

HYDRAULIC MOTORS MLHPL



APPLICATION

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



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OPTIONS

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

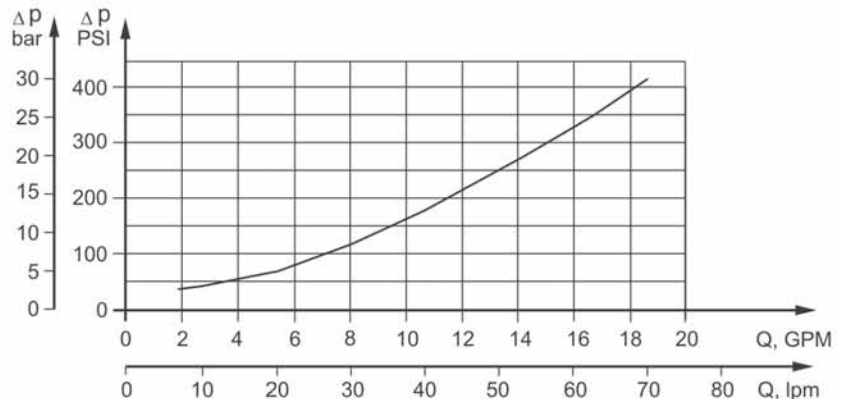
GENERAL

Displacement,	in ³ /rev [cm ³ /rev.]	1.52÷38.5 [49,5÷396]
Max. Speed,	[RPM]	150÷1210
Max. Torque,	in-lb [daNm]	290÷4415 [3,3÷50]
Max. Output,	HP [kW]	4.4÷14.1 [9,9÷11,7]
Max. Pressure Drop,	PSI [bar]	800÷2030 [95÷140]
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	MLHPL 50	MLHPL 80	MLHPL 100	MLHPL 125	MLHPL 160	MLHPL 200	MLHPL 250	MLHPL 315	MLHPL 400	
Displacement, in.³/rev. [cm.³/rev.]	3.02 [49,5]	4.83 [79,2]	6.04 [99]	7.55[123,8]	9.66[158,4]	12.1 [198]	15.1[247,5]	19.3[316,8]	24.16[396]	
Max. Speed, [RPM]	Cont.	1210	755	605	485	378	303	242	190	150
	Cont. for "LSV" motors	200	200	200	200	200	200	200	190	150
	Int.*	1515	945	755	605	472	378	303	236	189
	Int. for "LSV" motors*	250	250	250	250	250	250	250	236	189
Max. Torque in-lb [daNm]	Cont.	832 [9,4]	1336 [15,1]	1708 [19,3]	2100 [23,7]	2770 [31,3]	3240 [36,6]	4160 [47]	4300 [48,6]	4425 [50]
	Cont. for "LL" motors	800 [9]	1275 [14,4]	1630 [18,4]	1990 [22,5]	2340 [26,4]	3080 [34,8]	3950 [44,6]	4090 [46,2]	4205 [47,5]
	Int.*	1054 [11,9]	1725 [19,5]	2097 [23,7]	2637 [29,8]	3345 [37,8]	4035 [45,6]	5160 [58,3]	4956 [56]	5222 [59]
	Int. for "LL" motors*	1000 [11,3]	1640 [18,5]	1990 [22,5]	2505 [28,3]	3190 [36]	3835 [43,3]	4905 [55,4]	4710 [53,2]	4960[56]
	Peak**	1240 [14,0]	1947 [22,0]	2390 [27,0]	3230 [36,5]	3717 [42]	4700 [53]	5930 [67]	7523 [85]	7560 [85,4]
Max. Output HP [kW]	Cont.	13.3 [9,9]	13.3 [9,9]	13.3 [9,9]	13.3[9,9]	15.7 [11,7]	13.8 [10,3]	13.1 [9,8]	10.2 [7,6]	8.9 [6,6]
	Int.*	16.8 [12,5]	16.8 [12,5]	16.8 [12,5]	16.8 [12,5]	16.8 [12,5]	20.8 [15,5]	23.5 [17,5]	11 [8,2]	12.3 [9,2]
Max. Pressure Drop PSI [bar]	Cont.	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]	1300 [120]	1015 [95]
	Int.*	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2030 [140]	1665 [115]
	Peak**	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	2610 [180]
Max. Oil Flow GPM [lpm]	Cont.	16 [60]	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.*	20 [75]	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]	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 Pressure without Drain Line or Max. Pressure 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 Pressure with Drain Line 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]	3262 [225]
Max. Starting Pressure with Unloaded Shaft, PSI [bar]		145 [10]	145 [10]	145 [10]	131 [9]	116 [8]	100 [7]	87 [6]	73 [5]	73 [5]
	for "LSV" motors	1770 [20]	1770 [20]	1770 [20]	1770 [20]	1330 [15]	1330 [15]	1330 [15]	1065 [12]	1065 [12]
	for "FR" motors	116 [8]	116 [8]	116 [8]	109 [7,5]	94 [6,5]	80 [5,5]	-	-	-
Min. Starting Torque in-lb [daNm]	681 [7,7]	1150 [13]	1487 [16,8]	1860 [21,0]	2478 [28,0]	2850 [32,2]	3665 [41,4]	3805 [43,0]	3900 [44,0]	
Min. Speed***, [RPM]	10	10	10	10	10	10	10	10	10	
Weight, lb [kg]	18.5 [8,4]	18.7 [8,5]	19.4 [8,8]	19.6 [8,9]	20 [9,1]	20.9 [9,5]	22 [10,0]	23.6 [10,7]	25.1 [11,4]	

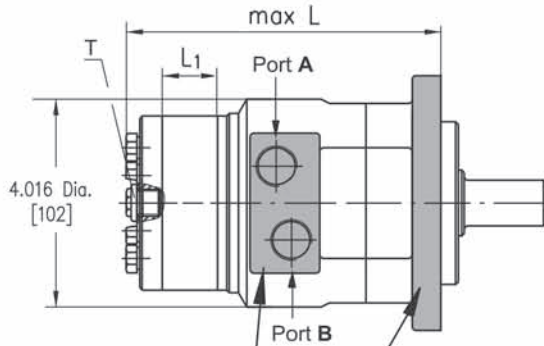
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

** 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.

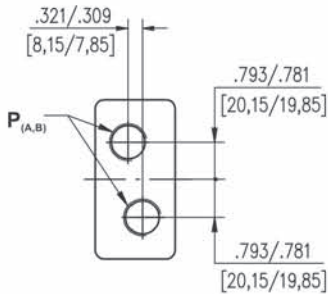
1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).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

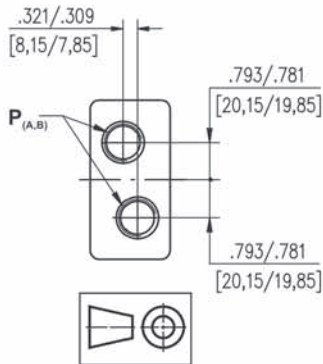


Porting

Side Ports
Version **2** **5**

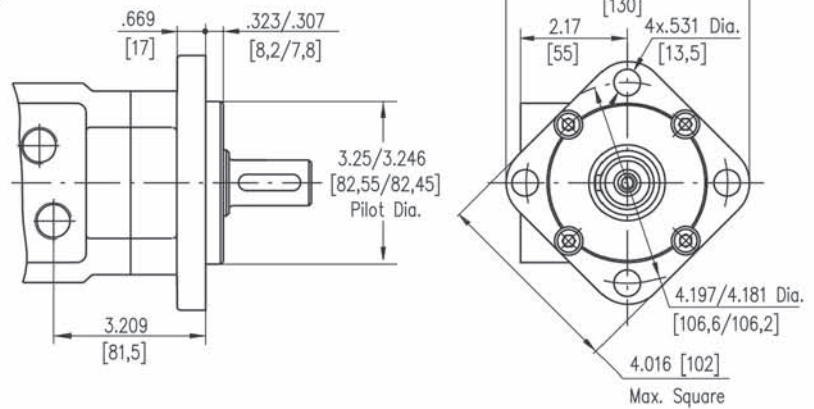


Version **4**

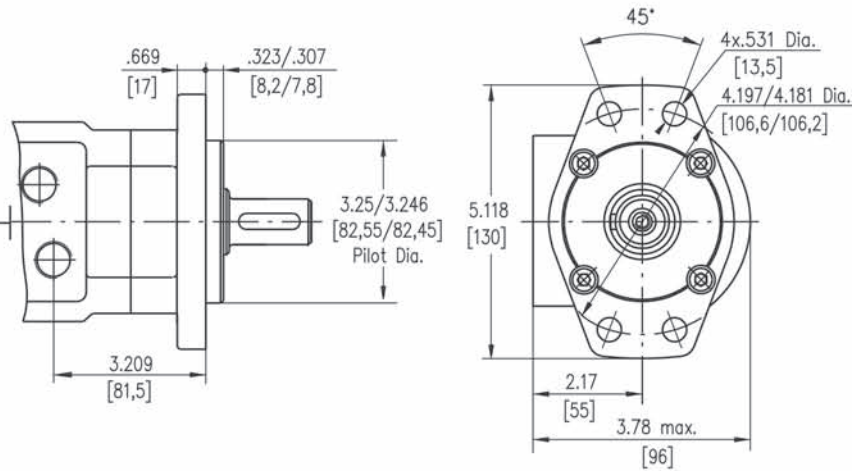


Mounting

Square Mount (4 Holes)



F Oval Mount (4 Holes)



Type	Lmax, in.[mm]	L ₁ , in.[mm]
MLHPL 50	5.83 [148]	.26[6,67]
MLHPL 80	5.98 [152]	.42[10,67]
MLHPL 100	6.10 [155]	.52[13,33]
MLHPL 125	6.22 [158]	.66[16,67]
MLHPL 160	6.42 [163]	.84[21,33]
MLHPL 200	6.61 [168]	1.05[26,67]
MLHPL 250	6.89 [175]	1.31[33,33]
MLHPL 315	7.24 [184]	1.68[42,67]
MLHPL 400	7.68 [195]	2.10[53,33]

Standard Rotation

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

Reverse Rotation

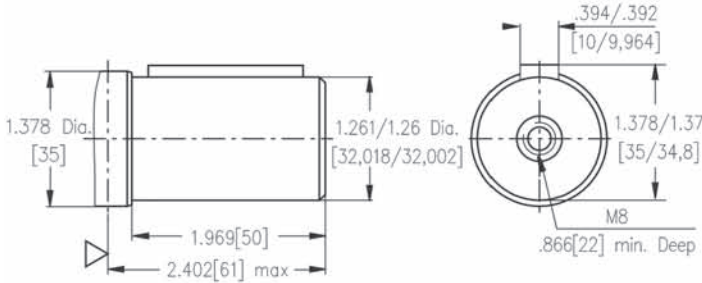
Viewed from Shaft End
Port A Pressurized - **CCW**
Port B Pressurized - **CW**

	Versions		
	2	4	5
P _(A,B)	2xG ¹ / ₂	2x ⁷ / ₈ -14 UNF	2x ¹ / ₂ -14 NPTF
T	G ¹ / ₄	⁷ / ₁₆ -20 UNF	⁷ / ₁₆ -20 UNF

SHAFT EXTENSIONS FOR MLHPL AND MLHRL

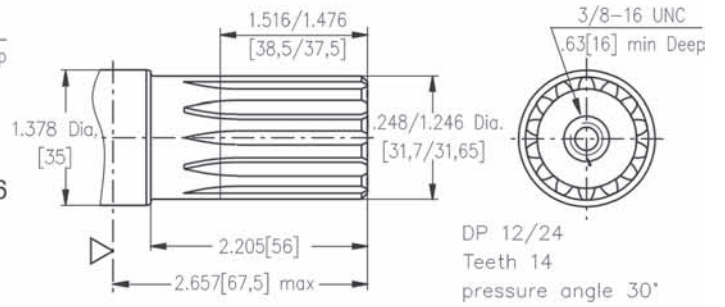
B

ø32 , Parallel key A10x8x40 DIN 6885
Max. Torque 6815 in-lb [77 daNm]



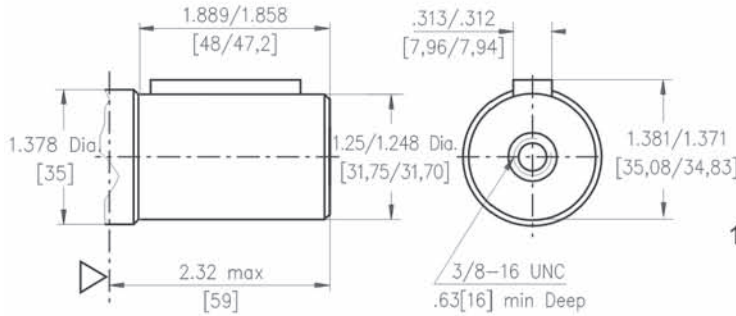
L

14T Splined, 1¼" [31,75], ANS B92.1-1976
Max. Torque 6815 in-lb [77 daNm]



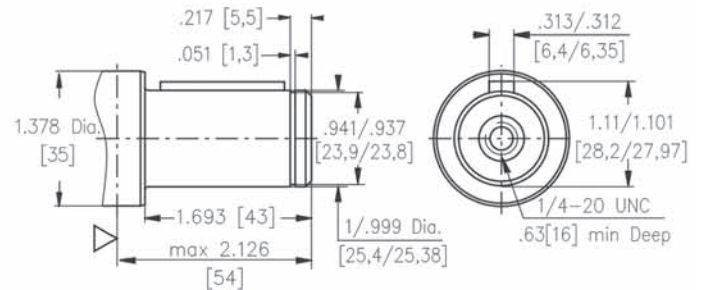
K

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



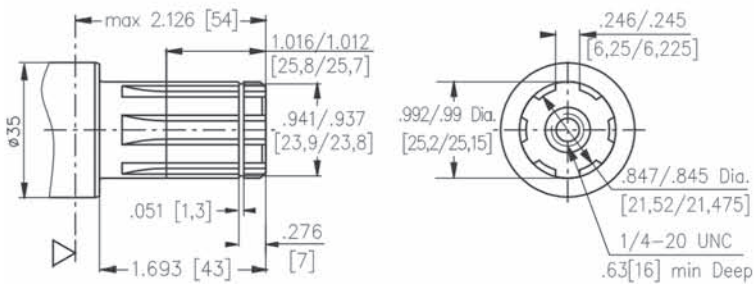
C

1" [25,4] straight, Parallel key ¼"x ¼"x 1¼" BS46
Max. Torque 3010 in-lb [34 daNm]



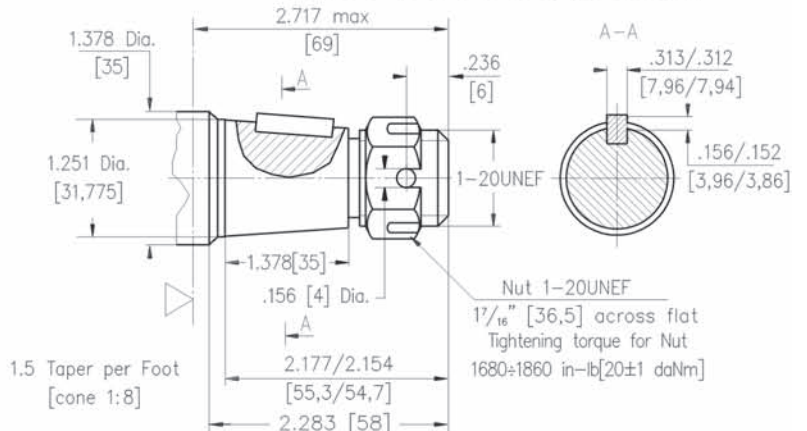
G

1" [25,4], Splined BS 2059 (SAE 6B)
Max. Torque 3010 in-lb [34 daNm]

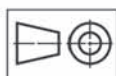


R

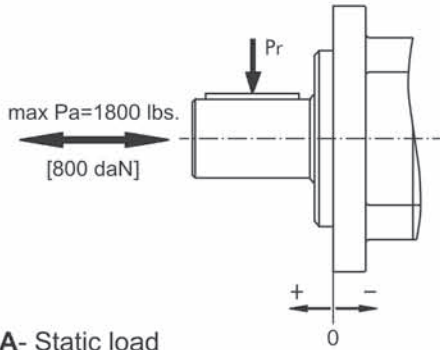
1¼" [31,75], SAE J501 Tapered
Parallel key 5/16"x 5/16"x1"
Max. Torque 6815 in-lb [77 daNm]



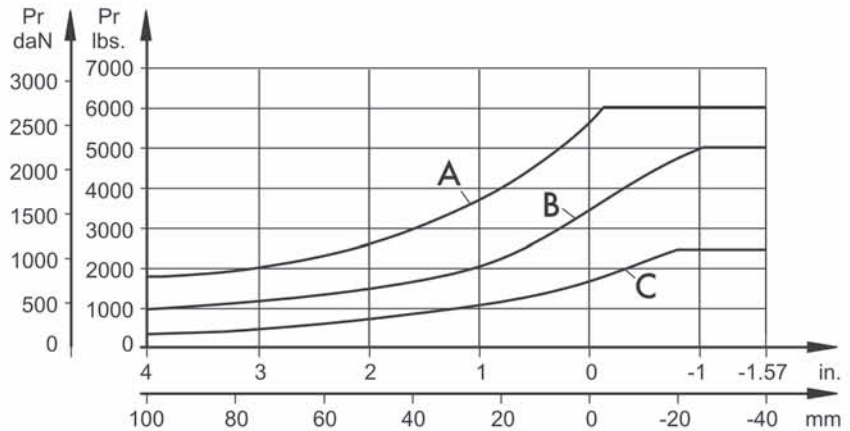
▽ - Motor Mounting Surface
Requirement max. Torque must be not exceeded.



Permissible Shaft Loads FOR MLHPI AND MLHRL



- A- Static load
- B- Pa=450 lbs. [200 daN]
- C- Pa=1800 lbs. [800 daN]



ORDER CODE

1	2	3	4	5	6	7	8
MLHPL							

Pos. 1 - Mounting Flange

omit - Square mount, four holes

F - Oval mount, four holes

Pos. 2 - Displacement code*

50	- 3.02 [49,5] in. ³ /rev. [cm. ³ /rev.]
80	- 4.83 [79,2] in. ³ /rev. [cm. ³ /rev.]
100	- 6.04 [99,0] in. ³ /rev. [cm. ³ /rev.]
125	- 7.55 [123,8] in. ³ /rev. [cm. ³ /rev.]
160	- 9.66 [158,4] in. ³ /rev. [cm. ³ /rev.]
200	- 12.1 [198,0] in. ³ /rev. [cm. ³ /rev.]
250	- 15.1 [247,5] in. ³ /rev. [cm. ³ /rev.]
315	- 19.3 [316,8] in. ³ /rev. [cm. ³ /rev.]
400	- 24.16 [396,0] in. ³ /rev. [cm. ³ /rev.]

Pos. 3 - Shaft Extensions**

B	- ø32 straight, Parallel key
K	- 1¼"[31,75] straight, Parallel key
L	- 1¼"[31,75] splined 14T ANS B 92.1-1976
R	- 1¼"[31,75] tapered SAE J 501
C	- ø25,4 straight, Parallel key
G	- ø25,4 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
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NOTES: * See Function diagrams from page 19 to page 24.
 ** The permissible output torque for shafts must be not exceeded!
 *** Color at customer's request.

The hydraulic motors are manganophosphatized as standard.