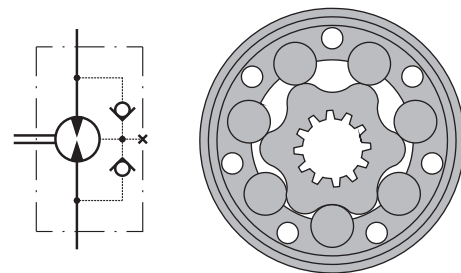


HYDRAULIC MOTORS MLHHW



APPLICATION

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



CONTENTS

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OPTIONS

- » Model- Disk valve, roll-gerotor
- » Side port
- » Shaft - straight, splined and tapered
- » SAE and BSPP ports
- » Other special features

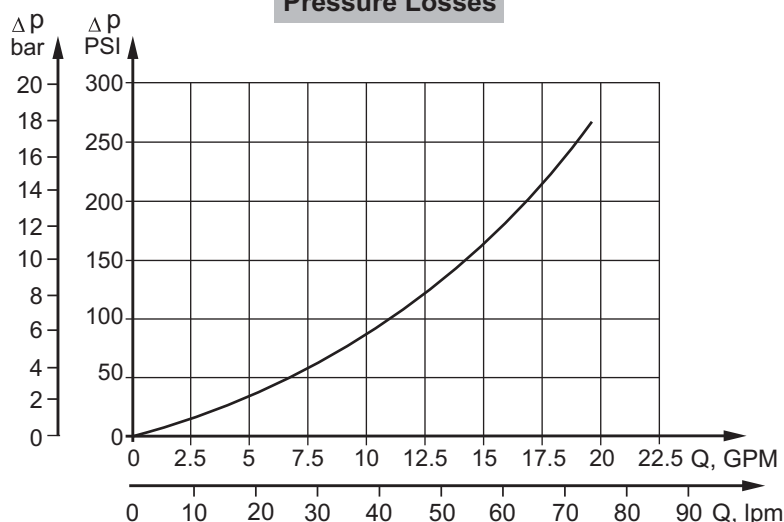
GENERAL

Displacement,	in ³ /rev [cm ³ /rev.]	7.67÷33.55 [126÷550]
Max. Speed,	[RPM]	475÷110
Max. Torque,	in-lb [daNm]	2980÷8700 [33,7÷98,3]
Max. Output,	HP [kW]	12.1÷20.8 [9÷15,5]
Max. Pressure Drop,	PSI [bar]	3000÷1810 [205÷125]
Max. Oil Flow,	GPM [lpm]	16 [60]
Min. Speed,	[RPM]	10÷8
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		MLHHW 125	MLHHW 160	MLHHW 200	MLHHW 235	MLHHW 250	MLHHW 300	MLHHW 315
Displacement, in³/rev [cm³/rev]		7.69 [126]	9.64 [157,8]	12.28 [201,3]	14.33 [235,3]	15.37 [252]	18.3 [300]	19.21 [314,9]
Max. Speed, [RPM]	Cont. for LL/LSV version	475/200	375/200	300/200	255/200	240/200	200	190
	Int.* for LL/LSV version	600/225	470/250	375/275	320/250	300/250	250	240
Max. Torque lb-in [daNm]	Cont.	2980 [33,7]	3760 [42,5]	4744 [53,6]	5580 [63]	5974 [67,5]	7151 [80,8]	7505 [84,8]
	Int.*	3290 [37,2]	4130 [46,7]	5186 [58,6]	6150 [69,5]	6514 [73,6]	7753 [87,6]	8140 [92]
Max. Output HP [kW]	Cont. for LL version	18.8 [14,0]	20.8 [15,5]	19.2 [14,3]	18.2 [13,6]	18.9 [14,1]	18.5 [13,8]	18.5 [13,8]
	Cont. for LSV version	6.8 [5,1]	11 [8,2]	12.7 [9,5]	14.5 [10,8]	15.3 [11,4]	18.5 [13,8]	18.5 [13,8]
	Int.* for LL version	25.5 [19,8]	29 [21,6]	26.3 [19,6]	25.7 [19,2]	25.1 [18,7]	25.5 [19]	25.3 [18,9]
	Int.* for LSV version	9.1 [6,8]	14.5 [10,8]	17 [12,7]	18.9 [14,1]	20.9 [15,6]	25.5 [19]	25.3 [18,9]
Max. Pressure Drop, PSI [bar]	Cont.	3000 [205]	3000 [205]	3000 [205]	3000 [205]	3000 [205]	3000 [205]	3000 [205]
	Int.*	3250 [225]	3250 [225]	3250 [225]	3250 [225]	3250 [225]	3250 [225]	3250 [225]
Max. Oil Flow GPM [lpm]	Cont. for LL Version	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]
	Cont. for LSV Version	6.6 [25]	8.5 [32]	10.5 [40]	12.4 [47]	13.2 [50]	16 [60]	16 [60]
	Int.* for LL Version	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
	Int.* for LSV Version	8.5 [32]	10.5 [40]	13.2 [50]	15.3 [58]	16.5 [62,5]	20 [75]	20 [75]
Max. Inlet Pressure PSI [bar]	Cont.	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]
	Int.*	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, PSI [bar]	Cont. 0-100 RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
	Cont. 100-200 RPM	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]
	Cont. 200-300 RPM	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]
	Int.* 0-max. RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
Max. Starting Pressure with Unloaded Shaft, PSI [bar]		145 [10]	145 [10]	145 [10]	145 [10]	145 [10]	145 [10]	145 [10]
Min. Starting Torque, lb-in [daNm]	At max.press.drop Cont.	2442 [27,6]	3080 [34,8]	3900 [44]	4575 [51,7]	4870 [55]	5840 [66]	6151 [69,5]
	At max.press.drop Int.*	2650 [29,9]	3310 [37,4]	4151 [46,9]	4920 [55,6]	5215 [58,9]	6215 [70,2]	6515 [73,6]
Min. Speed***, [RPM]		10	10	10	10	10	10	10
Weight, lb [kg]		20.9 [12,2]	27.6 [12,5]	28.7 [13]	29.5 [13,4]	30 [13,6]	30.9 [14]	31.3 [14,2]

* 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 5 RPM lower than given, 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 mm²/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.

SPECIFICATION DATA

Type		MLHHW 350	MLHHW 370	MLHHW 400	MLHHW 470	MLHHW 500	MLHHW 535	MLHHW 550
Displacement, in³/rev [cm³/rev]		21.21[347,8]	22.51 [369,2]	24.2 [396,8]	28.71 [470,6]	30.65 [502,4]	32.7 [535]	33.55 [550]
Max. Speed, [RPM]	Cont.	172	160	150	125	120	112	110
	Int.*	215	200	185	160	150	140	135
Max. Torque lb-in [daNm]	Cont.	8143 [92]	8640 [97,6]	8600 [97,2]	8355 [94,4]	8700 [98,3]	8140 [92]	8054 [91]
	Int.*	8850 [100]	9400 [106,2]	9420 [106,4]	9250 [104]	9450 [106,8]	9330 [105,4]	9293 [105]
Max. Output HP [kW]	Cont.	18.2 [13,6]	17.7 [13,2]	16.8 [12,5]	14.2 [10,6]	14.5 [10,8]	12.6 [9,4]	12.1 [9,0]
	Int.*	23.9 [17,8]	23.2 [17,3]	22.4 [16,7]	18.2 [13,6]	18.6 [13,9]	17.2 [12,8]	16.6 [12,4]
Max. Pressure Drop, PSI [bar]	Cont.	3000 [205]	3000 [205]	2685 [185]	2175 [150]	2175 [150]	1885 [130]	1810 [125]
	Int.*	3250 [225]	3250 [225]	2755 [190]	2390 [165]	2390 [165]	2175 [150]	2100 [145]
Max. Oil Flow GPM [lpm]	Cont.	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]	16 [60]
	Int.*	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
Max. Inlet Pressure PSI [bar]	Cont.	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]
	Int.*	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]	3625 [250]
Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, PSI [bar]	Cont. 0-100 RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
	Cont. 100-200 RPM	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]	725 [50]
	Cont. 200-300 RPM	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]
	Int.* 0-max. RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
Max. Starting Pressure with Unloaded Shaft, PSI [bar]		145 [10]	145 [10]	145 [10]	145 [10]	145 [10]	145 [10]	145 [10]
Min. Starting Torque, lb-in [daNm]	At max.press.dropCont	6682 [75,5]	7080 [80]	6877 [77,7]	6850 [77,4]	6903 [78]	6682 [75,5]	6602 [74,6]
	At max.press.drop Int.*	7090 [80,1]	7523 [85,0]	7531 [85,1]	7364 [83,2]	5678 [85,5]	7470 [84,4]	7435 [84,0]
Min. Speed***, [RPM]		8	8	8	8	8	5	5
Weight, lb [kg]		32.2 [14,6]	32.6 [14,8]	33.5 [15,2]	35.3 [16]	35.9 [16,3]	36.8 [16,7]	37 [16,8]

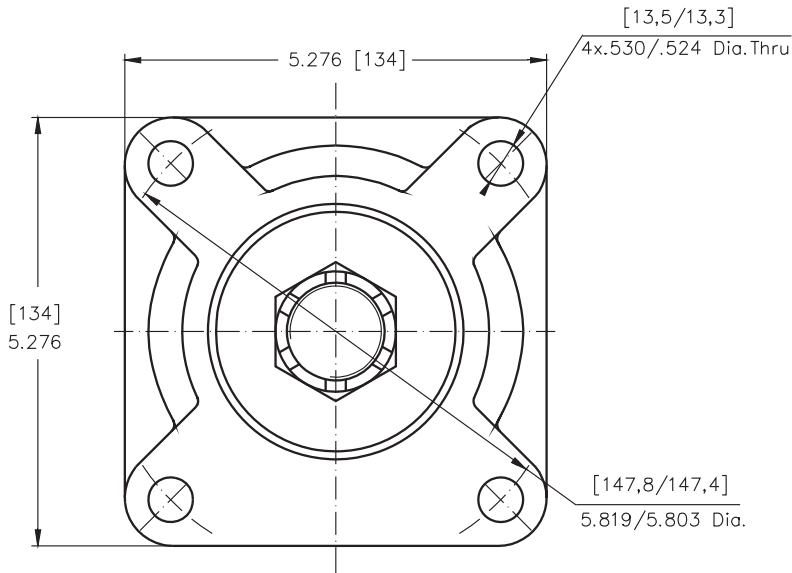
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

*** For speeds of 5 RPM lower than given, consult factory or your regional manager.

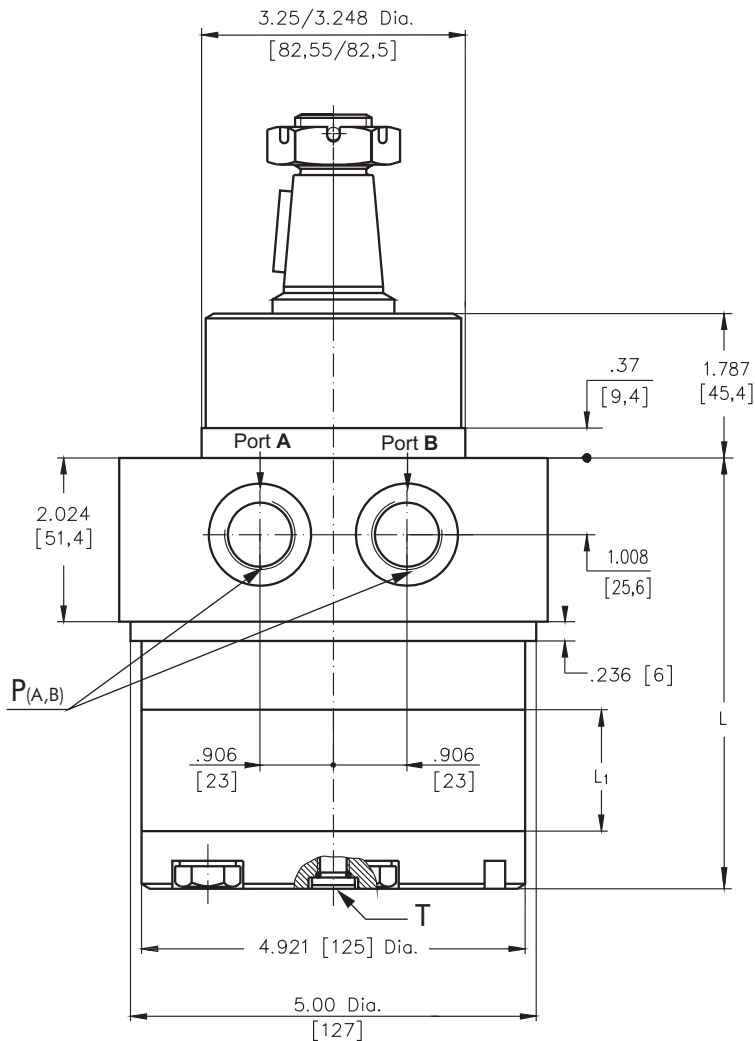
1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).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



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



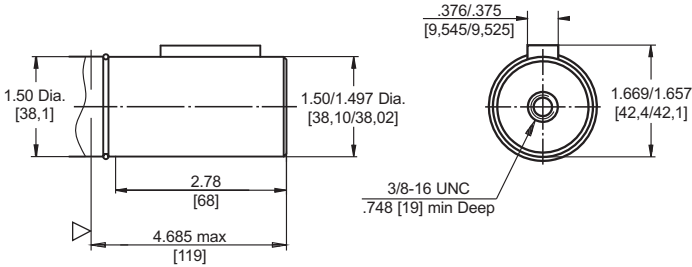
Versions		
	2	4
P _(A,B)	2xG $\frac{1}{2}$	2x $\frac{7}{8}$ -14UNF
T	G $\frac{1}{4}$	7/16-20UNF

Type	L _{max} ,in. [mm]	L ₁ ,in.[mm]
MLHHW 125	4.69 [119]	.68 [17,4]
MLHHW 160	4.84 [123]	.86 [21,8]
MLHHW 200	5.08 [129]	1.09 [27,8]
MLHHW 235	5.28 [134]	1.28 [32,5]
MLHHW 250	5.35 [136]	1.37 [34,8]
MLHHW 300	5.59 [142]	1.63 [41,4]
MLHHW 315	5.71 [145]	1.71 [43,5]
MLHHW 350	5.87 [149]	1.89 [48,0]
MLHHW 370	5.98 [152]	2.01 [51,0]
MLHHW 400	6.14 [156]	2.16 [54,8]
MLHHW 470	6.54 [166]	2.56 [65,0]
MLHHW 500	6.73 [171]	2.73 [69,4]
MLHHW 535	6.89 [175]	2.92 [74,1]
MLHHW 550	6.97 [177]	2.99 [76,0]

SHAFT EXTENSIONS

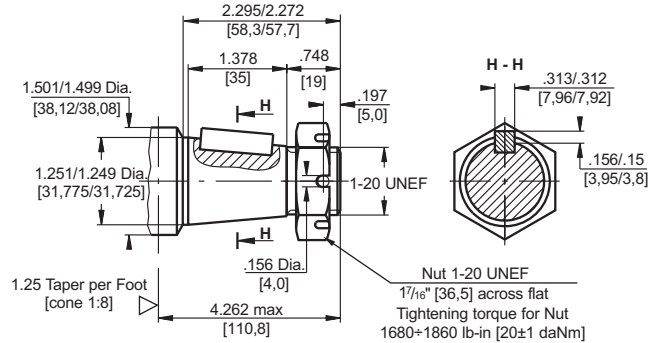
C

ø38,1 straight, Parallel key $\frac{3}{8}$ "x $\frac{3}{8}$ "x $\frac{1}{2}$ " BS46
Max. Torque 10630 lb-in [120 daNm]



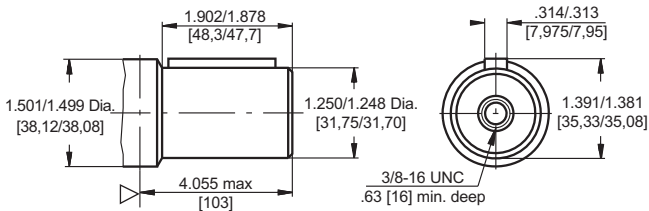
R

1¼"[31,75] SAE J501 Tapered, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x1" BS46
Max. Torque 6815 lb-in [77 daNm]



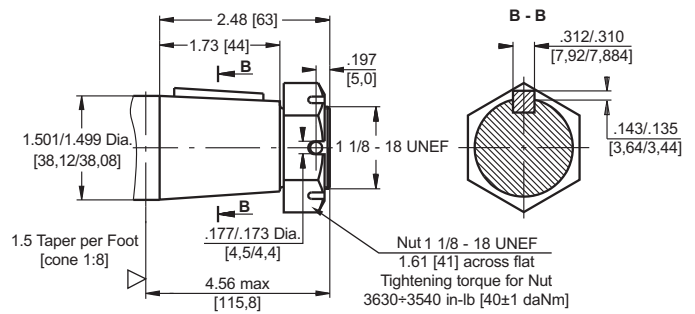
K

1¼"[31,75] straight, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x1½" BS46
Max. Torque 6815 lb-in [77 daNm]



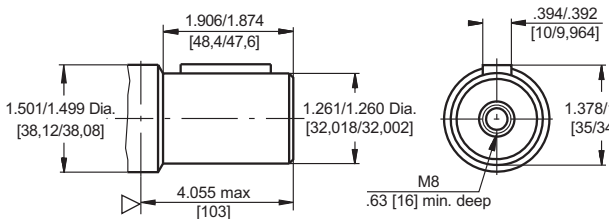
T

1½"[38,1] Tapered, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x1¼" BS46
Max. Torque 10630 lb-in [120 daNm]



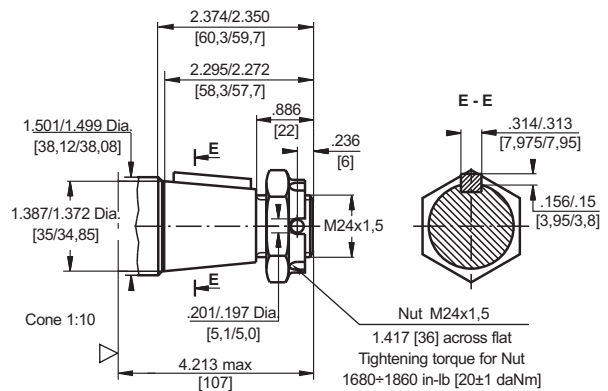
M

ø32 straight, Parallel key A10x8x32 DIN 6885
Max. Torque 6815 lb-in [77 daNm]



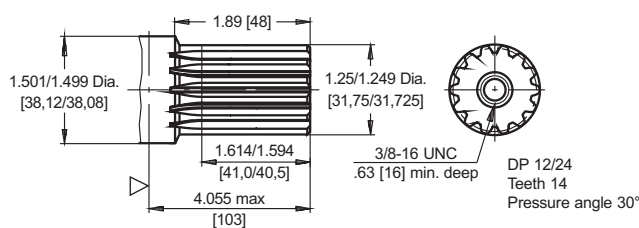
KB

ø35 tapered 1:10, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x1¼" BS46
Max. Torque 8410 lb-in [95 daNm]



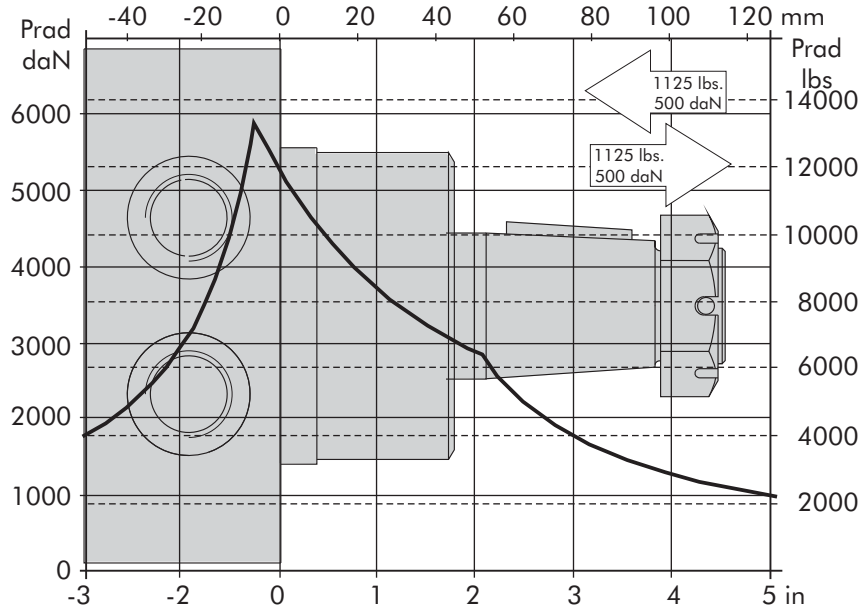
L

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



▽ - Motor Mounting Surface

PERMISSIBLE SHAFT LOADS



ORDER CODE

	1	2	3	4	5	6	7
MLHHW							

Pos.1 - Displacement code

125	- 7.69 in ³ /rev [126,00 cm ³ /rev]
160	- 9.64 in ³ /rev [158,00 cm ³ /rev]
200	- 12.28 in ³ /rev [201,30 cm ³ /rev]
235	- 14.33 in ³ /rev [235,00 cm ³ /rev]
250	- 15.37 in ³ /rev [252,00 cm ³ /rev]
300	- 18.30 in ³ /rev [300,00 cm ³ /rev]
315	- 19.21 in ³ /rev [314,90 cm ³ /rev]
350	- 21.21 in ³ /rev [347,80 cm ³ /rev]
370	- 22.51 in ³ /rev [369,00 cm ³ /rev]
400	- 24.20 in ³ /rev [396,80 cm ³ /rev]
470	- 28.71 in ³ /rev [470,60 cm ³ /rev]
500	- 30.65 in ³ /rev [502,40 cm ³ /rev]
535	- 32.70 in ³ /rev [536,00 cm ³ /rev]
550	- 33.55 in ³ /rev [550,00 cm ³ /rev]

Pos.2 - Shaft Extensions*

C	- ø38,1 straight, Parallel key $\frac{3}{8}$ "x $\frac{3}{8}$ "x $1\frac{1}{2}$ " BS46
K	- 1¼"[31,75] straight, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x $1\frac{1}{4}$ " BS46
KB	- ø35 tapered 1:10, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x $1\frac{1}{4}$ " BS46
L	- 1¼"[31,75] splined 14T, ANSI B92.1-1976
M	- ø32 straight, Parallel key A10x8x32 DIN 6885
R	- 1¼"[31,75] Tapered, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x 1 " BS46
T	- 1½"[38,1] Tapered, Parallel key $\frac{5}{16}$ "x $\frac{5}{16}$ "x $1\frac{1}{4}$ " BS46

Pos. 3 - Ports

2	- BSPP (ISO 228)
4	- SAE (ANSI B1.1-1982)

Pos. 4 - Special Features [\[see page 57\]](#)

Pos. 3 - Design Series

omit - Factory specified

Notes:

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

The hydraulic motors are mangano phosphatized as standard.