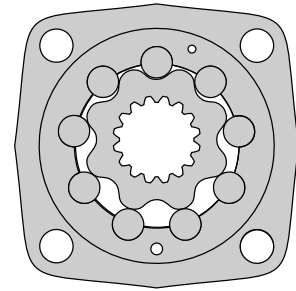


HYDRAULIC MOTORS MV



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OPTIONS

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

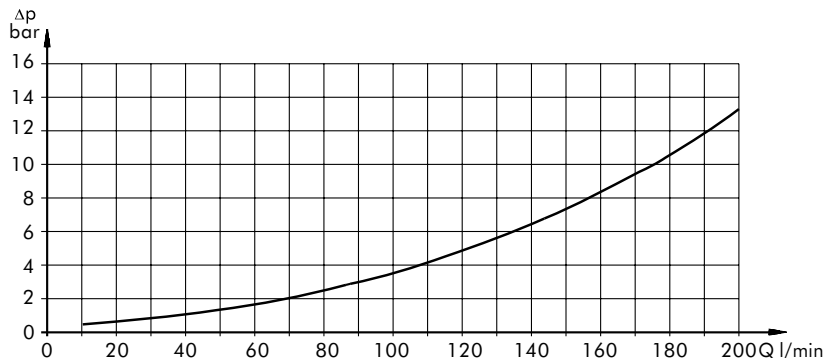
GENERAL

Displacement, [cm ³ /rev.]	314,5÷801,8
Max. Speed, [RPM]	250÷510
Max. Torque, [daNm]	92÷188
Max. Output, [kW]	42,5÷53,5
Max. Pressure Drop, [bar]	160÷200
Max. Oil Flow, [l/min]	160÷200
Min. Speed, [RPM]	5÷10
Permissible Shaft Loads, [daN]	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		MV 315	MV 400	MV 500	MV 630	MV 800
Displacement [cm ³ /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
Max. Return Pressure with Drain Line [bar]	Int.* 0-max. RPM	75	75	75	75	75
	cont.	140	140	140	140	140
	Int.*	175	175	175	175	175
Max. Starting Pressure with Unloaded Shaft, [bar]	peak**	210	210	210	210	210
	cont.	8	8	8	8	8
	Int.*	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, avg. [kg]	MV	31,8	32,6	33,5	34,9	36,5
	MVW	32,4	33,2	34,1	35,5	37,1
	MVS	22,7	23,5	24,4	25,6	27,7

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

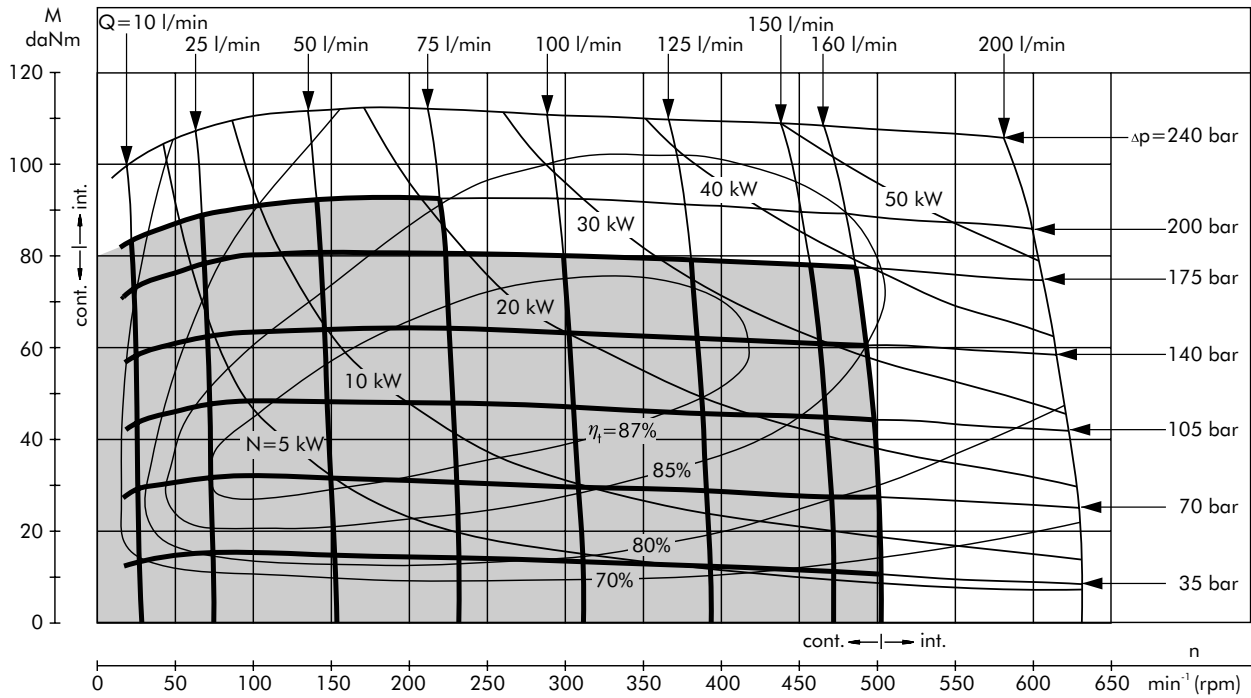
** Peak load: the permissible values may occur for max. 1% of every minute.

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

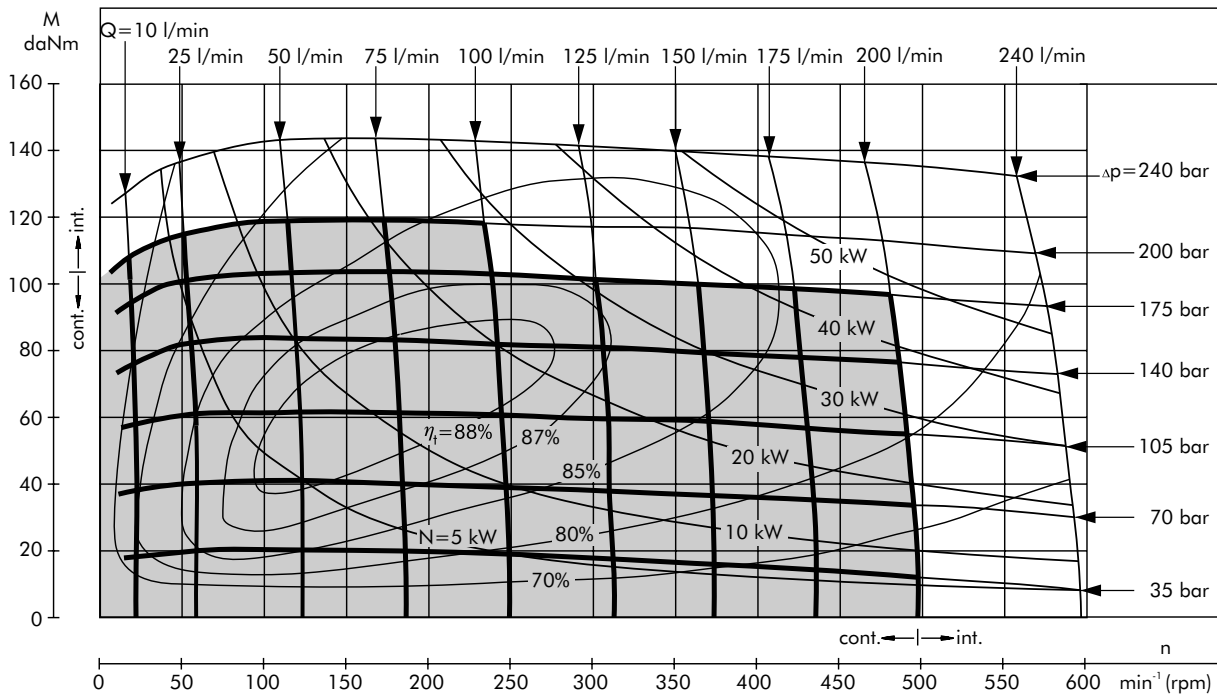
- 1) Intermittent speed and intermittent pressure must not occur simultaneously.
- 2) Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- 3) Recommend using a premium quality, anti-wear type mineral based hydraulic oil, HLP(DIN51524) or HM(ISO6743/4).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

MV 315



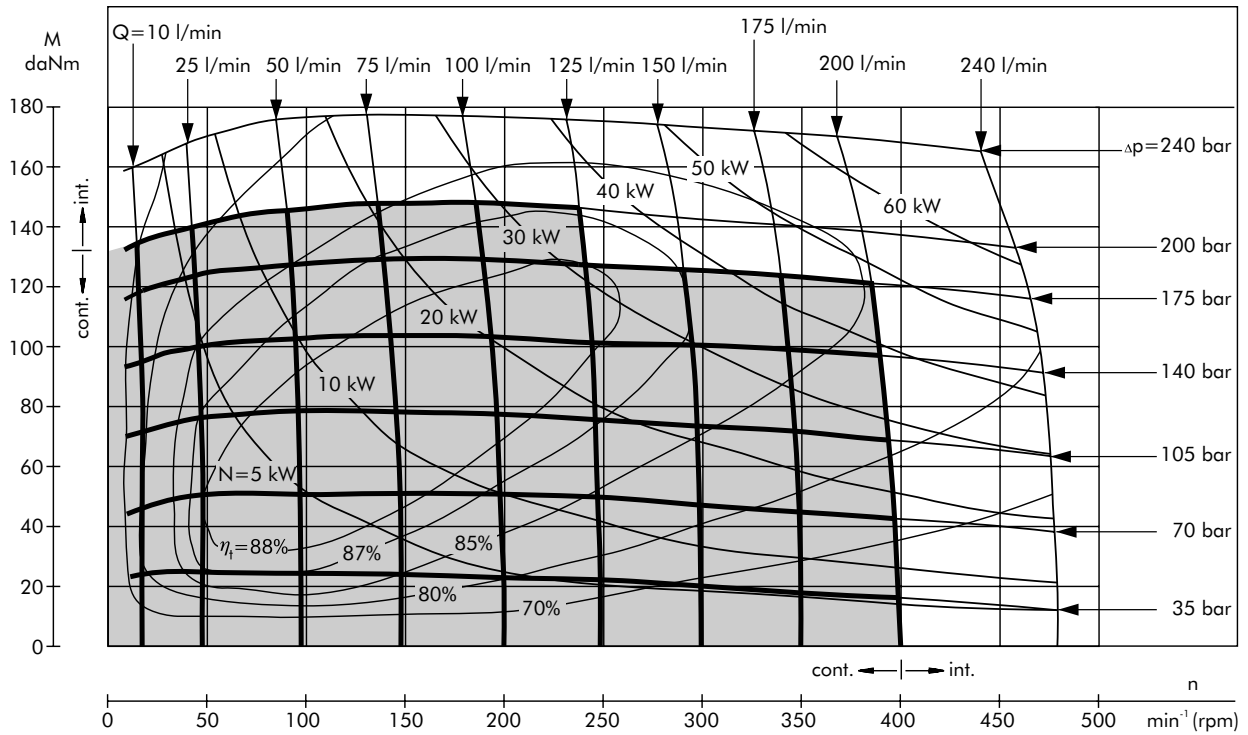
MV 400



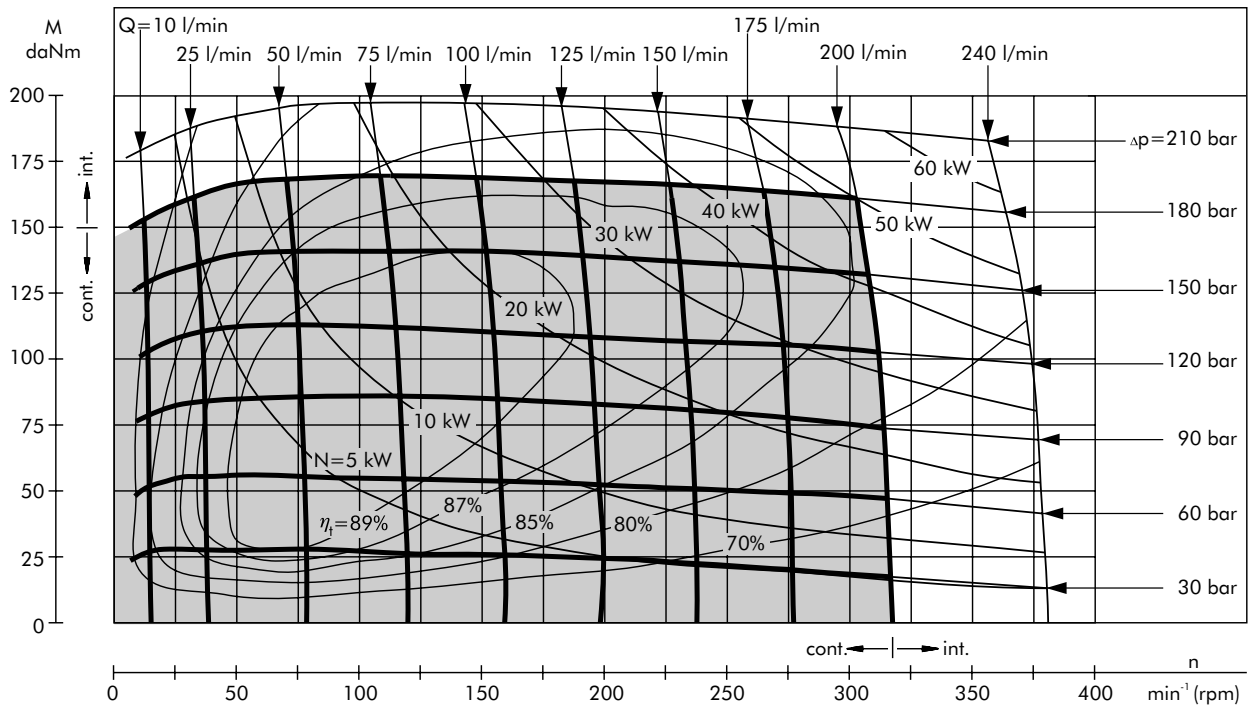
The function diagrams data was collected at back pressure 5 ÷ 10 bar and oil with viscosity of 32 mm²/s at 50° C.

FUNCTION DIAGRAMS

MV 500



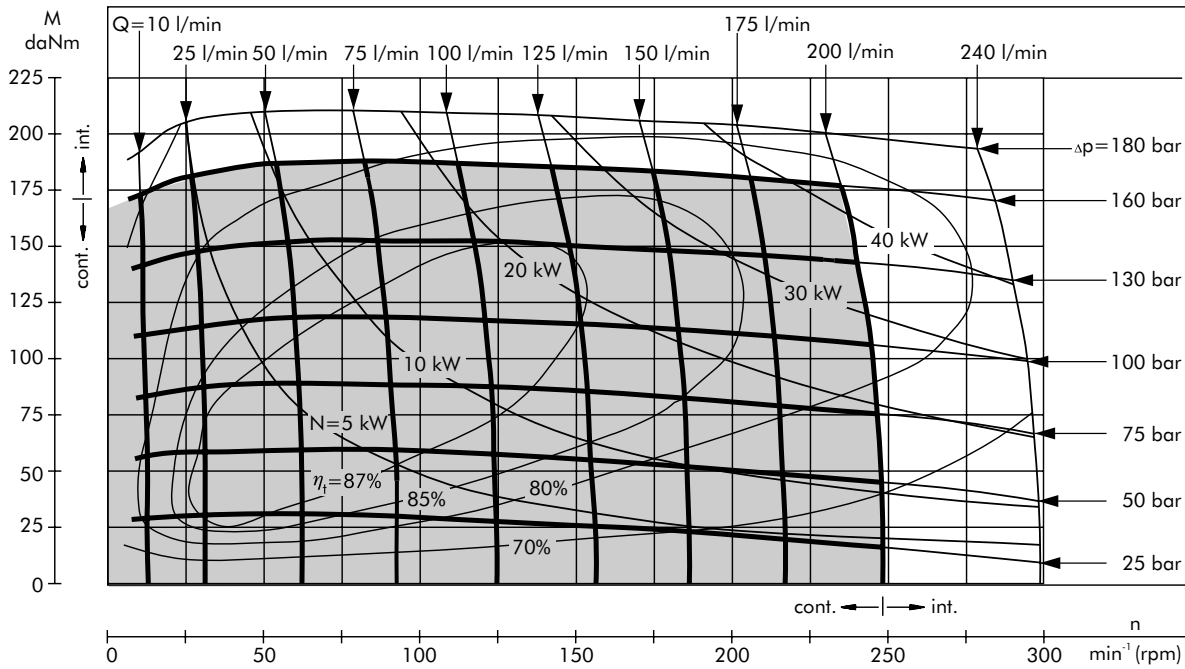
MV 630



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

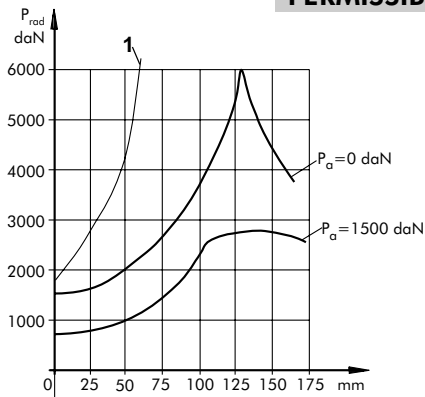
FUNCTION DIAGRAMS

MV 800

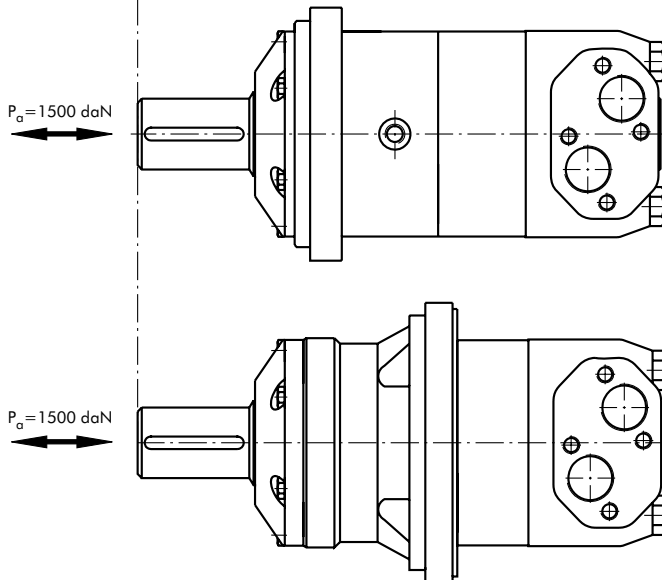


The function diagrams data was collected at back pressure $5 \div 10$ bar and oil with viscosity of $32 \text{ mm}^2/\text{s}$ at 50°C .

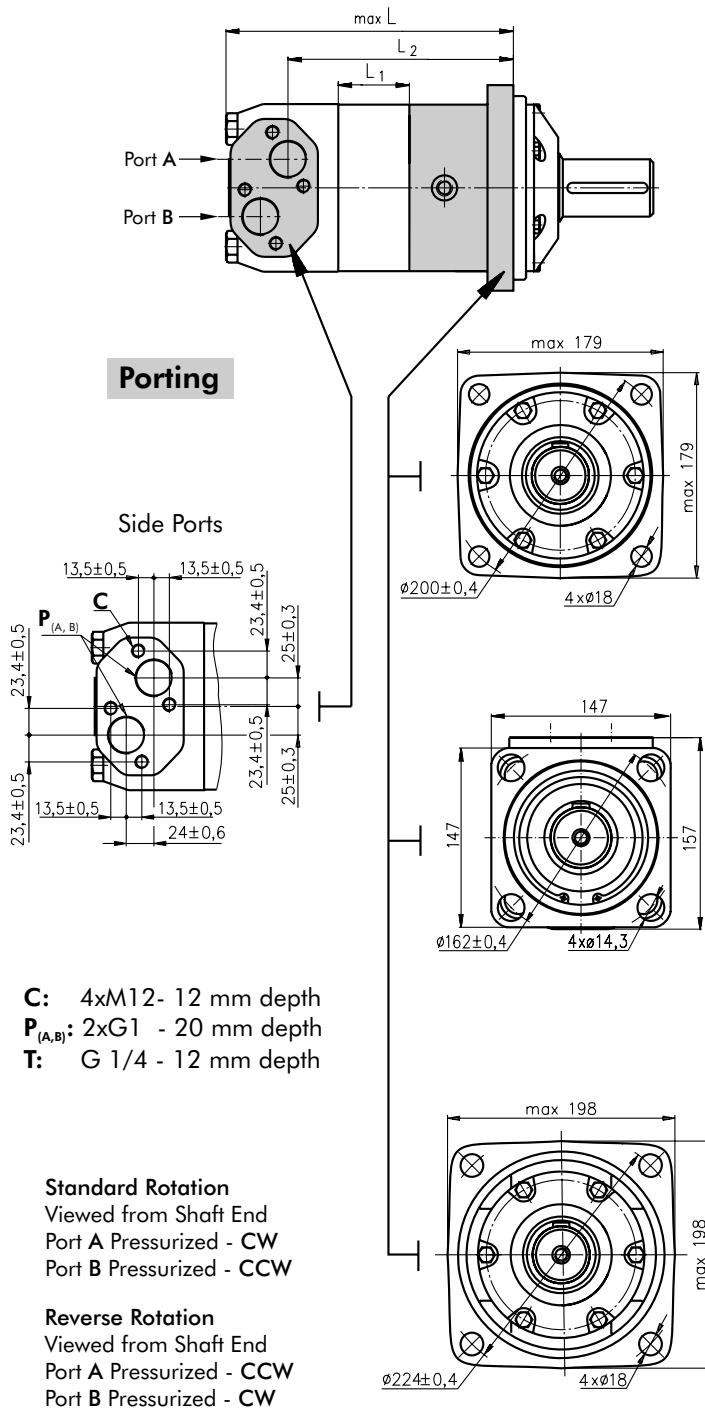
PERMISSIBLE SHAFT LOADS



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



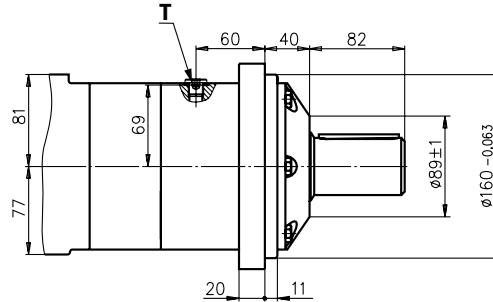
C: 4xM12- 12 mm depth
P_(A,B): 2xG1 - 20 mm depth
T: G 1/4 - 12 mm depth

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

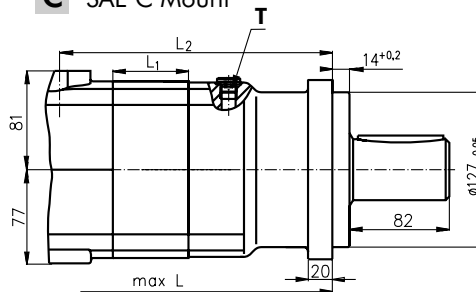
Reverse Rotation
 Viewed from Shaft End
 Port A Pressurized - CCW
 Port B Pressurized - CW

Mounting

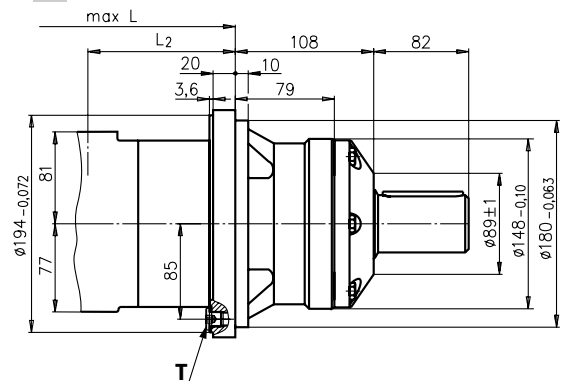
Square Mount (4 Holes)



C SAE C Mount



W Wheel Mount

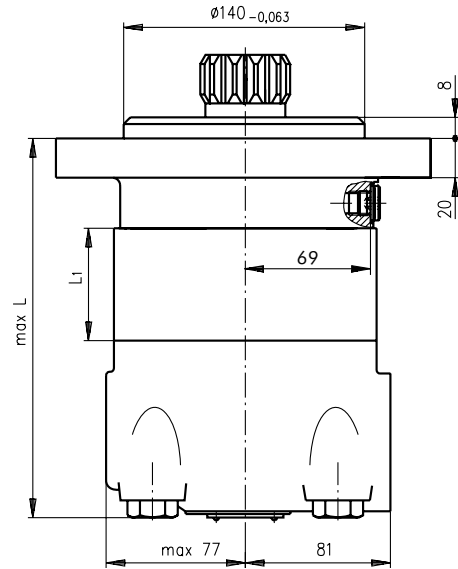
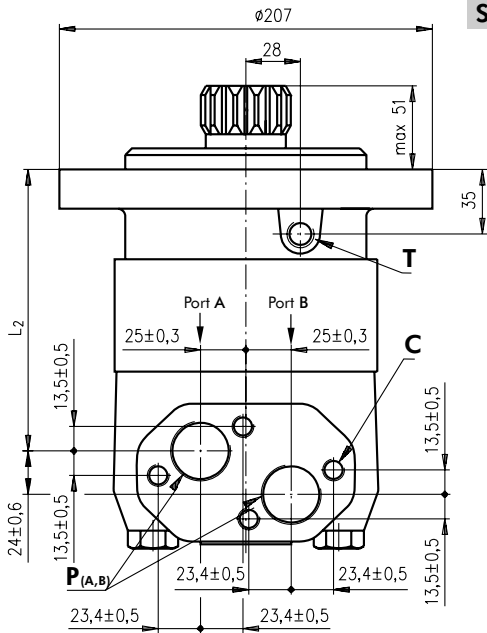


Type	L, mm	L ₂ , mm	Type	L, mm	L ₂ , mm	Type	L, mm	L ₂ , mm	*L ₁ , mm
MV 315	214,5	160	MVC 315	238,25	184,26	MVW 315	146	92	21,5
MV 400	221,5	167	MVC 400	245,25	191,26	MVW 400	153	99	28,5
MV 500	229,5	175	MVC 500	253,25	199,26	MVW 500	161	107	36,5
MV 630	240,0	186	MVC 630	263,75	209,76	MVW 630	172	118	47,0
MV 800	254,0	200	MVC 800	277,75	223,76	MVW 800	185	132	61,0

* The width of the roll-ge rotor is 4 mm greater than L₁.

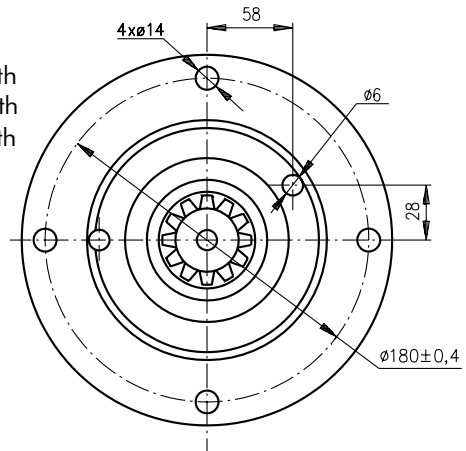
DIMENSIONS AND MOUNTING

S Short Mount



Type	L, mm	*L ₁ , mm	L ₂ , mm
MVS 315	171	22,0	117
MVS 400	179	29,0	124
MVS 500	186	37,0	132
MVS 630	197	47,5	143
MVS 800	211	61,5	157

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



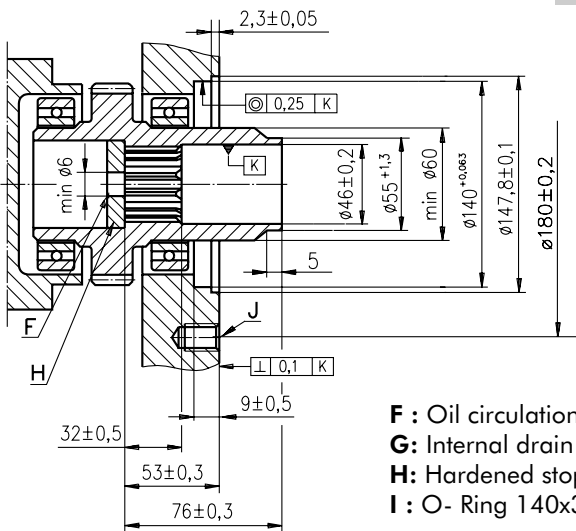
* The width of the gerolor is 4 mm greater than L₁.

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

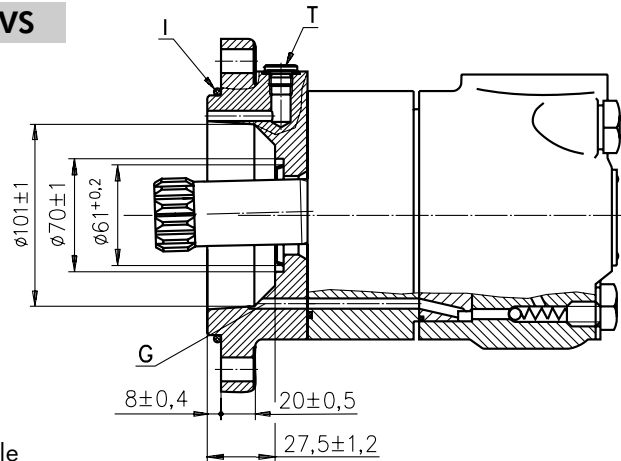
Reverse Rotation
 Viewed from Shaft End
 Port A Pressurized - CCW
 Port B Pressurized - CW

DIMENSIONS OF THE ATTACHED COMPONENT

MVS



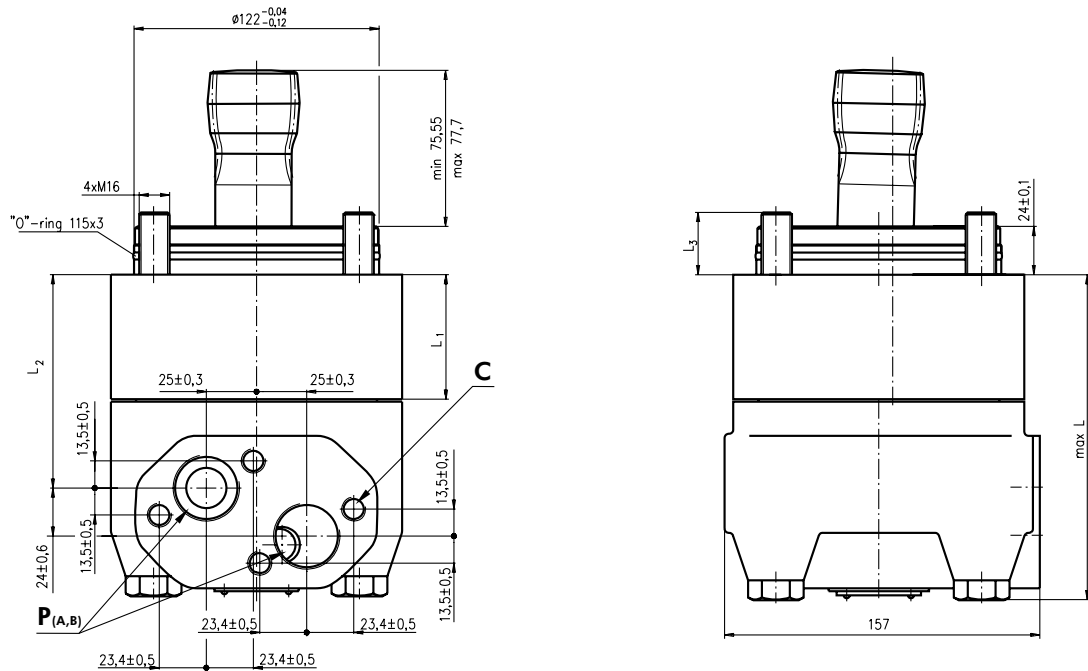
F: Oil circulation hole
G: Internal drain channel
H: Hardened stop plate
I: O- Ring 140x3mm



J: 4xM12-18 mm depth, 90°
T: Drain connection G1/4 - 12 mm depth

DIMENSIONS AND MOUNTING

V Very Short Mount



C: 4xM12- 12 mm depth
P(A,B): 2xG1 - 20 mm depth

Type	L, mm	*L ₁ , mm	L ₂ , mm	L ₃ , mm
MVV 315	121,5	22,0	68,0	29,5
MVV 400	128,5	29,0	75,0	32,5
MVV 500	136,5	37,0	83,0	34,5
MVV 630	147,0	47,5	93,0	34,0
MVV 800	161,0	61,5	107,5	30,0

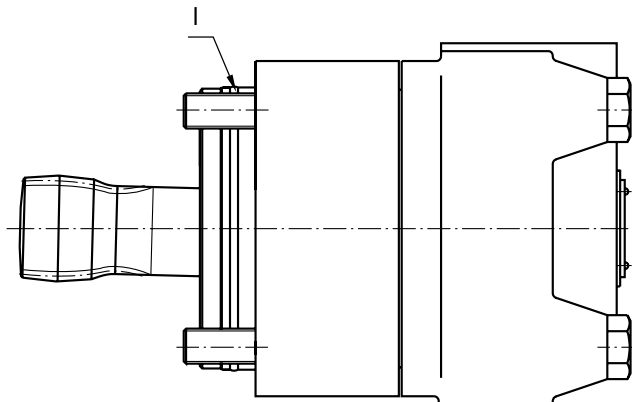
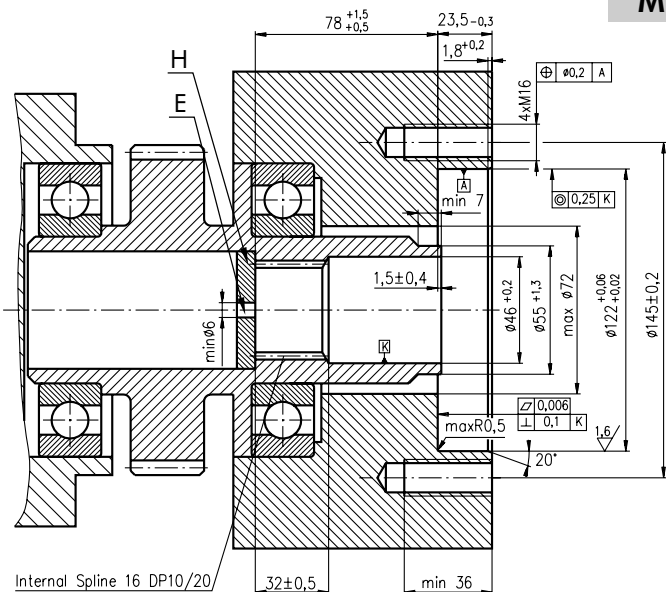
Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

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

* The width of the roll-gerotor is 4 mm greater than L₁.

DIMENSIONS OF THE ATTACHED COMPONENT

MVV



E: External drain channel
H: Hardened stop plate
I: O- Ring 115x3mm

DRAIN CONNECTION

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

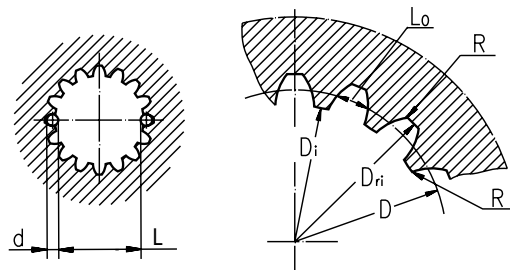
- For MVS at the drain port of the motor;
- For MVV at the drain connection of the attached component. The maximum pressure in the drain line is limited by the attached component and its shaft seal.

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.

INTERNAL SPLINE DATA FOR THE ATTACHED COMPONENT

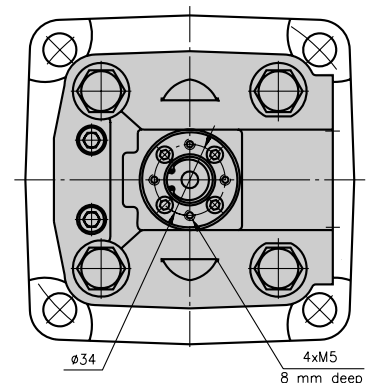
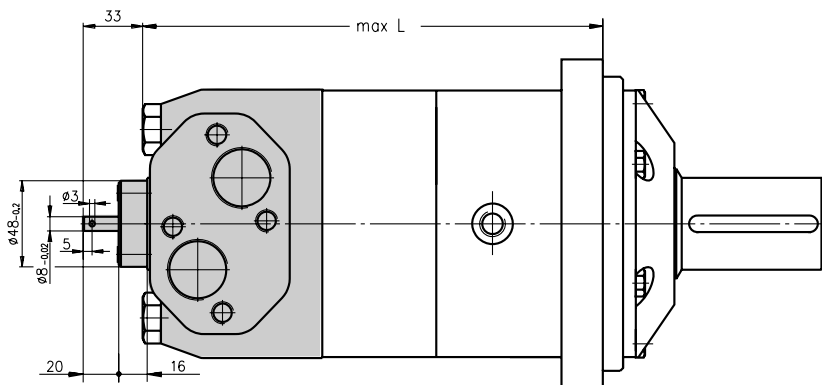
Standard ANSI B92.1-1976, class 5
[$m=2.54$; corrected $x.m = +1,0$]

Fillet Root Side Fit		mm
Number of Teeth	z	16
Diametral Pitch	DP	10/20
Pressure Angle		30°
Pitch Dia.	D	40,640
Major Dia.	D_{ri}	45,2 ^{+0,4}
Minor Dia.	D_i	38,5 ^{+0,039}
Space Width [Circular]	L_o	5,18±0,037
Fillet Radius	R	0,4
Max. Measurement between Pin	L	32,47 ^{+0,15}
Pin Dia.	d	5,5±0,001



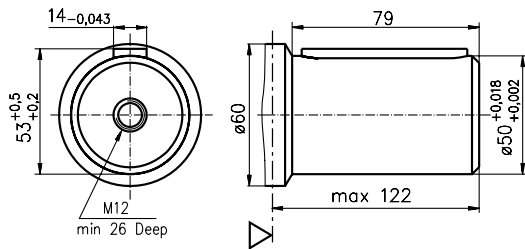
Hardening Specification:
 HV=750±50 on the surface
 HV=560 at 0,7±0,2 mm case depth
 Material 20 MoCr4 EN 10084 or better

MOTOR WITH TACHO CONNECTION

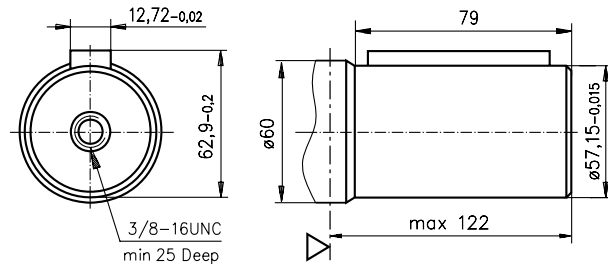


SHAFT EXTENSIONS

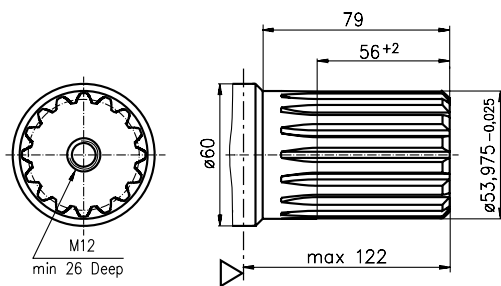
C - $\varnothing 50$ straight, Parallel key A14x9x70 DIN 6885



CO - $\varnothing 2\frac{1}{4}$ " [57,15] straight, Parallel key $\frac{1}{2}$ " x $\frac{1}{2}$ " x $2\frac{1}{4}$ " BS46

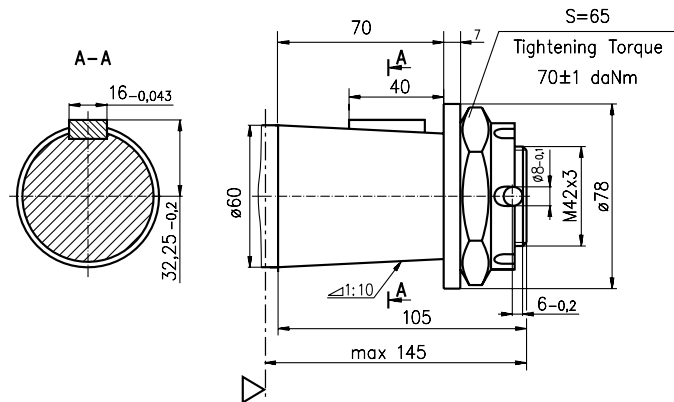


SH - $\varnothing 2\frac{1}{8}$ " splined, 16 DP 8/16 ANSI B92.1-1976



▽ - Motor Mounting Surface

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



ORDER CODE

	1	2	3	4	5
M V					

Pos. 1 - Mounting Flange

omit - Square mount, four holes

C - SAE C mount

W - Wheel mount

S - Short mount

V - Very short 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*

omit - for **S** and **V** mounting flange

C - $\varnothing 50$ straight, Parallel key A14x9x70 DIN6885

CO - $\varnothing 2\frac{1}{4}$ " straight, Parallel key $\frac{1}{2}$ " x $\frac{1}{2}$ " x $2\frac{1}{4}$ " BS46

SH - $\varnothing 2\frac{1}{8}$ " splined, ANSI B92.1-1976

K - $\varnothing 60$ tapered 1:10, Parallel key B16x10x32 DIN6885

Pos. 4 - Special Features (see page 53)

Pos. 5 - Design Series

omit - Factory specified

NOTES:

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

The hydraulic motors are mangano- phosphatized as standard.