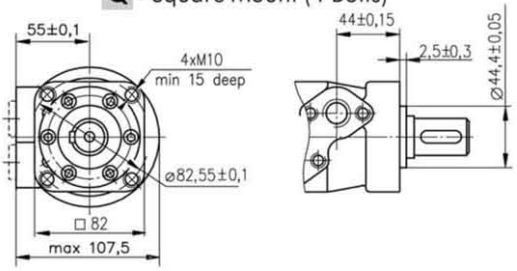
Oval Mount (2 Holes)



F - Oval Mount (4 Holes)



Q - Square Mount (4 Bolts)



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**

Type	L, mm	Type	L, mm	Type	L, mm	Type	L, mm	L_1, mm
MR(F) 50	138,0	MRQ 50	143,5	MR(F)E 50	157,5	MRQE 50	163,5	9,0
MR(F) 80	143,0	MRQ 80	148,5	MR(F)E 80	162,5	MRQE 80	168,5	14,0
MR(F) 100	146,0	MRQ 100	152,0	MR(F)E 100	165,5	MRQE 100	171,5	17,4
MR(F) 125	150,5	MRQ 125	156,5	MR(F)E 125	170,0	MRQE 125	176,0	21,8
MR(F) 160	156,5	MRQ 160	162,5	MR(F)E 160	176,0	MRQE 160	182,0	27,8
MR(F) 200	163,5	MRQ 200	169,5	MR(F)E 200	183,0	MRQE 200	189,0	34,8
MR(F) 250	172,0	MRQ 250	179,0	MR(F)E 250	192,0	MRQE 250	198,0	43,5
MR(F) 315	183,0	MRQ 315	189,0	MR(F)E 315	204,0	MRQE 315	210,0	54,8
MR(F) 400	198,0	MRQ 400	204,0	MR(F)E 400	218,0	MRQE 400	224,0	69,4

ORDER CODE

	1	2	3	4	5	6	7	8	9	10
M R										

Pos.1 - **Mounting Flange**

omit - Oval mount, two holes
F - Oval mount, four holes
Q - Square mount, four bolts

Pos.2 - **Option** (needle bearings)

omit - none
N - with needle bearings

Pos.3 - **Port type**

omit - Side ports
E - Rear ports

Pos.4 - **Displacement code**

50 - 51,5 [cm³/rev]
80 - 80,3 [cm³/rev]
100 - 99,8 [cm³/rev]
125 - 125,7 [cm³/rev]
160 - 159,6 [cm³/rev]
200 - 199,8 [cm³/rev]
250 - 250,1 [cm³/rev]
315 - 315,7 [cm³/rev]
400 - 397,0 [cm³/rev]

Pos.5 - **Shaft Extensions*** (see page 24)

C - ø25 straight, Parallel key A8x7x32 DIN6885
VC - ø25 straight, Parallel key A8x7x32 DIN6885 with corrosion resistant bushing
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
VCO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46 with corrosion resistant bushing
SH - ø25,32 splined BS 2059 (SAE 6B)
VSH - ø25,32 splined BS 2059 (SAE 6B) with corrosion resistant bushing
K - ø28,56 tapered 1:10, Parallel key B5x5x14 DIN6885
SA - ø24,5 splined B 25x22 DIN 5482
VSA - ø24,5 splined B 25x22 DIN 5482 with corrosion resistant bushing
CB - ø32 straight, Parallel key A10x8x45 DIN6885
KB - ø35 tapered 1:10, Parallel key B6x6x20 DIN6885
SB - splined A 25x22 DIN 5482
OB - ø1¼" tapered1:8, Parallel key 5/16"x5/16"x1¼" BS46
HB - ø1¼" splined 14T ANSI B92.1 - 1976

Pos. 6 - **Shaft Seal Version** (see page 26)

omit - Low pressure shaft seal or Standard shaft seal for **"...B"** shaft
D - Standard shaft seal
U - High pressure shaft seal (without check valves)

Pos. 7 - **Drain Port**

omit - with drain port
1 - without drain port

Pos. 8 - **Ports**

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

Pos. 9 - **Special Features** (see page 46)

Pos.10 - **Design Series**

omit - Factory specified

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

NOTES: 1. The following combinations are not allowed:- **Q** flange with **"...B"** shafts;
- **N** option with **"...B"** shafts, Low Pressure Seal or **U** option;
- **"...B"** shafts with **D** and **U** shaft seals.

The hydraulic motors are mangano-phosphatized as standard.