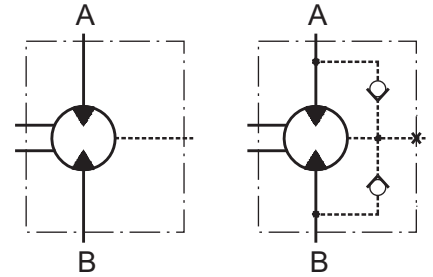


HYDRAULIC MOTORS MTK



APPLICATION

- » Conveyors
- » Metal working machines
- » Agricultural machines
- » Road building machines
- » Mining machinery
- » Food industries
- » Special vehicles
- » Plastic and rubber machinery etc.



CONTENTS

| | |
|-------------------------------|-------|
| Specification data | 9 |
| Dimensions and mounting | 10÷13 |
| Shaft extensions | 14 |
| Permissible shaft loads | 15 |
| Order code | 16 |

OPTIONS

- » Model - Disc valve, roll-gerotor
- » Flange mount with wheel mount
- » Side and rear ports
- » Shafts - straight, splined and tapered
- » Metric, SAE and BSPP ports
- » Other special features

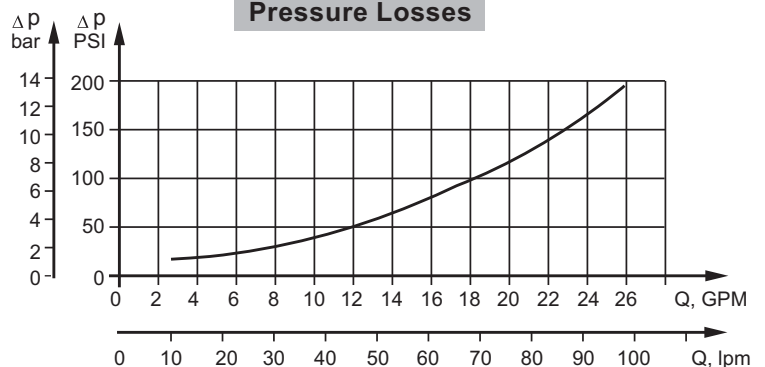
GENERAL

| | | |
|--|---|--|
| Displacement, | in ³ /rev [cm ³ /rev] | 9.63÷30.7 [157,9÷502,4] |
| Max. Speed, | RPM | 159÷505 |
| Max. Torque, | lb-in [daNm] | 5045÷9650 [57÷109] |
| Max. Output, | HP [kW] | 30 [22] |
| Max. Pressure Drop, | PSI [bar] | 2320÷3626 [160÷250] |
| Max. Oil Flow, | GPM [lpm] | 21 [80] |
| Min. Speed, | RPM | 5÷10 |
| Permissible Shaft Loads, | lb [daN] | Pa=2250 [1000] |
| Pressure fluid | | Mineral based- HLP(DIN 51524) or HM(ISO 6743/4) |
| Temperature range, | °F [°C] | -22÷194 [-30÷90] |
| 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 | MTK 160 | MTK 200 | MTK 250 | MTK 315 | MTK 400 | MTK 470 | MTK 500 | |
|---|--------------------------------|------------------|------------------|-----------------|-----------------|-----------------|------------------|-------------|
| Displacement, in ³ /rev [cm ³ /rev] | 9.63 [157,9] | 12.28 [201,3] | 15.38 [252,2] | 19.2 [314,9] | 24.2 [396,8] | 28.7 [470,5] | 30.65 [502,4] | |
| Max. Speed, [RPM] | Cont. | 505 | 400 | 320 | 255 | 200 | 170 | 159 |
| | Int.* | 630 | 500 | 400 | 315 | 250 | 210 | 199 |
| Max. Torque, lb-in [daNm] | Cont. | 5045 [57] | 6373 [72] | 8055 [91] | 9293 [105] | 9470 [107] | 9028 [102] | 9648 [109] |
| | Int.* | 6420 [72,5] | 8143 [92] | 9470 [107] | 11595 [131] | 12390 [140] | 11772 [133] | 12037 [136] |
| Max. Output, HP [kW] | Cont. | 29.5 [22] | 29.5 [22] | 28.2 [21] | 26.8 [20] | 23.5 [17,5] | 18.8 [14] | 18.8 [14] |
| | Int.* | 36.2 [27] | 36.2 [27] | 33.5 [25] | 31.5 [23,5] | 29.5 [22] | 23.5 [17,5] | 22.8 [17] |
| Max. Pressure Drop, PSI [bar] | Cont. | 3626 [250] | 3626 [250] | 3626 [250] | 3626 [250] | 2900 [200] | 2320 [160] | 2320 [160] |
| | Int.* | 4714 [325] | 4714 [325] | 4350 [300] | 4350 [300] | 3626 [250] | 2900 [200] | 2900 [200] |
| Max. Inlet Pressure, PSI [bar] | Cont. | 3626 [250] | | | | | | |
| | Int.* | 5077 [350] | | | | | | |
| Max. Oil Flow, GPM [lpm] | Cont. | 21.1 [80] | | | | | | |
| | Int.* | 26.4 [100] | | | | | | |
| Max. Starting Pressure with Unloaded Shaft, PSI [bar] | | 116 [8] | 116 [8] | 102 [7] | 102 [7] | 102 [7] | 102 [7] | 102 [7] |
| Min. Starting Torque, lb-in [daNm] | at max. pressure drop cont. | 3806 [43] | 4780 [54] | 6020 [68] | 6992 [79] | 7080 [80] | 7346 [83] | 7435 [84] |
| | at max. pressure drop int.* | 4824 [54,5] | 6107 [69] | 7080 [80] | 8720 [98,5] | 9294 [105] | 9294 [105] | 9294 [105] |
| Max. Return Pressure without Drain Line, PSI [bar] | | see diagram | | | | | | |
| Max. Return Pressure with Drain Line, PSI [bar] | Cont. | 2030 [140] | | | | | | |
| | Int.* | 2540 [175] | | | | | | |
| | Peak* | 3046 [210] | | | | | | |

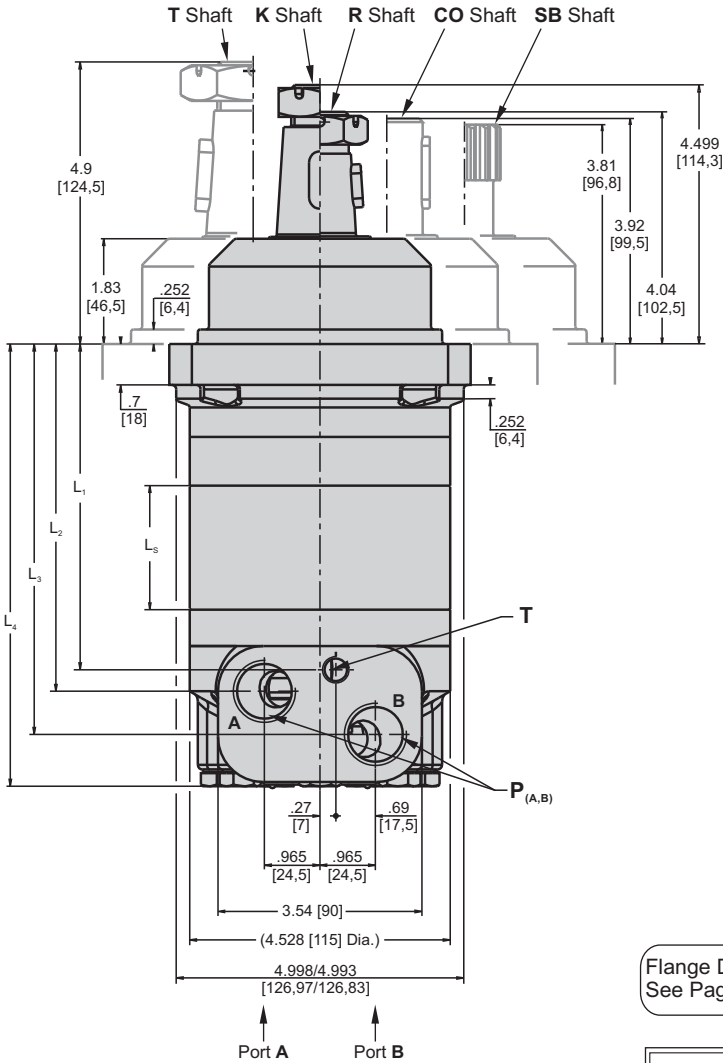
* Intermittent operation: the permissible values may occur for max. 10% of every minute.

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

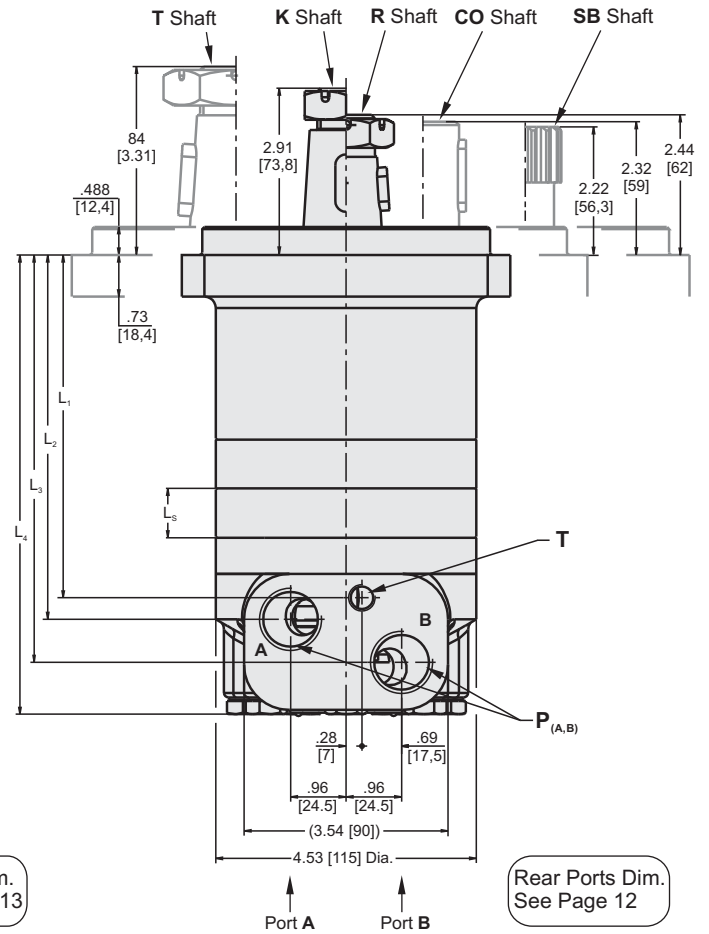
*** For speeds of 5 RPM lower than given, consult factory or your regional manager.

1. Intermittent speed and intermittent pressure 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(ISO6743/4).
If using synthetic fluids consult the factory for alternative seal materials.
4. Recommended minimum oil viscosity 70 SUS [13 cm³/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 - MTK W and MTK C

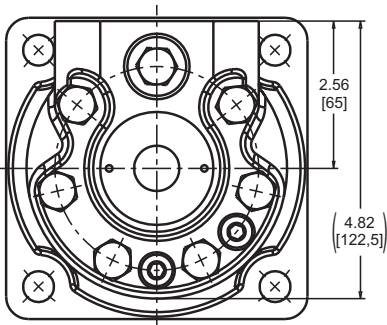


Shaft Dim.
See Page 14



Flange Dim.
See Page 13

Rear Ports Dim.
See Page 12



| | Versions | | | | |
|----------------|----------|---------|---------------|---------|--------------|
| | Side | | | Rear | |
| | 2 | 3 | 4 | 6 | 8 |
| P (A,B) | 2xG 3/4 | 2xM27x2 | 2x1 1/16-12UN | 2xG 1/2 | 2x 7/8-14UNF |
| T | G 1/4 | M14x1,5 | 7/16-20UNF | G 1/4 | 7/16-20UNF |

| Type | L _S , in [mm] |
|-----------------|--------------------------|
| MTKW160 MTKC160 | .86 [21,8] |
| MTKW200 MTKC200 | 1.09 [27,8] |
| MTKW250 MTKC250 | 1.37 [34,8] |
| MTKW315 MTKC315 | 1.71 [43,5] |
| MTKW400 MTKC400 | 2.16 [54,8] |
| MTKW470 MTKC470 | 2.56 [65,0] |
| MTKW500 MTKC500 | 2.73 [69,4] |

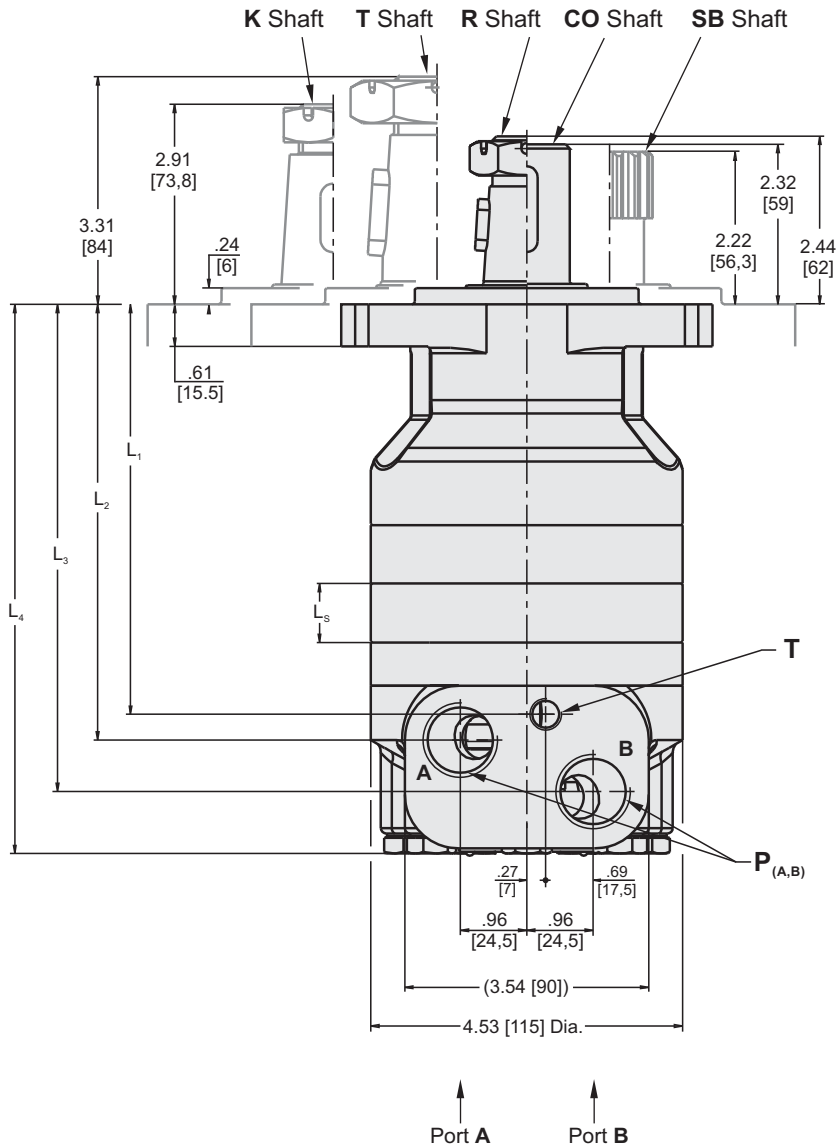


Standard Rotation
Viewed from Shaft End
Port A Pressurized - **CW**
Port B Pressurized - **CCW**

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

| Type | L ₁ , in [mm] | L ₂ , in [mm] | L ₃ , in [mm] | L ₄ , in [mm] | Type | L ₁ , in [mm] | L ₂ , in [mm] | L ₃ , in [mm] | L ₄ , in [mm] |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|---------|--------------------------|--------------------------|--------------------------|--------------------------|
| MTKW160 | 4.36 [110,8] | 4.74 [120,3] | 5.48 [139,3] | 6.39 [162,2] | MTKC160 | 5.96 [151,3] | 6.33 [160,8] | 7.08 [179,8] | 7.98 [202,7] |
| MTKW200 | 4.59 [116,8] | 4.97 [126,3] | 5.72 [145,3] | 6.62 [168,2] | MTKC200 | 6.19 [157,3] | 6.57 [166,8] | 7.32 [185,8] | 8.22 [208,7] |
| MTKW250 | 4.87 [123,8] | 5.25 [133,3] | 5.99 [152,3] | 6.89 [175,2] | MTKC250 | 6.47 [164,3] | 6.84 [173,8] | 7.59 [192,8] | 8.49 [215,7] |
| MTKW315 | 5.22 [132,5] | 5.59 [142,0] | 6.34 [161,0] | 7.24 [183,9] | MTKC315 | 6.81 [173,0] | 7.19 [182,5] | 7.93 [201,5] | 8.84 [224,4] |
| MTKW400 | 5.66 [143,8] | 6.04 [153,3] | 6.78 [172,3] | 7.69 [195,2] | MTKC400 | 7.26 [184,3] | 7.63 [193,8] | 8.38 [212,8] | 9.28 [235,7] |
| MTKW470 | 6.06 [154,0] | 6.44 [163,5] | 7.19 [182,5] | 8.09 [205,4] | MTKC470 | 7.66 [194,5] | 8.03 [204,0] | 8.78 [223,0] | 9.68 [245,9] |
| MTKW500 | 6.24 [158,4] | 6.61 [167,9] | 7.36 [186,9] | 8.26 [209,8] | MTKC500 | 7.83 [198,9] | 8.20 [208,4] | 8.95 [227,4] | 9.85 [250,3] |

DIMENSIONS - MTK F



Standard Rotation

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

Reverse Rotation

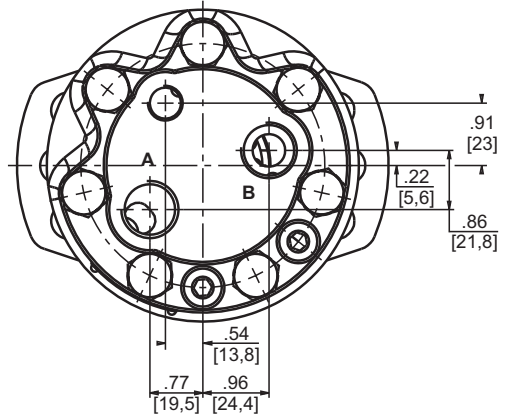
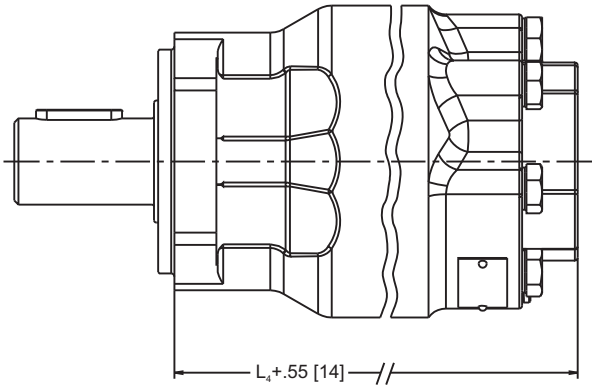
Viewed from Shaft End
Port A Pressurized - **CCW**
Port B Pressurized - **CW**

| | Versions | | | | |
|----------------|----------|---------|--|---------|---------------------------------------|
| | Side | | | Rear | |
| | 2 | 3 | 4 | 6 | 8 |
| P (A,B) | 2xG 3/4 | 2xM27x2 | 2x1 ¹ / ₁₆ -12UN | 2xG 1/2 | 2x ⁷ / ₈ -14UNF |
| T | G 1/4 | M14x1,5 | ⁷ / ₁₆ -20UNF | G 1/4 | ⁷ / ₁₆ -20UNF |

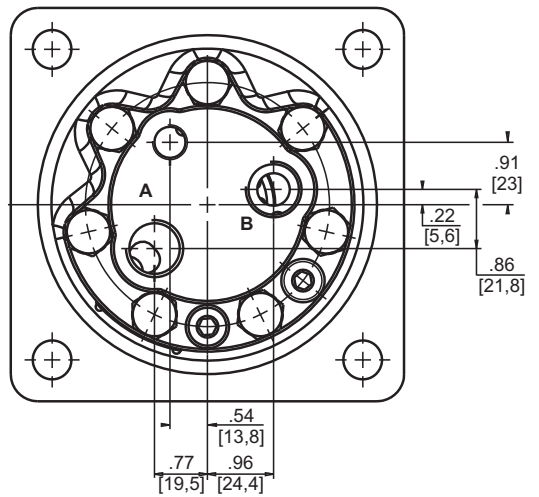
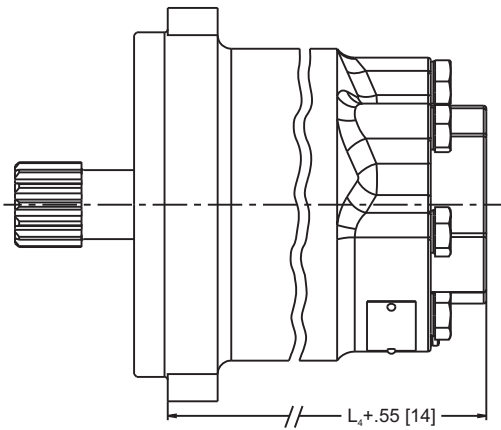
| Type | L ₁ , in [mm] | L ₂ , in [mm] | L ₃ , in [mm] | L ₄ , in [mm] | L _s , in [mm] |
|----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| MTKF 160 | 5.96 [151,3] | 6.33 [160,8] | 7.08 [179,8] | 7.98 [202,7] | .86 [21,8] |
| MTKF 200 | 6.19 [157,3] | 6.57 [166,8] | 7.32 [185,8] | 8.22 [208,7] | 1.09 [27,8] |
| MTKF 250 | 6.47 [164,3] | 6.84 [173,8] | 7.59 [192,8] | 8.49 [215,7] | 1.37 [34,8] |
| MTKF 315 | 6.81 [173,0] | 7.19 [182,5] | 7.93 [201,5] | 8.84 [224,4] | 1.71 [43,5] |
| MTKF 400 | 7.26 [184,3] | 7.63 [193,8] | 8.38 [212,8] | 9.28 [235,7] | 2.16 [54,8] |
| MTKF 470 | 7.66 [194,5] | 8.03 [204,0] | 8.78 [223,0] | 9.68 [245,9] | 2.56 [65,0] |
| MTKF 500 | 7.83 [198,9] | 8.21 [208,4] | 8.95 [227,4] | 9.85 [250,3] | 2.73 [69,4] |

Rear Ports

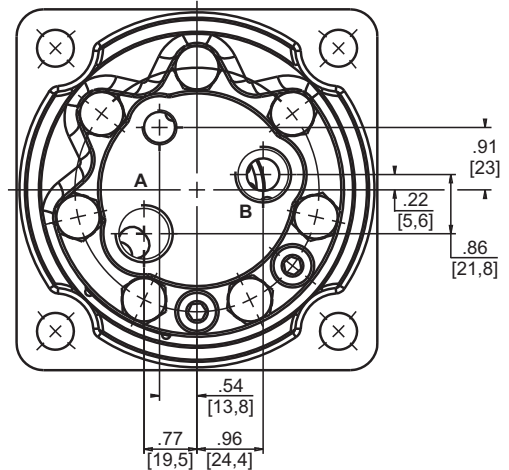
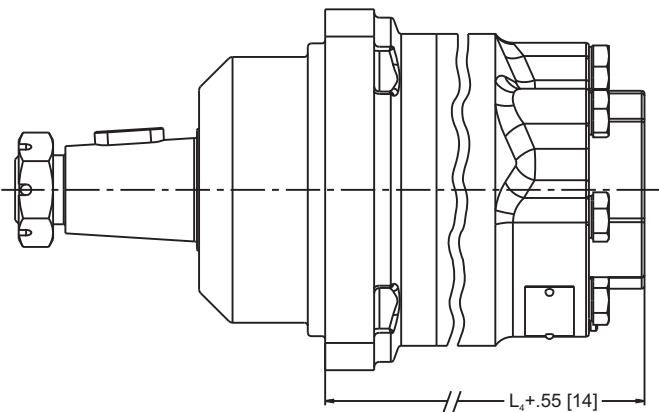
MTK F



MTK C



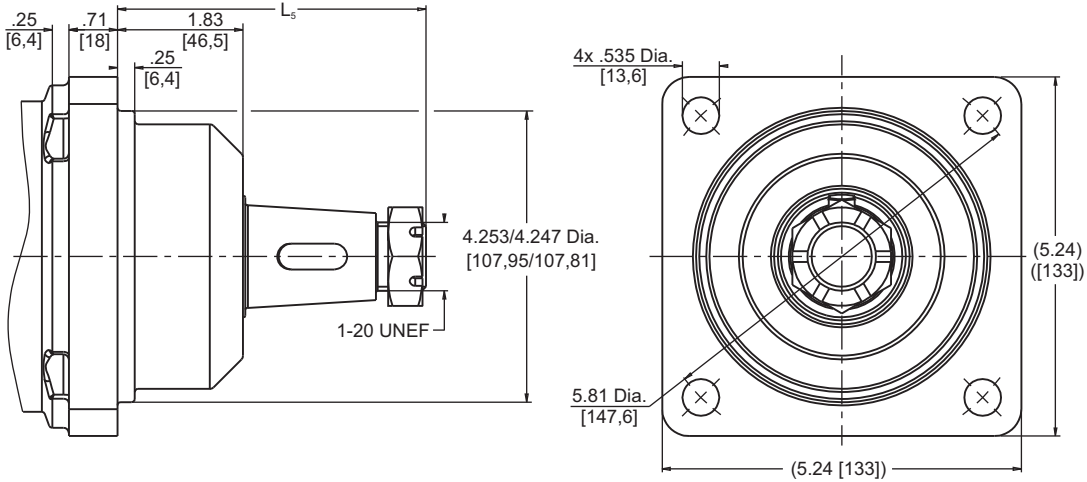
MTK W



in [mm]

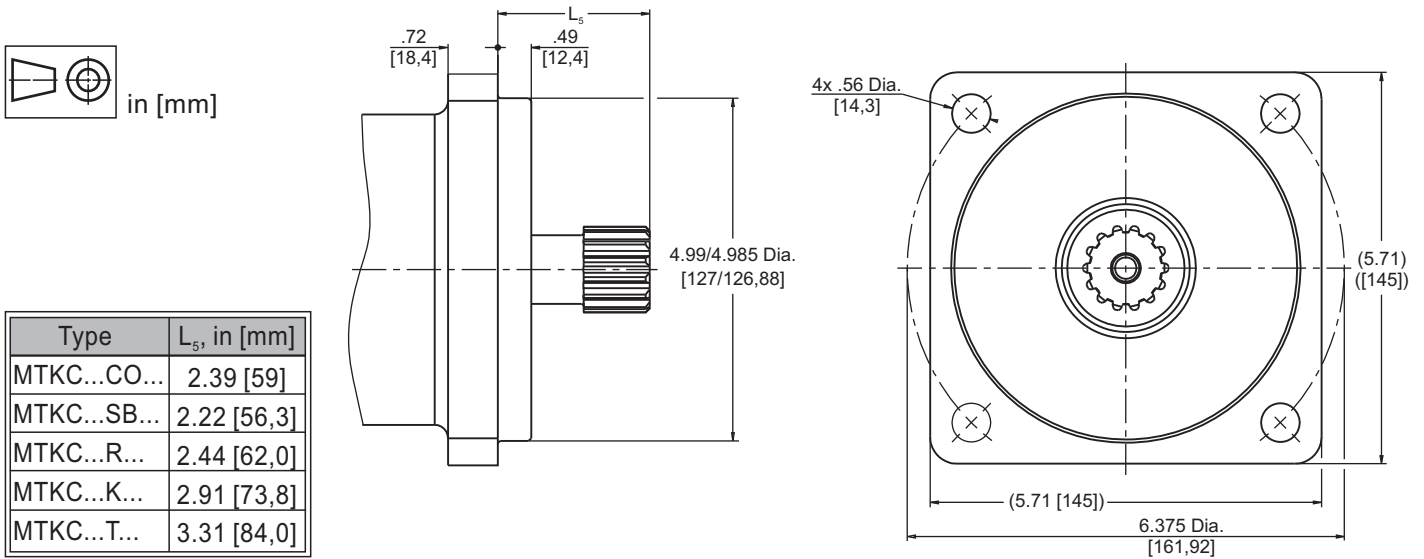
DIMENSIONS OF MOUNTING

W 4-Bolt flange, Wheel Motor
spigot diameter 2.25 in [107,9 mm] - BC 5.81 in [147,6 mm]



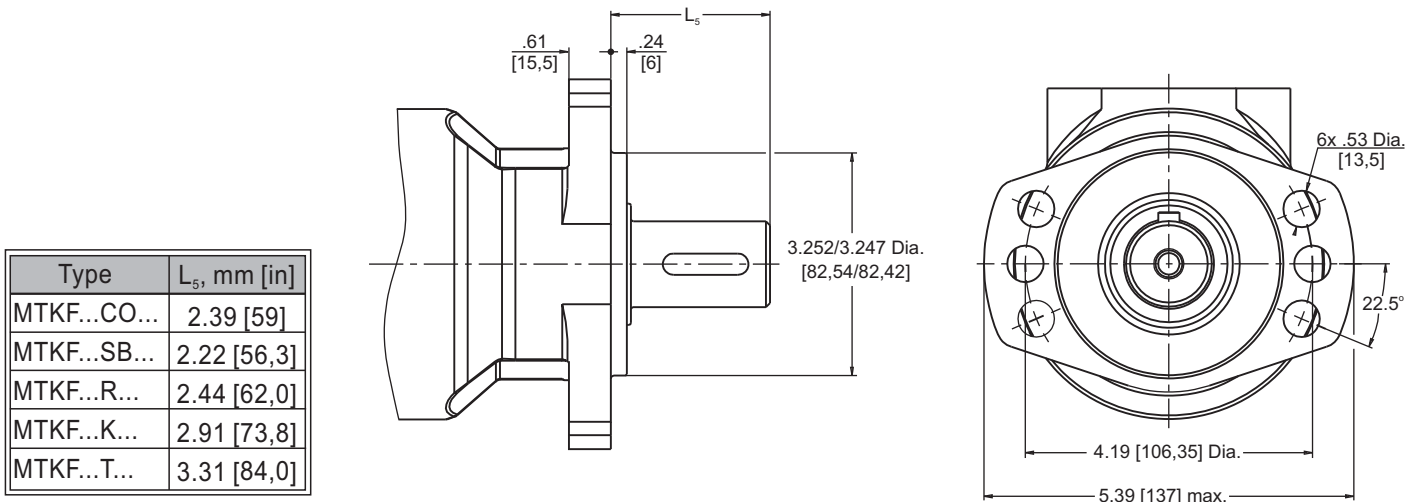
| Type | L ₅ , in [mm] |
|--------------|--------------------------|
| MTKW...CO... | 3.92 [99,5] |
| MTKW...SB... | 3.81 [96,8] |
| MTKW...R... | 4.04 [102,5] |
| MTKW...K... | 4.49 [114,3] |
| MTKW...T... | 4.91 [124,5] |

C 4-Bolt flange,
spigot diameter 4.99 in [127 mm] - BC 6.375 in [161,92 mm]



| Type | L ₅ , in [mm] |
|--------------|--------------------------|
| MTKC...CO... | 2.39 [59] |
| MTKC...SB... | 2.22 [56,3] |
| MTKC...R... | 2.44 [62,0] |
| MTKC...K... | 2.91 [73,8] |
| MTKC...T... | 3.31 [84,0] |

F 6-Bolt flange,
spigot diameter 3.25 in [82,5 mm] - BC 4.19 in [106,35 mm]

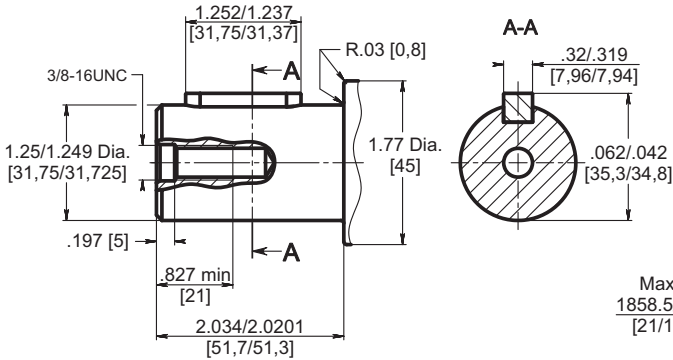


| Type | L ₅ , mm [in] |
|--------------|--------------------------|
| MTKF...CO... | 2.39 [59] |
| MTKF...SB... | 2.22 [56,3] |
| MTKF...R... | 2.44 [62,0] |
| MTKF...K... | 2.91 [73,8] |
| MTKF...T... | 3.31 [84,0] |

SHAFT EXTENSIONS

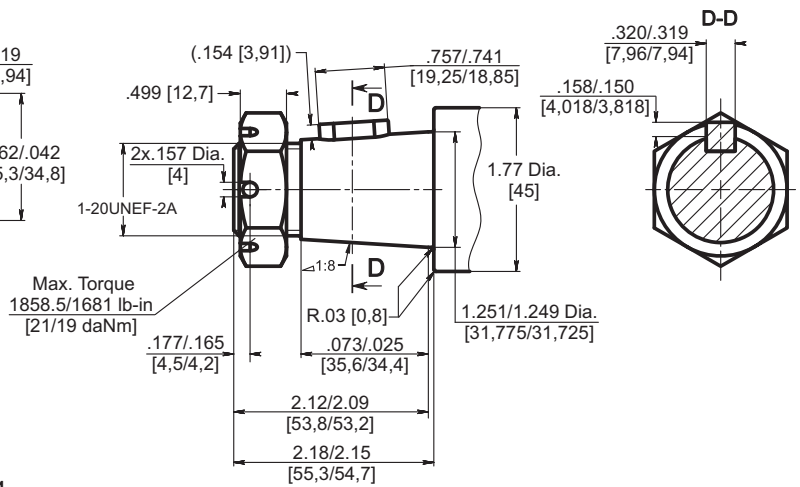
CO

ø1.25" [31,75] srtaight, Parallel key 5/16"x 5/16"x 1 1/4"
Max. Torque 6815 lb-in [77 daNm]



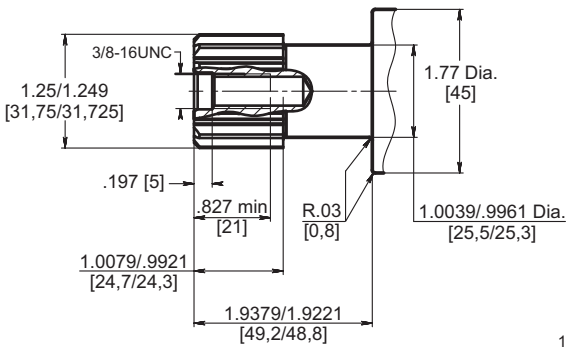
R

ø1.25" [31,75] tapered 1:8, Parallel key 5/16"x 5/16"x 3/4"
Max. Torque 6815 lb-in [77 daNm]



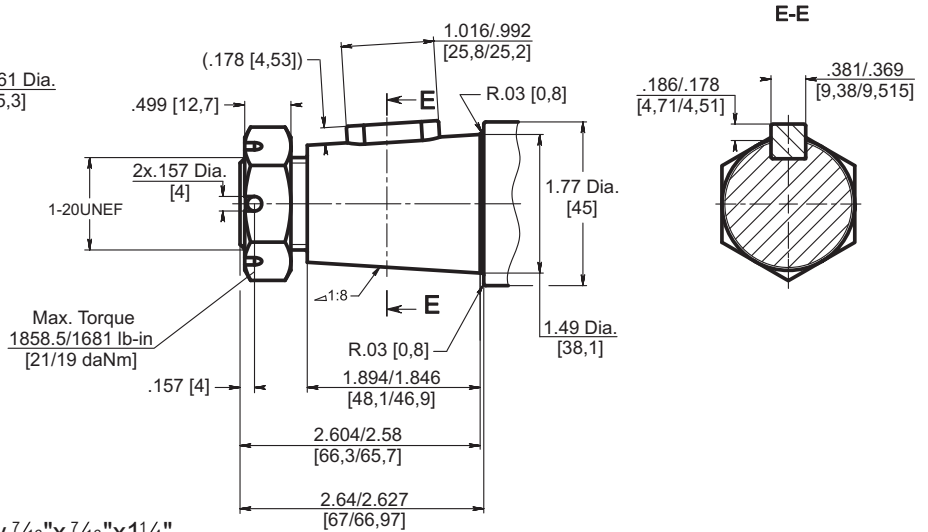
SB

ø1.25" [31,75] 14T Splined ANSI B92.1-1970, 12/24
Max. Torque 6815 lb-in [77 daNm]



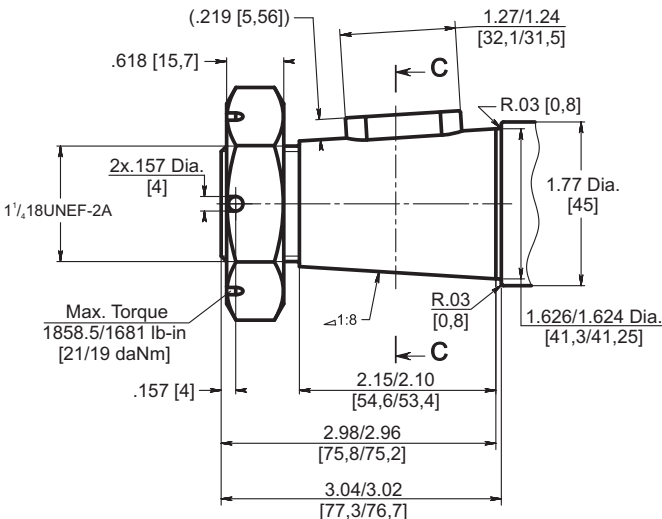
K

ø1.5" [38,1] tapered 1:8, Parallel key 3/8"x 3/8"x 1"
Max. Torque 7878 lb-in [89 daNm]

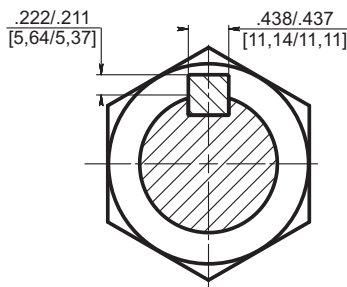


T

ø1.625" [41,275] tapered 1:8, Parallel key 7/16"x 7/16"x 1 1/4"
Max. Torque 8850 lb-in [100 daNm]



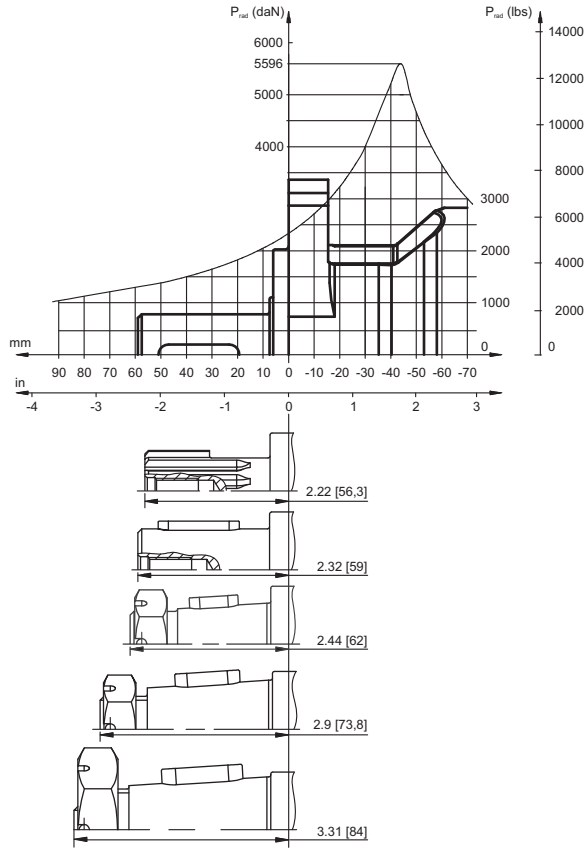
C-C



PERMISSIBLE SHAFT LOADS

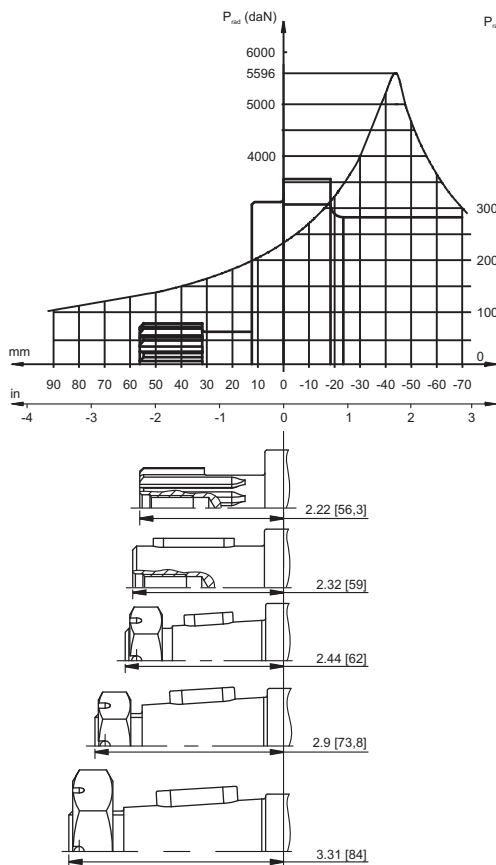
The curves apply to a B10 bearing life (ISO281) of 2000 hours at 100 RPM.

MTKF

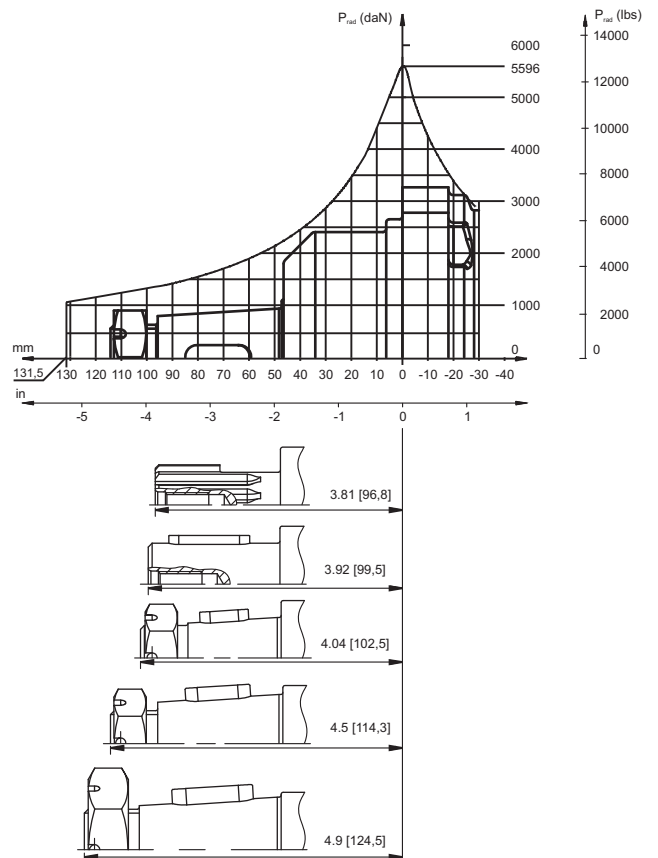


The curves apply to a B10 bearing life (ISO281) of 2000 hours at 100 RPM.

MTKC

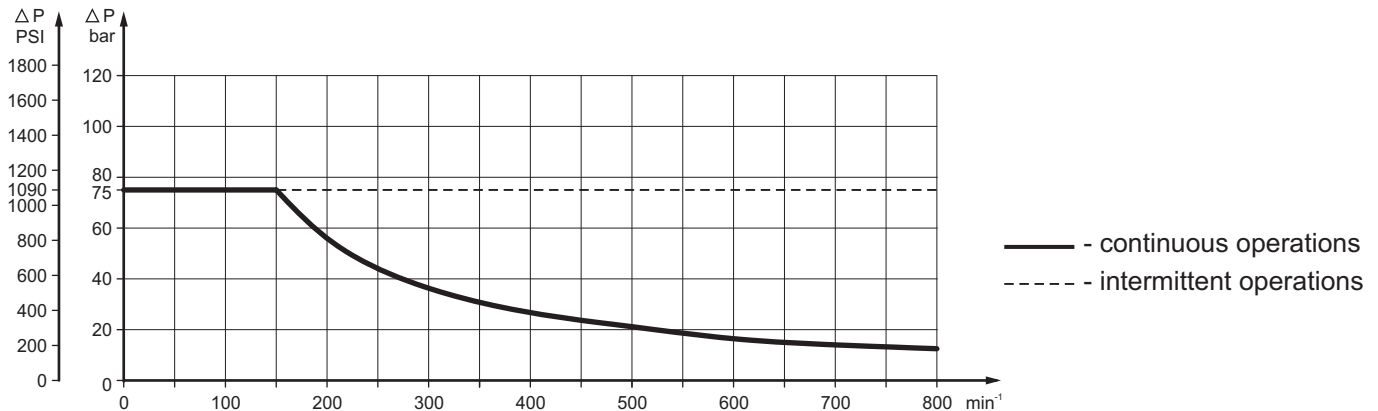


MTKW



MAX. PERMISSIBLE SHAFT SEAL PRESSURE for MTK motors

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



ORDER CODE

| | | | | | | | |
|------------|---|---|---|---|---|-----------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| MTK | | | | | | HD | |

Pos.1 - Mounting Flange

- W** - 4-Bolt flange, Wheel Motor spigot diameter 2.25 in [107,9 mm] - BC 5.81 in [147,6 mm]
- C** - 4-Bolt flange, spigot diameter 4.99 in [127 mm] - BC 6.375 in [161,92 mm]
- F** - Bolt flange, spigot diameter 3.25 in [82,5 mm] - BC 4.19 in [106,35 mm]

Pos.2 - Port type

- omit - Side ports
- E** - Rear ports

Pos.3 - Displacement code

- 160** - 9.63 in³/rev [157,9 cm³/rev]
- 200** - 12.28 in³/rev [201,3 cm³/rev]
- 250** - 15.38 in³/rev [252,2 cm³/rev]
- 315** - 19.20 in³/rev [314,9 cm³/rev]
- 400** - 24.20 in³/rev [396,8 cm³/rev]
- 470** - 28.70 in³/rev [470,5 cm³/rev]
- 500** - 30.65 in³/rev [502,4 cm³/rev]

Pos.4 - Shaft Extensions*

- CO** - ø1.25" [31,75] straight, Parallel key 5/16"x5/16"x1 1/4", 3/8-16 UNC
- SB** - ø1.25" [31,75] 14T Splined ANSI B92.1-1970, 12/24, 3/8-16 UNC
- R** - ø1.25" [31,75] Tapered 1:8, Parallel key 5/16"x5/16"x3/4", 1-20 UNEF
- K** - ø1.5" [38,1] Tapered 1:8, Parallel key 3/8"x3/8"x1", 1-20 UNEF
- T** - ø1.625" [41,275] Tapered 1:8, Parallel key 7/16"x7/16"x1 1/4", 1 1/4-18 UNEF

Pos.5 - Port Size/Type

- 2** - side ports, 2xG 3/4, G1/4 BSP (ISO 228)
- 3** - side ports, 2xM27x2, M14x1,5 - 6H (ISO 262)
- 4** - side ports, 2x1 1/16-12 UN, 7/16-20 UNF
- 6** - rear ports, 2xG 1/2, G1/4 BSP (ISO 228)
- 8** - rear ports, 2x7/8-14 UNF, 7/16-20 UNF

Pos.6 - Check Valves

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

Pos.7 - Special Features

- HD** - Reinforced motor HD**
For Other **Special Features** see [page 48](#)

Pos.8 - Design Series

- omit - Factory specified

Notes: * The permissible output torque for shafts must not be exceeded!
** Drain line should always be used.

The hydraulic motors are mangano phosphatized as standard.