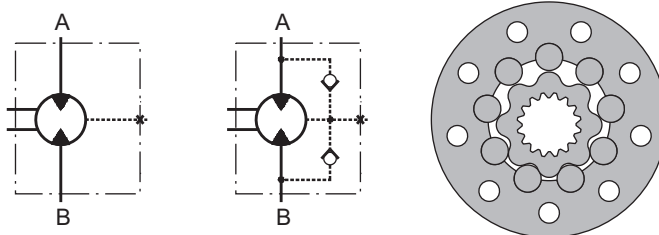


# HYDRAULIC MOTORS TMYF

## APPLICATION

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



## CONTENTS

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## OPTIONS

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

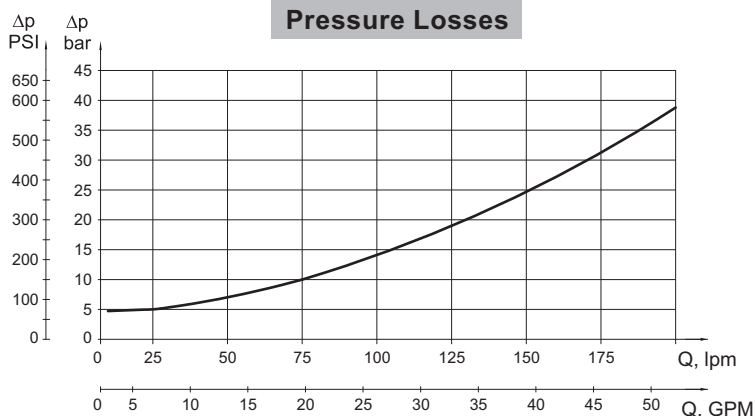
## GENERAL

|                                                                       |                                                                 |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Max. Displacement,</b> cm <sup>3</sup> /rev [in <sup>3</sup> /rev] | 801,8 [48.91]                                                   |
| <b>Max. Speed,</b> [RPM]                                              | 590                                                             |
| <b>Max. Torque,</b> daNm [lb-in]                                      | cont.: 259 [22920] int.: 340 [30090]                            |
| <b>Max. Output,</b> kW [HP]                                           | 65 [87]                                                         |
| <b>Max. Pressure Drop,</b> bar [PSI]                                  | cont.: 250 [3600] int.: 350 [5080]                              |
| <b>Max. Oil Flow,</b> lpm [GPM]                                       | 240 [63.4]                                                      |
| <b>Min. Speed,</b> [RPM]                                              | 5                                                               |
| <b>Permissible Shaft Loads</b> daN [lbs]                              | P <sub>a</sub> =1500 [3300]                                     |
| <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 micron) |

### Oil flow in drain line

| Pressure drop bar [PSI] | Viscosity mm <sup>2</sup> /s [SUS] | Oil flow in drain line lpm [GPM] |
|-------------------------|------------------------------------|----------------------------------|
| 200 [2900]              | 20 [98]                            | 2,5 [.660]                       |
|                         | 35 [164]                           | 1,5 [.400]                       |
| 275 [3990]              | 20 [98]                            | 4 [1.057]                        |
|                         | 35 [164]                           | 2,5 [.660]                       |

### Pressure Losses



## SPECIFICATION DATA

| Type                                                         |        | TMYF 315                      | TMYF 400     | TMYF 500     | TMYF 630      | TMYF 800      |
|--------------------------------------------------------------|--------|-------------------------------|--------------|--------------|---------------|---------------|
| <b>Displacement, cm<sup>3</sup>/rev [in<sup>3</sup>/rev]</b> |        | 314,5 [19.19]                 | 400,9 [24.5] | 499,6 [30.5] | 629,1 [38.38] | 801,8 [48.91] |
| <b>Max. Speed, [RPM]</b>                                     | Cont.  | 480                           | 450          | 400          | 315           | 240           |
|                                                              | Int.*  | 570                           | 590          | 480          | 370           | 290           |
| <b>Max. Torque, daNm [lb-in]</b>                             | Cont.  | 135 [11950]                   | 172 [15220]  | 224 [19820]  | 259 [22920]   | 270 [23900]   |
|                                                              | Int.*  | 160 [14160]                   | 200 [17700]  | 260 [23010]  | 320 [28320]   | 340 [30090]   |
|                                                              | Peak** | 180 [15930]                   | 230 [20355]  | 286 [25315]  | 360 [31860]   | 402 [35580]   |
| <b>Starting Torque, daNm [lb-in]</b>                         |        | 92 [8140]                     | 115 [10180]  | 144 [12745]  | 180 [15930]   | 205 [18140]   |
| <b>Max. Output, kW [HP]</b>                                  | Cont.  | 50 [67]                       | 55 [74]      | 55 [74]      | 50 [67]       | 50 [67]       |
|                                                              | Int.*  | 55 [74]                       | 60 [80]      | 65 [87]      | 60 [80]       | 60 [80]       |
| <b>Max. Pressure Drop, bar [PSI]</b>                         | Cont.  | 300 [4350]                    | 300 [4350]   | 300 [4350]   | 275 [3990]    | 225 [3263]    |
|                                                              | Int.*  | 350 [5080]                    | 350 [5080]   | 350 [5080]   | 350 [5080]    | 300 [4350]    |
|                                                              | Peak** | 400 [5800]                    | 400 [5800]   | 400 [5800]   | 400 [5800]    | 350 [5080]    |
| <b>Max. Oil Flow, lpm [GPM]</b>                              | Cont.  | 150 [39.6]                    | 180 [47.6]   | 200 [52.8]   | 200 [52.8]    | 200 [52.8]    |
|                                                              | Int.*  | 180 [47.6]                    | 240 [63.4]   | 240 [63.4]   | 240 [63.4]    | 240 [63.4]    |
| <b>Max. Inlet Pressure, bar [PSI]</b>                        | Cont.  | 300 [4350]                    | 300 [4350]   | 300 [4350]   | 300 [4350]    | 300 [4350]    |
|                                                              | Int.*  | 380 [5510]                    | 380 [5510]   | 380 [5510]   | 380 [5510]    | 380 [5510]    |
|                                                              | Peak** | 420 [6090]                    | 420 [6090]   | 420 [6090]   | 420 [6090]    | 420 [6090]    |
| <b>Max. Starting Pressure with Unloaded Shaft, bar [PSI]</b> |        | 5 [70]                        | 5 [70]       | 5 [70]       | 5 [70]        | 5 [70]        |
| <b>Max. Return Pressure with Drain Line, bar [PSI]</b>       | Cont.  | 140 [2030]                    |              |              |               |               |
|                                                              | Int.*  | 175 [2540]                    |              |              |               |               |
|                                                              | Peak** | 210 [3046]                    |              |              |               |               |
| <b>Drain line:</b>                                           |        | <b>Should always be used!</b> |              |              |               |               |
| <b>Weight, kg [lb]</b>                                       | TMYFT  | 31,2 [68.8]                   | 31,8 [70.1]  | 32,4 [71.4]  | 34 [74.9]     | 34,5 [76.1]   |
|                                                              | TMYFV  | 38,2 [84.4]                   | 38,8 [85.5]  | 39,4 [86.9]  | 41 [90.4]     | 41,5 [91.5]   |

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

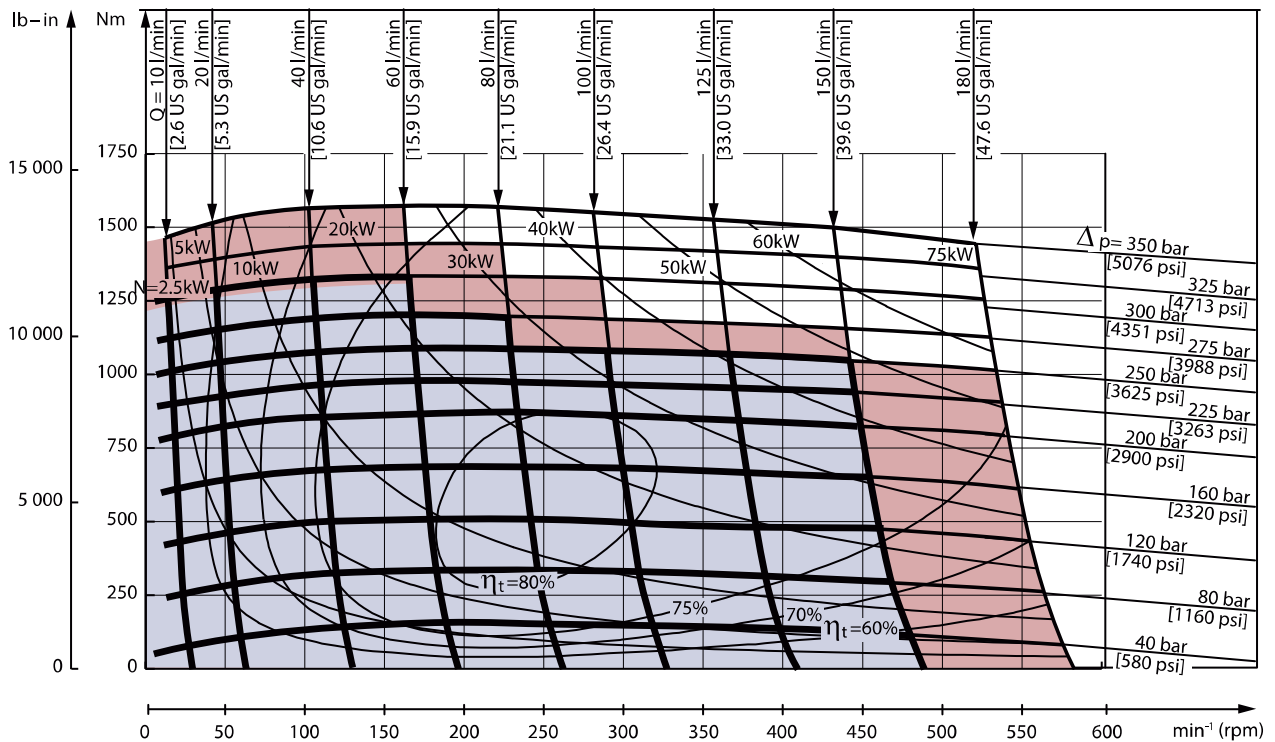
\*\* Peak load: the permissible values may occur for max. 1% of every minute.

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

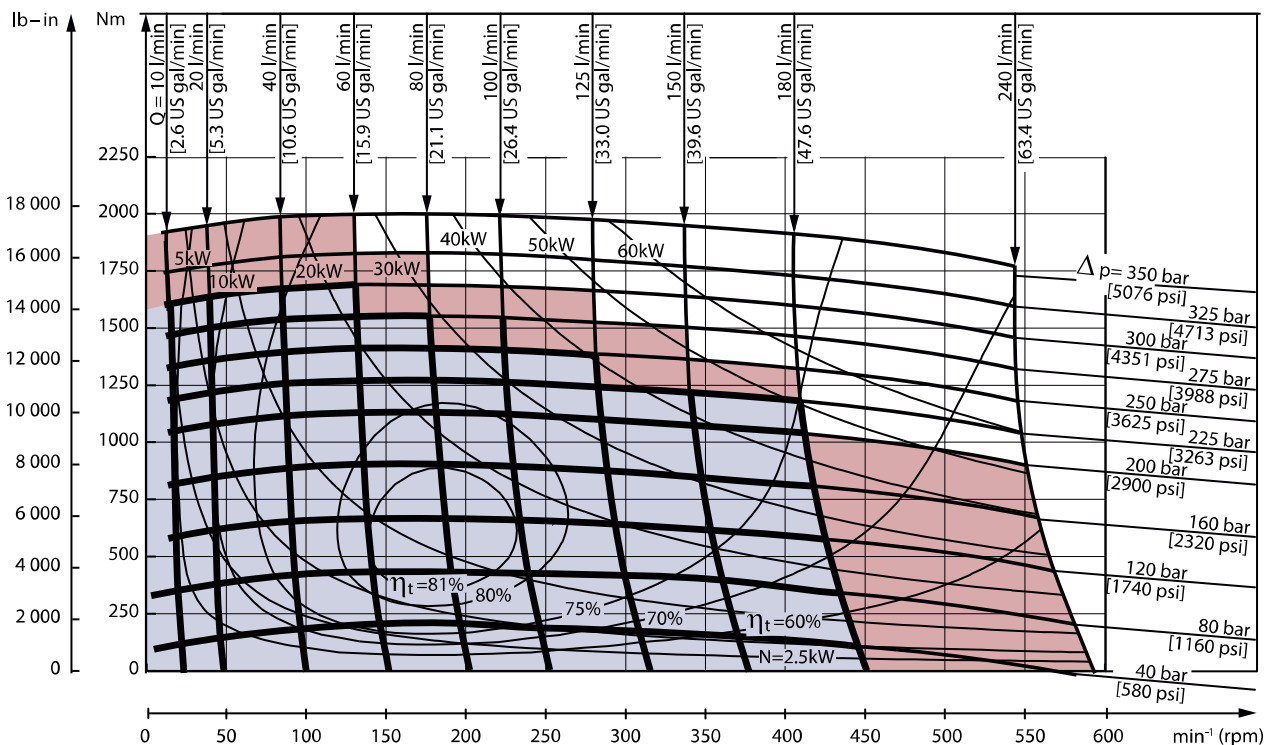
- Intermittent speed and intermittent pressure must not occur simultaneously.
- Recommended filtration is per ISO cleanliness code 20/16. A nominal filtration of 25 micron or better.
- Recommend using a premium quality, anti-wear type mineral based hydraulic oil HLP(DIN51524) or HM (ISO 6743/4).  
If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

## FUNCTION DIAGRAMS

### TMYF 315



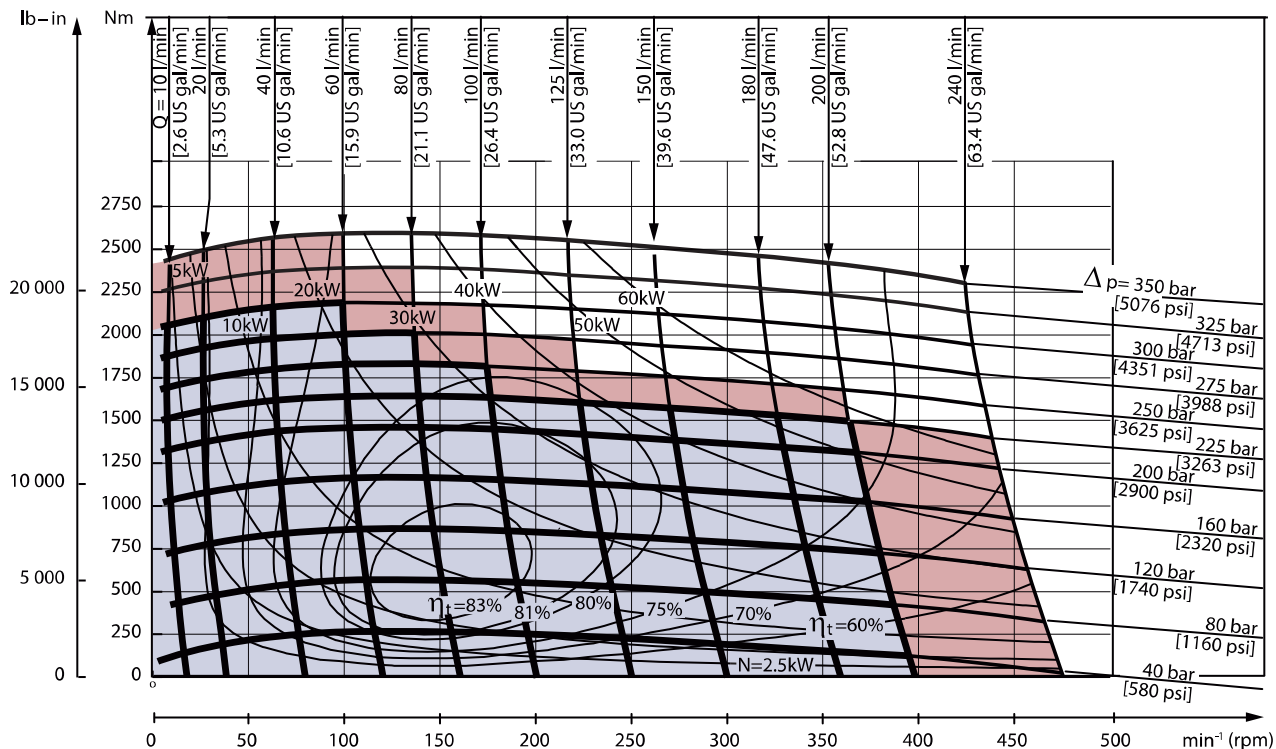
### TMYF 400



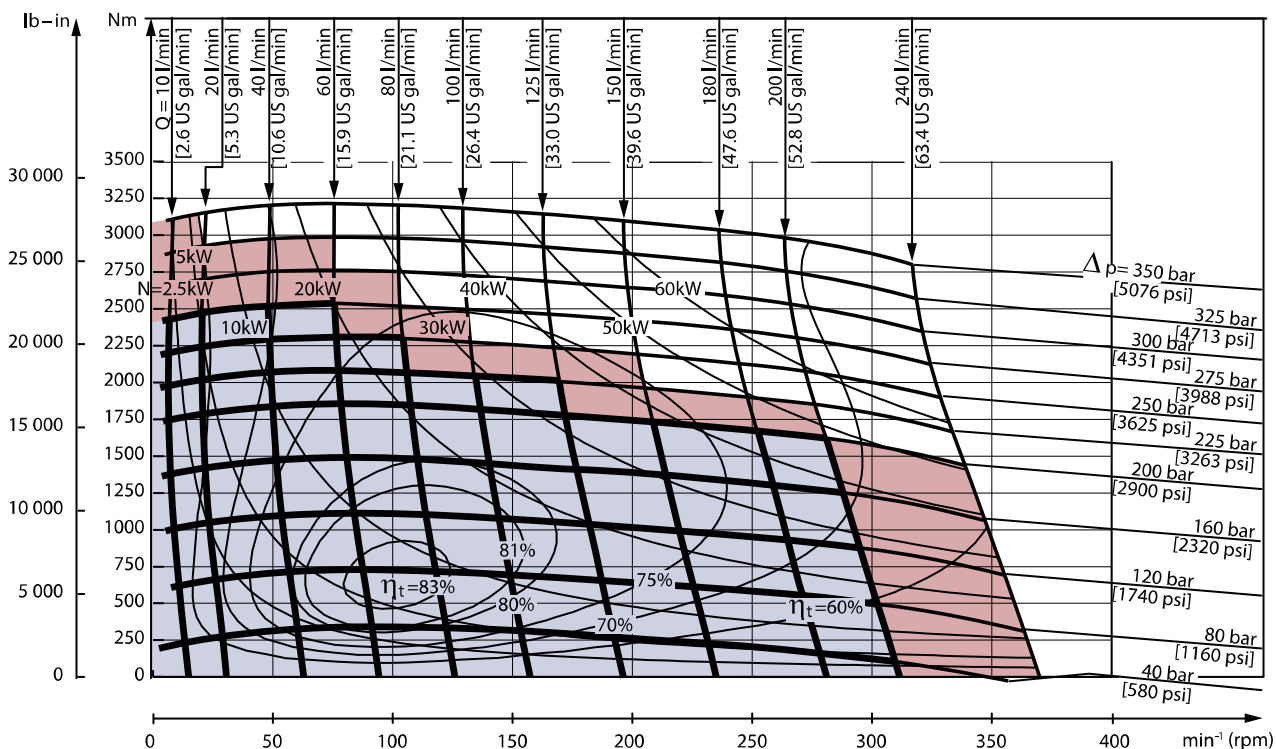
The function diagrams data is for average performance of randomly selected motors at back pressure 5÷10 bar [72.5 PSI÷145 PSI] and oil with viscosity of 32 mm<sup>2</sup>/s [150 SUS] at 50°C [122°F].

## FUNCTION DIAGRAMS

### TMYF 500



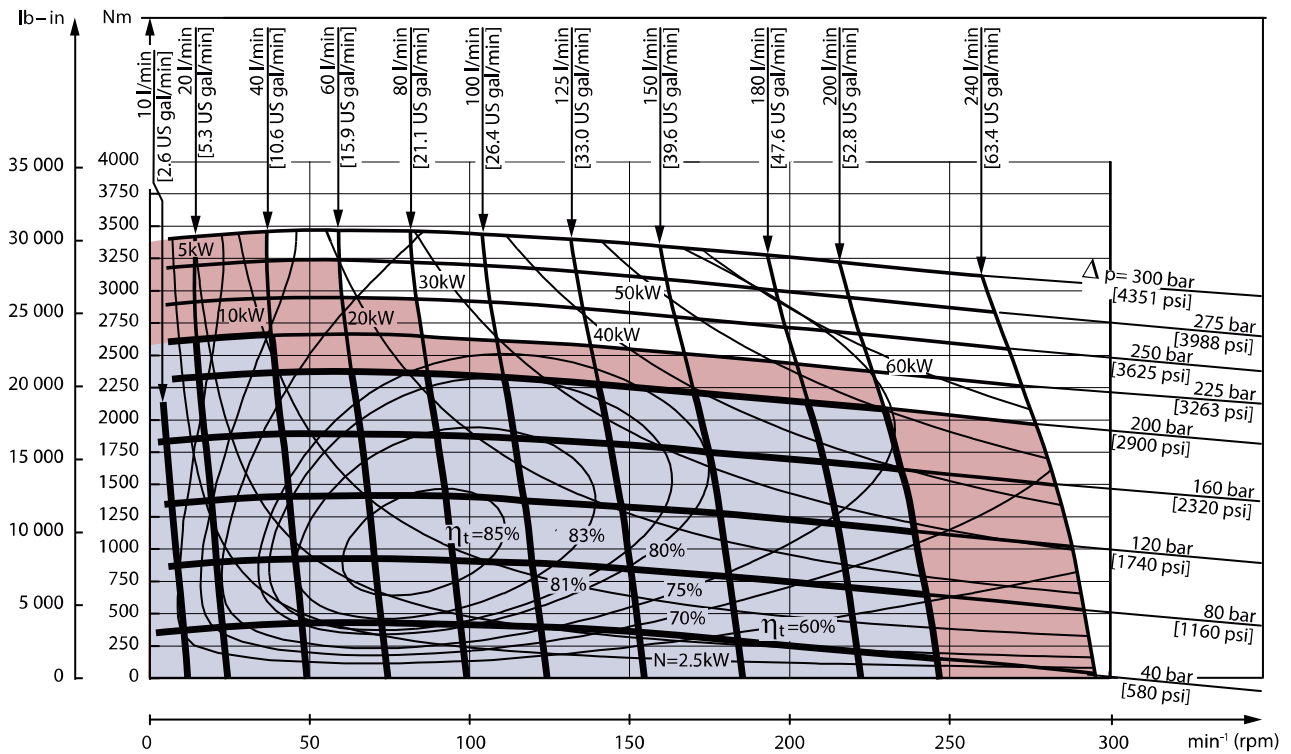
### TMYF 630



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

**FUNCTION DIAGRAMS**

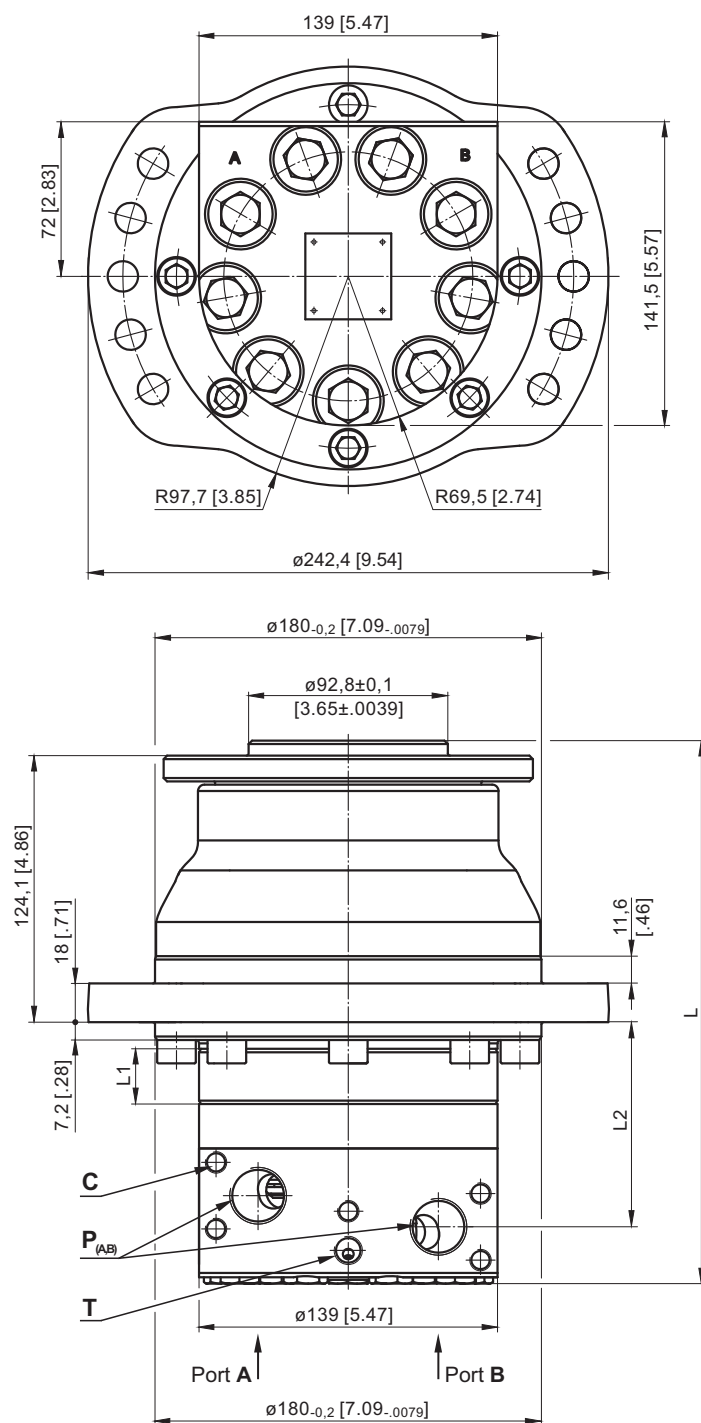
**TMYF 800**



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

## OUTLINE DIMENSIONS REFERENCE

**TMYFT...5...**



|                          | Versions                        |                                                   |                                 |
|--------------------------|---------------------------------|---------------------------------------------------|---------------------------------|
|                          | 2                               | 4                                                 | 5                               |
| <b>C</b>                 | -                               | -                                                 | 5xM10                           |
| <b>P<sub>(A,B)</sub></b> | 2xG <sup>3</sup> / <sub>4</sub> | 2x1 <sup>1</sup> / <sub>16</sub> -12 UN<br>O-ring | 2xG <sup>3</sup> / <sub>4</sub> |
| <b>T</b>                 | G <sup>1</sup> / <sub>4</sub>   | <sup>9</sup> / <sub>16</sub> -18 UNF              | G <sup>1</sup> / <sub>4</sub>   |

### Standard Rotation

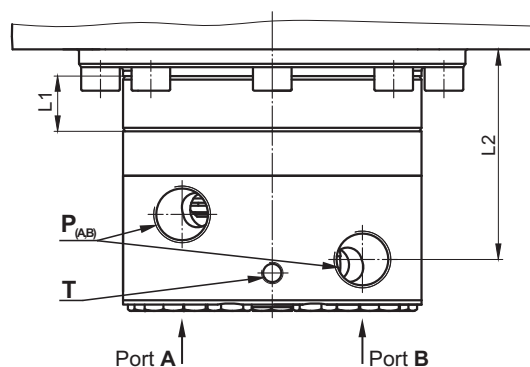
Viewed from Shaft End  
Port **A** Pressurized - **CW**  
Port **B** Pressurized - **CCW**

### Reverse Rotation

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



**TMYFT...2(4)...**

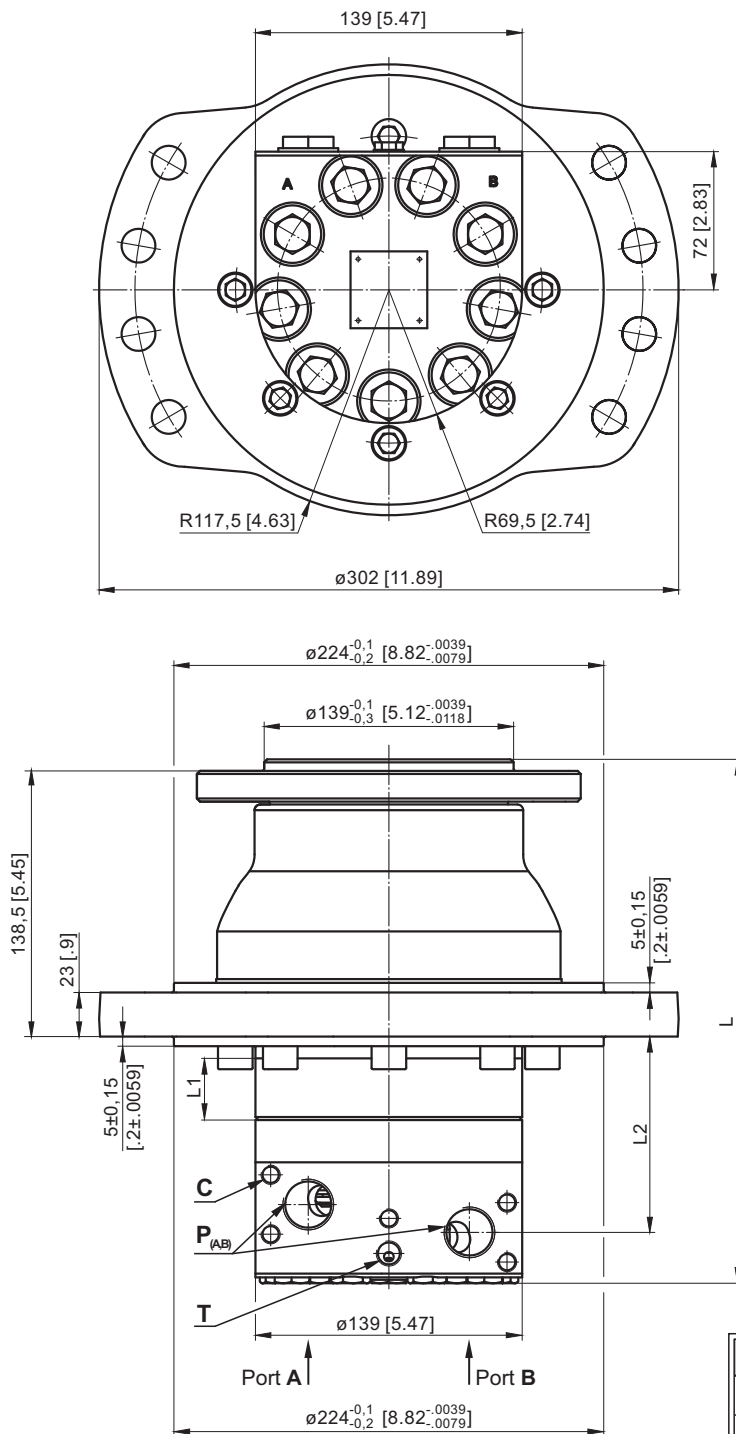


| Type          | L <sub>max</sub> , mm [in] | L <sub>2</sub> , mm [in] | L <sub>1</sub> , mm [in] |
|---------------|----------------------------|--------------------------|--------------------------|
| TMYFT 315...5 | 253,5 [ 9.98]              | 95,5 [3.76]              | 25,5 [1.00]              |
| TMYFT 400...5 | 260,5 [10.26]              | 102,5 [4.04]             | 32,5 [1.28]              |
| TMYFT 500...5 | 268,5 [10.58]              | 110,5 [4.35]             | 40,5 [1.59]              |
| TMYFT 630...5 | 279,0 [10.98]              | 121,0 [4.76]             | 51,0 [2.00]              |
| TMYFT 800...5 | 293,0 [11.54]              | 135,0 [5.31]             | 65,0 [2.56]              |

| Type             | L <sub>max</sub> , mm [in] | L <sub>2</sub> , mm [in] | L <sub>1</sub> , mm [in] |
|------------------|----------------------------|--------------------------|--------------------------|
| TMYFT 315...2(4) | 253,5 [ 9.98]              | 98,0 [3.86]              | 25,5 [1.00]              |
| TMYFT 400...2(4) | 260,5 [10.26]              | 105,0 [4.13]             | 32,5 [1.28]              |
| TMYFT 500...2(4) | 268,5 [10.58]              | 113,0 [4.45]             | 40,5 [1.59]              |
| TMYFT 630...2(4) | 279,0 [10.98]              | 123,5 [4.86]             | 51,0 [2.00]              |
| TMYFT 800...2(4) | 293,0 [11.54]              | 137,5 [5.41]             | 65,0 [2.56]              |

**OUTLINE DIMENSIONS REFERENCE**

**TMYFV...5...**



|                          | Versions                        |                                                   |                                 |
|--------------------------|---------------------------------|---------------------------------------------------|---------------------------------|
|                          | 2                               | 4                                                 | 5                               |
| <b>C</b>                 | -                               | -                                                 | 5xM10                           |
| <b>P<sub>(A,B)</sub></b> | 2xG <sup>3</sup> / <sub>4</sub> | 2x1 <sup>1</sup> / <sub>16</sub> -12 UN<br>O-ring | 2xG <sup>3</sup> / <sub>4</sub> |
| <b>T</b>                 | G <sup>1</sup> / <sub>4</sub>   | 9 <sup>1</sup> / <sub>16</sub> -18 UNF            | G <sup>1</sup> / <sub>4</sub>   |

**Standard Rotation**

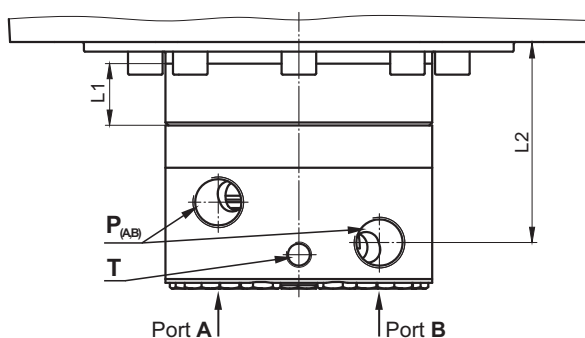
Viewed from Shaft End  
Port A Pressurized - **CW**  
Port B Pressurized - **CCW**

**Reverse Rotation**

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



**TMYFV...2(4)...**

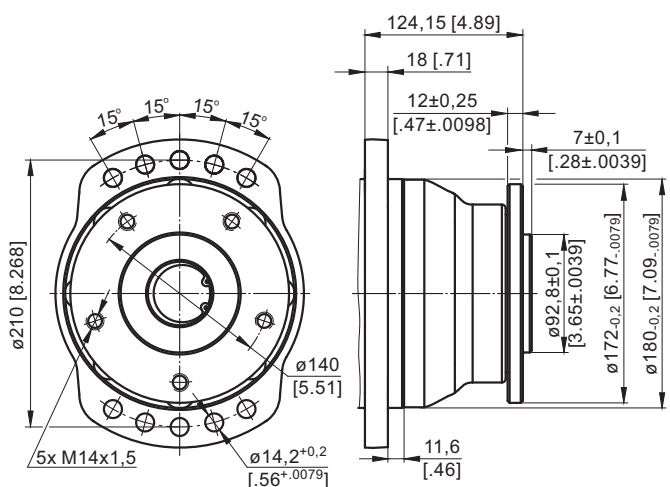


| Type          | L <sub>max</sub> , mm [in] | L <sub>2</sub> , mm [in] | L <sub>1</sub> , mm [in] |
|---------------|----------------------------|--------------------------|--------------------------|
| TMYFV 315...5 | 266,0 [10.47]              | 95 [3.74]                | 25,5 [1.00]              |
| TMYFV 400...5 | 273,0 [10.75]              | 102 [4.02]               | 32,5 [1.28]              |
| TMYFV 500...5 | 281,0 [11.06]              | 110 [4.33]               | 40,5 [1.59]              |
| TMYFV 630...5 | 291,5 [11.48]              | 121 [4.76]               | 51,0 [2.00]              |
| TMYFV 800...5 | 305,5 [12.03]              | 135 [5.31]               | 65,0 [2.56]              |

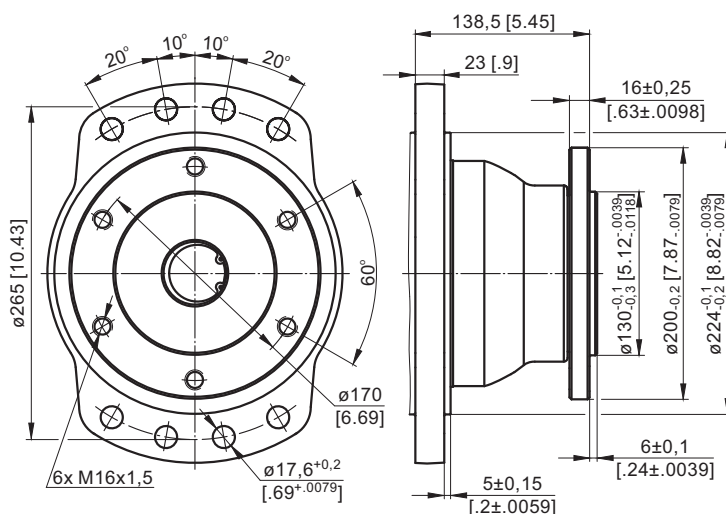
| Type             | L <sub>max</sub> , mm [in] | L <sub>2</sub> , mm [in] | L <sub>1</sub> , mm [in] |
|------------------|----------------------------|--------------------------|--------------------------|
| TMYFV 315...2(4) | 266,0 [10.47]              | 97,5 [3.84]              | 25,5 [1.00]              |
| TMYFV 400...2(4) | 273,0 [10.75]              | 104,5 [4.11]             | 32,5 [1.28]              |
| TMYFV 500...2(4) | 281,0 [11.06]              | 112,5 [4.43]             | 40,5 [1.59]              |
| TMYFV 630...2(4) | 291,5 [11.48]              | 123,5 [4.86]             | 51,0 [2.00]              |
| TMYFV 800...2(4) | 305,5 [12.03]              | 137,5 [5.41]             | 65,0 [2.56]              |

## MOUNTING

### TMYFT

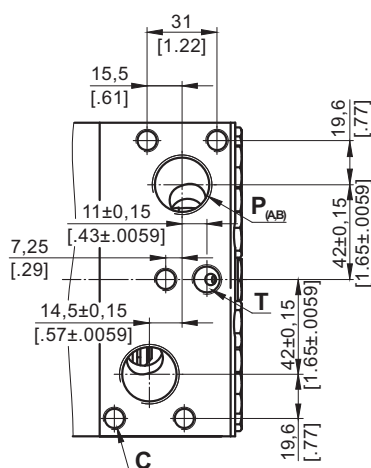


### TMYFV

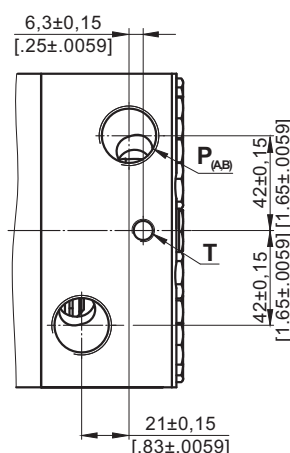


## PORTS

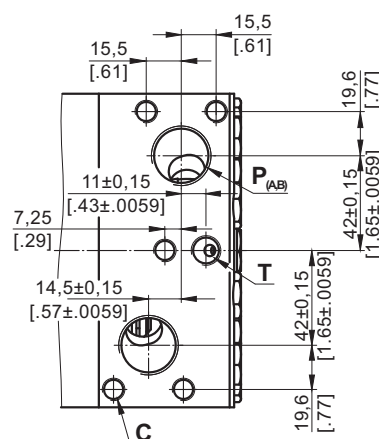
### TMYFT...5...



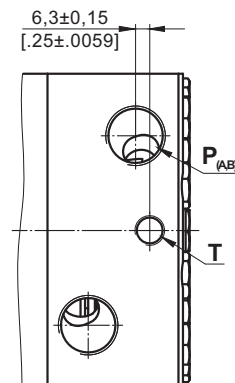
### TMYFT...2(4)...



### TMYFV...5...



### TMYFV...2(4)...



|                    | Versions                        |                                                   |                                 |
|--------------------|---------------------------------|---------------------------------------------------|---------------------------------|
|                    | 2                               | 4                                                 | 5                               |
| C                  | -                               | -                                                 | 5xM10                           |
| P <sub>(A,B)</sub> | 2xG <sup>3</sup> / <sub>4</sub> | 2x1 <sup>1</sup> / <sub>16</sub> -12 UN<br>O-ring | 2xG <sup>3</sup> / <sub>4</sub> |
| T                  | G <sup>1</sup> / <sub>4</sub>   | 9 <sup>1</sup> / <sub>16</sub> -18 UNF            | G <sup>1</sup> / <sub>4</sub>   |



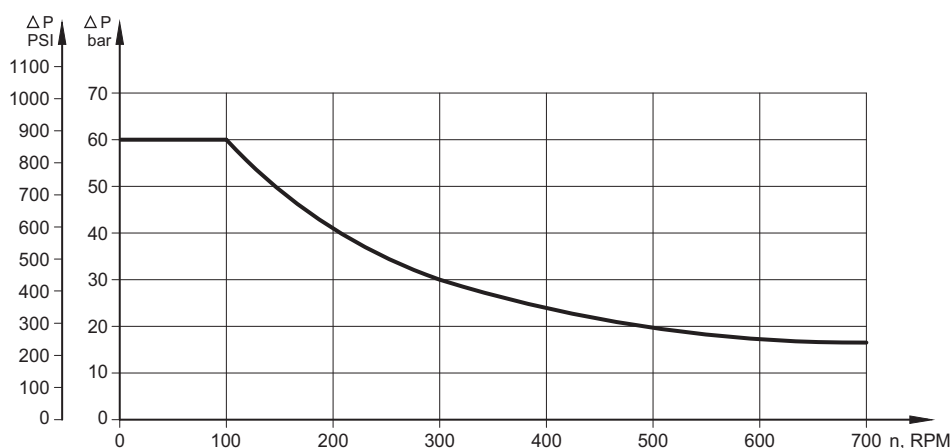
#### Standard Rotation

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

#### Reverse Rotation

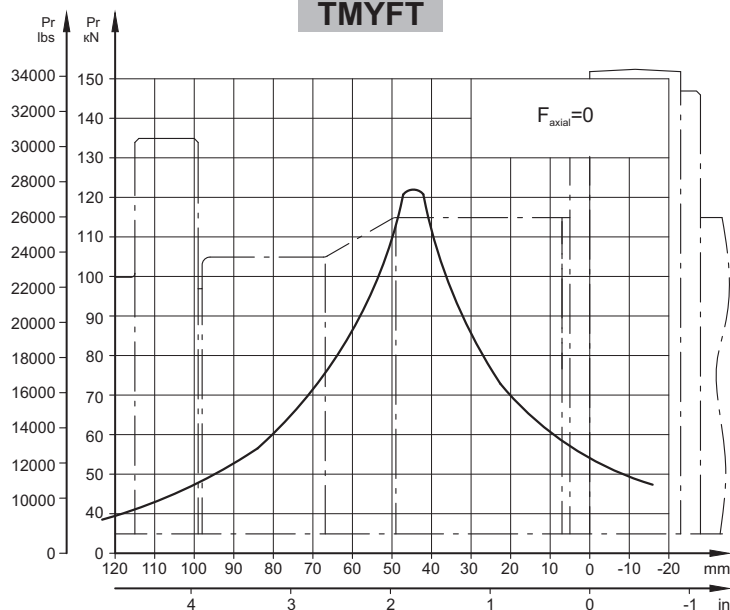
Viewed from Shaft End  
Port A Pressurized - CCW  
Port B Pressurized - CW

## MAX. PERMISSIBLE SHAFT SEAL PRESSURE



## PERMISSIBLE SHAFT LOADS

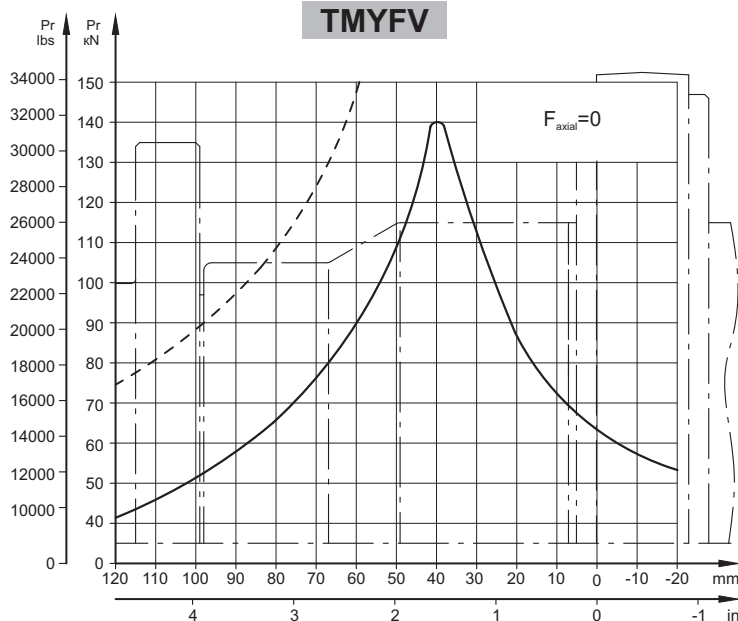
### TMYFT



| n<br>min <sup>-1</sup> | Correction factor |
|------------------------|-------------------|
| 50                     | 1,23              |
| 100                    | 1,00              |
| 200                    | 0,81              |
| 300                    | 0,72              |
| 400                    | 0,66              |
| 500                    | 0,62              |

The curve of the radial load is based on the bearing life L10 by ISO 281 (2000 h at 100 min<sup>-1</sup> or 12 000 000 revolutions). For calculation of the radial load at speed different than 100 min<sup>-1</sup> must be used the coefficients shown in the table.

### TMYFV



## ORDER CODE

|   |   |   |   |   |    |
|---|---|---|---|---|----|
| 1 | 2 | 3 | 4 | 5 | 6  |
| T | M | Y | F | - | HD |

#### Pos.1 - Mounting Flange

- T** - 10-Bolt flange, spigot dia. ø180, BC ø210
- V** - 8-Bolt flange, spigot dia. ø200, BC ø265

#### Pos.2 - Displacement code

- 315** - 314,5 cm<sup>3</sup>/rev [19.19 in<sup>3</sup>/rev]
- 400** - 400,9 cm<sup>3</sup>/rev [24.50 in<sup>3</sup>/rev]
- 500** - 499,6 cm<sup>3</sup>/rev [30.50 in<sup>3</sup>/rev]
- 630** - 629,1 cm<sup>3</sup>/rev [38.38 in<sup>3</sup>/rev]
- 800** - 801,8 cm<sup>3</sup>/rev [48.91 in<sup>3</sup>/rev]

#### Pos.3 - Port Size/Type [standard manifold to each]

- 2** - side ports, 2xG3/4, G1/4, BSP thread, ISO 228
- 4** - side ports, 2x1<sup>1</sup>/<sub>16</sub>-12 UN, O-ring, 9/16-18 UNF
- 5** - side ports, 2xG3/4, G1/4, 5xM10

#### Pos.4 - Check Valves

- omit - without check valves
- 1\*** - with check valves

#### Pos.5 - Special Features

- HD** - Reinforced motor **HD\*\***

For Other **Special Features** see [page 69](#)

#### Pos.6 - Design Series

- omit - without check valves

**NOTES:** \* Not for Port Size Version 5!

\*\* Drain line should always be used.

The hydraulic motors are mangano-phosphatized as standard.