Quality assured company - ISO 9001 *certified*

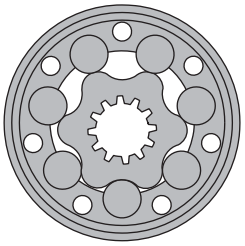
M+S HYDRAULIC

Product Tech News

Hydraulic orbital motors MRW(N)

OPTIONS

- » Model - Spool valve, roll-gerotor
- » Wheel mount
- » Motor with needle bearing (option)
- » Shafts - straight, splined and tapered
- » Metric and BSPP ports
- » Other special features



APPLICATION

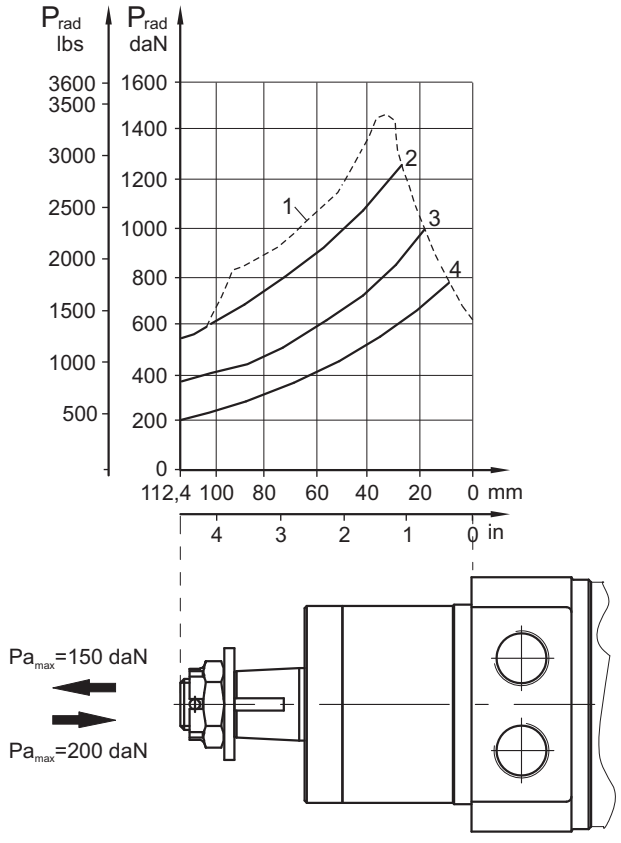
- » Conveyors
- » Feeding mechanism of robots and manipulators
- » Metal working machines
- » Textile machines
- » Agricultural machines
- » Food industries
- » Grass cutting machinery etc.

PERMISSIBLE SHAFT LOADS

MRWN

The curves apply to a B10 bearing life of 2000 hours.

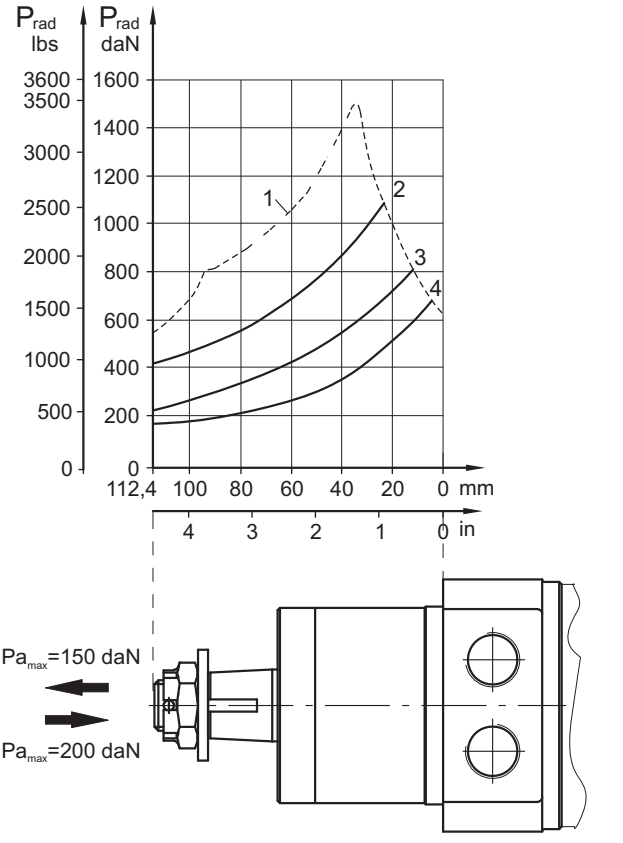
1. Max. radial shaft load
2. n= 50 RPM
3. n=200 RPM
4. n=800 RPM



MRW

The curves apply to a B10 bearing life of 2000 hours.

1. Max. radial shaft load
2. n=300 RPM
3. n=500 RPM
4. n=800 RPM



SPECIFICATION DATA

Type		MRW50	MRW80	MRW100	MRW125	MRW160	MRW200	MRW250	MRW315	MRW400
Displacement, cm^3/rev		51,5	80,3	99,8	125,7	159,6	199,8	250,1	315,7	397
[in^3/rev]		[3.14]	[4.90]	[6.09]	[7.67]	[9.74]	[12.19]	[15.26]	[19.26]	[24.4]
Max. Speed,	Cont.	775	750	600	475	375	300	240	190	150
[RPM]	Int.*	970	940	750	600	470	375	300	240	190
Max. Torque	Cont.	10 [900]	20 [1770]	24 [2125]	30 [2655]	39 [3450]	38,5[3410]	39 [3450]	36 [3185]	38 [3360]
daNm [in-lb]	Int.*	13 [1150]	22 [1947]	28 [2480]	34 [3010]	43 [3805]	46 [4070]	47 [4160]	47 [4160]	47 [4160]
	Peak**	17 [1505]	27 [2390]	32 [2832]	37 [3275]	46 [4070]	56 [4960]	60 [5310]	61 [5400]	61 [5400]
Max. Output	Cont.	7 [9.5]	12,5 [17]	13 [17.4]	12,5[16.8]	11,5[15.4]	9 [12]	8 [10.7]	5 [6.7]	4,8 [6.4]
kW [HP]	Int.*	8,5 [11.9]	15 [20.1]	15 [20.1]	14,5[19.5]	14 [18.8]	12 [16.1]	9,5 [12.7]	8 [10.7]	6,8 [9.1]
Max. Pressure Drop	Cont.	140 [2030]	175 [2540]	175[2540]	175[2540]	175[2540]	140 [2030]	110[1600]	85 [1230]	65 [940]
bar [PSI]	Int.*	175 [2540]	200 [2900]	200[2900]	200[2900]	200[2900]	175 [2540]	140[2030]	115[1670]	90 [1300]
	Peak**	225 [3260]	225 [3260]	225[3260]	225[3260]	225[3260]	225 [3260]	200[2900]	150[2175]	115[1670]
Max. Oil Flow	Cont.	40 [10.5]	60 [15.8]	60 [15.8]	60 [15.8]	60 [15.8]	60 [15.8]	60 [15.8]	60 [15.8]	60 [15.8]
lpm [GPM]	Int.*	50 [13.2]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]	75 [19.8]
Max. Inlet Pressure	Cont.	175 [2540]	175 [2540]	175[2540]	175[2540]	175[2540]	175 [2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200 [2900]	200 [2900]	200[2900]	200[2900]	200[2900]	200 [2900]	200[2900]	200[2900]	200[2900]
	Peak**	225 [3260]	225 [3260]	225[3260]	225[3260]	225[3260]	225 [3260]	225[3260]	225[3260]	225[3260]
Max. Return Pres-	Cont.	175 [2540]	175 [2540]	175[2540]	175[2540]	175[2540]	175 [2540]	175[2540]	175[2540]	175[2540]
sure with Drain Line	Int.*	200 [2900]	200 [2900]	200[2900]	200[2900]	200[2900]	200 [2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225 [3260]	225 [3260]	225[3260]	225[3260]	225[3260]	225 [3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10 [145]	10 [145]	10 [145]	9 [130]	7 [102]	5 [73]	4 [58]	3 [44]	3 [44]
Min. Starting Torque	At max.press.									
daNm [in-lb]	drop Cont.	8 [710]	15 [1330]	20 [1770]	25 [2215]	32 [2832]	33 [2920]	31 [2740]	31,5[2875]	31,5[2875]
	At max.press.									
	drop Int.*	10 [85]	17 [1505]	23 [2035]	28 [2480]	37 [3275]	40 [3540]	48 [4250]	58 [5220]	50 [4425]
Min. Speed***, [RPM]		10	10	10	10	10	10	10	10	10
Weight, kg [lb]	MR(F)	6,8 [15]	6,9 [15,2]	7,2 [15.9]	7,3 [16.1]	7,5 [15.2]	8 [17.6]	8,4 [18.5]	9,1 [20]	9,8 [21.6]
For rear ports: +0,650 [1.433]	MRQ(N)	6,2 [13.7]	6,3 [13.9]	6,6 [14.6]	6,8 [15]	7,2 [14.7]	7,6 [15.4]	7,8 [17.2]	8,6 [19]	9,3 [20.5]

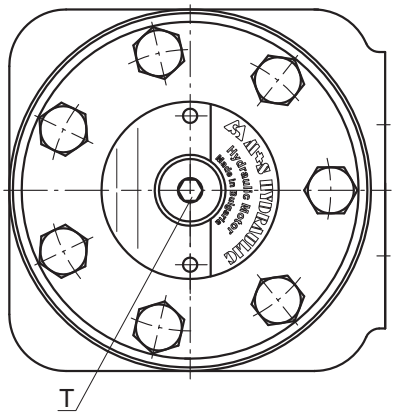
* Intermittent operation: the permissible values may occur for max. 10% of every minute.
** Peak load: the permissible values may occur for max. 1% of every minute.
*** For speeds lower than given, consult factory or your regional manager.

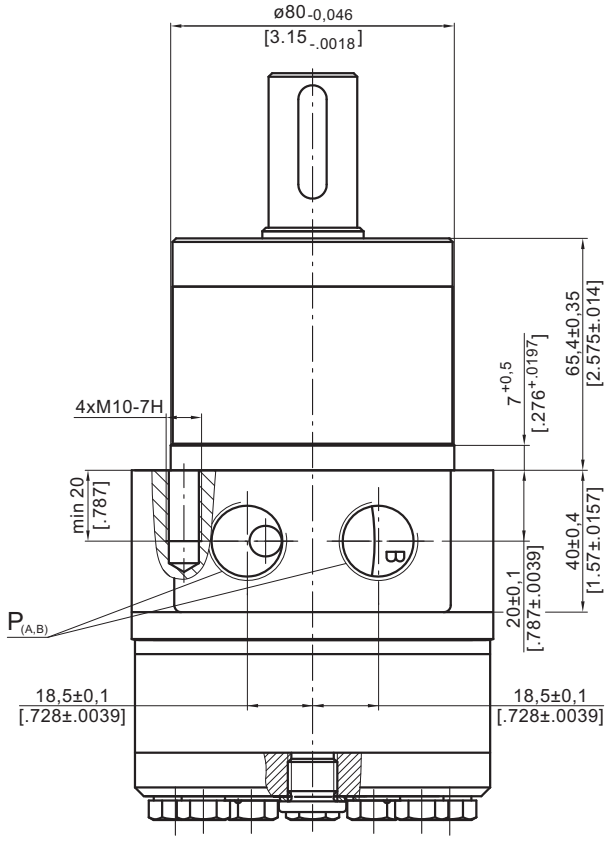
1. Intermittent speed and intermittent pressure must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4). If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

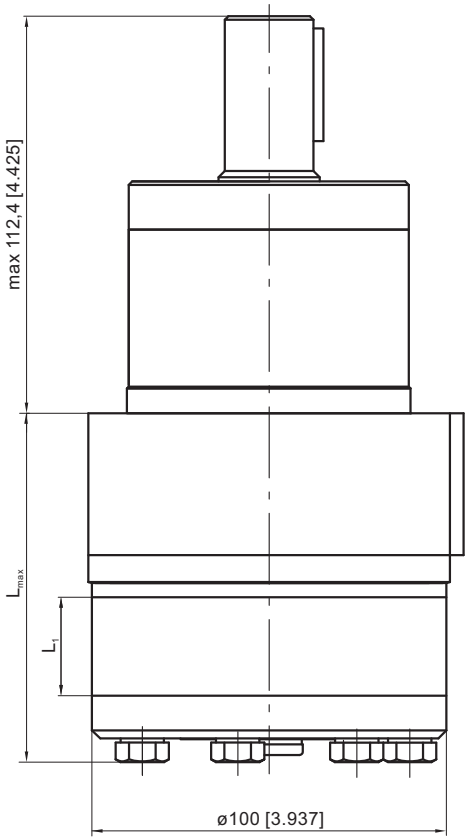
DIMENSIONS AND MOUNTING DATA

$P_{(A, B)}$: 2xG1/2 or 2xM22x1,5 - 15 mm [.59 in] depth
T : G1/4 or M14x1,5 - 12 mm [.47 in] depth (plugged)

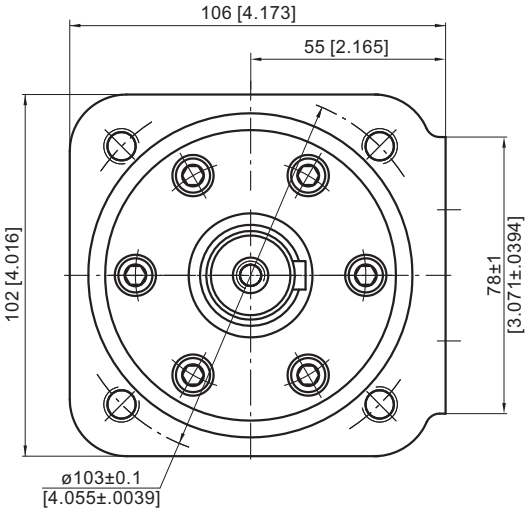
mm [in]







Type	L, mm [in]	L_1, mm [in]
MRW 50	81,0 [3.19]	9,0 [.35]
MRW 80	86,0 [3.39]	14,0 [.55]
MRW 100	89,5 [3.52]	17,4 [.69]
MRW 125	93,8 [3.69]	21,8 [.86]
MRW 160	99,8 [3.93]	27,8 [1.09]
MRW 200	106,8 [4.20]	34,8 [1.37]
MRW 250	115,5 [4.55]	43,5 [1.71]
MRW 315	126,8 [4.99]	54,8 [2.16]
MRW 400	141,5 [5.57]	69,4 [2.73]

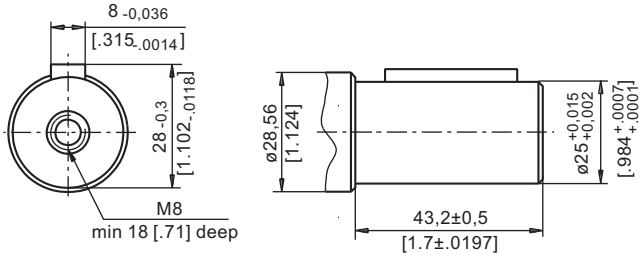


Standard Rotation
Viewed from Shaft End
Port **A** Pressurized - **CW**
Port **B** Pressurized - **CCW**

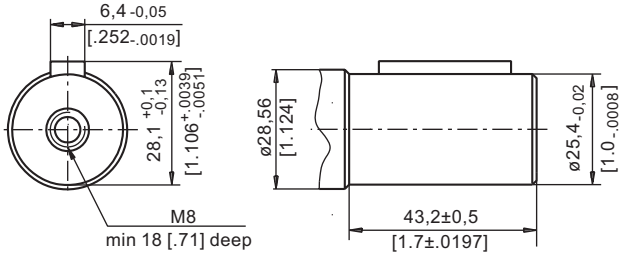
Reverse Rotation
Viewed from Shaft End
Port **A** Pressurized - **CCW**
Port **B** Pressurized - **CW**

SHAFT EXTENSIONS

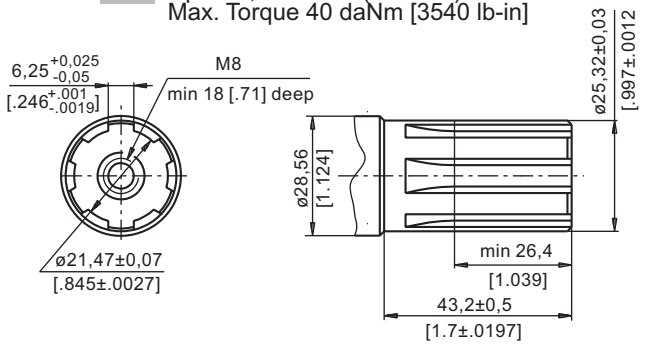
C - ø25 straight, Parallel key A8x7x32 DIN 6885
Max. Torque 34 daNm [3010 lb-in]



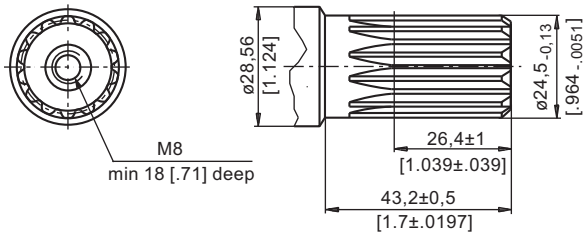
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
Max. Torque 34 daNm [3010 lb-in]



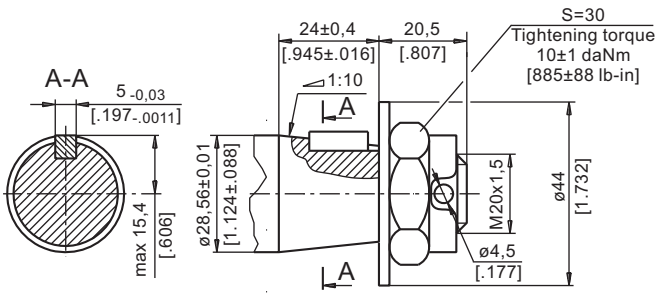
SH - splined, BS 2059 (SAE 6B)
Max. Torque 40 daNm [3540 lb-in]



SA - splined, B25x22h9 DIN 5482
Max. Torque 40 daNm [3540 lb-in]

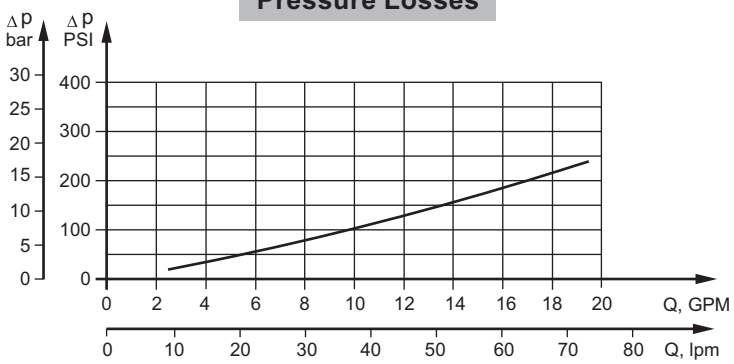


K - tapered 1:10, Parallel key B5x5x14 DIN 6885
Max. Torque 40 daNm [3540 lb-in]



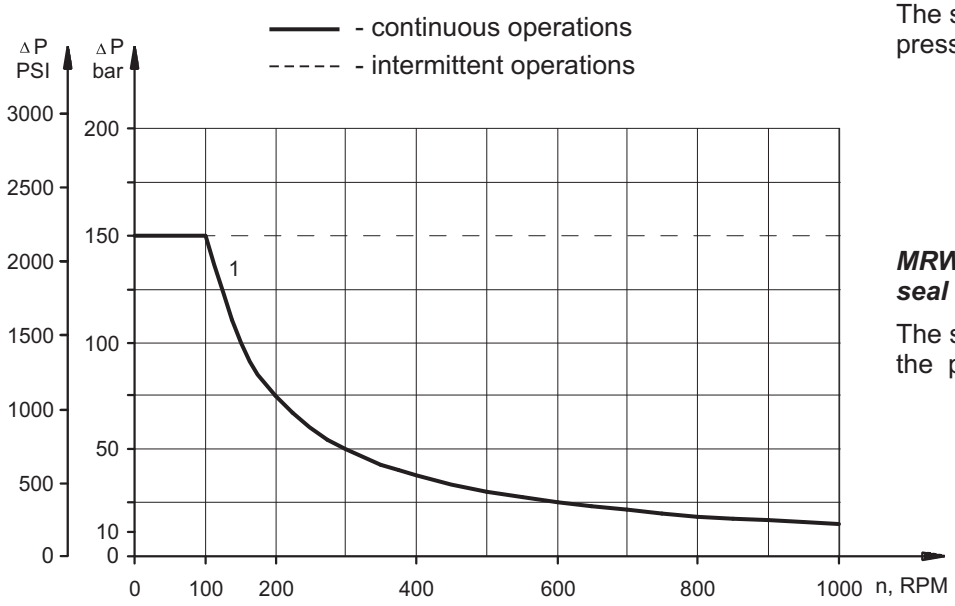
mm [in]

Pressure Losses



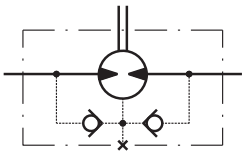
MAX. PERMISSIBLE SHAFT SEAL PRESSURE

1: Drawing for Standard Shaft Seal "D"



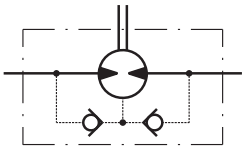
MRW(N)... motors with standard shaft seal and with drain connection:

The shaft seal pressure equals the pressure in the drain line.



MRW(N)...1 motors with standard shaft seal and without drain connection:

The shaft seal pressure never exceeds the pressure in the return line.



ORDER CODE

	1	2	3	4	5	6	7	8	9
M R W				**D**					

Pos.1 - Option (needle bearings)

omit - none
N - with needle bearings

Pos.2 - Displacement code

50 - 51,5 cm^3/rev [3.14 in^3/rev]
80 - 80,3 cm^3/rev [4.90 in^3/rev]
100 - 99,8 cm^3/rev [6.09 in^3/rev]
125 - 125,7 cm^3/rev [7.67 in^3/rev]
160 - 159,6 cm^3/rev [9.74 in^3/rev]
200 - 199,8 cm^3/rev [12.19 in^3/rev]
250 - 250,1 cm^3/rev [15.26 in^3/rev]
315 - 315,7 cm^3/rev [19.26 in^3/rev]
400 - 397,0 cm^3/rev [24.40 in^3/rev]

Pos.3 - Shaft Extensions*

C - ø25 straight, Parallel key A8x7x32 DIN6885
CO - ø1" straight, Parallel key ¼"x¼"x1¼" BS46
SH - ø25,32 splined BS 2059 (SAE 6B)
K - ø28,56 tapered 1:10, Parallel key B5x5x14 DIN6885
SA - ø24,5 splined B 25x22 DIN 5482

Pos.4 - Shaft Seal Version

D - Standard shaft seal

Pos. 5 - Drain Port

omit - with drain port
1 - without drain port

Pos. 6 - Special Features (not for N-option)

omit - none
LL - Low Leakage
LSV - Low Speed Valve
FR - Free Running

Pos. 7 - Rotation

omit - Standard Rotation
R - Reverse Rotation

Pos. 8 - Option (Paint)**

omit - no Paint
P - Painted
PC - Corrosion Protected Paint

Pos. 9 - Design Series

omit - Factory specified

Notes:

* The permissible output torque for shafts must not be exceeded!
** Colour at customer's request.

The hydraulic motors are mangano-phosphatized as standard.

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