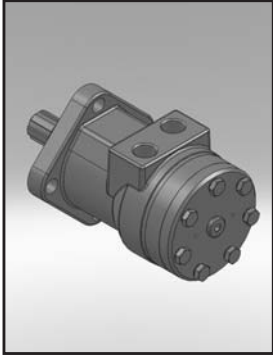
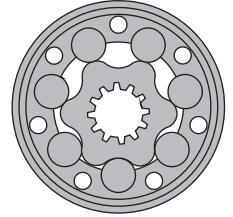
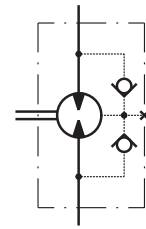


HYDRAULIC MOTORS MLHRL



APPLICATION

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



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OPTIONS

- » Model - Spool valve, roll-gerotor
- » Antifriction conical bearings
- » Flange mount
- » Shafts - straight, splined and tapered
- » SAE and BSPP ports
- » Other special features

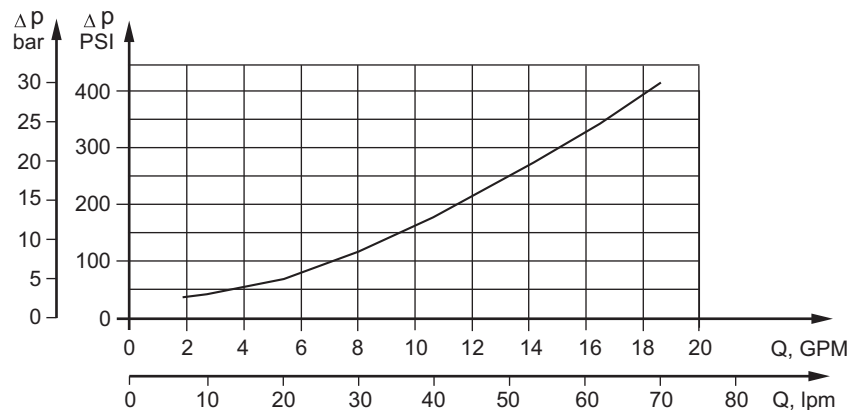
GENERAL

Max. Displacement, in ³ /rev [cm ³ /rev]	24.4 [397]
Max. Speed, [RPM]	970
Max. Torque, lb-in [daNm]	cont.: 5400 [61] int.: 6100 [69]
Max. Output, HP [kW]	21.5 [16]
Max. Pressure Drop, PSI [bar]	cont.: 2540 [175] int.: 2900 [200]
Max. Oil Flow, GPM [lpm]	20 [75]
Min. Speed, [RPM]	10
Pressure fluid	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
Temperature range, °F [°C]	-40÷284 [-40÷140]
Optimal Viscosity range, SUS [mm ² /s]	98÷347 [20÷75]
Filtration	ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

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	MLHRL 50	MLHRL 80	MLHRL 100	MLHRL 125	MLHRL 160	MLHRL 200	MLHRL 250	MLHRL 315	MLHRL 400	
Displacement, in³/rev [cm³/rev]	3.14 [51,5]	4.90[80,3]	6.09[99,8]	7.67[125,7]	9.74 [159,6]	12.19[199,8]	15.26[250,1]	19.26[315,7]	24.4[397]	
Max. Speed, [RPM]	Cont.	775	750	600	475	375	300	240	190	
	Int.*	970	940	750	600	470	375	300	240	
Max. Torque lb-in [daNm]	Cont.	900 [10,1]	1770[20]	2125[24]	2655[30]	3450[39]	4000[45]	4780[54]	4870[55]	5400[61]
	Int.*	1150 [13]	1947[22,0]	2480[28]	3010[34]	3805 [43]	4425[50]	5400[61]	5580[63]	6100[69]
	Peak**	1505 [17]	2390[27,0]	2832 [32]	3275[37]	4070[46]	4960 [56]	6280[71]	7350[83]	7700[87]
Max. Output HP [kW]	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]
	Int.*	11.9 [8,5]	20.1[15]	20.1[15]	21.5[16]	18.8[14]	17.4[13]	16.1[12]	14.8[11]	14.2[10,6]
Max. Pressure Drop PSI [bar]	Cont.	2030 [140]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	1960[135]	1670[115]
	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 GPM [lpm]	Cont.	11 [40]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]
	Int.*	13 [50]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
Max. Inlet Pressure PSI [bar]	Cont.	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]
	Int.*	2900 [200]	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 without Drain Line or Max. Pres- sure in Drain Line, PSI [bar]	Cont. 0-100 RPM	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]
	Cont. 100-300 RPM	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]
	Cont. 300-600 RPM	365 [25]	365 [25]	365 [25]	365 [25]	365 [25]	365 [25]	365 [25]	365 [25]	365 [25]
	Cont. >600 RPM	220 [15]	220 [15]	220 [15]	220 [15]	220 [15]	220 [15]	220 [15]	220 [15]	220 [15]
	Int.* 0-max. RPM	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]	1450 [100]
Max. Return Pres- sure with Drain Line PSI [bar]	Cont.	2030 [140]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]
	Int.*	2540 [175]	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]	58 [4]	44 [3]	44 [3]	
Min. Starting Torque lb-in [daNm]	710 [8]	1330[15]	1770[20]	2215[25]	2835[32]	3275[37]	4000[45]	4000[45]	4340[49]	
Min. Speed***, [RPM]	10	10	10	10	10	10	10	10	10	
Weight, lb [kg]	18.7 [8,5]	19 [8,6]	19.6 [8,9]	19.8 [9,0]	20.3 [9,2]	21.2 [9,6]	22.3 [10,1]	23.8 [10,8]	25.4 [11,5]	

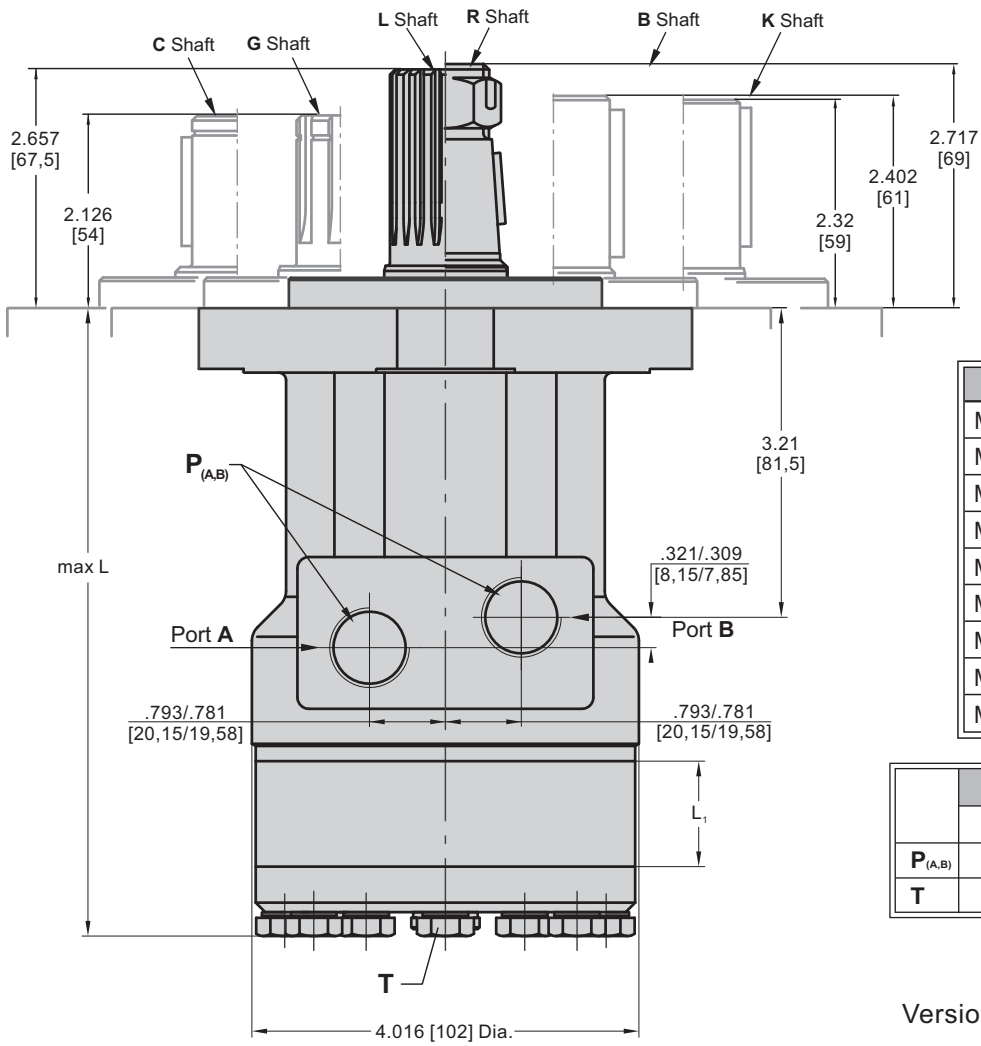
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

** 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 drop 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 [13 mm²/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



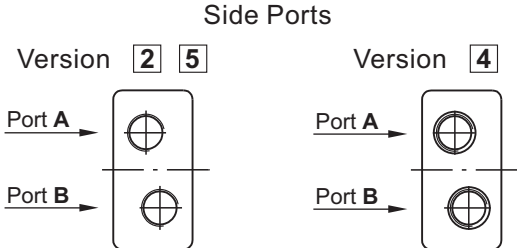
Shaft Dim.
See Page 47

Type	L, in [mm]	L ₁ , in [mm]
MLHRL 50	8.80 [147,5]	.35 [9,0]
MLHRL 80	6.00 [152,5]	.55 [14,0]
MLHRL 100	6.12 [155,5]	.69 [17,4]
MLHRL 125	6.30 [160,0]	.86 [21,8]
MLHRL 160	6.54 [166,0]	1.09 [27,8]
MLHRL 200	6.81 [173,0]	1.37 [34,8]
MLHRL 250	7.15 [181,5]	1.71 [43,5]
MLHRL 315	7.60 [193,0]	2.16 [54,8]
MLHRL 400	8.17 [207,5]	2.73 [69,4]

	Versions		
	2	4	5
P _(A,B)	2xG1/2	2x7/8-14 UNF	2x1/2-14 NPTF
T	G1/4	7/16-20 UNF	7/16-20 UNF

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

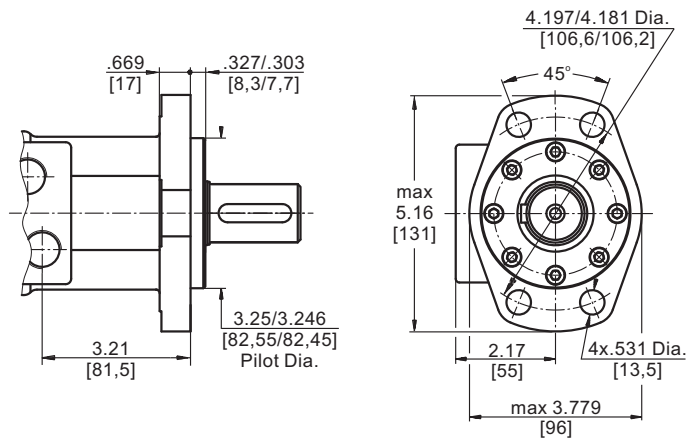
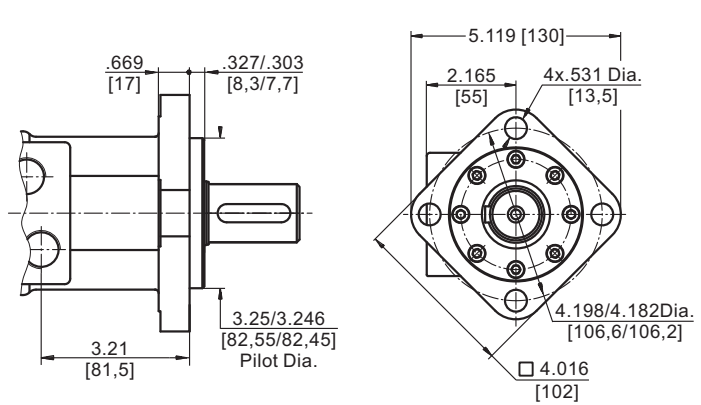
Reverse Rotation
Viewed from Shaft End
Port A Pressurized - CCW
Port B Pressurized - CW



MOUNTING

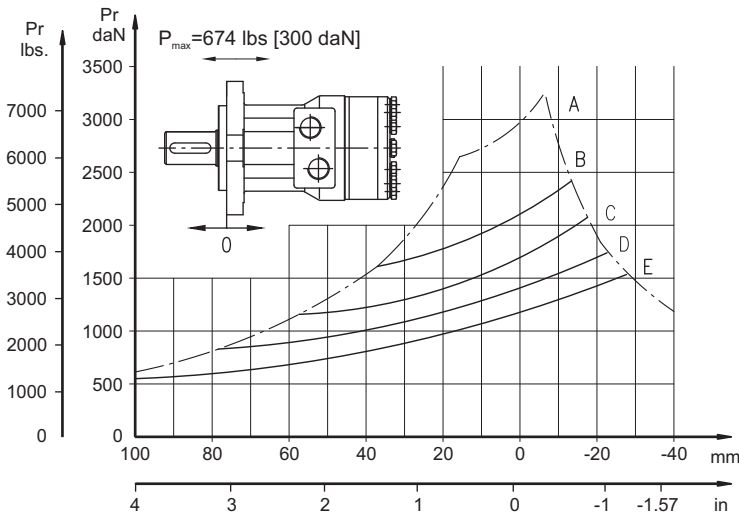
Square Mount (4 Holes)

F Oval Mount (4 Holes)



Permissible Shaft Loads MLHPL and MLHRL

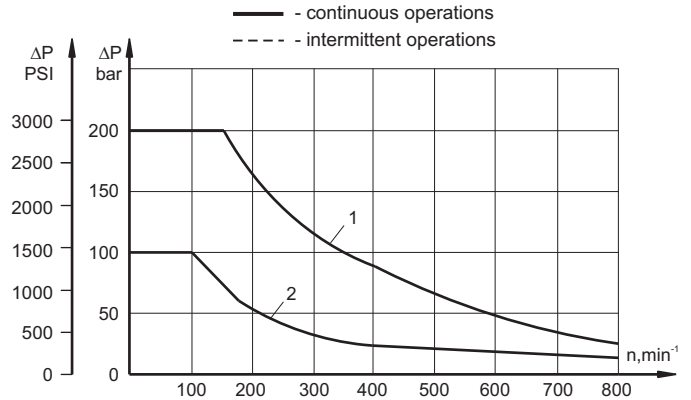
The curves apply to a B10 bearings life of 2000 hrs



- A - Max. radial shaft load.
- B - $n=50 \text{ min}^{-1}$
- C - $n=100 \text{ min}^{-1}$
- D - $n=200 \text{ min}^{-1}$
- E - $n=400 \text{ min}^{-1}$

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

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



ORDER CODE

1	2	3	4	5	6
MLHRL					

Pos.1 - Mounting Flange

omit - Square mount, four holes

F - Oval mount, four holes

Pos.2 - Displacement code*

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

Pos.3 - Shaft Extensions [see page 47]**

- B** - $\varnothing 32$ straight, Parallel key
- K** - 1 1/4" [31,75] straight, Parallel key
- L** - 1 1/4" [31,75] splined 14T ANS B 92.1-1976
- R** - 1 1/4" [31,75] tapered SAE J 501
- C** - $\varnothing 25,4$ straight, Parallel key
- G** - $\varnothing 25,4$ splined BS 2059 (SAE 6B)

Pos.4 - 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
- 5** - side ports, 2x1/2-14 NPTF, 7/16-20 UNF

Pos.5 - Special Features [see page 102]

Pos.6 - Design Series

omit - Factory specified

Notes:

* For the Function Diagrams 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.