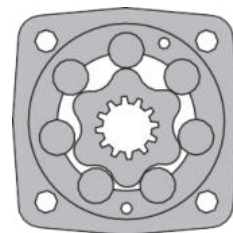
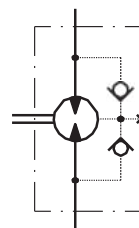


HYDRAULIC MOTORS WC-MS



APPLICATION

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



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OPTIONS

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

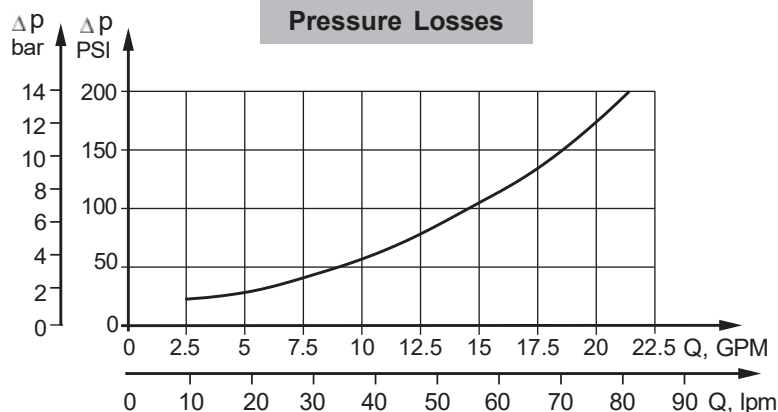
GENERAL

Max. Displacement, cm ³ /rev [in ³ /rev]	564,9 [34.47]
Max. Speed, [RPM]	1000
Max. Torque, daNm [lb-in]	cont.: 85 [7520] int.: 99 [8760]
Max. Output, kW [HP]	23 [30.8]
Max. Pressure Drop, bar [PSI]	cont.: 210 [3050] int.: 275 [3990]
Max. Oil Flow, lpm [GPM]	90 [24]
Min. Speed, [RPM]	5
Permissible Shaft Loads daN [lbs]	P _a =500 [1125]
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °C [°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]	1,5 [.396]
	35 [164]	1 [.264]
210 [3045]	20 [98]	3 [.793]
	35 [164]	2 [.528]

Pressure Losses



SPECIFICATION DATA

Type		WC-MS 80	WC-MS 100	WC-MS 125	WC-MS 160	WC-MS 200
Displacement, cm ³ /rev [in ³ /rev]		80,5 [4.91]	100 [6.1]	125,7 [7.67]	159,7 [9.74]	200 [12.2]
Max. Speed, [RPM]	cont.	810	750	600	470	375
	Int.*	1000	900	720	560	450
Max. Torque daNm [lb-in]	cont.	24 [2120]	30,5 [2700]	37,5 [3320]	49 [4340]	61 [5400]
	Int.*	31 [2740]	39 [3450]	49 [4340]	60 [5310]	72 [6370]
Max. Output kW [HP]	cont.	15,5 [20.8]	18 [24.1]	18 [24.1]	16,5 [22.1]	16,5 [22.1]
	int.*	19,5 [26.2]	22,8 [30.2]	22,5 [30.2]	23 [30.8]	22 [29.52]
Max. Pressure Drop bar [PSI]	cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
	Int.*	275 [3990]	275 [3990]	275 [3990]	275 [3990]	275 [3990]
	peak**	295 [4280]	295 [4280]	295 [4280]	295 [4280]	295 [4280]
Max. Oil Flow lpm [GPM]	cont.	65 [17]	75 [20]	75 [20]	75 [20]	75 [20]
	Int.*	80 [21]	90 [24]	90 [24]	90 [24]	90 [24]
Max. Inlet Pressure bar [PSI]	cont.	230 [3340]	230 [3340]	230 [3340]	230 [3340]	230 [3340]
	Int.*	295 [4280]	295 [4280]	295 [4280]	295 [4280]	295 [4280]
	peak**	300 [4350]	300 [4350]	300 [4350]	300 [4350]	300 [4350]
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 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		12 [175]	10 [145]	10 [145]	8 [115]	8 [115]
Min. Starting Torque daNm [lb-in]	at max. press. drop cont.	18 [1590]	23 [2040]	29 [2570]	37 [3270]	47 [4160]
	at max. press. drop Int.*	23,5 [2080]	30 [2660]	38 [3360]	46 [4070]	56 [4960]
Min. Speed***, [RPM]		10	10	8	8	6
Weight, kg [lb] For Rear Ports + 0,40 [.88]	WC-MS(F)	9,9 [21.8]	10,1 [22.2]	10,4 [22.9]	10,8 [23.8]	11,2 [24.7]
	WC-MSW	10,4 [22.9]	10,6 [23.3]	10,9 [24]	11,3 [24.6]	11,7 [25.8]
	WC-MSS	7,9 [17.4]	8,1 [17.8]	8,4 [18.5]	8,8 [19.4]	9,2 [20.2]
	WC-MSV	5,8 [12.8]	6 [13.2]	6,3 [13.9]	6,7 [14.8]	7,1 [15.6]
	WC-MSQ	10,3 [22.7]	10,5 [23.2]	10,8 [23.8]	11,2 [24.7]	11,6 [25.6]
	WC-MSB	16,9 [37.3]	17,1 [37.7]	17,4 [38.3]	17,8 [39.2]	18,2 [41.1]

* 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.

- Intermittent speed and intermittent pressure must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- 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.
- Recommended minimum oil viscosity 13 mm²/s [70 SUS] at 50°C [122°F].
- Recommended maximum system operating temperature is 82°C [180°F].
- To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

SPECIFICATION DATA (continued)

Type		WC-MS 250	WC-MS 315	WC-MS 400	WC-MS 475	WC-MS 525	WC-MS 565
Displacement, cm ³ /rev [in ³ /rev]		250 [15.3]	314,9 [19.2]	397 [24.2]	474,6[28.96]	522,7 [31.88]	564,9[34.47]
Max. Speed, [RPM]	cont.	300	240	190	160	145	130
	Int.*	360	290	230	190	175	160
Max. Torque daNm [lb-in]	cont.	72 [6370]	82,5 [7300]	86,5 [7660]	85 [7520]	85 [7520]	85 [7520]
	Int.*	87 [7700]	100 [8850]	99 [8760]	99 [8760]	99 [8760]	99 [8760]
Max. Output kW [HP]	cont.	14,5 [19.4]	15 [20.1]	11 [14.8]	8,4 [11]	7,6 [10.2]	6,9 [9]
	int.*	18 [24.1]	17 [22.8]	12,5 [16.8]	11,3 [15]	10,4 [13.9]	9,6 [13]
Max. Pressure Drop bar [PSI]	cont.	200 [2900]	200 [2900]	160 [2320]	130 [1880]	115 [1670]	105 [1520]
	Int.*	250 [3630]	240 [3480]	190 [2760]	150 [2180]	135 [1960]	125 [1810]
	peak**	270 [3920]	260 [3770]	210 [3050]	170 [2470]	155 [2250]	145 [2100]
Max. Oil Flow lpm [GPM]	cont.	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
	Int.*	90 [24]	90 [24]	90 [24]	90 [24]	90 [24]	90 [24]
Max. Inlet Pressure bar [PSI]	cont.	230 [3340]	230 [3340]	230 [3340]	230 [3340]	230 [3340]	230 [3340]
	Int.*	295 [4280]	295 [4280]	295 [4280]	295 [4280]	295 [4280]	295 [4280]
	peak**	300 [4350]	300 [4350]	300 [4350]	300 [4350]	300 [4350]	300 [4350]
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 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		8 [115]	8 [115]	8 [115]	8 [115]	8 [115]	8 [115]
Min. Starting Torque daNm [lb-in]	at max. press. drop cont.	56 [4960]	71 [6280]	71 [6280]	71 [6280]	71 [6280]	71 [6280]
	at max. press. drop Int.*	70 [6200]	85 [7520]	84 [7430]	84 [7430]	84 [7430]	84 [7430]
Min. Speed***, [RPM]		6	5	5	5	5	5
Weight, kg [lb] For Rear Ports + 0,40 [.88]	WC-MS(F)	11,7 [25.8]	12,4 [27.3]	13,1 [29.3]	14,1 [31]	14,6 [32.2]	15 [33.1]
	WC-MSW	12,2 [26.9]	12,9 [28.4]	13,8 [30.4]	14,6 [32.2]	15,1 [33.3]	15,5 [34.1]
	WC-MSS	9,7 [21.4]	10,4 [22.9]	11,3 [24.9]	12,1 [26.7]	12,6 [27.8]	13 [28.6]
	WC-MSV	7,6 [16.7]	8,3 [18.3]	9,2 [20.2]	10 [22]	10,5 [23.1]	10,9 [24]
	WC-MSQ	12,1 [26.7]	12,8 [28.2]	13,7 [30.2]	14,5 [32]	15 [33.1]	15,4 [33.9]
	WC-MSB	18,7 [41.2]	19,4 [42.7]	20,3 [44.7]	21,1 [46.5]	21,6 [47.6]	23 [48.5]

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

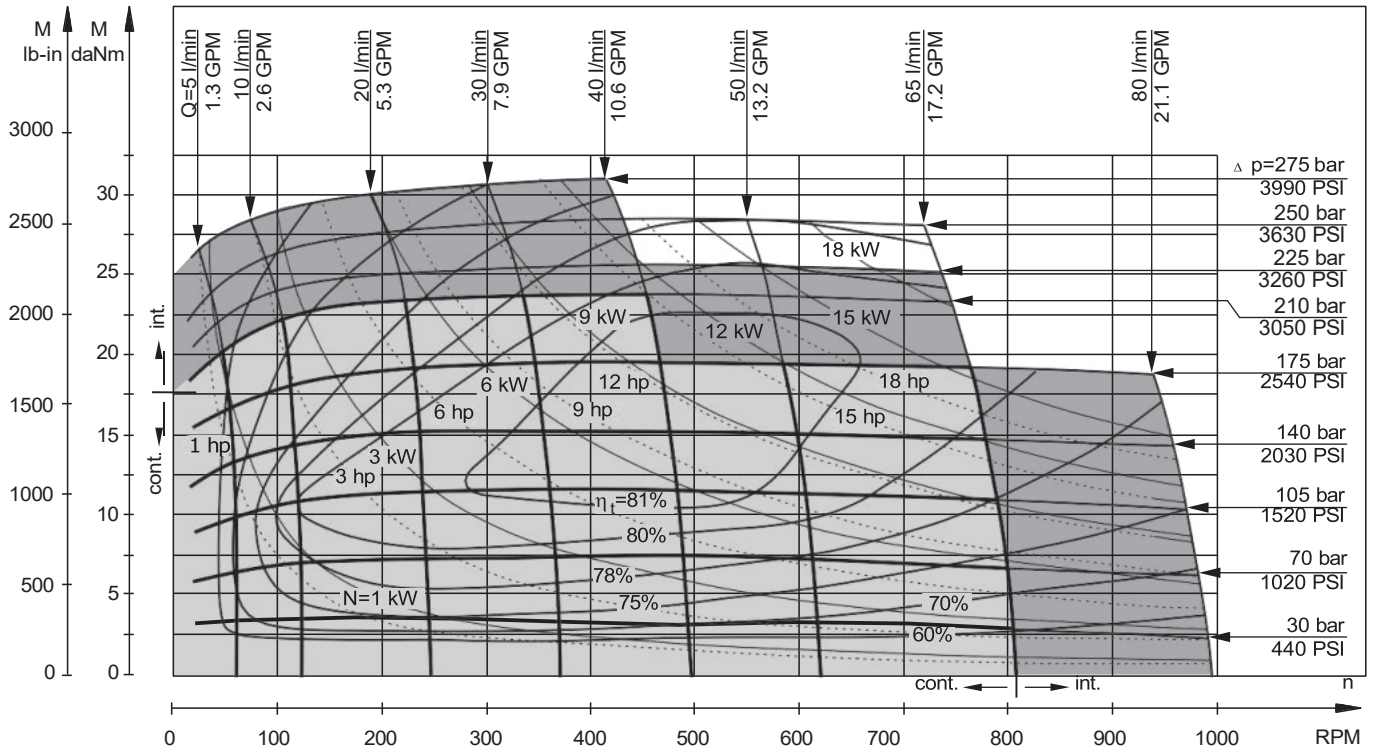
** Peak load: the permissible values may occur for max. 1% of every minute.

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

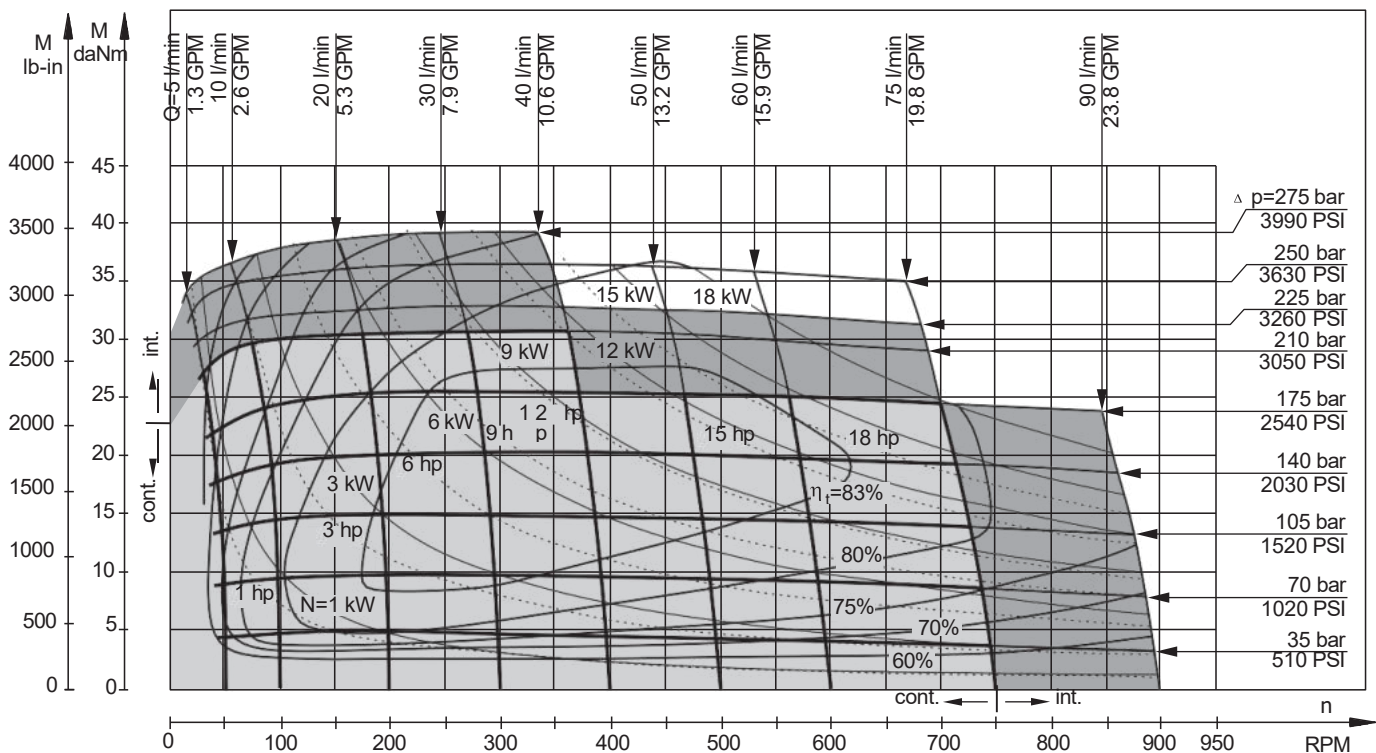
- Intermittent speed and intermittent pressure must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).
If using synthetic fluids consult the factory for alternative seal materials.
- Recommended minimum oil viscosity 13 mm²/s [70 SUS] at 50°C [122°F].
- Recommended maximum system operating temperature is 82°C [180°F].
- To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

FUNCTION DIAGRAM WC-MS

WC-MS 80



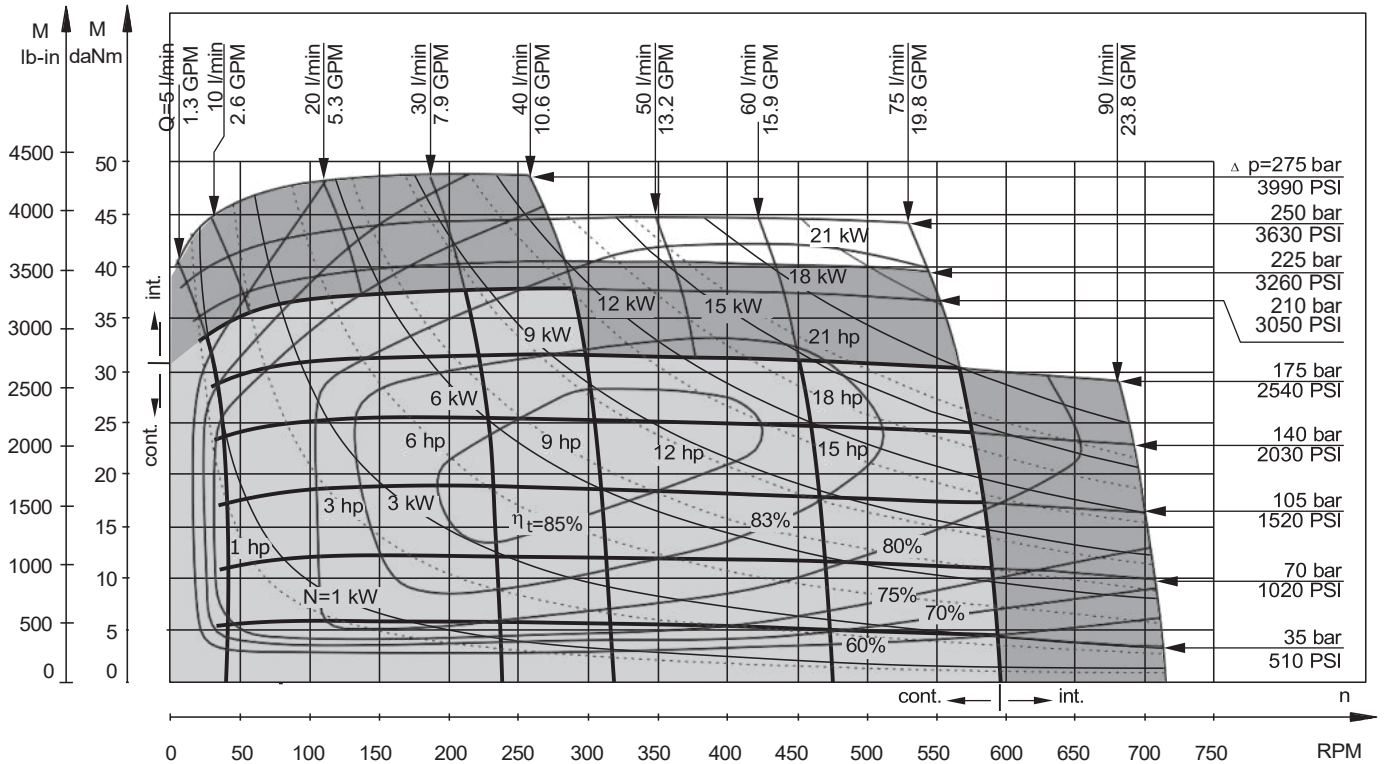
WC-MS 100



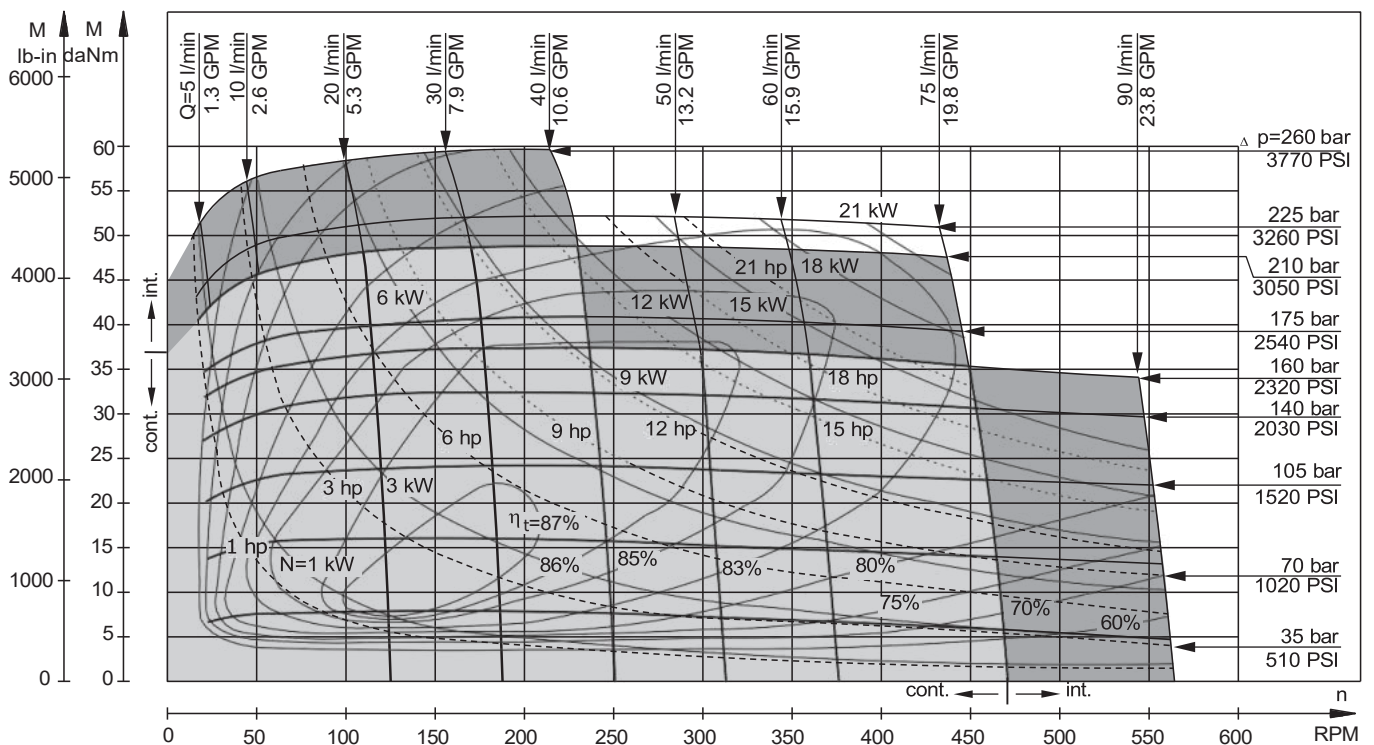
The function diagrams data is for average performance of randomly selected motors at back pressure 5 ± 10 bar [72.5±145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAWC-MS

WC-MS 125



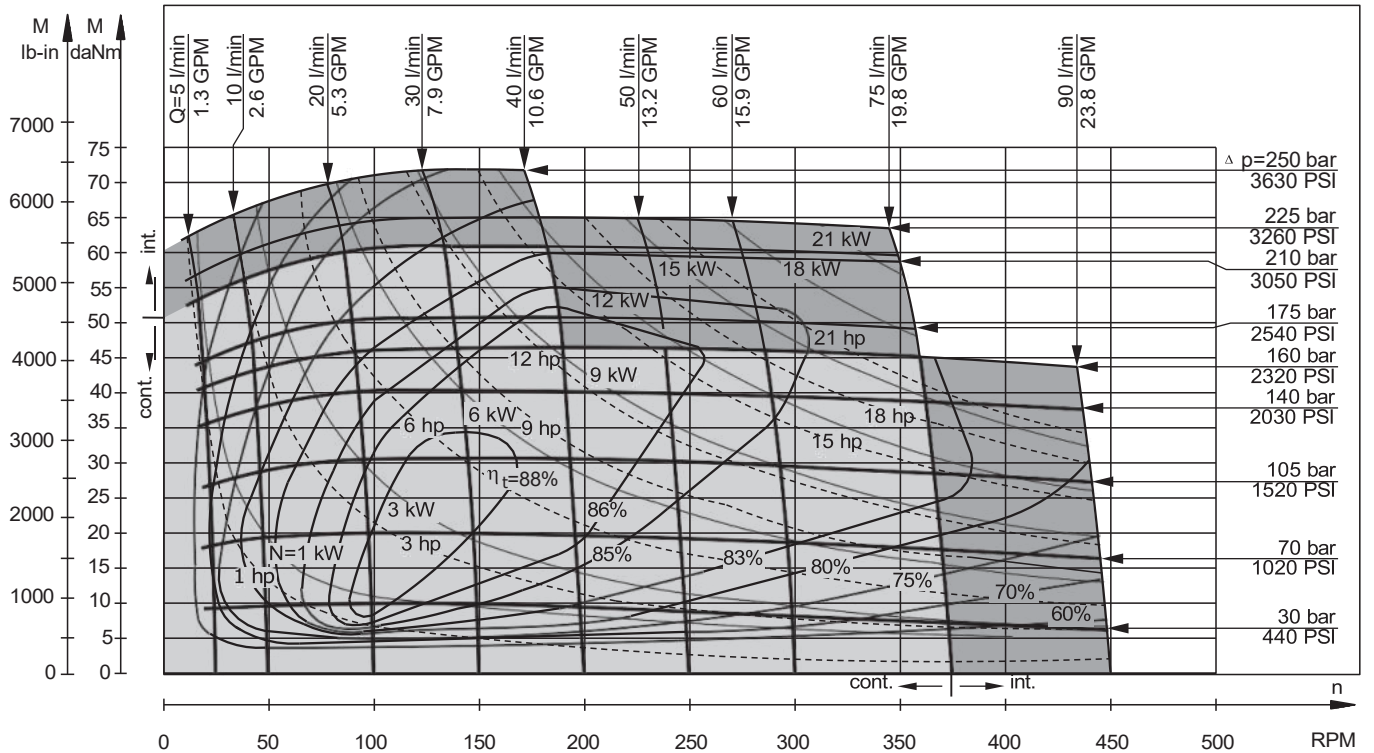
WC-MS 160



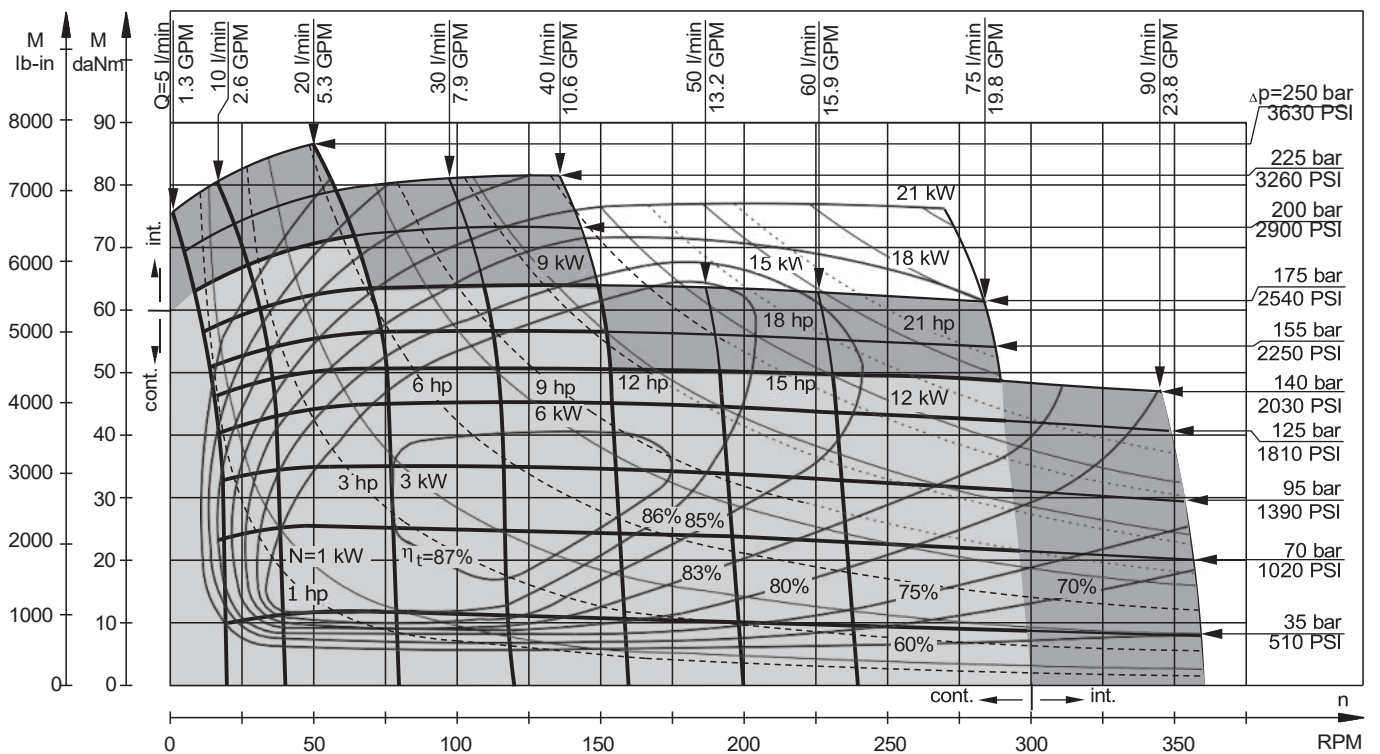
The function diagrams data is for average performance of randomly selected motors at back pressure 5 ± 10 bar [72.5±145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAMS

WC-MS 200



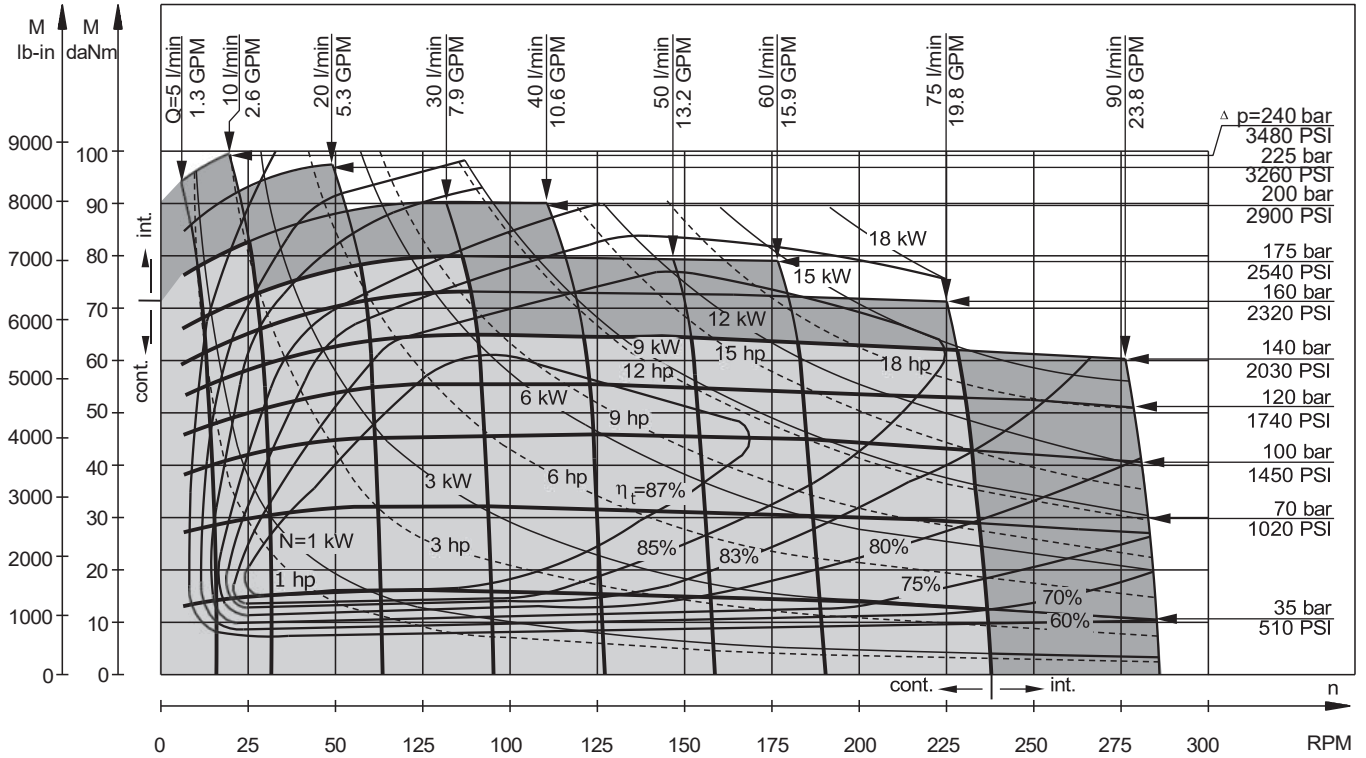
WC-MS 250



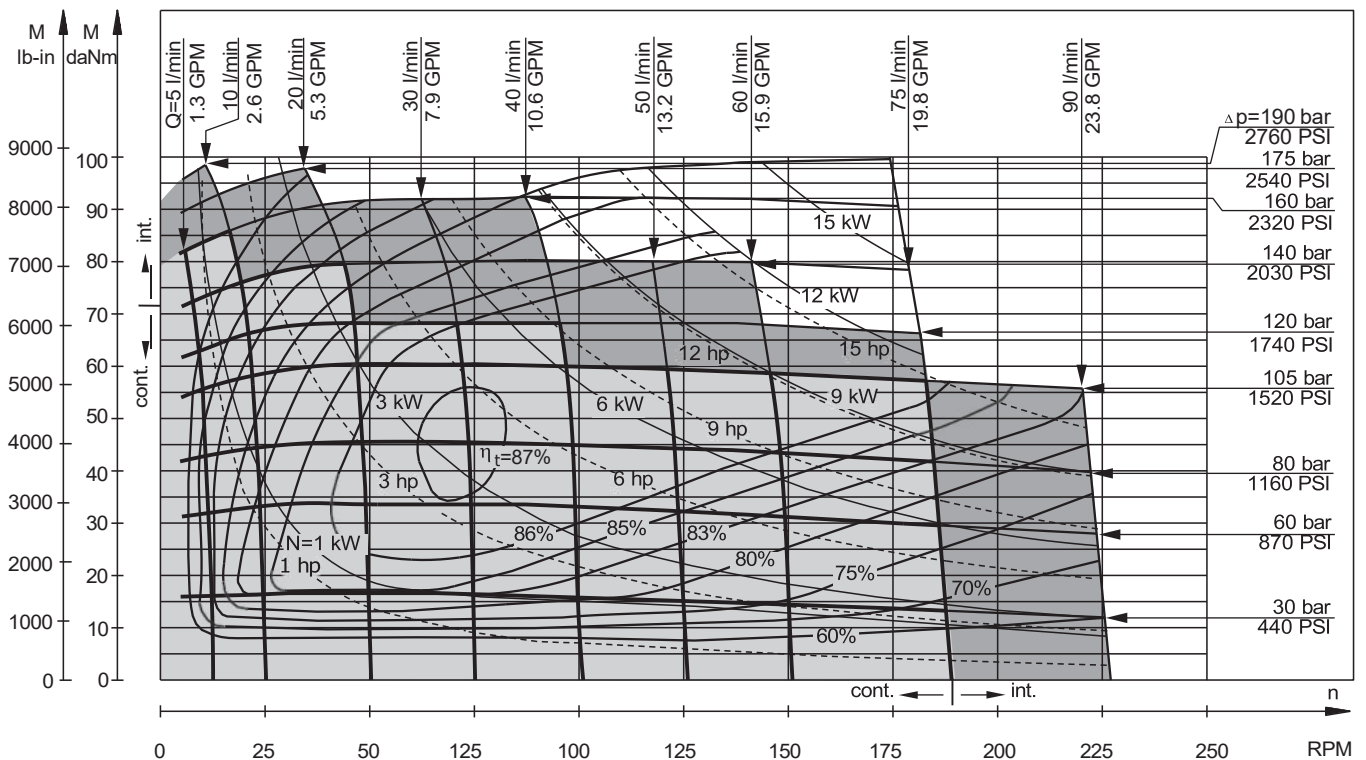
The function diagrams data is for average performance of randomly selected motors at back pressure 5 ± 10 bar [72.5±145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAMS

WC-MS 315



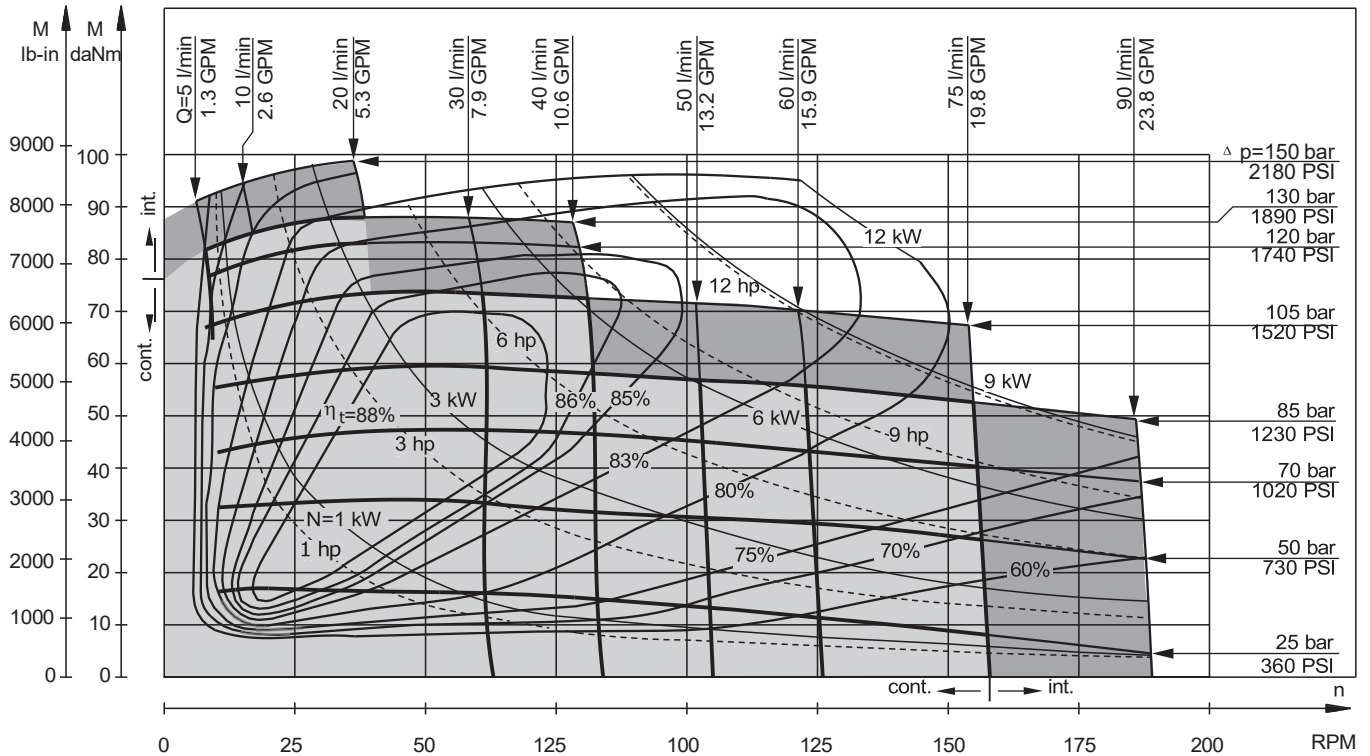
WC-MS 400



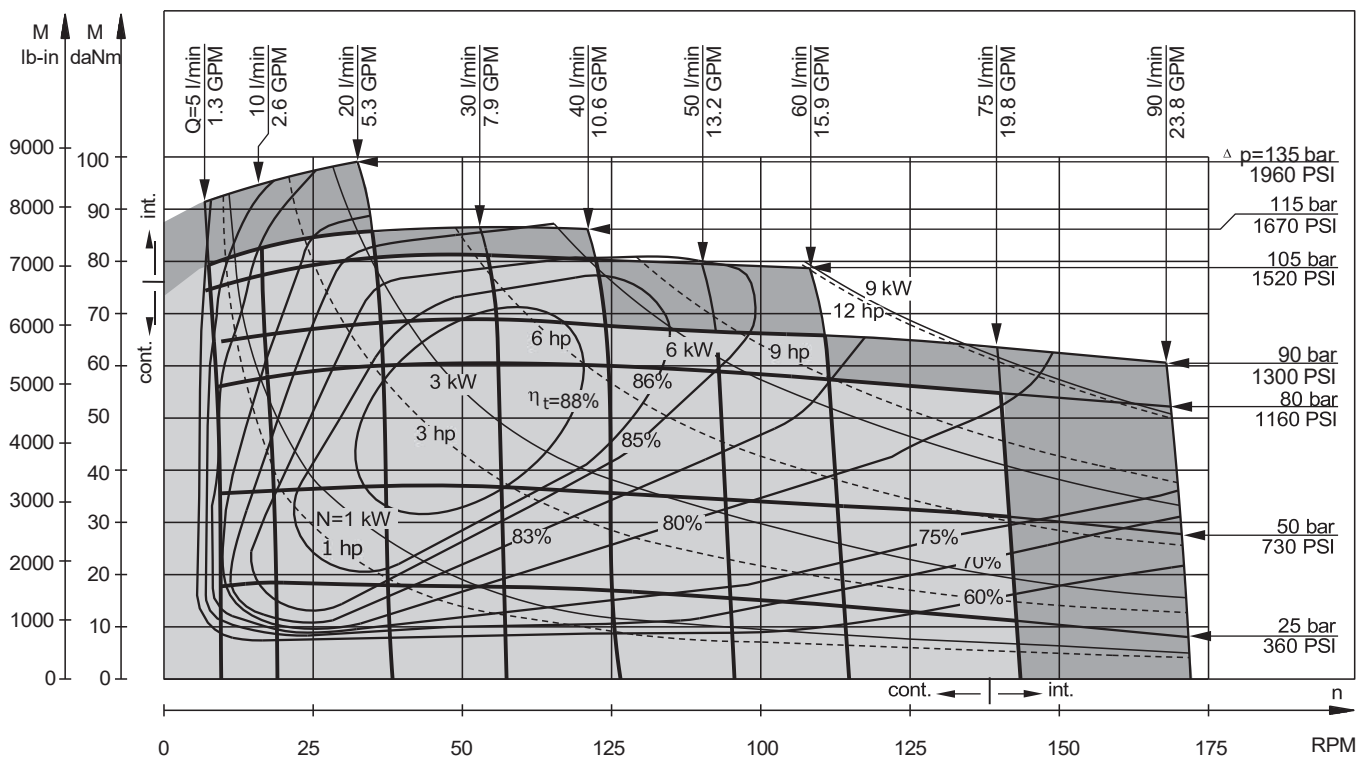
The function diagrams data is for average performance of randomly selected motors at back pressure 5 ± 10 bar [72.5±145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

FUNCTION DIAGRAMS

WC-MS 475



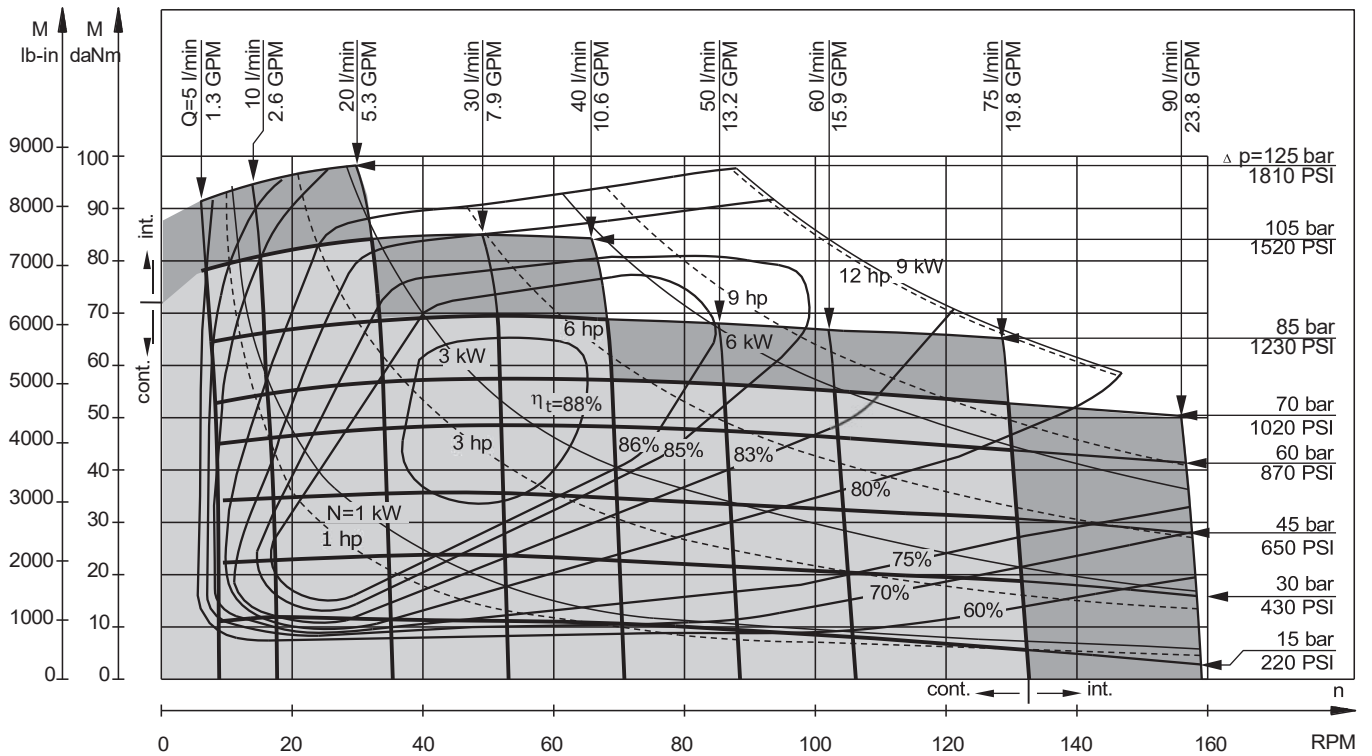
WC-MS 525



The function diagrams data is for average performance of randomly selected motors 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].

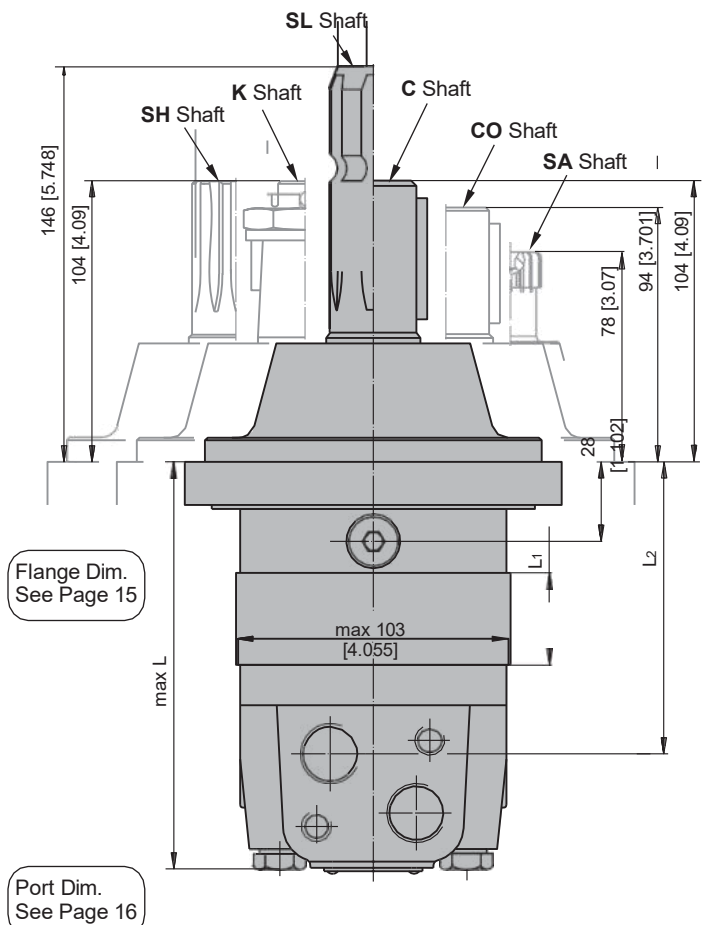
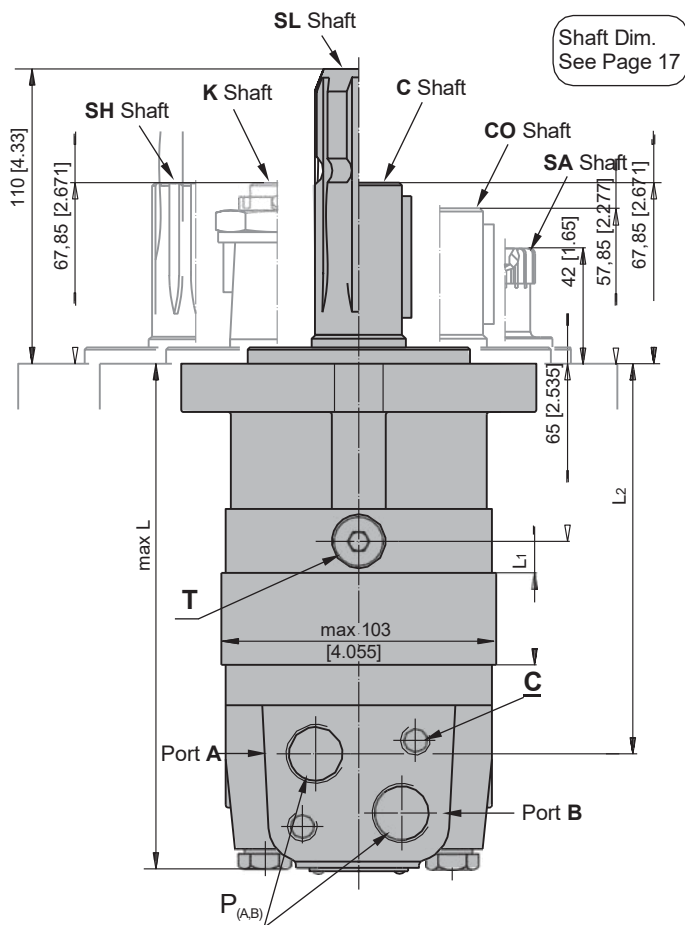
FUNCTION DIAGRAMS

WC-MS 565

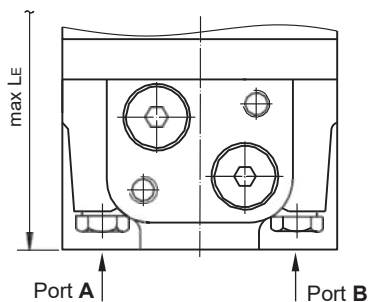


The function diagram WC-MS data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

DIMENSIONS AND MOUNTING DATA MS, MSF, MSA, MSW



E Rear ports



C: 2xM10-12 mm [.47 in] depth

P_(A,B): 2xG1/2 or 2xM22x1,5-15 mm [.59 in] depth

T: G 1/4 or M14x1,5- 12 mm [.47 in] depth (plugged)

Standard Rotation

Viewed from Shaft End

Port **A** Pressurized - **CW**

Port **B** Pressurized - **CCW**

Reverse Rotation

Viewed from Shaft End

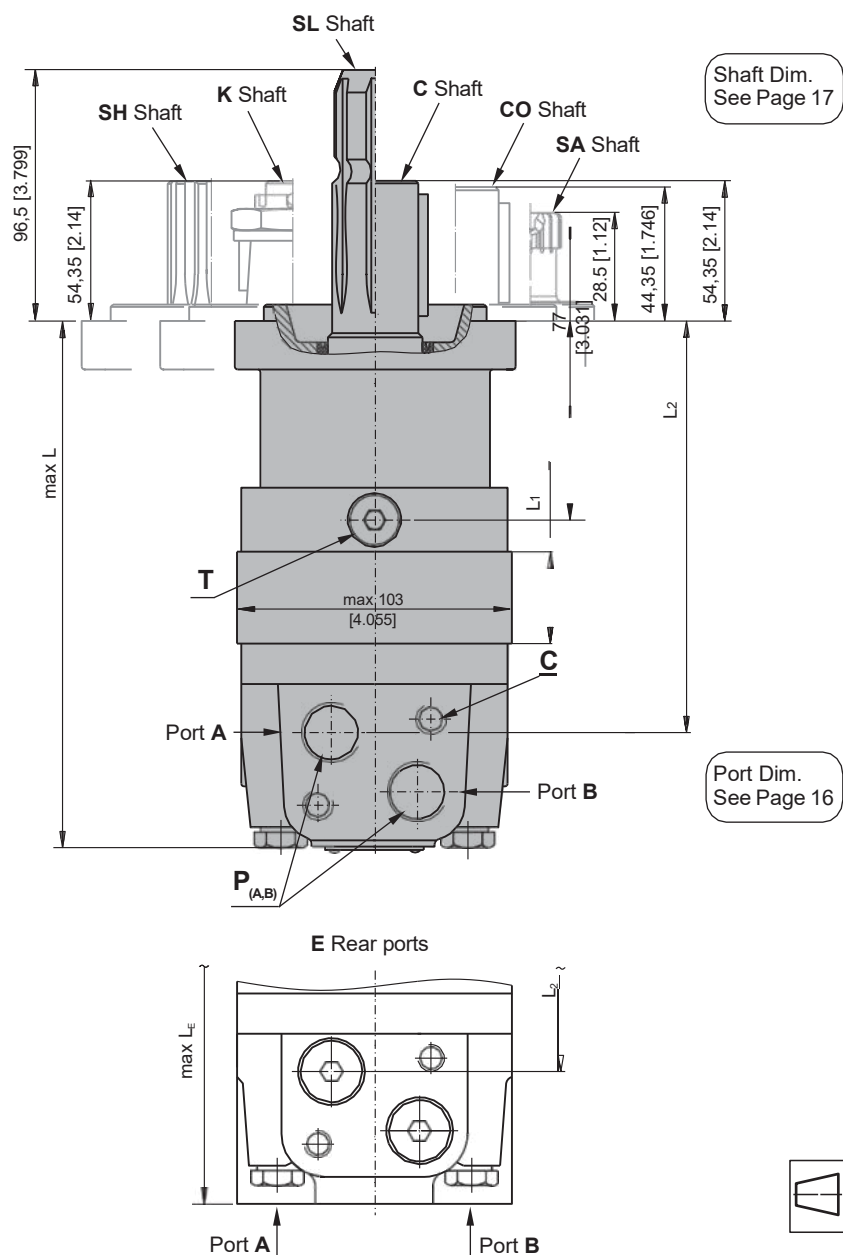
Port **A** Pressurized - **CCW**

Port **B** Pressurized - **CW**

Type	L, mm[in.]	L ₂ , mm[in.]	*L _E , mm[in.]	Type	L, mm[in.]	L ₂ , in.[mm]	*L _E , mm[in.]	L ₁ , mm[in.]
WC-MS(F, A) 80	168 [6.61]	124 [4.88]	173 [6.81]	WC-MSW 80	129 [5.08]	87 [3.43]	138 [5.43]	14,0 [.55]
WC-MS(F, A) 100	171 [6.73]	128 [5.04]	177 [6.97]	WC- MSW100	133 [5.23]	91 [3.58]	142 [5.59]	17,4 [.69]
WC-MS(F, A) 125	176 [6.93]	132 [5.20]	181 [7.13]	WC-MSW 125	137 [5.39]	95 [3.74]	146 [5.75]	21,8 [.86]
WC-MS(F, A) 160	182 [7.17]	138 [5.43]	187 [7.36]	WC-MSW 160	143 [5.63]	101 [3.98]	152 [5.99]	27,8 [1.09]
WC-MS(F, A) 200	189 [7.44]	145 [5.71]	194 [7.64]	WC-MSW 200	150 [5.91]	108 [4.25]	159 [6.26]	34,8 [1.37]
WC-MS(F, A) 250	197 [7.76]	154 [6.06]	203 [7.99]	WC-MSW 250	159 [6.26]	117 [4.61]	168 [6.62]	43,5 [1.71]
WC-MS(F, A) 315	209 [8.23]	165 [6.50]	214 [8.43]	WC-MSW 315	170 [6.69]	128 [5.04]	179 [7.05]	54,8 [2.16]

WC-MS(F, A) 400	223 [8.78]	179 [7.05]	228 [8.98]	WC-MSW 400	184 [7.24]	143 [5.63]	194 [7.64]	69,4 [2.73]
WC-MS(F, A) 475	237 [9.33]	193 [7.60]	242 [9.53]	WC-MSW 475	198 [7.79]	156 [6.14]	207 [8.15]	82,6 [3.25]
WC-MS(F, A) 525	229 [9.02]	185 [7.28]	234 [9.21]	WC-MSW 525	190 [7.48]	148 [5.83]	199 [7.84]	74,5 [2.93]
WC-MS(F, A) 565	235 [9.25]	191 [7.52]	240 [9.45]	WC-MSW 565	196 [7.72]	154 [6.06]	205 [8.07]	80,2 [3.16]

DIMENSIONS AND MOUNTING DATA - MSQ



C: 2xM10-12 mm [.47 in] depth

P_(A,B): 2xG1/2 or 2xM22x1,5-15 mm [.59 in] depth

T: G 1/4 or M14x1,5- 12 mm [.47 in] depth (plugged)

Standard Rotation

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

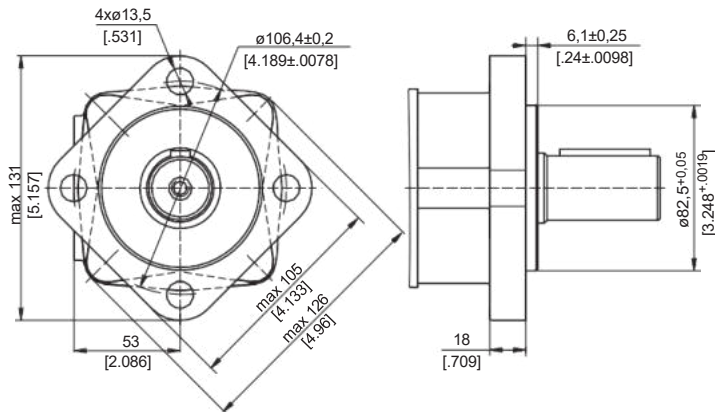
Reverse Rotation

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

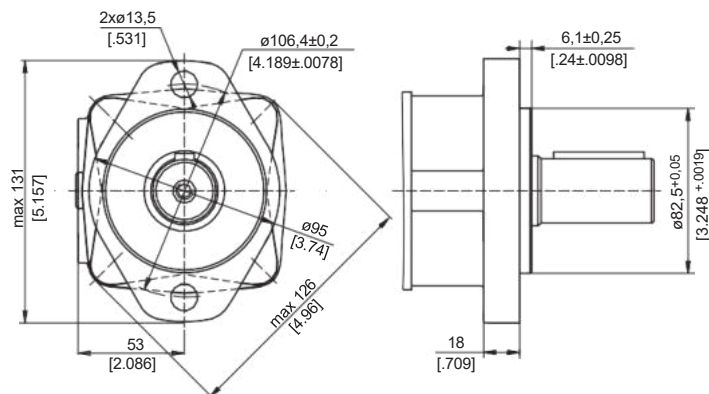
Type	L, mm [in.]	L ₂ , mm [in.]	*L _E , mm [in.]	L ₁ , mm [in.]
WC-MSQ 80	179 [7.05]	136 [5.35]	185 [7.28]	.55 [14,0]
WC-MSQ 100	183 [7.21]	140 [5.51]	189 [7.44]	.69 [17,4]
WC-MSQ 125	187 [7.36]	144 [5.67]	193 [7.60]	.86 [21,8]
WC-MSQ 160	193 [7.60]	150 [5.91]	199 [7.83]	1.09 [27,8]
WC-MSQ 200	200 [7.87]	157 [6.18]	206 [8.11]	1.37 [34,8]
WC-MSQ 250	209 [8.23]	166 [6.54]	215 [8.46]	1.71 [43,5]
WC-MSQ 315	220 [8.66]	177 [6.67]	226 [8.90]	2.16 [54,8]

MOUNTING

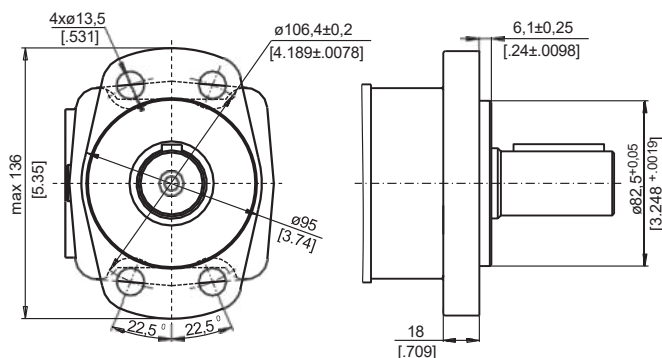
SAE A-4 Mount (4 Holes)



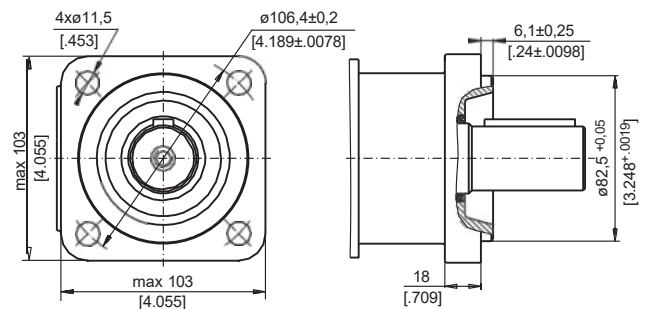
A SAE A-2 Mount (2 Holes)



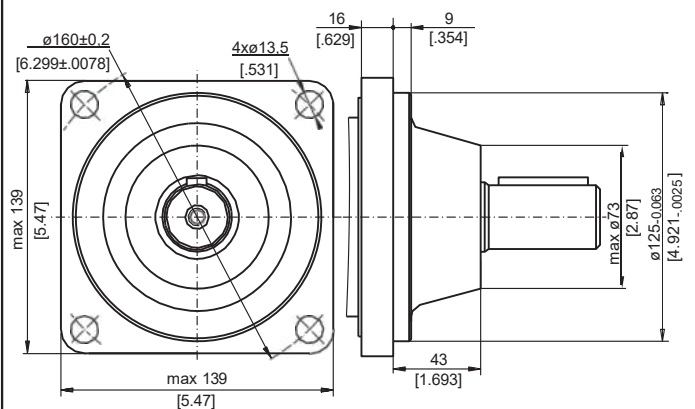
F Magneto Mount (4 Holes)



Q Square Mount (4 Holes)

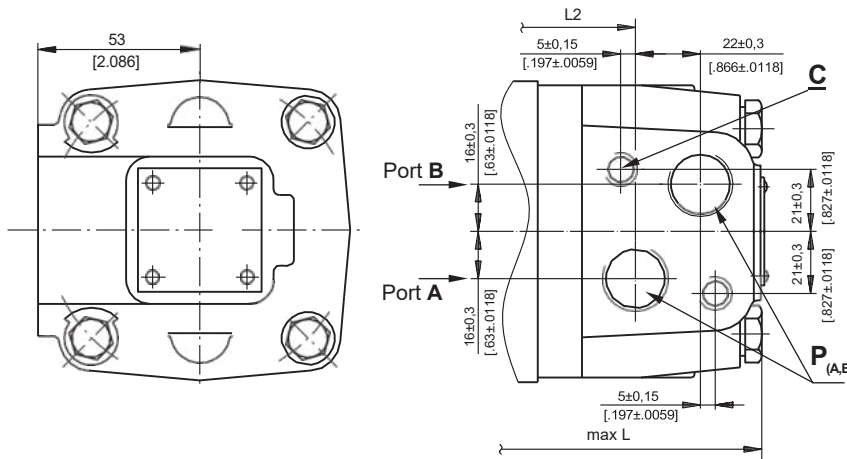


W Wheel Mount

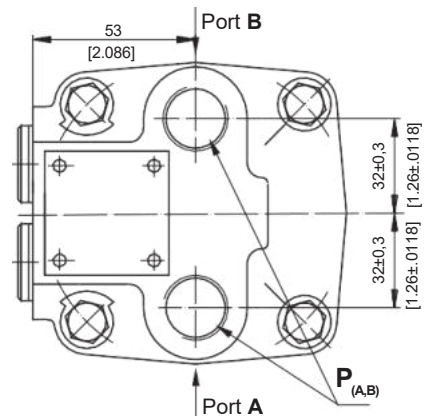


PORTS

Side Ports



E Rear Ports



Standard Rotation

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

Reverse Rotation

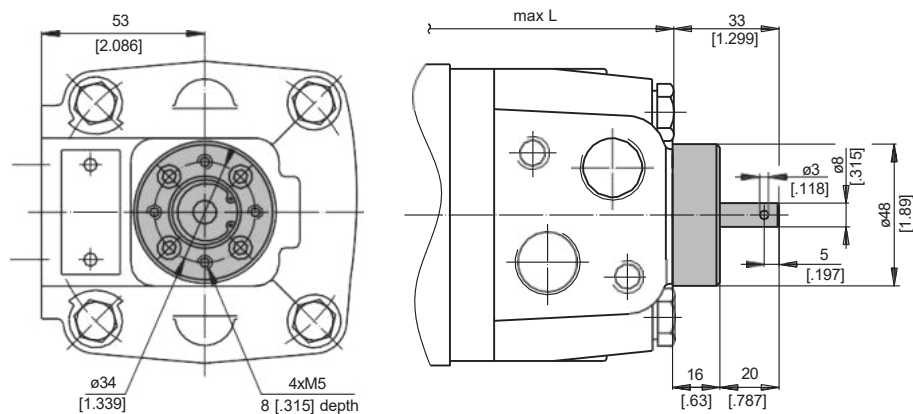
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

C: 2xM10-12 mm [.47 in] depth

P_(A,B): 2xG1/2 or 2xM22x1,5-15 mm [.59 in] depth

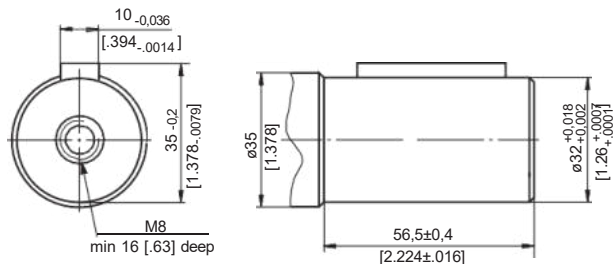
T: G 1/4 or M14x1,5- 12 mm [.47 in] depth (plugged)

MOTORS WITH TACHO CONNECTION

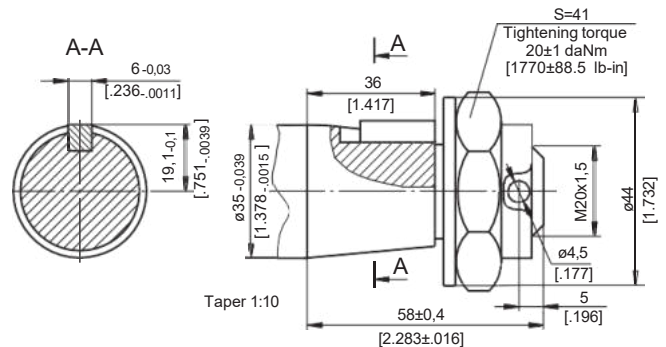


SHAFT EXTENSIONS

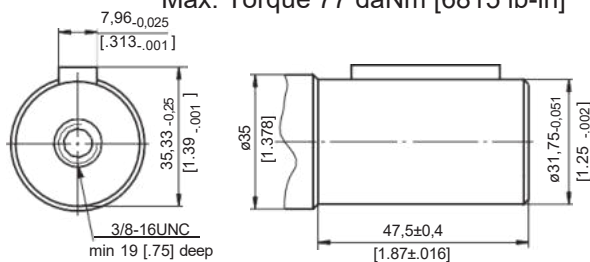
C - ø32 straight, Parallel key A10x8x45 DIN 6885
Max. Torque 77 daNm [6815 lb-in]



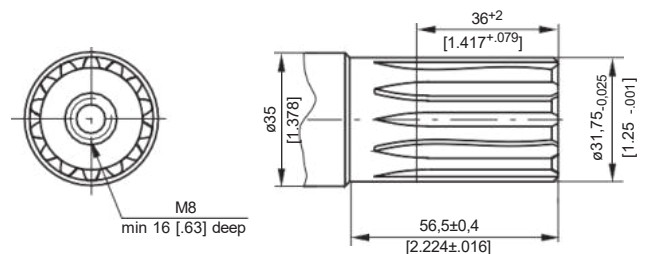
K - tapered 1:10, Parallel key B6x6x20 DIN 6885
Max. Torque 95 daNm [8400 lb-in]



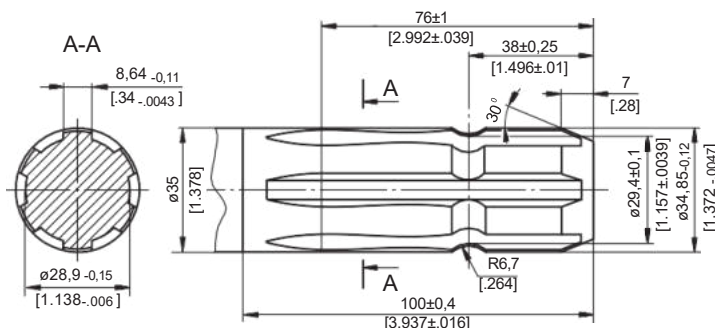
CO - $\varnothing 1\frac{1}{4}$ " straight, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x $1\frac{1}{4}$ "BS46
Max. Torque 77 daNm [6815 lb-in]



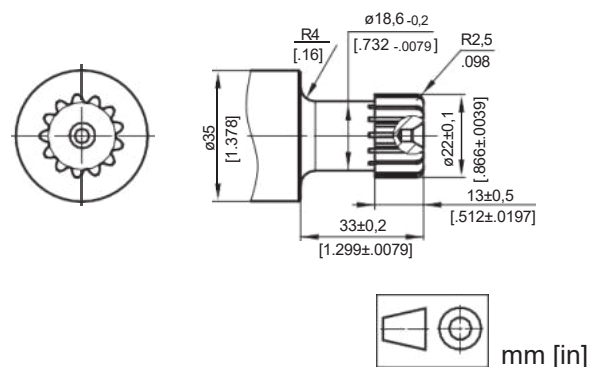
SH - $\varnothing 1\frac{1}{4}$ " splined 14T, DP12/24 ANS B92.1-1970
Max. Torque 95 daNm [8400 lb-in]



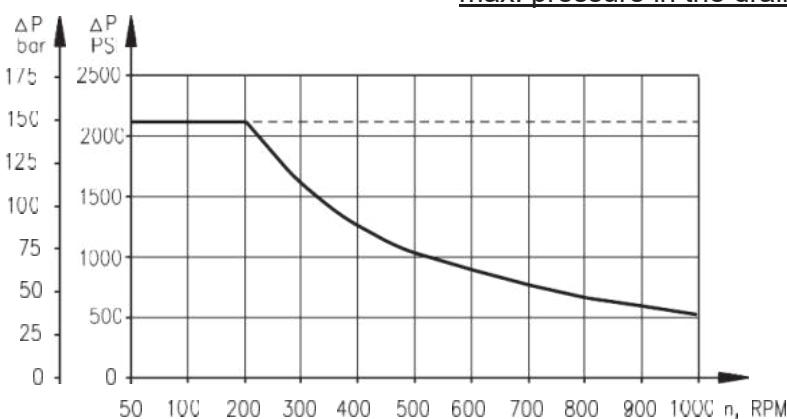
SL - ø34,85 p.t.o. DIN 9611 Form 1
Max. Torque 77 daNm [6815 lb-in]



SA - 7/8"-13T splined DP16/32 ANS B92.1-1970
Max. Torque 20 daNm [1770 lb-in]



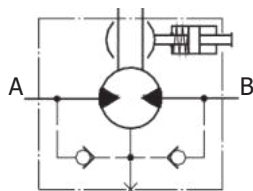
MAX. PERMISSIBLE SHAFT SEAL PRESSURE

$$\frac{\text{Max. return pressure without drain line or}}{\text{max. pressure in the drain line}}$$


— - continuous operations
- - - - - intermittent operations

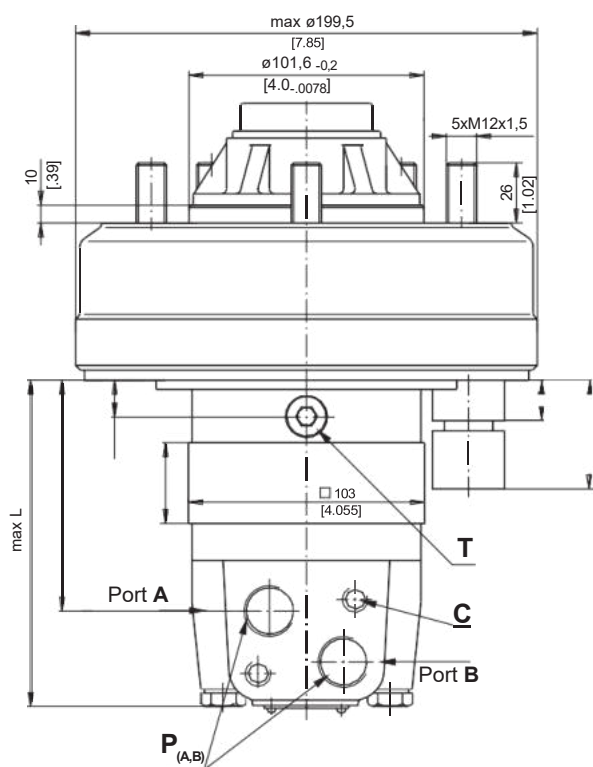
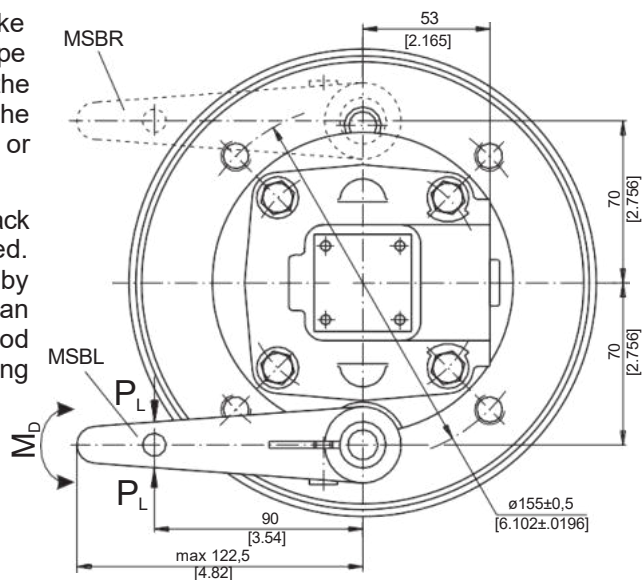
DIMENSIONS AND MOUNTING DATA

WC-MSB Motor with Drum Brake

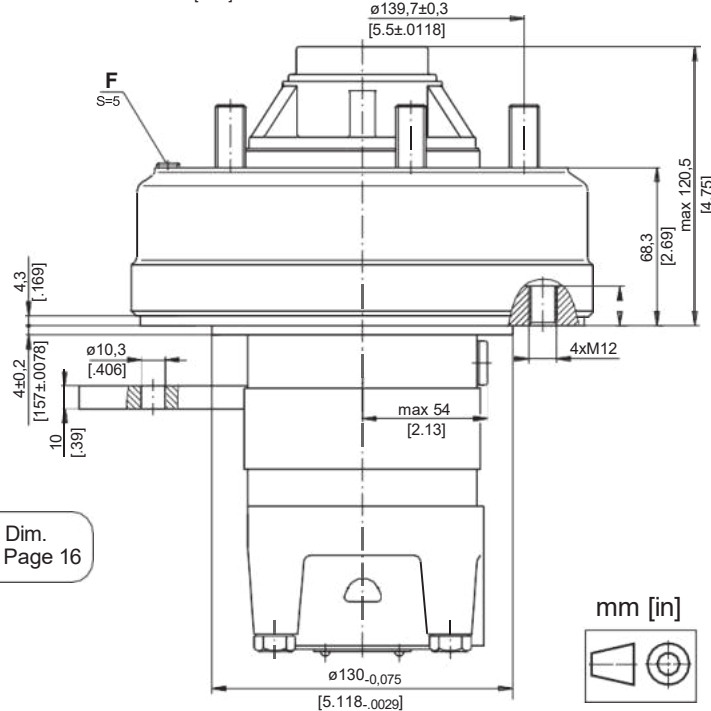


Actuating the brake level, the brake shaft is turned. The rectangular shape of the inner part of this shaft forces the brake pads to be pressed against the brake drum. This brakes the wheel or the winch drum.

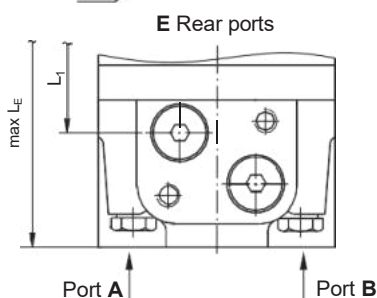
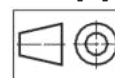
Releasing the level, the springs pull it and the brake pads back to the initial position. The motor output shaft is released. Minimum angle adjustment is 10° . It can be adjusted by dismounting the level. Depending on the application You can choose the actuating direction of the brake level. The rod connection actuating the brake should be capable of moving at last 25 mm from neutral to extreme position.



Port Dim.
See Page 16



mm [in]



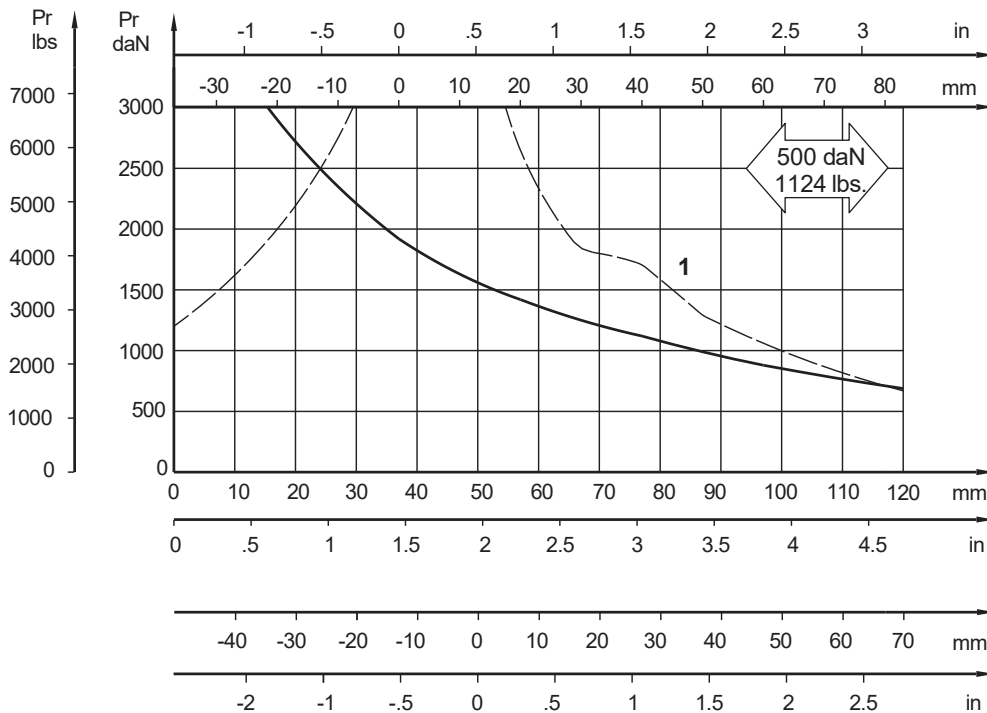
C: 2xM10-12 mm [.47 in] depth
F: Inspection hole for checking brake lining
P_(A,B): 2xG1/2 or 2xM22x1,5-15 mm [.59 in] depth
T: G 1/4 or M14x1,5- 12 mm [.47 in] depth (plugged)

Type	L, mm[in]	L ₁ ,mm[in.]	L ₂ ,mm[in.]	*L _E , mm[in]
MSB 80	119 [4.69]	14,0 [.55]	74 [2.91]	127 [5.00]
MSB100	122 [4.80]	17,4 [.69]	77 [3.03]	130 [5.12]
MSB 125	126 [4.96]	21,8 [.86]	82 [3.23]	134 [5.28]
MSB 160	132 [5.20]	27,8 [1.09]	88 [3.47]	140 [5.51]
MSB 200	139 [5.47]	34,8 [1.37]	95 [3.74]	147 [5.79]
MSB 250	148 [5.83]	43,5 [1.71]	110 [4.33]	156 [6.14]
MSB 315	159 [6.26]	54,8 [2.16]	115 [4.53]	167 [6.57]
MSB 400	174 [6.85]	69,4 [2.73]	130 [5.12]	182 [7.17]
MSB 475	188 [7.40]	82,6 [3.25]	143 [5.63]	196 [7.72]
MSB 525	180 [7.09]	74,5 [2.93]	135 [5.32]	188 [7.40]
MSB 565	186 [7.32]	80,2 [3.16]	141 [5.55]	192 [7.56]

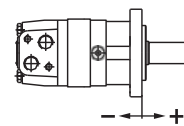
PERMISSIBLE SHAFT LOADS

The output shaft runs in tapered bearings that permit high axial and radial forces. The permissible radial load on the shaft is shown for an axial load of 0 N as function of the distance from the mounting flange to the point of load application. The curves apply to a B10 bearing life of 2000 hours at 100 RPM.

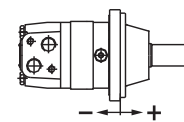
Curve "1" shows max. radial shaft load. Any shaft load exceeding the values shown by the curve will seriously reduce motor life.



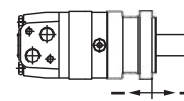
Mounting Flange:



Standard
A-2
Magneto



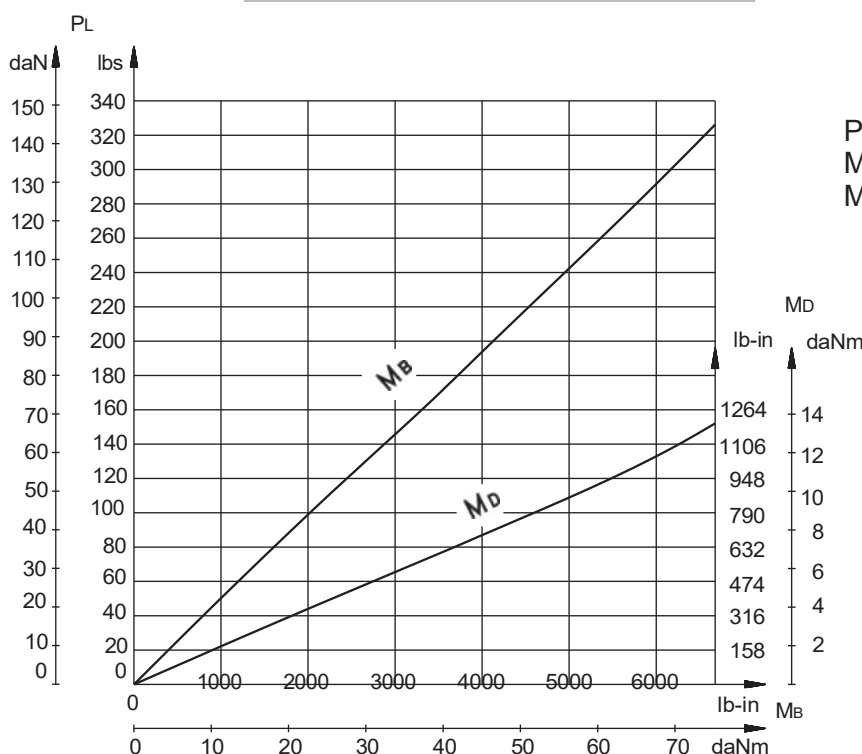
W - Wheel



Q - Square

Shaft: All type shafts except SA

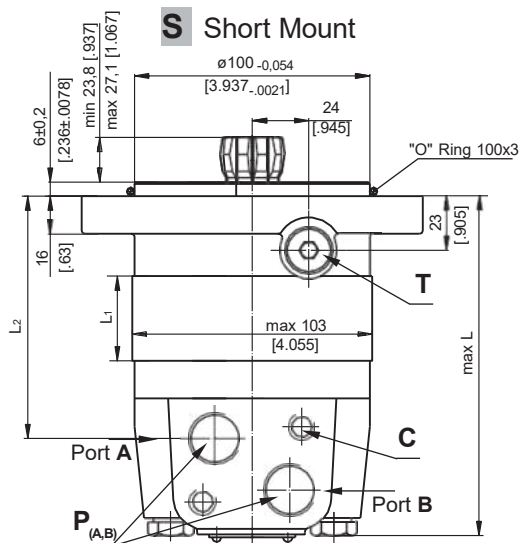
FUNCTION DIAGRAM WC-MSB



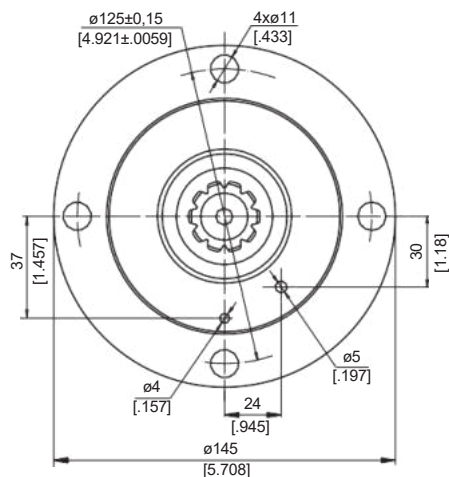
PL - Brake Lever Load
MB - Brake Torque
MD - Brake Lever Torque

DIMENSIONS AND MOUNTING DATA - WC-MSS and WC-MSV

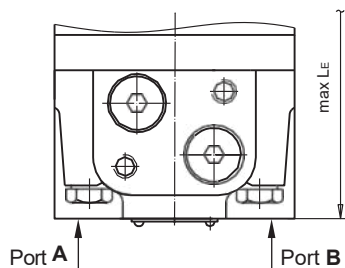
S Short Mount



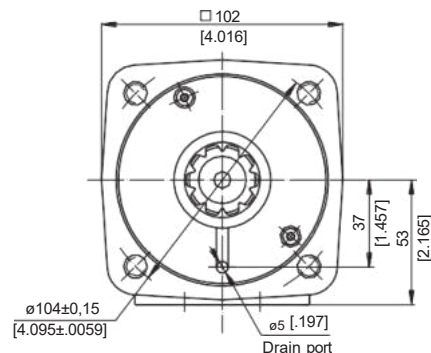
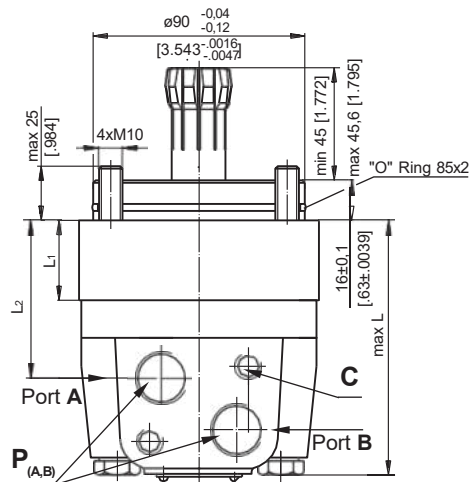
Port Dim.
See Page 16



E Rear ports



V Very Short Mount



C: 2xM10-12 mm [.47 in] depth

P_(A,B): 2xG1/2 or 2xM22x1,5-15 mm [.59 in] depth

T: G 1/4 or M14x1,5- 12 mm [.47 in] depth (plugged)

Standard Rotation

Viewed from Shaft End

Port A Pressurized - **CW**

Port B Pressurized - **CCW**

Reverse Rotation

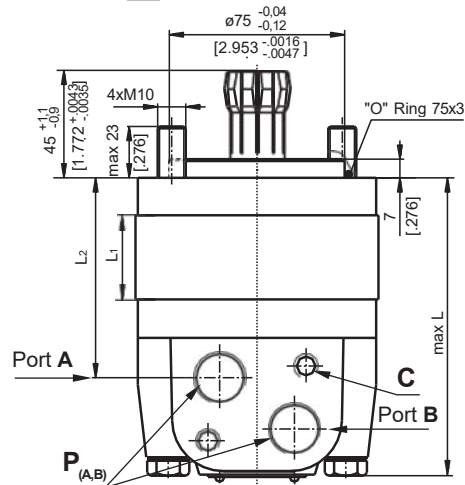
Viewed from Shaft End

Port A Pressurized - **CCW**

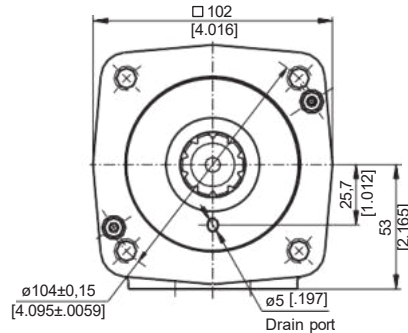
Port B Pressurized - **CW**

Type	L,mm[in]	L ₂ ,mm[in]	*L _E ,mm[in]	Type	L,mm[in]	L ₂ ,mm[in]	*L _E ,mm[in]	L ₁ ,mm[in]
WC-MSS 80	125 [4.92]	83 [3.27]	134 [5.28]	WC-MSV 80	91 [3.58]	47 [1.85]	97 [3.82]	14,0 [.55]
WC-MSS 100	129 [5.08]	87 [3.43]	138 [5.43]	WC-MSV 100	94 [3.70]	50,5 [1.99]	100 [3.94]	17,4 [.69]
WC-MSS 125	133 [5.24]	90 [3.54]	141 [5.55]	WC-MSV 125	99 [3.90]	55 [2.17]	105 [4.13]	21,8 [.86]
WC-MSS 160	139 [5.47]	96 [3.78]	147 [5.79]	WC-MSV 160	105 [4.13]	61 [2.40]	111 [4.37]	27,8 [1.09]
WC-MSS 200	146 [5.75]	103 [4.05]	154 [6.06]	WC-MSV 200	112 [4.41]	68 [2.78]	118 [4.64]	34,8 [1.37]
WC-MSS 250	155 [6.10]	112 [4.41]	163 [6.42]	WC-MSV 250	120 [4.72]	76,5 [3.01]	126 [4.96]	43,5 [1.71]
WC-MSS 315	166 [6.54]	123 [4.84]	174 [6.85]	WC-MSV 315	132 [5.20]	88 [3.46]	138 [5.43]	54,8 [2.16]

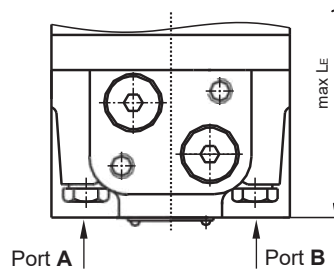
U Ultra Short Mount



Port Dim.
See Page 16



E Rear ports



C: 2xM10-12 mm [.47 in] depth

P_(A,B): 2xG1/2 or 2xM22x1,5
15 mm [.59 in] depth

Standard Rotation

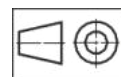
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

Reverse Rotation

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

Type	L,mm[in]	L ₂ ,mm[in]	*L _E ,mm[in]	L ₁ ,mm[in]
MSU 80	105,5 [4.15]	63 [2.48]	111,5 [4.39]	14,0 [.55]
MSU 100	109 [4.29]	66,5 [2.62]	115 [4.53]	17,4 [.69]
MSU 125	113 [4.45]	71 [2.80]	119 [4.69]	21,8 [.86]
MSU 160	119 [4.69]	77 [3.03]	125 [4.92]	27,8 [1.09]
MSU 200	126 [4.96]	84 [3.31]	132 [5.20]	34,8 [1.37]
MSU 250	135 [5.32]	92,5 [3.64]	141 [5.55]	43,5 [1.71]
MSU 315	146 [5.75]	104 [4.09]	152 [5.98]	54,8 [2.16]
MSU 400	160 [6.30]	119 [4.69]	167 [6.58]	69,4 [2.73]
MSU 475	174 [6.85]	132 [5.20]	180 [7.09]	82,6 [3.25]
MSU 525	166 [6.54]	124 [4.88]	172 [6.77]	74,5 [2.93]
MSU 565	172 [6.77]	130 [5.12]	178 [7.01]	80,2 [3.16]

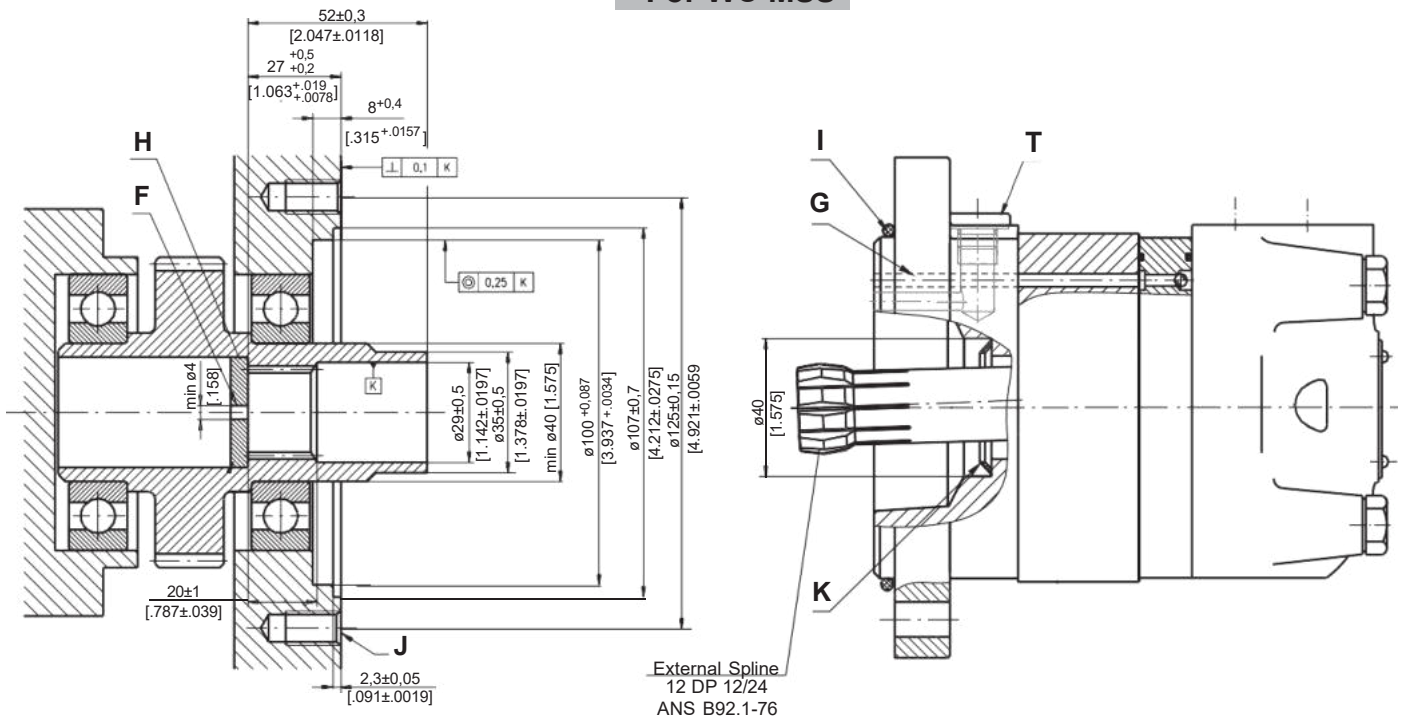
* -For Rear Ported Motors.



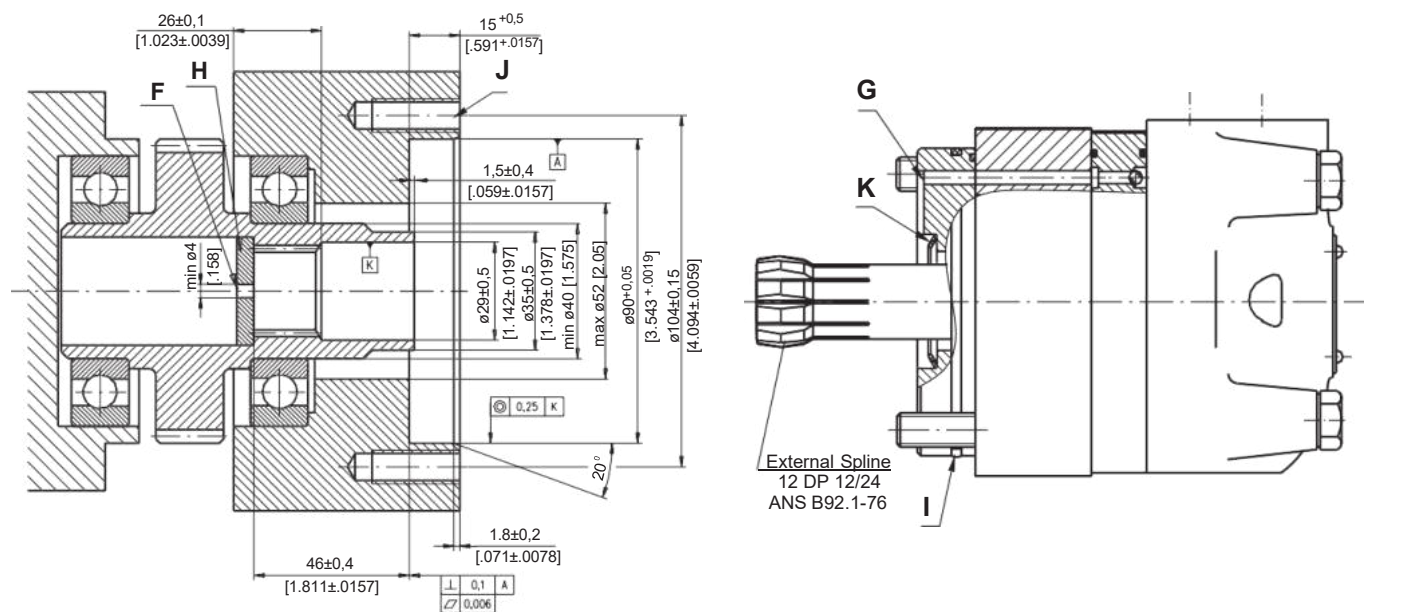
mm [in]

DIMENSIONS OF THE ATTACHED COMPONENT

For WC-MSS



For WC-MSV



ORDER CODE

	1	2	3	4	5	6	7	8
WC-MS								

Pos. 1 - Mounting Flange

omit - SAE A-4 mount, four holes

A - SAE A-2 mount, two holes

F - Magneto mount, four holes

Q - Square mount, four holes

B - Motor with drum brake

S - Short mount

V - Very short mount

U - Ultra short mount

W - Wheel mount

Pos. 2 - Port type

omit - Side ports

E - Rear ports

Pos. 3 - Displacement code

80 - 80,5 cm³/rev [4.91 in³/rev]

100 - 100,0 cm³/rev [6.10 in³/rev]

125 - 125,7 cm³/rev [7.67 in³/rev]

160 - 159,7 cm³/rev [9.74 in³/rev]

200 - 200,0 cm³/rev [12.20 in³/rev]

250 - 250,0 cm³/rev [15.30 in³/rev]

315 - 314,9 cm³/rev [19.20 in³/rev]

400 - 397,0 cm³/rev [24.20 in³/rev]

475 - 474,6 cm³/rev [28.96 in³/rev]

525 - 522,7 cm³/rev [31.88 in³/rev]

565 - 564,9 cm³/rev [34.47 in³/rev]

Pos. 4 - Shaft Extensions*

omit - for **B**, **S**, **U** and **V** mounting flange

C - Ø32 straight, Parallel key A10x8x45 DIN6885

CO - Ø1¼" straight, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x1¼" BS46

K - Ø35 tapered 1:10, Parallel key B6x6x20 DIN6885

SL - Ø34,85 p.t.o. DIN 9611 Form 1

SH - Ø1¼" splined 14T ANS B92.1-1970

SA - 7/8"-13T splined ANS B92.1-1970

Pos. 5 - Ports

omit - BSPP (ISO 228)

M - Metric (ISO 262)

Pos. 6 - Actuating Direction**

/R - Right

/L - Left

Pos. 7 - Special Features (see page 51)

Pos. 8 - Design Series

omit - Factory specified