

HYDRAULIC MOTORS MLHRL



APPLICATION

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



CONTENTS

Specification data 67
 Performance data 48+52
 Dimensions and mounting ... 68
 Shaft versions..... 64
 Permissible shaft loads 65
 Order code 69

OPTIONS

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

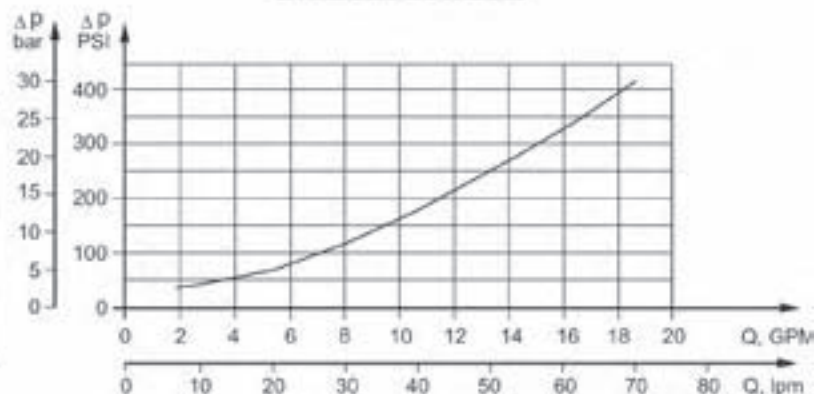
GENERAL

Displacement,	in ³ /rev [cm ³ /rev.]	3.14+24.4 [51,5+397]
Max. Speed,	[RPM]	150+775
Max. Torque,	in-lb [daNm]	900+5400 [10,1+61]
Max. Output,	HP [kW]	4.8+17,4 [3,6+13]
Max. Pressure Drop,	PSI [bar]	1670+2540 [115+175]
Max. Oil Flow,	GPM [lpm]	16 [60]
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 [mm ² /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	MLHRL 50	MLHRL 80	MLHRL 100	MLHRL 125	MLHRL 160	MLHRL 200	MLHRL 250	MLHRL 315	MLHRL 400	
Displacement, in.³/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]	1526[250,1]	19.26[315,7]	24.4[397]	
Max. Speed, [RPM]	Cont.	775	750	600	475	375	300	240	190	
	Cont. for "LSV" motors	200	200	200	200	200	200	200	190	
	Int.*	970	940	750	600	470	375	300	240	
	Int. for "LSV" motors*	250	250	250	250	250	250	250	240	
Max. Torque in-lb [daNm]	Cont.	900 [10,1]	1770[20]	2125[24]	2655[30]	3450[39]	4000[45]	4780[54]	4870[55]	5400[61]
	Cont. for "LL" motors	850[9,6]	1681[19]	2020[22,8]	2520[28,5]	3275[37]	3790[42,8]	4540[51,3]	4630[52,3]	5135[58]
	Int.*	1150 [13]	1947[22,0]	2480[28]	3010[34]	3805 [43]	4425[50]	5400[61]	5580[63]	6100[69]
	Int. for "LL" motors*	1100[12,4]	1860[21]	2335[26,6]	2880[32,3]	3611[40,8]	4205[47,5]	5135[58]	5310[60]	5630[63,6]
	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]
	Cont. for "LSV" motors	2.6 [10]	4.2 [16]	5 [20]	6.6 [25]	8.5 [32]	11 [40]	13 [50]	16 [60]	16 [60]
	Int.*	13 [50]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
	Int. for "LSV" motors*	3.3 [12,5]	5 [20]	6.6 [25]	8.5 [32]	11 [40]	13 [50]	16.5 [62,5]	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]	
	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]	
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]	
	Cont. 100-300 RPM	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]	
	Cont. >600 RPM	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]	
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]	
	Int.*	2540 [175]	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]	
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]
	for "LSV" motors	1770 [20]	1770 [20]	1770 [20]	1770 [20]	1330 [15]	1330 [15]	1330 [15]	1085 [12]	1065 [12]
	for "FR" motors	116 [8]	116 [8]	116 [8]	109 [7,8]	80 [5,5]	58 [4]	-	-	-
Min. Starting Torque in-lb [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]	

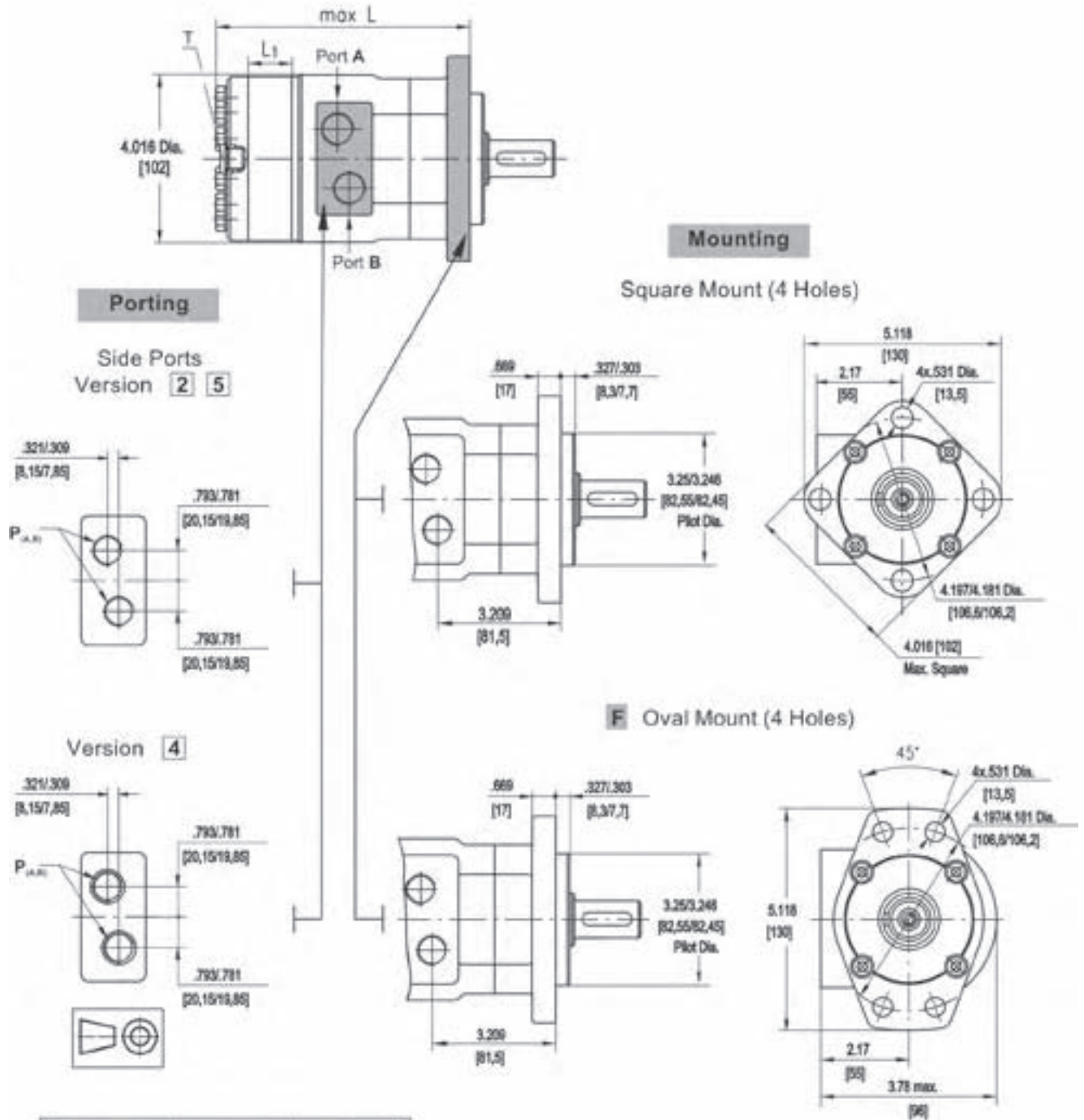
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

*** For speeds of 10 RPM or lower, consult factory or your regional manager.

- Intermittent speed and intermittent pressure drop 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 70 SUS [13 mms/s] at 122°F [50°C].
- Recommended maximum system operating temperature is 180°F [82°C].
- 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



Type	L max, in. [mm]	L, in. [mm]
MLHRL 50	5.98[152]	.35 [9,0]
MLHRL 80	6.18[157]	.55[14,0]
MLHRL 100	6.30[160]	.69[17,4]
MLHRL 125	6.50[165]	.86[21,8]
MLHRL 160	6.73[171]	1.09[27,8]
MLHRL 200	7.01[178]	1.37[34,8]
MLHRL 250	7.36[187]	1.71[43,5]
MLHRL 315	7.80[198]	2.16[54,8]
MLHRL 400	8.35[212]	2.73[69,4]

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	5
P _{max}	2xGΩ	2x¼-14 UNF	2xΩ-14 NPTF
T	G°	¼-20 UNF	¼-20 UNF

ORDER CODE

	1	2	3	4	5	6	7	8
MLHRL								

Pos.1 - Mounting Flange

- omit - Square mount, four holes
- F** - Oval mount, four holes

Pos.2 - 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	- 24.4 [397,0] in. ³ /rev. [cm. ³ /rev.]

Pos.3 - Shaft Extensions [see page 64]**

B	- \sim 32 straight, Parallel key
K	- 1" [31,75] straight, Parallel key
L	- 1" [31,75] splined 14T ANS B 92.1-1976
R	- 1" [31,75] tapered SAE J 501
C	- \sim 25,4 straight, Parallel key
G	- \sim 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

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

Pos. 6 - Rotation

- omit - Standard Rotation
- R** - Reverse Rotation

Pos. 7 - Option [Paint]***

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

Pos. 8 - Design Series

- omit - Factory specified

NOTES: * See Function diagrams from page 48 to page 52.
 ** The permissible output torque for shafts must be not exceeded!
 *** Color at customer's request.

The hydraulic motors are mangano phosphatized as standard.