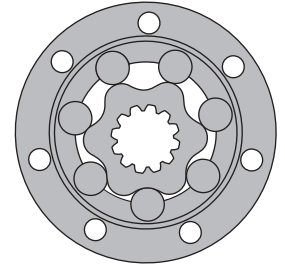


HYDRAULIC MOTORS HW



APPLICATION

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



CONTENTS

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Permissible shaft Seal Pressure ...	97
Shaft extensions	98÷99
Permissible shaft loads	99
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OPTIONS

- » Model - Spool valve, roll-gerotor
- » Wheel and flange mount
- » Shafts - straight, splined and tapered
- » SAE and BSPP ports
- » Other special features

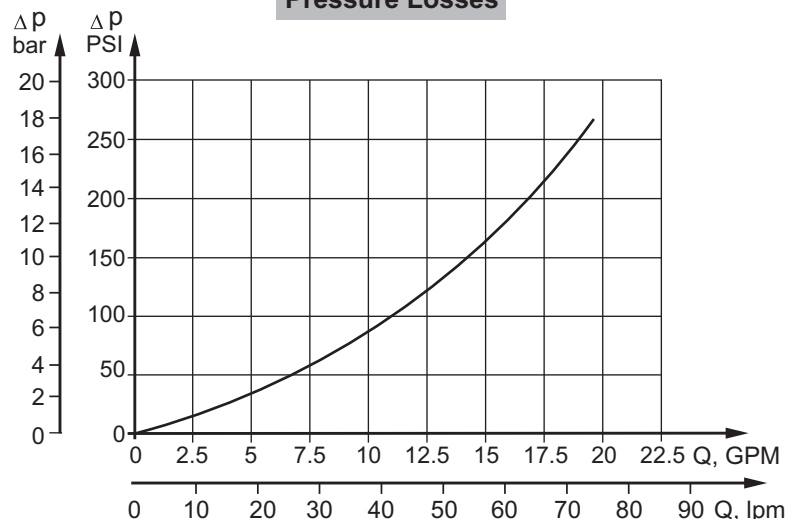
GENERAL

Max. Displacement, in ³ /rev [cm ³ /rev]	33.55 [550]
Max. Speed, [RPM]	497
Max. Torque, lb-in [daNm]	cont.: 8500 [96] int.: 9293 [105]
Max. Output, HP [kW]	31 [23,1]
Max. Pressure Drop, PSI [bar]	cont.: 3000 [205] int.: 3260 [225]
Max. Oil Flow, GPM [lpm]	30.4 [115]
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 [mm²/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		HW 125	HW 160	HW 200	HW 235	HW 250	HW 300	HW 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.	357	380	373	319	298	250	238
	int.*	476	475	497	425	397	333	318
Max. Torque lb-in [daNm]	cont.	3098 [35]	3894 [44]	4868 [55]	5710 [64,5]	6107 [69]	7170 [81]	7523 [85]
	int.*	3408 [38,5]	4248 [48]	5310 [60]	6196 [70]	6638 [75]	7877 [89]	8230 [93]
Max. Output, HP [kW]	cont.	21.7 [16,2]	23.6 [17,6]	24.9 [18,6]	24.4 [18,2]	22.5 [16,8]	22 [16,5]	21.9 [16,4]
	int.*	26.6 [19,8]	29 [21,6]	31 [23,1]	30.3 [22,6]	27.9 [20,8]	27.9 [20,8]	27.9 [20,8]
Max. Pressure Drop, PSI [bar]	cont.	2970 [205]	2970 [205]	2970 [205]	2970 [205]	2970 [205]	2970 [205]	2970 [205]
	int.*	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]	3260 [225]
Max. Oil Flow GPM [lpm]	cont.	12 [45]	16 [60]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
	int.*	16 [60]	20 [75]	26.4 [100]	26.4 [100]	26.4 [100]	26.4 [100]	26.4 [100]
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. 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.	2540 [28,7]	3186 [36]	3991 [45,1]	4673 [52,8]	5000 [56,5]	5877 [66,4]	6169 [69,7]
	at max. press. drop int.*	2788 [31,5]	3478 [39,3]	4355 [49,2]	5080 [57,4]	5443 [61,5]	6452 [72,9]	6744 [76,2]
Min. Speed**, [RPM]		10	10	10	10	10	10	10
Weight, avg. lb [kg]	HW	31.5 [14,3]	32.2 [14,6]	33.3 [15,1]	34.2 [15,5]	34.6 [15,7]	35.5 [16,1]	35.9 [16,3]
	HWF	28.2 [12,8]	28.9 [13,1]	30 [13,6]	30.9 [14,0]	31.3 [14,2]	32.2 [14,6]	32.6 [14,8]
	HWFR	32.6 [14,8]	33.3 [15,1]	34.4 [15,6]	35.3 [16]	35.7 [16,2]	36.6 [16,6]	37 [16,8]
	HWS	30.9 [14]	31.5 [14,3]	32.6 [14,8]	33.5 [15,2]	34 [15,4]	34.8 [15,8]	35.3 [16]
	HWSR	35.3 [16]	35.9 [16,3]	37 [16,8]	37.9 [17,2]	38.4 [17,4]	39.2 [17,8]	39.7 [18]
	HWD	31.8 [14,4]	32.4 [14,7]	33.5 [15,2]	34.4 [15,6]	34.8 [15,8]	35.7 [16,2]	36.2 [16,4]

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

** For speeds 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		HW 350	HW 370	HW 400	HW 470	HW 500	HW 535	HW 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.	216	203	189	159	149	140	136
	int.*	288	271	252	244	229	215	209
Max. Torque lb-in [daNm]	cont.	8320 [94]	8497 [96]	8497 [96]	8143 [92]	8054 [91]	7966 [90]	7877 [89]
	int.*	9028 [102]	9293 [105]	8674 [98]	8939 [101]	8939 [101]	9205 [104]	9293 [105]
Max. Output, HP [kW]	cont.	22 [16,5]	17.7 [13,2]	16.8 [12,5]	14.2 [10,6]	14.5 [10,8]	12.6 [9,4]	12 [9]
	int.*	27.9 [20,8]	25.7 [19,2]	24.8 [18,5]	23.3 [17,4]	23.9 [17,8]	22 [16,4]	21.2 [15,8]
Max. Pressure Drop, PSI [bar]	cont.	2970 [205]	2970 [205]	2680 [185]	2180 [150]	2030 [140]	1885 [130]	1815 [125]
	int.*	3260 [225]	3260 [225]	2760 [190]	2390 [165]	2250 [155]	2180 [150]	2105 [145]
Max. Oil Flow GPM [lpm]	cont.	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]	20 [75]
	int.*	26.4 [100]	26.4 [100]	26.4 [100]	30.4 [115]	30.4 [115]	30.4 [115]	30.4 [115]
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. 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.	6815 [77]	7036 [79,5]	6966 [78,7]	6674 [75,4]	6603 [74,6]	6532 [73,8]	6452 [72,9]
	at max. press. drop int.*	7400 [83,6]	7612 [86]	7107 [80,3]	7328 [82,8]	7328 [82,8]	7540 [85,2]	7470 [84,4]
Min. Speed**, [RPM]		8	8	8	8	8	5	5
Weight, avg. lb [kg]	HW	36.8 [16,7]	37.3 [16,9]	38.1 [17,3]	39.9 [18,1]	40.6 [18,4]	41.5 [18,8]	41.7 [18,9]
	HWF	33.5 [15,2]	34 [15,4]	34.8 [15,8]	36.6 [16,6]	37.3 [16,9]	38.1 [17,3]	38.3 [17,4]
	HWFR	37.9 [17,2]	38.4 [17,4]	39.2 [17,8]	41 [18,6]	41.7 [18,9]	42.5 [19,3]	42.8 [19,4]
	HWS	36.2 [16,4]	36.6 [16,6]	37.5 [17]	39.2 [17,8]	39.9 [18,1]	40.8 [18,5]	41 [18,6]
	HWSR	40.6 [18,4]	41 [18,6]	41.9 [19]	43.7 [19,8]	44.3 [20,1]	45.2 [20,5]	45.4 [20,6]
	HWD	37 [16,8]	37.5 [17]	38.4 [17,4]	40.1 [18,2]	40.8 [18,5]	41.7 [18,9]	41.9 [19]

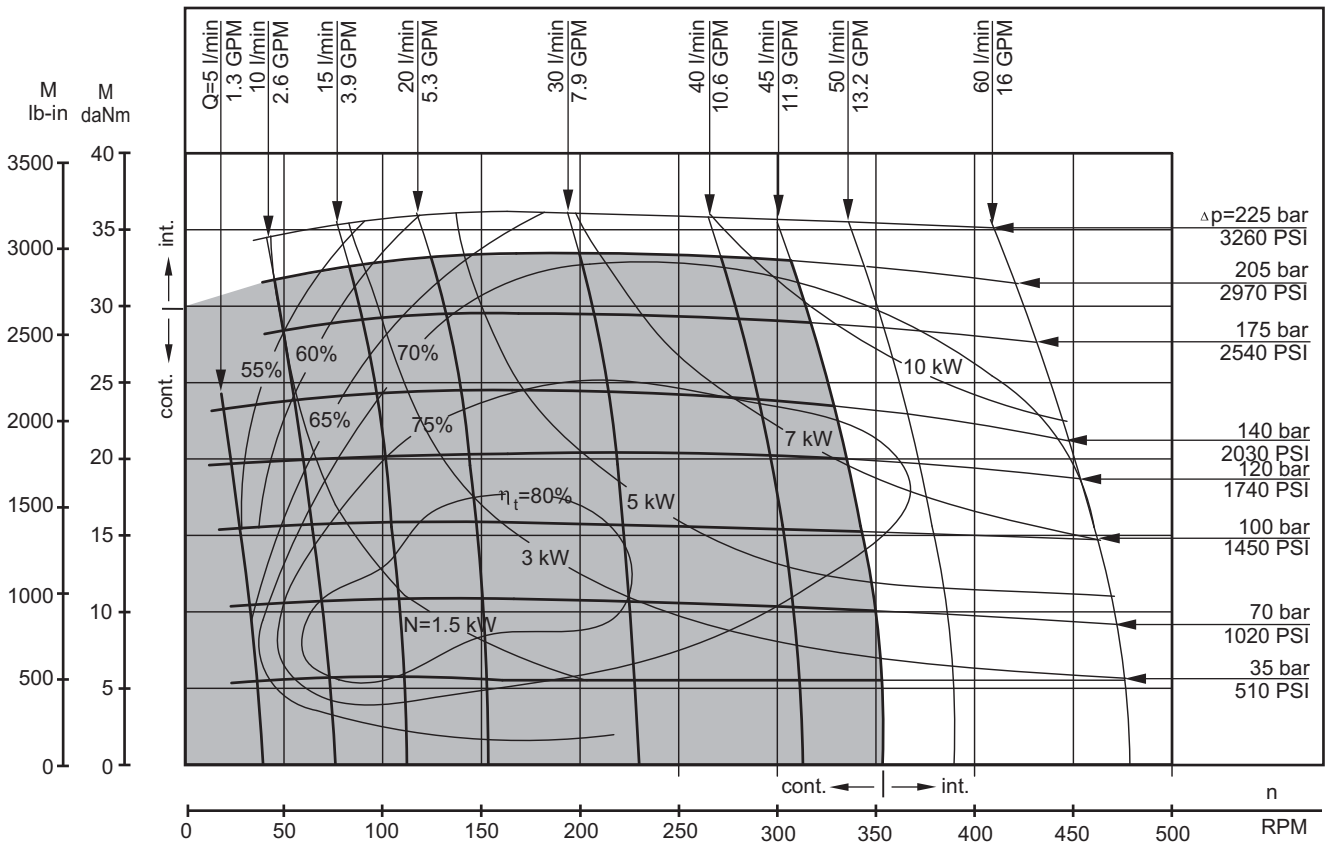
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

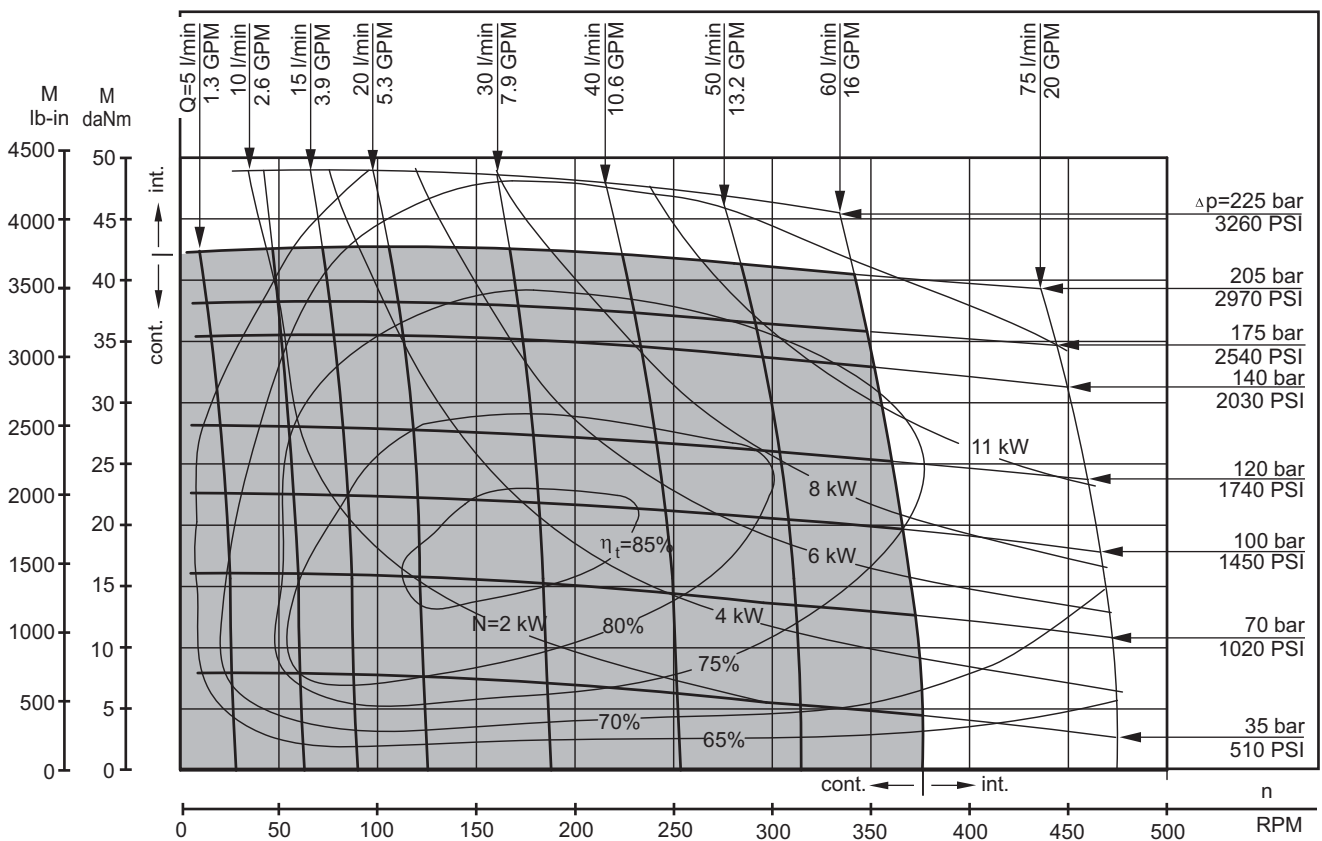
- Intermittent speed and intermittent pressure drop must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).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

FUNCTION DIAGRAMS

HW 125



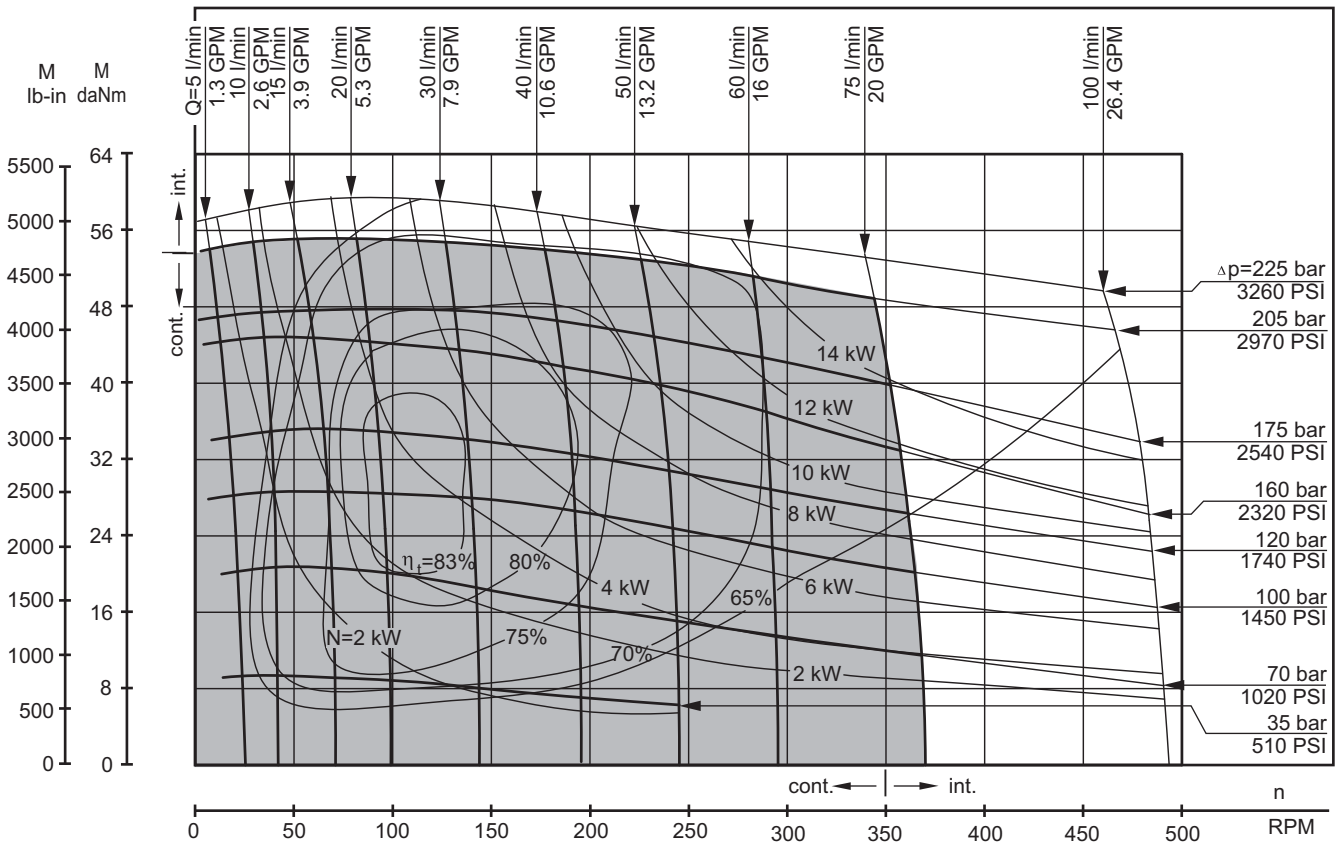
HW 160



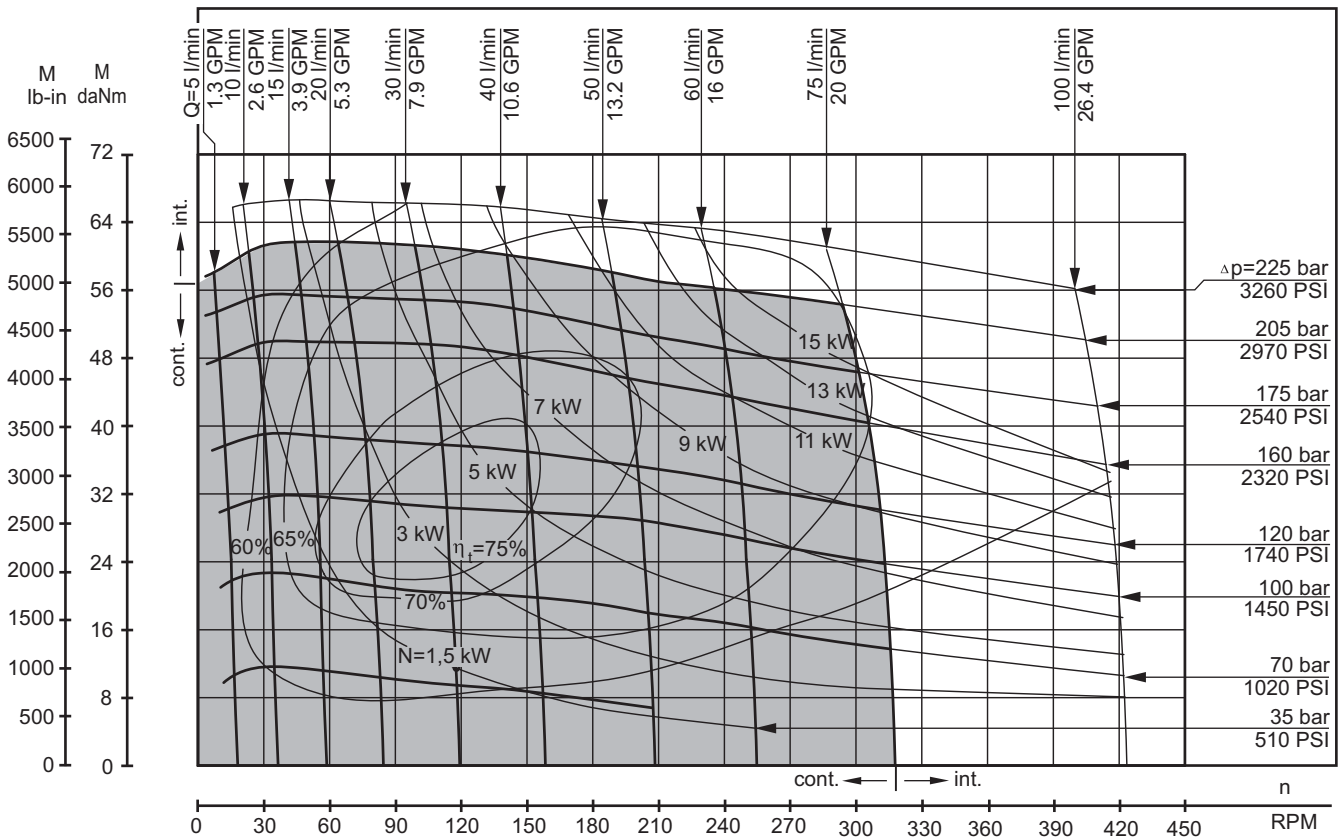
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 200



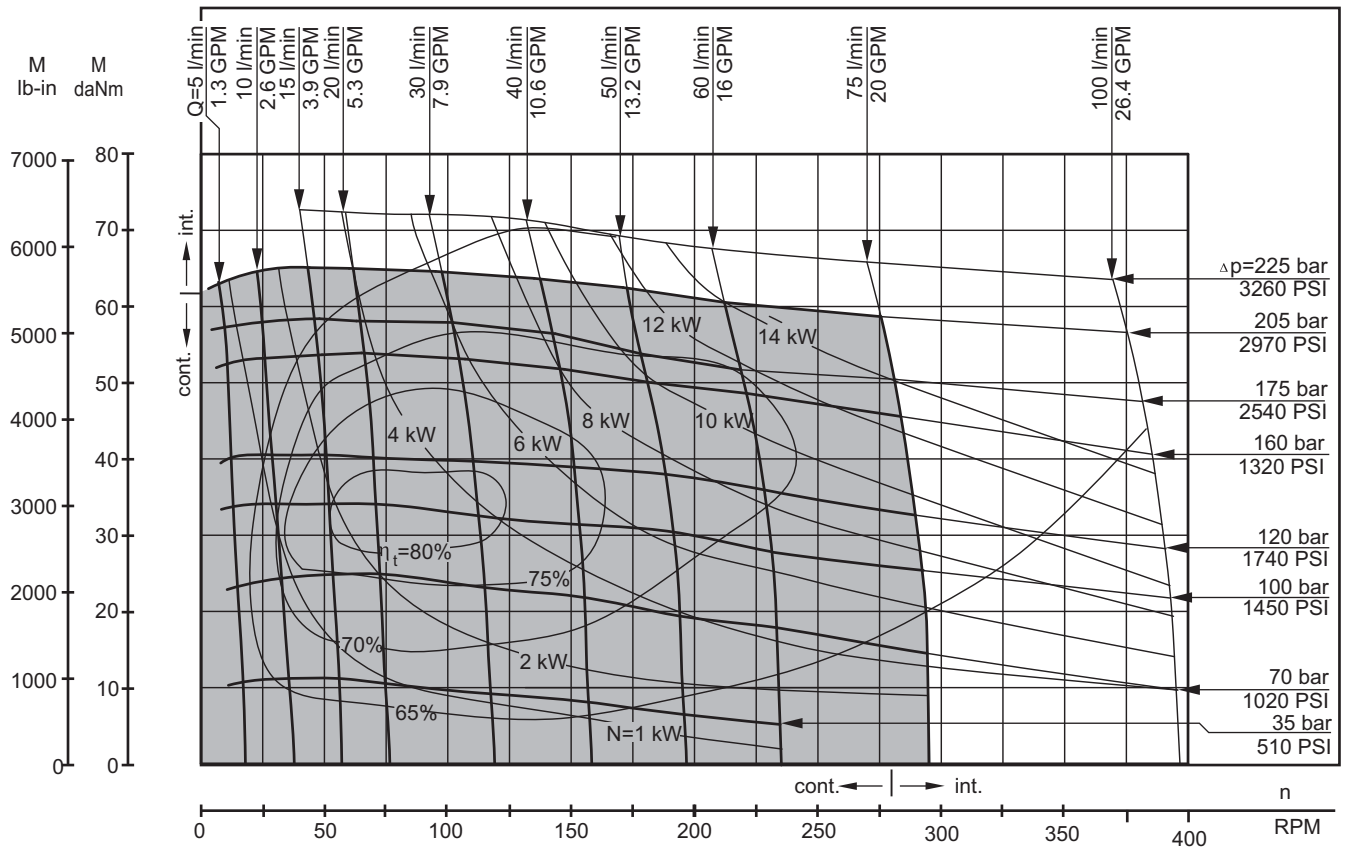
HW 235



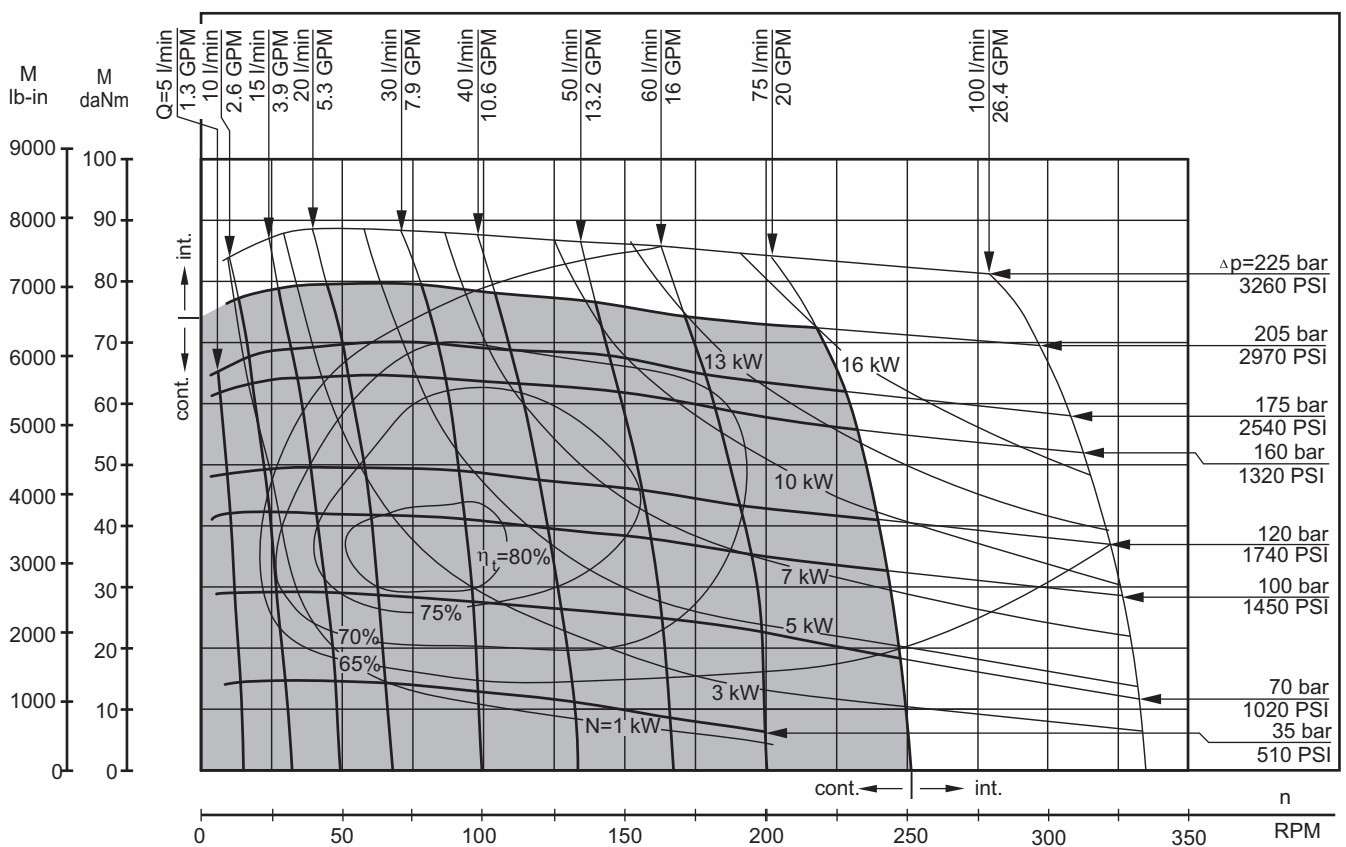
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 250



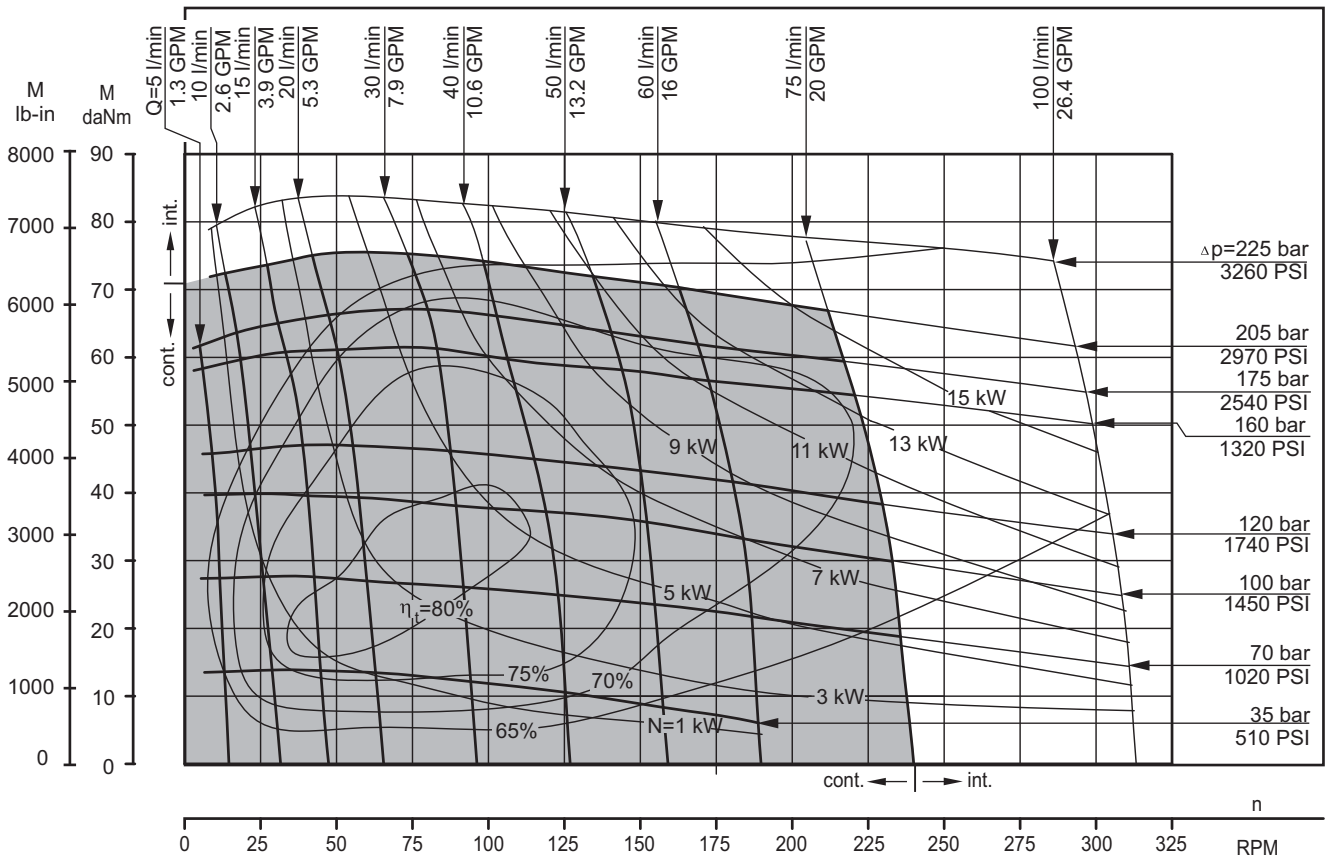
HW 300



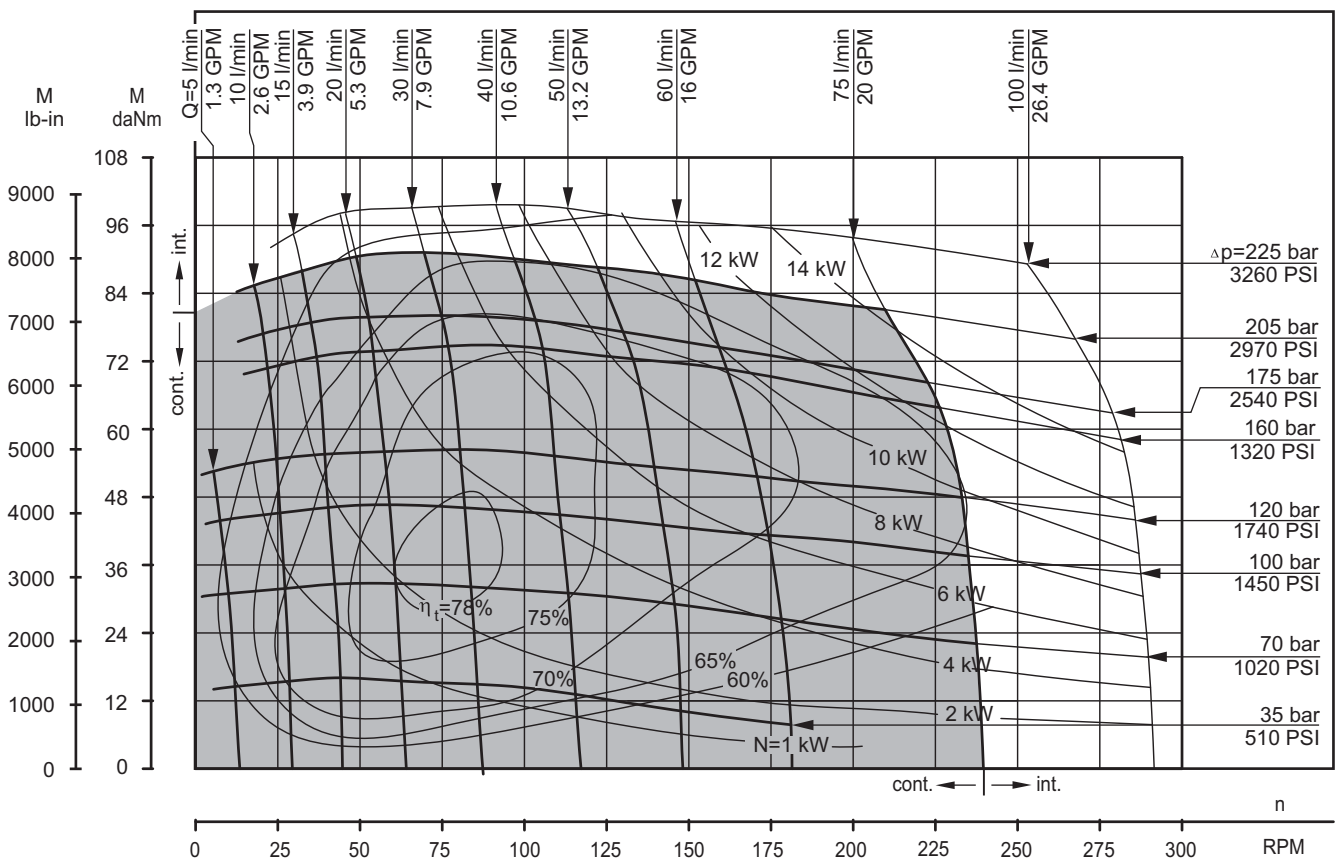
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 315



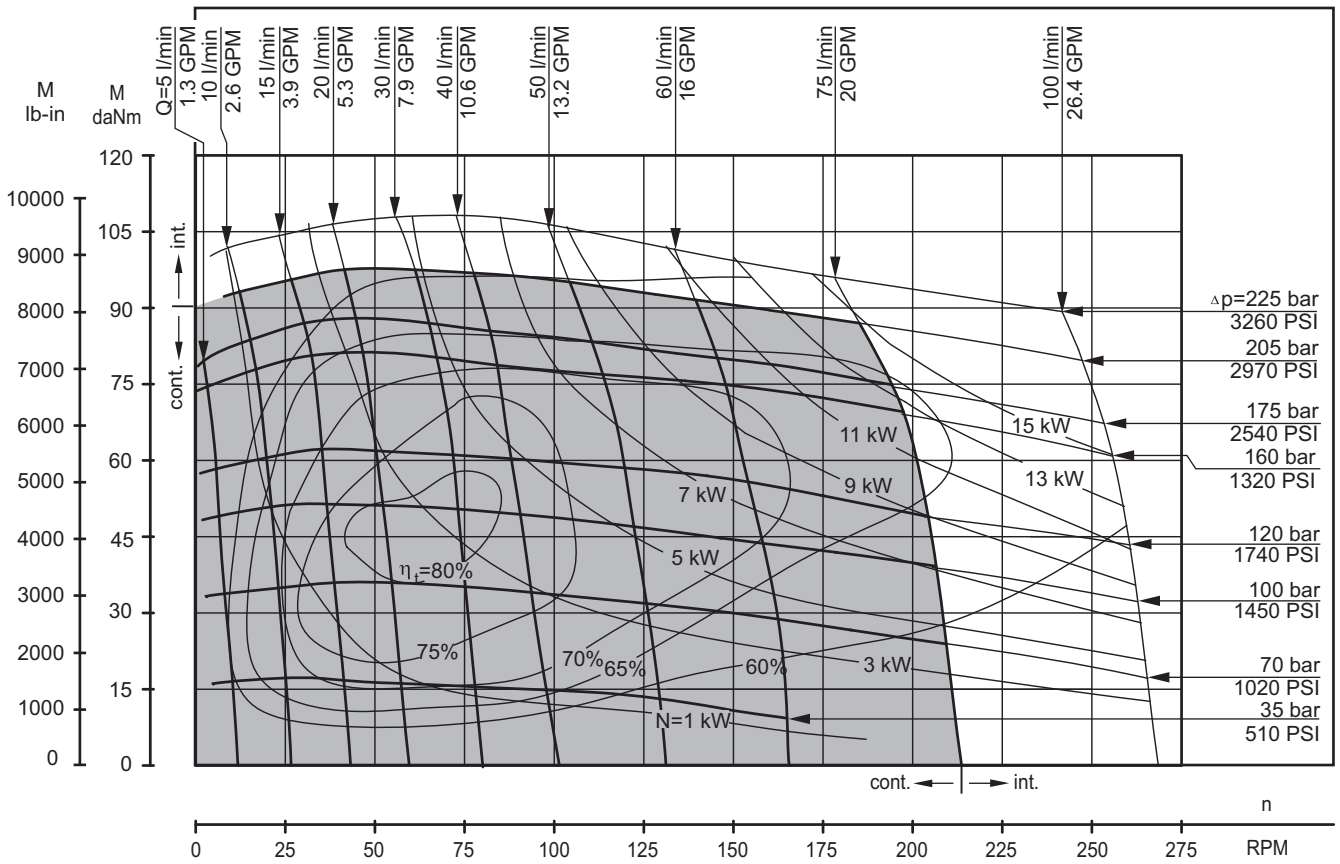
HW 350



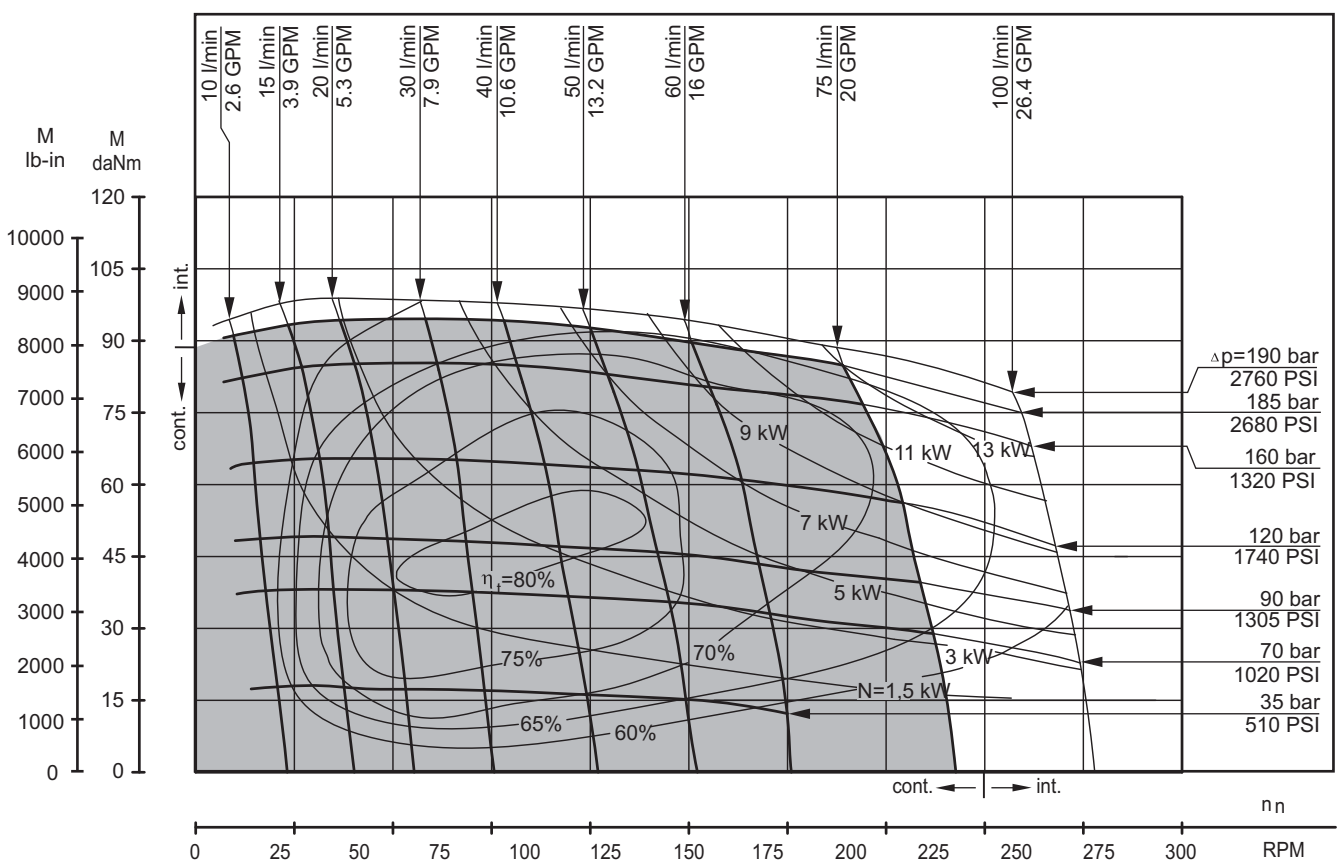
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 370



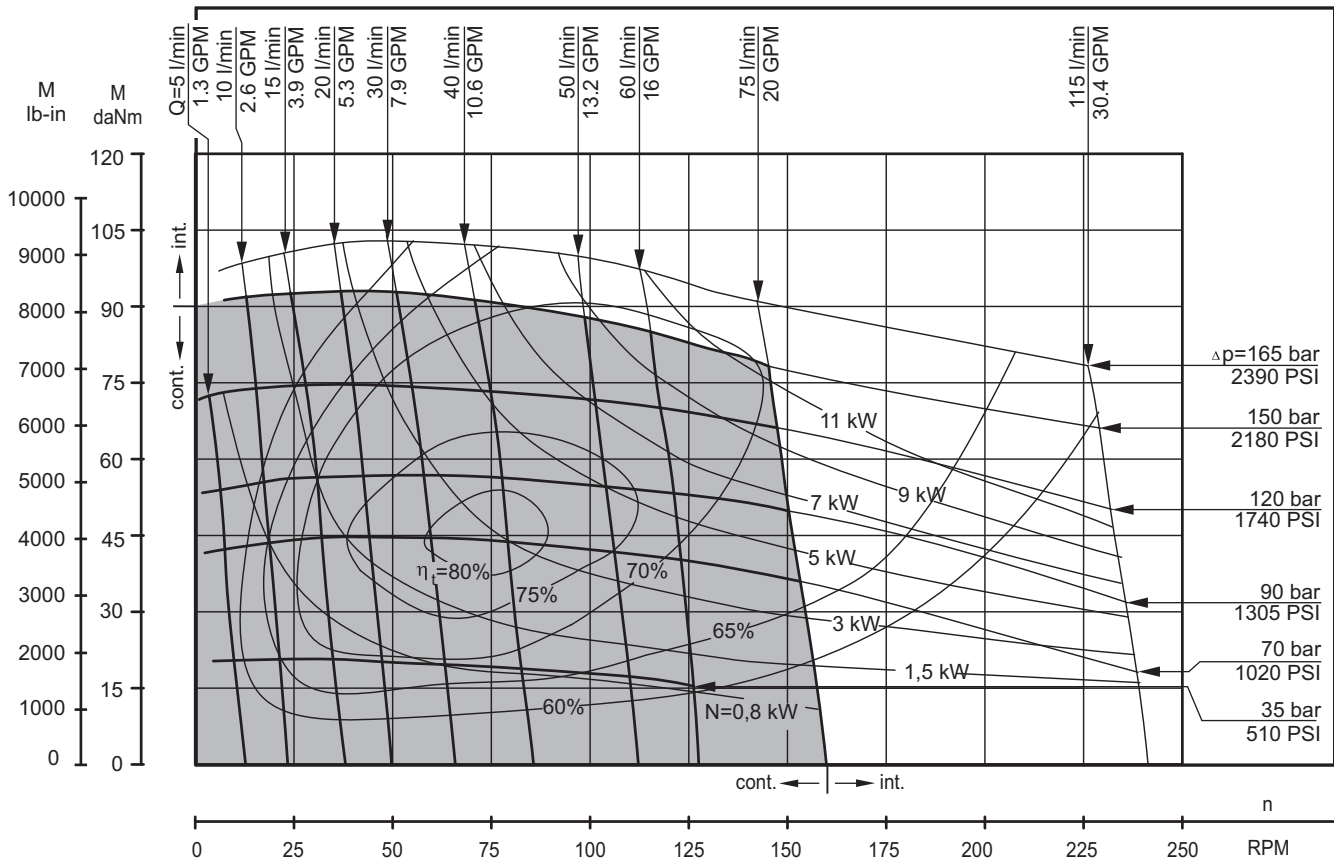
HW 400



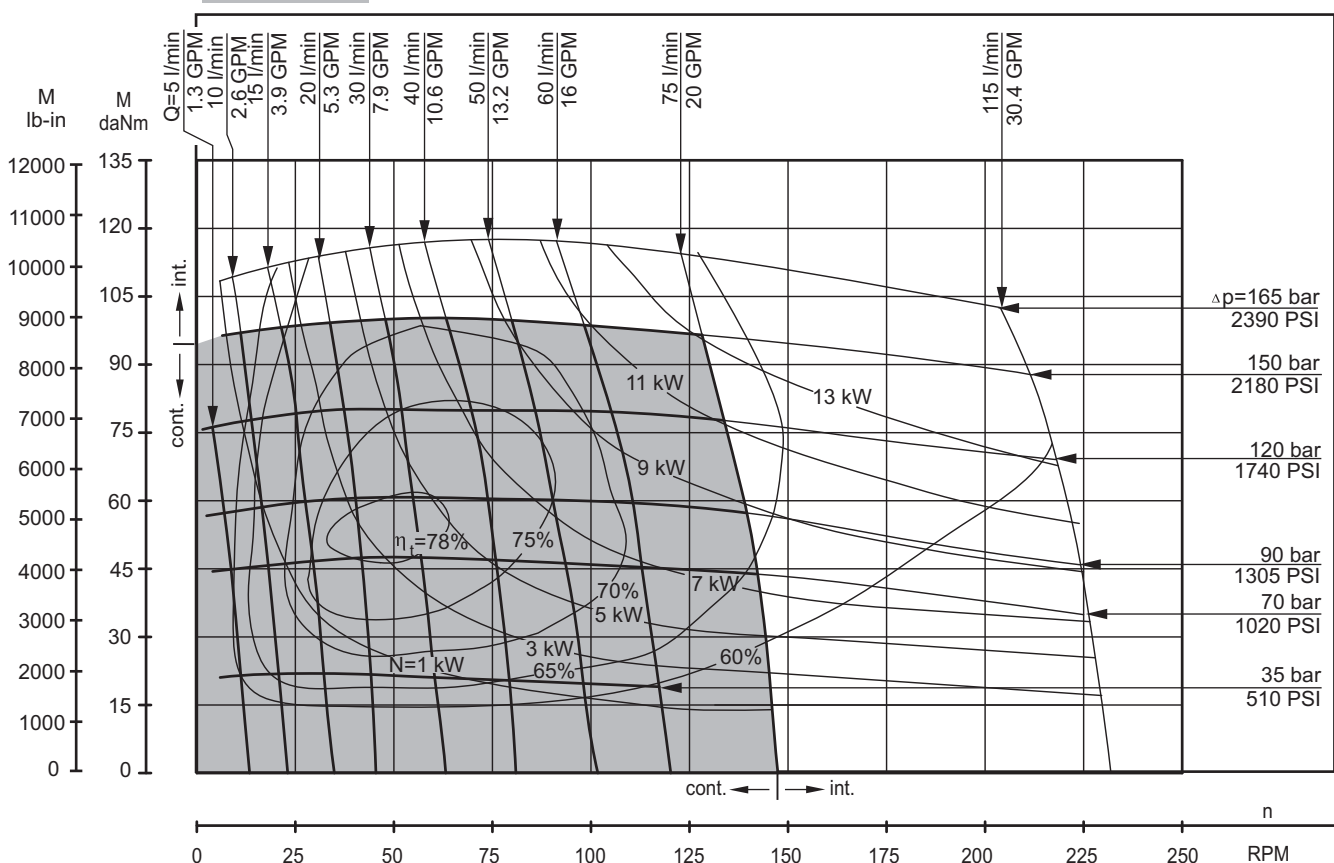
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 470



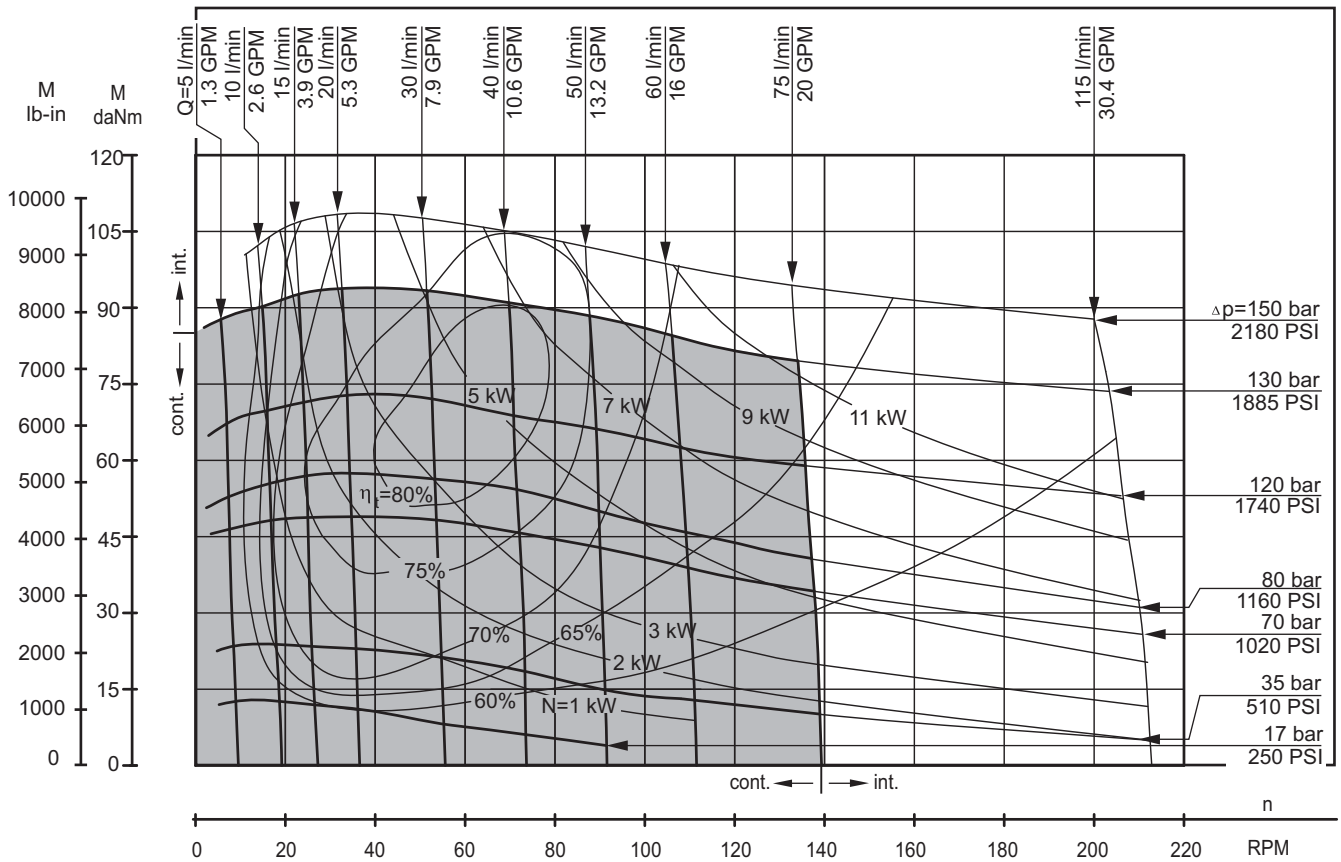
HW 500



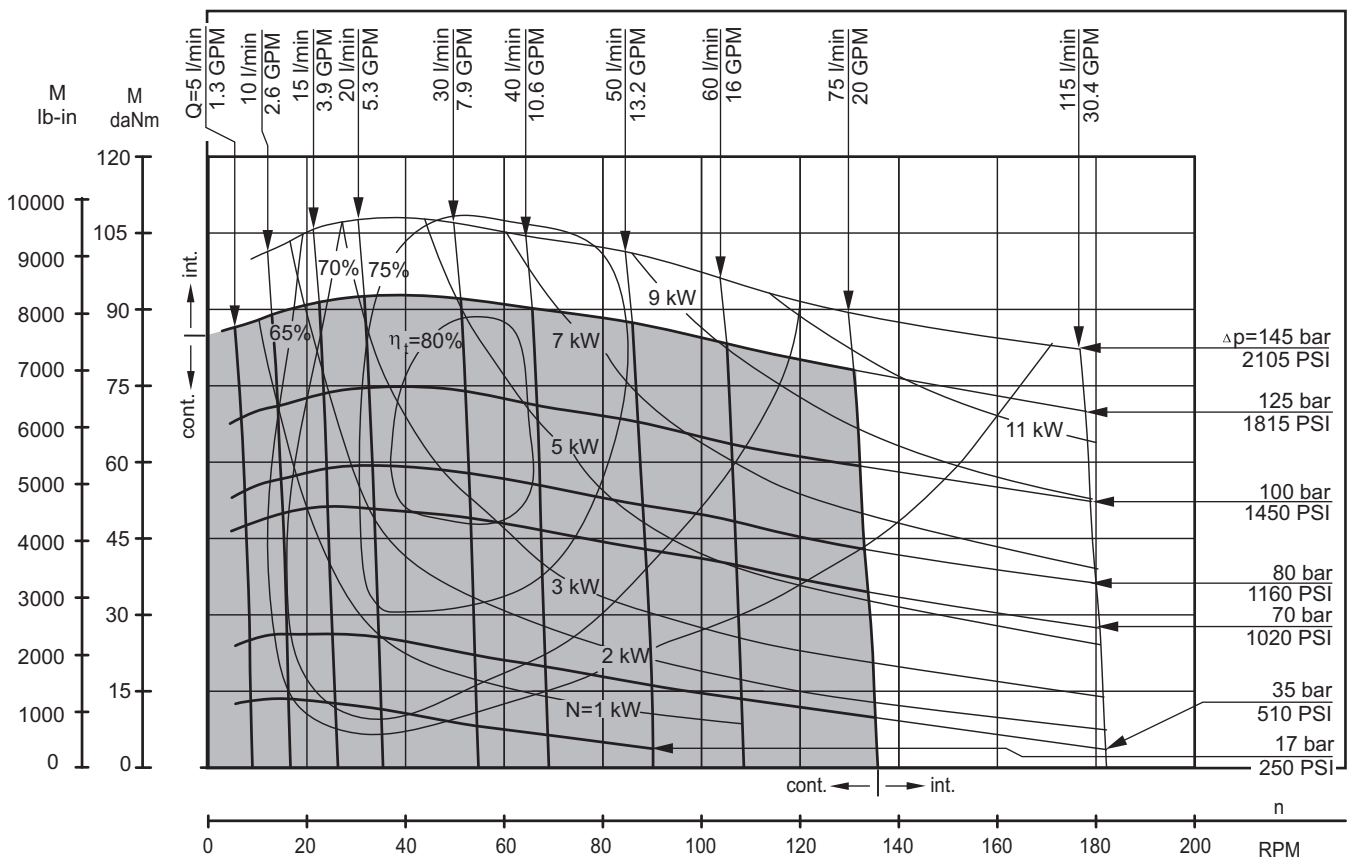
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

FUNCTION DIAGRAMS

HW 535



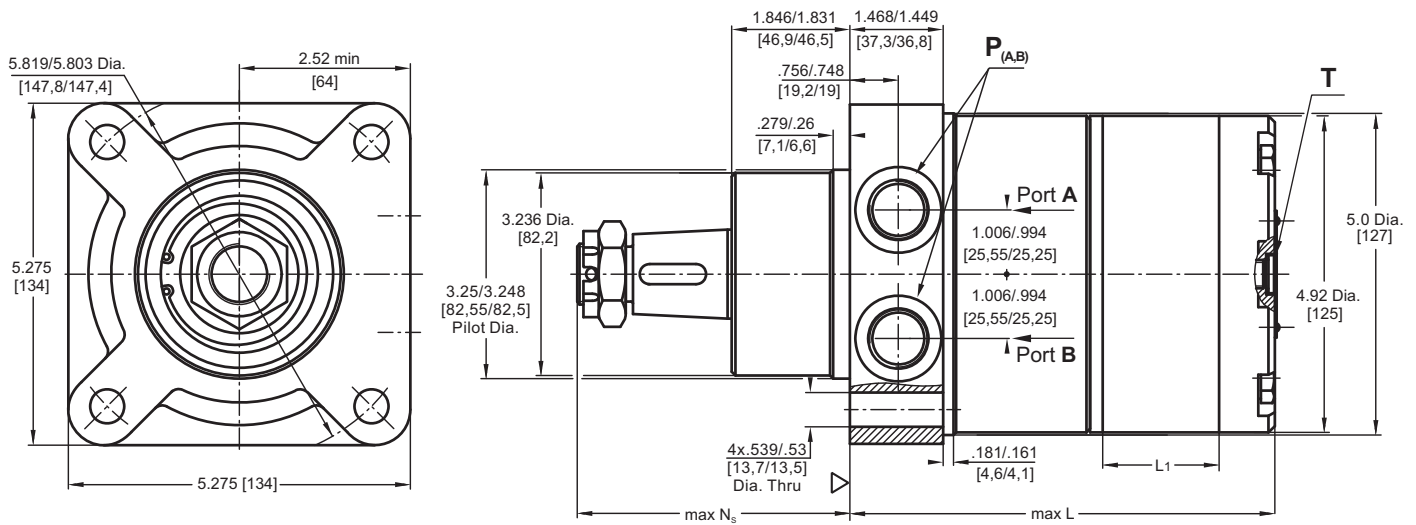
HW 550



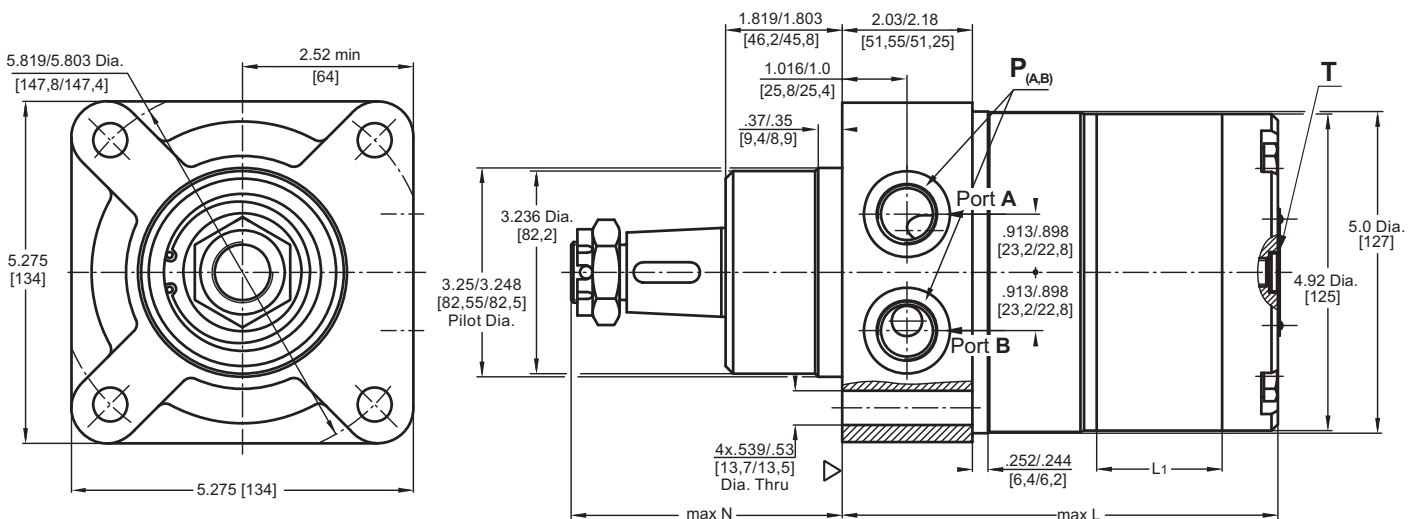
The function diagrams data is for average performance of randomly selected motors at back pressure 72.5÷145 PSI [5÷10 bar] and oil with viscosity of 150 SUS [32 mm²/s] at 122°F [50°C].

DIMENSIONS AND MOUNTING DATA

HWS - Wheel Mount



HW - Wheel Mount



Note: For N and N_s see pages 99÷100.

▽ - Motor Mounting Surface

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, O-ring
T	G $\frac{1}{4}$	$\frac{7}{16}$ -20UNF, O-ring

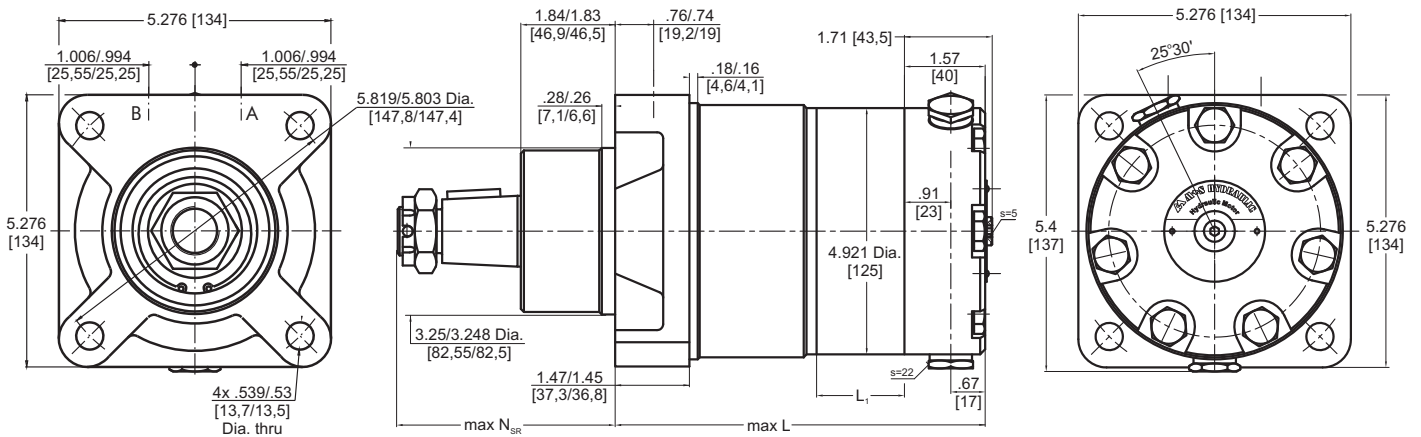


Type	*L, in [mm]	L1, in [mm]
HW(S) 125	5.51 [140,5]	.68 [17,4]
HW(S) 160	5.71 [145,0]	.86 [21,8]
HW(S) 200	5.95 [151,0]	1.09 [27,8]
HW(S) 235	6.12 [155,5]	1.28 [32,5]
HW(S) 250	6.22 [158,0]	1.37 [34,8]
HW(S) 300	6.48 [164,5]	1.63 [41,4]
HW(S) 315	6.56 [166,5]	1.71 [43,5]
HW(S) 350	6.73 [171,0]	1.89 [48,0]
HW(S) 370	6.85 [174,0]	2.01 [51,0]
HW(S) 400	7.01 [178,0]	2.16 [54,8]
HW(S) 470	7.40 [188,0]	2.56 [65,0]
HW(S) 500	7.58 [192,5]	2.73 [69,4]
HW(S) 535	7.76 [197,0]	2.92 [74,1]
HW(S) 550	7.84 [199,0]	2.99 [76,0]

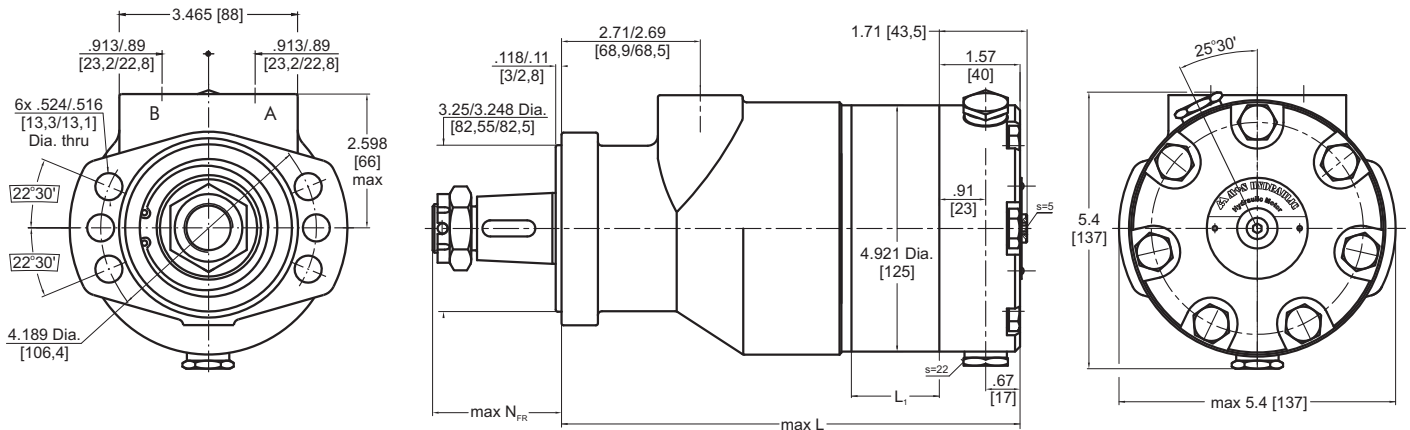
* For LSV option the dimension L is .118 in [3 mm] greater.

DIMENSIONS AND MOUNTING DATA

HWSR - Wheel mount, relief valves



HWFR - Wheel mount, six holes, relief valves



Note: For N_{FR} and N_{SR} see pages 99+100.

▽ - Motor Mounting Surface

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)	2xG½	2x7/8-14UNF, O-ring

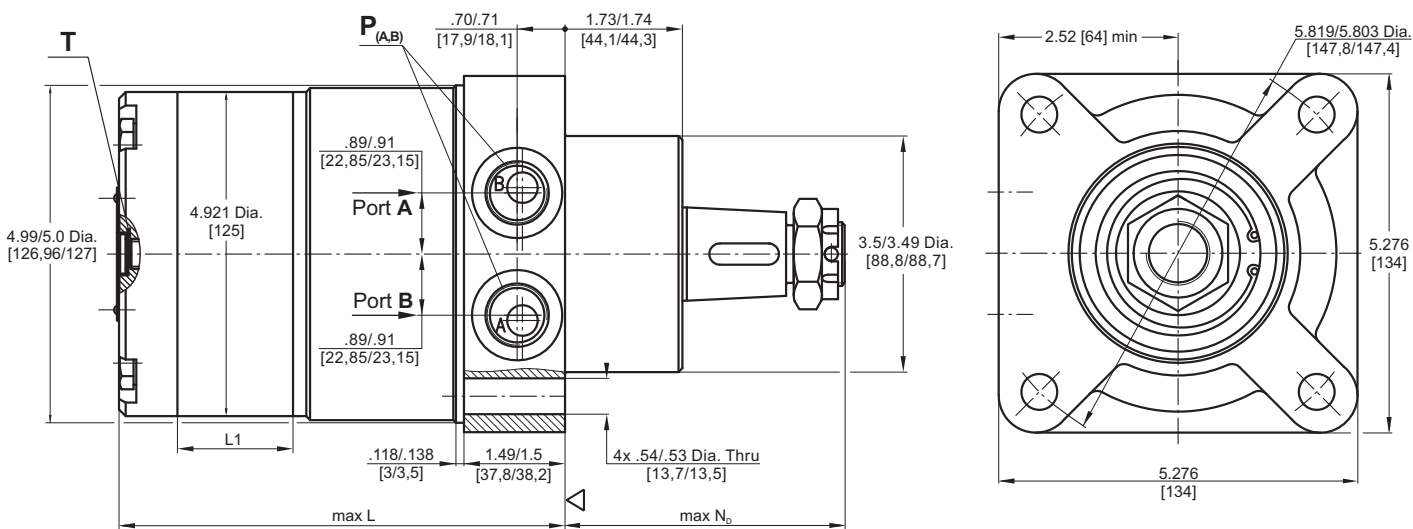


Type	L*max,in [mm]		L ₁ ,in [mm]
	HWSR	HWFR	
HW... 125	6.24 [158,5]	7.95 [202,0]	.68 [17,4]
HW... 160	6.42 [163,0]	8.13 [206,5]	.86 [21,8]
HW... 200	6.65 [169,0]	8.37 [212,5]	1.09 [27,8]
HW... 235	6.83 [173,5]	8.54 [217,0]	1.28 [32,5]
HW... 250	6.93 [176,0]	8.64 [219,5]	1.37 [34,8]
HW... 300	7.19 [182,5]	8.89 [226,0]	1.63 [41,4]
HW... 315	7.26 [184,5]	8.98 [228,0]	1.71 [43,5]
HW... 350	7.44 [189,0]	9.15 [232,5]	1.89 [48,0]
HW... 370	7.56 [192,0]	9.27 [235,5]	2.01 [51,0]
HW... 400	7.72 [196,0]	9.43 [239,5]	2.16 [54,8]
HW... 470	8.11 [206,0]	9.82 [249,5]	2.56 [65,0]
HW... 500	8.29 [210,5]	10.00 [254,0]	2.73 [69,4]
HW... 535	8.46 [215,0]	10.19 [258,8]	2.92 [74,1]
HW... 550	8.54 [217,0]	10.26 [260,5]	2.99 [76,0]

* For LSV option the dimension L is .118 in [3 mm] greater.

DIMENSIONS AND MOUNTING DATA

HWD Wheel Mount



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

* For LSV option the dimension L is $.118$ in [3 mm] greater.

Type	*L, in [mm]		L_1 , in [mm]
	HWD	HWV	
HW... 125	5.59 [142,0]	5.53 [140,5]	.68 [17,4]
HW... 160	5.79 [147,0]	5.71 [145,0]	.86 [21,8]
HW... 200	6.02 [153,0]	5.94 [151,0]	1.09 [27,8]
HW... 235	6.22 [158,0]	6.12 [155,5]	1.28 [32,5]
HW... 250	6.30 [160,0]	6.22 [158,0]	1.37 [34,8]
HW... 300	6.56 [166,5]	6.46 [164,5]	1.63 [41,4]
HW... 315	6.65 [169,0]	6.56 [166,5]	1.71 [43,5]
HW... 350	6.83 [173,5]	6.73 [171,0]	1.89 [48,0]
HW... 370	6.95 [176,5]	6.85 [174,0]	2.01 [51,0]
HW... 400	7.09 [180,0]	7.01 [178,0]	2.16 [54,8]
HW... 470	7.50 [190,5]	7.40 [188,0]	2.56 [65,0]
HW... 500	7.66 [194,5]	7.58 [192,5]	2.73 [69,4]
HW... 535	7.85 [199,5]	7.76 [197,0]	2.92 [74,1]
HW... 550	7.93 [201,5]	7.83 [199,0]	2.99 [76,0]

Note: For N_D and N_V see pages 99+100.

▽ - Motor Mounting Surface

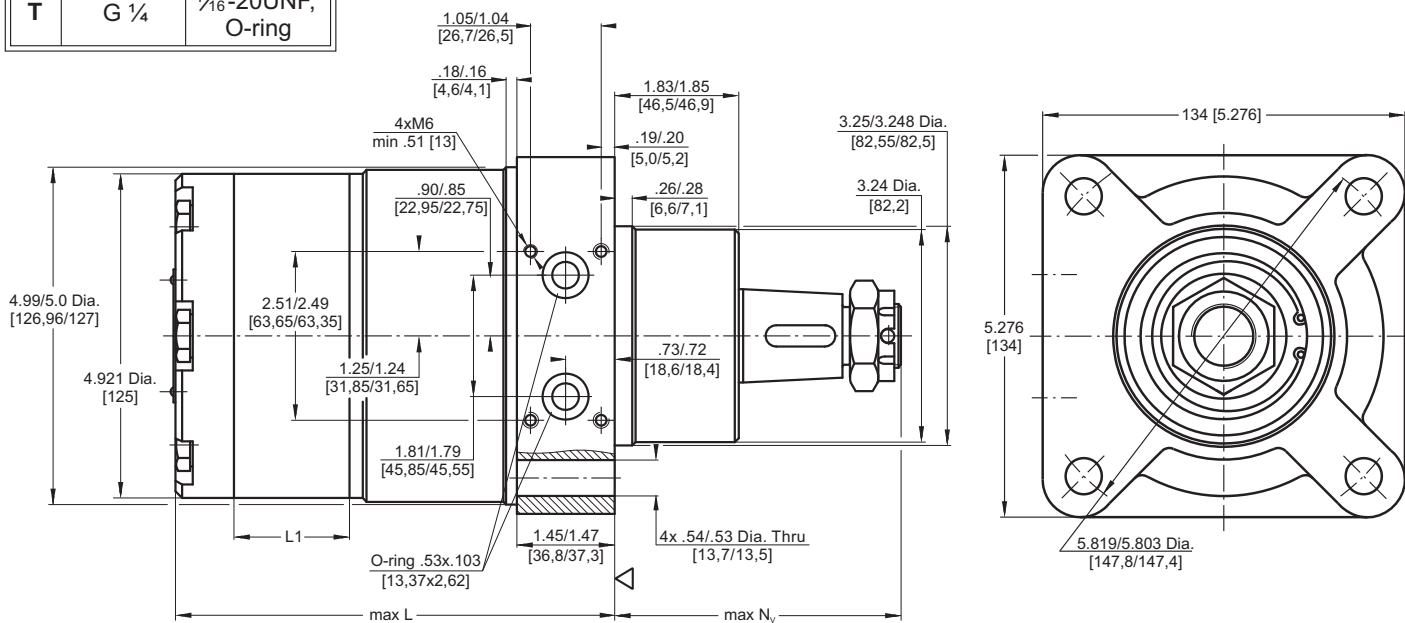


Standard Rotation
Viewed from Shaft End
Port A Pressurized - CW
Port B Pressurized - CCW

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

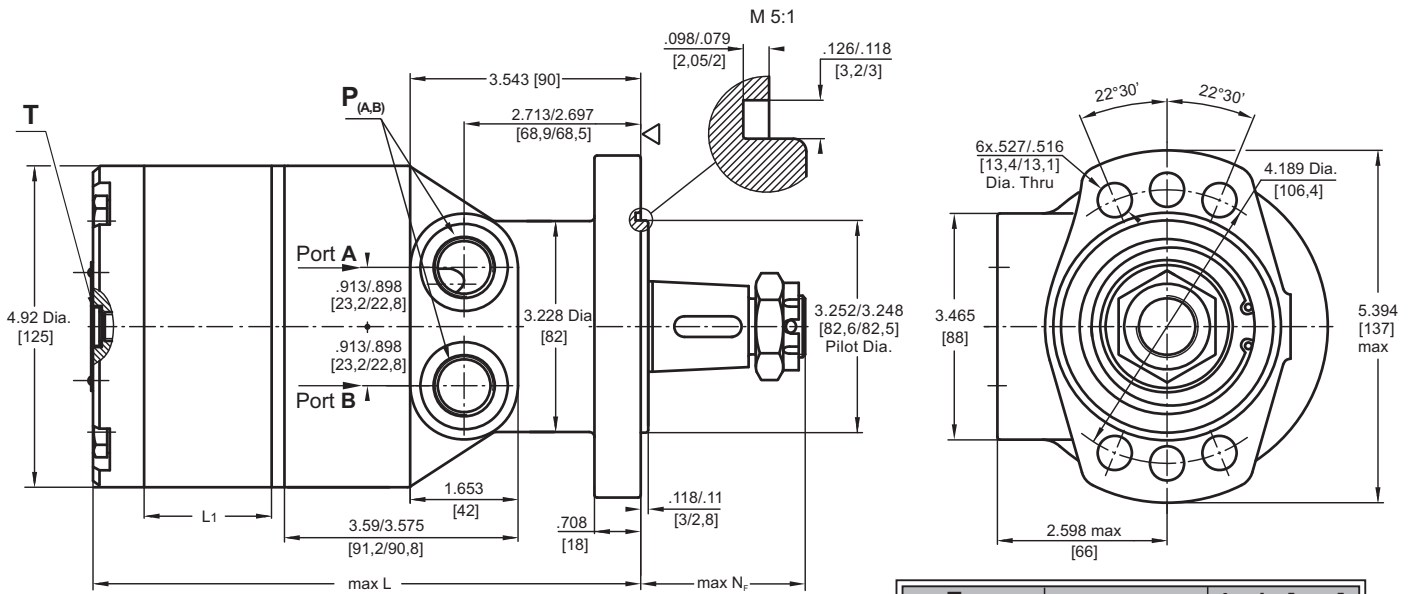
Versions		
	2	4
T	$G\frac{1}{4}$	$\frac{7}{16}-20UNF$, O-ring

HWV Wheel Mount



DIMENSIONS AND MOUNTING DATA

HWF - Magneto Mount



Note: For N_F see pages 99÷100.

▽ - Motor Mounting Surface

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, O-ring
T	G $\frac{1}{4}$	$\frac{7}{16}$ -20UNF, O-ring



Type	*L, in [mm]	L1, in [mm]
HWF 125	7.24 [184,0]	.68 [17,4]
HWF 160	7.42 [188,5]	.86 [21,8]
HWF 200	7.66 [194,5]	1.09 [27,8]
HWF 235	7.84 [199,0]	1.28 [32,5]
HWF 250	7.93 [201,5]	1.37 [34,8]
HWF 300	8.20 [208,0]	1.63 [41,4]
HWF 315	8.27 [210,0]	1.71 [43,5]
HWF 350	8.45 [214,5]	1.89 [48,0]
HWF 370	8.56 [217,5]	2.01 [51,0]
HWF 400	8.72 [221,5]	2.16 [54,8]
HWF 470	9.11 [231,5]	2.56 [65,0]
HWF 500	9.29 [236,0]	2.73 [69,4]
HWF 535	9.47 [240,5]	2.92 [74,1]
HWF 550	9.55 [242,5]	2.99 [76,0]

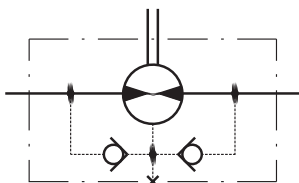
* For **LSV** option the dimension L is .118 in [3 mm] greater.

MAX. PERMISSIBLE SHAFT SEAL PRESSURE

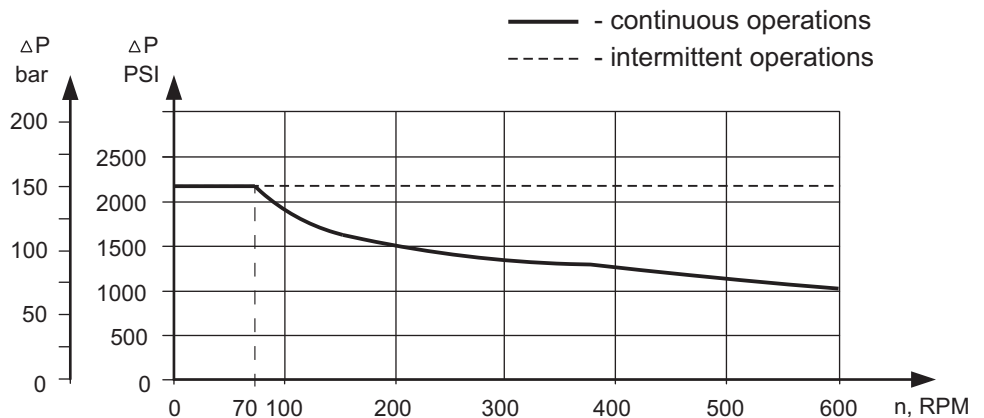
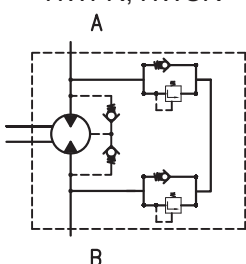
HW, HWF, HWS, HWD, HWV

HW... motors with drain connection:

The shaft seal pressure equals the pressure in the drain line.

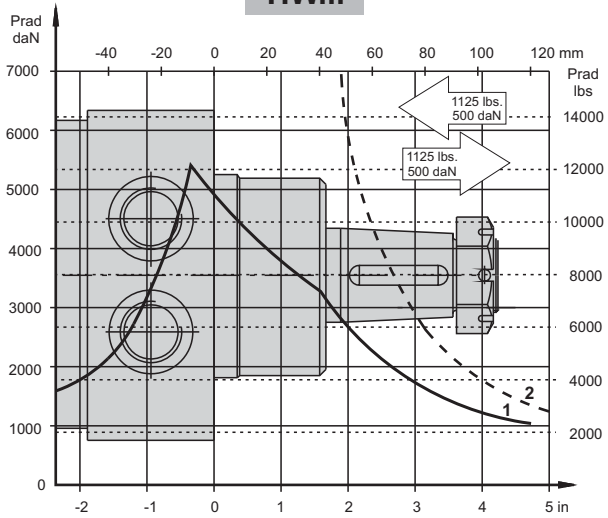


HWFR, HWSR

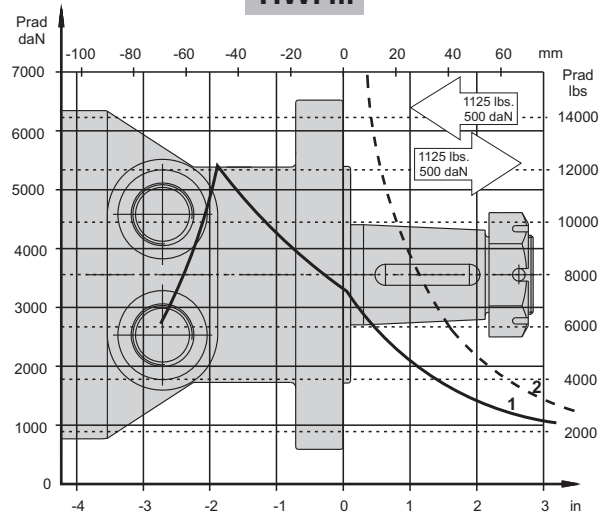


PERMISSIBLE SHAFT LOADS

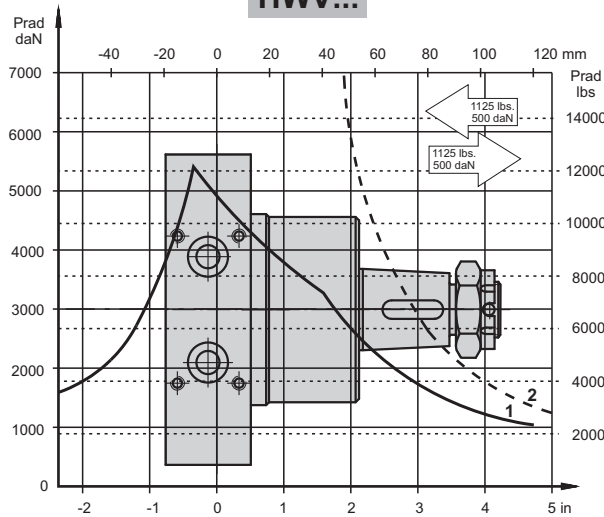
HW...



HWF...



HWV...

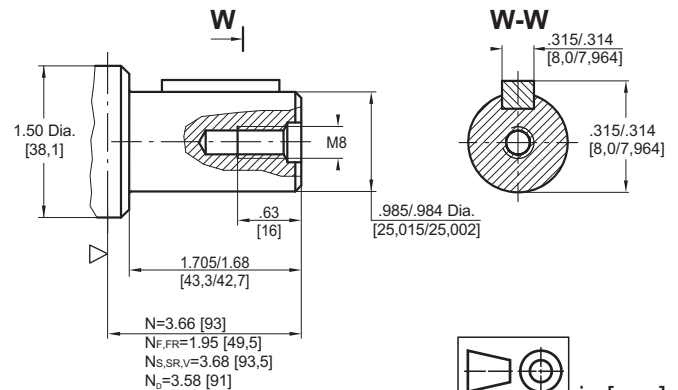
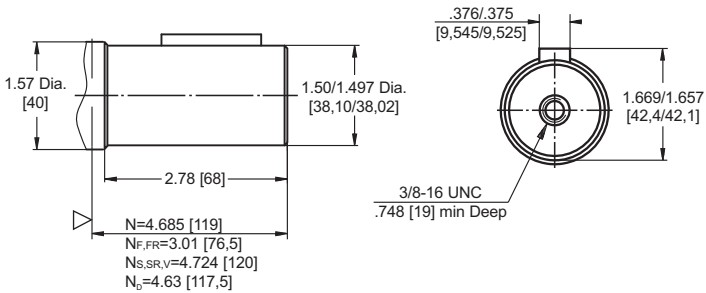


- 1 - Bearing curve: The curve applies to a B10 bearing life of 2000 hours at 100 RPM.
- 2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 3:1.

SHAFT EXTENSIONS

C - 1½"[38,1] straight, Parallel key 3/8"x 3/8"x 1½" BS46
Max. Torque 10630 lb-in [120 daNm]

CO - ø25, straight, Parallel key A8x7x32 DIN 6885
Max. Torque 3540 lb-in [40 daNm]



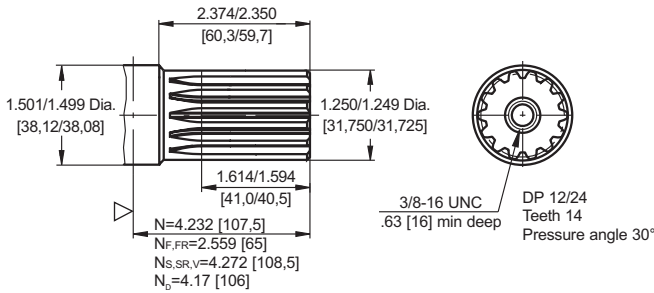
- N - for standard flange
- N_F - for F flange
- N_{FR} - for FR flange
- N_S - for S flange
- N_{SR} - for SR flange
- N_D - for D flange
- N_V - for V flange



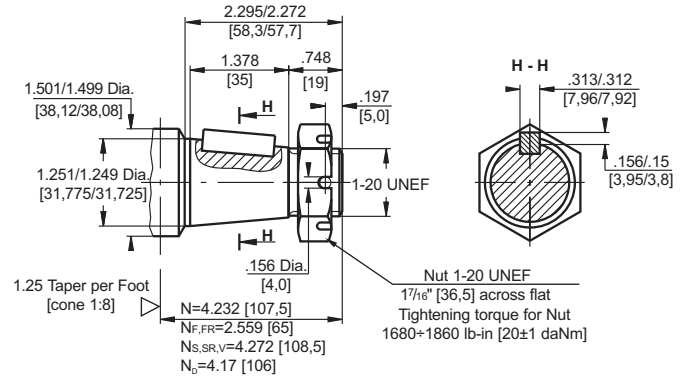
▽ - Motor Mounting Surface

SHAFT EXTENSIONS [continued]

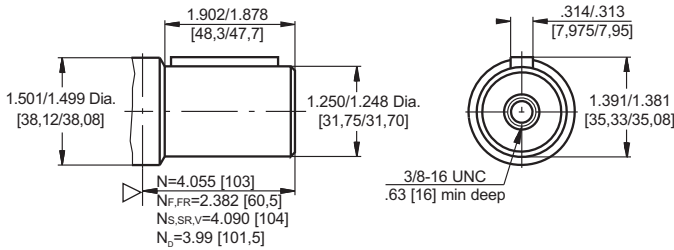
L - 1 1/4" [31,75] splined 14T, ANSI B92.1-1976
Max. Torque 8410 lb-in [95 daNm]



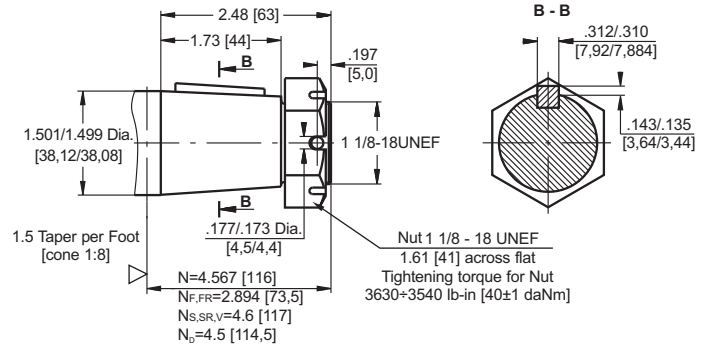
R - 1 1/4" [31,75] SAE J501 Tapered, Parallel key 5/16"x5/16"x1" BS46
Max. Torque 6815 lb-in [77 daNm]



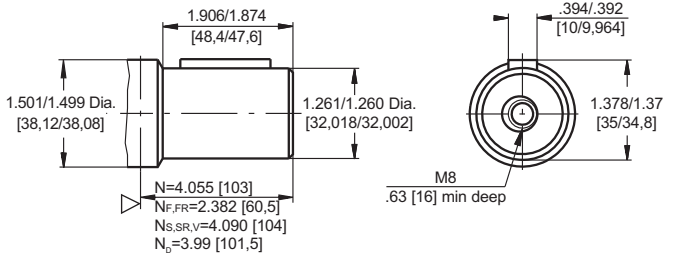
K - 1 1/4" [31,75] straight, Parallel key 5/16"x5/16"x1 1/2" BS46
Max. Torque 6815 lb-in [77 daNm]



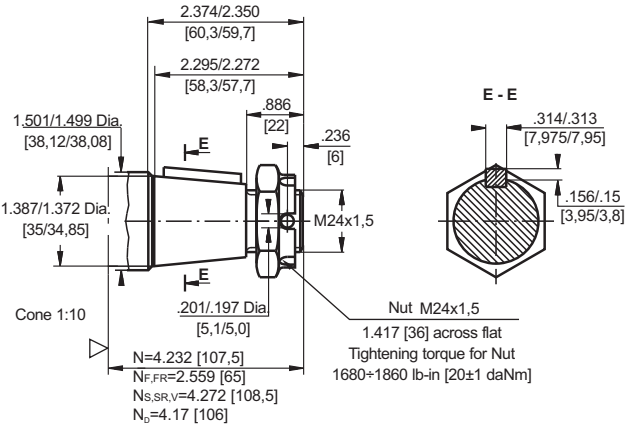
T - 1 1/2" [38,1] Tapered, Parallel key 5/16"x5/16"x1 1/4" BS46
Max. Torque 10630 lb-in [120 daNm]



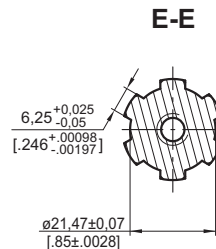
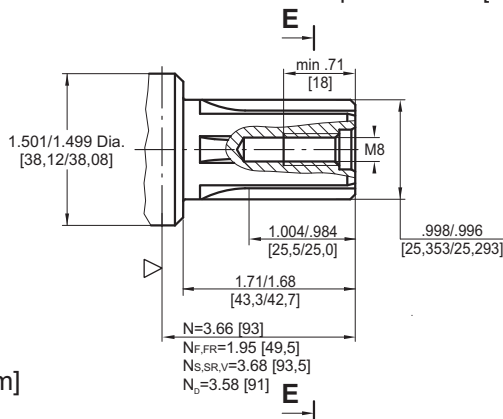
M - ø32 straight, Parallel key A10x8x32 DIN 6885
Max. Torque 6815 lb-in [77 daNm]



KB - ø35 tapered 1:10, Parallel key 5/16"x5/16"x1 1/4" BS46
Max. Torque 8410 lb-in [95 daNm]



SH - ø1 1/4" splined BS 2059, SAE 6B
Max. Torque 40 daNm [3540 lb-in]



▽ - Motor Mounting Surface

- N - for standard flange
- N_F - for F flange
- N_{FR} - for FR flange
- N_S - for S flange
- N_{SR} - for SR flange
- N_D - for D flange
- N_V - for V flange

ORDER CODE

	1	2	3	4	5	6	7
HW					/		

Pos.1 - Mounting Flange

- omit - Wheel mount, four holes
- F** - Oval mount, six holes
- FR** - Oval mount, six holes, relief valves
- S** - Wheel mount, four holes
- SR** - Wheel mount, four holes, relief valves
- D** - Wheel mount, four holes; mounting on 3.5 [ø88,8]
- V*** - Wheel mount, four holes, valves

Pos.2 - Displacement code

- | | |
|------------|---|
| 125 | - 7.69 in ³ /rev [126,0 cm ³ /rev] |
| 160 | - 9.64 in ³ /rev [158,0 cm ³ /rev] |
| 200 | - 12.28 in ³ /rev [201,3 cm ³ /rev] |
| 235 | - 14.33 in ³ /rev [235,0 cm ³ /rev] |
| 250 | - 15.37 in ³ /rev [252,0 cm ³ /rev] |
| 300 | - 18.30 in ³ /rev [300,0 cm ³ /rev] |
| 315 | - 19.21 in ³ /rev [314,9 cm ³ /rev] |
| 350 | - 21.21 in ³ /rev [347,8 cm ³ /rev] |
| 370 | - 22.51 in ³ /rev [369,0 cm ³ /rev] |
| 400 | - 24.20 in ³ /rev [396,8 cm ³ /rev] |
| 470 | - 28.71 in ³ /rev [470,6 cm ³ /rev] |
| 500 | - 30.65 in ³ /rev [502,4 cm ³ /rev] |
| 535 | - 32.70 in ³ /rev [536,0 cm ³ /rev] |
| 550 | - 33.55 in ³ /rev [550,0 cm ³ /rev] |

Pos.3 - Shaft Extensions**

- K** - 1¼" [31,75] straight, Parallel key ⁵/₁₆"x⁵/₁₆"x1½" BS46
- KB** - ø35 tapered 1:10, Parallel key ⁵/₁₆"x⁵/₁₆"x1¼" BS46
- L** - 1¼" [31,75] splined 14T, ANSI B92.1-1976
- M** - ø32 straight, Parallel key A10x8x32 DIN 6885
- R** - 1¼" [31,75] Tapered 1:8, Parallel key ⁵/₁₆"x⁵/₁₆"x1½" BS46
- T** - 1½" [38,1] Tapered 1:8, Parallel key ⁵/₁₆"x⁵/₁₆"x1¼" BS46
- C** - 1.57" [40] straight, Parallel key ³/₈"x³/₈"x1½" BS46
- CO** - ø25, straight, Parallel key A8x7x32 DIN 6885
- SH** - ø1¼" splined BS 2059, SAE 6B

Pos.4 - Ports

- 2** - side ports, 2xG1/2, G1/4, BSP thread, ISO 228
- 4** - side ports, 2x7/8-14 UNF, O-ring, 7/16-20 UNF

Pos.5 - Special Features*** [see page 102]

Pos.6 - Valves Pressure Range, bar****

- /** - 70, 100, 140, 170, 210

Pos.7 - Design Series

- omit - Factory specified

NOTES:

- * Flange **V** is for versions 2 and 4 - drainage only!
- ** The permissible output torque for shafts must not be exceeded!
- *** If the code on pos.5 is not specified in the order, it will be considered as LL-option.
- **** For **SR** and **FR** only!

The hydraulic motors are manganophosphatized as standard.