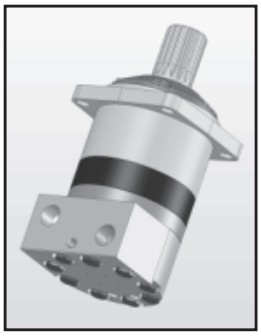
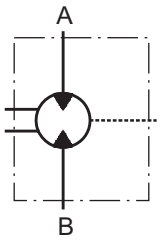
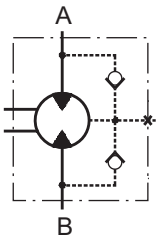
HYDRAULIC MOTORS MVM

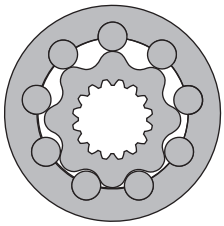


APPLICATION

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







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OPTIONS

» Model - Disc valve, roll-gerotor
» Wheel mounting flange
» Short motor
» Side ports
» Shafts - straight, splined and tapered
» BSPP ports Metric, SAE and BSPP ports
» Other special features.

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

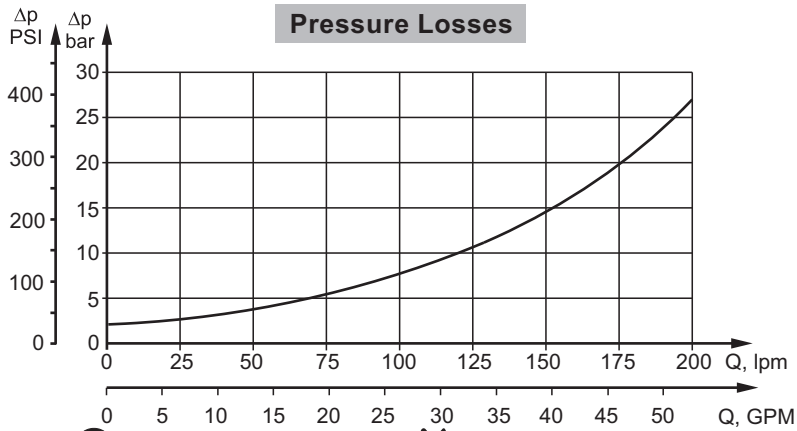
GENERAL

Max. Displacement,	cm^3/rev [in^3/rev]	801,1 [48.91]
Max. Speed,	[RPM]	763
Max. Torque,	daNm [lb-in]	cont.: 259 [22920] int.: 340 [30090]
Max. Output,	kW [HP]	12 [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]	P_a=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: 18/16/13 According to ISO 4406-1999

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

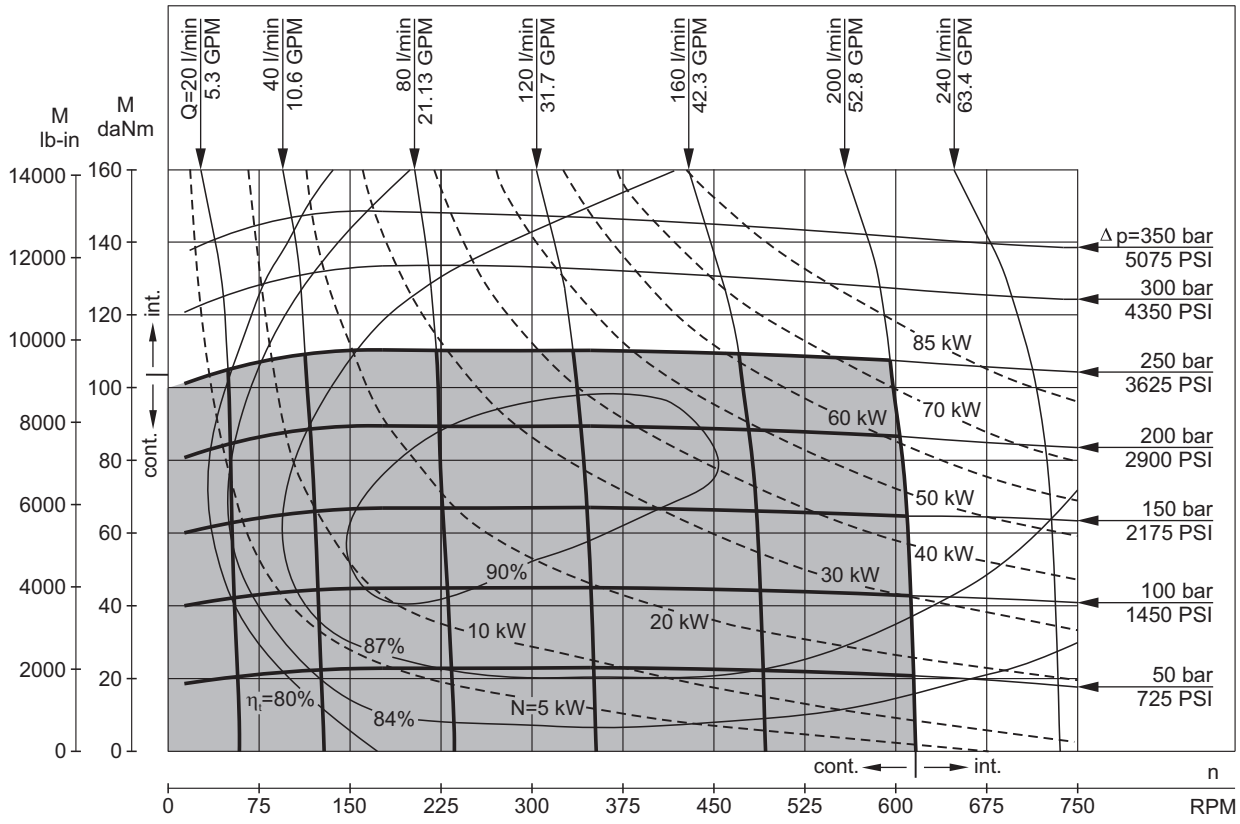
Type		MVM 315	MVM 400	MVM 500	MVM 630	MVM 677	MVM 800
Displacement, cm^3/rev [in^3/rev]		314,5 [19.19]	400,9 [24.5]	499,6 [30.5]	629,1 [38.38]	675,8 [41.24]	801,8 [48.91]
Max. Speed, [RPM]	Cont.	636	500	400	315	296	250
	Int.*	763	600	480	380	355	300
Max. Torque, daNm [lb-in]	Cont.	115 [10180]	144 [12745]	180 [15930]	227 [20090]	242 [21420]	259 [22920]
	Int.*	160 [14160]	200 [17700]	260 [23010]	310 [27440]	290 [25670]	340 [30090]
	Peak**	180 [15930]	230 [20355]	286 [25315]	360 [31860]	387 [34250]	402 [35580]
Max. Output, kW [HP]	Cont.	67 [90]	67 [90]	67 [90]	67 [90]	67 [90]	67 [90]
	Int.*	112 [150]	112 [150]	112 [150]	112 [150]	112 [150]	112 [150]
Max. Pressure Drop, bar [PSI]	Cont.	250 [3630]	250 [3630]	250 [3630]	250 [3630]	250 [3630]	225 [3260]
	Int.*	350 [5080]	350 [5080]	350 [5080]	350 [5080]	310 [5000]	300 [4350]
	Peak**	400 [5800]	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]	200 [52.8]
	Int.*	240 [63.4]	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]	270 [3915]
	Int.*	370 [5365]	370 [5365]	370 [5365]	370 [5365]	370 [5365]	370 [5365]
	Peak**	420 [6090]	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]	140 [2030]
	Int.*	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]	175 [2540]
	Peak**	210 [3045]	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]	5 [70]
Min. Starting Torque, daNm [lb-in]		92 [8140]	115 [10180]	144 [12745]	180 [15930]	194 [17170]	205 [18145]
Min. Speed*, [RPM]**		10	9	8	6	6	5
Weight, kg [lb]	MVM	41,3 [91]	42,1 [93]	43 [95]	44,5 [98]	45,2 [99.65]	46 [101.4]
	MVMC	43,8 [96.6]	44,9 [99]	45,8 [101]	48,3 [106.5]	49 [108.03]	50,4 [111.1]
	MVMCA	38,5 [84.88]	39,6 [87.3]	40,5 [89.29]	43 [94.8]	43,7 [96.34]	45,1 [99.43]

* 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.

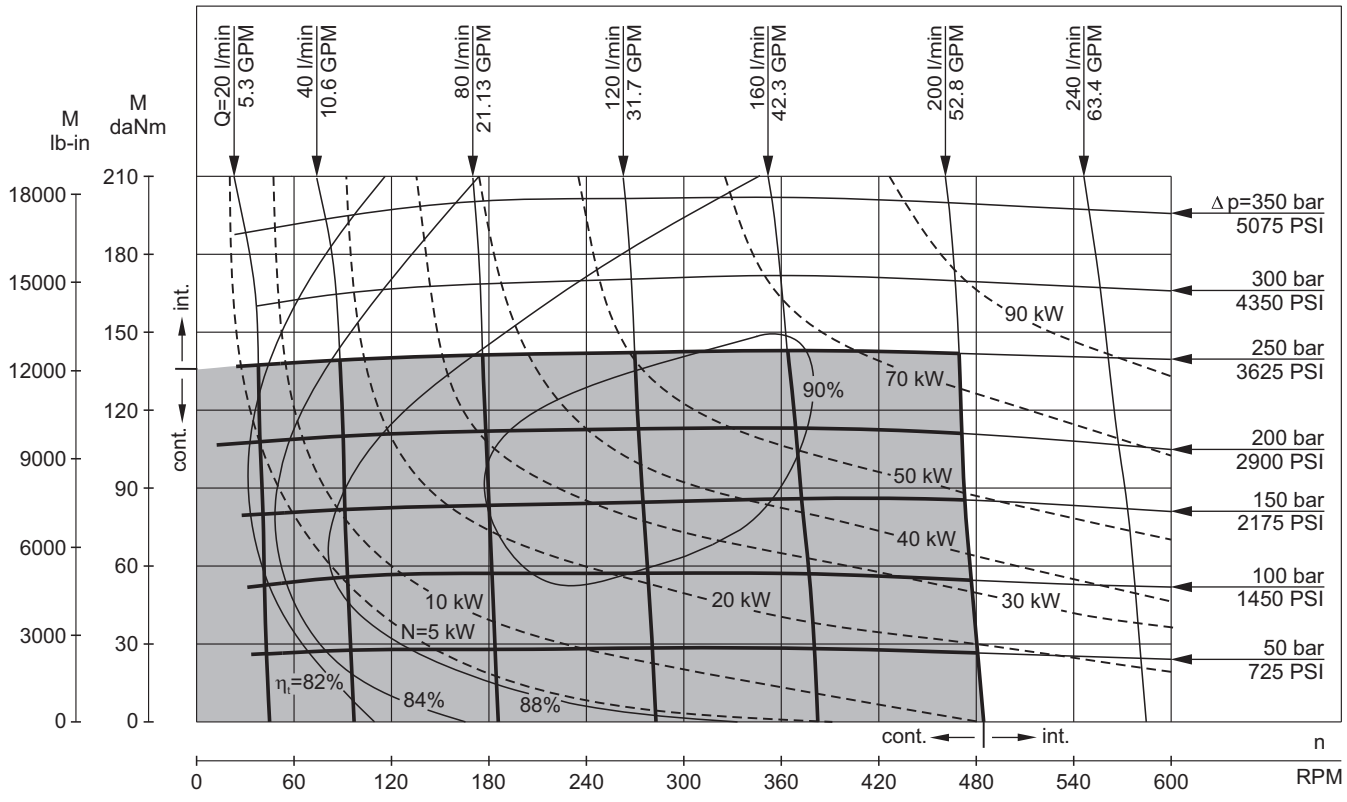
1. Intermittent speed and intermittent pressure must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4). If 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



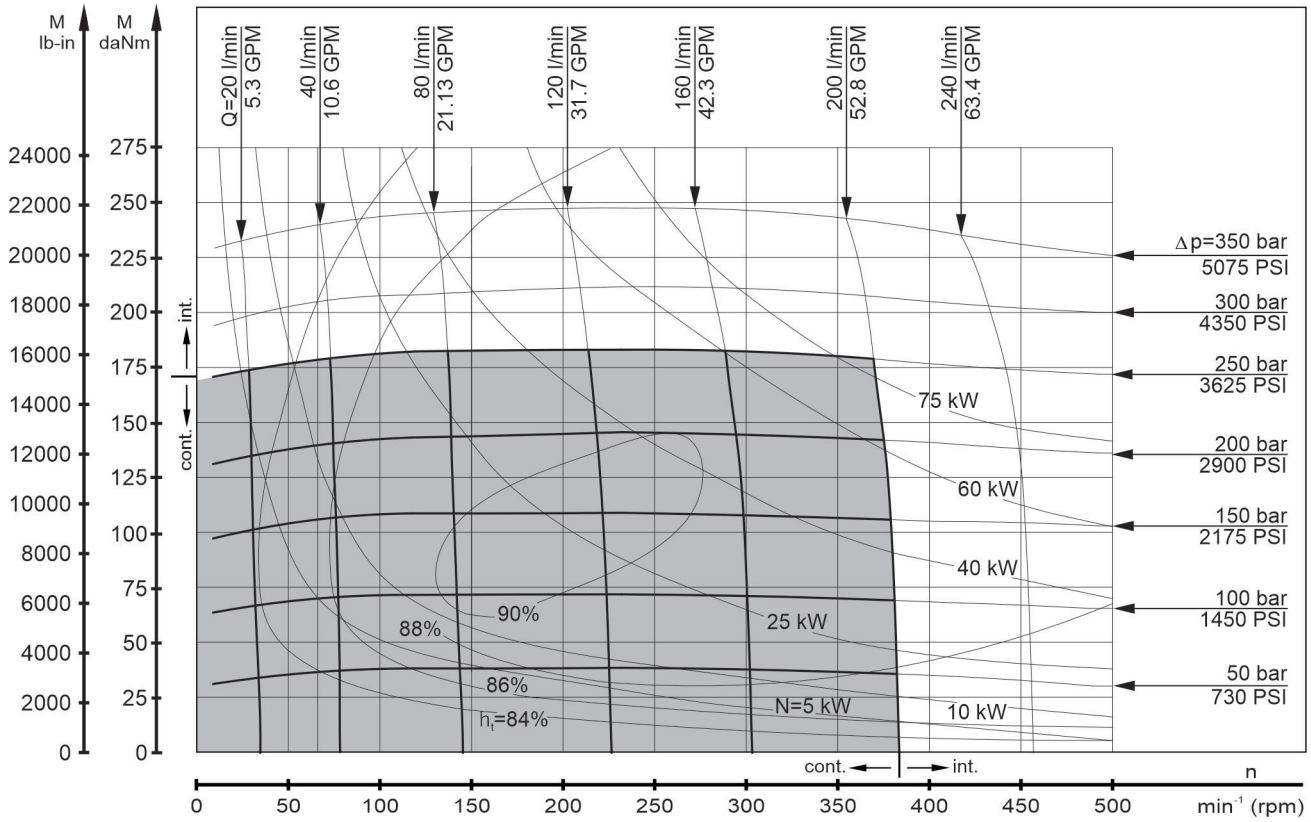
MVM 400



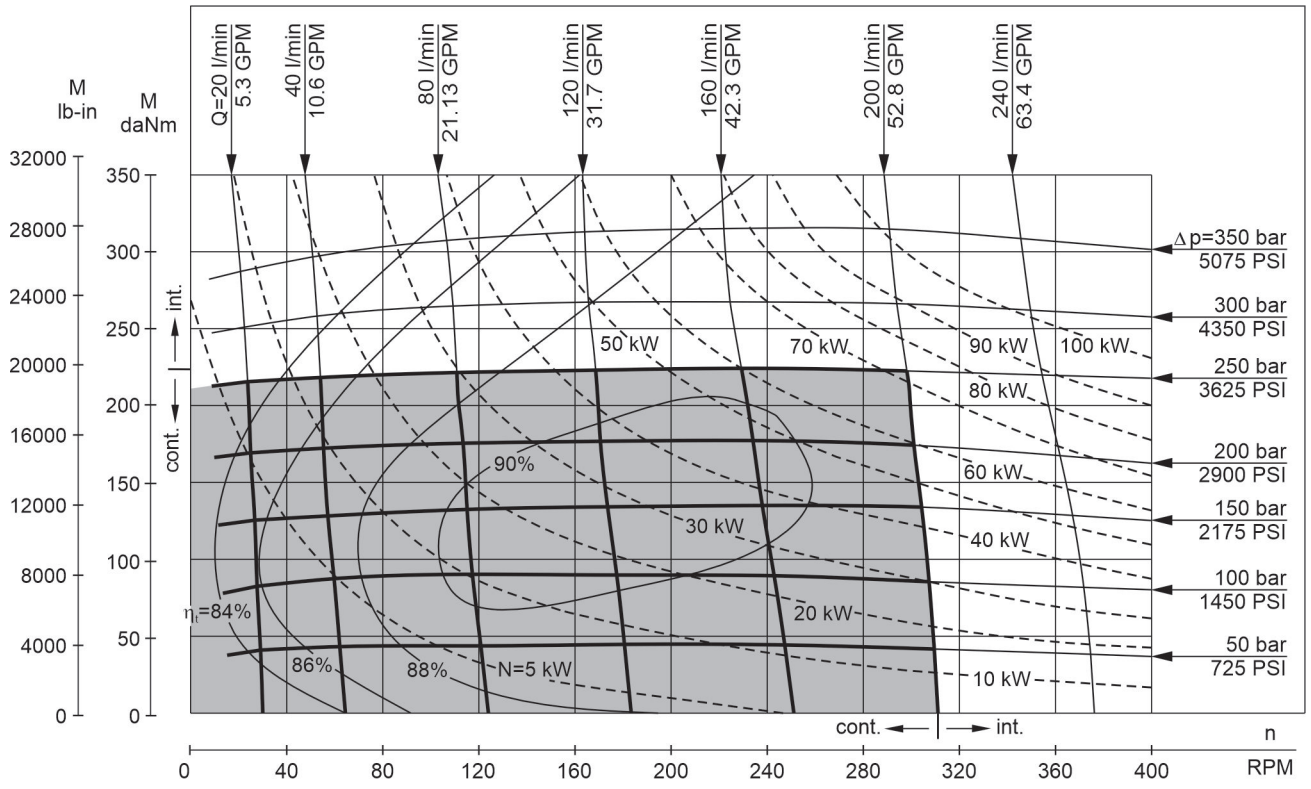
The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5 PSI÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAMS

MVM 500



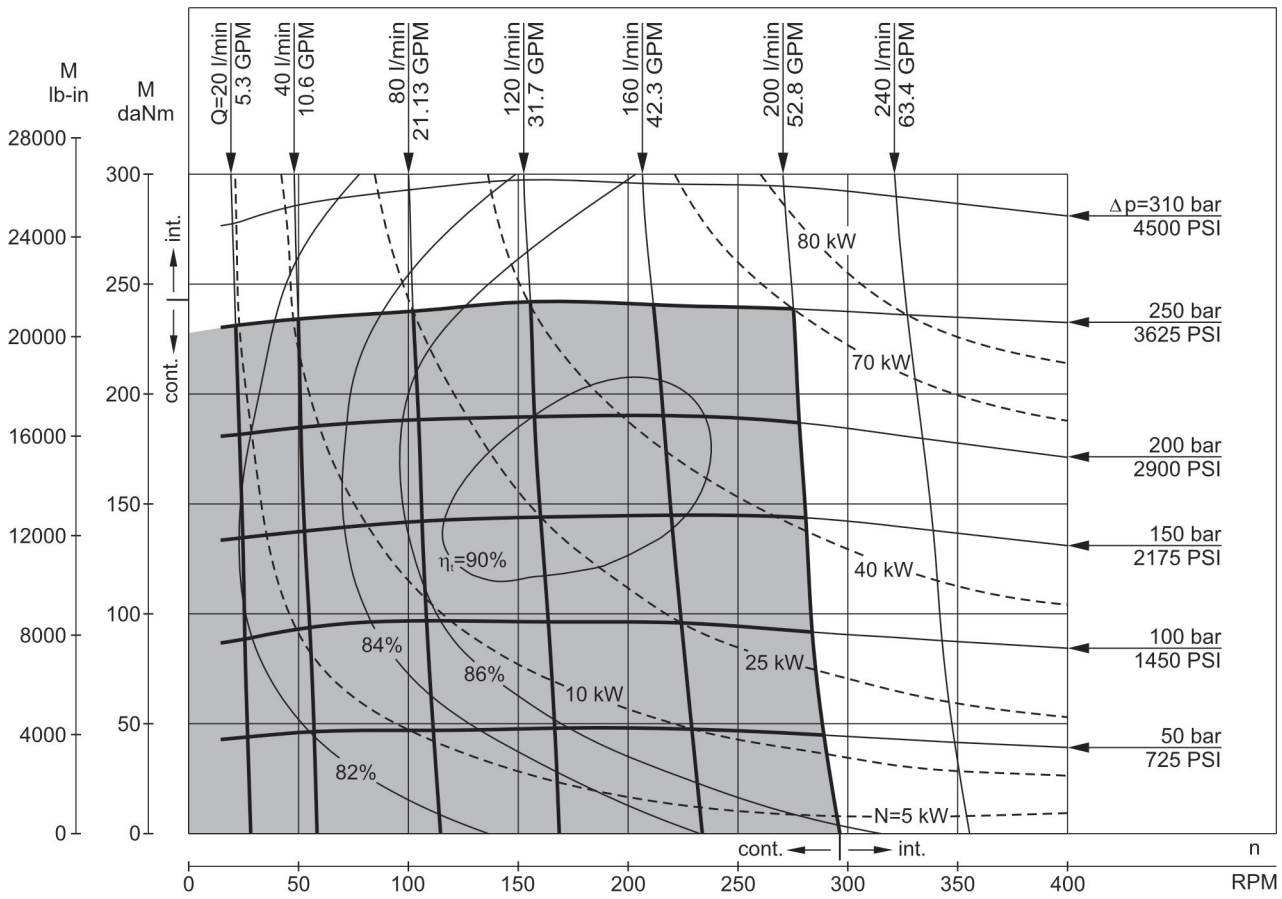
MVM 630



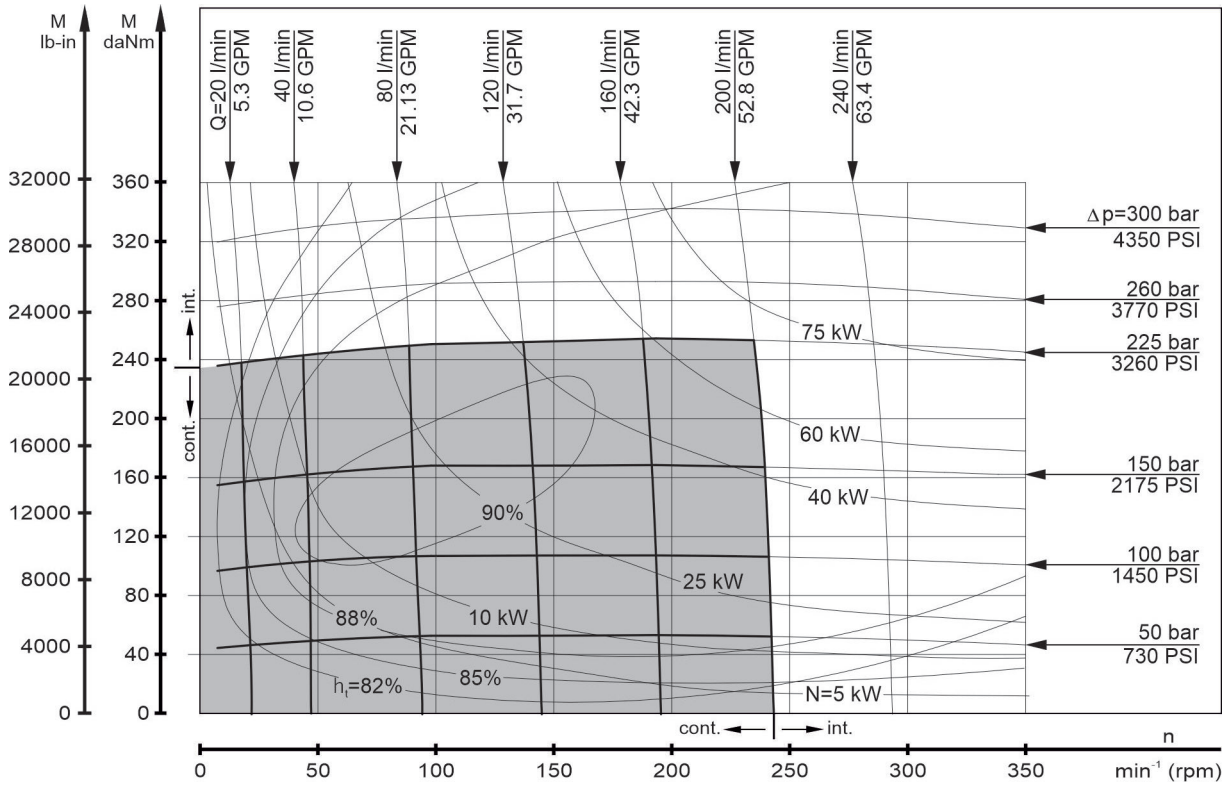
The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5 PSI÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAMS

MVM 677

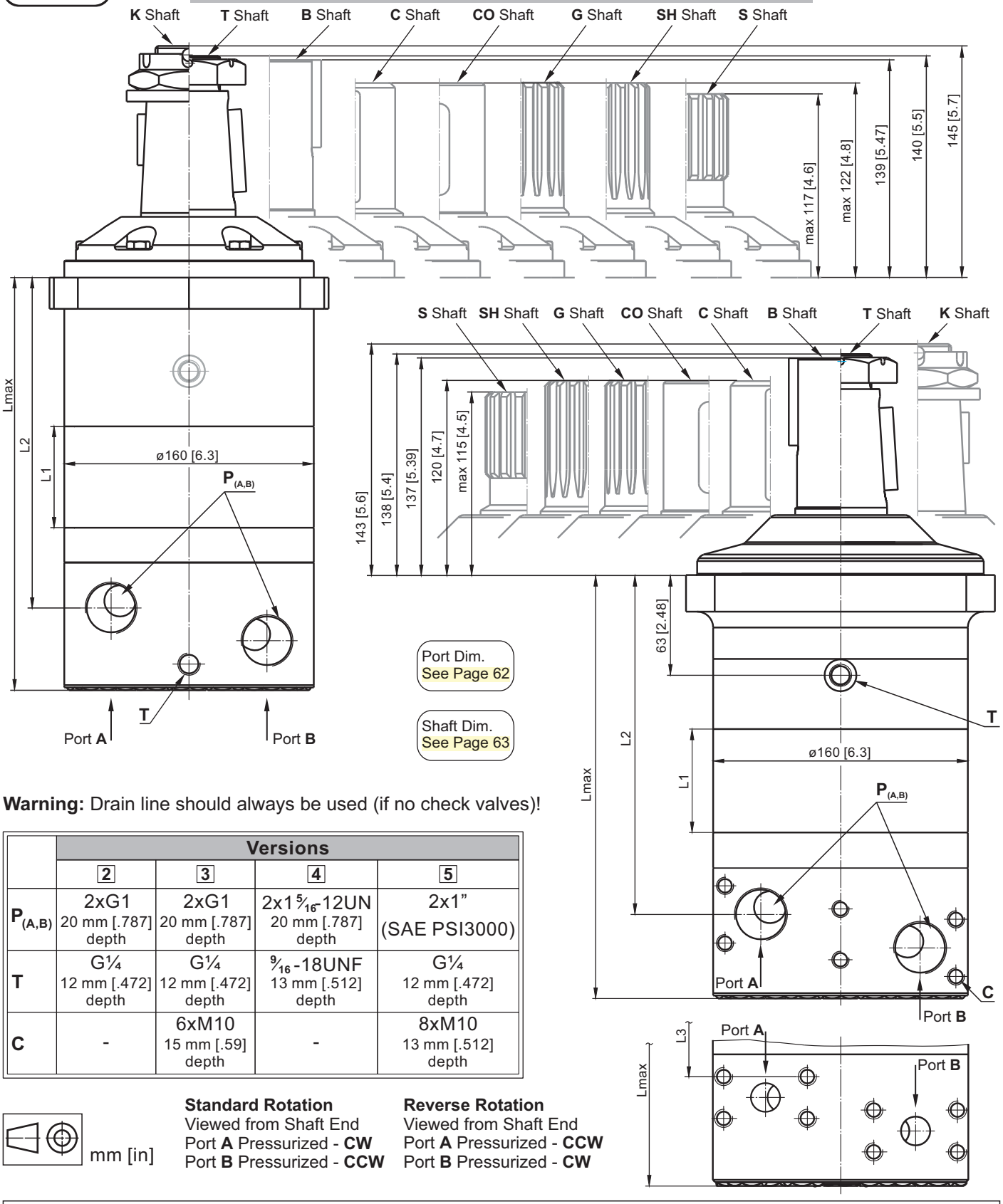


MVM 800



The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5 PSI÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

DIMENSIONS and MOUNTING DATA for MVM and MVMC



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

	Versions			
	2	3	4	5
$P_{(A,B)}$	2xG1 20 mm [.787] depth	2xG1 20 mm [.787] depth	2x1 5/16-12UN 20 mm [.787] depth	2x1” (SAE PSI3000)
T	G¼ 12 mm [.472] depth	G¼ 12 mm [.472] depth	9/16-18UNF 13 mm [.512] depth	G¼ 12 mm [.472] depth
C	-	6xM10 15 mm [.59] depth	-	8xM10 13 mm [.512] depth

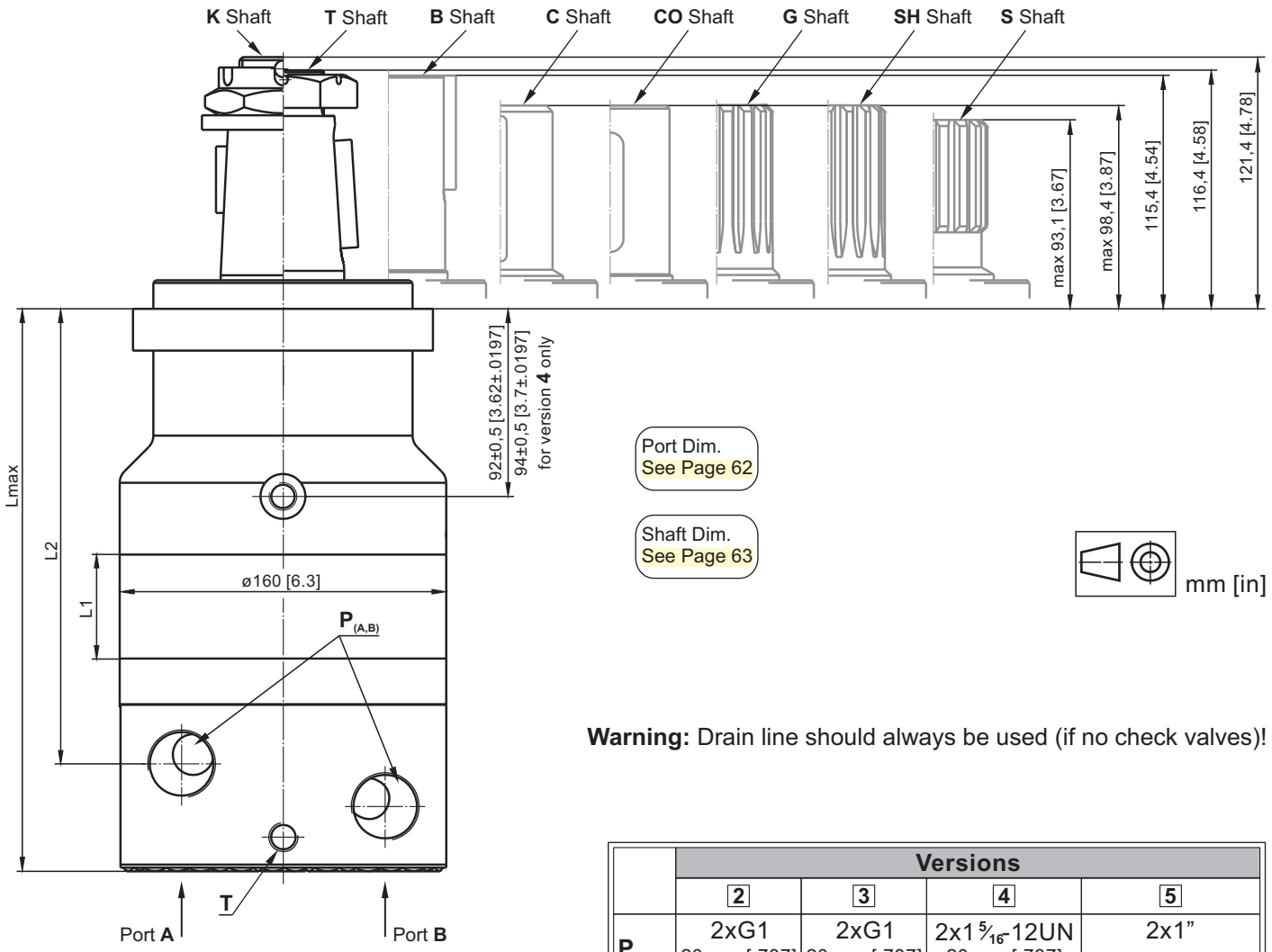
mm [in]

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**

Type	L_{max}, mm [in]	L_2, mm [in]	L_3, mm [in]	Type	L_{max}, mm [in]	L_2, mm [in]	L_3, mm [in]	L_1, 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 677	256,0 [10.08]	201,8 [7.94]	186,7 [7.35]	MVMC 677	256,5 [10.10]	203,1 [8.00]	188,0 [7.40]	54,8 [2.16]
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]

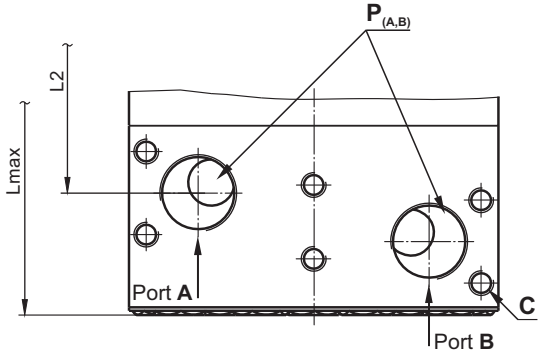
DIMENSIONS and MOUNTING DATA MVMCA

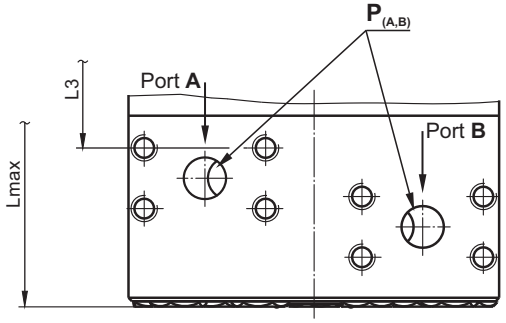


Port Dim. See Page 62

Shaft Dim. See Page 63

mm [in]





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

	Versions			
	2	3	4	5
$P_{(A,B)}$	2xG1 20 mm [.787] depth	2xG1 20 mm [.787] depth	2x1 5/16-12UN 20 mm [.787] depth	2x1" (SAE PSI3000)
T	G¼ 12 mm [.472] depth	G¼ 12 mm [.472] depth	9/16-18UNF 13 mm [.512] depth	G¼ 12 mm [.472] depth
C	-	6xM10 15 mm [.59] depth	-	8xM10 13 mm [.512] depth

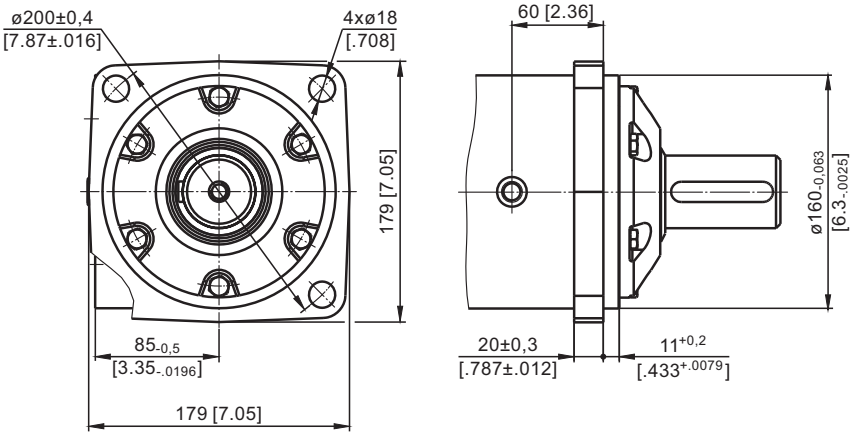
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

Type	L_{max}, mm [in]	L_2, mm [in]	L_3, mm [in]	L_1, mm [in]
MVMCA 315	251,5 [9.90]	197,5 [7.78]	182,4 [7.18]	25,5 [1.00]
MVMCA 400	258,5 [10.18]	204,5 [8.05]	189,4 [7.46]	32,5 [1.28]
MVMCA 500	266,5 [10.49]	212,5 [8.37]	197,4 [7.77]	40,5 [1.59]
MVMCA 630	277,0 [10.91]	223,0 [8.78]	207,9 [8.19]	51,0 [2.01]
MVMCA 677	281,0 [11.06]	226,8 [8.93]	211,7 [8.33]	54,8 [2.16]
MVMCA 800	291,0 [11.46]	237,0 [9.33]	221,9 [8.74]	65,0 [2.56]

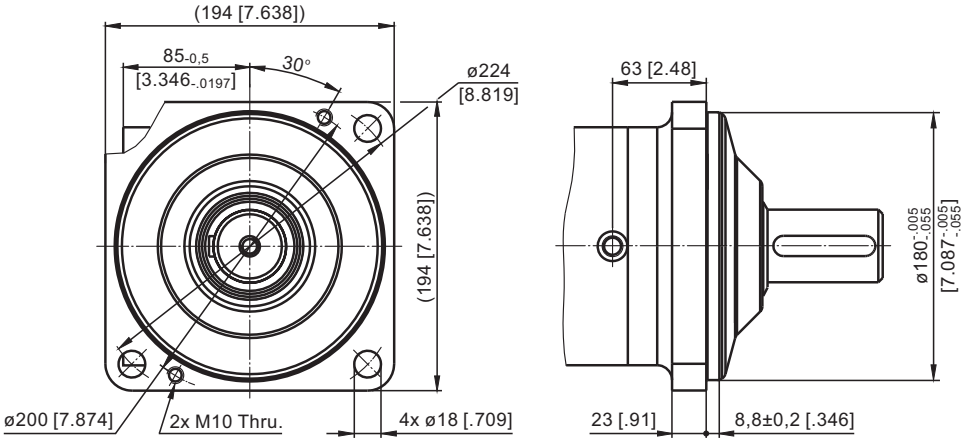
MOUNTING

Square Mount (four holes)

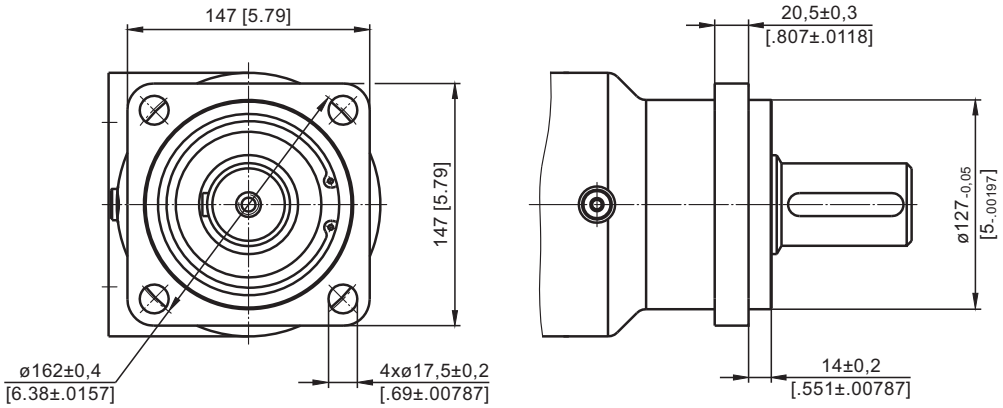


mm [in]

C Square Mount (four holes)

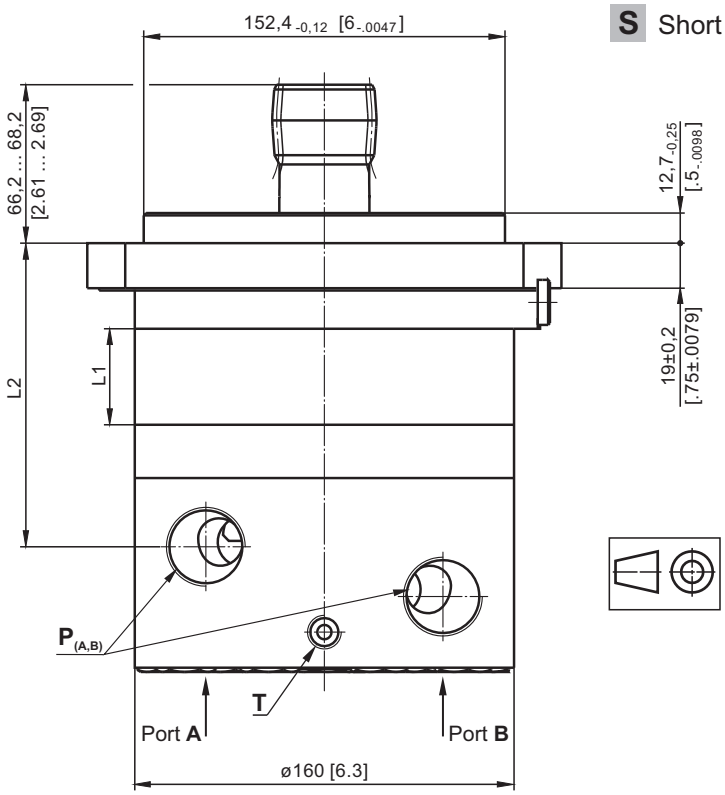


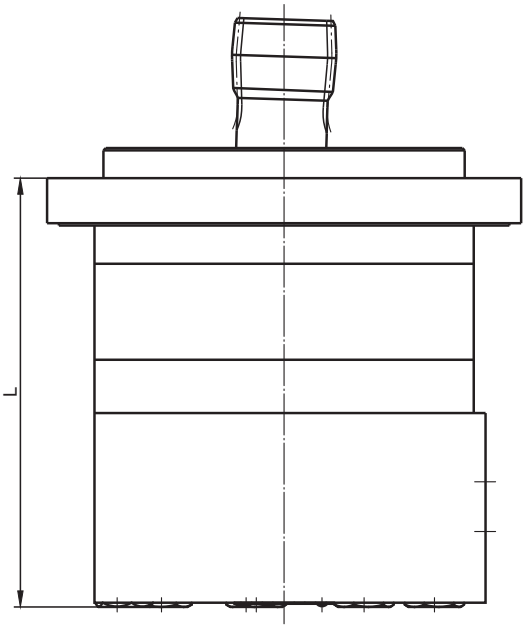
CA Square Mount (four holes)



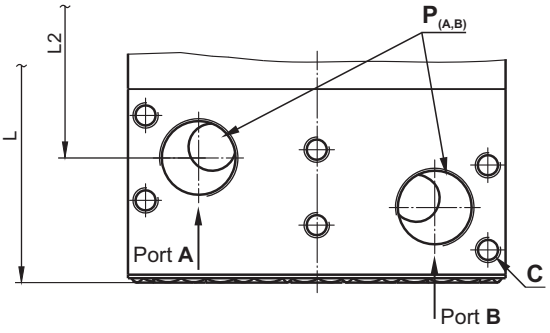
DIMENSIONS and MOUNTING DATA MVMS

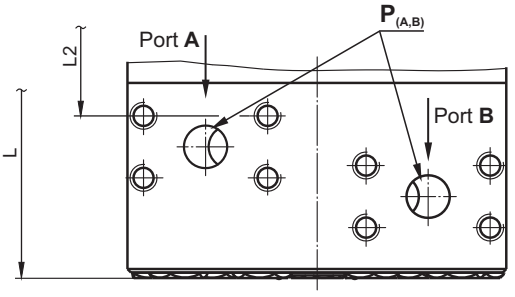
S Short Mount

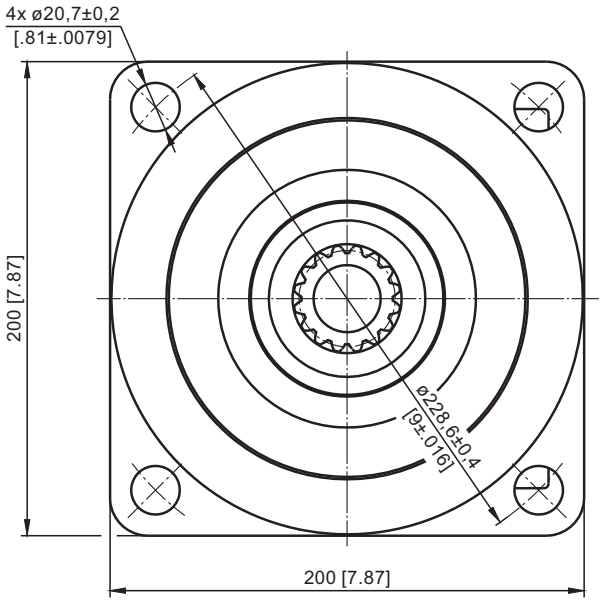




mm [in]







	Versions			
	2	3	4	5
$P_{(A,B)}$	2xG1 20 mm [.787] depth	2xG1 20 mm [.787] depth	2x1⁵⁄₁₆-12UN 20 mm [.787] depth	2x1" (SAE PSI3000)
T	G¼ 12 mm [.472] depth	G¼ 12 mm [.472] depth	⁹⁄₁₆-18UNF 13 mm [.512] depth	G¼ 12 mm [.472] depth
C	-	6xM10 15 mm [.59] depth	-	8xM10 13 mm [.512] depth

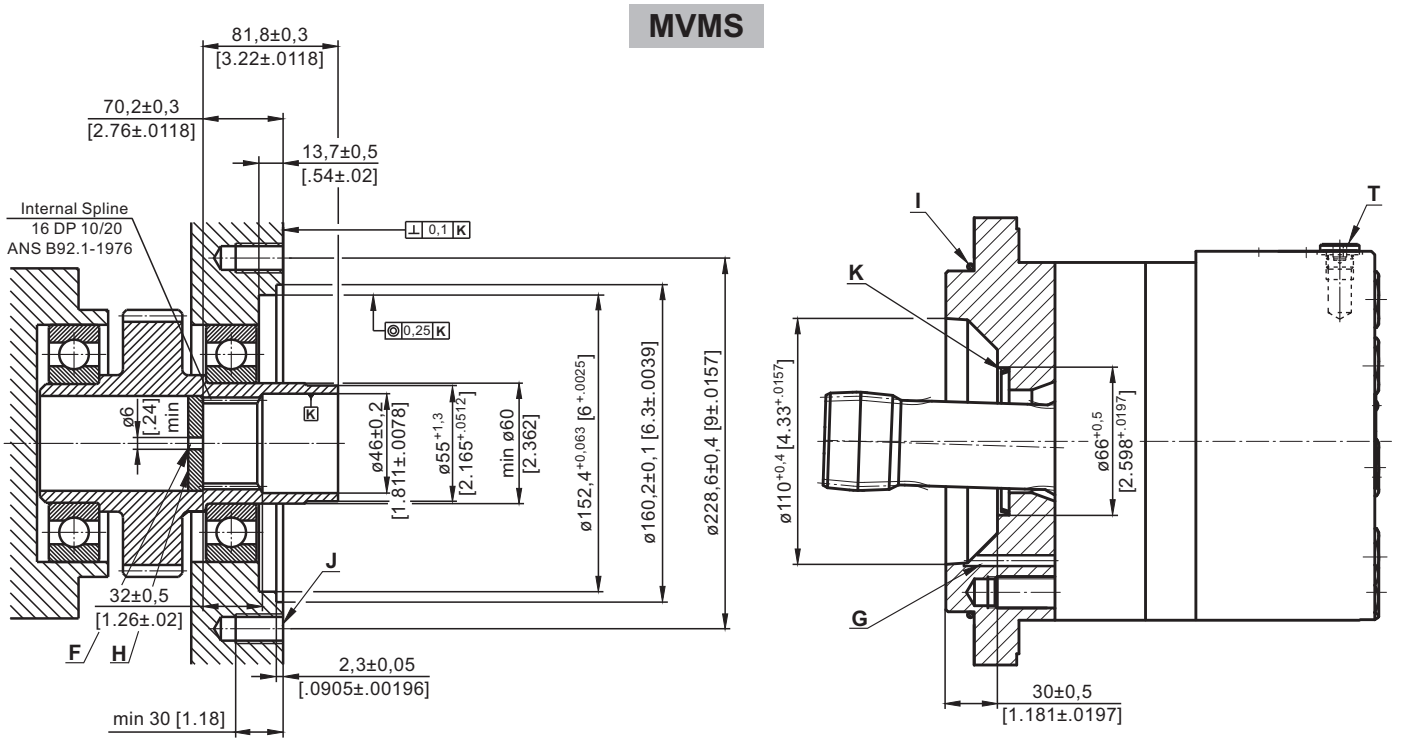
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

Type	L +1,2 [.047] -1,4 [.055], mm [in]	L2 +0,7 [.028] -0,5 [.020], mm [in]	Type	L +1,2 [.047] -1,4 [.055], mm [in]	L2 +0,7 [.028] -0,5 [.020], mm [in]	L1, mm [in]
MVMS 315...2,3,4	165,9 [6.53]	113,1 [4.45]	MVMS 315...5	165,9 [6.53]	98,0 [3.86]	25,5 [1.00]
MVMS 400...2,3,4	172,9 [6.81]	120,1 [4.73]	MVMS 400...5	172,9 [6.81]	105,0 [4.13]	32,5 [1.28]
MVMS 500...2,3,4	180,9 [7.12]	128,1 [5.04]	MVMS 500...5	180,9 [7.12]	113,0 [4.45]	40,5 [1.59]
MVMS 630...2,3,4	191,4 [7.54]	138,6 [5.46]	MVMS 630...5	191,4 [7.54]	123,5 [4.86]	51,0 [2.01]
MVMS 677...2,3,4	195,2 [7.69]	142,4 [5.61]	MVMS 677...5	195,2 [7.69]	127,3 [5.01]	54,8 [2.16]
MVMS 800...2,3,4	205,4 [8.09]	152,6 [6.01]	MVMS 800...5	205,4 [8.09]	137,5 [5.41]	65,0 [2.56]

DIMENSIONS of the ATTACHED COMPONENT

MVMS



mm [in]

F : Oil circulation hole
G: Internal drain channel
H: Hardened stop plate
I : O-Ring 152x3 mm [5.98x.118 in]

J : 4xM20-30 mm [1.18 in] depth, 90°
K: Conical seal ring
T: Drain connection G1/4 - 12 mm [.47 in] depth

DRAIN CONNECTION

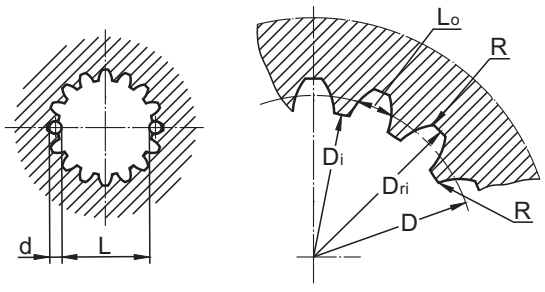
A drain line has to be used when pressure in the return line can exceed the permissible pressure. It can be connected to the drain port of the motor.

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

Flat Root Side Fit		mm	inch
Number of Teeth	z	16	16
Diametral Pitch	DP	10/20	10/20
Pressure Angle		30°	30°
Pitch Dia.	D	40,640	1.6
Major Dia.	Dri	$45,2^{+0,4}$	1.796÷1.780
Minor Dia.	Di	$38,5^{+0,039}$	1.5175÷1.516
Space Width [Circular]	Lo	5,18±0,037	.2055÷.2025
Fillet Radius	R	0,4	.015
Max. Measurement between Pins	L	$32,47^{+0,15}$	1.284÷1.278
Pin Dia.	d	5,6±0,001	.22051÷.22043

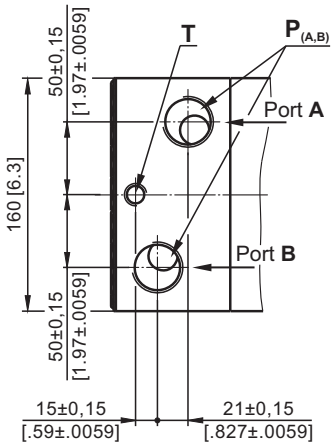


Hardening Specification:
HV=750±50 on the surface.
HV=560 at 0,7±0,2 mm [.035±.019in] case depth
Material: 20 MoCr4 EN 10084 or better.

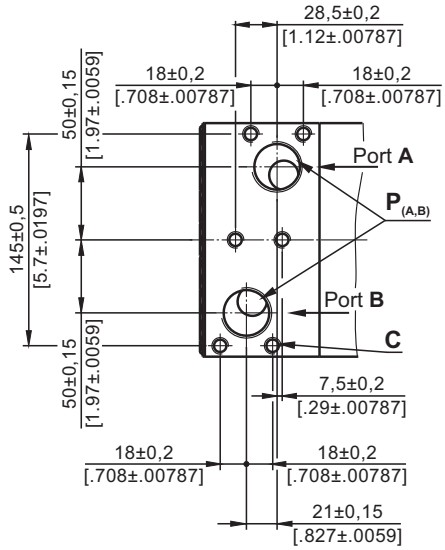
PORTS

Side Ports

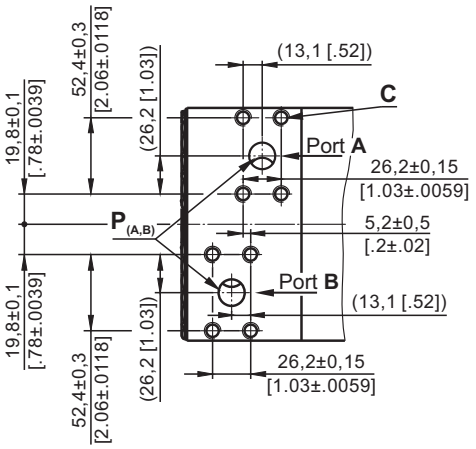
Versions 2 4



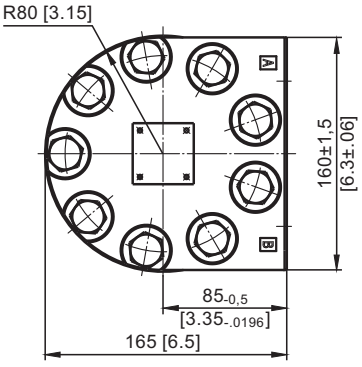
Versions 3



Versions 5



mm [in]



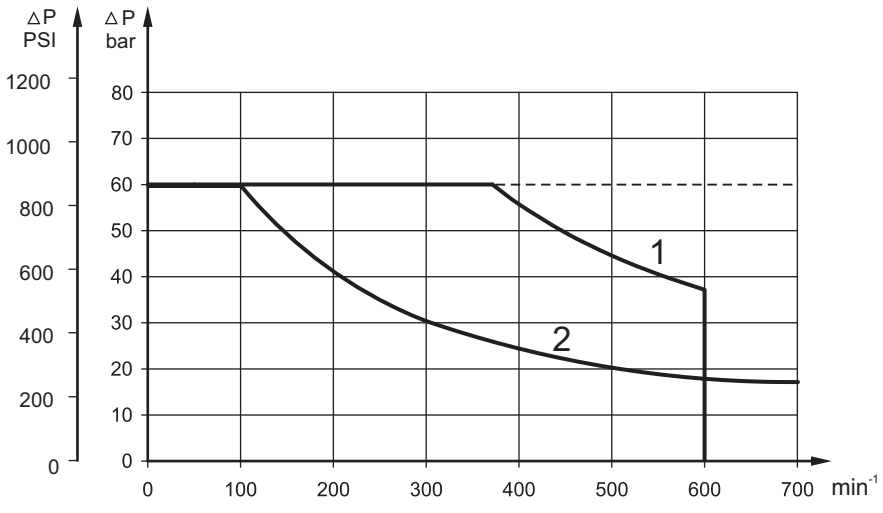
Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

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

	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

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

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

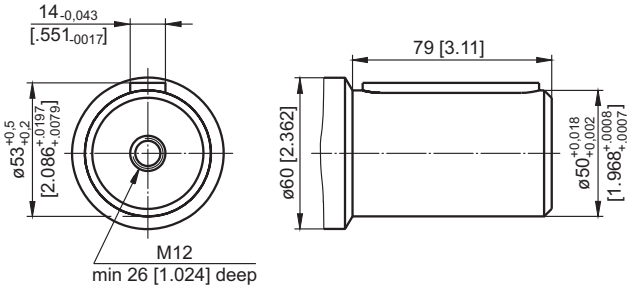


1: Drawing for High Pressure Seal ("U" Seal)
2: Drawing for Standard Shaft Seal

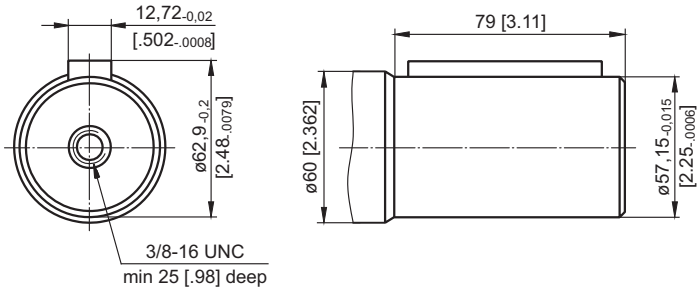
——— - continuous operations
- - - - - - intermittent operations

SHAFT EXTENSIONS

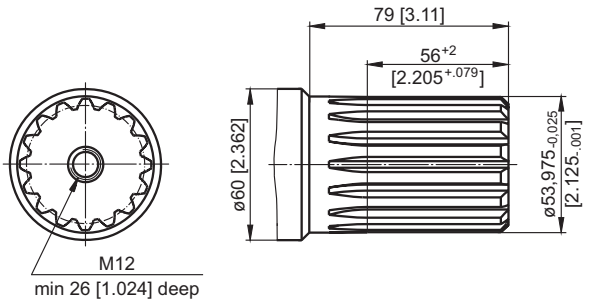
C - ø50 straight, Parallel key A14x9x70 DIN 6885
Max. Torque 271,2 daNm [24000 lb-in]



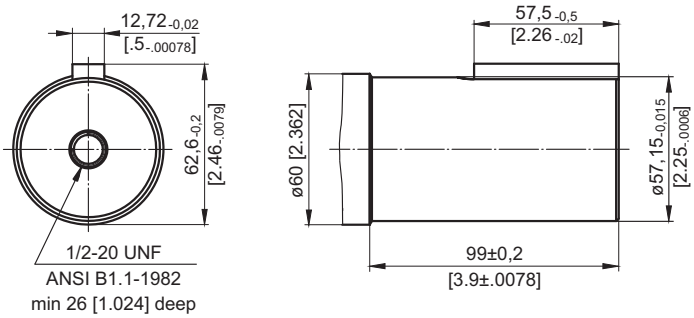
CO - ø2¼" [57,15] straight, Parallel key ½ "x½"x 2¼" BS46
Max. Torque 271,2 daNm [24000 lb-in]



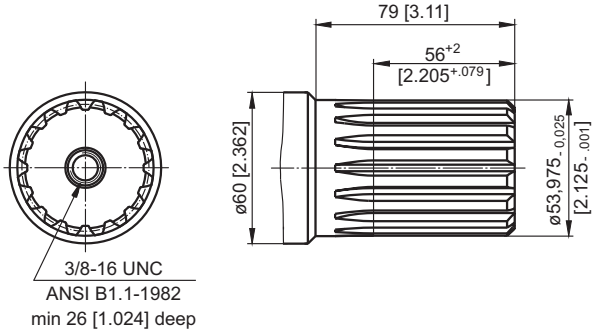
SH - ø2⅛" (ø53,975) splined 16 DP 8/16 ANS B92.1-1976
Max. Torque 271,2 daNm [24000 lb-in]



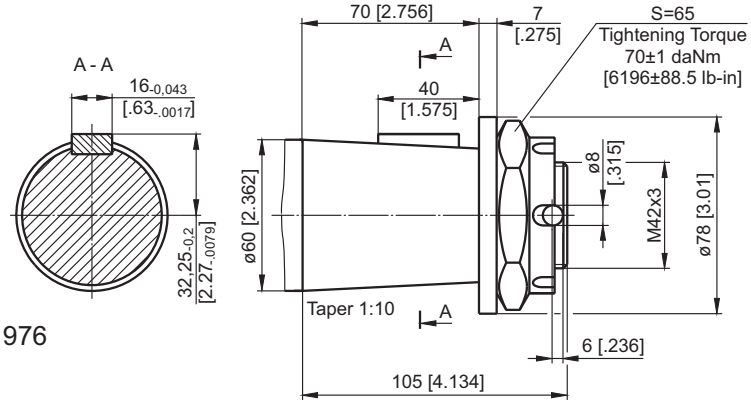
B - ø2¼" [57,15] straight, Parallel key ½ "x½"x 2¼" BS46
Max. Torque 271,2 daNm [24000 lb-in]



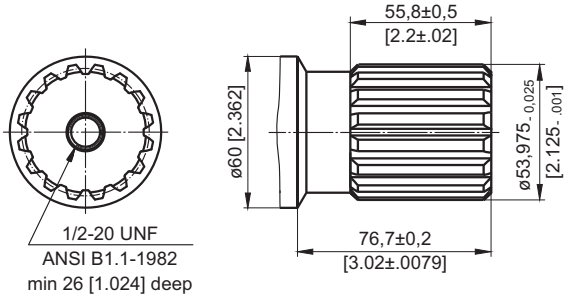
G - ø2⅛" (ø53,975) splined 16 DP 8/16 ANS B92.1-1976
Max. Torque 271,2 daNm [24000 lb-in]



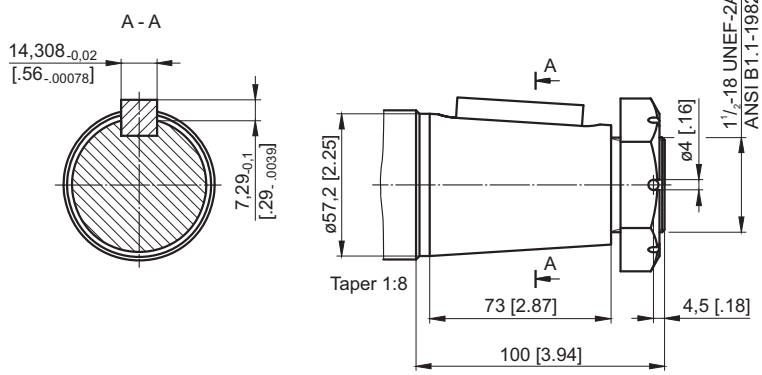
K - ø60, tapered 1:10, Parallel key B16x10x32 DIN 6885
Max. Torque 271,2 daNm [24000 lb-in]



S - ø2⅛" (ø53,975) splined 16 DP 8/16 ANS B92.1-1976
Max. Torque 271,2 daNm [24000 lb-in]



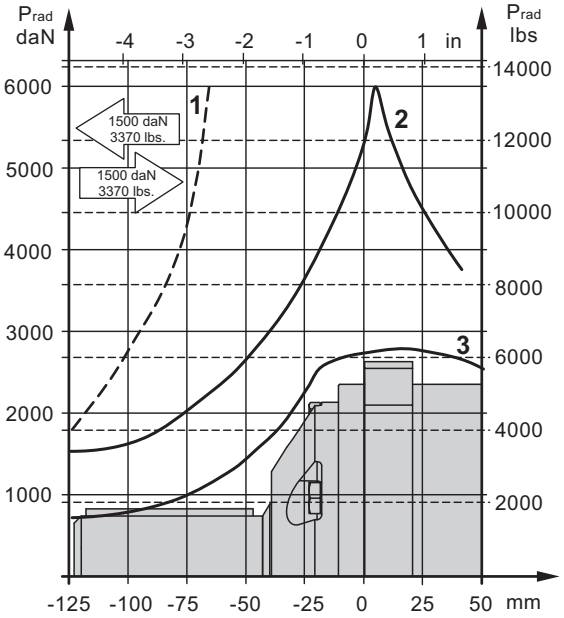
T - ø2¼" [57,15] SAE J501, tapered 1:8, key $^{9}/_{16}$"x$^{9}/_{16}$"x2" BS46
Max. Torque 271,2 daNm [24000 lb-in]



mm [in]

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.



2 - P_a=0 daN [0 lbs]

3 - P_a=1500 daN [3370 lbs]

ORDER CODE

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

Pos.1 - Mounting Flange

omit - Standard square mount, four holes, spigot dia. ø160 [6.3], BC200

C - Square mount, four holes, dia. ø180 [7.1], BC224

CA - Square mount, four holes, dia. ø127 [5.0], Bc162

S - Short mount

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]

677 - 675,8 cm^3/rev [41.24 in^3/rev]

800 - 801,8 cm^3/rev [48.91 in^3/rev]

Pos.3 - Shaft Extensions*

omit - for Short mount

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, ISO 228, 8xM10

Pos.5 - Check Valves

omit - without check valves

1 - with check valves

Pos.6 - Shaft Seal Version**

omit - Low pressure shaft seal

U - High pressure shaft seal

Pos.7 - Additional Options

HD - Reinforced motor **HD*****

For Other **Additional Options** see page 71

Pos.8 - Design Series

omit - Factory specified

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

** Shaft seal is available with the **omit**, **C** and **CA** mounting flange only!

*** Drain line should always be used (if no check valves).

The hydraulic motors are mangano-phosphatized as standard.