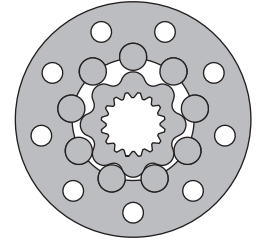
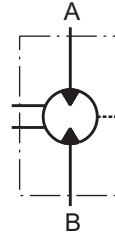


# HYDRAULIC MOTORS TMF



## APPLICATION

- » Marine equipment
- » Forestry equipment
- » Metal working machines
- » Agricultural machines
- » Road building machines
- » Mining machinery
- » Special vehicles etc.



## CONTENTS

Specification data .....	30
Dimensions and mounting TMF.....	31
Dimensions and mounting TMFA .....	32
Permissible shaft loads .....	33
Order code .....	33

## OPTIONS

- » Model - Disc valve, roll-gerotor
- » Wheel mounting flange
- » Side ports
- » Shaft - thread hole flange
- » SAE and BSPP ports
- » Other special features

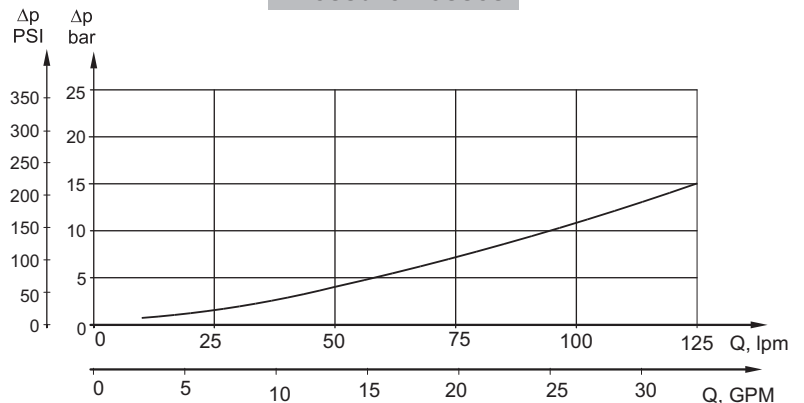
## GENERAL

<b>Max. Displacement,</b> in <sup>3</sup> /rev [cm <sup>3</sup> /rev]	44.2 [724,3]
<b>Max. Speed,</b> [RPM]	750
<b>Max. Torque,</b> lb-in [daNm]	cont.: 16200 [183] int.: 20270 [229]
<b>Max. Output,</b> HP [kW]	94 [70]
<b>Max. Pressure Drop,</b> PSI [bar]	cont.: 3600 [250] int.: 5080 [350]
<b>Max. Oil Flow,</b> GPM [lpm]	40 [150]
<b>Min. Speed,</b> [RPM]	5
<b>Permissible Shaft Loads</b> lbs [daN]	P <sub>a</sub> =2250 [1000]
<b>Pressure fluid</b>	Mineral based- HLP(DIN 51524) or HM(ISO 6743/4)
<b>Temperature range,</b> °F [°C]	-40÷284 [-40÷140]
<b>Optimal Viscosity range, SUS [mm<sup>2</sup>/s]</b>	98÷347 [20÷75]
<b>Filtration</b>	ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

### Oil flow in drain line

Pressure drop PSI [bar]	Viscosity SUS [mm <sup>2</sup> /s]	Oil flow in drain line GPM [lpm]
2030 [140]	98 [20]	.660 [2,5]
	164 [35]	.396 [1,5]
3045 [210]	98 [20]	1.321 [5]
	164 [35]	.793 [3]

### Pressure Losses





### SPECIFICATION DATA

Type		TMF 200	TMF 250	TMF 315	TMF 400	TMF 470	TMF 500	TMF 630	TMF 725
<b>Displacement, in<sup>3</sup>/rev [cm<sup>3</sup>/rev]</b>		12.29 [201,4]	15.36 [251,8]	19.9 [326,3]	25.06 [410,9]	28.97 [475]	31.95 [523,6]	38.52 [631,2]	44.2 [724]
<b>Max. Speed, [RPM]</b>	Cont.	625	500	380	305	260	240	190	170
	Int.*	750	600	460	365	315	285	230	215
<b>Max. Torque lb-in [daNm]</b>	Cont.	6375 [72]	7965[90]	10265[116]	13010[147]	15135[171]	15225[172]	16200[183]	14160[160]
	Int.*	9030[102]	11330[128]	14425[163]	18232[206]	16030[215]	19030[215]	20270[229]	17000[192]
	Peak**	10180[115]	12745[144]	16460[186]	20800[235]	21240[240]	21240[240]	24250[274]	21240[240]
<b>Max. Output HP [kW]</b>	Cont.	55 [41]	55 [41]	55 [41]	55 [41]	55 [41]	50[37,5]	37,5 [28]	35 [26]
	Int.*	87 [65]	94[70]	94[70]	94[70]	74[55]	68 [51]	56 [42]	54 [40]
<b>Max. Pressure Drop PSI [bar]</b>	Cont.	3600[250]	3600[250]	3600[250]	3600[250]	3600[250]	3340[230]	2900[200]	2320[160]
	Int.*	5080[350]	5080[350]	5080[350]	5080[350]	4570[315]	4060[280]	3625[250]	3045[210]
	Peak**	5800[400]	5800[400]	5800[400]	5800[400]	5080[350]	4640[320]	4350[300]	3770[260]
<b>Max. Oil Flow GPM [lpm]</b>	Cont.	33[125]	33[125]	33[125]	33[125]	33[125]	33[125]	33[125]	33[125]
	Int.*	40[150]	40[150]	40[150]	40[150]	40[150]	40[150]	40[150]	40[150]
<b>Max. Inlet Pressure PSI [bar]</b>	Cont.	3920[270]	3920[270]	3920[270]	3920[270]	3920[270]	3920[270]	3920[270]	3920[270]
	Int.*	5370[370]	5370[370]	5370[370]	5370[370]	5370[370]	5370[370]	5370[370]	5370[370]
	Peak**	6100[420]	6100[420]	6100[420]	6100[420]	6100[420]	6100[420]	6100[420]	6100[420]
<b>Max. Return Pressure without Drain Line or Max. Pressure in Drain Line, PSI [bar]</b>	Cont. 0-100 RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
	Cont. 100-300 RPM	580 [40]	580 [40]	580 [40]	580 [40]	580 [40]	580 [40]	580 [40]	580 [40]
	Cont. >300 RPM	290 [20]	290 [20]	290 [20]	290 [20]	290 [20]	-	-	-
	Int.* 0-max. RPM	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]	1100 [75]
<b>Max. Return Pressure with Drain Line PSI [bar]</b>	Cont.	2000[140]	2000[140]	2000[140]	2000[140]	2000[140]	2000[140]	2000[140]	2000[140]
	Int.*	2500[175]	2500[175]	2500[175]	2500[175]	2500[175]	2500[175]	2500[175]	2500[175]
	Peak**	3000[210]	3000[210]	3000[210]	3000[210]	3000[210]	3000[210]	3000[210]	3000[210]
<b>Max. Starting Pressure with Unloaded Shaft, PSI [bar]</b>		90 [6]	90 [6]	90 [6]	90 [6]	90 [6]	90 [6]	90 [6]	90 [6]
<b>Min. Starting Torque lb-in [daNm]</b>		5310[60]	6640[75]	8585[97]	10800[122]	12570[142]	12655[143]	12830[145]	13100[148]
<b>Min. Speed***, [RPM]</b>		5	5	5	5	5	5	5	5
<b>Weight, lb [kg]</b>		59.3 [26,9]	60.2 [27,3]	62 [28,1]	64 [29]	65.5 [29,7]	66.6 [30,2]	65.5 [29,7]	68.4 [31]

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

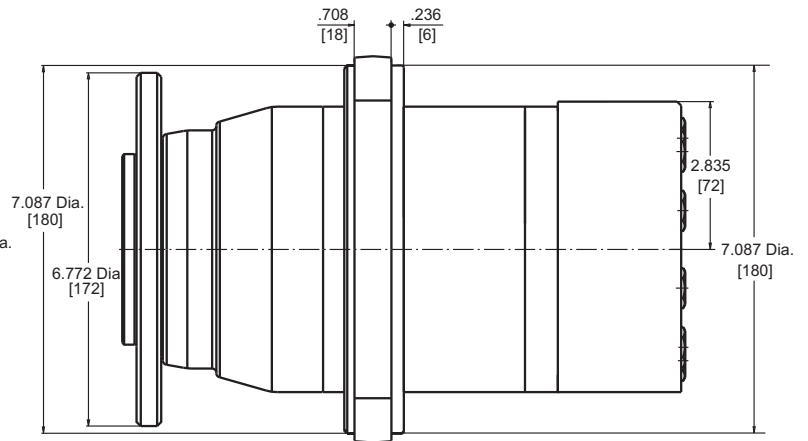
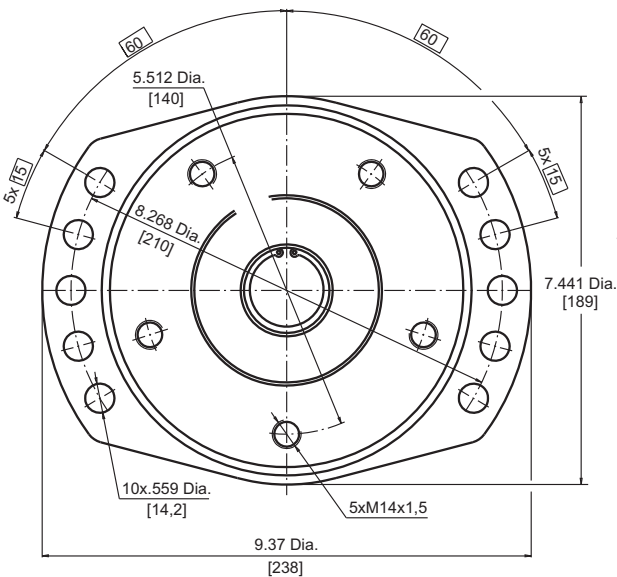
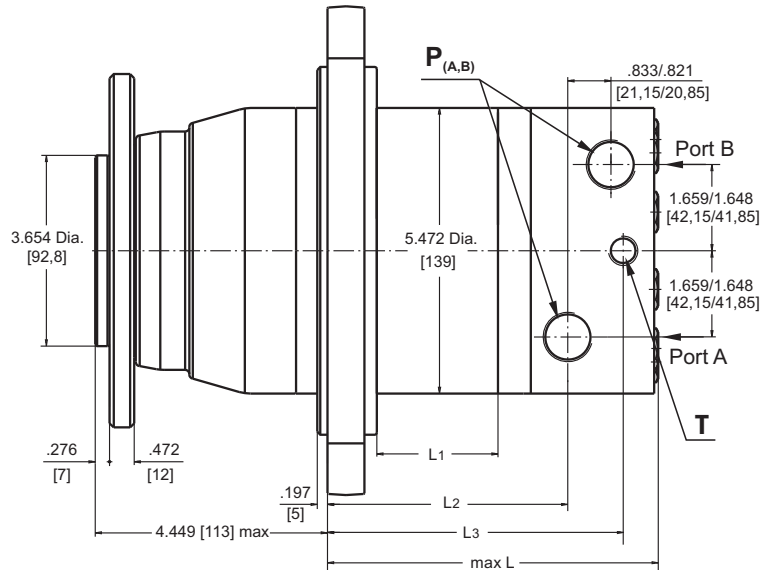
\*\* Peak load: the permissible values may occur for max. 1% of every minute.

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

1. Intermittent speed and intermittent pressure drop must not occur simultaneously.
2. Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
3. Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).  
If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 70 SUS [13 mm<sup>2</sup>/s] at 122°F [50°C].
5. Recommended maximum system operating temperature is 180°F [82°C].
6. To assure optimum motor life fill with fluid prior to loading and run at moderate load and speed for 10-15 minutes.

**DIMENSIONS AND MOUNTING DATA - TMF**

**P<sub>(A,B)</sub>**: 2xG3/4 - .669 in [17 mm] depth  
**T** : G1/4 - .472 in [12 mm] depth



**Warning:** Drain line should always be used.



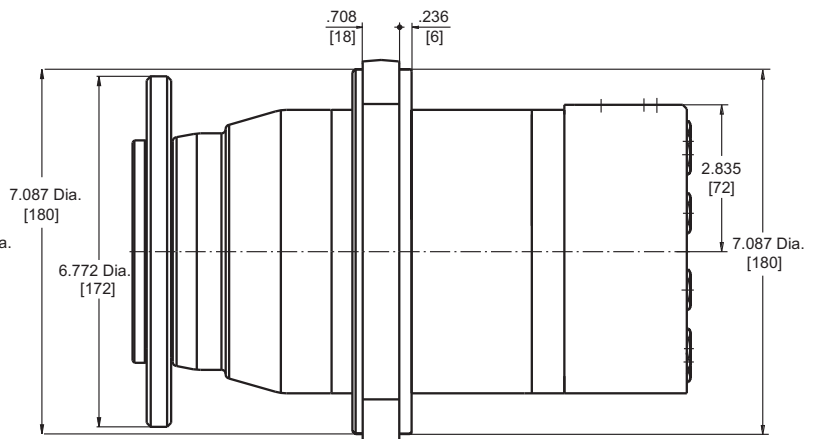
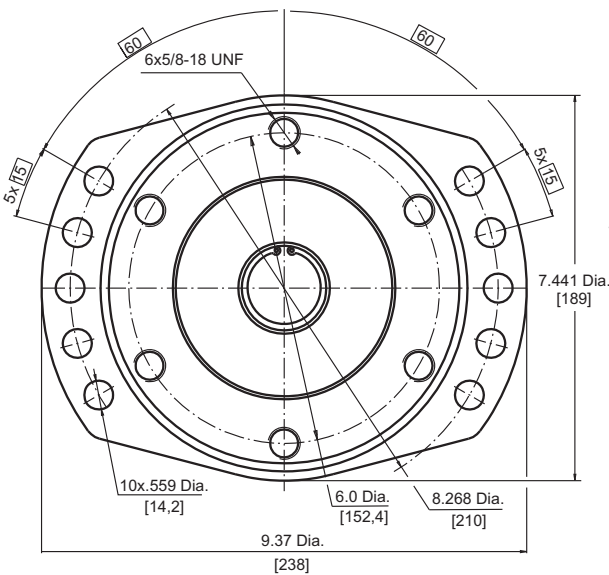
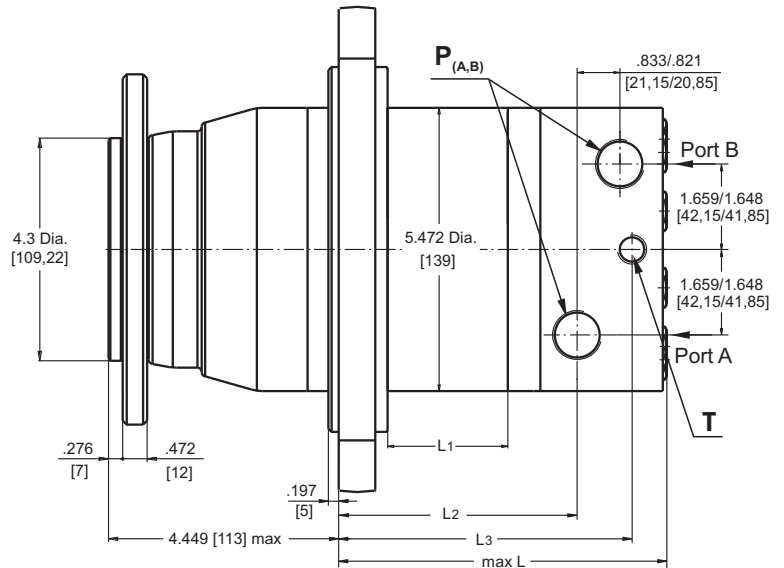
**Standard Rotation**  
 Viewed from Shaft End  
 Port **A** Pressurized - **CW**  
 Port **B** Pressurized - **CCW**  
**Reverse Rotation**  
 Viewed from Shaft End  
 Port **A** Pressurized - **CCW**  
 Port **B** Pressurized - **CW**

Type	L <sub>max</sub> , in [mm]	L <sub>1</sub> , in [mm]	L <sub>2</sub> , in [mm]	L <sub>3</sub> , in [mm]
TMF 200	4.96 [126]	25 [.98]	3.268 [83]	4.34 [110,3]
TMF 250	5.21 [132,3]	1.23 [31,3]	3.516 [89,3]	4.59 [116,6]
TMF 315	5.57 [141,5]	1.59 [40,5]	3.878 [98,5]	4.95 [125,8]
TMF 400	5.98 [152]	2.01 [51]	4.291 [109]	5.37 [136,3]
TMF 470	6.30 [160]	2.32 [59]	4.606 [117]	5.68 [144,3]
TMF 500	6.54 [166]	2.56 [65]	4.843 [123]	5.92 [150,3]
TMF 630	6.38 [162]	2.40 [61]	4.69 [119]	5.76 [146,3]
TMF 725	6.73 [171]	2.76 [70]	5.04 [128]	6.11 [155,3]



**DIMENSIONS AND MOUNTING DATA - TMFA**

**P<sub>(A,B)</sub>** : 2x1 1/16-12 UN, O-ring port  
.669 in [17 mm] depth  
**T** : 9/16-18 UNF, O-ring port  
.472 in [12 mm] depth



**Warning:** Drain line should always be used.



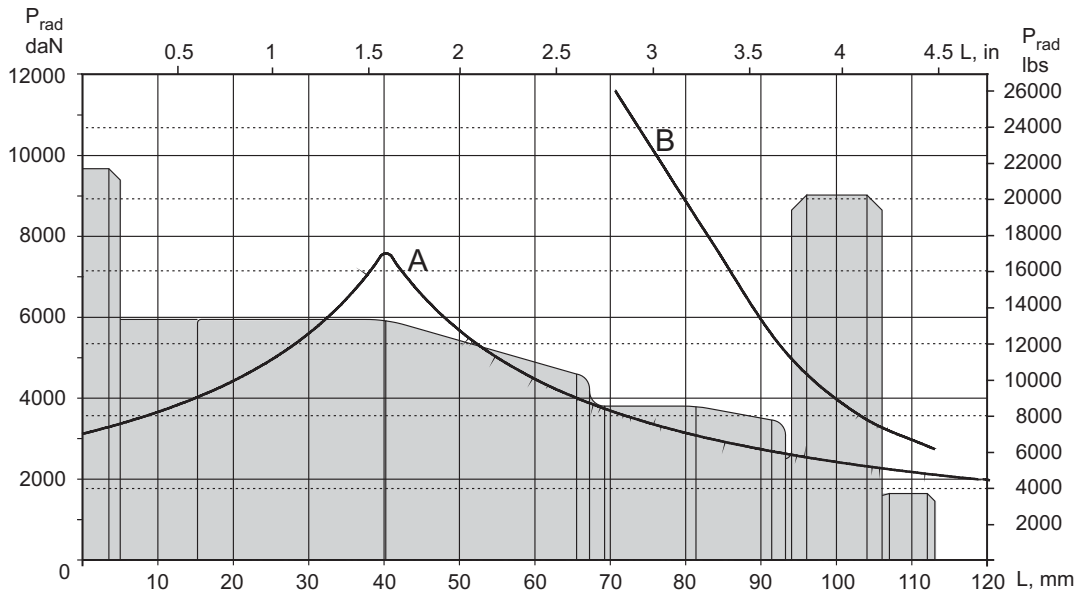
**Standard Rotation**  
Viewed from Shaft End  
Port A Pressurized - CW  
Port B Pressurized - CCW

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

Type	L <sub>max</sub> , in [mm]	L <sub>1</sub> , in [mm]	L <sub>2</sub> , in [mm]	L <sub>3</sub> , in [mm]
TMFA 200	4.96 [126]	25 [.98]	3.268 [83]	4.34 [110,3]
TMFA 250	5.21 [132,3]	1.23 [31,3]	3.516 [89,3]	4.59 [116,6]
TMFA 315	5.57 [141,5]	1.59 [40,5]	3.878 [98,5]	4.95 [125,8]
TMFA 400	5.98 [152]	2.01 [51]	4.291 [109]	5.37 [136,3]
TMFA 470	6.30 [160]	2.32 [59]	4.606 [117]	5.68 [144,3]
TMFA 500	6.54 [166]	2.56 [65]	4.843 [123]	5.92 [150,3]
TMFA 630	6.38 [162]	2.40 [61]	4.69 [119]	5.76 [146,3]
TMFA 725	6.73 [171]	2.76 [70]	5.04 [128]	6.11 [155,3]

**PERMISSIBLE SHAFT LOADS**

The load diagram is valid for an average bearings life of 2000 hours at 100 RPM



**A** - Permissible radial shaft load.  
**B** - Max. radial shaft load. Any shaft load exceeding the values shown by the curve will involve a risk of breakage.

**ORDER CODE**

	1	2	3	4
<b>TMF</b>				

**Pos.1 - Mounting Flange**

omit - Thread hole flange, 5xM12x1,5 on  $\varnothing$ 140

**A** - Thread hole flange, 6x5/8-18 UNF on  $\varnothing$ 152,4

**Pos.2 - Displacement code**

**200** - 12.29 in<sup>3</sup>/rev [201,4 cm<sup>3</sup>/rev]

**250** - 15.36 in<sup>3</sup>/rev [251,8 cm<sup>3</sup>/rev]

**315** - 19.90 in<sup>3</sup>/rev [326,3 cm<sup>3</sup>/rev]

**400** - 25.06 in<sup>3</sup>/rev [410,9 cm<sup>3</sup>/rev]

**470** - 28.97 in<sup>3</sup>/rev [475,0 cm<sup>3</sup>/rev]

**500** - 31.95 in<sup>3</sup>/rev [523,6 cm<sup>3</sup>/rev]

**630** - 38.52 in<sup>3</sup>/rev [631,2 cm<sup>3</sup>/rev]

**725** - 44.20 in<sup>3</sup>/rev [724,3 cm<sup>3</sup>/rev]

**Pos.3 - Special Features [see page 48]**

**Pos.4 - Design Series**

omit - Factory specified

The hydraulic motors are manganophosphatized as standard.