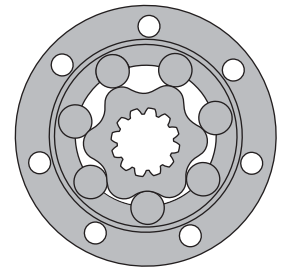


# HYDRAULIC MOTORS HW



## APPLICATION

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



## CONTENTS

Specification data .....103÷104  
 Function diagrams .....105÷111  
 Dimensions and mounting .....112÷115  
 Permissible shaft Seal Pressure ...115  
 Shaft extensions .....116÷117  
 Permissible shaft loads .....117  
 Order code .....118

## OPTIONS

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

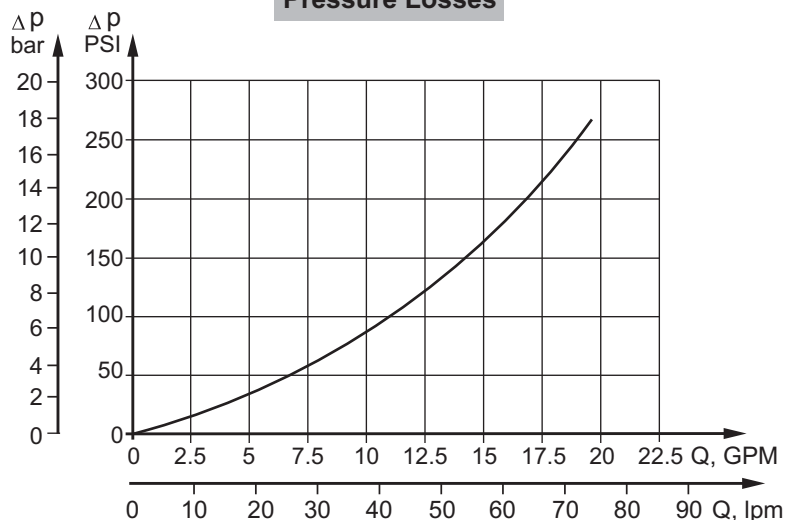
## GENERAL

<b>Max. Displacement,</b> cm <sup>3</sup> /rev [in <sup>3</sup> /rev]	550 [33.55]
<b>Max. Speed,</b> [RPM]	497
<b>Max. Torque,</b> daNm [in-lb]	cont.: 96 [8500] int.: 105 [9293]
<b>Max. Output,</b> kW [HP]	23,1 [31]
<b>Max. Pressure Drop,</b> bar [PSI]	cont.: 205 [3000] int.: 225 [3260]
<b>Max. Oil Flow,</b> lpm [GPM]	115 [30.4]
<b>Min. Speed,</b> [RPM]	10
<b>Pressure fluid</b>	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
<b>Temperature range,</b> °C [°F]	-40÷140 [-40÷284]
<b>Optimal Viscosity range,</b> mm <sup>2</sup> /s [SUS]	20÷75 [98÷347]
<b>Filtration</b>	ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

### Oil flow in drain line

Pressure drop bar [PSI]	Viscosity mm <sup>2</sup> /s [SUS]	Oil flow in drain line lpm [GPM]
100 [1450]	20 [98]	2,5 [.660]
	35 [164]	1,8 [.476]
140 [2030]	20 [98]	3,5 [.925]
	35 [164]	2,8 [.740]

### Pressure Losses



## SPECIFICATION DATA

Type		HW 125	HW 160	HW 200	HW 235	HW 250	HW 300	HW 315
<b>Displacement, cm<sup>3</sup>/rev [in<sup>3</sup>/rev]</b>		126 [7.69]	157,8 [9.64]	201,3 [12.28]	235,3 [14.33]	252 [15.37]	300 [18.3]	314,9 [19.21]
<b>Max. Speed, [RPM]</b>	cont.	357	380	373	319	298	250	238
	int.*	476	475	497	425	397	333	318
<b>Max. Torque daNm [in-lb]</b>	cont.	35 [3098]	44 [3894]	55 [4868]	64,5 [5710]	69 [6107]	81 [7170]	85 [7523]
	int.*	38,5 [3408]	48 [4248]	60 [5310]	70 [6196]	75 [6638]	89 [7877]	93 [8230]
<b>Max. Output, kW [HP]</b>	cont.	16,2 [21.7]	17,6 [23.6]	18,6 [24.9]	18,2 [24.4]	16,8 [22.5]	16,5 [22]	16,4 [21.9]
	int.*	19,8 [26.6]	21,6 [29]	23,1 [31]	22,6 [30.3]	20,8 [27.9]	20,8 [27.9]	20,8 [27.9]
<b>Max. Pressure Drop, bar [PSI]</b>	cont.	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]	205 [2970]
	int.*	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]	225 [3260]
<b>Max. Oil Flow lpm [GPM]</b>	cont.	45 [12]	60 [16]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
	int.*	60 [16]	75 [20]	100 [26.4]	100 [26.4]	100 [26.4]	100 [26.4]	100 [26.4]
<b>Max. Inlet Pressure, bar [PSI]</b>	cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
	int.*	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]
<b>Max. Starting Pressure with Unloaded Shaft, bar [PSI]</b>		10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
<b>Min. Starting Torque daNm [in-lb]</b>	at max. press. drop cont.	28,7 [2540]	36 [3186]	45,1 [3991]	52,8 [4673]	56,5 [5000]	66,4 [5877]	69,7 [6169]
	at max. press. drop int.*	31,5 [2788]	39,3 [3478]	49,2 [4355]	57,4 [5080]	61,5 [5443]	72,9 [6452]	76,2 [6744]
<b>Min. Speed**, [RPM]</b>		10	10	10	10	10	10	10
<b>Weight, avg. kg [lb]</b>	HW	14,3 [31.5]	14,6 [32.2]	15,1 [33.3]	15,5 [34.2]	15,7 [34.6]	16,1 [35.5]	16,3 [35.9]
	HWF	12,8 [28.2]	13,1 [28.9]	13,6 [30]	14,0 [30.9]	14,2 [31.3]	14,6 [32.2]	14,8 [32.6]
	HWS	14 [30.9]	14,3 [31.5]	14,8 [32.6]	15,2 [33.5]	15,4 [34]	15,8 [34.8]	16 [35.3]

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

\*\* For speeds 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 13 mm<sup>2</sup>/s [70 SUS] at 50°C [122°F].
5. Recommended maximum system operating temperature is 82°C [180°F].
6. 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
<b>Displacement, cm<sup>3</sup>/rev [in<sup>3</sup>/rev]</b>	347,8 [21.21]	369,2 [22.51]	396,8 [24.2]	470,6 [28.71]	502,4 [30.65]	535 [32.7]	550 [33.55]
<b>Max. Speed, [RPM]</b>	cont.	216	203	189	159	149	140
	int.*	288	271	252	244	229	215
<b>Max. Torque daNm [in-lb]</b>	cont.	94 [8320]	96 [8497]	96 [8497]	92 [8143]	91 [8054]	90 [7966]
	int.*	102 [9028]	105 [9293]	98 [8674]	101 [8939]	101 [8939]	104 [9205]
<b>Max. Output, kW [HP]</b>	cont.	16,5 [22]	13,2 [17.7]	12,5 [16.8]	10,6 [14.2]	10,8 [14.5]	9,4 [12.6]
	int.*	20,8 [27.9]	19,2 [25.7]	18,5 [24.8]	17,4 [23.3]	17,8 [23.9]	16,4 [22]
<b>Max. Pressure Drop, bar [PSI]</b>	cont.	205 [2970]	205 [2970]	185 [2680]	150 [2180]	140 [2030]	130 [1885]
	int.*	225 [3260]	225 [3260]	190 [2760]	165 [2390]	155 [2250]	150 [2180]
<b>Max. Oil Flow lpm [GPM]</b>	cont.	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]	75 [20]
	int.*	100 [26.4]	100 [26.4]	100 [26.4]	115 [30.4]	115 [30.4]	115 [30.4]
<b>Max. Inlet Pressure, bar [PSI]</b>	cont.	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]	210 [3050]
	int.*	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]	250 [3625]
<b>Max. Starting Pressure with Unloaded Shaft, bar [PSI]</b>	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]	10 [145]
<b>Min. Starting Torque daNm [in-lb]</b>	at max. press. drop cont.	77 [6815]	79,5 [7036]	78,7 [6966]	75,4 [6674]	74,6 [6603]	73,8 [6532]
	at max. press. drop int.*	83,6 [7400]	86 [7612]	80,3 [7107]	82,8 [7328]	82,8 [7328]	85,2 [7540]
<b>Min. Speed**, [RPM]</b>	8	8	8	8	8	5	5
<b>Weight, avg. kg [lb]</b>	HW	16,7 [36.8]	16,9 [37.3]	17,3 [38.1]	18,1 [39.9]	18,4 [40.6]	18,8 [41.5]
	HWF	15,2 [33.5]	15,4 [34]	15,8 [34.8]	16,6 [36.6]	16,9 [37.3]	17,3 [38.1]
	HWS	16,4 [36.2]	16,6 [36.6]	17 [37.5]	17,8 [39.2]	18,1 [39.9]	18,5 [40.8]

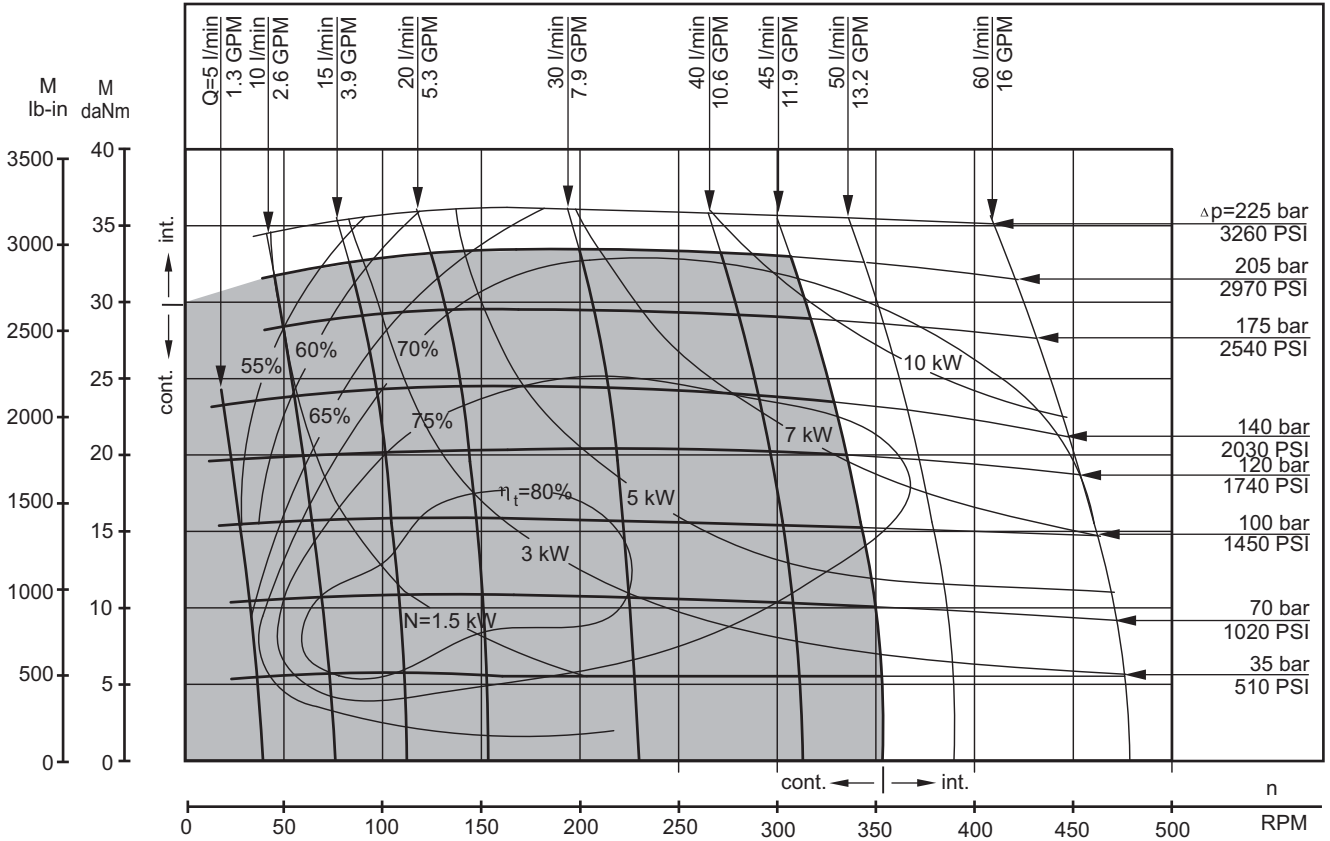
\* Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

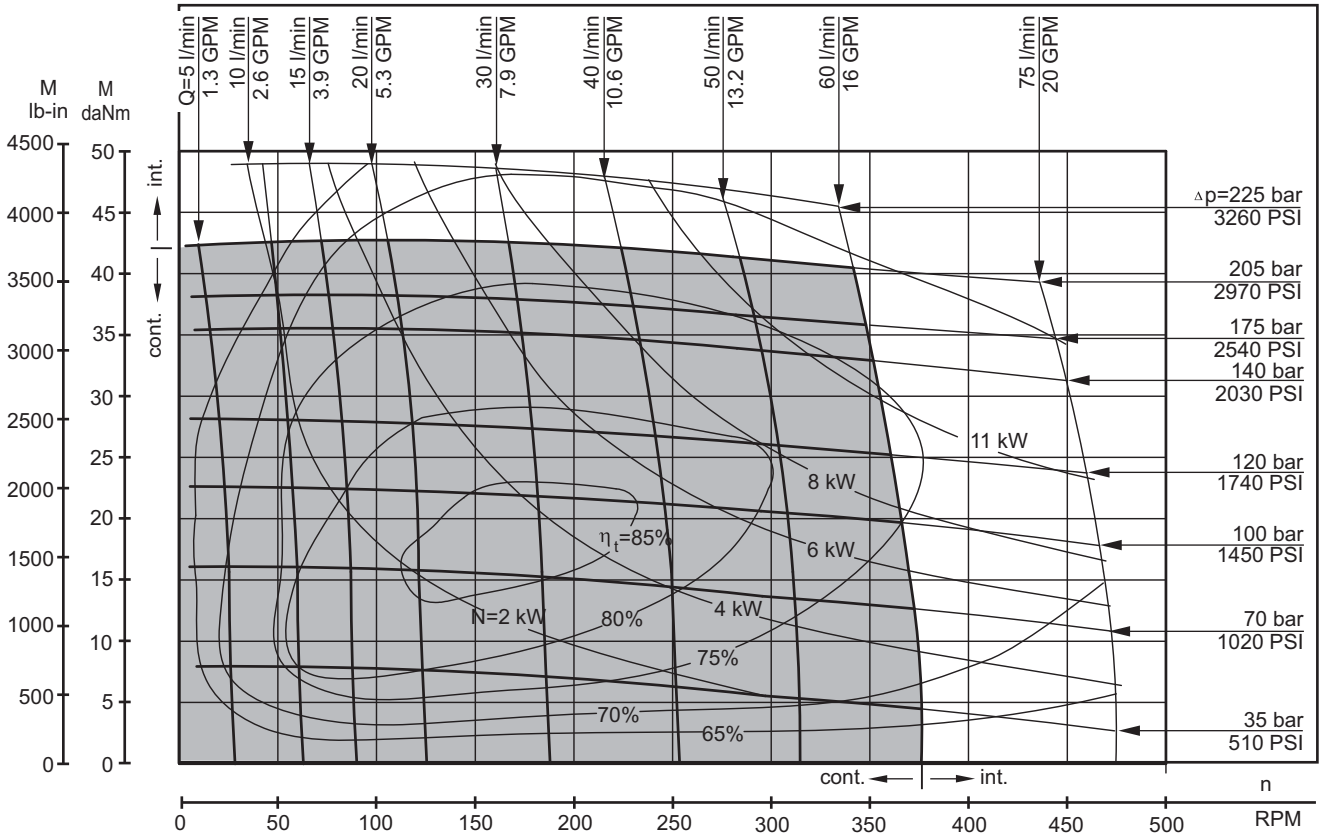
1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).  
If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 13 mm<sup>2</sup>/s [70 SUS] at 50°C [122°F].
5. Recommended maximum system operating temperature is 82°C [180°F].
6. 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**



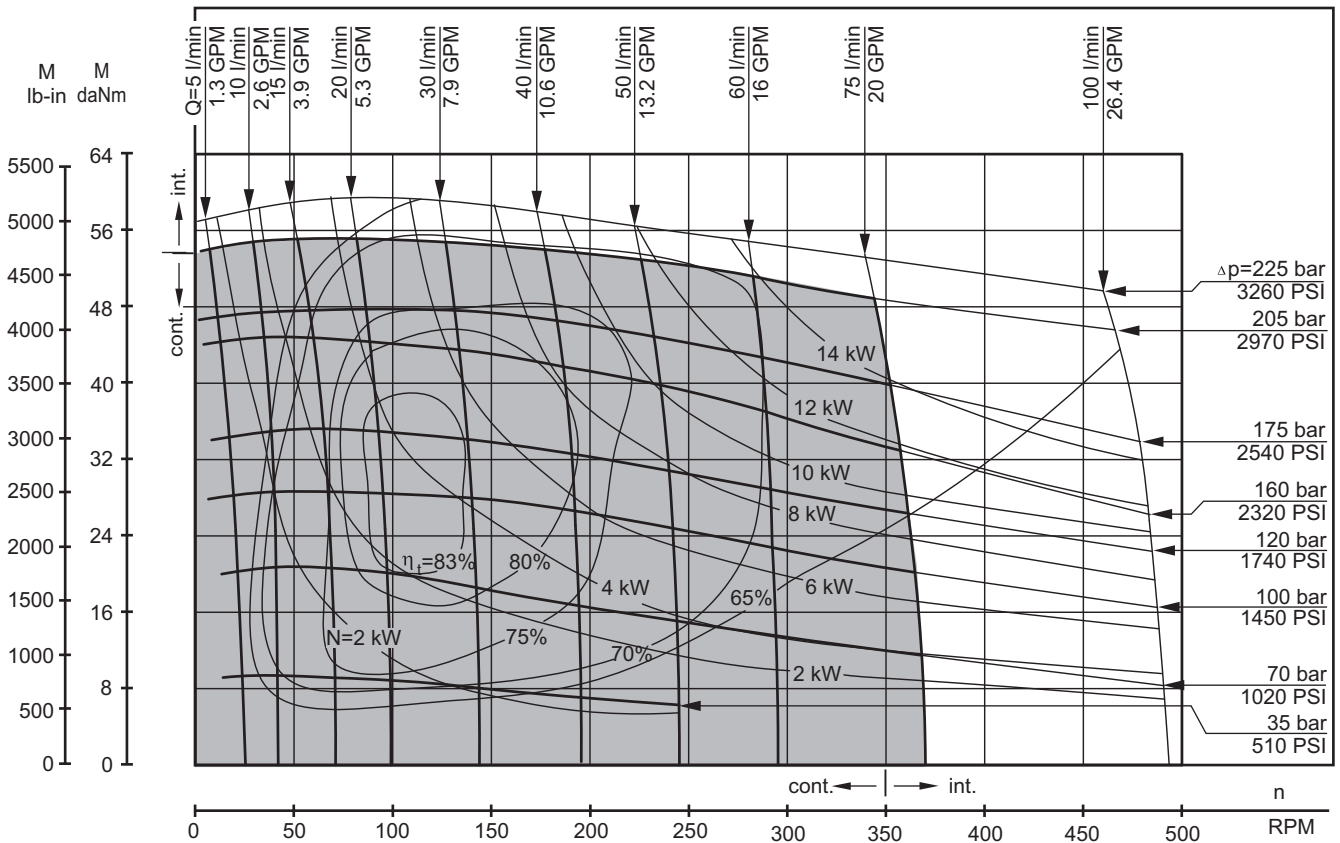
**HW 160**



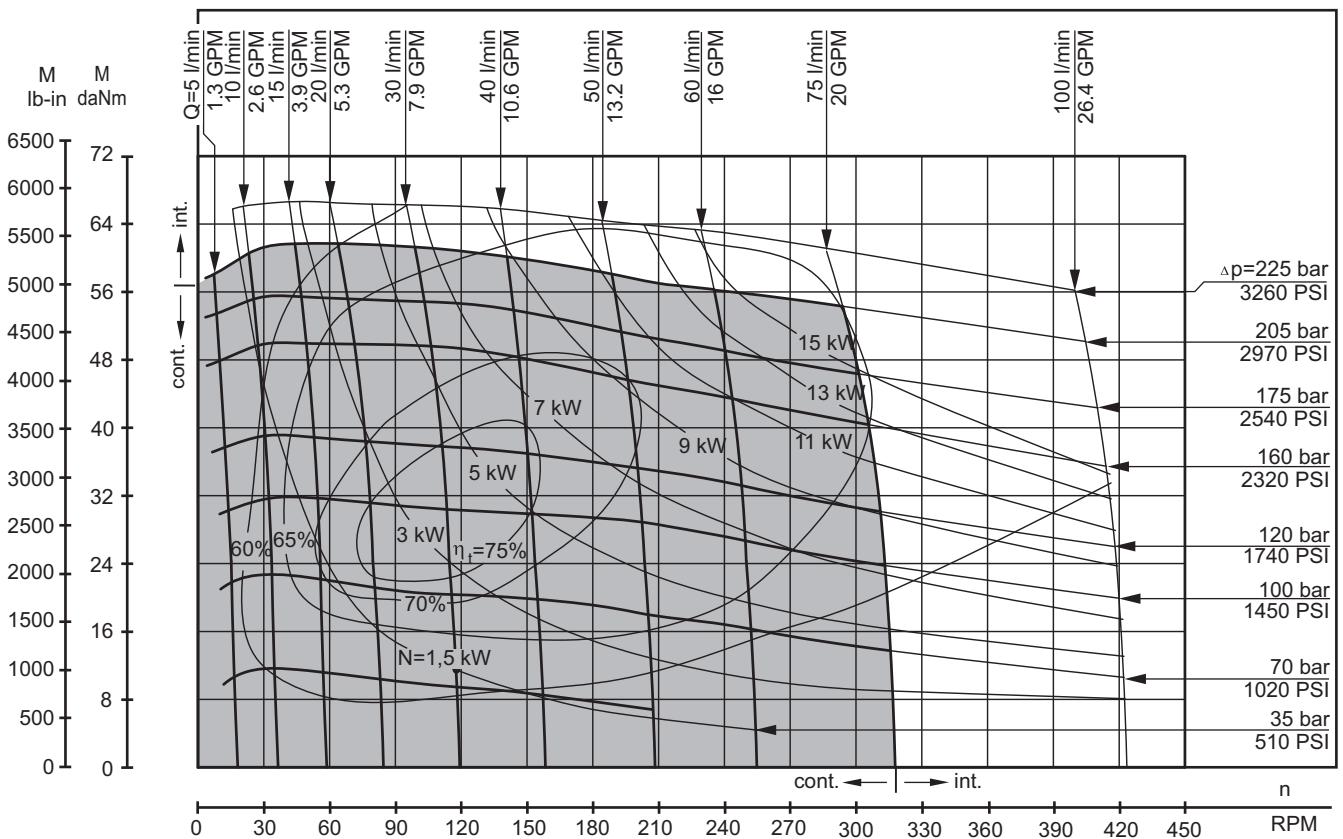
The function diagrams data is for average performance of randomly selected motors at back pressure  $5 \pm 10$  bar [72.5  $\pm$  145 PSI] and oil with viscosity of  $32 \text{ mm}^2/\text{s}$  [150 SUS] at  $50^\circ\text{C}$  [122 $^\circ\text{F}$ ].

**FUNCTION DIAGRAMS**

**HW 200**



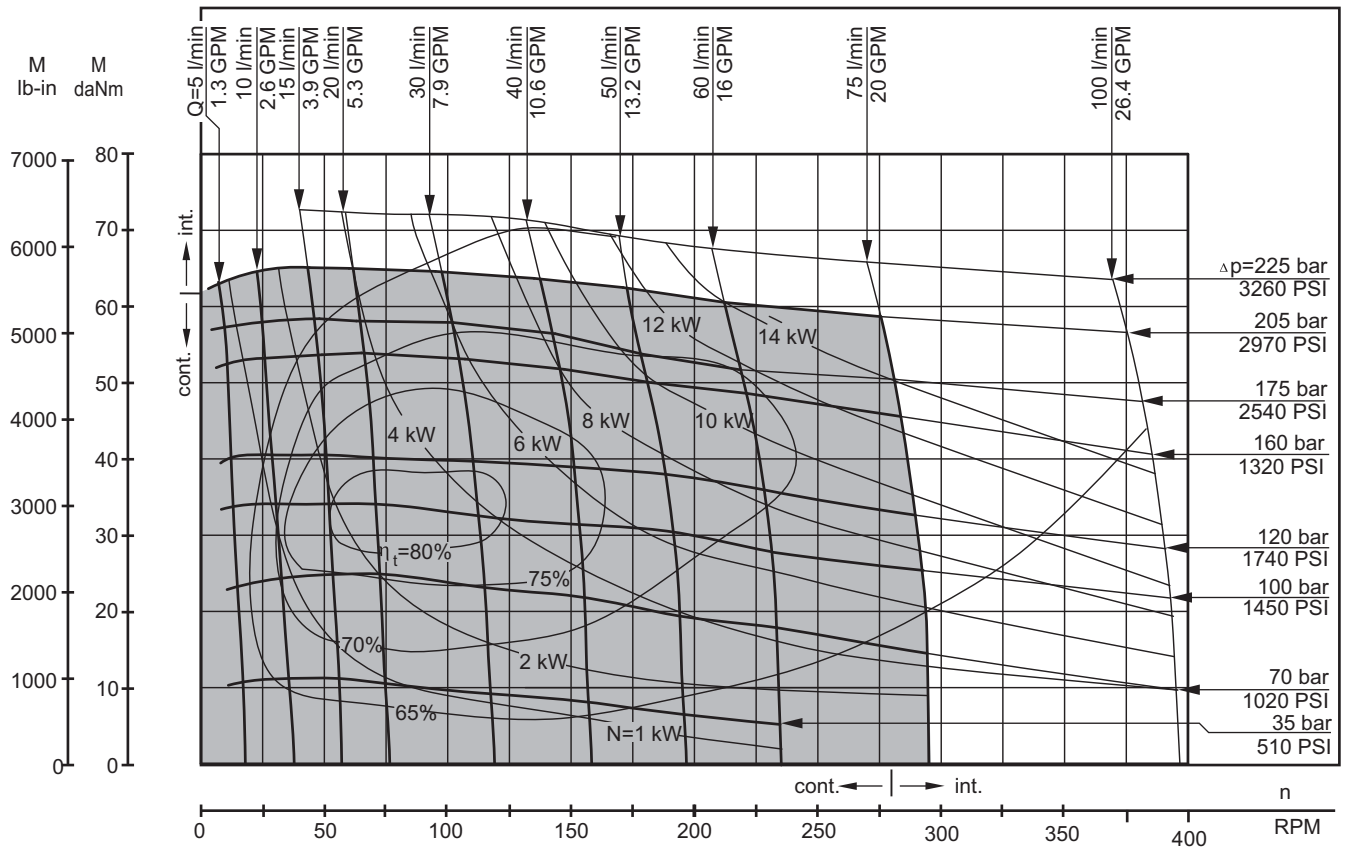
**HW 235**



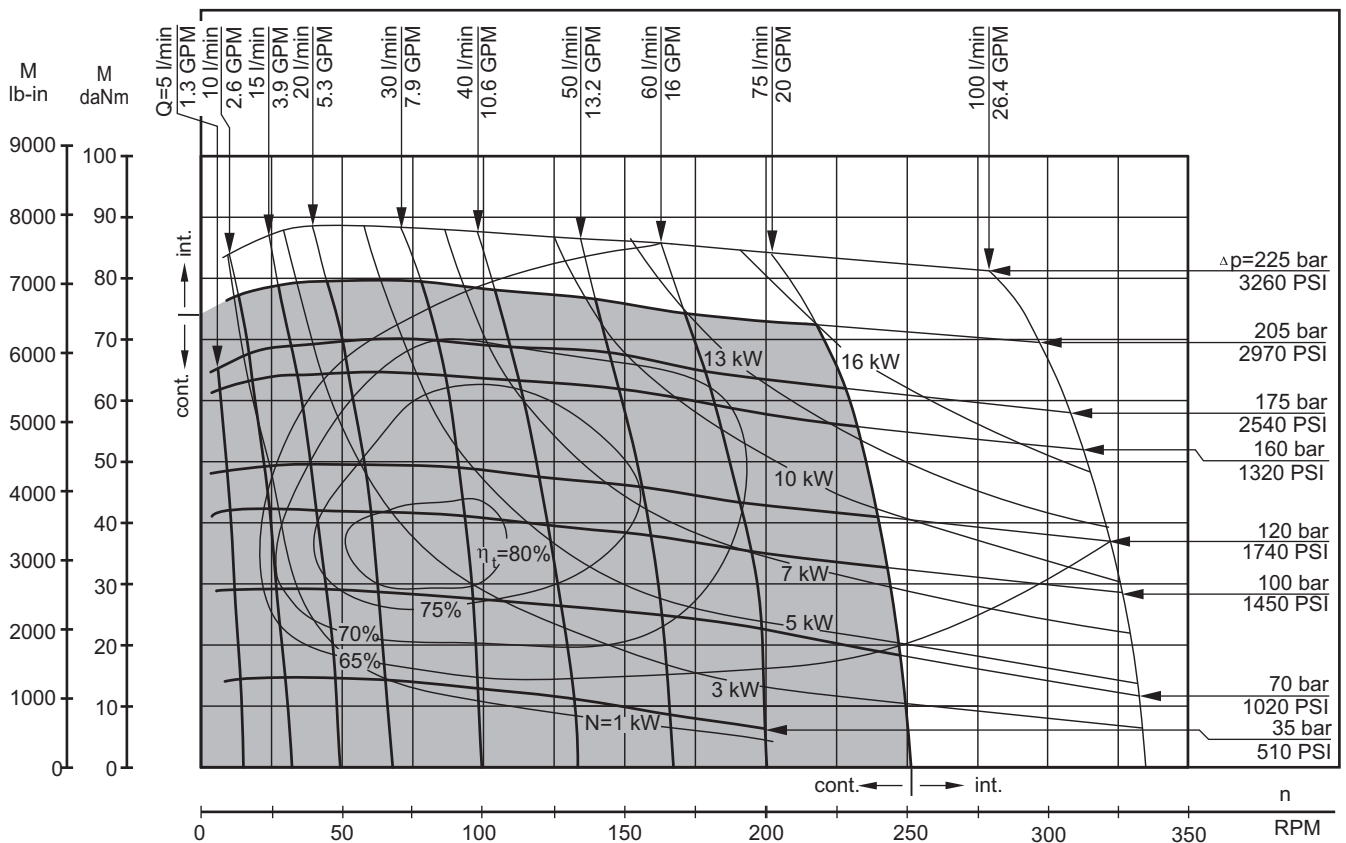
The function diagrams data is for average performance of randomly selected motors at back pressure 5±10 bar [72.5±145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

**FUNCTION DIAGRAMS**

**HW 250**



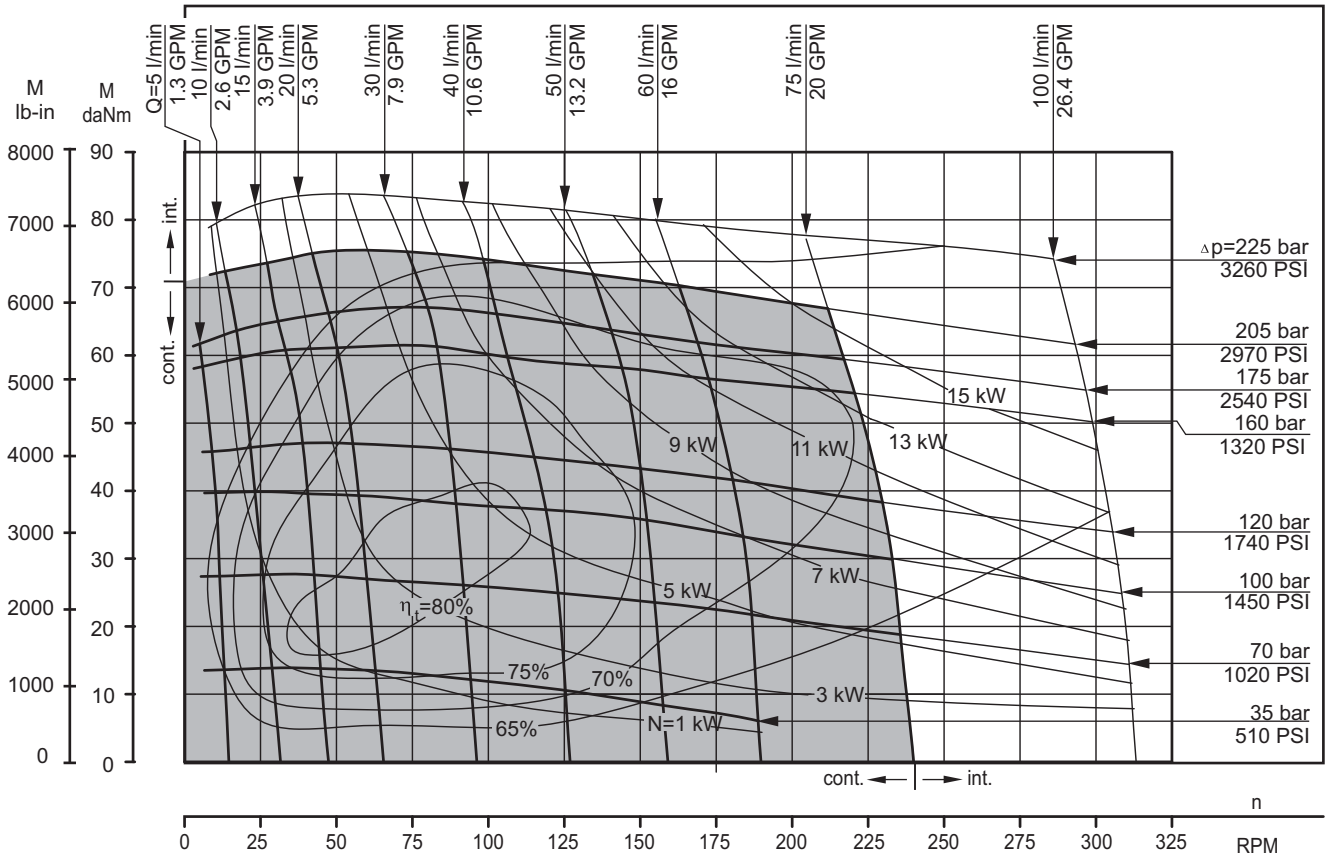
**HW 300**



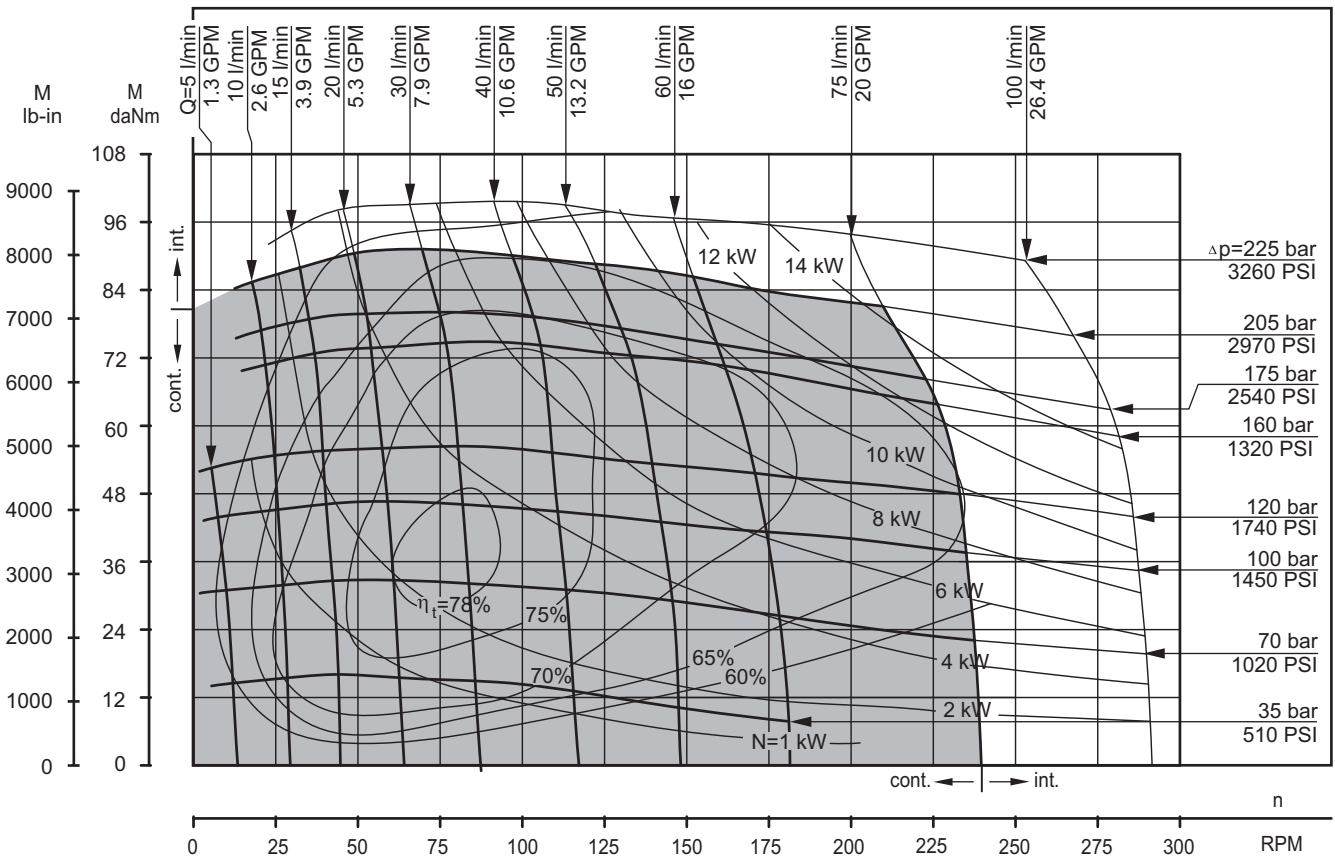
The function diagrams data is for average performance of randomly selected motors at back pressure 5±10 bar [72.5±145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

**FUNCTION DIAGRAMS**

**HW 315**



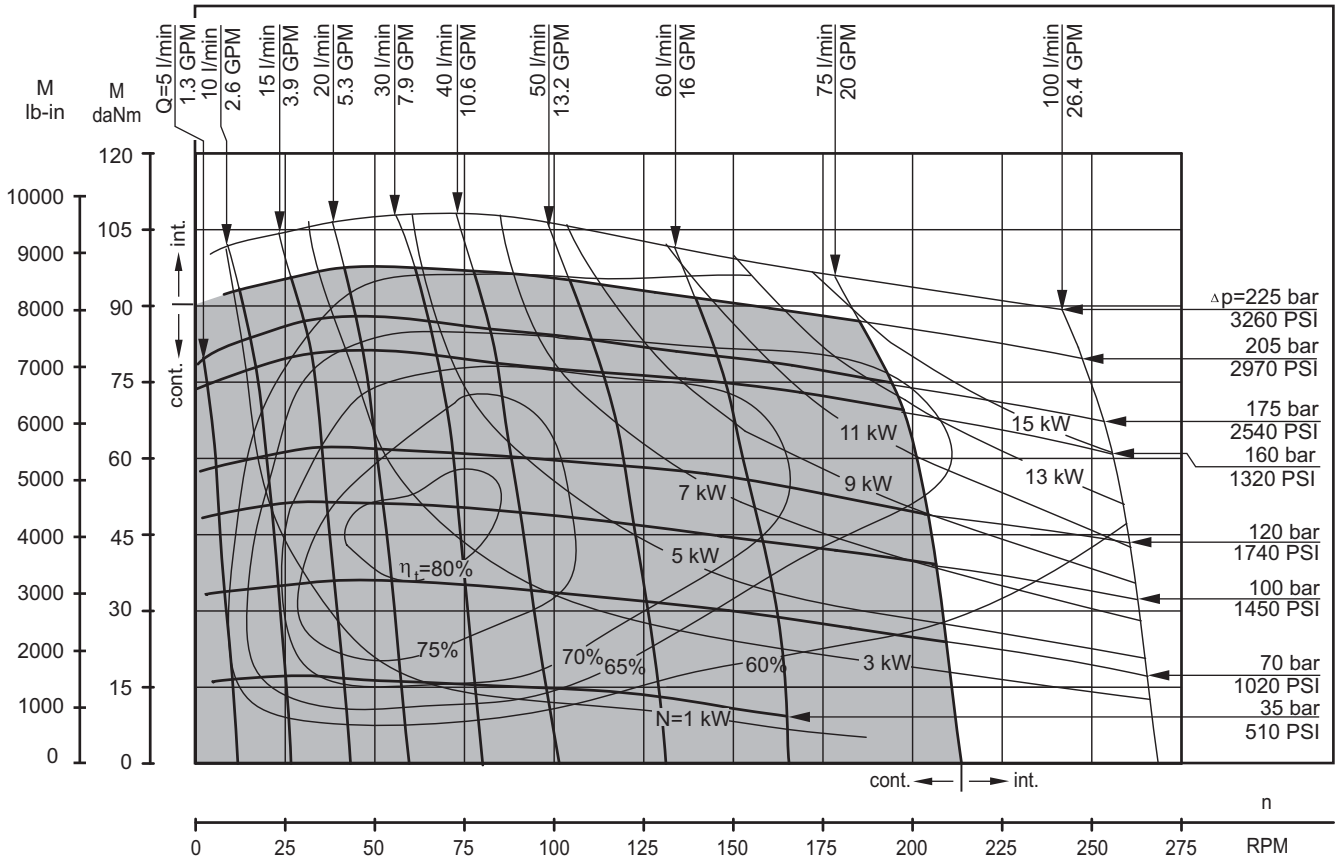
**HW 350**



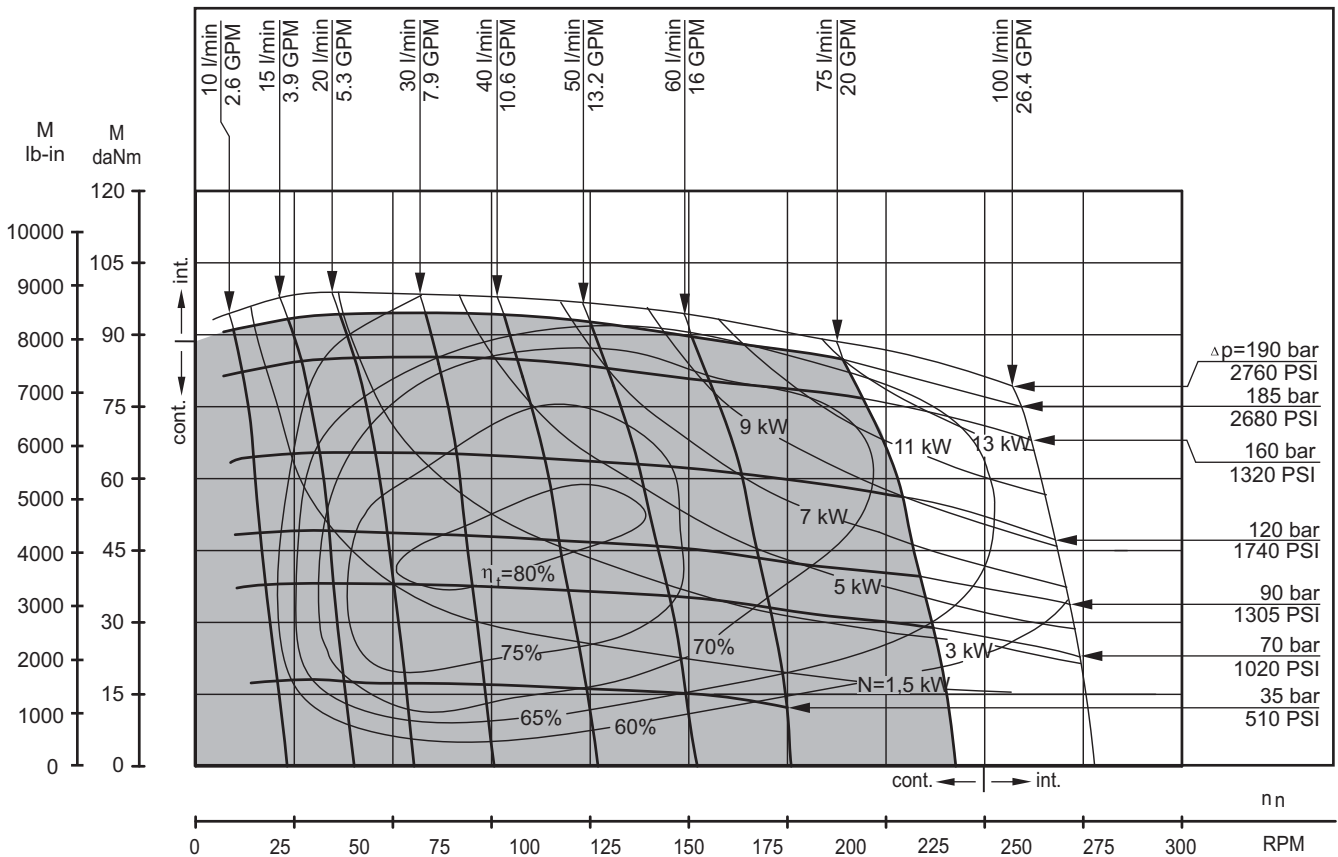
The function diagrams data is for average performance of randomly selected motors at back pressure 5±10 bar [72.5±145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

**FUNCTION DIAGRAMS**

**HW 370**



**HW 400**

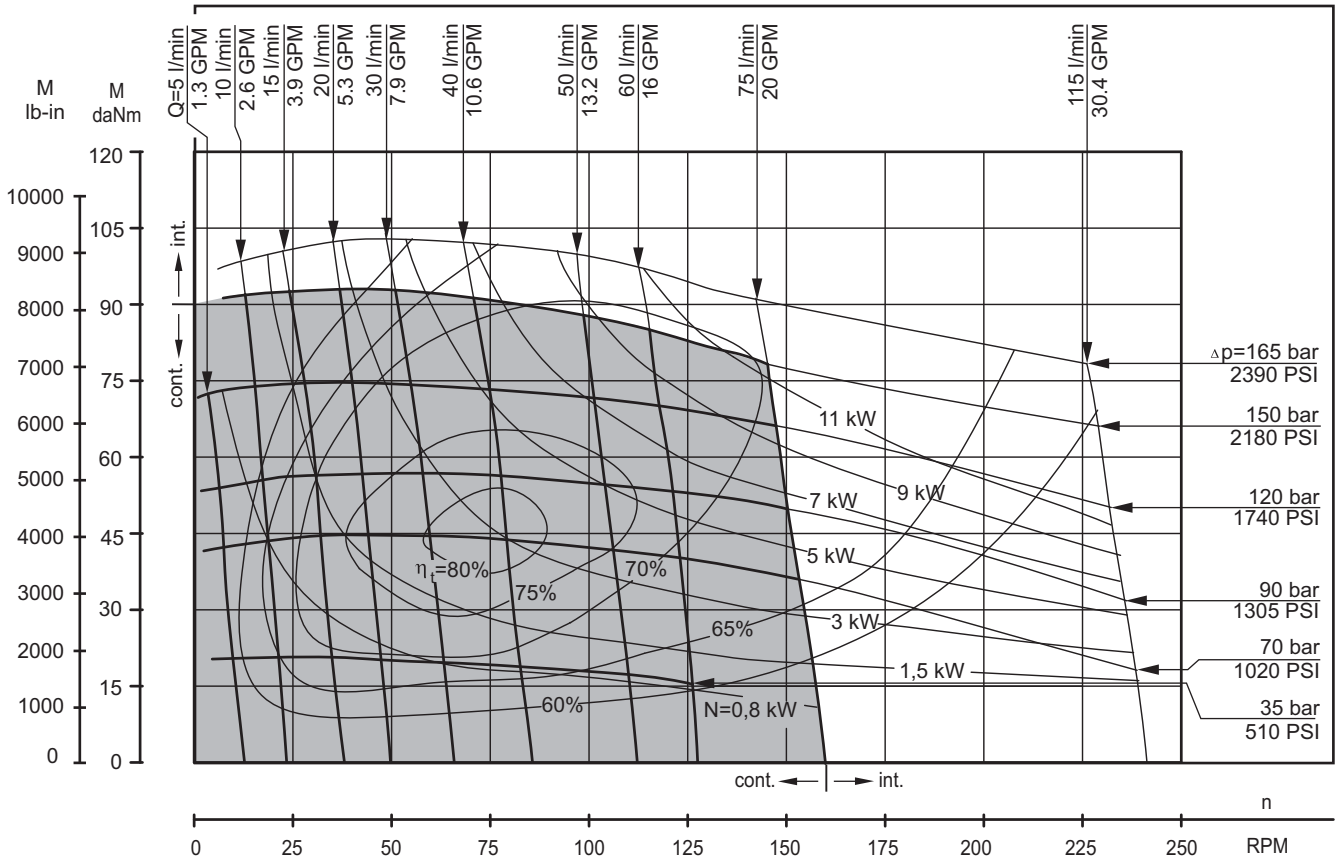


The function diagrams data is for average performance of randomly selected motors at back pressure  $5 \pm 10$  bar [72.5  $\pm$  145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

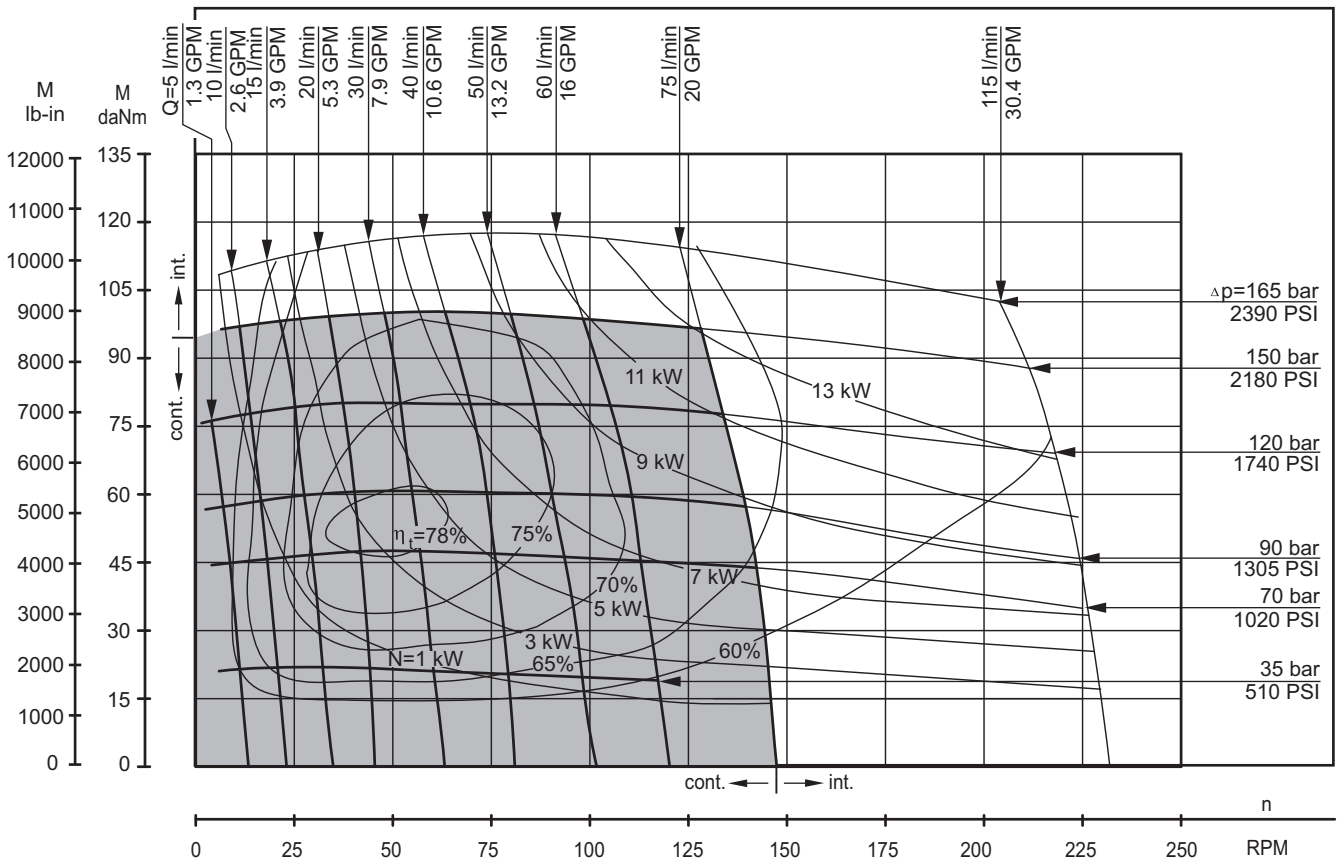


**FUNCTION DIAGRAMS**

**HW 470**



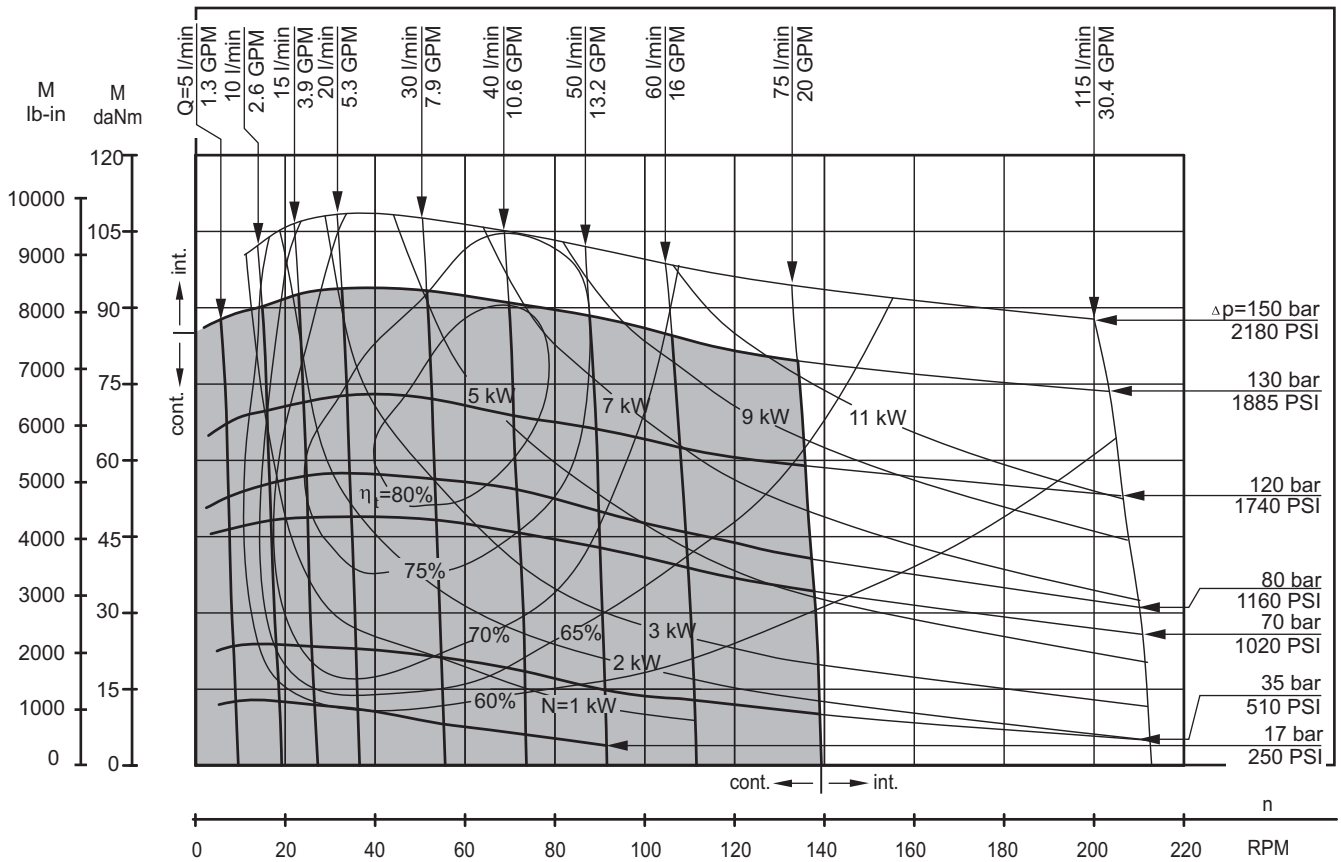
**HW 500**



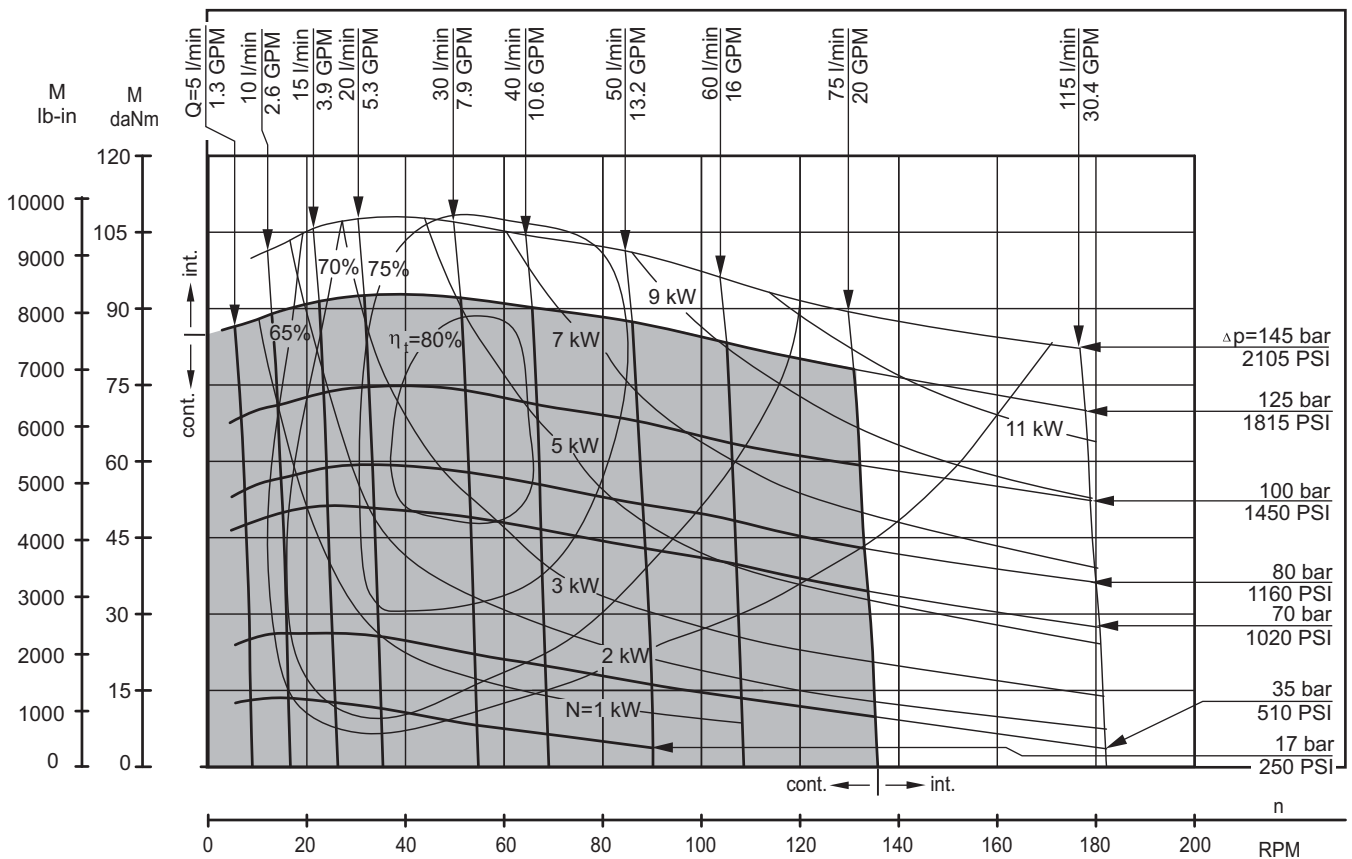
The function diagrams data is for average performance of randomly selected motors at back pressure  $5 \pm 10$  bar [72.5  $\pm$  145 PSI] and oil with viscosity of  $32 \text{ mm}^2/\text{s}$  [150 SUS] at  $50^\circ\text{C}$  [122 $^\circ\text{F}$ ].

**FUNCTION DIAGRAMS**

**HW 535**



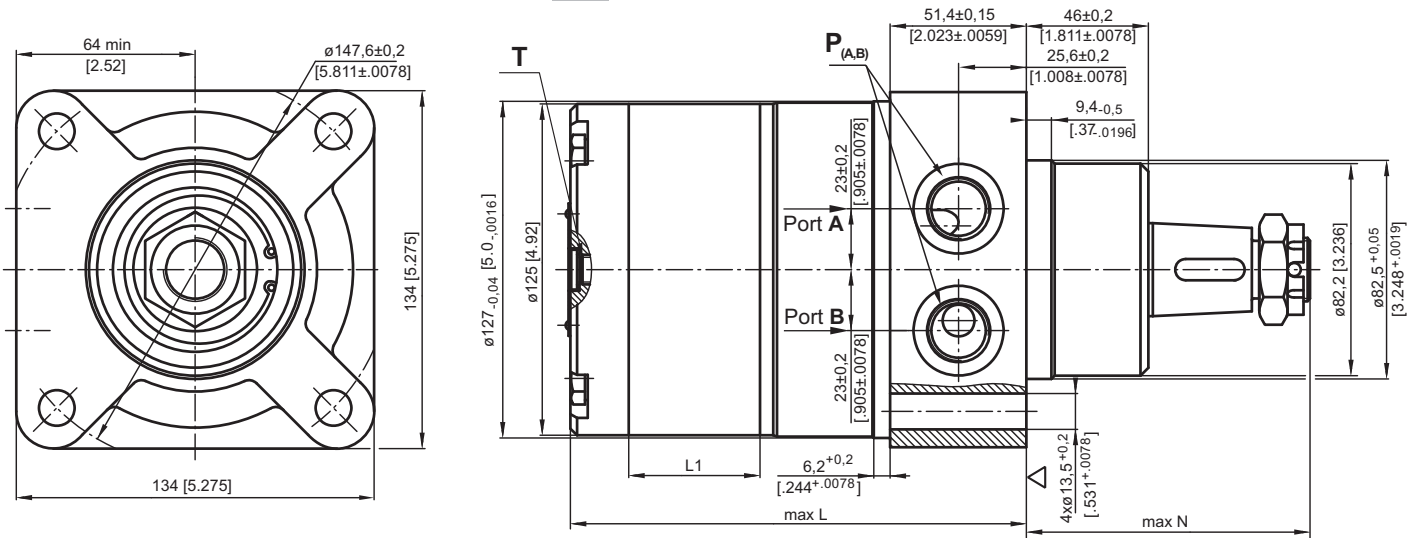
**HW 550**



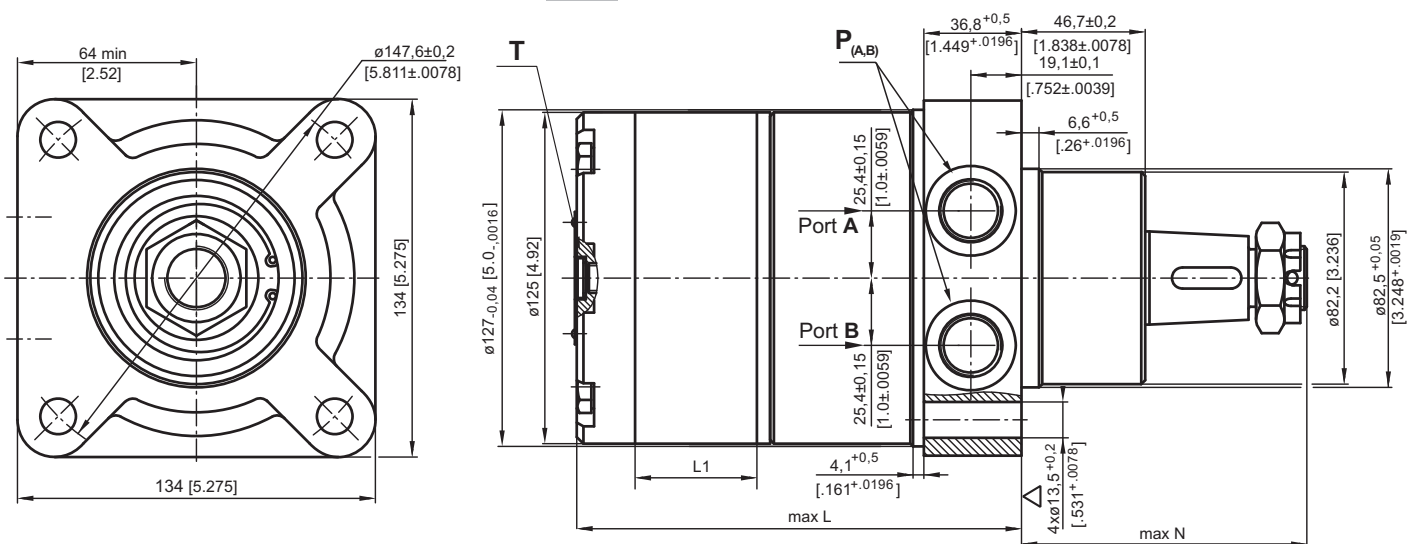
The function diagrams data is for average performance of randomly selected motors at back pressure 5±10 bar [72.5±145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

**DIMENSIONS AND MOUNTING DATA**

**HW - Wheel Mount**



**HWS - Wheel Mount**



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

▽ - Motor Mounting Surface

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

**Note:** For N see pages **116 and 117**.

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

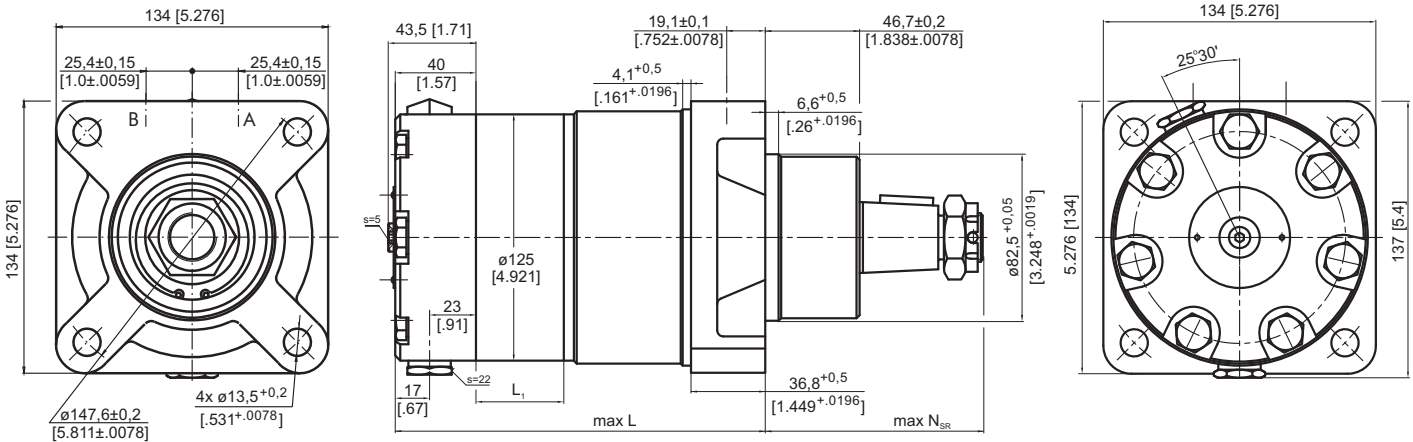
**Reverse Rotation**  
Viewed from Shaft End  
Port A Pressurized - **CCW**  
Port B Pressurized - **CW**



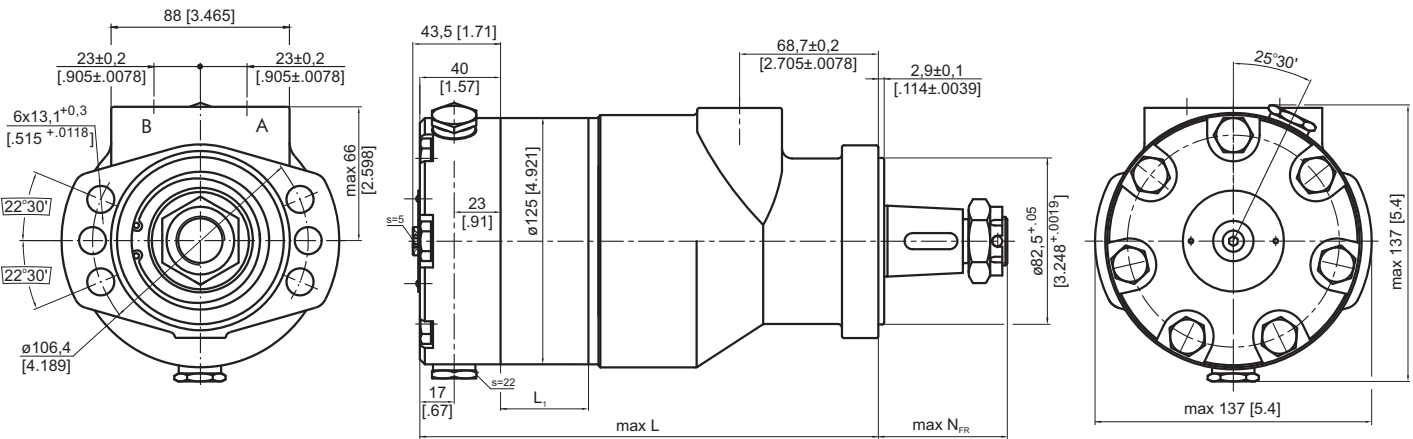
\* For LSV option the dimension L is 3 mm [1.18 in] greater.

**DIMENSIONS AND MOUNTING DATA**

**HWSR - Wheel mount, relief valves**



**HWFR - Wheel mount, six holes, relief valves**



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

▽ - Motor Mounting Surface

	Versions	
	2	4
P <sub>(A,B)</sub>	2xG½	2x7/8-14UNF, O-ring

**Note:** For N<sub>FR</sub> and N<sub>SR</sub> see pages 116 and 117.

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

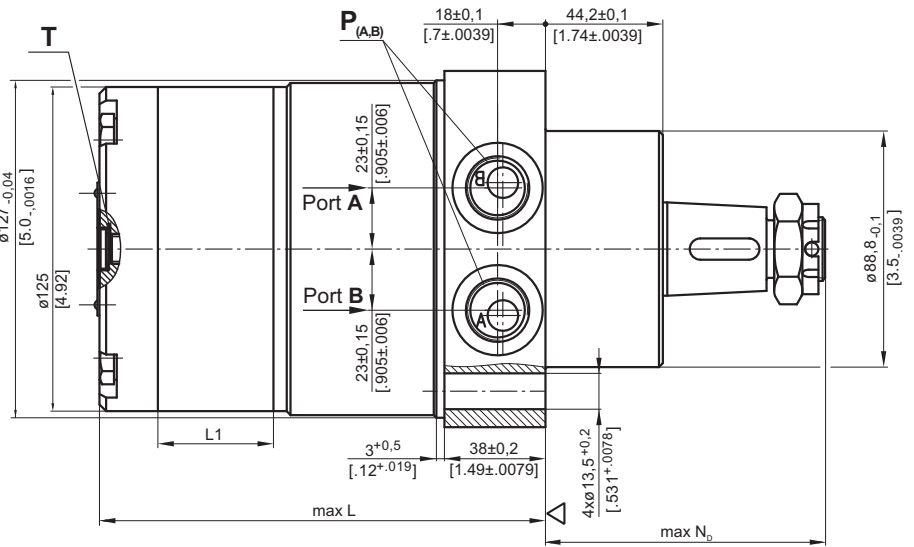
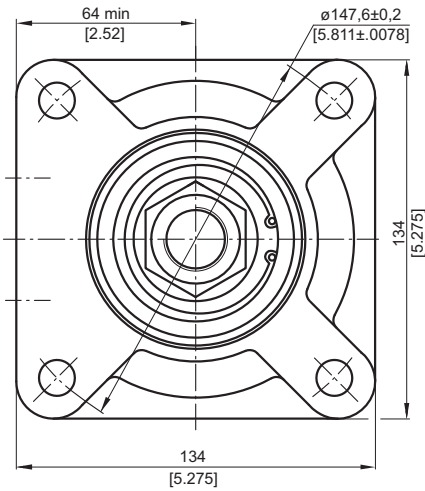
**Reverse Rotation**  
Viewed from Shaft End  
Port A Pressurized - CCW  
Port B Pressurized - CW



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

**DIMENSIONS AND MOUNTING DATA**

**HWD** Wheel Mount



Versions		
	2	4
<b>P<sub>(A,B)</sub></b>	2xG½	2x¾-14UNF, O-ring
<b>T</b>	G ¼	¾-20UNF, O-ring

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

Type	*L, mm [in]		L <sub>v</sub> , mm [in]
	HWD	HWV	
HW... 125	142,0 [5.59]	140,5 [5.53]	17,4 [6.8]
HW... 160	147,0 [5.79]	145,0 [5.71]	21,8 [8.6]
HW... 200	153,0 [6.02]	151,0 [5.94]	27,8 [1.09]
HW... 235	158,0 [6.22]	155,5 [6.12]	32,5 [1.28]
HW... 250	160,0 [6.30]	158,0 [6.22]	34,8 [1.37]
HW... 300	166,5 [6.56]	164,5 [6.46]	41,4 [1.63]
HW... 315	169,0 [6.65]	166,5 [6.56]	43,5 [1.71]
HW... 350	173,5 [6.83]	171,0 [6.73]	48,0 [1.89]
HW... 370	176,5 [6.95]	174,0 [6.85]	51,0 [2.01]
HW... 400	180,0 [7.09]	178,0 [7.01]	54,8 [2.16]
HW... 470	190,5 [7.50]	188,0 [7.40]	65,0 [2.56]
HW... 500	194,5 [7.66]	192,5 [7.58]	69,4 [2.73]
HW... 535	199,5 [7.85]	197,0 [7.76]	74,1 [2.92]
HW... 550	201,5 [7.93]	199,0 [7.83]	76,0 [2.99]

**Note:** For N<sub>b</sub> and N<sub>v</sub> see pages 116 and 117.

▽ - Motor Mounting Surface

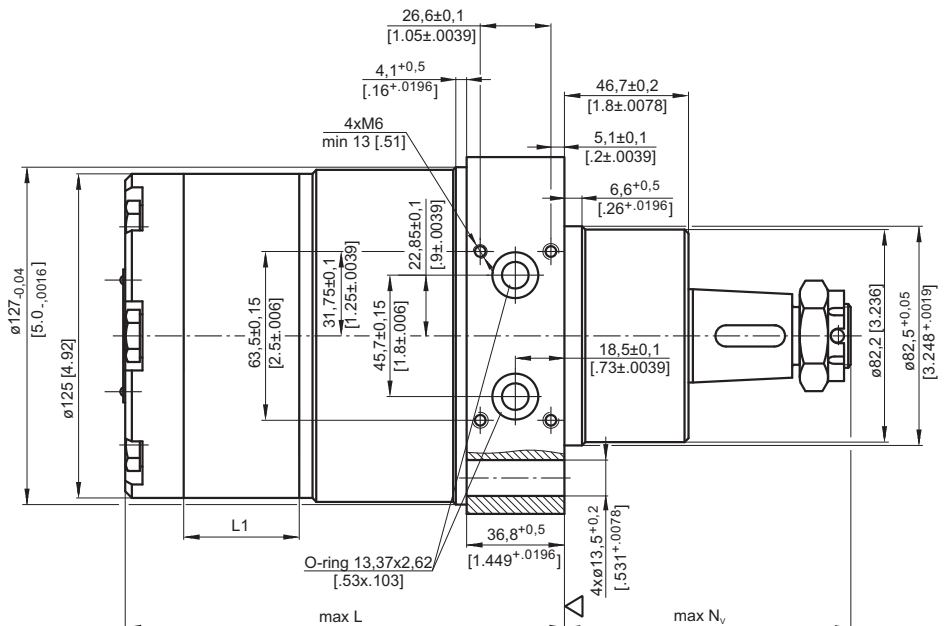
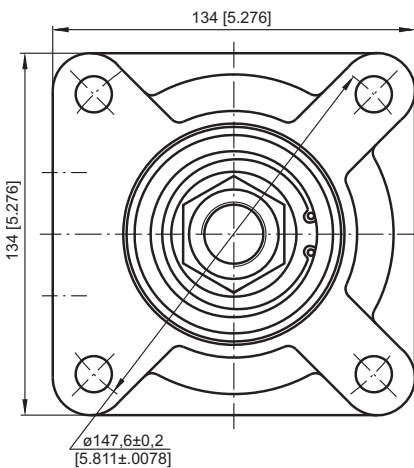


**Standard Rotation**  
Viewed from Shaft End  
Port A Pressurized - CW  
Port B Pressurized - CCW

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

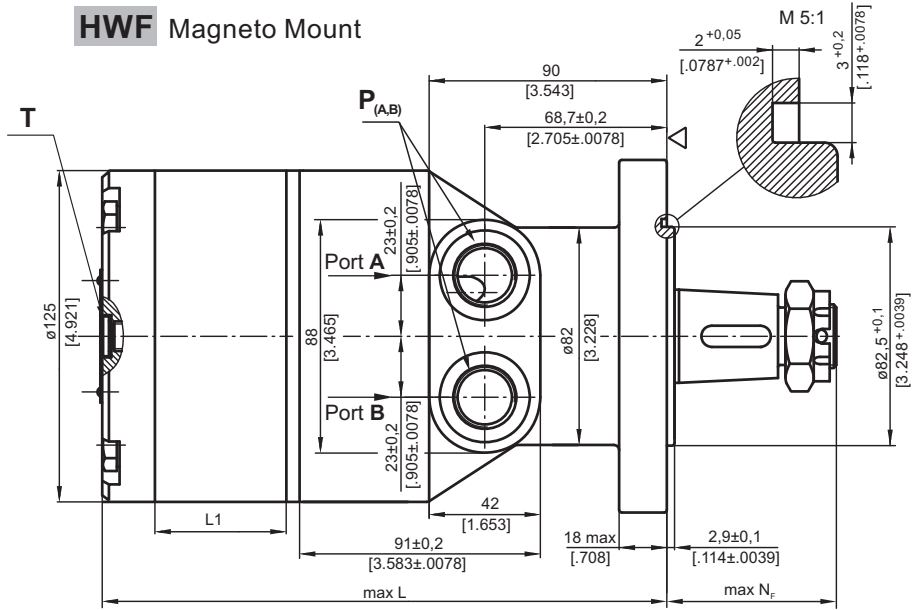
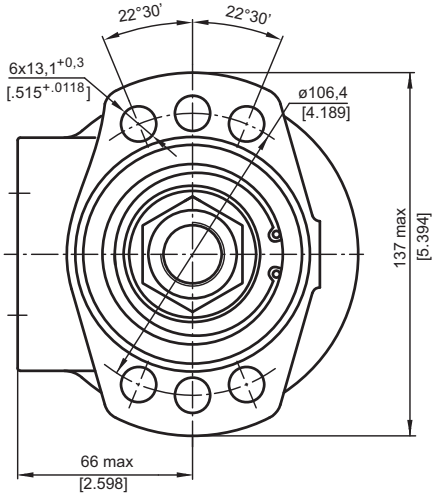
Versions		
	2	4
<b>T</b>	G ¼	¾-20UNF, O-ring

**HWV** Wheel Mount



**DIMENSIONS AND MOUNTING DATA**

**HWF Magneto Mount**

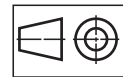


Type	*L, mm [in]	L <sub>1</sub> , mm [in]
HWF 125	184,0 [7.24]	17,4 [.68]
HWF 160	188,5 [7.42]	21,8 [.86]
HWF 200	194,5 [7.66]	27,8 [1.09]
HWF 235	199,0 [7.84]	32,5 [1.28]
HWF 250	201,5 [7.93]	34,8 [1.37]
HWF 300	208,0 [8.20]	41,4 [1.63]
HWF 315	210,0 [8.27]	43,5 [1.71]
HWF 350	214,5 [8.45]	48,0 [1.89]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

	Versions	
	2	4
P <sub>(A,B)</sub>	2xG½	2x7/8-14UNF, O-ring
T	G ¼	7/16-20UNF, O-ring

Note: For N<sub>F</sub> see pages 116 and 117.

▽ - Motor Mounting Surface



mm [in]

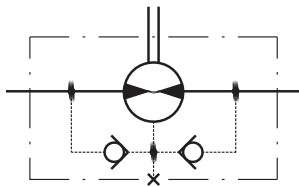
**Standard Rotation**  
Viewed from Shaft End  
Port A Pressurized - **CW**  
Port B Pressurized - **CCW**

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

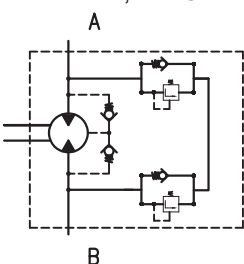
\* For LSV option the dimension L is 3 mm [.118 in] greater.

**MAX. PERMISSIBLE SHAFT SEAL PRESSURE**

HW, HWF, HWS, HWD, HWV

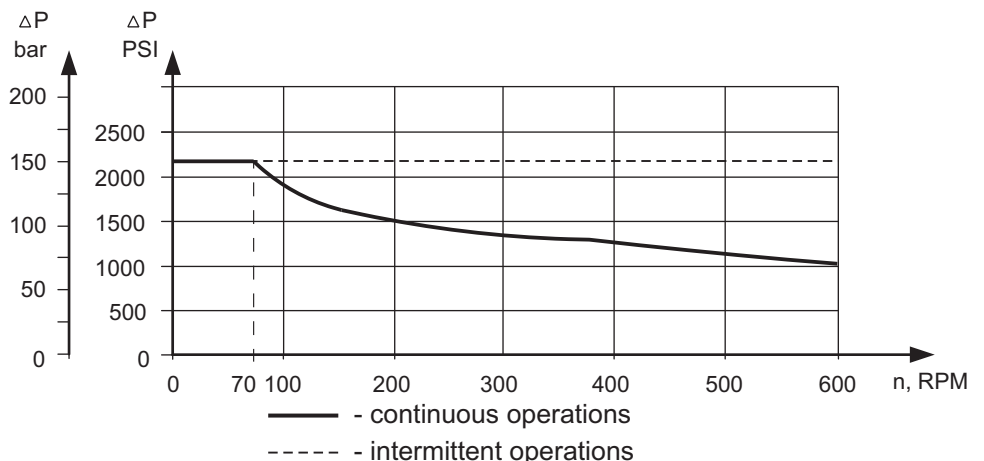


HWFR, HWSR



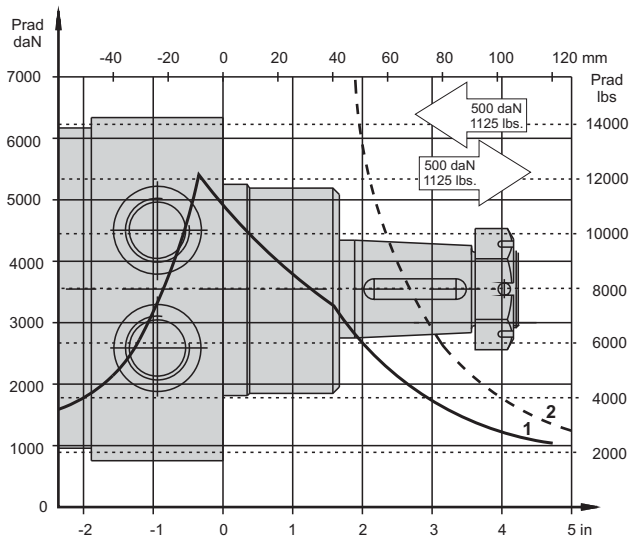
**HW... motors with drain connection:**

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

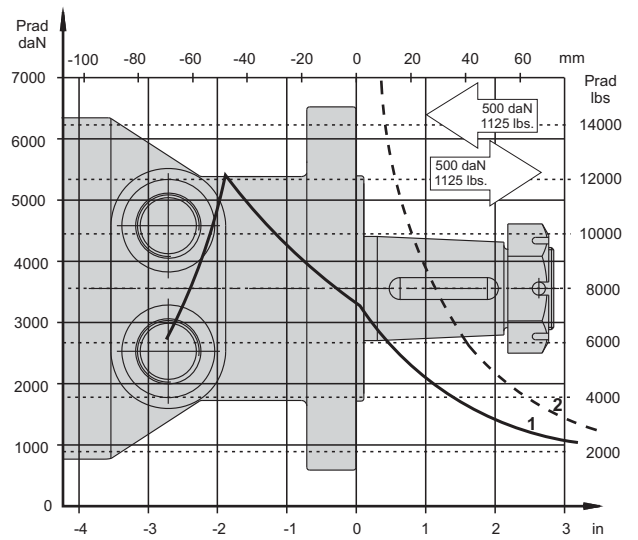


**PERMISSIBLE SHAFT LOADS**

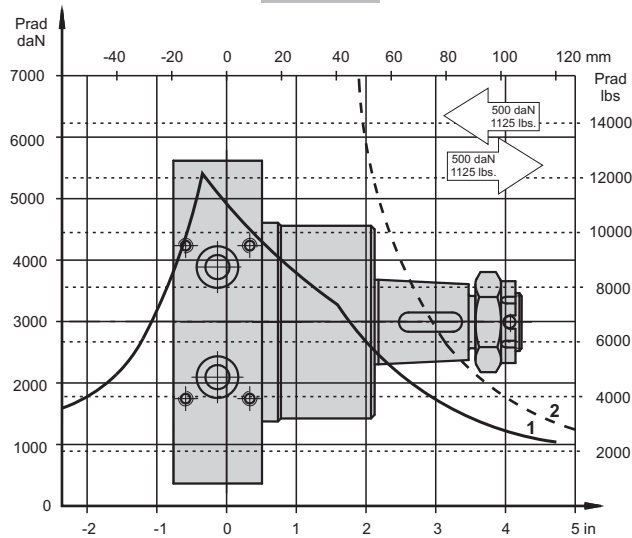
**HW...**



**HWF...**



**HWV...**

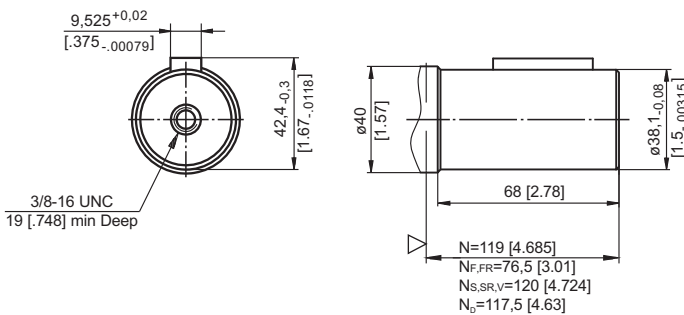


- 1 - Bearing curve: The curve applies to a B10 bearing life of 2000 hours at 100 RPM.
- 2 - Shaft curve: The curve represents Max. permissible radial shaft load with safety factor 3:1.

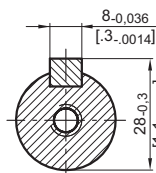
**SHAFT EXTENSIONS**

**C** - 1½" [38,1] straight, Parallel key ¾"x¾"x1½" BS46  
Max. Torque 120 daNm [10630 lb-in]

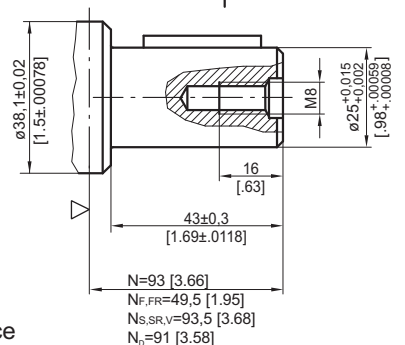
**CO** - ø25, straight, Parallel key A8x7x32 DIN 6885  
Max. Torque 40 daNm [3540 lb-in]



**W-W**



**W**



- N - for standard flange
- N<sub>F</sub> - for F flange
- N<sub>FR</sub> - for FR flange
- N<sub>S</sub> - for S flange
- N<sub>SR</sub> - for SR flange
- N<sub>D</sub> - for D flange
- N<sub>V</sub> - for V flange

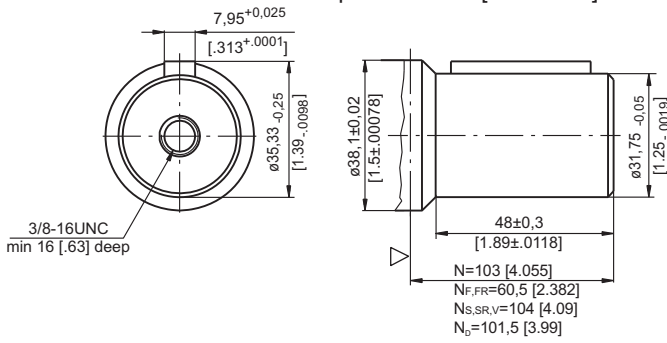
▽ - Motor Mounting Surface



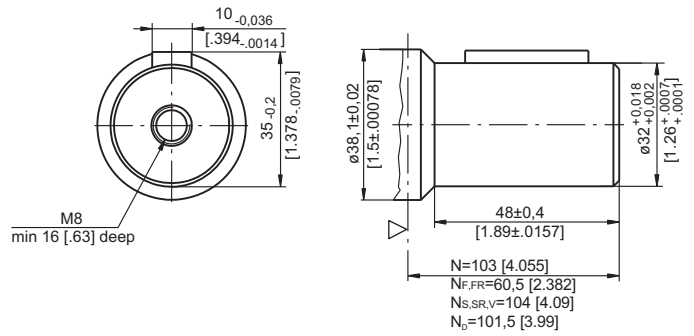
**W**

**SHAFT EXTENSIONS [continued]**

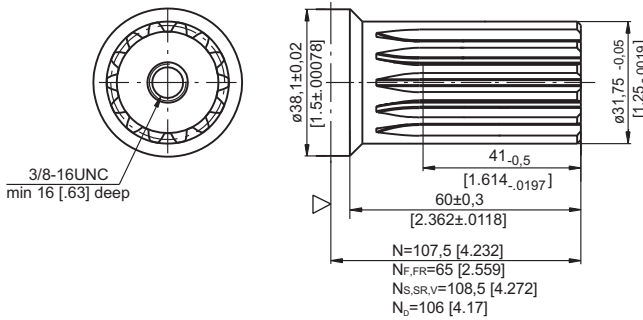
**K** - 1 1/4" straight, Parallel key 5/16"x5/16"x 1/2" BS46  
Max. Torque 77 daNm [6815 lb-in]



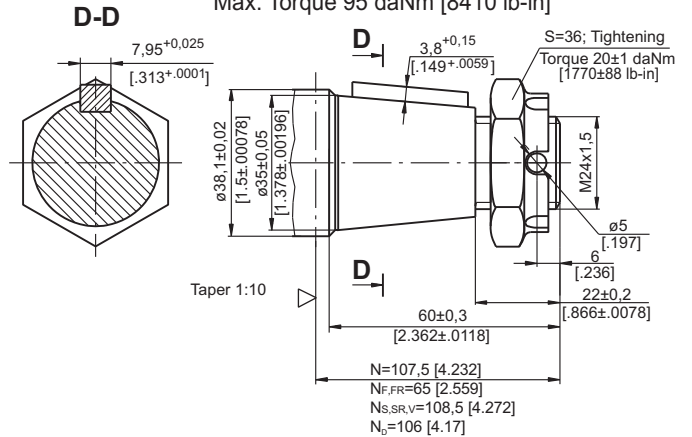
**M** - 32 straight, Parallel key A10x8x32 DIN 6885  
Max. Torque 77 daNm [6815 lb-in]



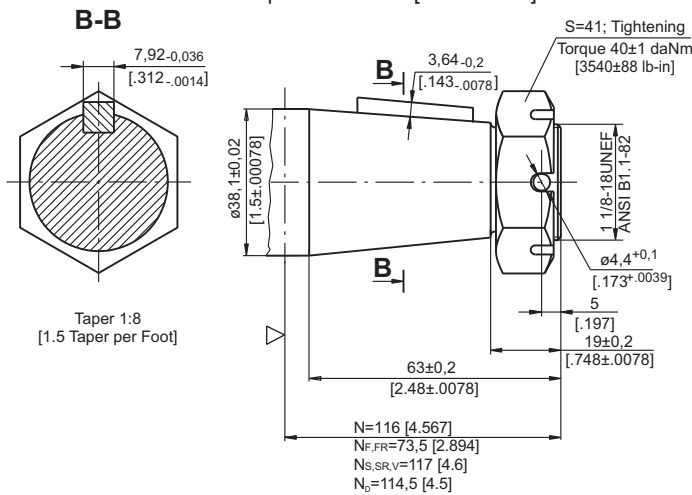
**L** - 1/4" splined 14T, DP12/24 ANSI B92.1-1976 Norm  
Max. Torque 95 daNm [8410 lb-in]



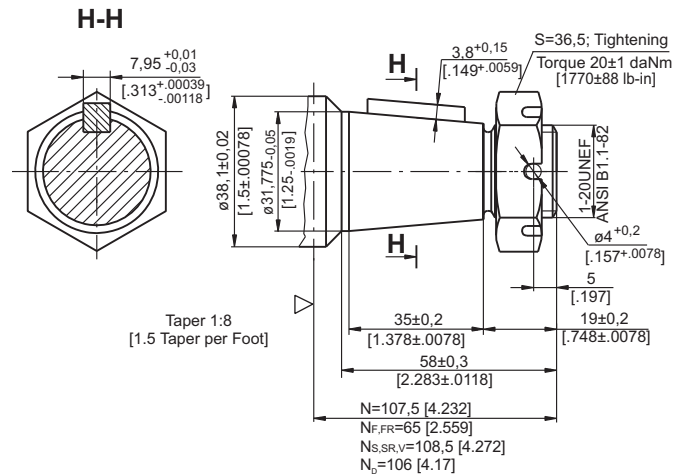
**KB** - 35 tapered 1:10, Parallel key 5/16"x5/16"x1/4" BS46  
Max. Torque 95 daNm [8410 lb-in]



**T** - 1/2" tapered 1:8, Parallel key 5/16"x5/16"x1/4" BS46  
Max. Torque 120 daNm [10620 lb-in]



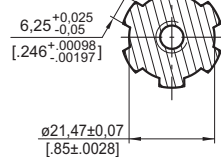
**R** - 1/4" tapered 1:8, Parallel key 5/16"x5/16"x1" BS46  
Max. Torque 77 daNm [6815 lb-in]



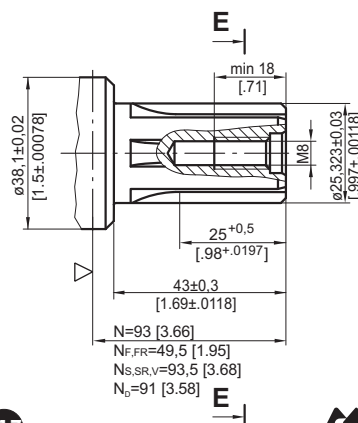
**SH** - 1" splined BS 2059, SAE 6B  
Max. Torque 40 daNm [3540 lb-in]



**E-E**



- N - for standard flange
- N<sub>F</sub> - for F flange
- N<sub>FR</sub> - for FR flange
- N<sub>S</sub> - for S flange
- N<sub>SR</sub> - for SR flange
- N<sub>D</sub> - for D flange
- N<sub>V</sub> - for V flange



▽ - Motor Mounting Surface



**ORDER CODE**

	1	2	3	4	5	6	7
<b>HW</b>					/		

**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  $\varnothing 88,8$  [3.5]
- V\*** - Wheel mount, four holes, valves

**Pos.2 - Displacement code**

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

**Pos.3 - Shaft Extensions\*\***

- K** - 1 1/4" [31,75] straight, Parallel key  $5/16$ "x $5/16$ "x1 1/2" BS46
- KB** -  $\varnothing 35$  tapered 1:10, Parallel key  $5/16$ "x $5/16$ "x1 1/4" BS46
- L** - 1 1/4"[31,75] splined 14T, ANSI B92.1-1976
- M** -  $\varnothing 32$  straight, Parallel key A10x8x32 DIN 6885
- R** - 1 1/4"[31,75] Tapered 1:8, Parallel key  $5/16$ "x $5/16$ "x1 1/4" BS46
- T** - 1 1/2"[38,1] Tapered 1:8, Parallel key  $5/16$ "x $5/16$ "x1 1/4" BS46
- C** - 1 1/2" [38,1] straight, Parallel key  $3/8$ "x $3/8$ "x1 1/2" BS46
- CO** -  $\varnothing 25$ , straight, Parallel key A8x7x32 DIN 6885
- SH** -  $\varnothing 1$ " 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 119]**

**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 mangano-phosphatized as standard.