

GH Series Hydraulic Motors

Options

- Flange connection
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

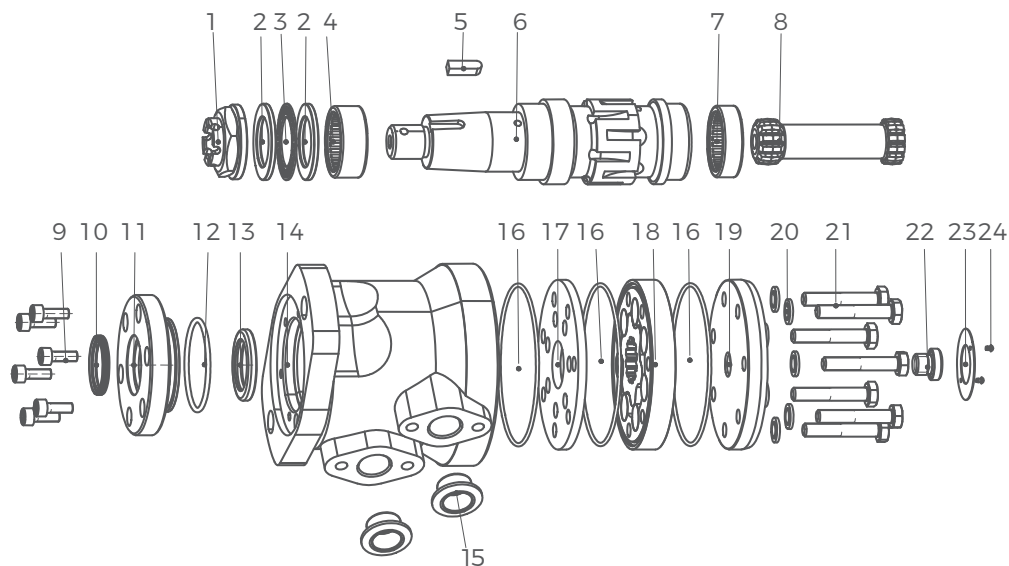
Applications

- Conveyors
- Feeding mechanism of robots and manipulators
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Mining machines



General

| | | |
|-------------------------|---|---|
| Max. Displacement | cm ³ /rev [in ³ /rev] | 502,4 [30.7] |
| Max. Speed | RPM | 445 |
| Max. Torque | daNm [lb-in] | cont.: 84 [7434] int.: 104 [9204] |
| Max. Output | kW [HP] | 18,5 [24.8] |
| Max. Pressure Drop | bar [PSI] | cont.: 175 [2540] int.: 200 [2900] |
| Max. Oil Flow | lpm [GPM] | 90 [23.78] |
| Min. Speed | RPM | 5 |
| Pressure fluid | | Mineral based- HLP (DIN 51524) or HM (ISO 6743/4) |
| Temperature Range | °C [°F] | -40÷140 [-40÷284] |
| Optimal Viscosity range | mm ² /s [SUS] | 20÷75 [98÷347] |
| Filtration | | ISO code: 20/16 (Min. recommended fluid filtration of 25 microns) |



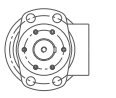
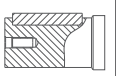
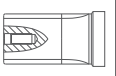
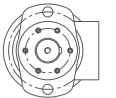
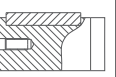
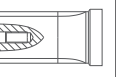
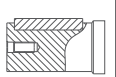
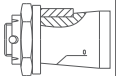
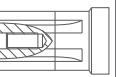
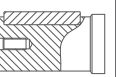
- 1 Slotted nuts
- 2 Bearing retainer
- 3 Thrust needle roller bearing
- 4 Needle roller bearings
- 5 Parallel Key
- 6 Output shaft

- 7 Thrust needle roller bearing
- 8 Transmission shaft
- 9 Screw
- 10 Skeleton anti-dust ring
- 11 Front cover
- 12 O-ring

- 13 Pressure Resistant Oil Seal
- 14 Housing
- 15 Oil port plug cap
- 16 O-ring
- 17 Spacer
- 18 Rotor and stator

- 19 Rear cover
- 20 Washer
- 21 Rear cover bolts
- 22 Plug
- 23 Nameplate
- 24 Rivets

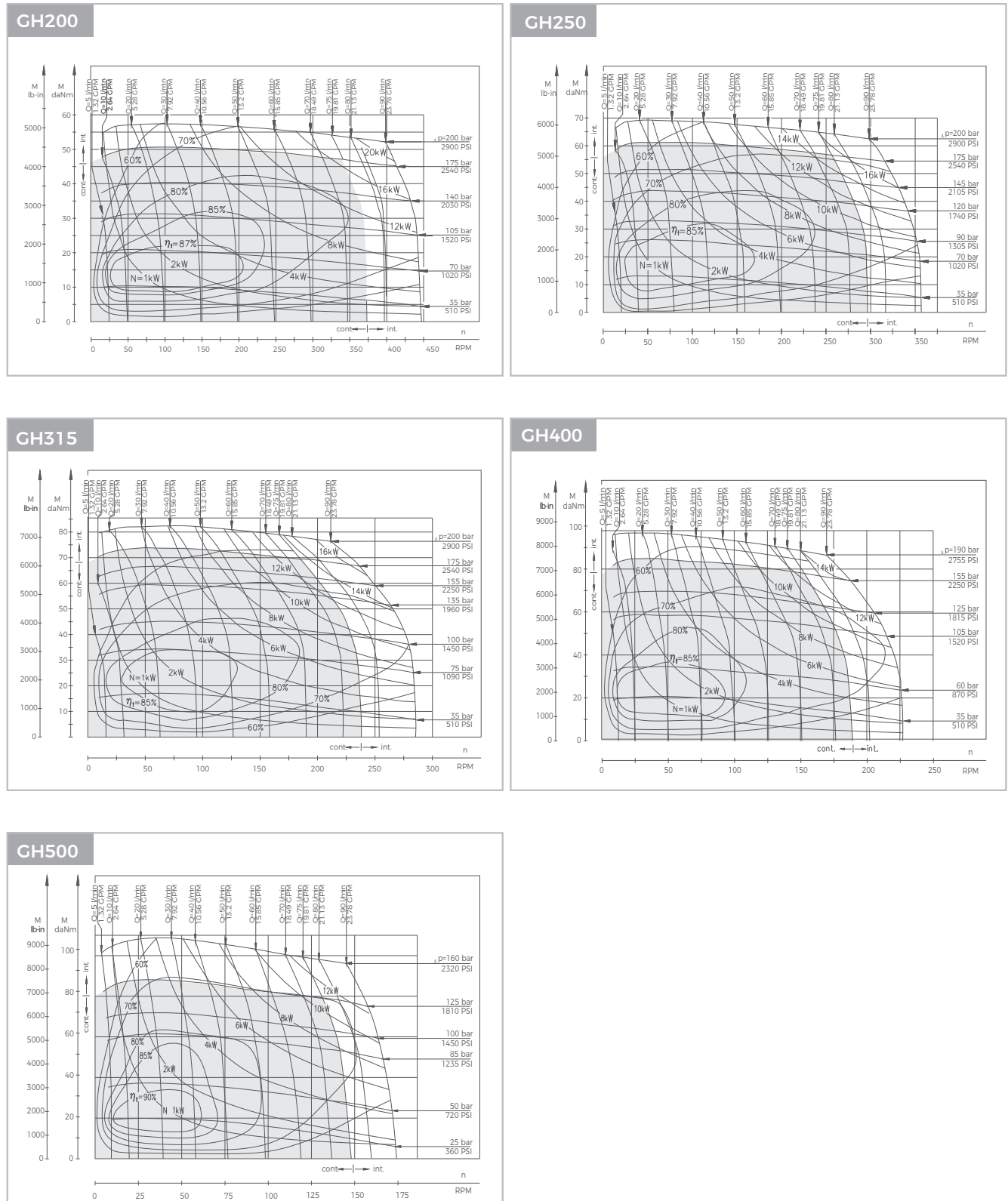
Ordering Code

| GH SERIES | | DISP | FLANGE | | SHAFT | | PORTS | | ROTATION | PAINT | | FUNCTION | | | | | | | | |
|-----------|--|---|--------|--|-------|---|-------|--|----------|---|------|---|------|---|----|--|----|--|----|--|
| CODE | | DISP | CODE | FLANGE | CODE | | CODE | PORTS | CODE | PAINT | CODE | | CODE | FUNCTION | | | | | | |
| 200 | | 201.3cm ³ /rev [12.9in ³ /rev] | A5 | 2- Ø13.5 SAE A pilot Ø82.5×6  | S4 | Ø32 parallel key 10×8×45  | G1 | G1/2, G1/4 Manifold 4×M8 | A | No paint | R3 | Ø31.75 splined tooth 14-DP 12/24  | A | Standard | | | | | | |
| 250 | | 252cm ³ /rev [15.4in ³ /rev] | | | | | A6 | 4- Ø13.5 SAE A pilot Ø82.5×6  | SF | Ø35 parallel key 10×8×45  | | | M1 | M22×1.5, M14×1.5 Manifold 4×M8 | B | Blue | R6 | Long Ø31.75 splined tooth 14-DP 12/24  | N | Big radial force |
| 315 | | 314.9cm ³ /rev [19.2in ³ /rev] | | | | | | | U2 | 7/8-14UNF O-ring, 7/16-20UNF Manifold 4×5/16-18UNC | | | SG | Ø31.5 parallel key 7.96×7.96×31.75  | U1 | 1/2-14 NPTF, 7/16-20UNF Manifold 4×5/16-18UNC | C | Black | T4 | Tapered Ø35 parallel key B6×6×20  |
| 400 | | 396.8cm ³ /rev [24.2in ³ /rev] | | | R4 | Ø25.4 SAE 6B  | G2 | PT (Rc) 1/2, PT (Rc) 1/4 Manifold 4×M8 | S | Silver grey | F | Free running | V | High temp. | | | | | | |
| 500 | | 502.4cm ³ /rev [30.7in ³ /rev] | | | SH | Ø35 parallel key 10×8×45  | | | | | L | Low speed | S | Low temp. | | | | | | |

Specifications

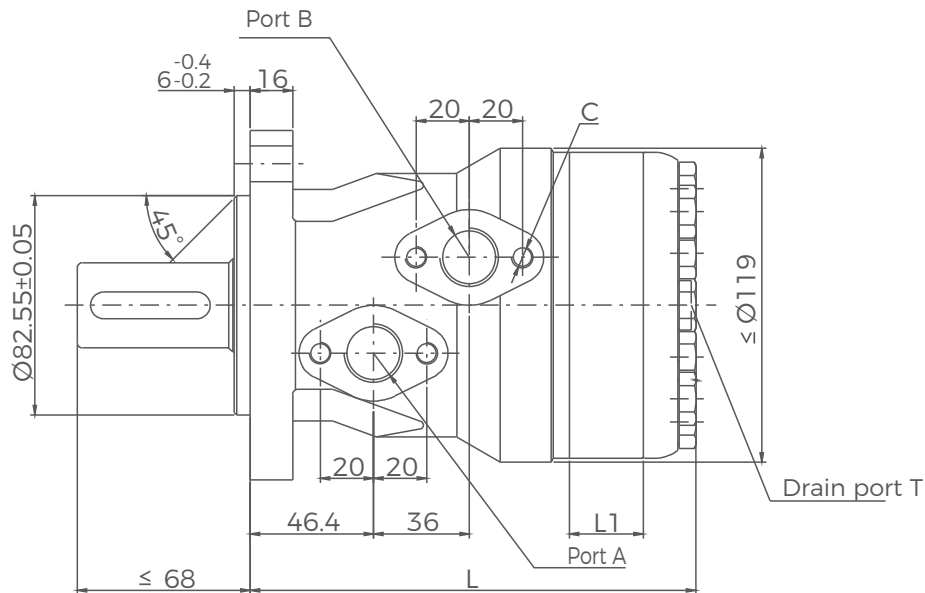
| Type | | GH200 | GH250 | GH315 | GH400 | GH500 |
|---|---------------------------|--------------|------------|-------------|-------------|-------------|
| Displacement, cm ³ /rev [in ³ /rev] | | 201,3[12.3] | 252[15.4] | 314,9[19.2] | 396,8[24.2] | 502,4[30.7] |
| Max. Speed, | Cont. | 370 | 295 | 235 | 185 | 150 |
| RPM | Int.* | 445 | 350 | 285 | 225 | 180 |
| Max. Torque | Cont. | 51[4510] | 61[5398] | 74[6548] | 84[7434] | 82[7257] |
| daNm [lb-in] | Int.* | 58[5130] | 70[6195] | 82[7257] | 98[8673] | 104[9204] |
| | Peak** | 64[5064] | 79[6992] | 98[8673] | 109[9647] | 117[10350] |
| Max. Output | Cont. | 16[21] | 16[21] | 14[18.7] | 12,5[16.7] | 11[14.7] |
| kW [HP] | Int.* | 18,5[24.8] | 18,5[24.8] | 15,5[20.7] | 15[20.1] | 14[18.7] |
| Max. Pressure Drop | Cont. | 175[2540] | 175[2540] | 175[2540] | 155[2240] | 125[1810] |
| bar [PSI] | Int.* | 200[2900] | 200[2900] | 200[2900] | 190[2750] | 160[2320] |
| | Peak** | 225[3260] | 225[3260] | 225[3260] | 210[3045] | 180[2610] |
| Max. Oil Flow | Cont. | 75[19.81] | 75[19.81] | 75[19.81] | 75[19.81] | 75[19.81] |
| lpm [GPM] | Int.* | 90[23.78] | 90[23.78] | 90[23.78] | 90[23.78] | 90[23.78] |
| Max. Inlet Pressure | Cont. | 200[2900] | 200[2900] | 200[2900] | 200[2900] | 200[2900] |
| bar [PSI] | Int.* | 225[3260] | 225[3260] | 225[3260] | 225[3260] | 225[3260] |
| | Peak** | 250[3626] | 250[3626] | 250[3626] | 250[3626] | 250[3626] |
| Max. Starting Pressure with Unloaded Shaft, bar [PSI] | | 5[72] | 5[72] | 5[72] | 5[72] | 5[72] |
| Min. Starting Torque | At max. press. drop Cont. | 39[3450] | 52[4600] | 66[5840] | 72[6370] | 72[6370] |
| daNm [lb-in] | At max. press. drop Int.* | 45[3980] | 59[5221] | 73[6460] | 88[7788] | 88[7788] |
| Min. Speed**, RPM | | 10 | 10 | 8 | 5 | 5 |
| Weight, kg [lb] | GH | 10,5[23.2] | 11[24.3] | 11,5[25.4] | 12,3[27.1] | 13[28.7] |

Function Diagrams



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

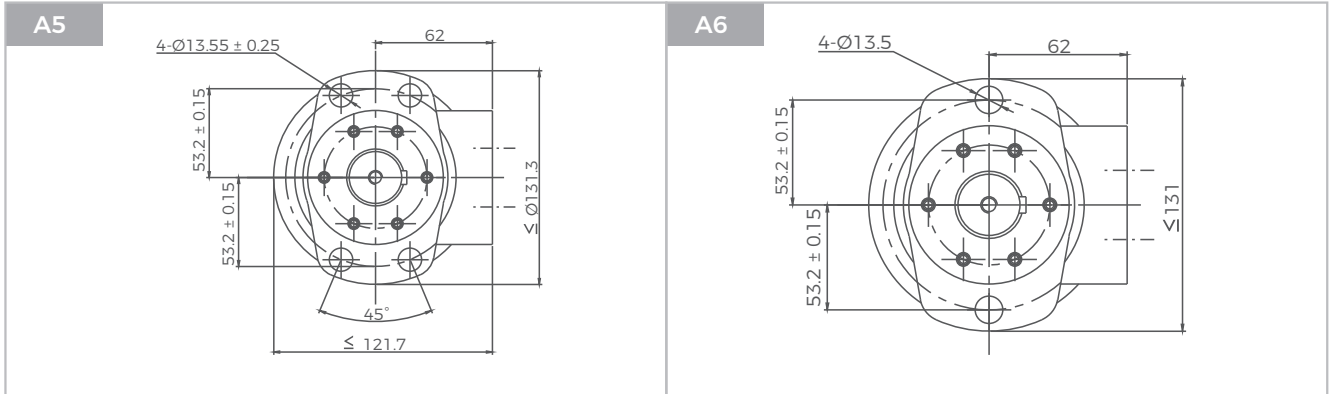
GH Dimensions and Mountings



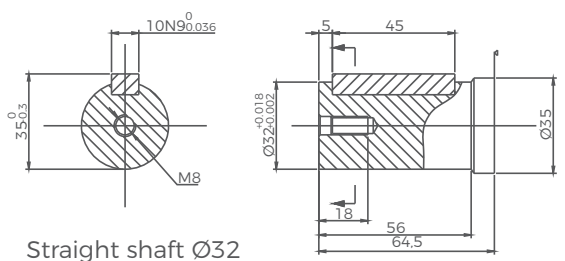
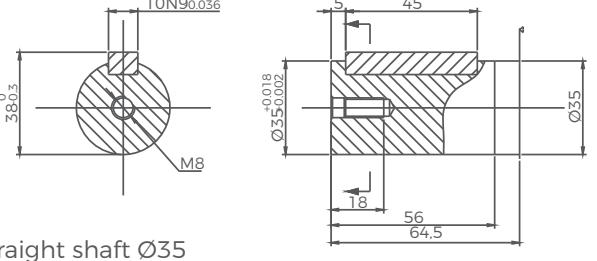
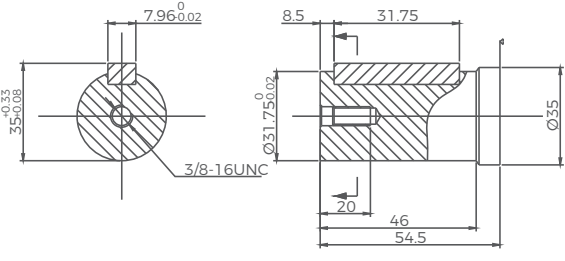
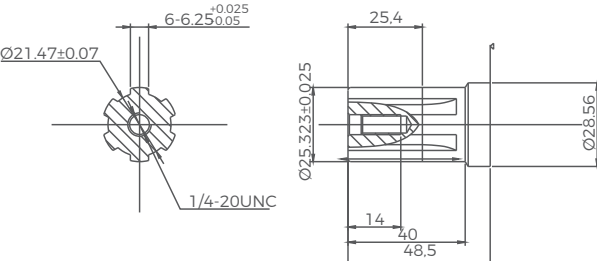
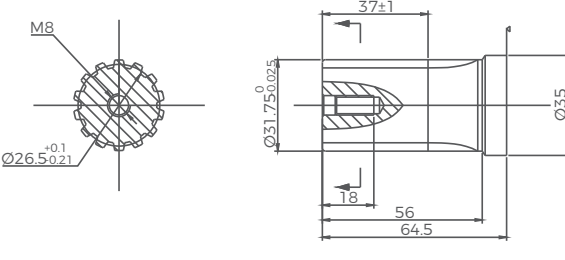
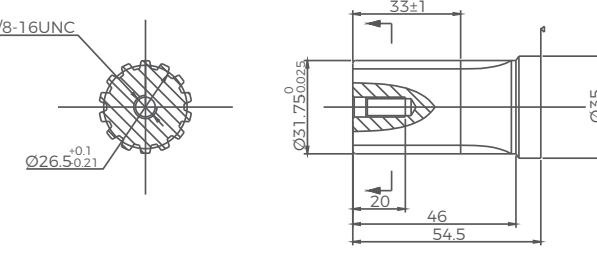
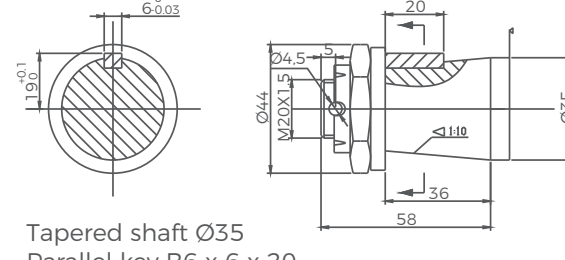
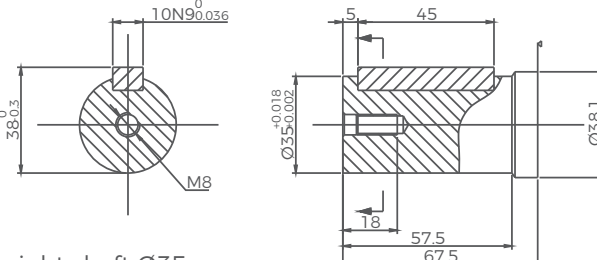
| Model | L | L1 |
|-------|-----|----|
| GH200 | 168 | 27 |
| GH250 | 175 | 34 |
| GH315 | 184 | 42 |
| GH400 | 195 | 54 |
| GH500 | 206 | 65 |

| Mounting | G1 (depth) | M1 (depth) | U2 (depth) | U1 (depth) | G2 (depth) |
|----------|---------------|---------------|-------------------|-------------------|----------------|
| P(A, B) | G1/2(15) | M22 x1.5(15) | 7/8-14 O-ring(17) | 1/2-14 NPTF(15) | PT(RC)1/2(15) |
| T | 4-M8(13) | 4-M8(13) | 4-5/16-18 UNC(13) | 4-5/16-18 UNC(13) | 4-M8(13) |
| C | G1/4(12) | M14 x 1.5(12) | 7/16-20 UNF(12) | 7/16-20 UNF(12) | PT(RC)1/4(9.7) |

GH Flange Covers Dimensions

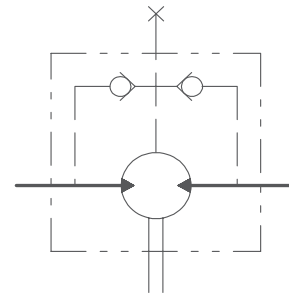
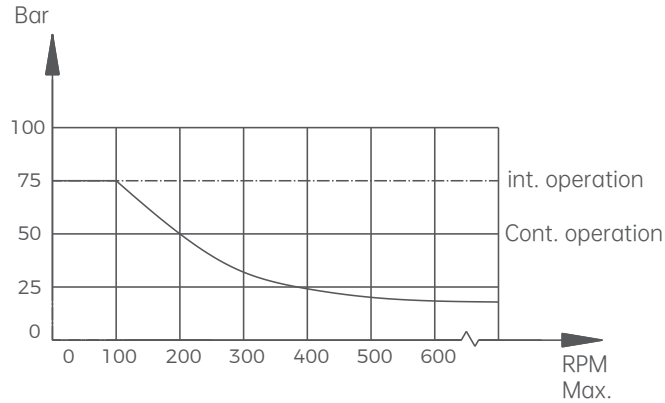


GH Shafts Dimensions

| | |
|--|--|
| <p>S4</p>  <p>Straight shaft Ø32 Parallel key 10 x 8 x 45</p> | <p>SF</p>  <p>Straight shaft Ø35 Parallel key 10 x 8 x 45</p> |
| <p>SC</p>  <p>Straight shaft Ø31.75 Parallel key 7.96 x 7.96 x 31.75</p> | <p>R4</p>  <p>Splined shaft SAE 6B</p> |
| <p>R3</p>  <p>Splined shaft 14-DP 12/24</p> | <p>R6</p>  <p>Splined shaft 14-DP 12/24</p> |
| <p>T4</p>  <p>Tapered shaft Ø35 Parallel key B6 x 6 x 20 Tightening torque: 200 ± 10Nm</p> | <p>SH</p>  <p>Straight shaft Ø35 Parallel key 10 x 8 x 45</p> |

GH Series Hydraulic Motors

Permissible shaft seal pressure



GH with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

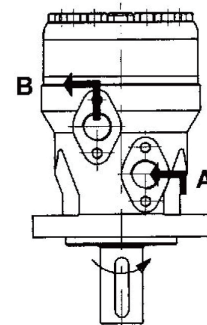
GH with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

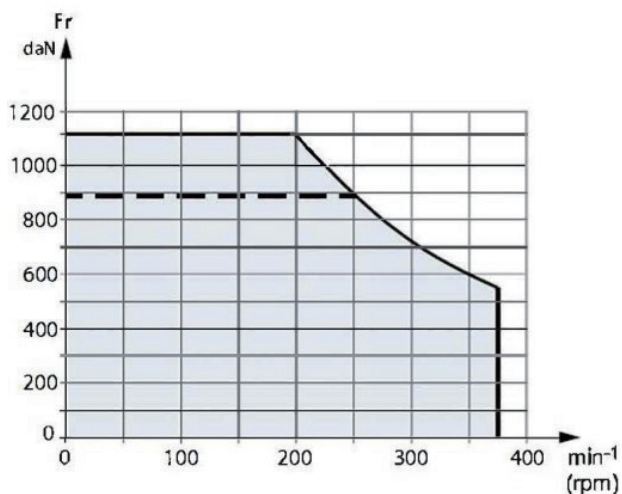
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

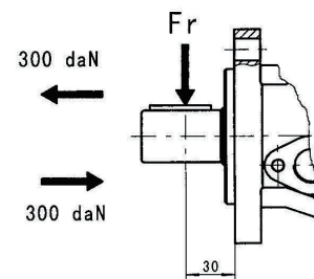
When facing shaft end of motor, shaft to rotate:
Clockwise. When port A is pressurized.
Counter-clockwise when port B is pressurized.



Axial and radial force



The drawing shows the permissible radial load when L = 30mm [1.18 in].



$$Fr = \frac{1100}{n} * \frac{25000}{103.5 + L} \text{ (daN)}$$

Fr = Radial Force (daN)

L = Distance (mm)

n = Speed (rpm)