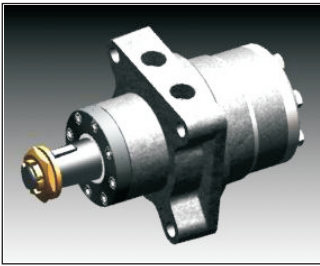
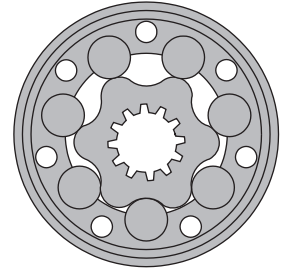


HYDRAULIC MOTORS MLHRW



APPLICATION

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



CONTENTS

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OPTIONS

- » Model- Spool valve, roll-gerotor
- » Wheel mount
- » Shafts- straight, splined and tapered
- » SAE, Metric and BSPP ports
- » Shaft seal for high and low pressure
- » Other special features

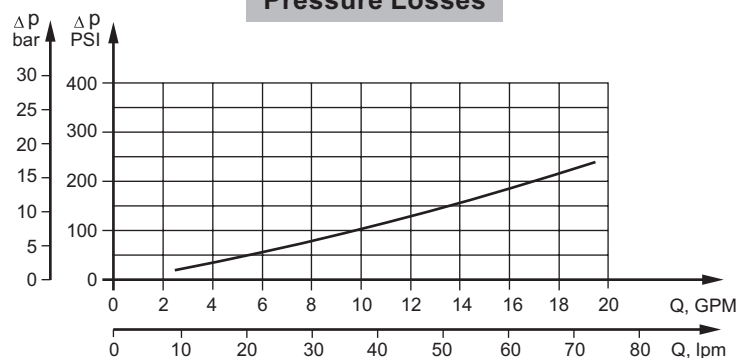
GENERAL

Displacement,	in ³ /rev [cm ³ /rev.]	3.14÷24.4 [51,5÷397]
Max. Speed,	[RPM]	150÷750
Max. Torque,	in-lb [daNm]	900÷5400 [10,1÷61]
Max. Output,	HP [kW]	9.5÷17.4 [7÷13]
Max. Pressure Drop,	PSI [bar]	1670÷2540 [115÷175]
Max. Oil Flow,	GPM [lpm]	10÷16 [37,8÷60,6]
Min. Speed,	[RPM]	10
Pressure fluid		Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range,	°F [°C]	-22÷194 [-30÷90]
Optimal Viscosity range, SUS [mm²/s]		98÷347 [20÷75]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 micron)

Oil flow in drain line

Pressure drop PSI [bar]	Viscosity SUS [mm ² /s]	Oil flow in drain line GPM [lpm]
1450 [100]	98 [20]	.660 [2,5]
	164 [35]	.476 [1,8]
2030 [140]	98 [20]	.925 [3,5]
	164 [35]	.740 [2,8]

Pressure Losses



SPECIFICATION DATA

Type		MLHRW 50	MLHRW 80	MLHRW 100	MLHRW 125	MLHRW 160	MLHRW 200	MLHRW 250	MLHRW 315	MLHRW 400	
Displacement, in.³/rev.		3.14	4.90	6.09	7.67	9.74	12.19	15.26	19.26	24.4	
[cm.³/rev.]		[51,5]	[80,3]	[99,8]	[125,7]	[159,6]	[199,8]	[250,1]	[315,7]	[397]	
Max. Speed,	Cont.	734	750	607	482	379	303	240	190	152	
	[RPM]	Int.*	1029	940	758	602	474	379	303	242	191
Max. Torque	Cont.	900 [10,1]	1725 [19,5]	2125 [24]	2655 [30]	3450 [39]	4000 [45]	4780 [54]	4870 [55]	5400 [61]	
	in-lb [daNm]	Int.*	1150 [13]	1947 [22]	2480 [28]	3010 [34]	3805 [43]	4425 [50]	5400 [61]	5580 [63]	6100 [69]
	Peak**	1505 [17]	2390 [27]	2832 [32]	3275 [37]	4070 [46]	4960 [56]	6280 [71]	7350 [83]	7700 [87]	
Max. Output	Cont.	9.5 [7]	17 [12,5]	17.4 [13]	16.8 [12,5]	15.4 [11,5]	14.8 [11]	13.4 [10]	12 [9]	10.5 [7,8]	
	HP [kW]	Int.*	11.9 [8,5]	20.1 [15]	20.1 [15]	19.5 [14,5]	18.8 [14]	17.4 [13]	16.1 [12]	14.8 [11]	14.2 [10,6]
Max. Pressure Drop	Cont.	2030 [140]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	1960 [135]	1670 [115]	
	PSI [bar]	Int.*	2540 [175]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2320 [160]	2030 [140]
	Peak**	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3045 [210]	2540 [175]	
Max. Oil Flow	Cont.	10 [37,8]	16 [60,6]	16 [60,6]	16 [60,6]	16 [60,6]	16 [60,6]	16 [60,6]	16 [60,6]	16 [60,6]	
	GPM [lpm]	Int.*	14 [53]	20 [75,7]	20 [75,7]	20 [75,7]	20 [75,7]	20 [75,7]	20 [75,7]	20 [75,7]	
Max. Inlet Pressure	Cont.	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	
	PSI [bar]	Int.*	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	
	Peak**	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	
Max. Return Pres- sure with Drain Line	Cont.	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	
	PSI [bar]	Int.*	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	2900 [200]	
	Peak**	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	
Max. Starting Pressure with Unloaded Shaft, PSI [bar]		145 [10]	145 [10]	145 [10]	130 [9]	102 [7]	73 [5]	73 [5]	73 [5]	73 [5]	
Min. Starting Torque	At max.press.										
	in-lb [daNm]	drop Cont.	710 [8]	1330 [15]	1770 [20]	2215 [25]	2832 [32]	3630 [41]	4425 [50]	4425 [50]	4425 [50]
	At max.press.	drop Int.*	885 [10]	1505 [17]	2035 [23]	2480 [28]	3275 [37]	4070 [46]	4870 [55]	5840 [66]	5400 [61]
Min. Speed***, [RPM]		10	10	10	9	7	5	6	5	5	
Weight, lb [kg]		21.2 [9,6]	21.4 [9,7]	21.7 [9,8]	22.1 [10,0]	22.7 [10,3]	23.8 [10,8]	24.9 [11,3]	26 [11,8]	27.63 [12,5]	

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

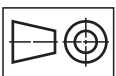
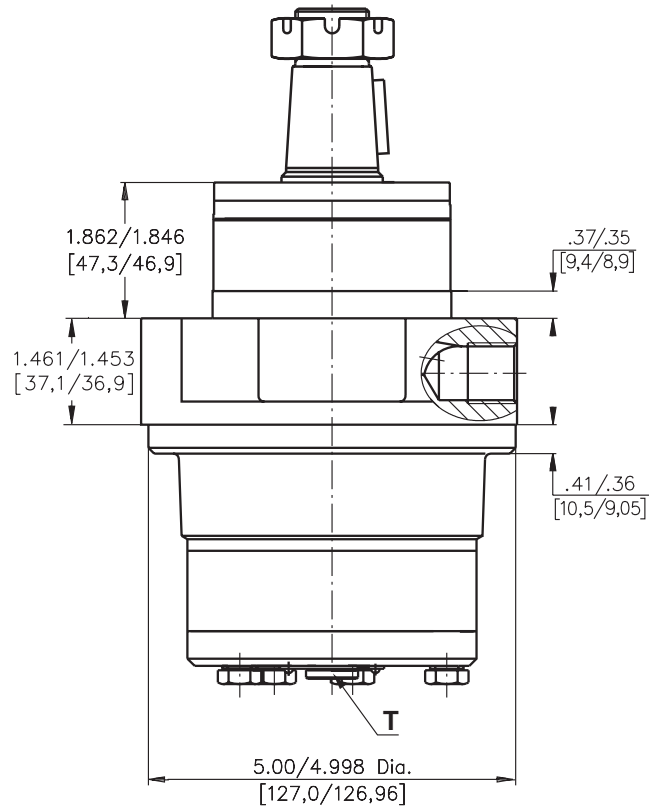
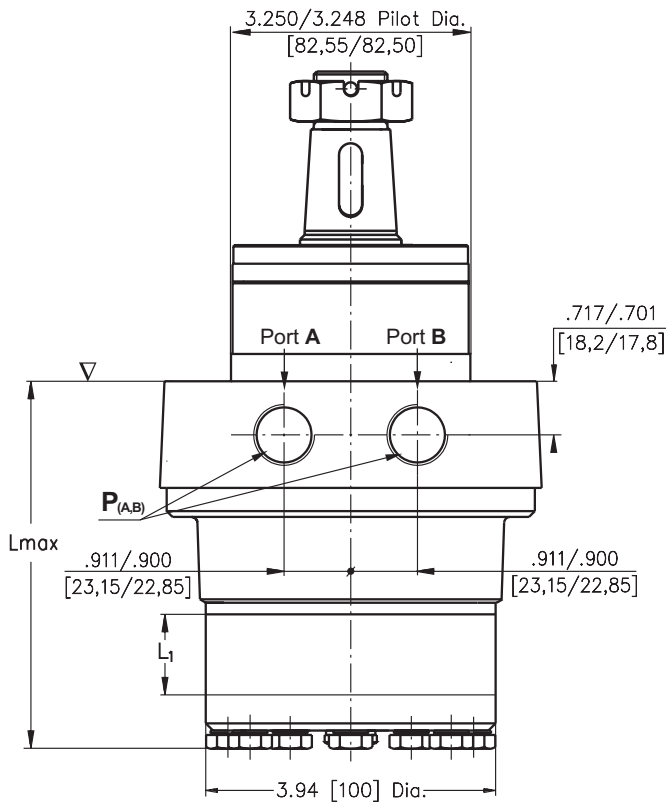
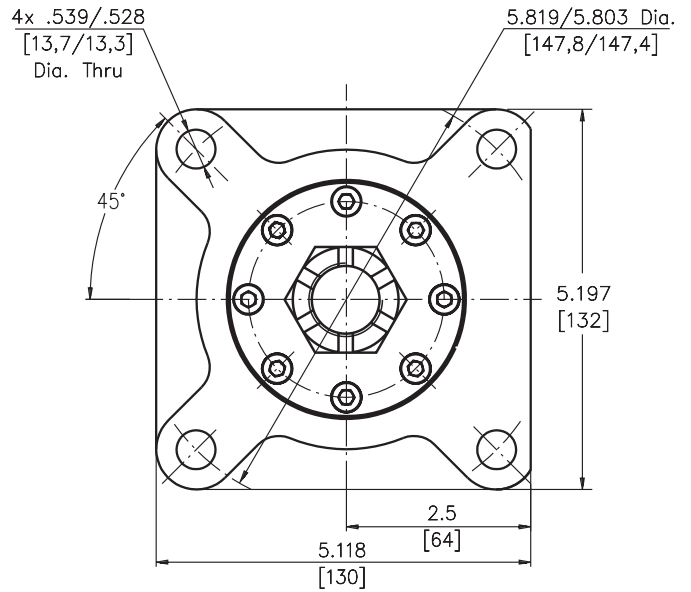
** Peak load: the permissible values may occur for max. 1% of every minute.

*** For speeds of 10 RPM or 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 70 SUS[13mm²/s] at 122°F [50°C].
5. Recommended maximum system operating temperature is 180°F [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.

DIMENSIONS AND MOUNTING DATA - MLHRW (WHEEL MOTOR)

Type	Lmax,in. [mm]	L1,in.[mm]
MLHRW 50	4.25 [108,0]	.35 [9,0]
MLHRW 80	4.45 [113,0]	.55 [14,0]
MLHRW 100	4.59 [116,5]	.69 [17,4]
MLHRW 125	4.74 [120,5]	.86 [21,8]
MLHRW 160	4.98 [126,5]	1.09 [27,8]
MLHRW 200	5.26 [133,5]	1.37 [34,8]
MLHRW 250	5.61 [142,5]	1.71 [43,5]
MLHRW 315	6.04 [153,5]	2.16 [54,8]
MLHRW 400	6.63 [168,5]	2.73 [69,4]



▽ - Motor Mounting Surface

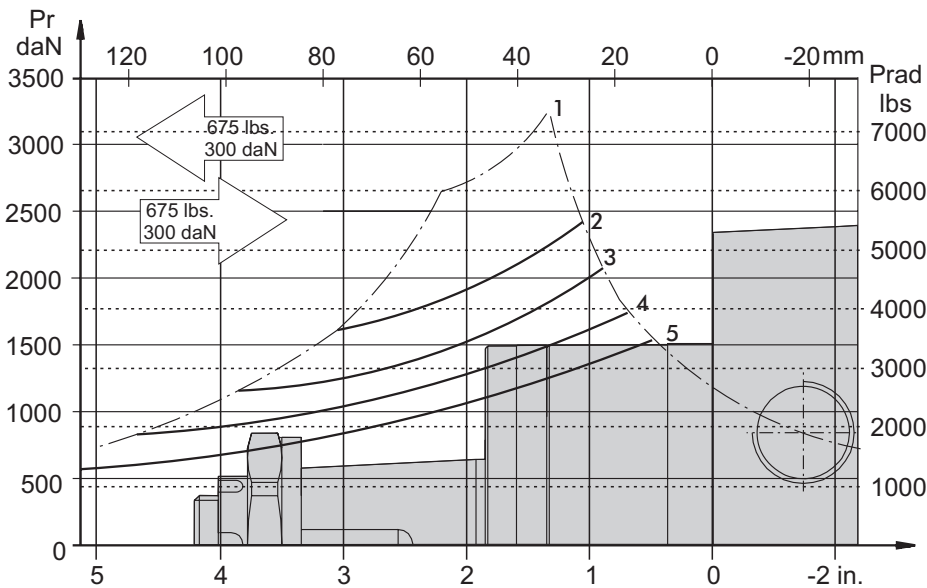
Standard Rotation
Viewed from Shaft End
Port A Pressurized - **CW**
Port B Pressurized - **CCW**

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

	Versions	
	2	4
P _(A,B)	2xG½	2x⅞-14UNF
T	G¼	⅞-20UNF

PERMISSIBLE SHAFT LOADS MLHRW

The curve applies to a B10 bearing life of 2000 hours.

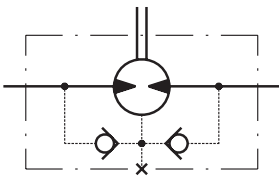


1. Permissible radial shaft load
2. Drawing by n= 50 RPM
3. Drawing by n=100 RPM
4. Drawing by n=200 RPM
5. Drawing by n=400 RPM

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

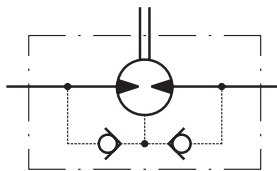
MLHRW...; MLHRW...UK motors with drain connection:

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



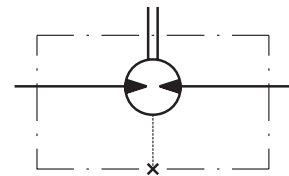
MLHRW...1 motors without drain connection:

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

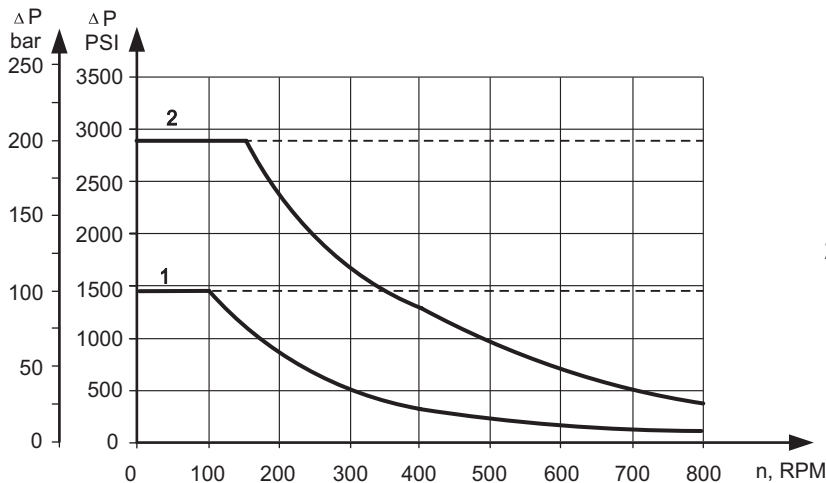


MLHRW...U motors with high pressure seal and drain connection:

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



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



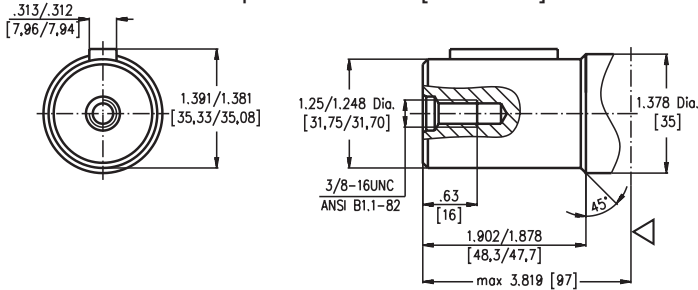
- 1: Drawing for Standard Shaft Seal
- 2: Drawing for High Pressure Seal ("U" Seal)

— - continuous operations
 - - - - - intermittent operations

SHAFT EXTENSIONS

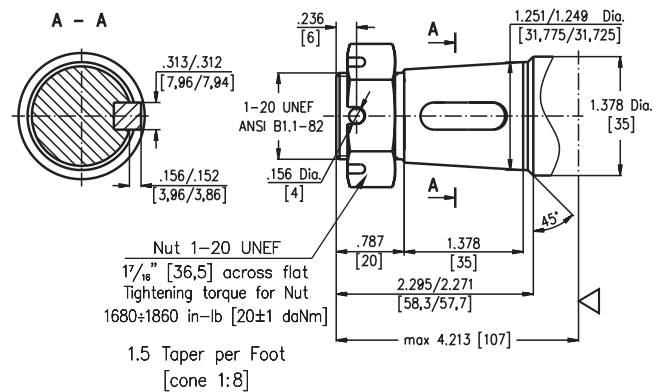
K

1¼" [31,75] straight, Parallel key 5/16"x5/16"x1¼" BS 46
Max. Torque 6815 in-lb [77 daNm]



R

1¼" [31,75], SAE J501 Tapered
Parallel key 5/16"x5/16"x1"
Max. Torque 6815 in-lb [77 daNm]



▽ - Motor Mounting Surface
Requirement max. Torque
must be not exceeded.

ORDER CODE

	1	2	3	4	5	6
MLHRW						

Pos. 1 - Displacement code*

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

Pos. 2 - Shaft Extensions**

K	-	1¼" [31,75] straight, Parallel key
R	-	1¼" [31,75] SAE J501 Tapered

Pos. 3 - Port Size/Type [standard manifold to each]

2	-	side ports, 2xG1/2, G1/4, BSP thread, ISO 228
4	-	side ports, 2x7/8-14 UNF, O-ring, 7/16-20 UNF

Pos. 4 - Shaft Seal Version

omit	-	Standard shaft seal
U	-	High pressure shaft seal without check valves
UK	-	High pressure shaft seal with check valves

Pos. 5 - Drain Port

omit	-	with drain port
1	-	without drain port

Pos. 6 - Special Features [see page 38]

Pos. 7 - Design Series

omit	-	Factory specified
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Notes : * For the Performance Data please look at "M+S Hydraulic" Catalogue for MLHR motors, pages 36÷40.

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

The hydraulic motors are mangano-phosphatized as standard.