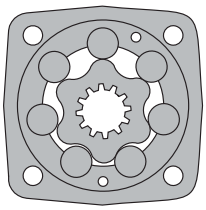
Planetarymotor MLHS





Application

- Conveyors
- Metal working machines
- Machine tools
- Special vehicles
- Road buliding machines
- Agriculture machines
- Food industries
- etc.

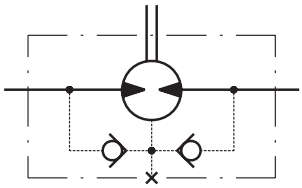
Construction and options

- Model: Disc valve, roll-gerotor
- Flange: SAE A, Magneto-, square- or wheelflange
- Ports: Rear or side ports, metric or BSPP threaded ports
- Shafts: Cylindrical, tapered or splined
- Motor with drum brake
- Motor with tacho connection
- Speed sensoring
- Other special features

Overview

Max. Displacement	in^3/rev [cm^3/rev]	34.47 [564,9]
Max. Speed	rpm	1000
Max. Torque	lb-in [daNm]	continuous: 7520 [85] intermittent: 8760 [99]
Max. Output	HP [kW]	30.8 [23]
Max. Pressure drop	PSI [bar]	continuous: 3050 [210] intermittent: 3990 [275]
Max. Oil flow	GPM [lpm]	24 [90]
Min. Speed	RPM	5
Permissible shaft loads	lbs [daN]	1125 [500]
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 micron)

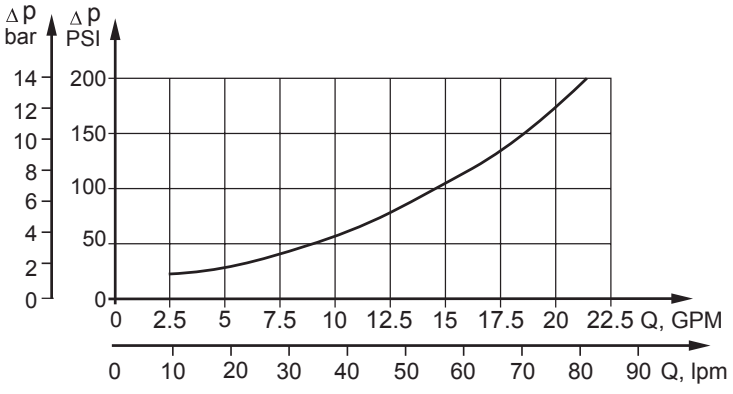
Graphic symbol



Oil flow in drain line

Pressure drop PSI [bar]	Viscosity SUS [mm^2/s]	Oil flow GPM [lpm]
2030 [140]	98 [20]	.396 [1,5]
	164 [35]	.264 [1,0]
3045 [210]	98 [20]	.793 [3,0]
	164 [35]	.528 [2,0]

Pressure losses



Technical datas

Type		MLHS 80	MLHS 100	MLHS 125	MLHS 160	MLHS 200
Displacement, in^3/rev [cm^3/rev]		.491 [80,5]	6.1 [100]	7.67 [125,7]	9.74 [159,7]	12.2 [200]
Max. Speed RPM	Continuous working	810	750	600	470	375
	Intermittent *	1000	900	720	560	450
Max. Torque lb-in [daNm]	Continuous working	2120 [24]	2700 [30,5]	3320 [37,5]	4340 [49]	5400 [61]
	Intermittent *	2740 [31]	3450 [39]	4380 [49]	5310 [60]	6370 [72]
Max. Output HP [kW]	Continuous working	20.8 [15,5]	24.1 [18]	24.1 [18]	22.1 [16,5]	22.1 [16,5]
	Intermittent *	26.2 [19,5]	30.2 [22,8]	30.2 [22,5]	30.8 [23]	29.52 [22]
Max. Pressure drop PSI [bar]	Continuous working	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]
	Intermittent *	3990 [275]	3990 [275]	3990 [275]	3990 [275]	3990 [275]
	Peak **	4280 [295]	4280 [295]	4280 [295]	4280 [295]	4280 [295]
Max. Oil flow GPM [lpm]	Continuous working	17 [65]	20 [75]	20 [75]	20 [75]	20 [75]
	Intermittent *	21 [80]	24 [90]	24 [90]	24 [90]	24 [90]
Max. Inlet pressure PSI [bar]	Continuous working	3340 [230]	3340 [230]	3340 [230]	3340 [230]	3340 [230]
	Intermittent *	4280 [295]	4280 [295]	4280 [295]	4280 [295]	4280 [295]
	Peak **	4350 [300]	4350 [300]	4350 [300]	4350 [300]	4350 [300]
Max. Return pressure with drain line PSI [bar]	Continuous working	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]
	Intermittent *	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]
	Peak **	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]
Max. starting pressure with unloaded shaft PSI [bar]		175 [12]	145 [10]	145 [10]	115 [8]	115 [8]
Min. Starting torque @ max. pressure drop lb-in [daNm]	Continuous working	1590 [18]	2040 [23]	2570 [29]	3270 [37]	4160 [47]
	Intermittent *	2080 [23,5]	2660 [30]	3360 [38]	4070 [46]	4960 [56]
Min. Speed *** RPM		10	10	8	8	6
Weight lb [kg] For rear ports + .88 [0,40]	MLHS (F)	21.8 [9,9]	22.2 [10,1]	22.9 [10,4]	23.8 [10,8]	24.7 [11,2]
	MLHS-B	22.9 [10,4]	23.3 [10,6]	24 [10,9]	24.6 [11,3]	25.8 [11,7]
	MLHS-S (Z)	17.4 [7,9]	17.8 [8,1]	18.5 [8,4]	19.4 [8,8]	20.2 [9,2]
	MLHS-V / MLHS-U	12.8 [5,8]	13.2 [6]	13.9 [6,3]	14.8 [6,7]	15.6 [7,1]
	MLHS-W (E)	22.7 [10,3]	23.2 [10,5]	23.8 [10,8]	24.7 [11,2]	25.6 [11,6]
	MLHS-BD	37.3 [16,9]	37.7 [17,1]	38.3 [17,4]	39.2 [17,8]	41.1 [18,2]

* Intermittent: Working max. 10% per minute
** Peak: max. 1% per minute
*** For speeds lower than given, please consult us.

- Intermittent speed and pressure should not occur simultaneously.
- Recommended minimum oil viscosity 70 SUS [13 mm^2/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.

Technical datas

Type		MLHS 250	MLHS 315	MLHS 400	MLHS 475	MLHS 525	MLHS 565
Displacement, in^3/rev [cm^3/rev]		15.3 [250]	19.2 [314,9]	24.2 [397]	28.96 [474,6]	31.88 [522,7]	34.47 [564,9]
Max. Speed RPM	Continuous working	300	240	190	160	145	130
	Intermittent *	360	290	230	190	175	160
Max. Torque lb-in [daNm]	Continuous working	6370 [72]	7300 [82,5]	7660 [86,5]	7520 [85]	7520 [85]	7520 [85]
	Intermittent *	7700 [87]	8550 [100]	8760 [99]	8760 [99]	8760 [99]	8760 [99]
Max. Output HP [kW]	Continuous working	19.4 [14,5]	20.1 [15]	14.8 [11]	11 [8,4]	10.2 [7,6]	9 [6,9]
	Intermittent *	24.1 [18]	22.8 [17]	16.8 [12,5]	15 [11,3]	13.9 [10,4]	13 [9,6]
Max. Pressure drop PSI [bar]	Continuous working	2900 [200]	2900 [200]	2320 [160]	1880 [130]	1670 [115]	1520 [105]
	Intermittent *	3630 [250]	3480 [240]	2760 [190]	2180 [150]	1960 [135]	1810 [125]
	Peak **	3920 [270]	3770 [260]	3050 [210]	2470 [170]	2250 [155]	2100 [145]
Max. Oil flow GPM [lpm]	Continuous working	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
	Intermittent *	24 [90]	24 [90]	24 [90]	24 [90]	24 [90]	24 [90]
Max. Inlet pressure PSI [bar]	Continuous working	3340 [230]	3340 [230]	3340 [230]	3340 [230]	3340 [230]	3340 [230]
	Intermittent *	4280 [295]	4280 [295]	4280 [295]	4280 [295]	4280 [295]	4280 [295]
	Peak **	4350 [300]	4350 [300]	4350 [300]	4350 [300]	4350 [300]	4350 [300]
Max. Return pressure with drain line PSI [bar]	Continuous working	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]	2030 [140]
	Intermittent *	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]	2540 [175]
	Peak **	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]	3050 [210]
Max. starting pressure with unloaded shaft PSI [bar]		115 [8]	115 [8]	115 [8]	115 [8]	115 [8]	115 [8]
Min. Starting torque @ max. pressure drop lb-in [daNm]	Continuous working	4960 [56]	6280 [71]	6280 [71]	6280 [71]	6280 [71]	6280 [71]
	Intermittent *	6200 [70]	7520 [85]	7430 [84]	7430 [84]	7430 [84]	7430 [84]
Min. Speed *** RPM		6	5	5	5	5	5
Weight lb [kg] For rear ports + .88 [0,40]	MLHS (F)	25.8 [11,7]	27.3 [12,4]	29.3 [13,1]	31 [14,1]	32.2 [14,6]	33.1 [15]
	MLHS-B	26.9 [12,2]	28.4 [12,9]	30.4 [13,8]	32.2 [14,6]	33.3 [15,1]	34.1 [15,5]
	MLHS-S (Z)	21.4 [9,7]	22.9 [10,4]	24.9 [11,3]	26.7 [12,1]	27.8 [12,6]	28.6 [13]
	MLHS-V / MLHS-U	16.7 [7,6]	18.3 [8,3]	20.2 [9,2]	22 [10]	23.1 [10,5]	24 [10,9]
	MLHS-W (E)	26.7 [12,1]	28.2 [12,8]	30.2 [13,7]	32 [14,5]	33.1 [15]	33.9 [15,4]
	MLHS-BD	41.2 [18,7]	42.7 [19,4]	44.7 [20,3]	46.5 [21,1]	47.6 [21,6]	48.5 [23]

* Intermittent: Working max. 10% per minute
** Peak: max. 1% per minute
*** For speeds lower than given, please consult us.
- Intermittent speed and pressure should not occur simultaneously.
- Recommended minimum oil viscosity 70 SUS [13 mm^2/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.

Ordercode MLHS

MLHS	1	2	3	4	5	6	7

Pos. 1	Mounting flange
omit	SAE A-4, four holes
A	SAE A-2, two holes
B	SAE B, two holes
E	Wheel mount, 4.25 Pilot diameter **
F	Magneto, four holes (six holes at customers request)
S	Short mount
V	Very short mount
U	Ultra short mount
W	Wheel mount, 5.00 Pilot diameter
Z	Short mount, with place for needle bearing
BD	With drum brake

Pos. 2	Displacement
80	4.91 in^3/rev [80,5 cm^3/rev]
100	6.10 in^3/rev [100,0 cm^3/rev]
125	7.67 in^3/rev [125,7 cm^3/rev]
160	9.74 in^3/rev [159,7 cm^3/rev]
200	12.20 in^3/rev [200,0 cm^3/rev]
250	15.30 in^3/rev [250,0 cm^3/rev]
315	19.20 in^3/rev [314,9 cm^3/rev]
400	24.20 in^3/rev [397,0 cm^3/rev]
475	28.96 in^3/rev [474,6 cm^3/rev]
525	31.88 in^3/rev [522,7 cm^3/rev]
565	34.47 in^3/rev [564,9 cm^3/rev]

Pos. 3	Shaft *
omit	For **BD**, **S**, **Z**, **V** and **U** mounting flange
C	1 1/4" [31,75 mm] straight, parallel key
D	1" [25,4 mm] straight, parallel key
G	1 1/4" [31,75 mm] 14T splined
M	32 mm straight, parallel key
P	34,85 mm splined, p.t.o. DIN 9611 Form 1
S	1" [25,4 mm] SAE 6 B splined (high torque version)
SW	1" [25,4 mm] SAE 6 B splined (low torque version)
SA	7/8" [22 mm] 13T splined ANS B92.1-1970
T	1 1/4" [31,75 mm] J501 tapered

Pos. 4	Actuation direction ***
/R	right
/L	left

Pos. 5	Port size / type
2	Side ports, 2xG1/2 / G1/4 BSP thread ISO 228
3	Side ports, 2xM22x1,5 / M14x1,5 metric thread ISO 262
4	Side ports, 2x7/8-14 UNF, O-ring / 7/16-20 UNF
5	Side ports, 2x1/2-14 NPTF / 7/16-20 UNF
6	Rear ports, 2xG1/2 / G1/4 BSP thread ISO 228
7	Rear ports, 2x7/8-14 UNF, O-ring / 7/16-20 UNF
8	Rear ports, 2x1/2-14 NPTF / 7/16-20 UNF
9	Rear ports, 2xM22x1,5 / M14x1,5 metric thread ISO 262

Pos. 6	Special features
RS	Speed sensor
T	Tacho connection
LL	Low leakage
LSV	Low speed valve
R	Reverse rotation
P	Paint (colour on request)
PC	Corrosion protected paint (colour on request)

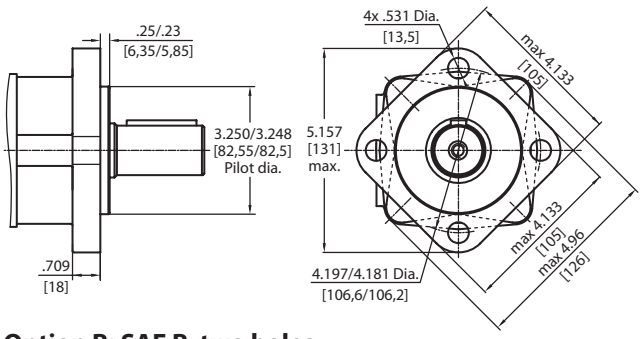
Pos. 7	Design series
omit	Factory specified

* The permissible output torque for shafts must not be exceeded!
** The motor MLHSE is not available with shafts D, P, S and SA
*** For MLHS-BD only

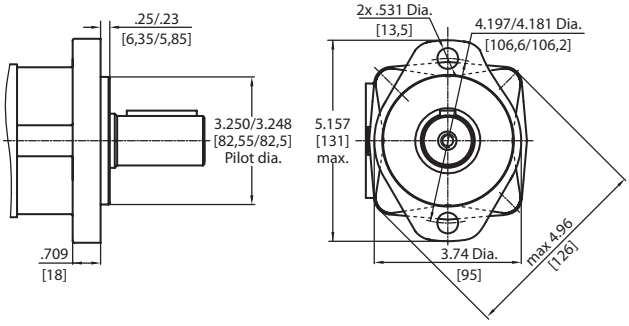
The hydraulic motors are mangano-phosphatized as standard.

Pos. 1 Mounting flange

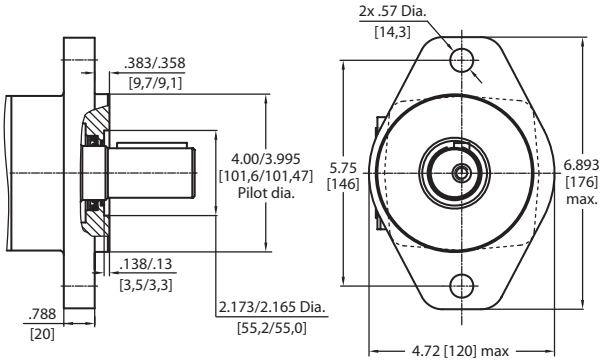
Standard: SAE A-4, four holes



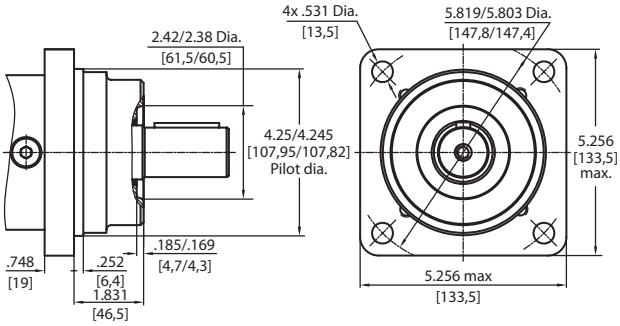
Option A: SAE A-2, two holes



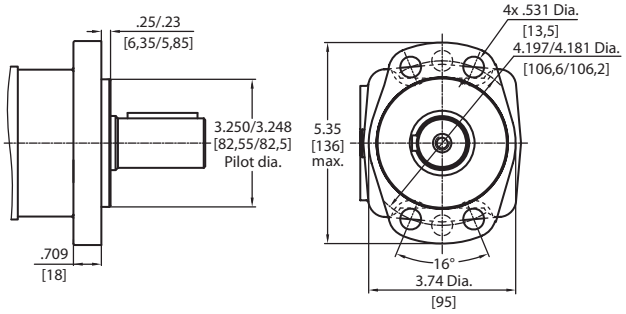
Option B: SAE B, two holes



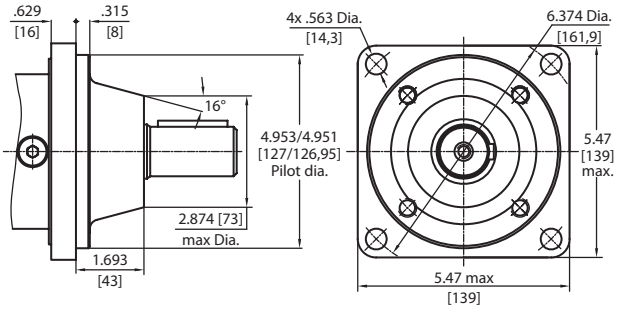
Option E: Wheel mount, 4.25 Pilot diameter



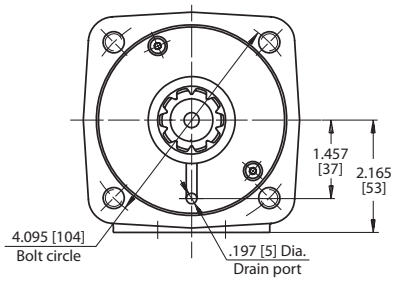
Option F: Magnetoflange, four holes



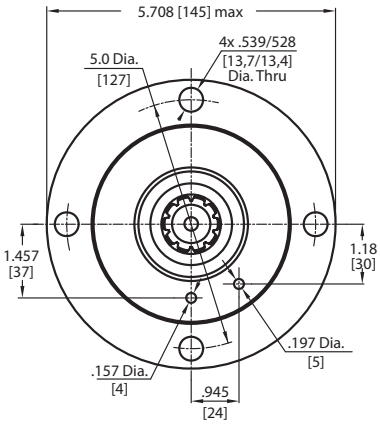
Option W: Wheel mount, 5.00 Pilot diameter



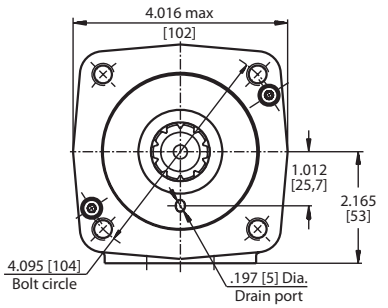
Option V: Very short mount



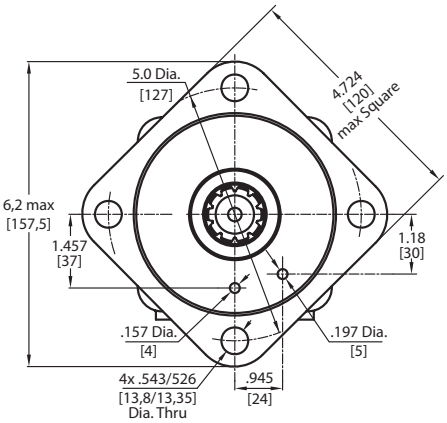
Option S: Short mount



Option U: Ultra short mount



Option Z: Short mount / needle bearing

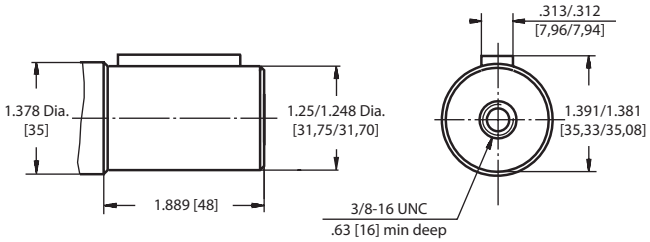


in [mm]

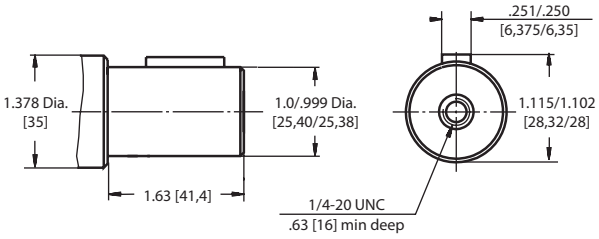
LOSI® Getriebe - Steuerungen - Hydraulik

Pos. 3 Shaft

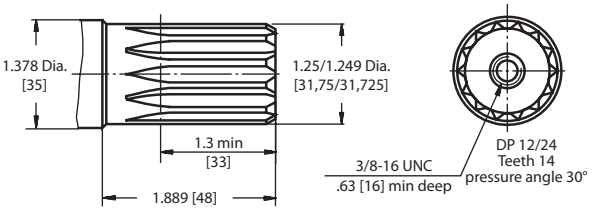
Option C: 1 1/4" straight, Parallel key 5/16" x 5/16" x 1 1/4" BS46
Max. torque 6815 in-lb [77 daNm]



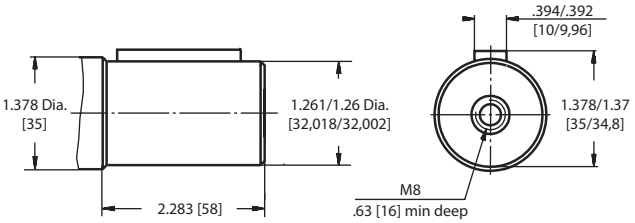
Option D: 1" straight, Parallel key 1/4" x 1/4" x 1" BS46
Max. torque 3900 in-lb [44 daNm]



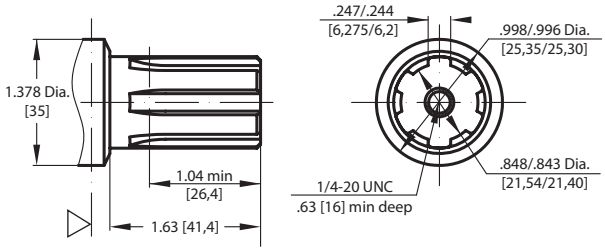
Option G: 14T Splined, 1 1/4", ANS B92.1-1976
Max. torque 6815 in-lb [77 daNm]



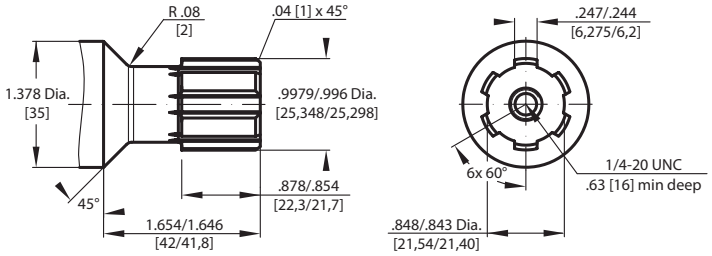
Option M: Ø32 straight, parallel key A10x8x45 DIN 6885
Max. torque 6815 in-lb [77 daNm]



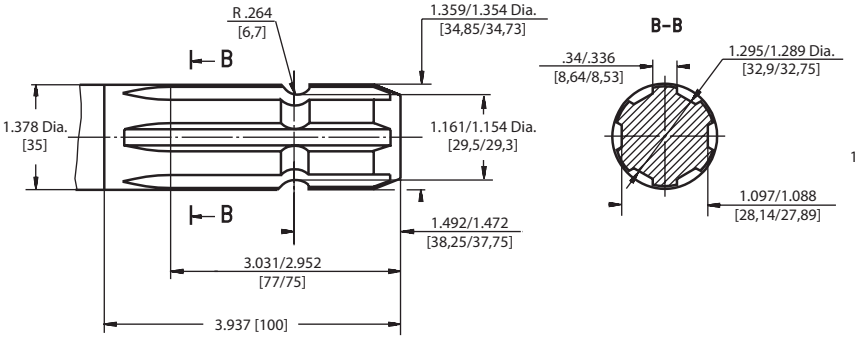
Option S: 1" SAE 6B splined BS2059
Max. torque 3900 in-lb [44 daNm]



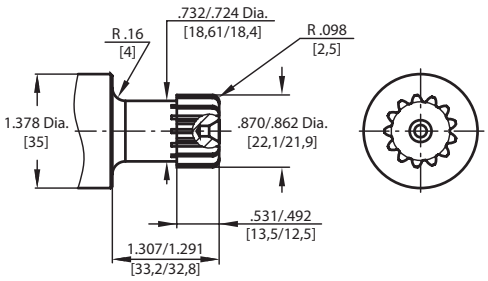
Option SW: 1" SAE 6B splined BS 2059
Max. torque 3400 in-lb [38 daNm]



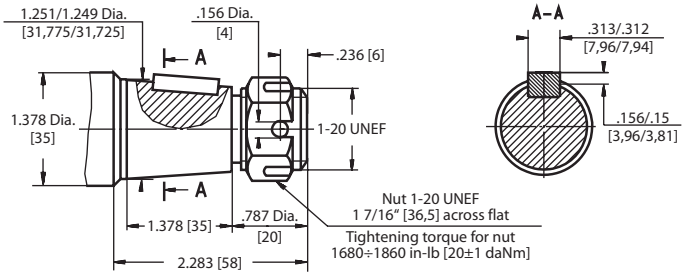
Option P: Ø34,85 p.t.o. DIN 9611 Form 1
Max. torque 6815 in-lb [77 daNm]



Option SA: 13T splined 7/8" DP16/32 ANS B92.1-1970
Max. torque 1770 in-lb [20 daNm]



Option T: 1 1/4" SAE J501 tapered (1.5 per foot), parallel key 5/16" x 5/16" x 1" BS46
Max. torque 6815 in-lb [77 daNm]

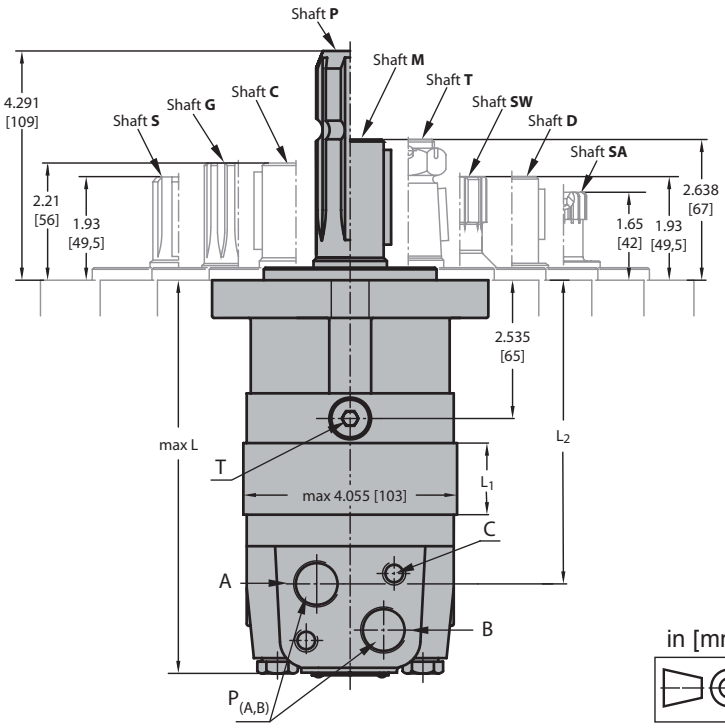


The permissible output torque for shafts must not be exceeded!

in [mm]

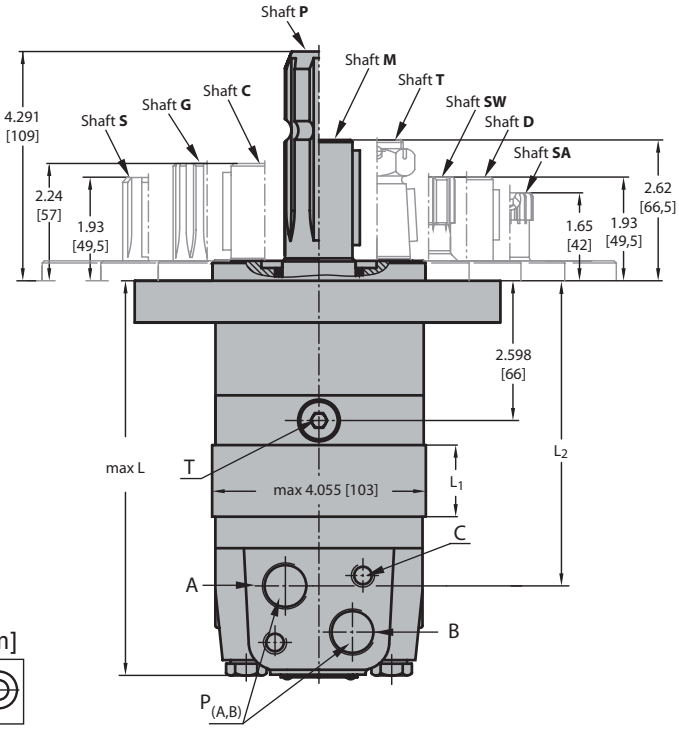
Pos. 2 Displacement

Dimensions
MLHS, MLHSF, MLHSA
in [mm]



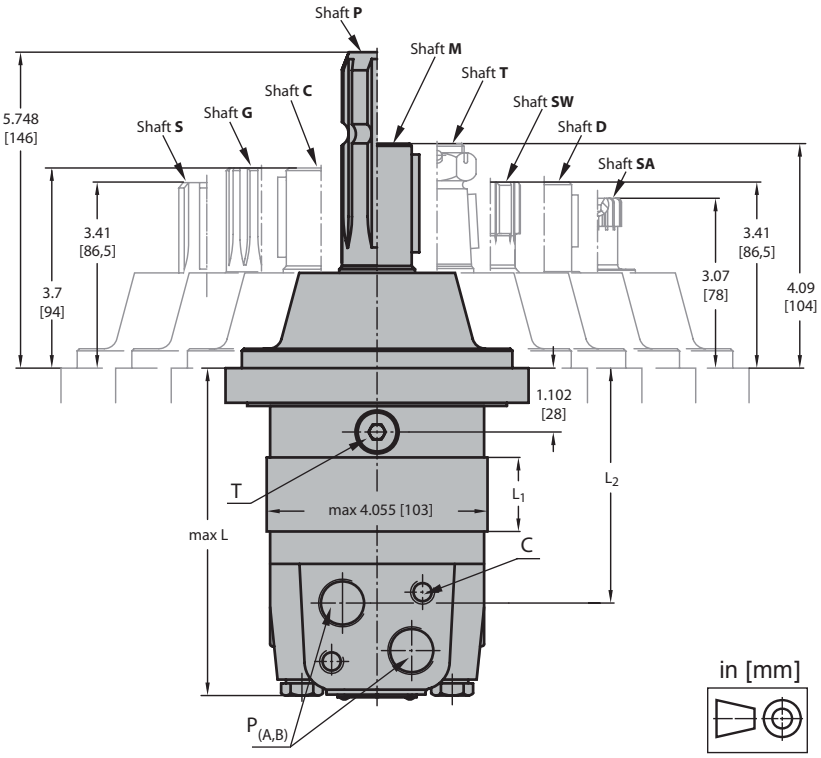
in [mm]

Dimensions
MLHSB
in [mm]



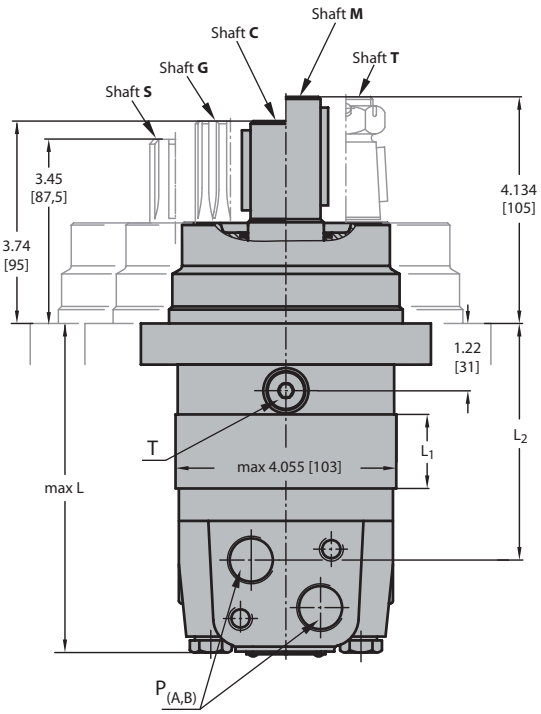
Type	L max, in [mm]		L_1, in [mm]	L_2, in [mm]
	Side ports	Rear ports		
MLHS (A, F, B) 80	6.61 [168]	6.89 [175]	.55 [14,0]	4.88 [124]
MLHS (A, F, B) 100	6.73 [171]	7.05 [179]	.69 [17,4]	5.04 [128]
MLHS (A, F, B) 125	6.93 [176]	7.21 [183]	.86 [21,8]	5.20 [132]
MLHS (A, F, B) 160	7.17 [182]	7.44 [189]	1.09 [27,8]	5.43 [138]
MLHS (A, F, B) 200	7.44 [189]	7.72 [196]	1.37 [34,8]	5.71 [145]
MLHS (A, F, B) 250	7.76 [197]	8.07 [205]	1.71 [43,5]	6.06 [154]
MLHS (A, F, B) 315	8.23 [209]	8.50 [216]	2.16 [54,8]	6.50 [165]
MLHS (A, F, B) 400	8.78 [223]	9.05 [230]	2.73 [69,4]	7.05 [179]
MLHS (A, F, B) 475	9.33 [237]	9.61 [244]	3.25 [82,6]	7.60 [193]
MLHS (A, F, B) 525	9.02 [229]	9.29 [236]	2.93 [74,5]	7.28 [185]
MLHS (A, F, B) 565	9.25 [235]	9.53 [242]	3.16 [80,2]	7.52 [191]

Dimensions
MLHSW
in [mm]



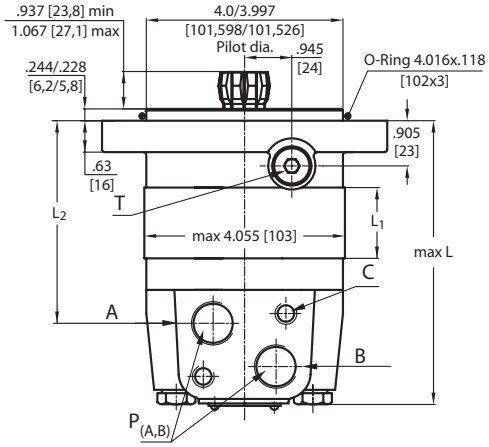
in [mm]

Dimensions
MLHSE
in [mm]

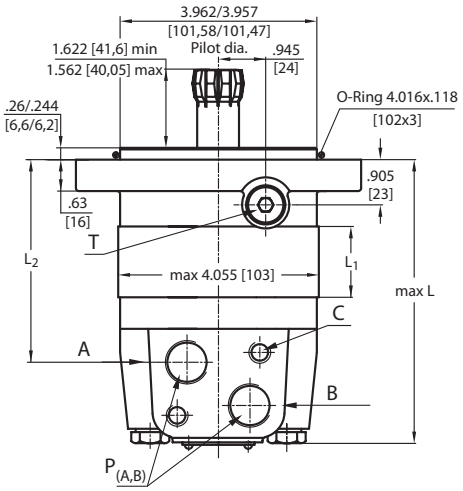


Type	L max, in [mm]		L_2, in [mm]	Type	L max, in [mm]		L_2, in [mm]	L_1, in [mm]
	Side ports	Rear ports			Side ports	Rear ports		
MLHSW 80	5.16 [131]	5.43 [138]	3.43 [87]	MLHSE 80	5.24 [133]	5.51 [140]	3.60 [91,5]	.55 [14,0]
MLHSW 100	5.28 [134]	5.59 [142]	3.58 [91]	MLHSE 100	5.39 [137]	5.67 [144]	3.74 [95]	.69 [17,4]
MLHSW 125	5.47 [139]	5.75 [146]	3.74 [95]	MLHSE 125	5.55 [141]	5.83 [148]	3.90 [99	.86 [21,8]
MLHSW 160	5.71 [145]	5.99 [152]	3.98 [101]	MLHSE 160	5.79 [147]	6.06 [154]	4.13 [105]	1.09 [27,8]
MLHSW 200	5.98 [152]	6.26 [159]	4.25 [108]	MLHSE 200	6.06 [154]	6.34 [161]	4.41 [112]	1.37 [34,8]
MLHSW 250	6.30 [160]	6.62 [168]	4.61 [117]	MLHSE 250	6.42 [163]	6.69 [170]	4.76 [121]	1.71 [43,5]
MLHSW 315	6.73 [171]	7.05 [179]	5.04 [128]	MLHSE 315	6.85 [174]	7.13 [181]	5.20 [132]	2.16 [54,8]
MLHSW 400	7.32 [186]	7.64 [194]	5.63 [143]	MLHSE 400	7.44 [189]	7.72 [196]	5.79 [147]	2.73 [69,4]
MLHSW 475	7.87 [200]	8.15 [207]	6.14 [156]	MLHSE 475	7.95 [202]	8.23 [209]	6.26 [159]	3.25 [82,6]
MLHSW 525	7.56 [192]	7.84 [199]	5.83 [148]	MLHSE 525	7.64 [194]	7.91 [201]	5.95 [151]	2.93 [74,5]
MLHSW 565	7.79 [198]	8.07 [205]	6.06 [154]	MLHSE 565	7.87 [200]	8.15 [207]	6.18 [157]	3.16 [80,2]

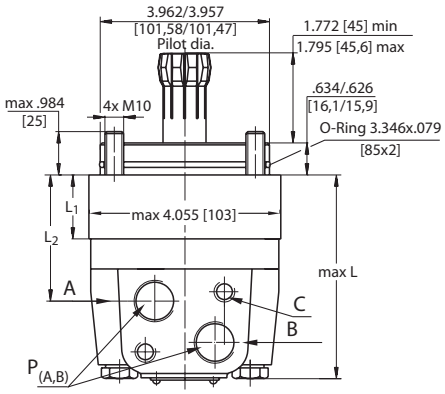
Dimensions MLHSS
in [mm]



Dimensions MLHSZ
in [mm]



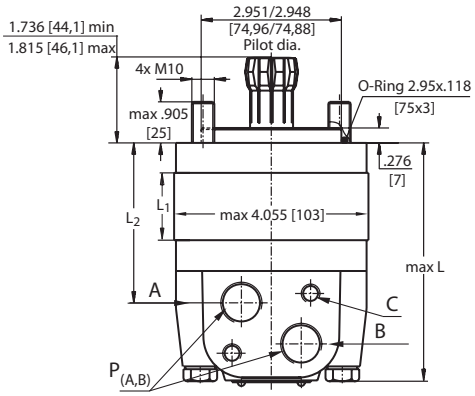
Dimensions MLHSV
in [mm]



in [mm]



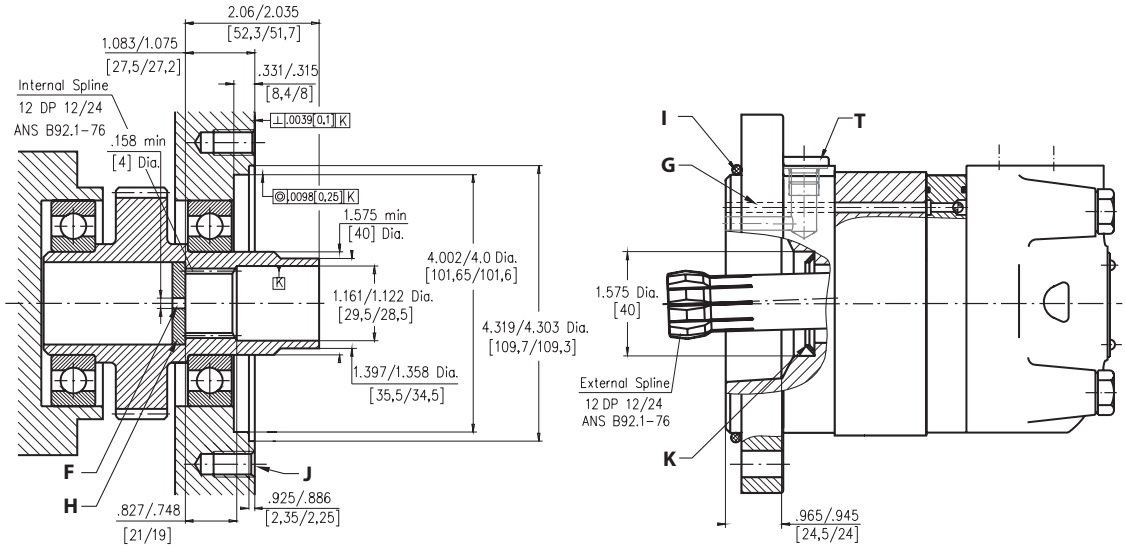
Dimensions MLHSU
in [mm]



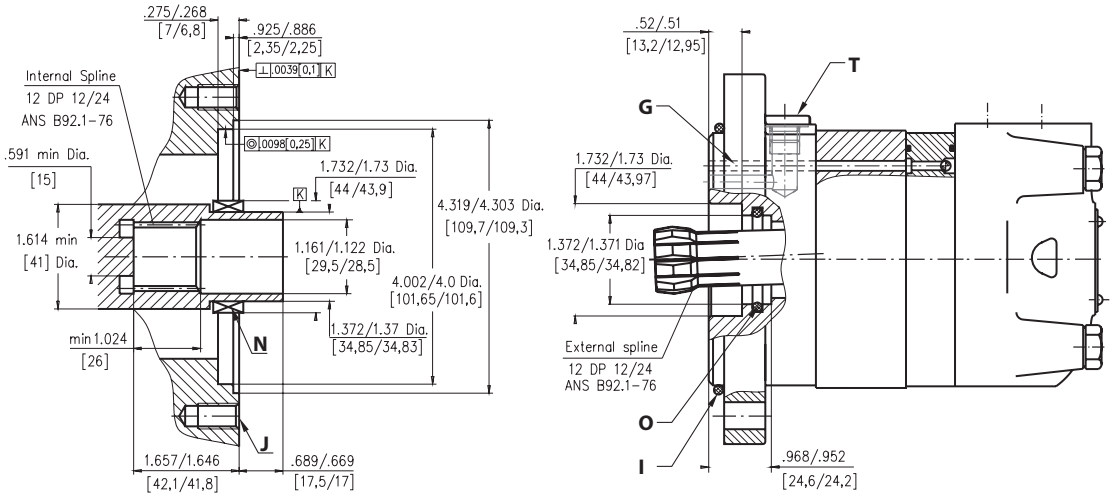
Type	L max, in [mm]		L_2, in [mm]	Type	L max, in [mm]		L_2, in [mm]	Type	L max, in [mm]		L_2, in [mm]	L_1, in [mm]
	Side ports	Rear ports			Side ports	Rear ports			Side ports	Rear ports		
MLHS (S, Z) 80	4.92 [125]	5.28 [134]	3.27 [83]	MLHSV 80	3.58 [91]	3.82 [97]	1.85 [47]	MLHSU 80	4.15 [105,5]	4.39 [111,5]	2.48 [63]	.55 [14,0]
MLHS (S, Z) 100	5.08 [129]	5.43 [138]	3.43 [87]	MLHSV 100	3.70 [94]	3.94 [100]	1.99 [50,5]	MLHSU 100	4.29 [109]	4.53 [115]	2.62 [66,5]	.69 [17,4]
MLHS (S, Z) 125	5.24 [133]	5.55 [141]	3.54 [90]	MLHSV 125	3.90 [99]	4.13 [105]	2.17 [55]	MLHSU 125	4.45 [113]	4.69 [119]	2.80 [71]	.86 [21,8]
MLHS (S, Z) 160	5.47 [139]	5.79 [147]	3.78 [96]	MLHSV 160	4.13 [105]	4.37 [111]	2.40 [61]	MLHSU 160	4.69 [119]	4.92 [125]	3.03 [77]	1.09 [27,8]
MLHS (S, Z) 200	5.75 [146]	6.06 [154]	4.05 [103]	MLHSV 200	4.41 [112]	4.64 [118]	2.78 [68]	MLHSU 200	4.96 [126]	5.20 [132]	3.31 [84]	1.37 [34,8]
MLHS (S, Z) 250	6.10 [155]	6.42 [163]	4.41 [112]	MLHSV 250	4.72 [120]	4.96 [126]	3.01 [76,5]	MLHSU 250	5.32 [135]	5.55 [141]	3.64 [92,5]	1.71 [43,5]
MLHS (S, Z) 315	6.54 [166]	6.85 [174]	4.84 [123]	MLHSV 315	5.20 [132]	5.43 [138]	3.46 [88]	MLHSU 315	5.75 [146]	5.98 [152]	4.09 [104]	2.16 [54,8]
MLHS (S, Z) 400	7.13 [181]	7.44 [189]	5.43 [138]	MLHSV 400	5.75 [146]	6.02 [153]	4.05 [103]	MLHSU 400	6.30 [160]	6.58 [167]	4.69 [119]	2.73 [69,4]
MLHS (S, Z) 475	7.64 [194]	7.99 [203]	5.98 [152]	MLHSV 475	6.30 [160]	6.54 [166]	4.57 [116]	MLHSU 475	6.85 [174]	7.09 [180]	5.20 [132]	3.25 [82,6]
MLHS (S, Z) 525	7.32 [186]	7.68 [195]	5.67 [144]	MLHSV 525	5.98 [152]	6.22 [158]	4.25 [108]	MLHSU 525	6.54 [166]	6.77 [172]	4.88 [124]	2.93 [74,5]
MLHS (S, Z) 565	7.56 [192]	7.91 [201]	5.91 [150]	MLHSV 565	6.22 [158]	6.46 [164]	4.49 [114]	MLHSU 565	6.77 [172]	7.01 [178]	5.12 [130]	3.16 [80,2]

Dimensions of the attached component in [mm]

MLHSS

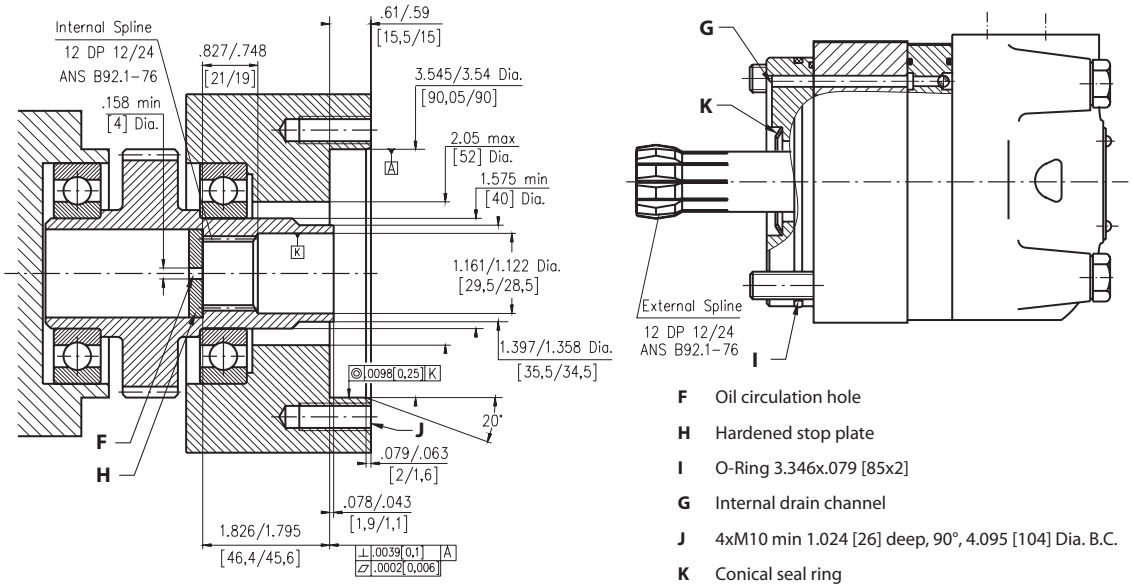


MLHSZ



F Oil circulation hole
G Internal drain channel
H Hardened stop plate
I O-Ring 4.016x.108 [102x3]
J 4x1/2 UN min .61 [15] deep, 90°, 5.00 [127] Dia. B.C.
K Conical seal ring
N Needle bearing 1 3/8" x 1 3/4"
O O-Ring 1.358x.104 [34,5x2,65]
T Drain connection G1/4, M14x1,5 or 7/16-20 UNF

MLHSV



F Oil circulation hole
H Hardened stop plate
I O-Ring 3.346x.079 [85x2]
G Internal drain channel
J 4xM10 min 1.024 [26] deep, 90°, 4.095 [104] Dia. B.C.
K Conical seal ring

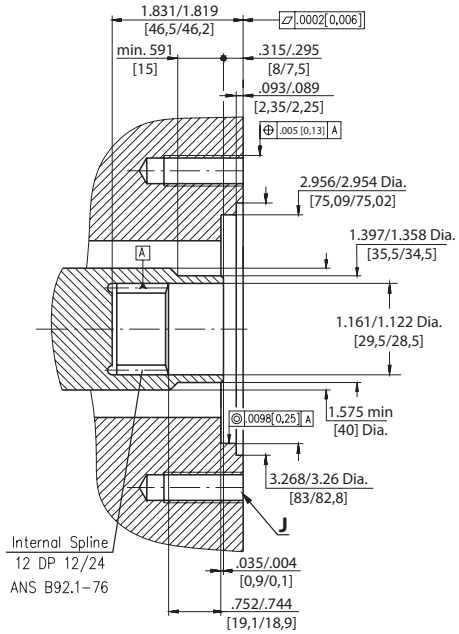
in [mm]

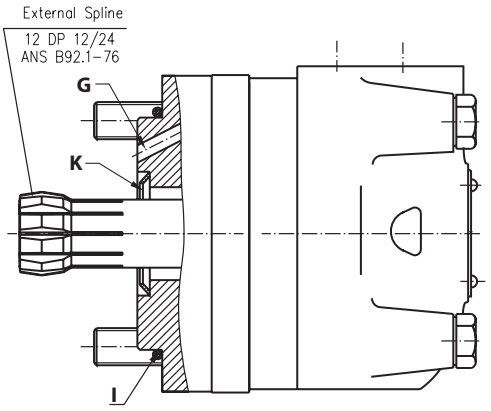
Dimensions of the attached component in [mm]

MLHSU

in [mm]







I O-Ring 2.95x.118 [75x3]

K Conical seal ring

G Internal drain channel

J 4xM10 min 1.024 [26] deep, 90°, 4.095 [104] Dia. B.C.

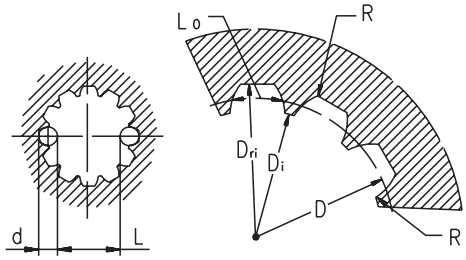
Drain connection

A drain line ought to be used when pressure in the return line can exceed the permissible pressure. It can be connected:
- For MLHSS, MLHSZ at the drain port of the motor
- For MLHSV, MLHSU at the drain connection of the attached component. The maximum pressure in the drain line is limited by the attached component and its shaft seal.

The drain line must be possible for oil to flow freely between motor and attached component and must be led to the tank.

Internal spline data for the attached component

Standard ANSI B92.1-1976, class 5 [m=2.1166; corrcted x.m=+0,8]

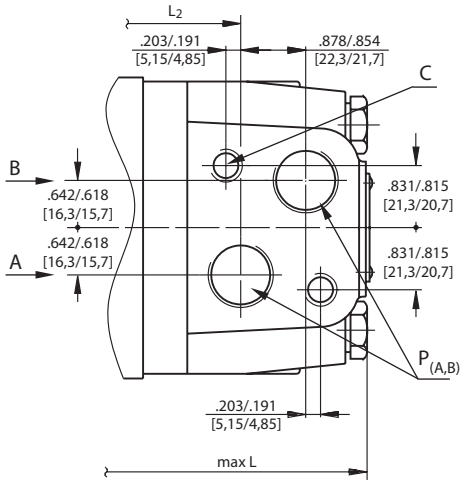


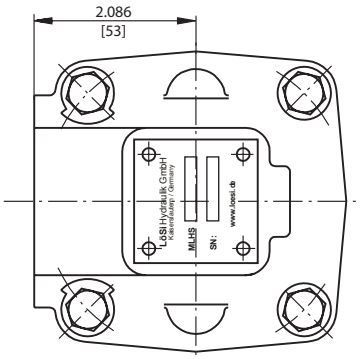
Hardening specification:
HV=750±50 on the surface
HV=560 at .035±.019 in [0,7±0,2 mm] depth
Material: 20 MoCr4 DIN17210 or SAE8620

Fillet root side fit		inch	mm
Number of teeth	z	12	12
Diametral Pitch	DP	12/24	12/24
Pressure angle		30°	30°
Pitch diameter	D	1	25,4
Major diameter	Dri	1.1 ÷ 1.098	$28,0_{-0,1}$
Minor diameter	Di	.907 ÷ .905	$23,0^{+0,033}$
Space width	Lo	.1704 ÷ .1688	4,308±0,020
Fillet radius	R	.008	0,2
Max. meas. between pins	L	.699 ÷ .694	$17,62^{+0,15}$
Pin dia.	d	.19039 ÷ .19031	4,835±0,001

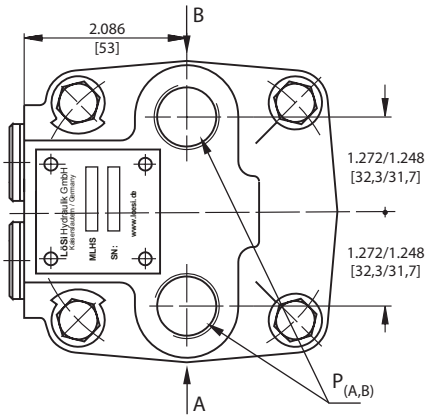
Pos. 5 Port type

Side ports
Option: **2**, **3**, **4**, **5**





Rear ports
Option: **6**, **7**, **8**, **9**



	Port options			
	2 and **6**	**3** and **9**	**4** and **7**	**5** and **8**
C	2x M10	2x M10	2x 3/8-16UNC	2x 3/8-16UNC
P (A, B)	2x G1/2	2x M22x1,5	2x 7/8-14UNF	2x 1/2-14NPTF
T	G1/4	M14x1,5	7/16-20UNF	7/16-20UNF

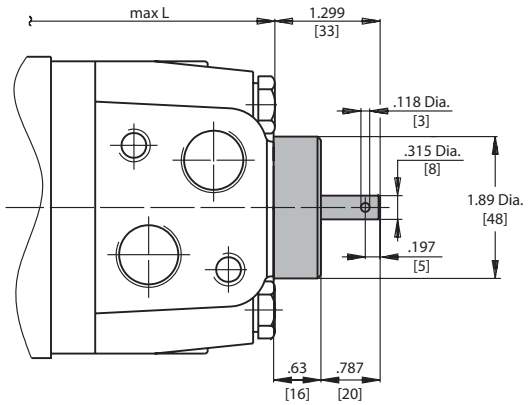
Reverse rotation (Pos. 6 - Option R)
Viewed from shaft end
Port **A** pressurized- left running
Port **B** pressurized- right running

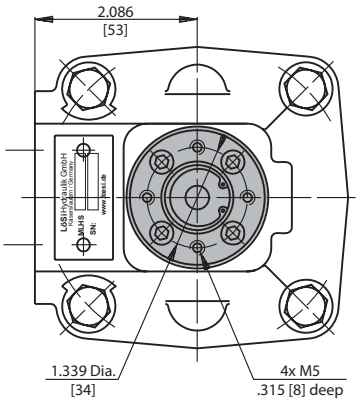
Standard rotation
Viewed from shaft end
Port **A** pressurized- right running
Port **B** pressurized- left running

Pos. 6 Special features

Option T: Tacho connection

Our MLHS motors are available in version with tacho drive shaft. With tacho connection the speed of the motor can be registered. Tacho shaft has a 6 times higher revolution speed than output shaft and opposite direction of rotation.

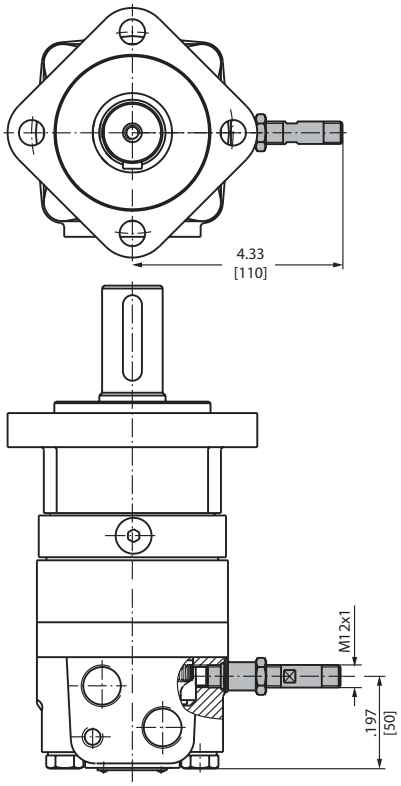




in [mm]

Attention:
Radial or axial load on tacho shaft must be avoided. Max torque on shaft .885 lb-in [0.1 daNm]. Max. continuous return pressure without drain line 290 PSI [20 bar].

Option RS: Speed sensor

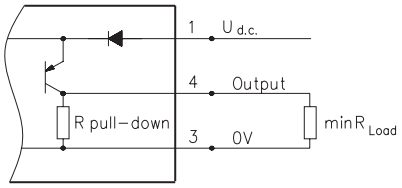


Technical data

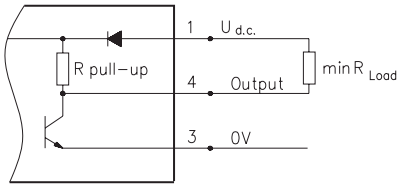
Frequency range	0 - 15000 Hz	Protection	IP 67
Output	PNP, NPN	Plug connector	M12-Serie Series
Power supply	10 - 36 VDC	Mounting principle	ISO 6149
Current input	20 mA (@24 VDC)	Pulses / rev.	54
Ambient temp.	-40 - 257°F [-40 - 125°C]		

Wiring diagram

PNP

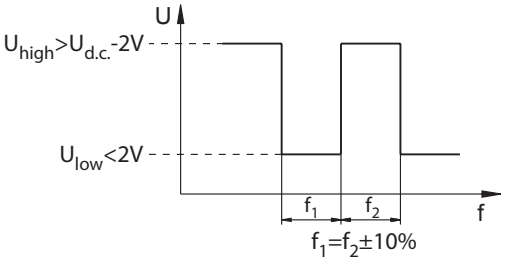


NPN



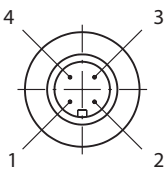
$R_{load}[k\Omega]=U_{d.c.}[V]/I_{max}[mA]$

Output signal



Load max: $I_{high}=I_{low}<50mA$

Stick type



Terminal No.	Connection	Cable Output
1	Ud.c.	Brown
2	No connection	White
3	0V	Blue
4	Output signal	Black

Order code for speed sensor

Code	Output	Electric connection
RSN	NPN	Connector BINDER 713 series
RSP	PNP	Connector BINDER 713 series
RSNL5	NPN	Cable output 3x0,25 (196 in [5m] long)
RSPL5	PNP	Cable output 3x0,25 (196 in [5m] long)

The speed sensor will be delivered not fitted, but is supplied in a plastic bag with the motor. For installation see the enclosed mounting instructions.

Option LL: Low Leakage

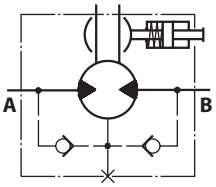
LL series hydraulic motors are designed to operate at the whole standard range of working conditions (pressure drop and frequency of rotation), but with considerable decreased volumetric losses in the drain ports. These motors are suitable for hydraulic system with series-connected motors with demands for low leakage.

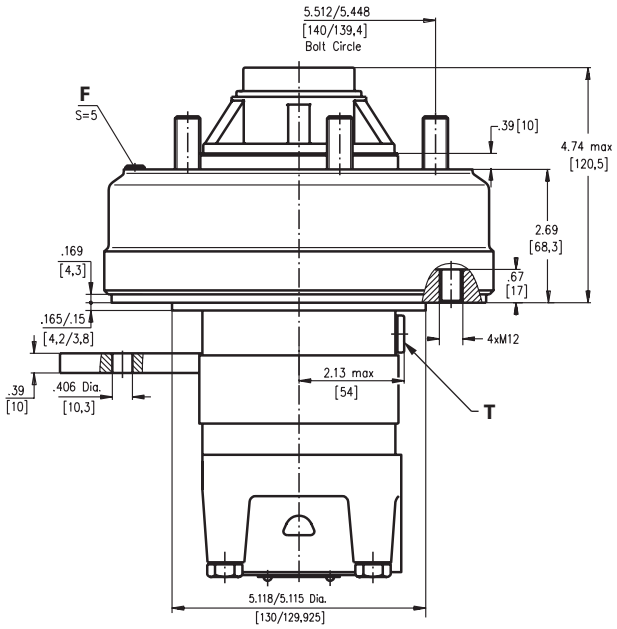
Option LSV: Low speed valve

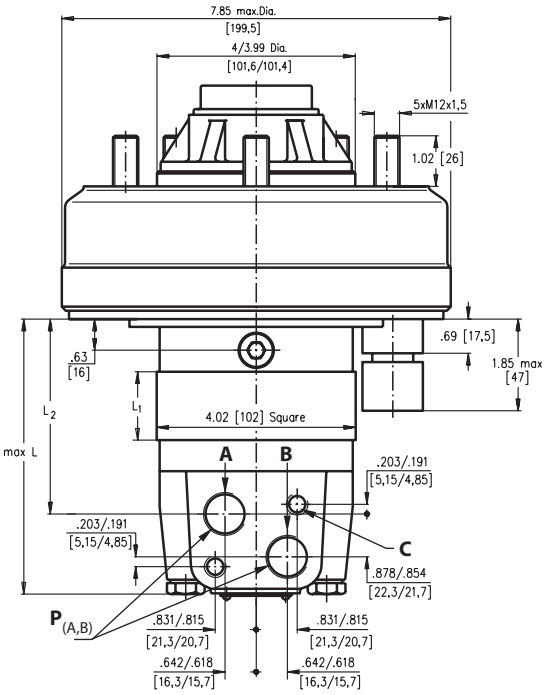
LSV option optimizes the motor for low speed performance. Motors with this valving provide very low speed while maintaining high torque. They are designed to run continuously at low speed (up to 200 RPM) at normal pressure drop and reduced flow. Optimal run is guaranteed at frequency of rotation from 20 to 50 RPM. Motors with this valving have an increased starting pressure and are not recommended for using at pressure drop less than 580 PSI [40 bar].

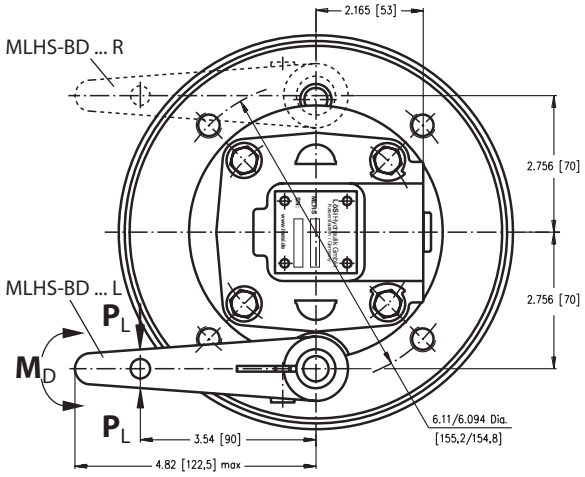
MLHS-BD: Motor with drum brake

Actuating the brake lever, the brake shaft is turned. The rectangular shape of the inner part of this shaft forces the brake pads to be pressed against the brake drum. This braks the wheel or the winch drum.
Releasing the lever, the springs pull it and the brake pads back to the initial position. The motor output shaft is released.
Minimum angle adjustment is 10°. It can be adjusted by dismounting the lever. Depending on the application you can choose the actuating direction of the brake lever. The rod connection actuating the brake should be capable of moving at last .975 in [25 mm] from neutral to extreme position.



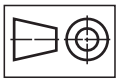






Type	L max, in [mm]		L_1, in [mm]	L_2, in [mm]
	Side ports	Rear ports		
MLHS-BD 80	4.69 [119]	5.00 [127]	.55 [14,0]	2.91 [74]
MLHS-BD 100	4.80 [122]	5.12 [130]	.69 [17,4]	3.03 [77]
MLHS-BD 125	4.96 [126]	5.28 [134]	.86 [21,8]	3.23 [82]
MLHS-BD 160	5.20 [132]	5.51 [140]	1.09 [27,8]	3.47 [88]
MLHS-BD 200	5.47 [139]	5.79 [147]	1.37 [34,8]	3.74 [95]
MLHS-BD 250	5.83 [148]	6.14 [156]	1.71 [43,5]	4.33 [110]
MLHS-BD 315	6.26 [159]	6.57 [167]	2.16 [54,8]	4.53 [115]
MLHS-BD 400	6.85 [174]	7.17 [182]	2.73 [69,4]	5.12 [130]
MLHS-BD 475	7.40 [188]	7.72 [196]	3.25 [82,6]	5.63 [143]
MLHS-BD 525	7.09 [180]	7.40 [188]	2.93 [74,5]	5.32 [135]
MLHS-BD 565	7.32 [186]	7.56 [192]	3.16 [80,2]	5.55 [141]

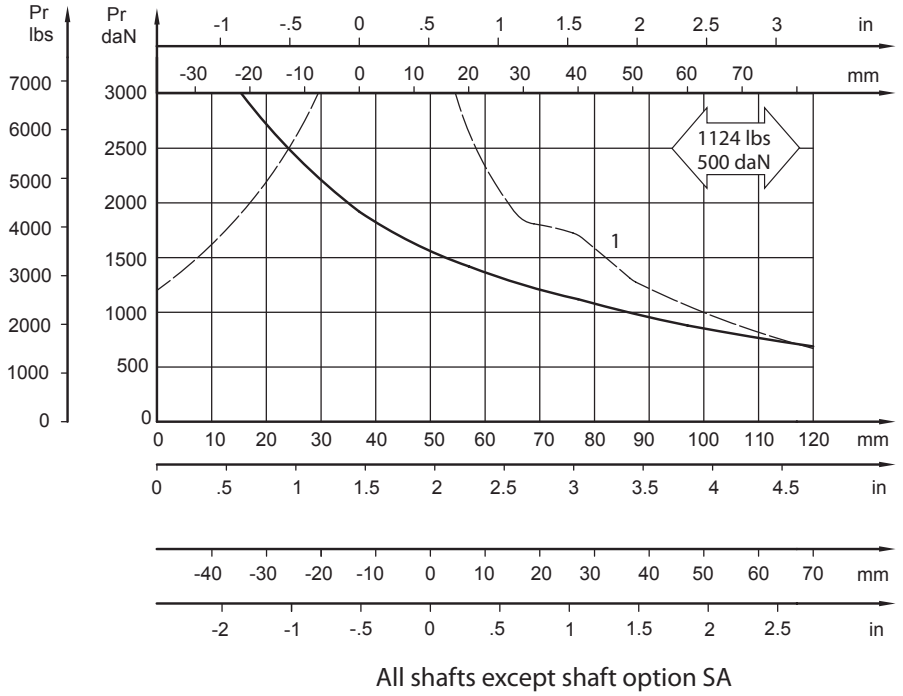
C Mounting holes
P(A, B) Pressure ports
T Drain connection
F Inspection hole for checking brake lining


in [mm]

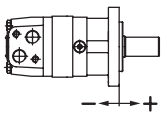
Furter technical informations

Permissible shaft load

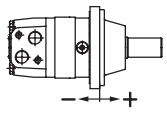
The output shaft runs in tapered bearings that permit high axial and radial forces.
The permissible radial load on the shaft is shown for an axial load of 0 N as function of the distance from the mounting flange to the point of load application.
The curves apply to a B10 bearing life of 2000 hours at 100 RPM.
Curve "**1**" shows max. radial shaft load. Any shaft load exceeding the values quoted in the curve will seriously reduce motor life.



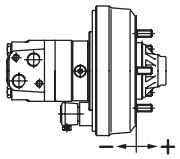
Flangeoption



Standard, A, B, F



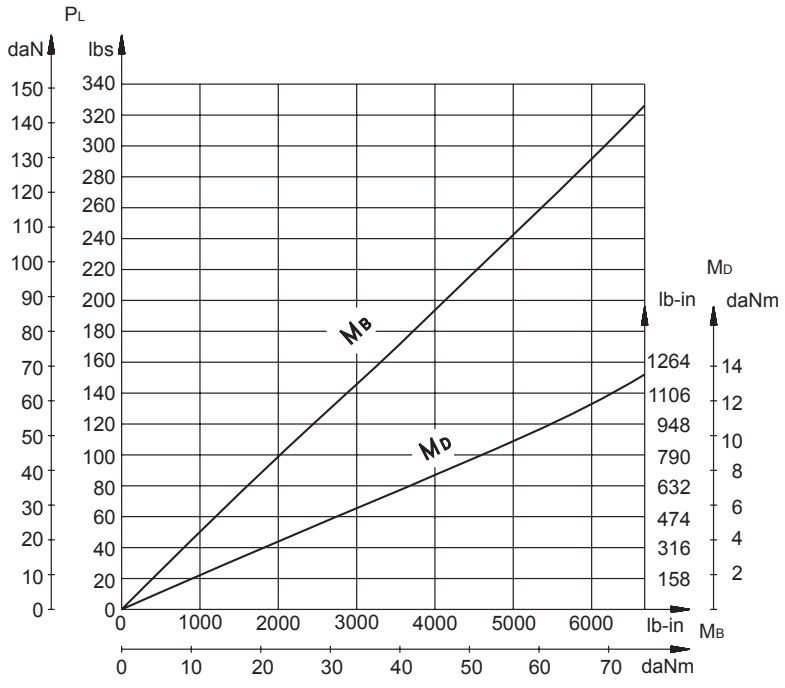
W, E



BD

All shafts except shaft option SA

Function diagram MLHS-BD

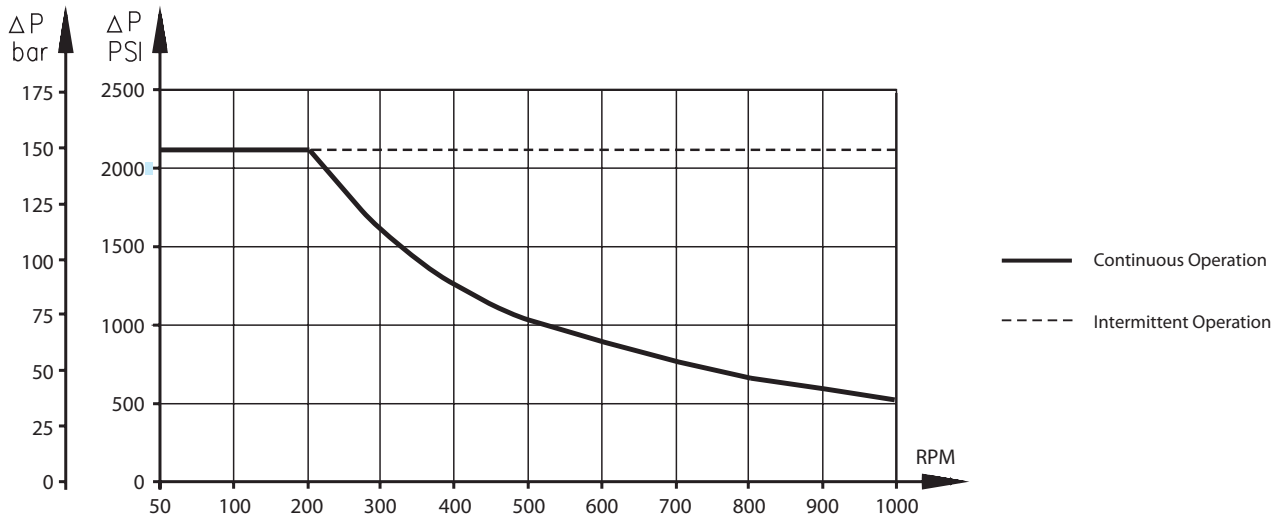


PL Brake Lever Load

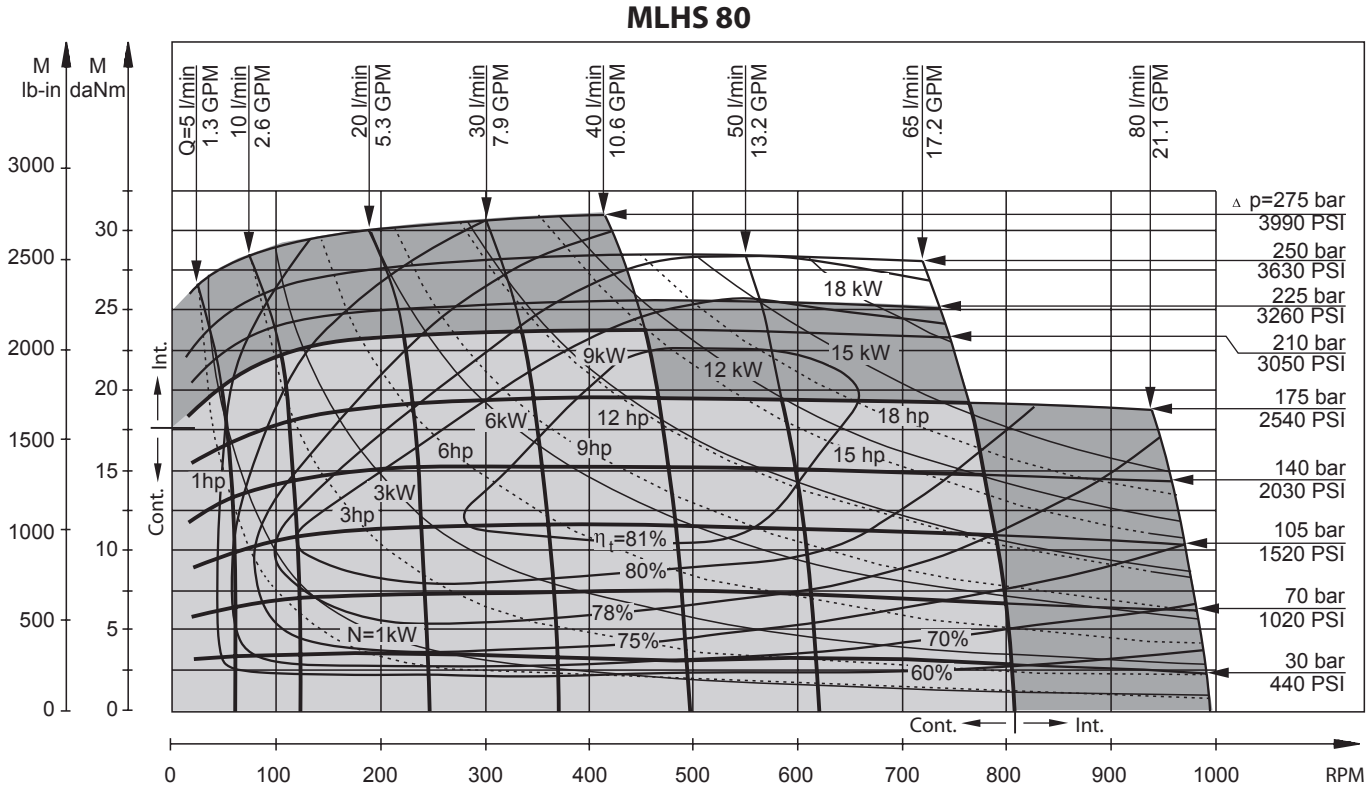
MB Brake torque

MD Brake Lever torque

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

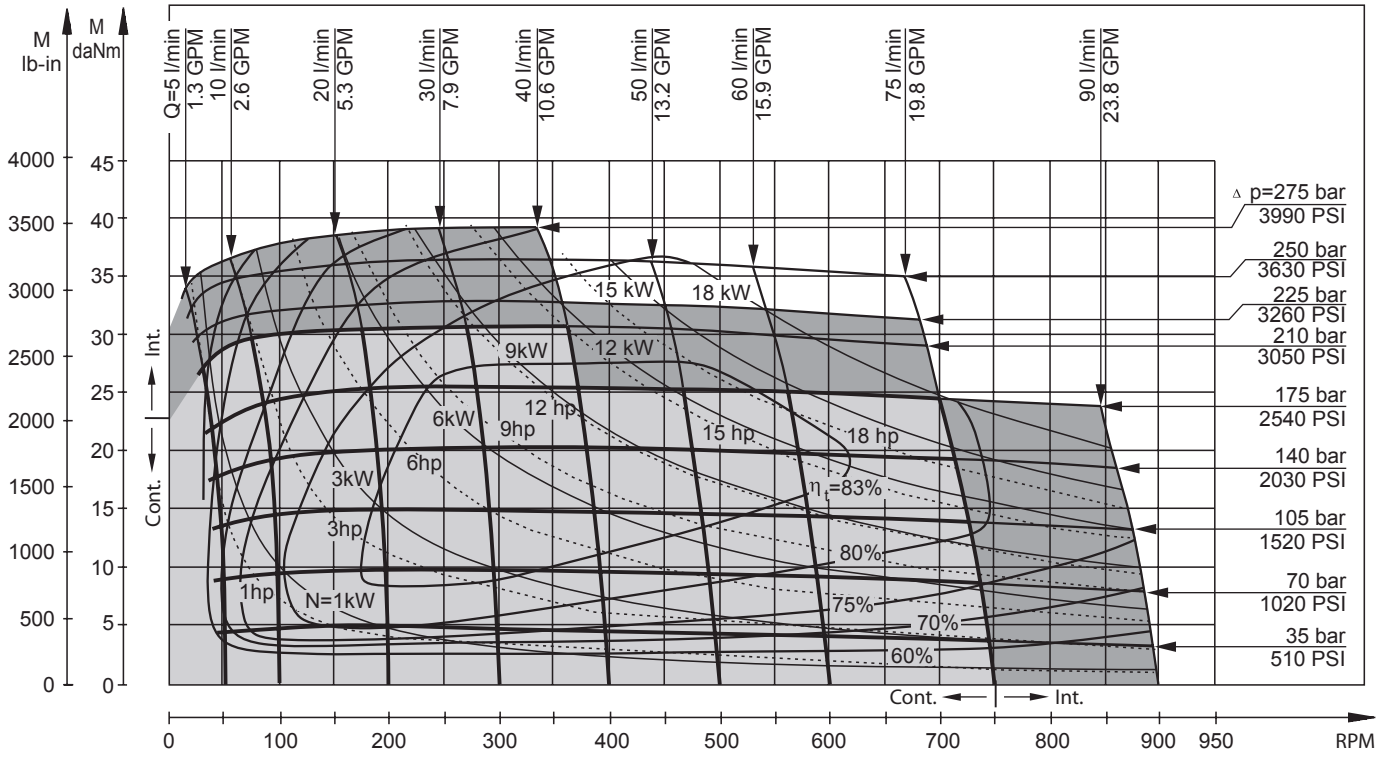


Function diagrams



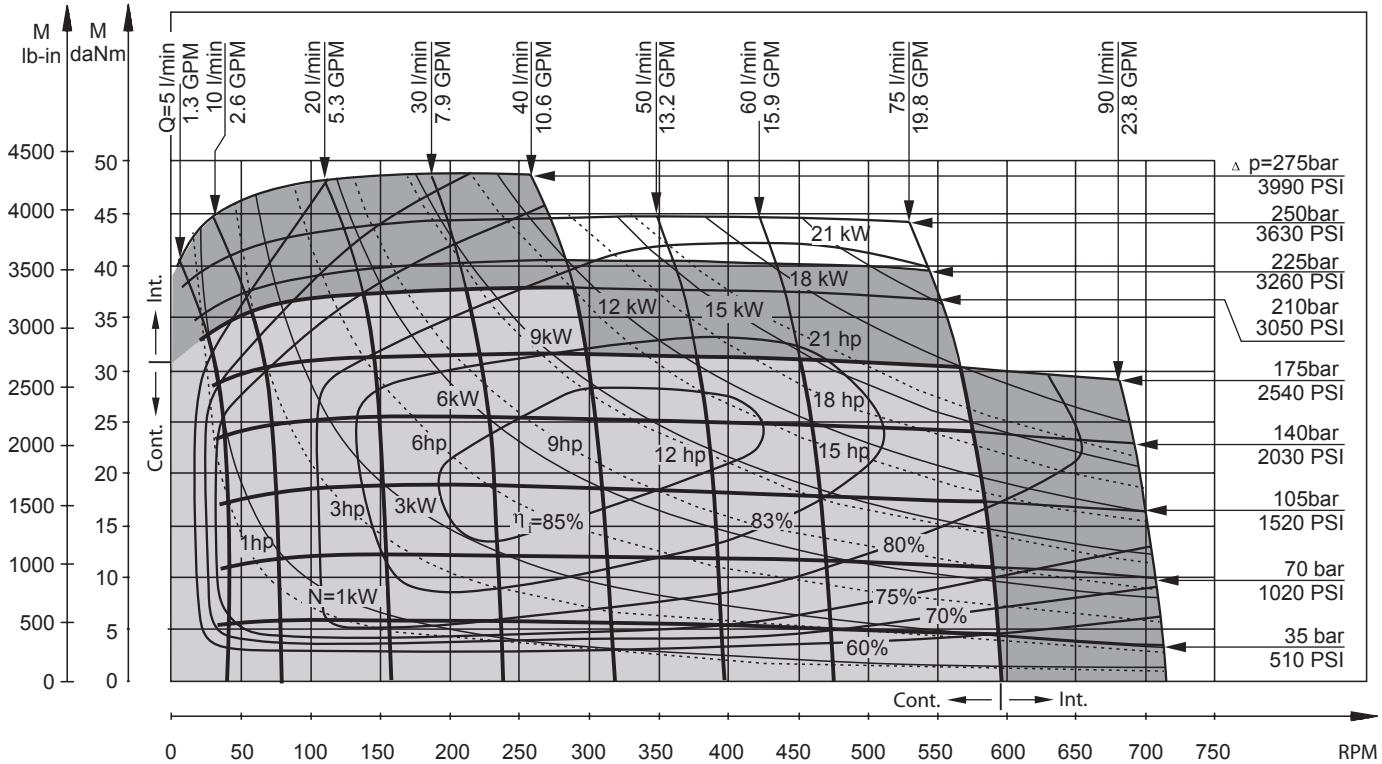
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 100

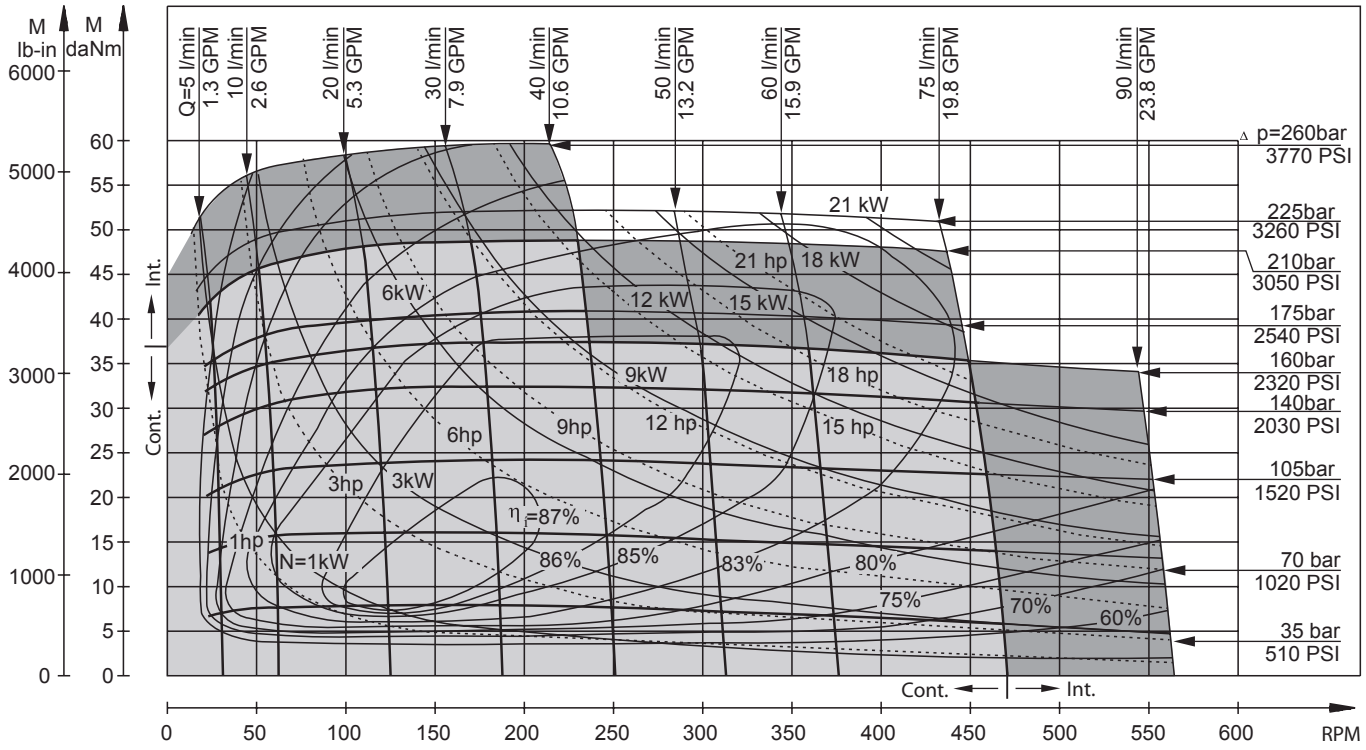


The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 125

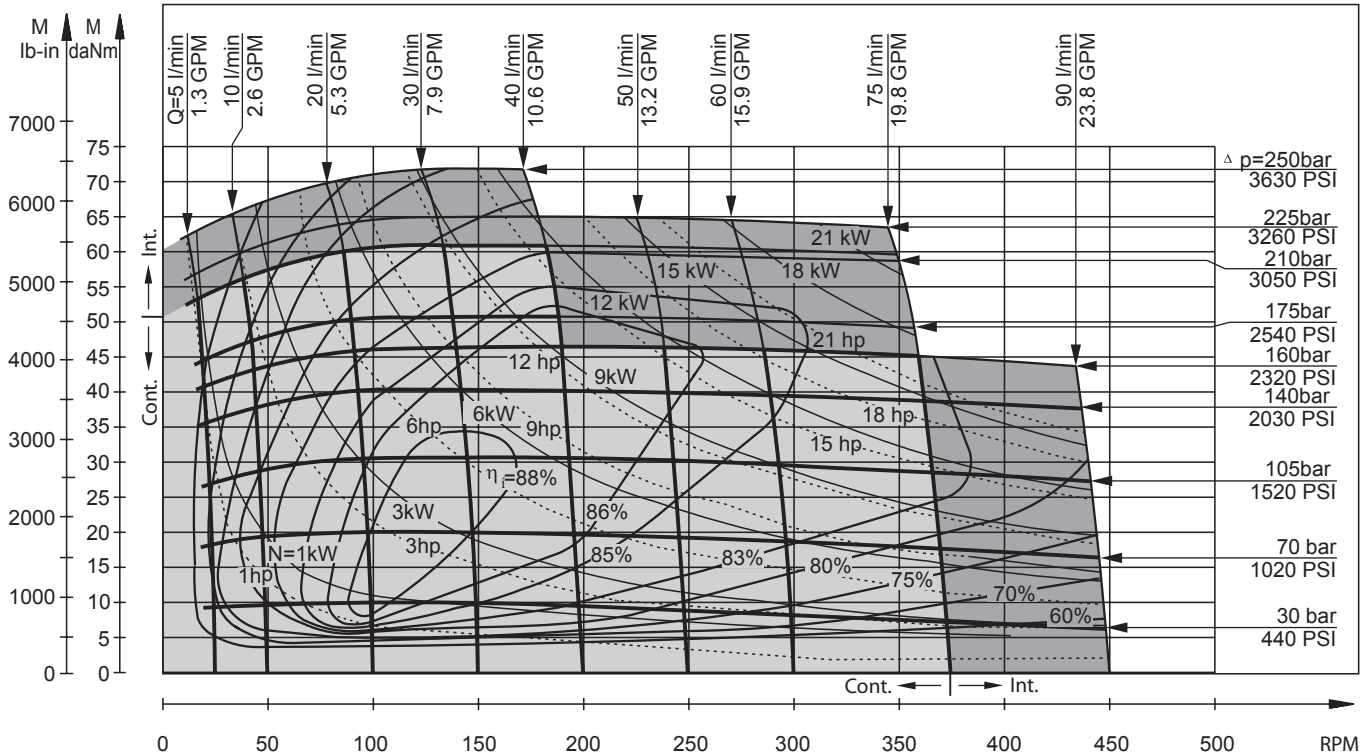


MLHS 160

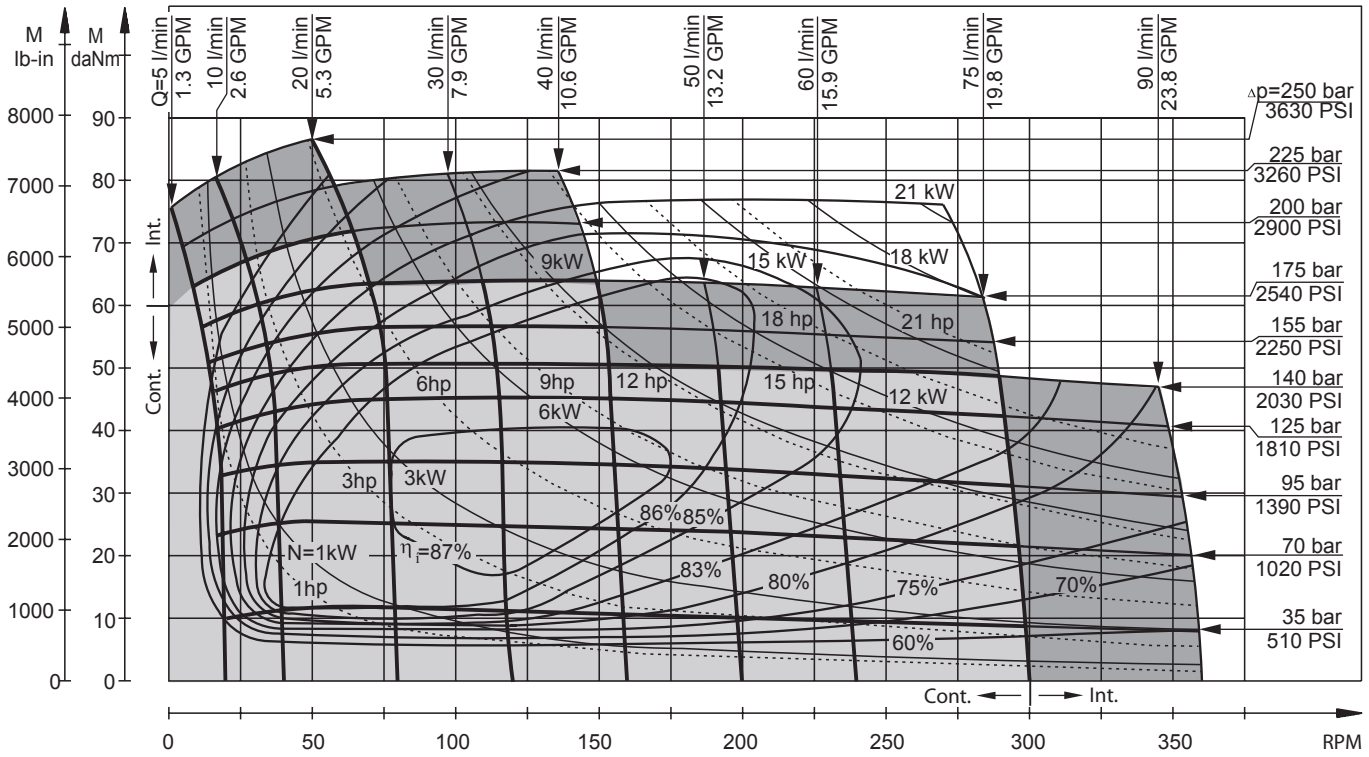


The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 200

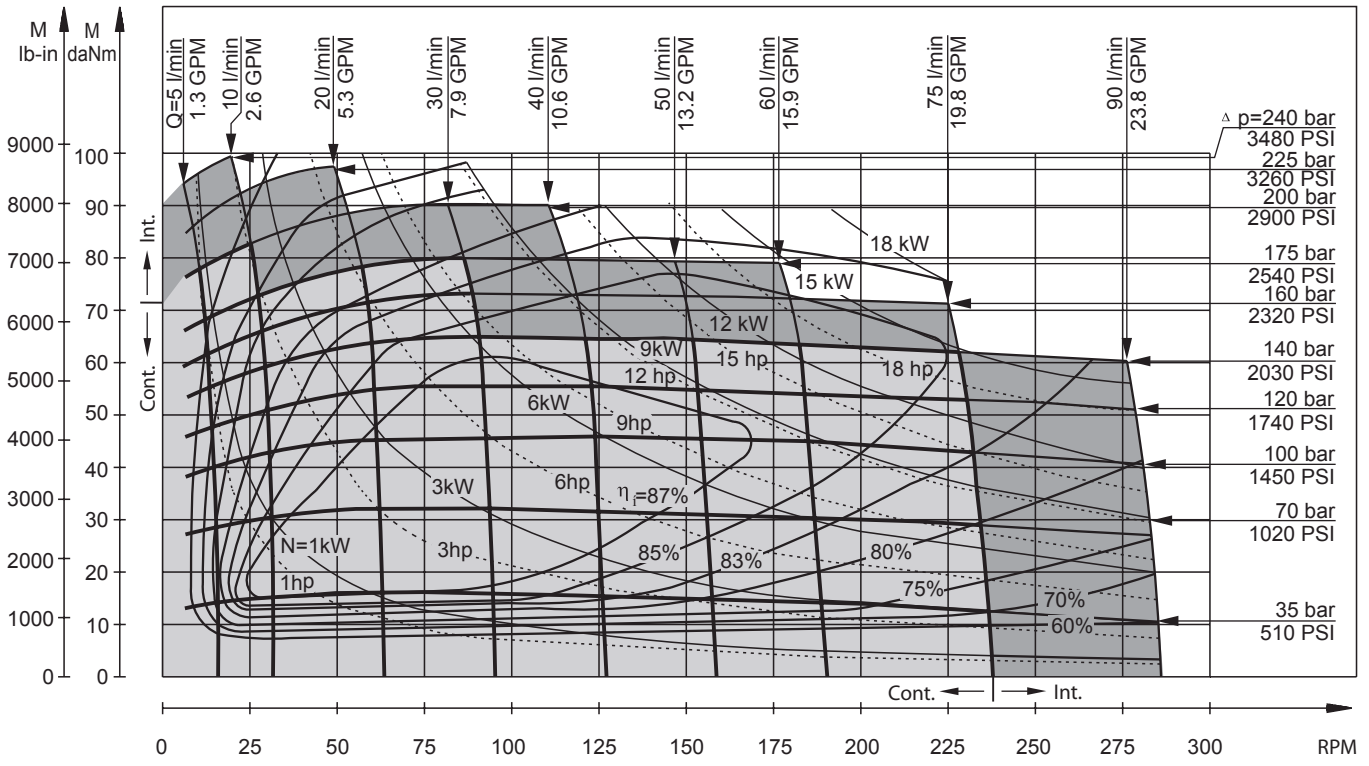


MLHS 250

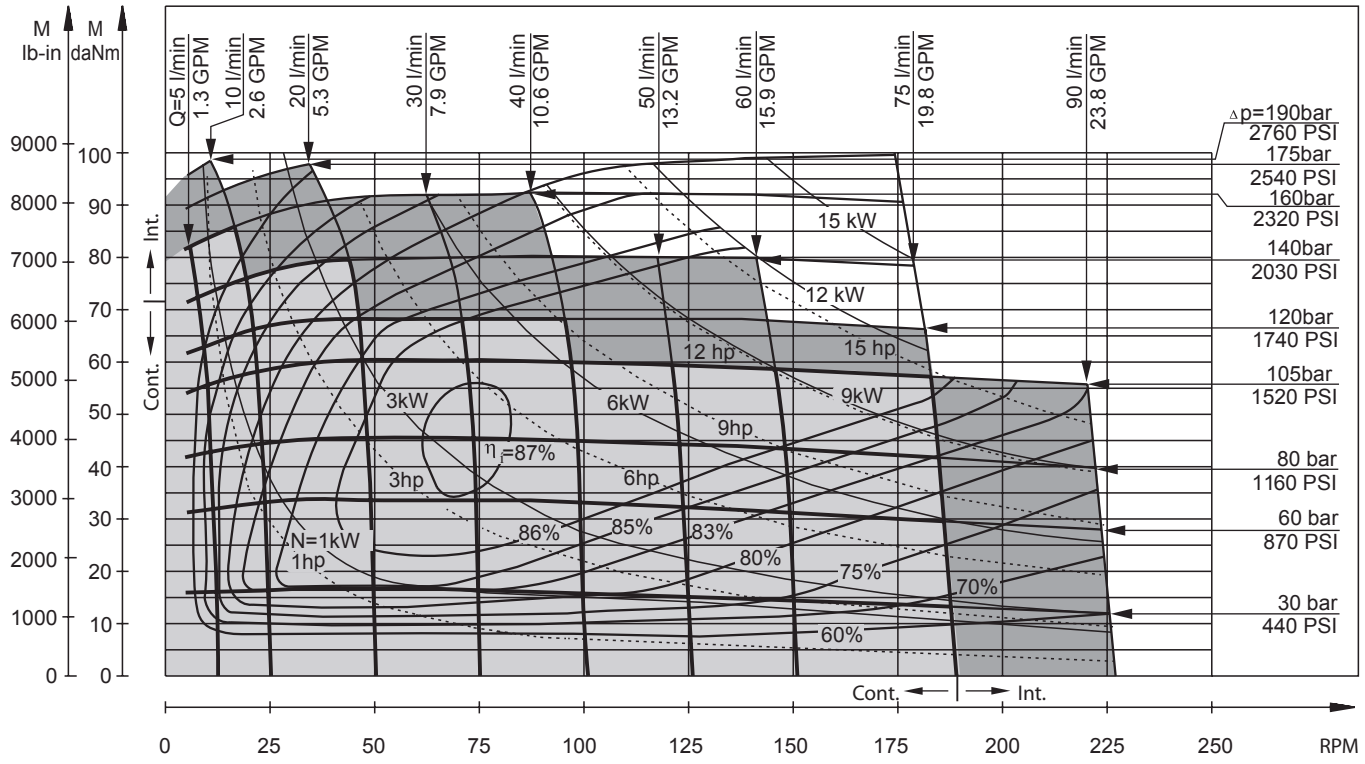


The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 315

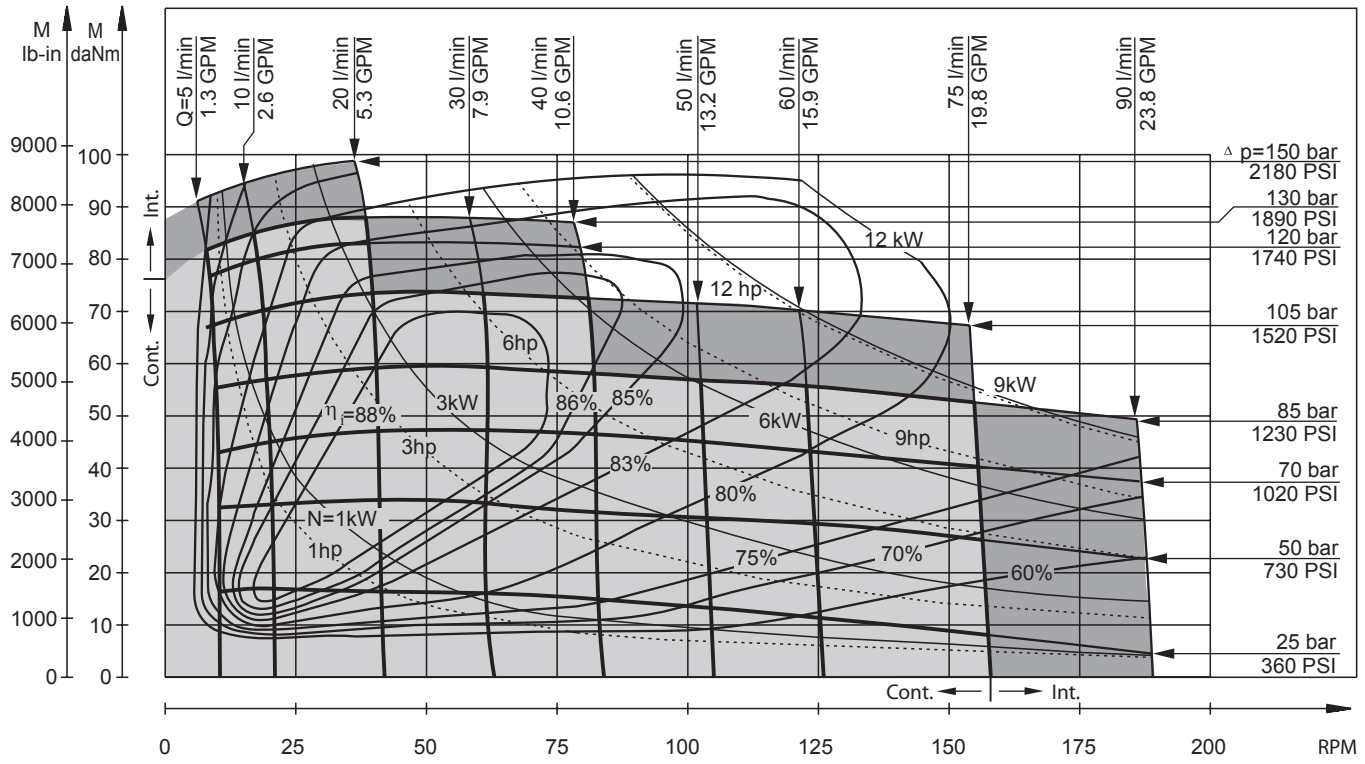


MLHS 400

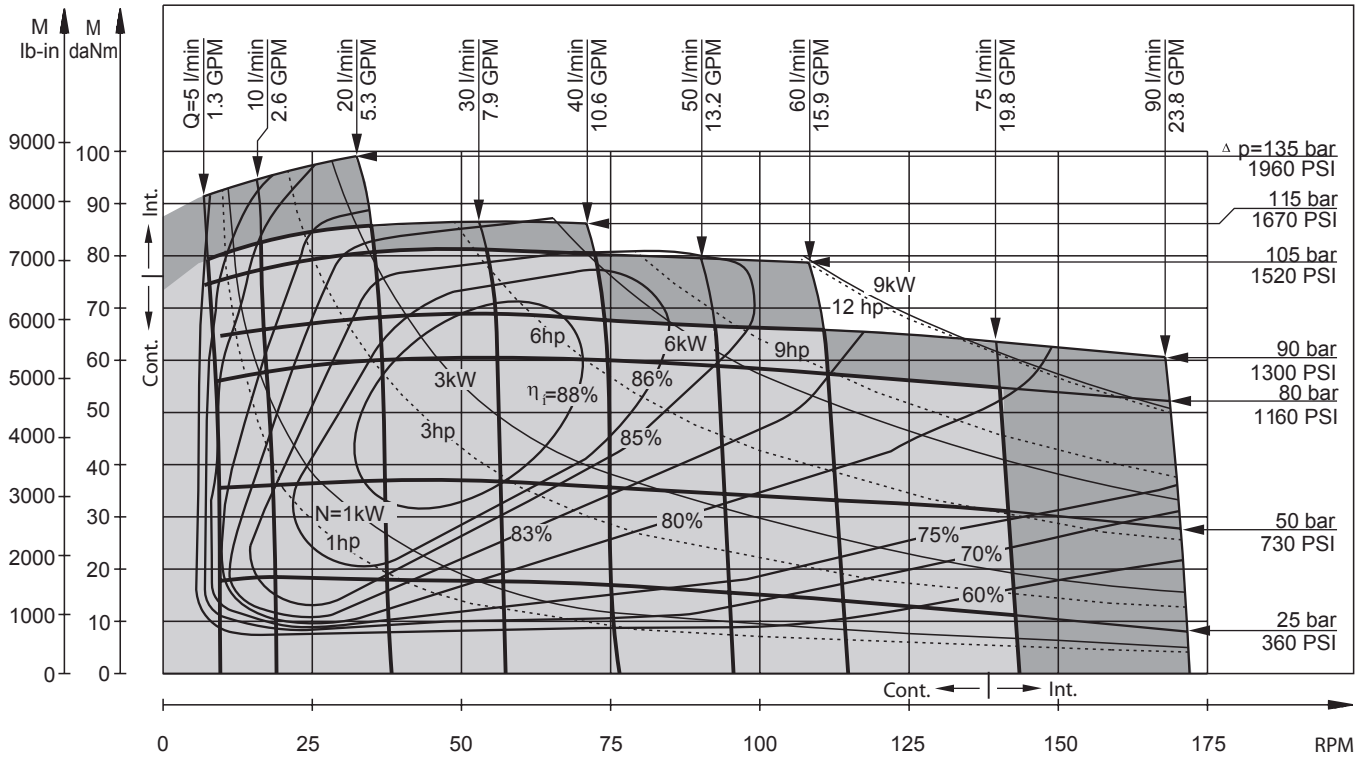


The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 475



MLHS 525



The function diagrams data is for average performance of randomly selected motors at back pressure 72.5-145 PSI [5-10 bar] and oil viscosity of 150 SUS [32 mm²/s] at 122° F [50° C].

MLHS 565

