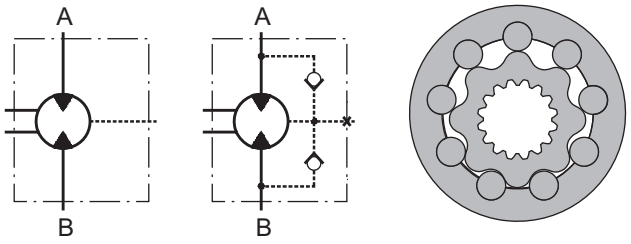
HYDRAULIC MOTORS MVM

APPLICATION

- » Conveyors
- » Metal working machines
- » Agricultural machines
- » Road building machines
- » Mining machinery
- » Food industries
- » Special vehicles
- » Plastic and rubber machinery etc.



OPTIONS

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

CONTENTS

EXCELLENCE

- » High torque and pressure drop
- » High inlet pressure
- » High starting torque
- » Improved efficiency at high pressure drop and frequent reversing
- » Smooth operation at low speed
- » High radial and axial bearing capacity

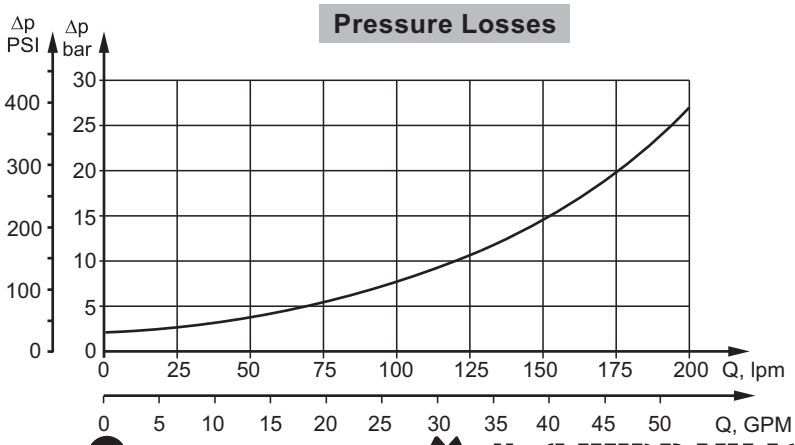
GENERAL

Max. Displacement, cm^3/rev [in^3/rev]	801,8 [48.91]
Max. Speed, [RPM]	763
Max. Torque, daNm [lb-in]	cont.: 259 [22920] int.: 340 [30090]
Max. Output, kW [HP]	112 [150]
Max. Pressure Drop, bar [PSI]	cont.: 250 [3630] int.: 350 [5080]
Max. Oil Flow, lpm [GPM]	240 [63.4]
Min. Speed, [RPM]	5
Permissible Shaft Loads, daN [lbs]	Pa=1500 [3370]
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, ^{O}C [^{O}F]	-40÷140 [-40÷284]
Optimal Viscosity range, mm^2/s [SUS]	20÷75 [98÷347]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm^2/s [SUS]	Oil flow in drain line lpm [GPM]
140 [2030]	20 [98]	3 [.793]
	35 [164]	2 [.528]
210 [3045]	20 [98]	6 [1.585]
	35 [164]	4 [1.057]

Pressure Losses



SPECIFICATION DATA

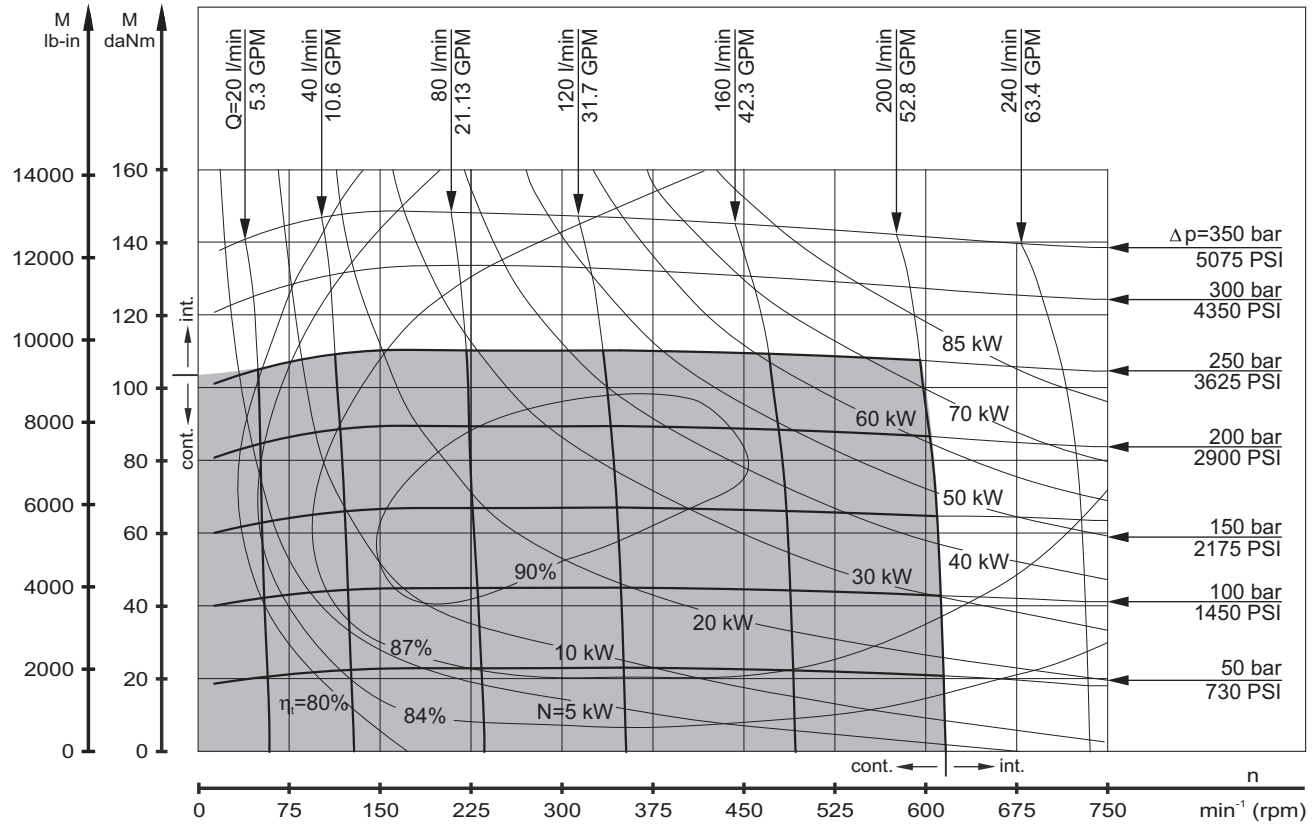
Type		MVM 315	MVM 400	MVM 500	MVM 630	MVM 800
Displacement, cm^3/rev [in^3/rev]		314,5 [19.19]	400,9 [24.5]	499,6 [30.5]	629,1 [38.38]	801,8 [48.91]
Max. Speed, [RPM]	cont.	636	500	400	315	250
	Int.*	763	600	480	380	300
Max. Torque daNm [lb-in]	cont.	115 [10180]	144 [12745]	180 [15930]	227 [20090]	259 [22920]
	Int.*	160 [14160]	200 [17700]	260 [23010]	310 [27440]	340 [30090]
	peak**	180 [15930]	230 [20355]	286 [25315]	360 [31860]	402 [35580]
Max. Output kW [HP]	cont.	67 [90]	67 [90]	67 [90]	67 [90]	67 [90]
	int.*	112 [150]	112 [150]	112 [150]	112 [150]	112 [150]
Max. Pressure Drop bar [PSI]	cont.	250 [3630]	250 [3630]	250 [3630]	250 [3630]	225 [3263]
	Int.*	350 [5080]	350 [5080]	350 [5080]	350 [5080]	300 [4350]
	peak**	400 [5800]	400 [5800]	400 [5800]	400 [5800]	350 [5080]
Max. Oil Flow lpm [GPM]	cont.	200 [52.8]	200 [52.8]	200 [52.8]	200 [52.8]	200 [52.8]
	Int.*	240 [63.4]	240 [63.4]	240 [63.4]	240 [63.4]	240 [63.4]
Max. Inlet Pressure bar [PSI]	cont.	270 [3915]	270 [3915]	270 [3915]	270 [3915]	270 [3915]
	Int.*	370 [5365]	370 [5365]	370 [5365]	370 [5365]	370 [5365]
	peak**	420 [6090]	420 [6090]	420 [6090]	420 [6090]	420 [6090]
Max. Return Pressure with Drain Line bar [PSI]	cont.	140 [2030]	140 [2030]	140 [2030]	140 [2030]	140 [2030]
	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
	peak**	210 [3045]	210 [3045]	210 [3045]	210 [3045]	210 [3045]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		5 [70]	5 [70]	5 [70]	5 [70]	5 [70]
Min. Starting Torque daNm [lb-in]		92 [8140]	115 [10180]	144 [12745]	180 [15930]	205 [18145]
Min. Speed***, [RPM]		10	6	8	6	5
Weight, kg [lb]	MVM	41,3 [91]	42,1 [93]	43 [95]	44,5 [98]	46 [101.4]
	MVMC	43,8 [96.6]	44,9 [99]	45,8 [101]	48,3 [106.5]	50,4 [111.1]

* 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 lower than given, consult factory or your regional manager.

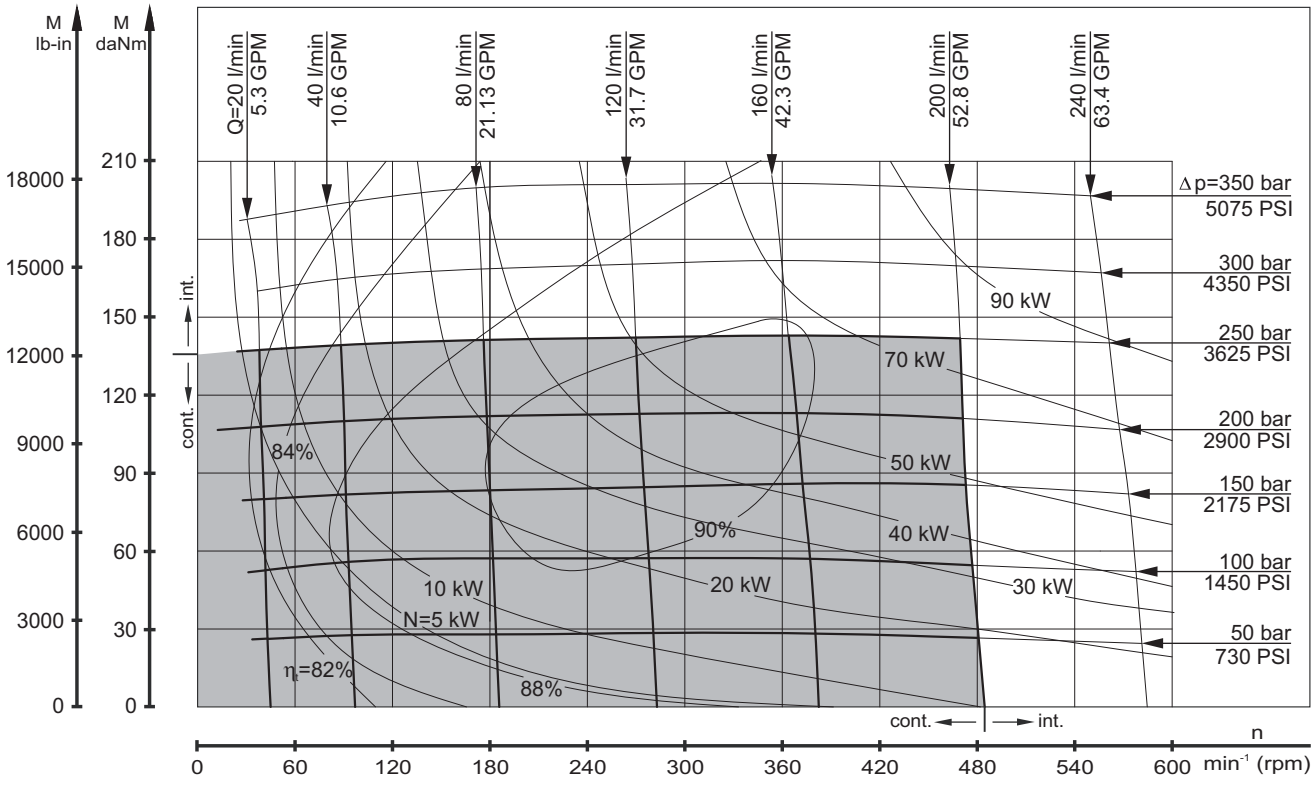
1. Intermittent speed and intermittent pressure must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4). If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 13 mm^2/s [70 SUS] at 50°C [122°F].
5. Recommended maximum system operating temperature is 82°C [180°F].
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

MVM 315



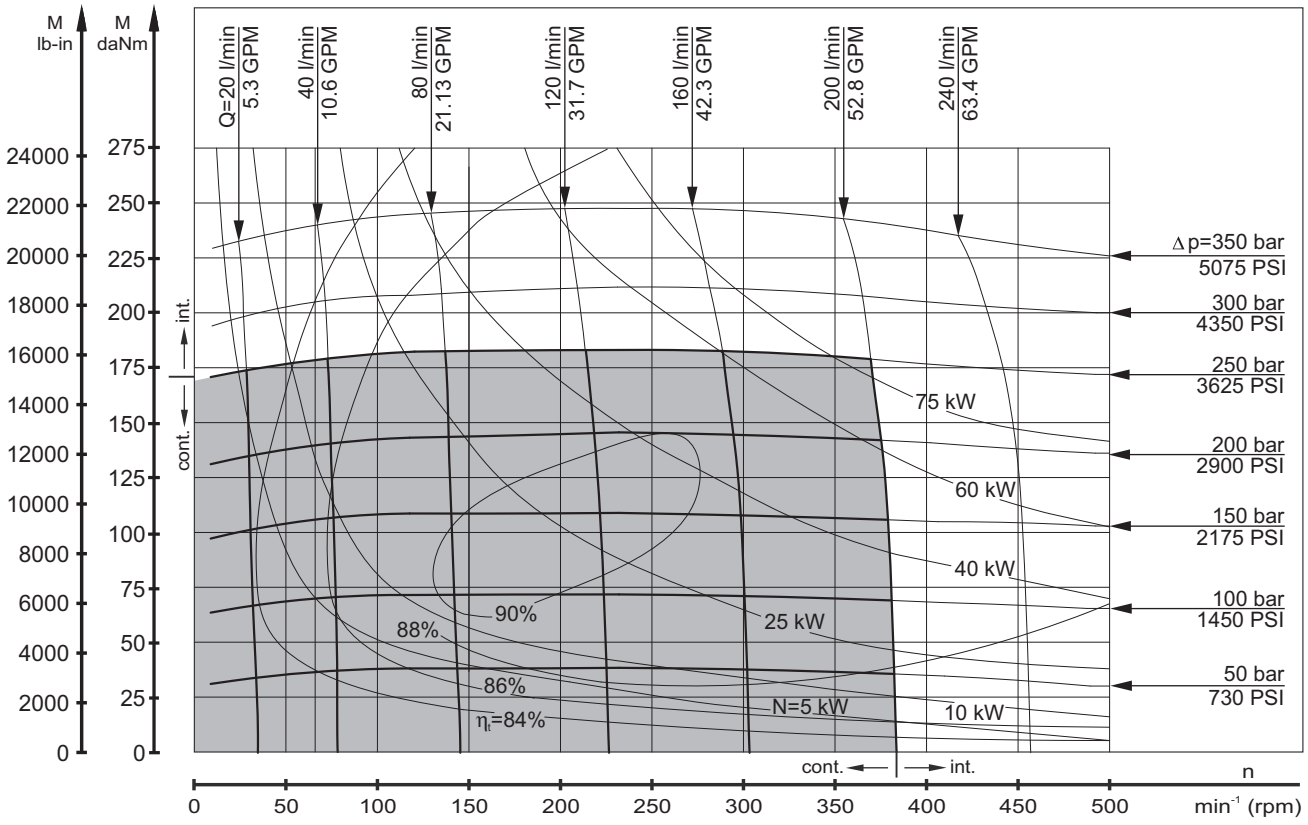
MVM 400



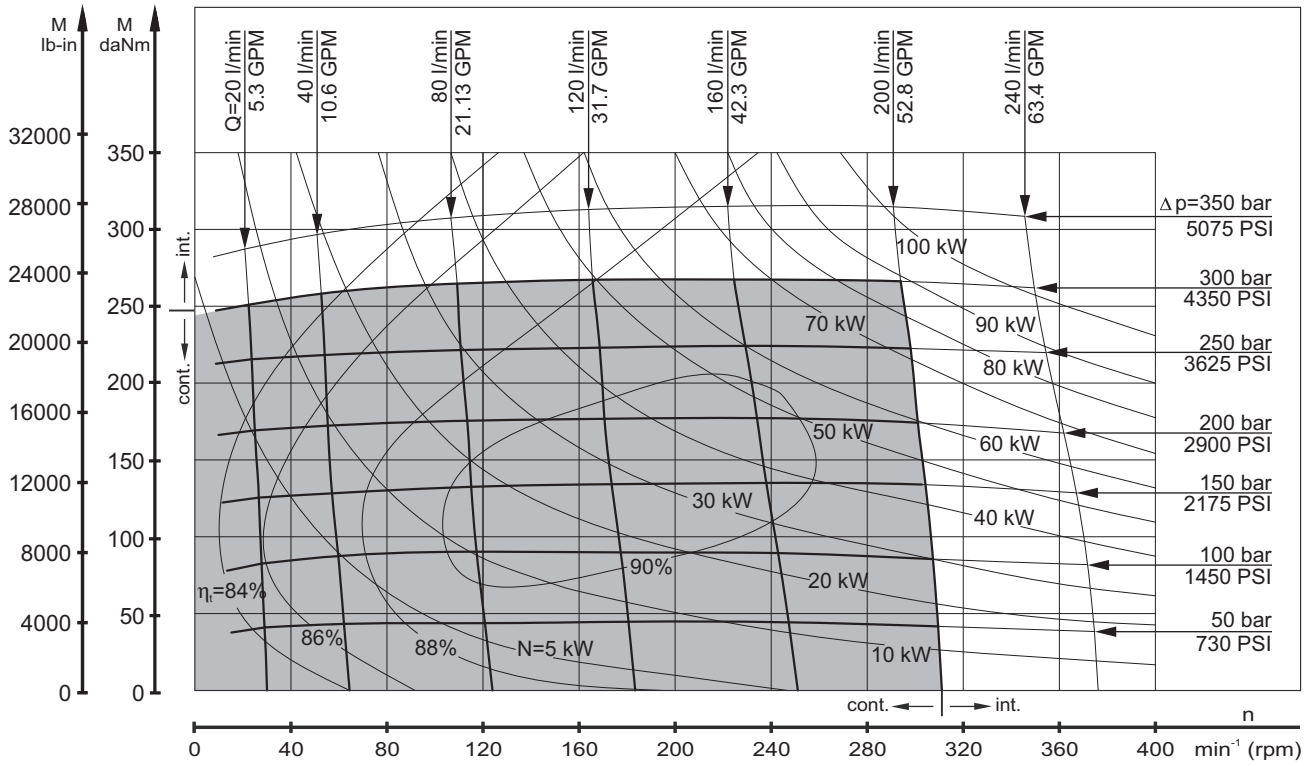
The function diagrams data was collected at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50° C [122°F].

FUNCTION DIAGRAMS

MVM 500



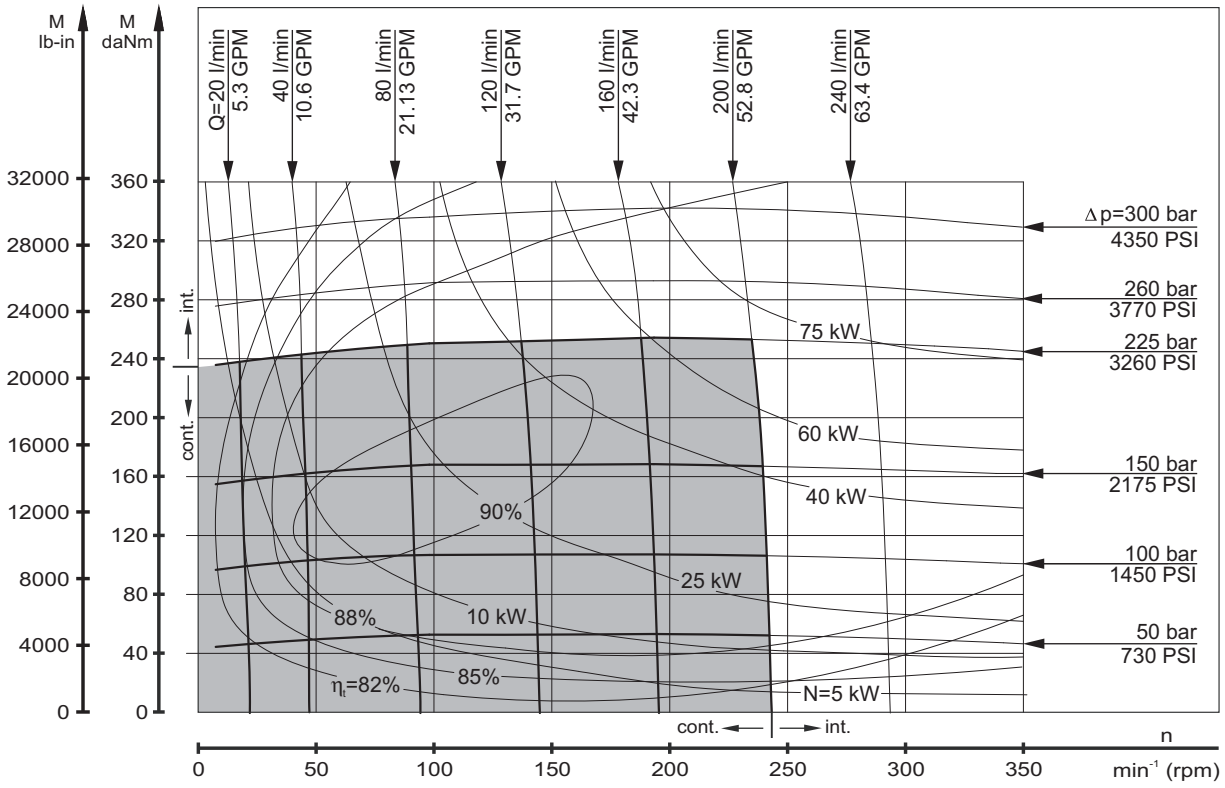
MVM 630



The function diagrams data was collected at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50° C [122°F].

FUNCTION DIAGRAMS

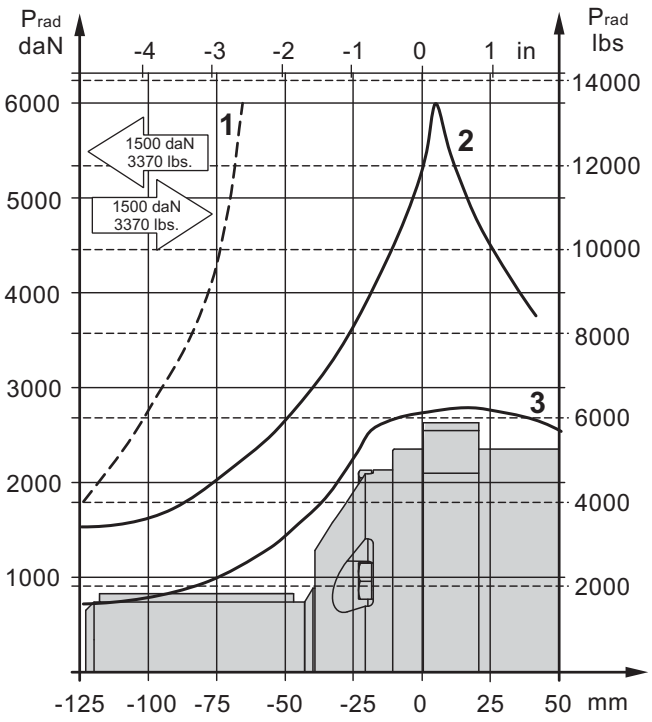
MVM 800



The function diagrams data was collected at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50° C [122°F].

PERMISSIBLE SHAFT LOADS

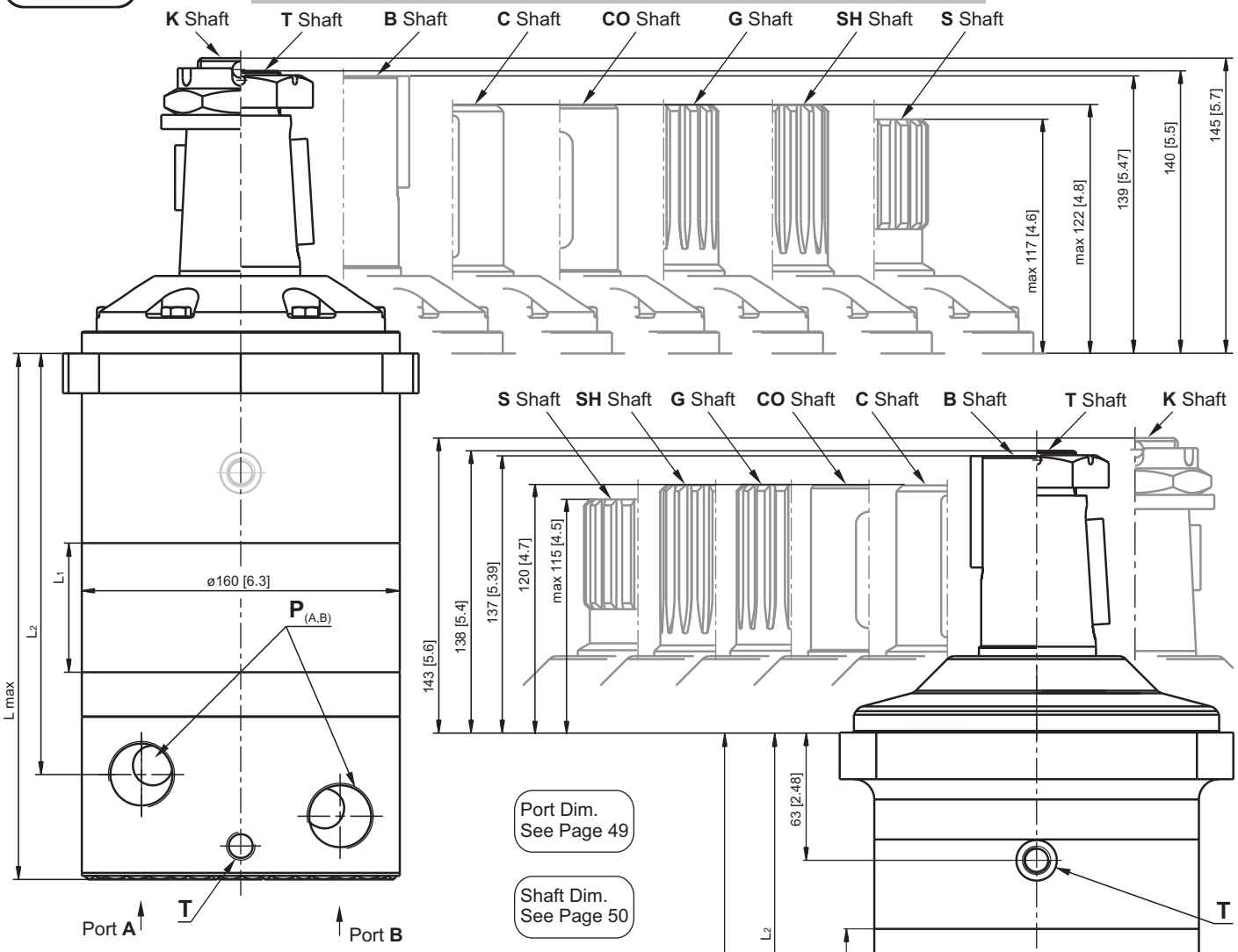
The output shaft runs in tapered bearings that permit high axial and radial forces. Curve "**1**" shows max. radial shaft load. Any shaft load exceeding the values shown by the curve will seriously reduce motor life. The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.



3 - P_a=1500 daN [3370 lbs]

2 - P_a=0 daN [0 lbs]

DIMENSIONS AND MOUNTING DATA MVM and MVMC



Port Dim. See Page 49

Shaft Dim. See Page 50

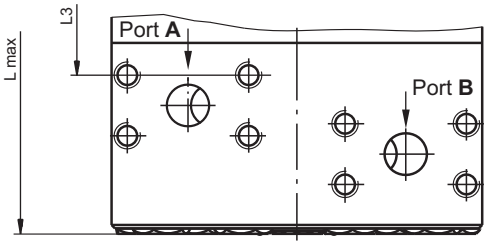
	Versions			
	2	3	4	5
$P_{(A,B)}$	2xG1	2xG1	2x1 5/16-12UN	2x1" (SAE PSI3000)
T	G¼	G¼	9/16-18UNF	G¼
C	-	6xM10	-	8xM10

mm [in]

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**

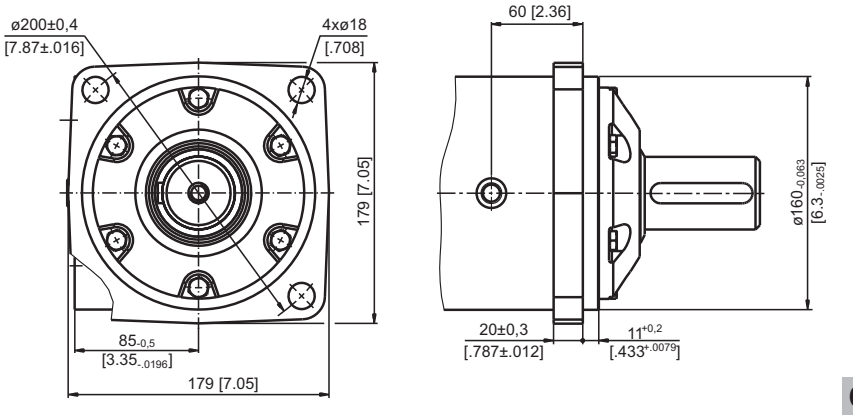
Warning: Drain line should always be used (if no check valves)!



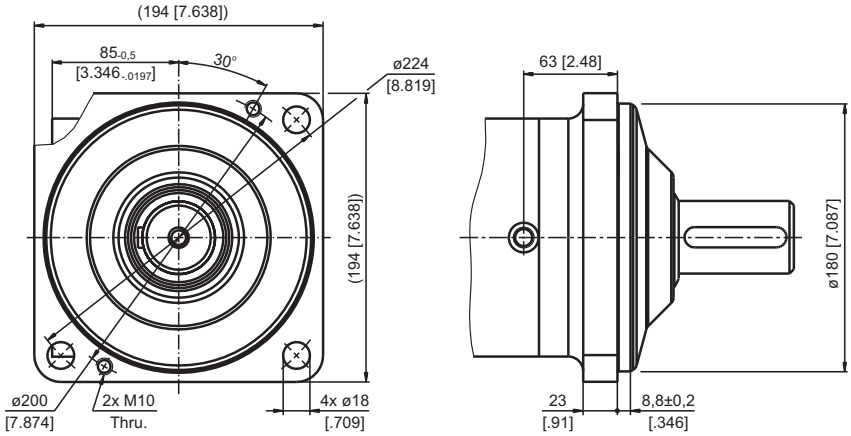
Type	Lmax, mm [in]	L2, mm [in]	L3, mm [in]	Type	Lmax, mm [in]	L2, mm [in]	L3, mm [in]	L1, mm [in]
MVM 315	226,5 [8.92]	172,5 [6.79]	157,4 [6.20]	MVMC 315	227,5 [8.957]	173,8 [6.84]	158,7 [6.25]	25,5 [1.00]
MVM 400	233,5 [9.19]	179,5 [7.07]	164,4 [6.47]	MVMC 400	234,5 [9.232]	180,8 [7.12]	165,7 [6.52]	32,5 [1.28]
MVM 500	241,5 [9.51]	187,5 [7.38]	172,4 [6.79]	MVMC 500	242,5 [9.547]	188,8 [7.43]	173,7 [6.84]	40,5 [1.59]
MVM 630	252,0 [9.92]	198,0 [7.79]	182,9 [7.20]	MVMC 630	253,0 [9.961]	199,3 [7.85]	184,2 [7.25]	51,0 [2.01]
MVM 800	266,0 [10.47]	212,0 [8.35]	196,9 [7.75]	MVMC 800	267,0 [10.518]	213,3 [8.39]	198,2 [7.80]	65,0 [2.56]

MOUNTING

Square Mount (4 Holes)



C Square Mount (four holes)

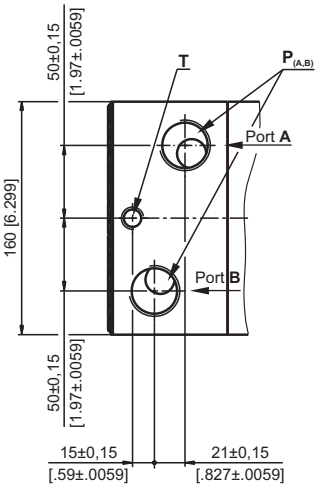


mm [in]

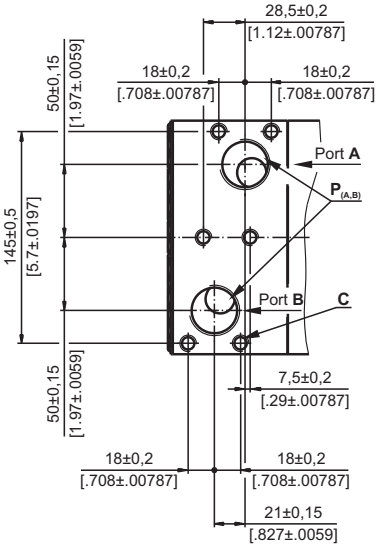
PORTS

Side Ports

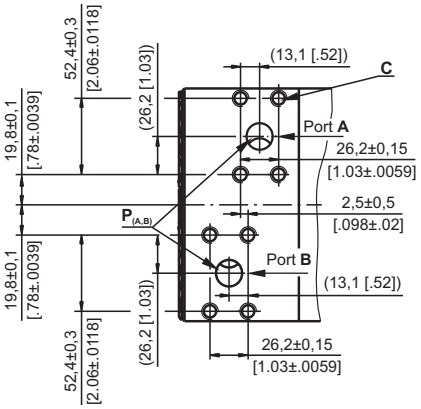
Versions 2 4

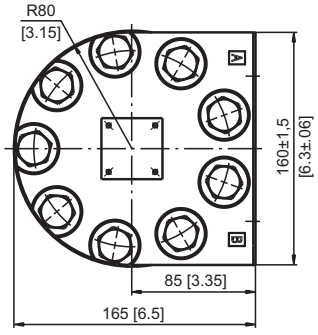


Versions 3



Versions 5





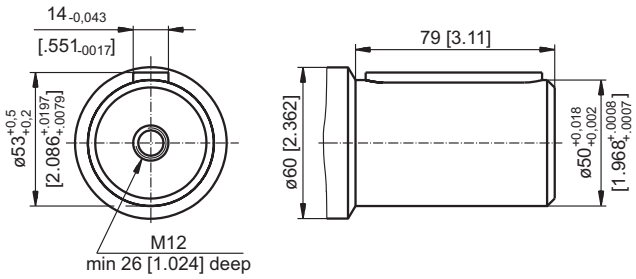
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

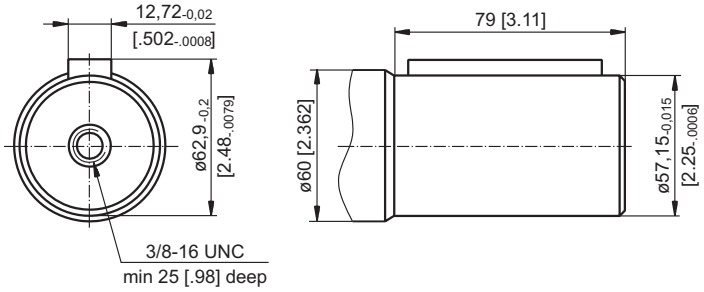
	Versions			
	2	3	4	5
P(A,B)	2xG1	2xG1	2x1 5/16-12UN	2x1" (SAE PSI3000)
T	G¼	G¼	9/16-18UNF	G¼
C	-	6xM10	-	8xM10

SHAFT EXTENSIONS

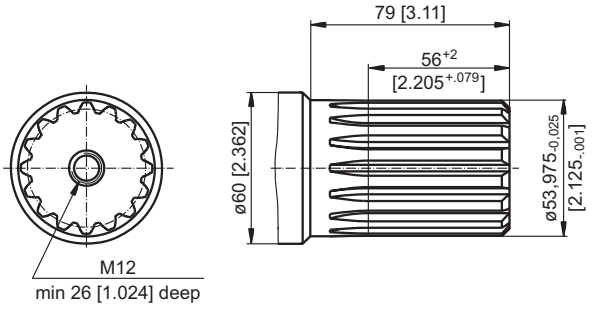
C - ø50 straight, Parallel key A14x9x70 DIN 6885



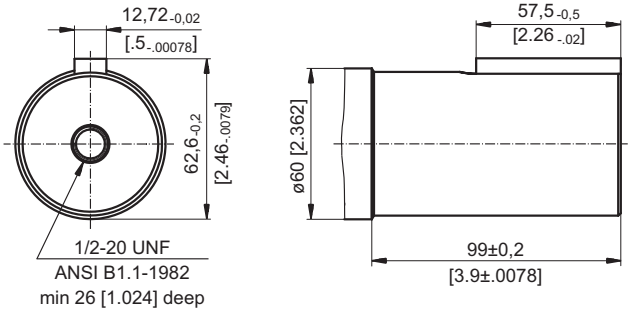
CO - ø2¼" [57,15] straight
Parallel key ½ "x½"x 2¼" BS46



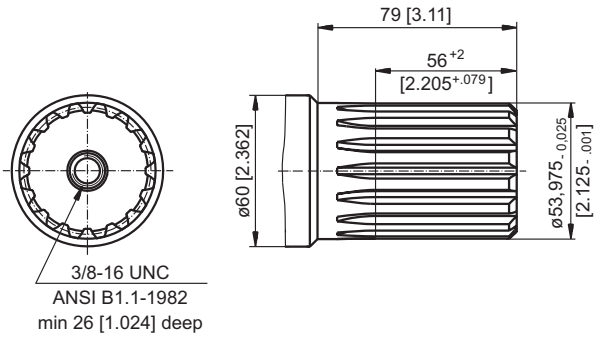
SH - ø2 ⅛" (ø53,975) splined
16 DP 8/16 ANS B92.1-1976



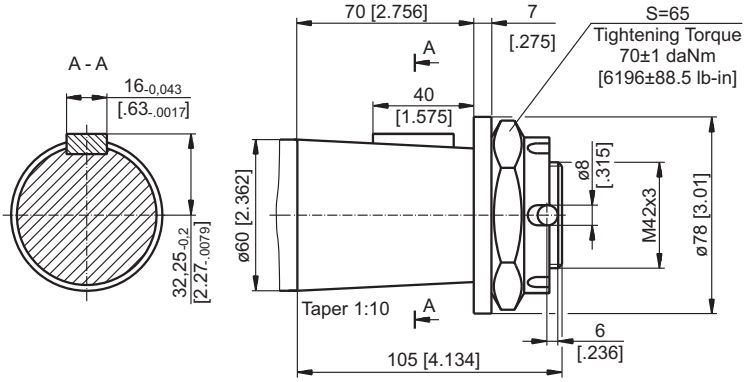
B - ø2¼" [57,15] straight
Parallel key ½ "x½"x 2¼" BS46



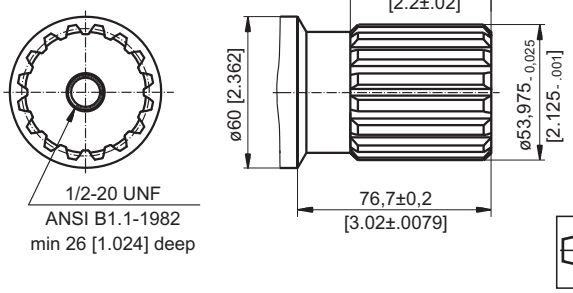
G - ø2 ⅛" [53,975] splined
16 DP 8/16 ANS B92.1-1976



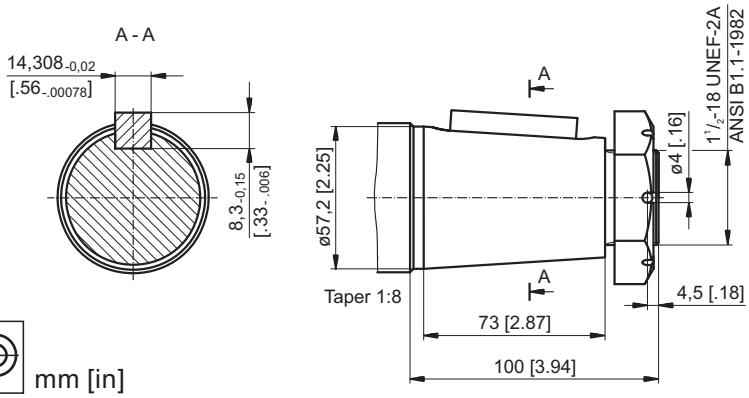
K - ø60, tapered 1:10
Parallel key B16x10x32 DIN 6885



S - ø2 ⅛" [53,975] splined
16 DP 8/16 ANS B92.1-1976



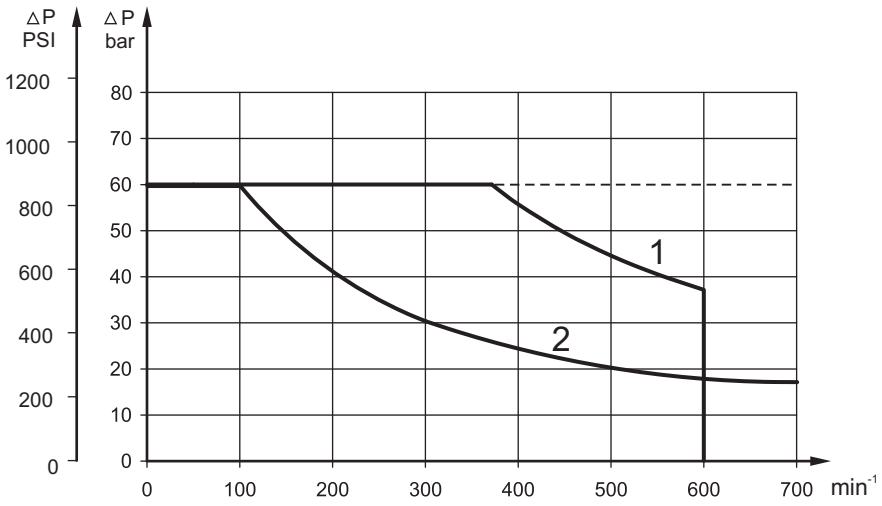
T - ø2¼" [57,15] SAE J501, tapered 1:8
key $^{9}/_{16}$"x$^{9}/_{16}$"x2" BS46



mm [in]

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

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



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

——— - continuous operations
- - - - - - intermittent operations

ORDER CODE

	1	2	3	4	5	6	7	8
M V M							**HD**	

Pos.1 - Mounting Flange

omit - Standard square mount, four holes
C - Square mount, four holes

Pos.2 - Displacement code

315 - 314,5 cm^3/rev [19.80 in^3/rev]
400 - 400,9 cm^3/rev [24.45 in^3/rev]
500 - 499,6 cm^3/rev [30.48 in^3/rev]
630 - 629,1 cm^3/rev [38.38 in^3/rev]
800 - 801,8 cm^3/rev [48.91 in^3/rev]

Pos.3 - Shaft Extensions*

C - ø50 straight, Parallel key A14x9x70 DIN6885
CO - ø2¼" [57,15] straight, Parallel key $^1/_2$"x$^1/_2$"x2¼" BS46
B - ø2¼" [57,15] straight, Parallel key $^1/_2$"x$^1/_2$"x2¼" BS46
SH - ø2$^1/_8$" [53,975] splined, 16DP 8/16 ANS B92.1-1976
G - ø2$^1/_8$" [53,975] splined, 16DP 8/16 ANS B92.1-1976
S - ø2$^1/_8$" [53,975] splined, 16DP 8/16 ANS B92.1-1976
K - ø60 tapered 1:10, Parallel key B16x10x32 DIN6885
T - ø2¼" [57,15] SAE J501, tapered 1:8, key $^9/_{16}$"x$^9/_{16}$"x2" BS46

Pos.4 - Ports

2 - side ports 2xG1, G1/4, BSP thread, ISO 228
3 - side ports 2xG1, G1/4, BSP thread, ISO 228, 6xM10
4 - side ports 2x1 5/16-12 UN, O-ring, 9/16-18 UNF
5 - side ports 2x1" (SAE PSI3000), G1/4, BSP thread,SO 228, 8xM10

Pos.5 - Check Valves

omit - without check valves
1 - with check valves

Pos.6 - Shaft Seal Version (see page 50)

omit - Low pressure shaft seal
U - High pressure shaft seal

Pos.7 - Special Features

HD - Reinforced motor **HD****
For Other **Special Features** see page 58

Pos.8 - Design Series

omit - Factory specified

NOTES:

* The permissible output torque for shafts must not be exceeded!
** Drain line should always be used (if no check valves).

The hydraulic motors are mangano-phosphatized as standard.