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RYAN HYDRAULICS
Solution to Hydraulic System

Techical Information

Orbital Motors

GM / GP / GPH / GR / GRS / GH / GS / GT / GV
GFA / GGM / GKA / GKB / GKC / GWD / GBD



www.ryanhydraulic.com



RYAN HYDRAULICS

Keep the concept seeking excellence, RYAN try our best to create more value for you with products and service.

Ryan Hydraulics

About RYAN

RYAN's manufacture was established in 1986, focusing on providing customers with quality hydraulic components and solutions to hydraulic system in the applications of engineering machinery, mobile industries, agricultural machinery, aviation, mining, and other fields. Main products include gear pump, gear motor, flow divider, orbital motor, load sensing proportional valve, monoblock valve, sectional valve, manifold assembly and hydraulic power unit as well.

Long-term development strategy

Reducing emissions by new energy is one of RYAN's long-term strategies. RYAN will be providing innovative technologies, products, and services for the global development of new energy, moving towards a century development strategy, and writing a century-new chapter in the hydraulic field.

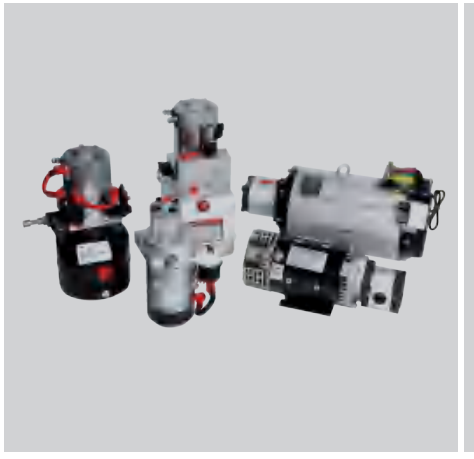


Innovation leads the future

Through a few decades of development, RYAN has built an intelligent manufacturing factory, gathering international R&D talents, accumulating rich R&D and manufacturing experience, possessing independent intellectual property rights, continuously providing customers with new products and technologies, and creating value for all of the customers.








Orbital Motors

GM GM Series Orbital Motors — 05-12
Speed 2450 RPM
Torque 88 Nm

GP GP Series Orbital Motors — 13-26
Speed 1815 RPM
Torque 640 Nm

GPH GPH Series Orbital Motors — 27-39
Speed 1815 RPM
Torque 640 Nm

GR GR Series Orbital Motors — 40-49
Speed 970 RPM
Torque 690 Nm

GRS GRS Series Orbital Motors — 50-60
Speed 970 RPM
Torque 690 Nm

GH GH Series Orbital Motors — 61-68
Speed 445 RPM
Torque 1040 Nm

GS GS Series Orbital Motors — 69-80
Speed 1000 RPM
Torque 990 Nm

GT GT Series Orbital Motors — 81-92
Speed 775 RPM
Torque 1470 Nm

Orbital Motors

GV GV Series Orbital Motors — 93-101
Speed 630 RPM
Torque 2110 Nm

GFA GFA Series Orbital Motors — 102-112
Speed 1141 RPM
Torque 648 Nm

GGM GGM Series Orbital Motors — 113-120
Speed 5000 RPM
Torque 12.5 Nm

GKA GKA Series Orbital Motors — 121-128
Speed 1215 RPM
Torque 930 Nm

GKB GKB Series Orbital Motors — 129-137
Speed 697 RPM
Torque 1181 Nm

GKC GKC Series Orbital Motors — 138-143
Speed 866 RPM
Torque 1875 Nm

GWD GWD Series Orbital Motors — 144-150
Speed 490 RPM
Torque 1237 Nm

GBD GBD Series Hydraulic Motor Brakes — 151-153
Speed 250 RPM
Torque 1500 Nm

GM Series Hydraulic Motors



Options

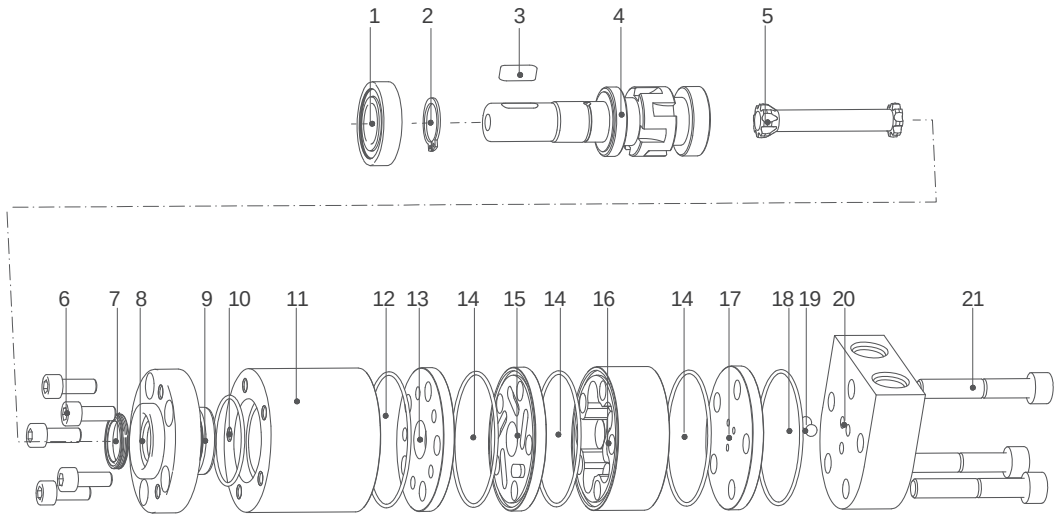
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

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

General

Max. Displacement	cm^3/rev [in^3/rev]	50 [3.05]
Max. Speed	RPM	2440
Max. Torque	daNm [lb-in]	cont.: 4,5 [398] int.: 5,8 [513]
Max. Output	kW [HP]	3,2 [4.3]
Max. Pressure Drop	bar [PSI]	cont.: 105 [1500] int.: 140 [2030]
Max. Oil Flow	lpm [GPM]	25 [6.6]
Min. Speed	RPM	20
Pressure Fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	℃ [℉]	-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 Tapered roller bearing
2 Shaft retainer
3 Paralled Key
4 Output shaft
5 Transmission shaft
6 Screw
7 Anti-dust free ring
8 Front Cover
9 Skeleton oil seal
10 O-ring
11 Housing
12 O-ring
13 Spacer 1
14 O-ring
15 Spacer 2
16 Rotor and stator
17 Balance plate
18 O-ring seal
19 Steel ball
20 Rear cover
21 Screw

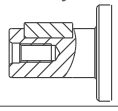
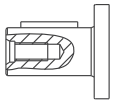
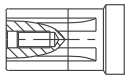
Ordering Code

GM SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
08	8.2cm³/rev [0.5in³/rev]
12.5	12.9cm³/rev [0.77in³/rev]
20	19.9cm³/rev [1.22in³/rev]
32	31.6cm³/rev [1.93in³/rev]
40	39.8cm³/rev [2.43in³/rev]
50	50.3cm³/rev [3.08in³/rev]

CODE	FLANGE
B4	3-M6 Circle, pilot Ø31.5x54 
B5	3-1/4-28UNF Circle, piot Ø31.55 
AD	2-Ø9 Rhomb, pilot Ø63x2 

CODE	PORTS
GA	G3/8, G1/8
U8	9/16-18UNF, 8-24UNF
GB	End port G3/8, G1/8
U9	End port 9/16-18UNF, 8-24UNF

CODE	SHAFT
SS	Shaft Ø16, paralll key 5x5x16 
ST	Shaft Ø15.875, parallel key 4.8x4.8x19.05 
RK	Shaft Ø16.5, splined B17x14 DIN5482 

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

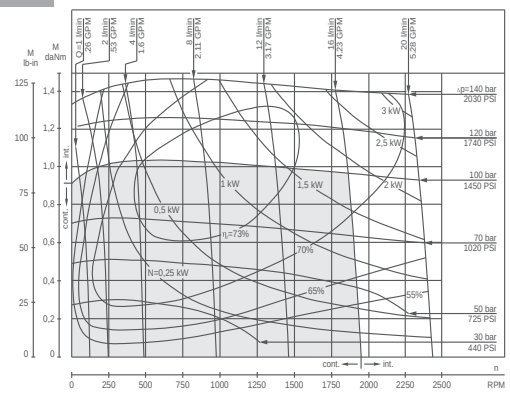
CODE	ROTATION
A	Standard
R	Opposite

Specifications

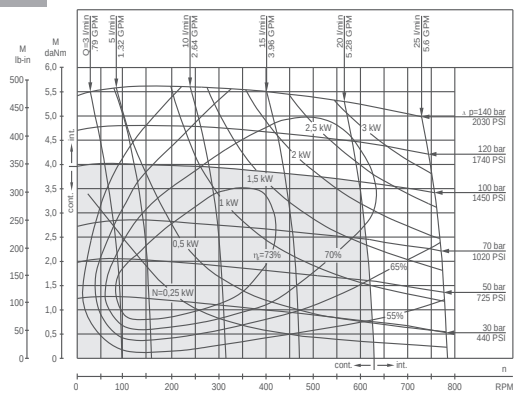
Type		GM8	GM12.5	GM20	GM32	GM40	GM50
Displacement, cm³/rev [in³/rev]		8.2[.50]	12.5[.77]	19.9[1.22]	31.6[1.93]	39.8[2.43]	50[3.08]
Max. Speed	Cont.	1950	1550	1000	630	500	400
RPM	Int.*	2450	1940	1250	800	630	500
Max. Torque	Cont.	1.1[95]	1.6[140]	2.5[220]	4.03501	4.5[400]	4.6[410]
daNm [lb-in]	Int.*	1.5[135]	2.3[200]	3.5[310]	5.7[500]	7.0[620]	8.8[780]
	Peak**	2.1[187]	3.3[293]	5.1[453]	6.4[568]	8.2[725]	10.0[885]
Max. Output	Cont.	1.8[2.4]	2.4[3.2]	2.4[3.2]	2.4[3.2]	2.2[3.0]	1.8[2.4]
kW [HP]	Int.*	2.6[3.5]	3.2[4.3]	3.2[4.3]	3.2[4.3]	3.2[4.3]	3.2[4.3]
Max. Pressure Drop	Cont.	100[1450]	100[1450]	100[1450]	100[1450]	90[1310]	70[1020]
bar [PSI]	Int.*	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
	Peak**	200[2900]	200[2900]	200[2900]	160[2900]	160[2900]	160[2900]
Max. Oil Flow	Cont.	16[4.2]	20[5.3]	20[5.3]	20[5.3]	20[5.3]	20[5.3]
lpm [GPM]	Int.*	20[5.3]	25[6.6]	25[6.6]	25[6.6]	25[6.6]	25[6.6]
Max. Inlet Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
bar [PSI]	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont. 0-100 RPM	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
without Drain Line	Cont.100-400 RPM	105[1500]	105[1500]	105[1500]	105[1500]	105[1500]	105[1500]
bar [PSI]	Cont. 400-800 RPM	50[725]	50[725]	50[725]	50[725]	50[725]	50[725]
Max. Pressure	Cont. >800 RPM	20[290]	20[290]	20[290]	-	-	-
in Drain Line, bar [PSI]	int.* 0-max. RPM	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
Max. Return Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
with Drain Line	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		4[60]	4[60]	4[60]	4[60]	4[60]	4[60]
Min. Starting Torque	At max. press. drop Cont.	0.7[60]	1.2[105]	2.1[185]	3.4[300]	3.8[335]	4.1[365]
daNm [lb-in]	At max. press. drop Int.*	1.0[90]	1.7[150]	2.9[255]	4.8[425]	6.2[550]	7.9[700]
Min. Speed***, RPM		50	40	30	30	25	20
Weight, kg [lb] For "F" flange: +0,200 [.441]	GM	1.9[4.2]	2.0[4.41]	2.1[4.63]	2.2[4.85]	2.3[5.07]	2.5[5.51]

Function Diagrams

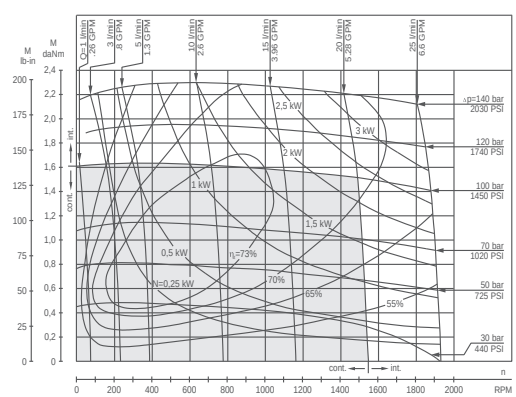
GM8



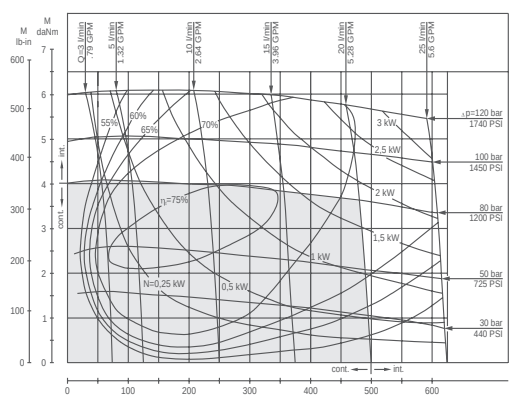
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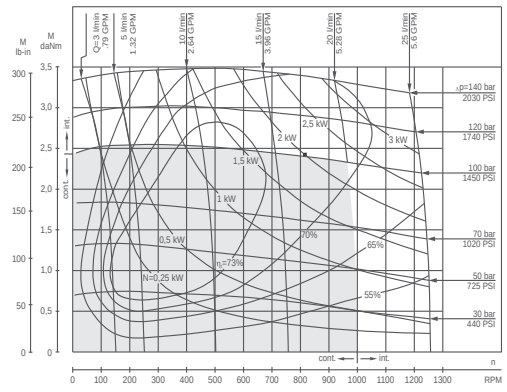
GM12.5



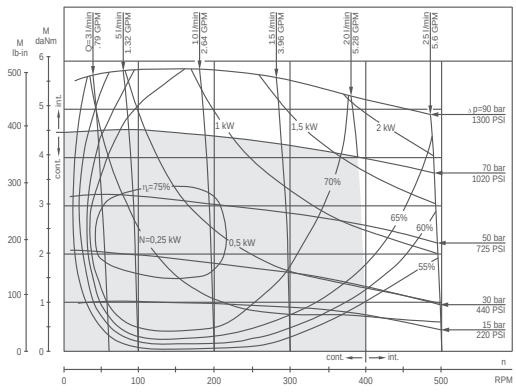
GM40



GM20



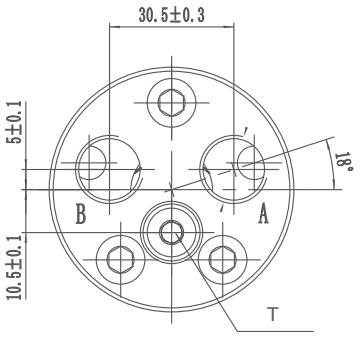
GM50

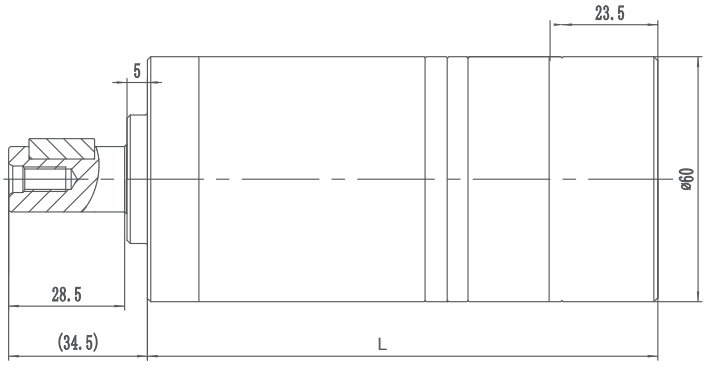


The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122 F].

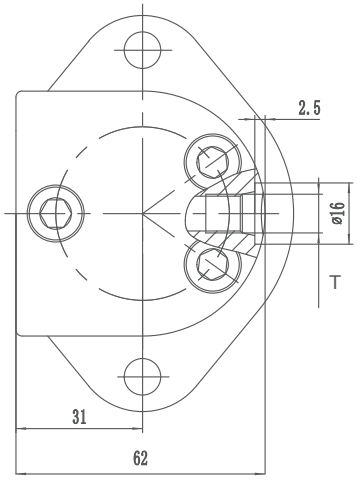
GM Dimensions and Mountings

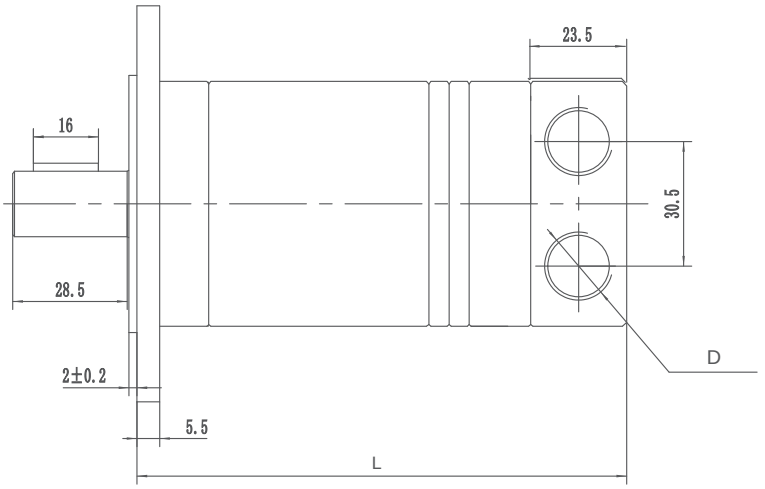
Model A





Model B



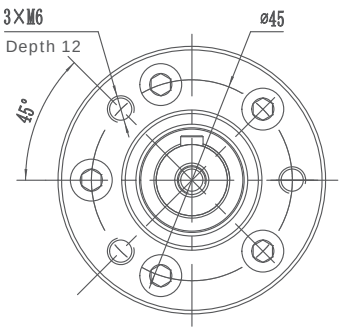


Model	Model A	Model B
	L	L
GM8	109	105
GM12.5	111	107
GM20	114	110
GM32	119	115
GM40	122	118
GM50	127	123

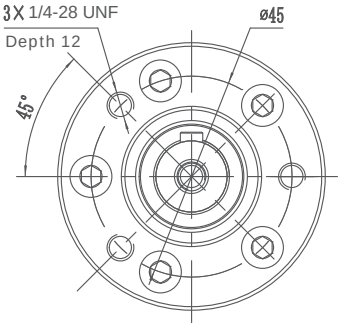
Mounting	GA (depth)	U8 (depth)	GB (depth)	U9 (depth)
P(A, B)	G3/8 (12)	9/16-18UNF (12)	End port G3/8 (12)	End port 9/16-18UNF (12)
T	G1/8 (8)	3/8-24UNF (8)	G1/8 (8)	8-24UNF (8)

GM Flange Covers Dimensions

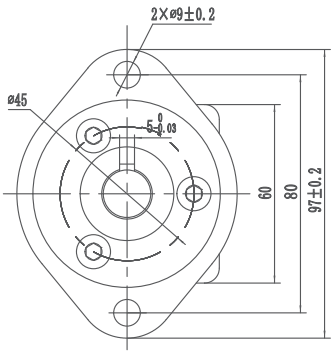
B4



B5

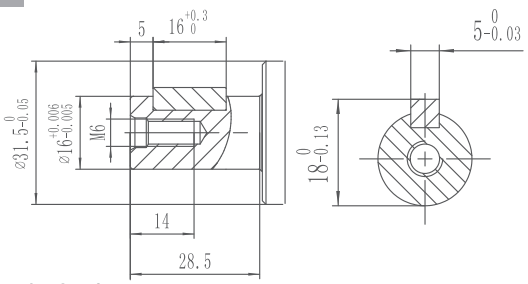


AD



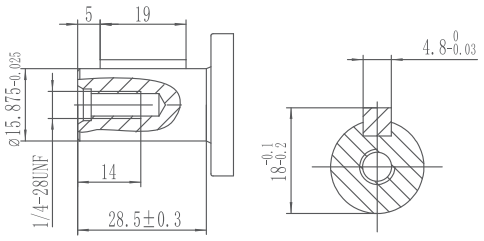
GM Shafts Dimensions

SS



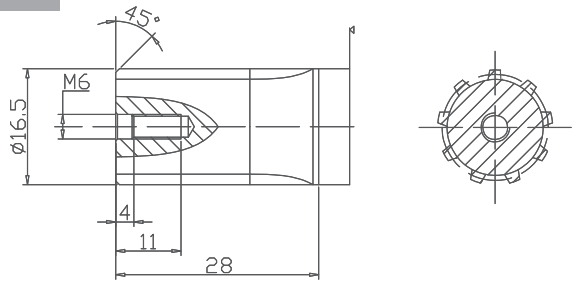
Straight shaft Ø16
Parallel key 5 x 5 x 16

ST



Straight shaft Ø15.875
Parallel key 4.8 x 4.8 x 19.05

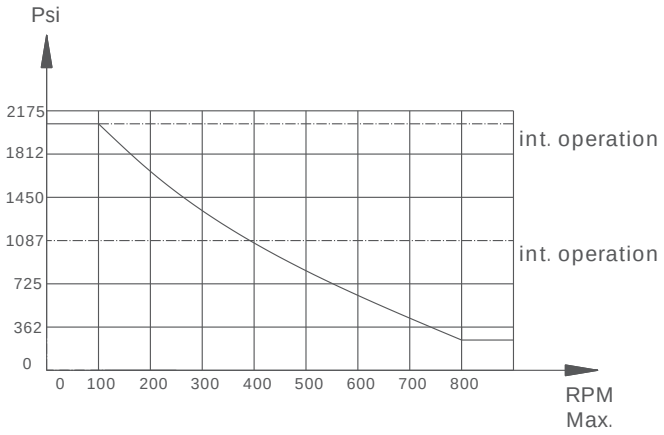
RK

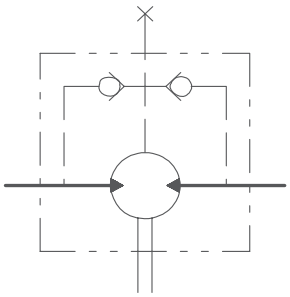


Splined shaft Ø16.5
B7 x 14 DIN5482

GM Series Hydraulic Motors

Permissible shaft seal pressure





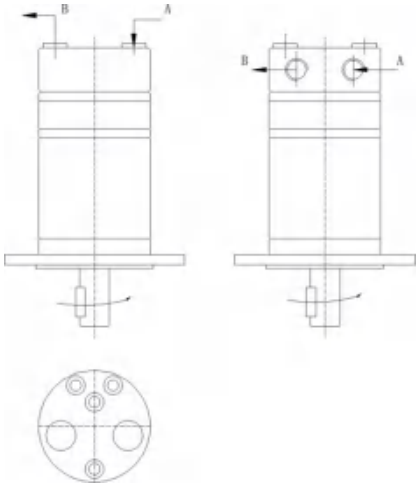
GM with standard shaft seal check valves and without use of drain connection:
The pressure on the shaft seal never exceeds the pressure in the return line. GM with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

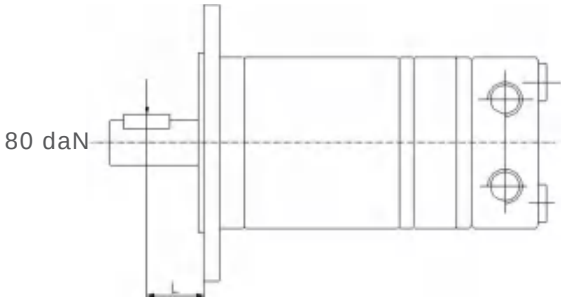
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

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



Axial and Radial force



$$Fr = \frac{600}{n} * \frac{13040}{61.5 + L} \text{ (daN)}$$

Fr =Radial Force (daN)
L =Distance (mm)
n =Speed (rpm)
Rhomb flange L=15mm
Square flange L=20mm

GP Series Hydraulic Motors



Options

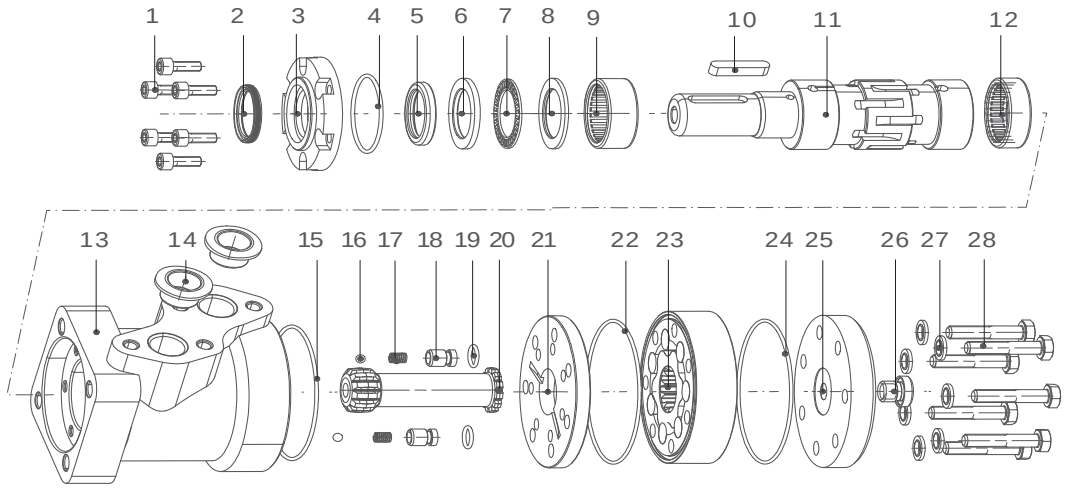
- Flange connection
- Motor with needle roller bearing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Feeding machanism of robots and manipulators
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Lawn mower

General

Max. Displacement	cm³/rev [in³/rev]	623.6 [38.05]
Max. Speed	RPM	1815
Max. Torque	daNm [lb-in]	cont.: 50 [5144] int.: 64 [5565]
Max. Output	kW [HP]	12.8 [17.1]
Max. Pressure Drop	bar [PSI]	cont.:140 [2030] int.:175 [2540]
Max. Oil Flow	lpm [GPM]	75 [19.8]
Min. Speed	RPM	10
Pressure Fluid		Mineral based- HLP [DIN 51524] or HM [ISO 6743/4]
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm²/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 [Min. recommended fluid filtration of 25 microns]

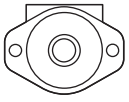
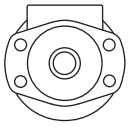
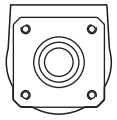
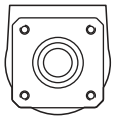


1 Bolt	6 Bearing retainer	11 Output shaft	16 Steel ball	21 Spacer	26 Plug
2 Anti-dust ring	7 Flat bearing	12 Needle roller bearing	17 Spring	22 O-ring seal	27 Washer
3 Front cover	8 Bearing retainer	13 Housing	18 Check valve	23 Rotor and stator	28 Screw
4 O-ring seal	9 Needle roller bearing	14 Rubber plug	19 O-ring seal	24 O-ring seal	
5 Shaft seal	10 Parallel key	15 O-ring seal	20 Transmission shaft	25 Rear cover	

Ordering Code

GP SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
025	25cm³/rev [1.52in³/rev]
032	32cm³/rev [1.95in³/rev]
040	40cm³/rev [2.44in³/rev]
050	49.5cm³/rev [3.02in³/rev]
080	79.2cm³/rev [4.83in³/rev]
100	99cm³/rev [6.04in³/rev]
125	123.8cm³/rev [7.55in³/rev]
160	158.4cm³/rev [9.66in³/rev]
200	198cm³/rev [12.1in³/rev]
250	247.5cm³/rev [15.1in³/rev]
315	316.8cm³/rev [19.3in³/rev]
400	396cm³/rev [24.16in³/rev]
500	495cm³/rev [30.2in³/rev]
630	623.6cm³/rev [38.05in³/rev]

CODE	FLANGE
A2	2-Hole SAE A, pilot Ø82.5×2.8 
A4	4-Hole SAE A, pilot Ø82.5×2.8 
H4	4-3/8-16UNC square, pilot Ø44.4×2.8 
H5	4-M10 square, pilot Ø44.4×2.8 

CODE	PORTS
G1	G1/2, G1/4 manifold 4 ×M8
M1	M22×1.5M14×1.5, manifold 4×M8
U2	7/8-1UNF, 7/16-20UN manifold 4×5/16-18UNCF
U1	7/8-14NPTF, 7/16 - 20UNF, manifold 4×5/16 - 18UNC
G2	PT (Rc) 1/2, PT (Rc) 1/4 manifold 4×M8

CODE	SHAFT
S1	Shaft Ø25, parallel key 8×7×32 
S2	Shaft Ø25.4, parallel key 6.35×6.35×31.75 
R1	Shaft Ø25.4, splined tooth SAE6B 
S3	Shaft Ø25.4, parallel key 6.35×6.35×31.75 
S4	Shaft Ø32, parallel key 10×8×45 
R2	Shaft Ø31.75, splined tooth 14 - DP 12/24 
R3	Long shaft Ø31.75,splined tooth 14 - DP 12/24 
S5	Shaft Ø31.75, parallel key 7.96×7.96×31.75 
T1	Tapered shaft Ø28.56, parallel key B5×5×14 
T2	Tapered shaft Ø31.75, paralle key 7.96×7.96×25.4 

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

Technical data for GP with Ø25 and 1" straight and 1" splined and Ø28.56 tapered shaft

Type		GP25	GP32	GP40	GP50	GP80	GP100	GP125
Displacement, cm^3/rev [in^3/rev]		25[1.52]	32[1.95]	40[2.44]	49.5[3.02]	79.2[4.83]	99[6.04]	123.8[7.55]
Max. Speed,	Cont.	1600	1560	1500	1210	755	605	486
RPM	Int.*	1815	1720	1750	1515	945	755	605
Max. Torque	Cont.	3.3[290]	4,3[380]	6,2[550]	9,4[835]	15,1[1340]	19,3[1710]	23,7[2100]
daNm [lb-in]	Int.*	4,7[415]	6,1[540]	8,2[730]	11,9[1050]	19,5[1725]	23,7[2100]	29,8[2640]
	Peak**	6,7[595]	8,6[760]	10,7[950]	14,3[1285]	22,4[1985]	27,5[2435]	36,5[3235]
Max. Output	Cont.	4,5[6.0]	5,8[7.8]	8,4[11.5]	10,1[13.5]	10,2[13.7]	10,5[14.1]	10,2[13.7]
kW [HP]	Int.*	6,1[8.2]	7,8[10.5]	11,6[15.5]	12,2[16.1]	12,5[16.8]	12,8[17.1]	12[16.1]
Max. Pressure Drop	Cont.	100[1450]	100[1450]	120[1750]	140[2030]	140[2030]	140[2030]	140[2030]
bar [PSI]	Int.*	140[2030]	140[2030]	155[2250]	175[2540]	175[2540]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	40[10.5]	50[13.2]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	45[11.9]	55[14.5]	70[18.5]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	10[145]	10[145]	10[145]	10[145]	10[145]	9[131]
Min. Starting Torque	At max. press. drop Cont.	3,0[265]	4,0[355]	5,4[480]	7,8[690]	13,2[1170]	16,6[1470]	20,7[1830]
daNm [lb-in]	At max. press. drop Int.*	4,2[370]	5,6[500]	6,8[600]	10[885]	16,8[1490]	21[1860]	26,6[2360]
Min. Speed***, RPM		20	15	10	10	10	10	10
Weight, kg [lb] For Rear Port + 0,450 [992]	GP	5,6[12.3]	5,6[12.3]	5,7[12.6]	5,8[12.8]	5,9[13.2]	6,1[13.5]	6,2[13.7]

Specifications

Technical data for GP with Ø25 and 1" straight and 1" splined and Ø28.56 tapered shaft

Type		GP160	GP200	GP250	GP315	GP400	GP500	GP630
Displacement, cm³/rev [in³/rev]		158,4[9.66]	198[12.1]	247,5[15.1]	316,8[19.3]	396[24.16]	495[30.2]	623,6[38.05]
Max. Speed,	Cont.	378	303	242	190	150	120	95
RPM	Int.*	472	378	303	236	189	150	120
Max. Torque	Cont.	31,3[2770]	36,6[3240]	38[3360]	38[3360]	36[3190]	39[3452]	44[3895]
daNm [lb-in]	Int.*	37,8[3345]	45,6[4035]	58,3[5160]	56[4960]	59[5240]	57[5045]	64[5665]
	Peak**	43,8[3880]	55[4870]	68,5[6060]	85[7505]	85,4[7560]	78[6903]	82[7257]
Max. Output	Cont.	10,1[13.5]	10[13.5]	7,5[10]	5,8[7.9]	4,6[6.2]	3,5[4.7]	3,3[4.4]
kW [HP]	Int.*	12,1[16.2]	12[16.1]	12[16.1]	9[12.1]	7,8[10.5]	7,2[9.7]	5,6[7.5]
Max. Pressure Drop	Cont.	140[2030]	140[2030]	110[1600]	90[1300]	70[1015]	60[870]	55[800]
bar [PSI]	Int.*	175[2540]	175[2540]	175[2540]	140[2030]	115[1665]	90[1305]	80[1160]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	180[2610]	130[1885]	110[1740]
Max. Oil Flow	Cont.	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	175[2540]	175 [2540]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		8[116]	7[100]	6[87]	5[73]	5[73]	5[73]	5[73]
Min. Starting Torque		28,2[2500]	33,5[2950]	33,6[2970]	34,4[3045]	34,5[3050]	36[3180]	41,5[3670]
daNm [lb-in]	At max. press. drop Cont.	35,5[3140]	42,6[3770]	54,2[4795]	61,9[5480]	60,8[5390]	54[4780]	62[5480]
Min. Speed***, RPM	At max. press. drop Int.*	10	10	10	10	10	10	10
Weight, kg [lb] For Rear Port + 0,450 [992]	GP	6,4[14.1]	6,6[14.6]	6,8[15]	7,1[15.6]	7,6[16.8]	8,9[20]	9,5[21.4]

Specifications

Technical data for GP with Ø31.75 and Ø32 shaft

Type		GP25	GP32	GP40	GP50	GP80	GP100	GP125
Displacement, cm^3/rev [in^3/rev]		25[1.52]	32[1.95]	40[2.44]	49.5[3.02]	79.2[4.83]	99[6.04]	123,8[7.55]
Max. Speed,	Cont.	1600	1560	1500	1210	755	605	486
RPM	Int.*	1815	1720	1750	1515	945	755	605
Max. Torque	Cont.	3,3[290]	4,3[380]	6,2[550]	9,4[835]	15,1[1340]	19,3[1710]	23,7[2100]
daNm [lb-in]	Int.*	4,7[415]	6,1[540]	8,2[730]	11,9[1050]	19,5[1725]	23,7[2100]	29,8[2640]
	Peak**	6,7[595]	8,6[760]	10,7[950]	14,3[1285]	22,4[1985]	27,5[2435]	36,5[3235]
Max. Output	Cont.	4,5[6.0]	5,8[7.8]	8,4[11.5]	10,1[13.5]	10,2[13.7]	10,5[14.1]	10,2[13.7]
kW [HP]	Int.*	6,1[8.2]	7,8[10.5]	11,6[15.5]	12,2[16.1]	12,5[16.8]	12,8[17.1]	12[16.1]
Max. Pressure Drop	Cont.	100[1450]	100[1450]	120[1750]	140[2030]	140[2030]	140[2030]	140[2030]
bar [PSI]	Int.*	140[2030]	140[2030]	155[2250]	175[2540]	175[2540]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	40[10.5]	60[13.2]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	45[11.9]	55[14.5]	70[18.5]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	10[145]	10[145]	10[145]	10[145]	10[145]	9[131]
Min. Starting Torque		3,0[265]	4,0[355]	5,4[480]	7,8[690]	13,2[1170]	16,6[1470]	20,7[1830]
daNm [lb-in]	At max. press. drop Cont.	4,2[370]	5,6[500]	6,8[600]	10[885]	16,8[1490]	21[1860]	26,6[2360]
Min. Speed***, RPM	At max. press. drop Int.*	20	15	10	10	10	10	10
Weight, kg [lb] For Rear Port + 0,450 [992]	GP	5,6[12.3]	5,6[12.3]	5,7[12.6]	5,9[13]	6[13.2]	6,2[13.7]	6,3[13.9]

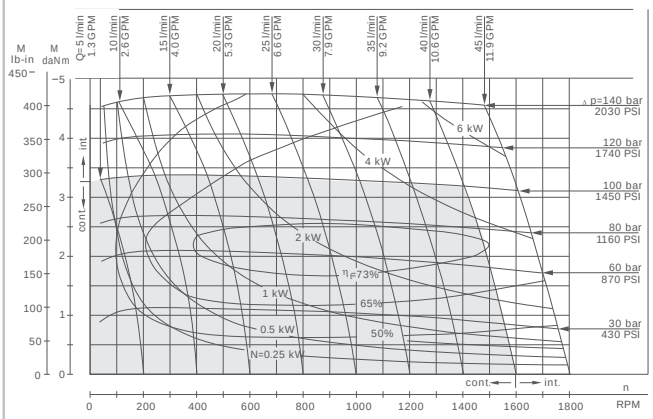
Specifications

Technical data for GP with Ø31.75 and Ø32 shaft

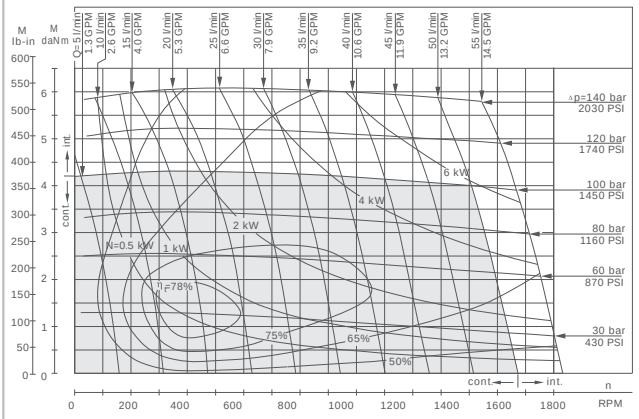
Type		GP160	GP200	GP250	GP315	GP400	GP500	GP630
Displacement, cm³/rev [in³/rev]		158,4[9.66]	198[12.1]	247,5[15.1]	316,8[19.3]	396[24.16]	495[30.2]	623,6[38.05]
Max. Speed,	Cont.	378	303	242	190	150	120	95
RPM	Int.*	472	378	303	236	189	150	120
Max. Torque	Cont.	31,3[2770]	36,6[3240]	47[4160]	48[4360]	50[4415]	39[3452]	44[3895]
daNm [lb-in]	Int.*	37,8[3345]	45,6[4035]	58,3[5160]	56[4960]	59[5240]	57[5045]	64[5665]
	Peak**	43,8[3880]	55[4870]	68,5[6060]	85[7505]	85,4[7560]	78[6903]	82[7257]
Max. Output	Cont.	10,1[13.5]	10[13.5]	9[12.1]	7,6[10.2]	6,2[8.3]	3,5[4.7]	3,3[4.4]
kW [HP]	Int.*	12,1[16.2]	12[16.1]	12[16.1]	9[12.1]	7,8[10.5]	7,2[9.7]	5,6[7.5]
Max. Pressure Drop	Cont.	140[2030]	140[2030]	140[2030]	120[1740]	95[1400]	60[870]	55[800]
bar [PSI]	Int.*	175[2540]	175[2540]	175[2540]	140[2030]	115[1670]	90[1305]	80[1160]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	180[2610]	130[1885]	110[1740]
Max. Oil Flow	Cont.	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]	175[2540]	175[2540]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		8[116]	7[100]	6[87]	5[73]	5[73]	5[73]	5[73]
Min. Starting Torque		28,2[2500]	33,5[2950]	42,8[3790]	4050[45,8]	46,8[4140]	36[3180]	41,5[3670]
daNm [lb-in]	At max. press. drop Cont.	35,5[3140]	42,6[3770]	54,2[4795]	5480[61,9]	60,8[5390]	54[4780]	62[5480]
Min. Speed***, RPM	At max. press. drop Int.*	10	10	10	10	10	10	10
Weight, kg [lb] For Rear Port + 0,450 [992]	GP	6[14.3]	6[14.8]	6,9[15.2]	7,2[15.9]	7,7[17]	9[19.9]	9[21.2]

Function Diagrams

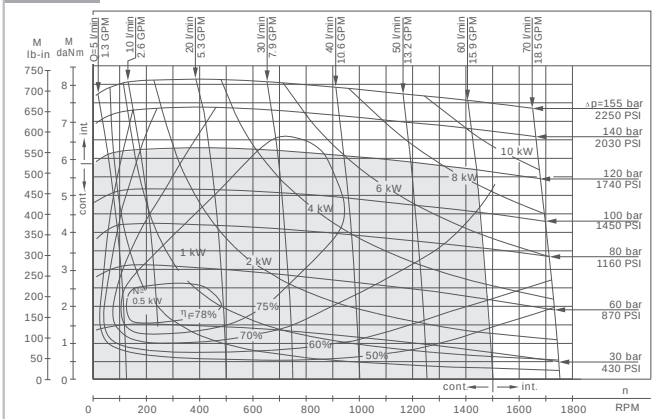
GP25



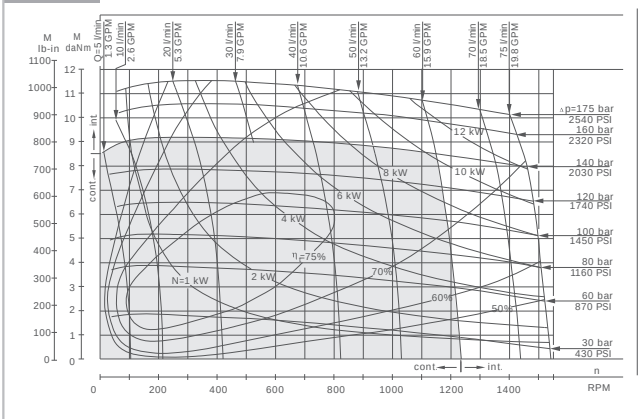
GP32



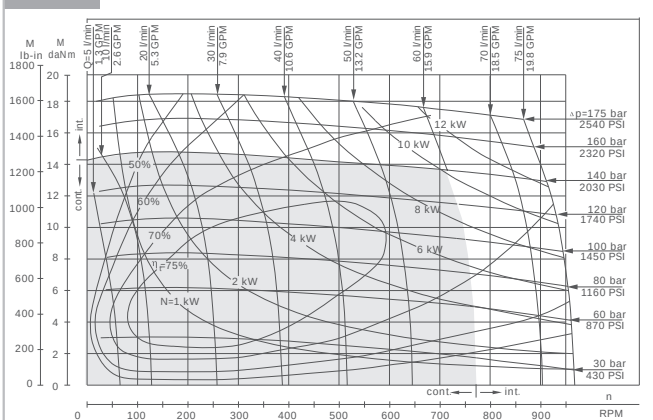
GP40



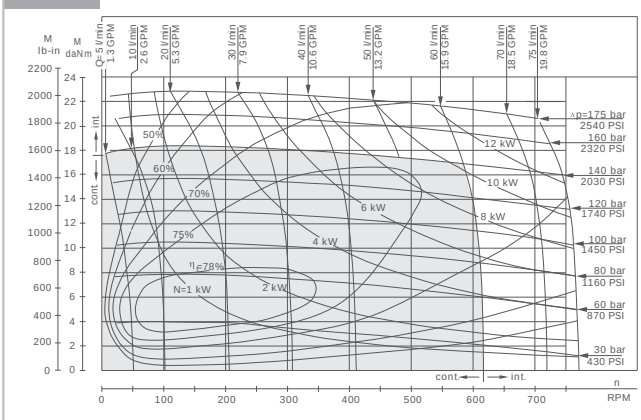
GP50



GP80



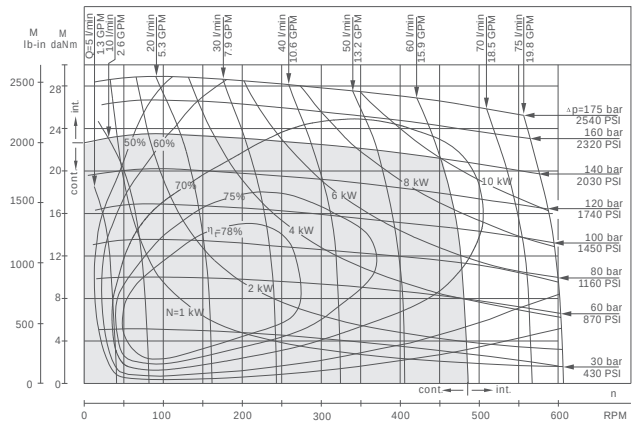
GP100



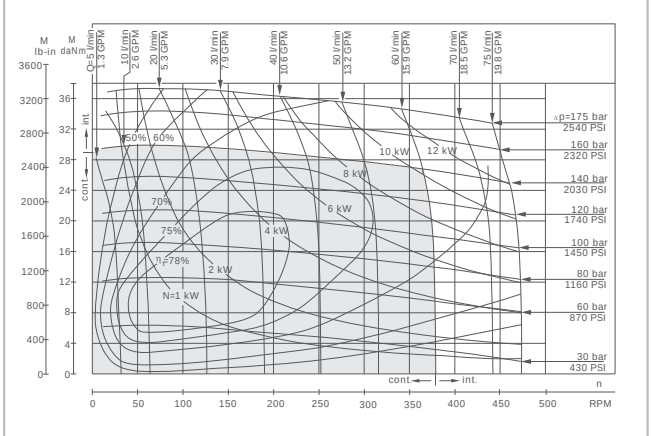
The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

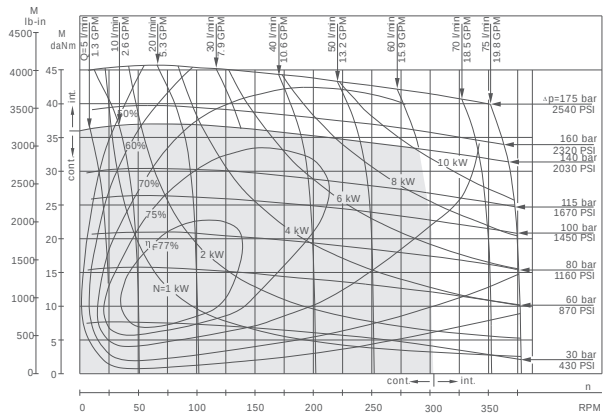
GP125



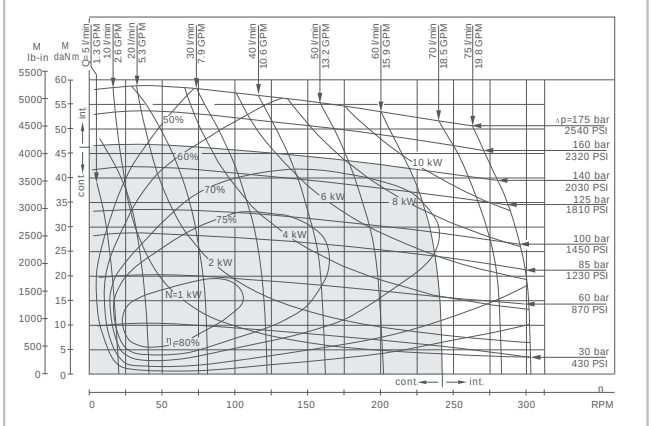
GP160



GP200



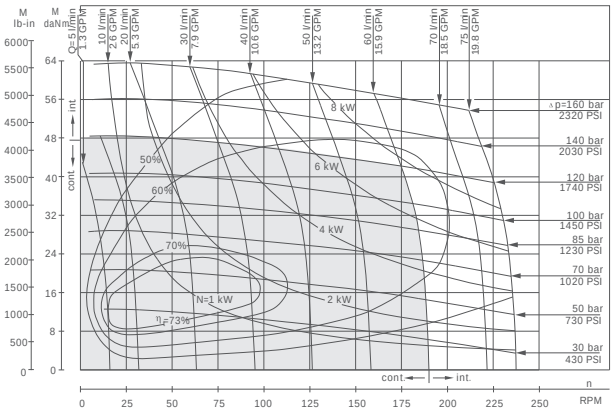
GP250



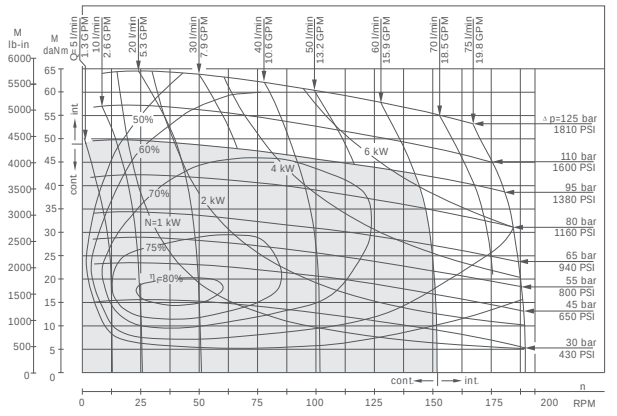
The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

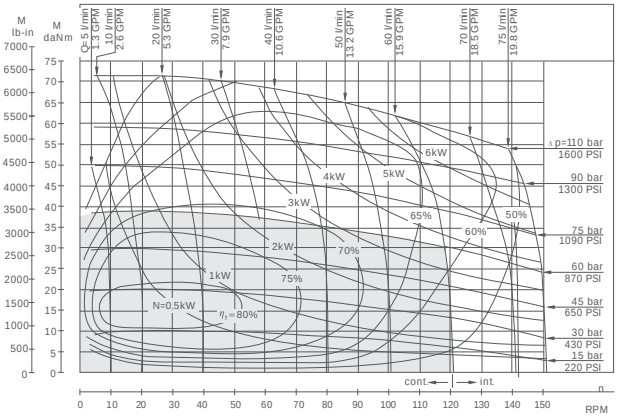
GP315



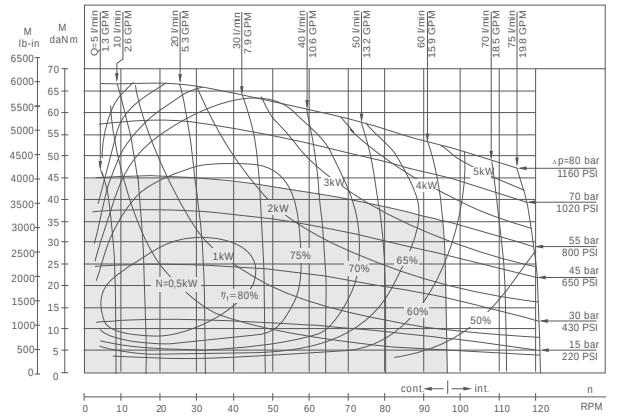
GP400



GP500

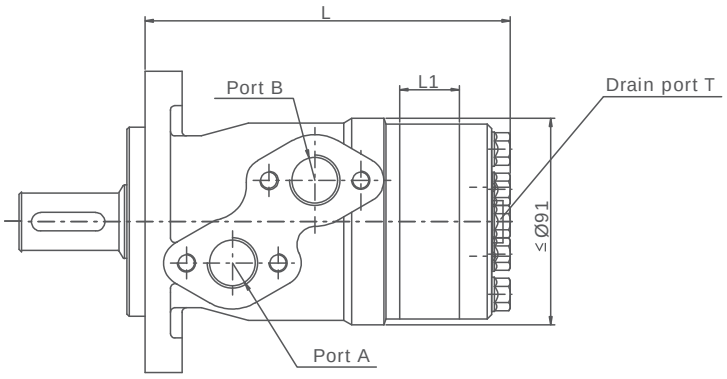


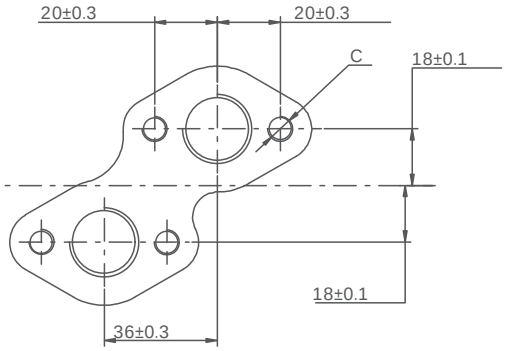
GP630



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].

GP Dimensions and Mountings



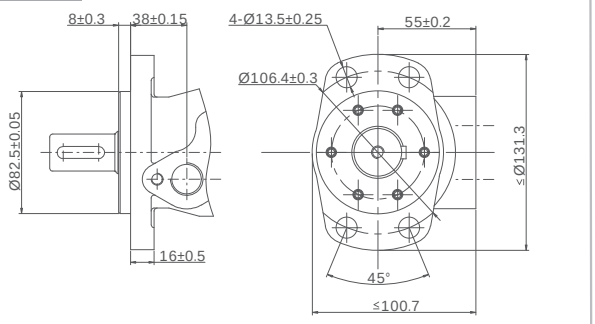


Model	L	L1
GP25	135	4.5
GP32	136	5.5
GP40	137	7
GP50	137	7
GP80	140.5	10.5
GP100	143	13
GP125	146	16
GP160	151	21
GP200	157	26
GP250	162	32
GP315	172	42
GP400	182	52
GP500	195	65
GP630	213	84

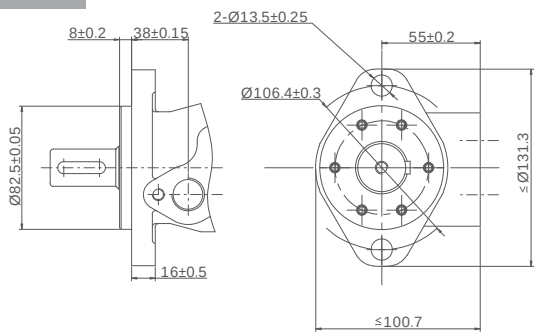
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)
C	4-M8(13)	4-M8(13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8(13)
T	G1/4(12)	M14 x 1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)

GP Flange Covers Dimensions

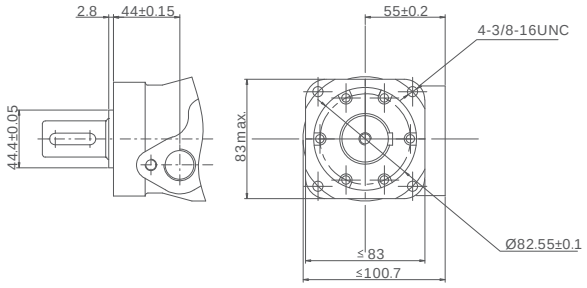
P1



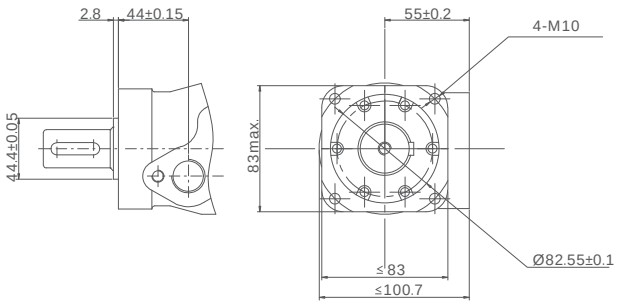
A2



H4

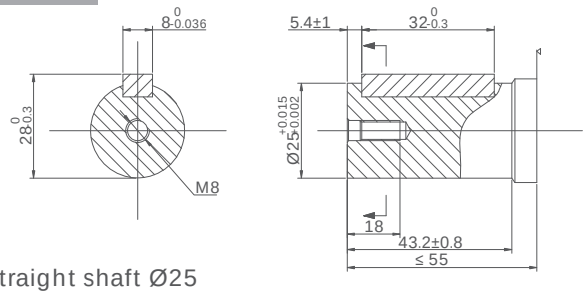


H5



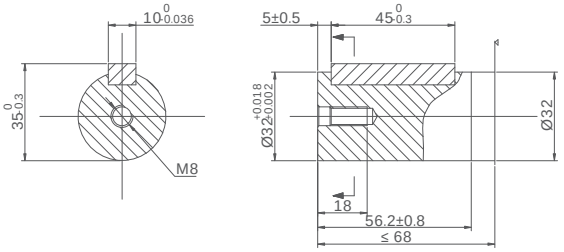
GP Shafts Dimensions

S1



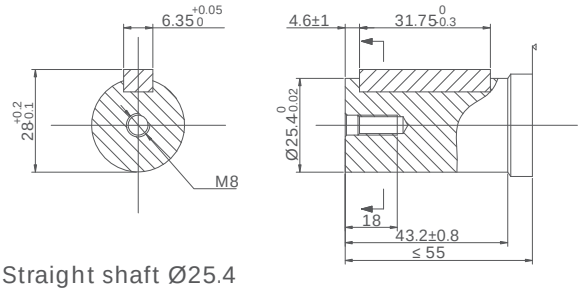
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



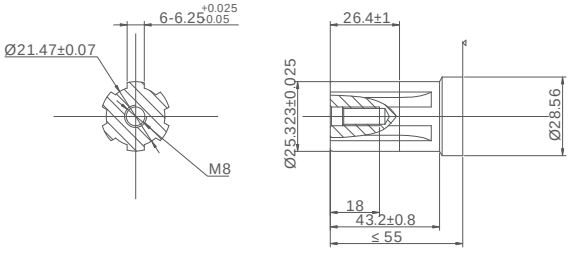
Straight shaft Ø32
Parallel key 10 x 8 x 45

S2



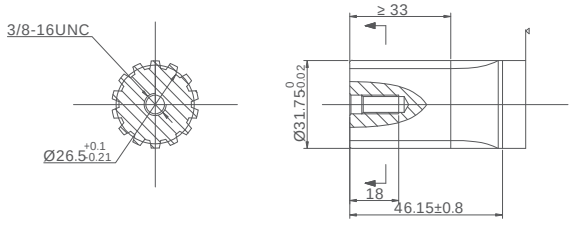
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R1



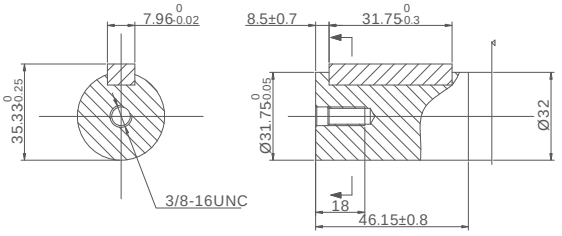
Splined shaft SAE 6B

R2



Splined shaft 14 - DP 12/ 24

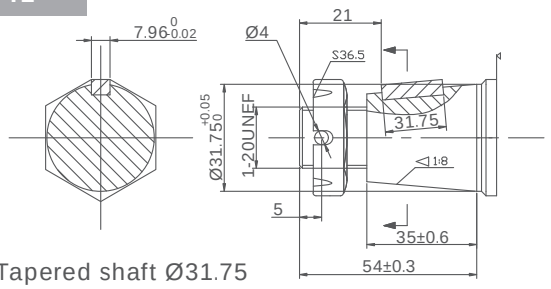
S5



Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

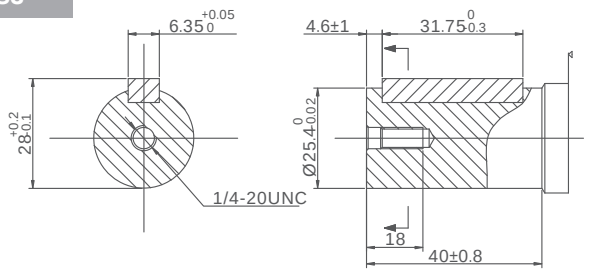
GP Shafts Dimensions

T2



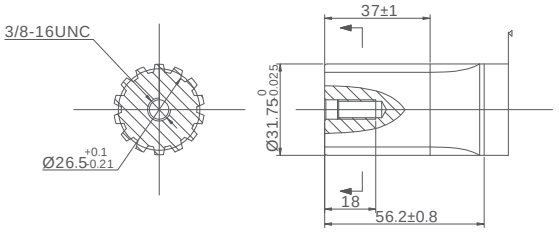
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75
Tightening torque 200 ± 10 Nm

S3



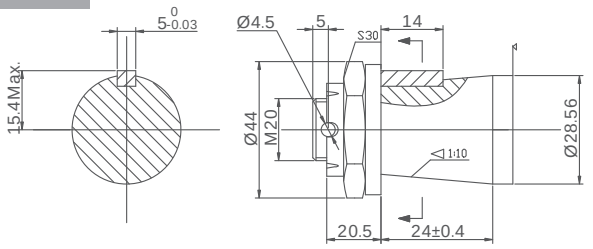
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R3



Splined shaft Ø14 - DP 12/24

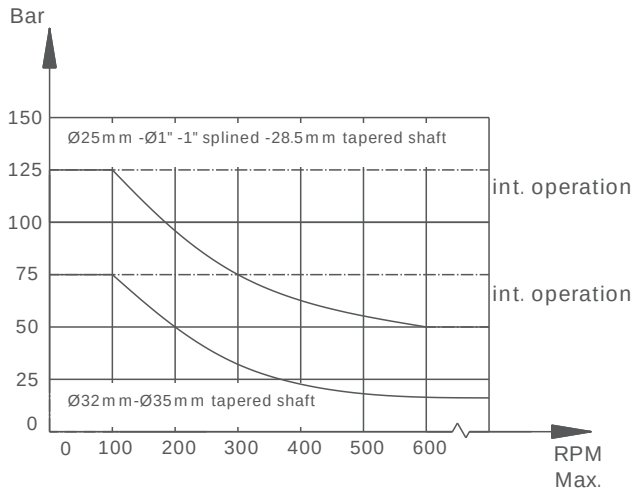
T1



Tapered shaft Ø28.56
Parallel key B5 x 5 x 14
Tightening torque: 100 ± 10 Nm

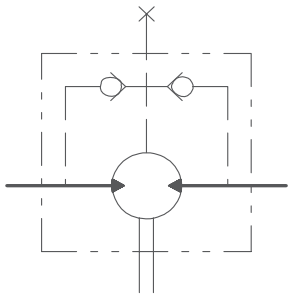
GP Series Hydraulic Motors

Permissible shaft seal pressure



Drain Port

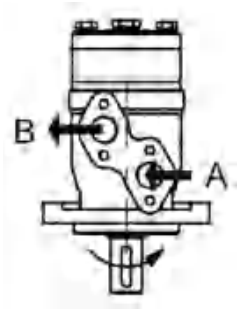
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.



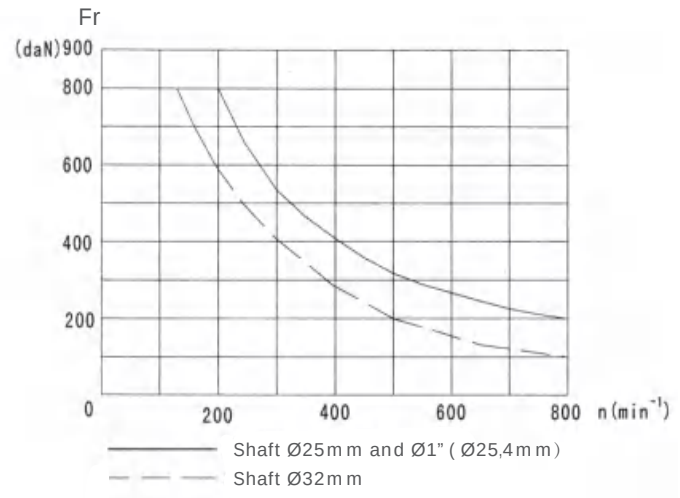
GP with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GP with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

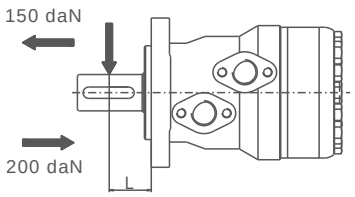
Standard direction of shaft rotation: Standard

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



Output shaft stand radial force





$$Fr = \frac{800}{n} * \frac{25000}{95 + L} \text{ (daN)}$$

Fr = Radial Force (daN)
L = Distance (mm)
n = Speed (rpm)
Rhomb flange L = 30mm
Square flange L = 24mm

GPH Series Hydraulic Motors



Options

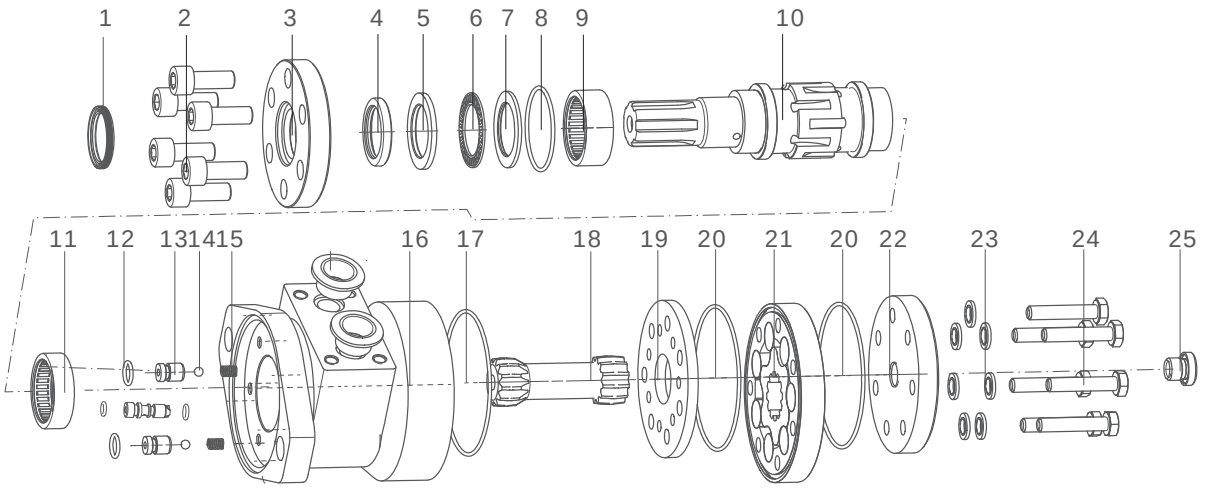
- Flange connection
- Motor with needle roller bearing
- Speed sensing
- Side and bottom ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Feeding medanism ofrobots and manipulators
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Lawn mower

General

Max. Displacement	cm^3/rev [in^3/rev]	801,8 [48.91]
Max. Speed	RPM	630
Max. Torque	daNm [lb-in]	cont.:188 [16650] int.:211 [18650]
Max. Output	kW [HP]	64 [85,8]
Max. Pressure Drop	bar [PSI]	cont.: 200 [2900] int.: 240 [3480]
Max. Oil Flow	lpm [GPM]	240 [63.4]
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)

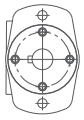
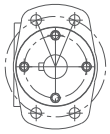


1 Anti-dust ring
2 Bolt
3 Front cover
4 Shaft seal
5 Bearing retainer
6 Flat bearing
7 Bearing retainer
8 O-ring seal
9 Needle roller bearing
10 Output shaft
11 Needle roller bearing
12 O-ring seal
13 Check valve
14 Steel ball
15 Spring
16 Rubber plug
17 Housing
18 O-ring seal
19 Transmission shaft
20 Spacer
21 Stator assembly
22 Rear cover
23 Combination washer
24 Screw
25 External drain plug

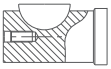
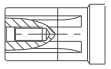
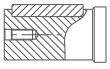
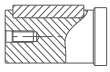
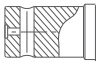
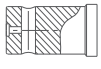
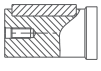
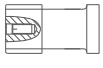
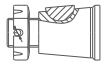
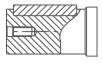
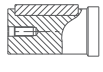
Ordering Code

GPH SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
025	25cm³/rev [1.52in³/rev]
032	32cm³/rev [1.95in³/rev]
040	40cm³/rev [2.44in³/rev]
050	49.5cm³/rev [3.02in³/rev]
080	79.2cm³/rev [4.83in³/rev]
100	99cm³/rev [6.04in³/rev]
125	123.8cm³/rev [7.55in³/rev]
160	158.4cm³/rev [9.66in³/rev]
200	198cm³/rev [12.1in³/rev]
250	247.5cm³/rev [15.1in³/rev]
315	316.8cm³/rev [19.3in³/rev]
400	396cm³/rev [24.16in³/rev]
500	495cm³/rev [30.2in³/rev]
630	623.6cm³/rev [38.05in³/rev]

CODE	FLANGE
A1	2-Hole SAE A, pilot Ø82.5×2.8 
A3	4-Hole SAE A, pilot Ø82.5×2.8 
H4	4-3/8-16 UNC square pilot Ø44.4×2.8 
H5	4-M10 square, pilot Ø44.4×2.8 

CODE	PORTS
G7	G1/2, G14
U9	7/8-14UNF O-ring, 7/16-20UNF
UA	1/2-14NPTF, 7/16-20UNF
U3	3/4-16 O-ring, 7/16-20UNF
G8	PT(Rc) 1/2, PT(Rc) 1/4
D1	Ø10 O-ring, 7/16-20UNF manifold 4×5/16-18UNC
D2	Ø10 O-ring manifold 4×M8, G1/4

CODE	SHAFT
S6	Ø25.4, woodruff key Ø25.4×6.35 
R4	Ø25.4, splined tooth SAE 6B 
S7	Ø25, parallel key 8×7×32 
S8	Ø25.4, parallel key 6.35×6.35×31.75 
S9	Ø25.4, pin hole Ø10.3 
SA	Ø25.4, pin hole Ø8 
SB	Ø22.22, parallel key 6.35×6.35×25.4 
R5	Ø22.22, splined tooth 13-DP 16/32 
T3	Tapered Ø25.4,woodruff key Ø25.4×6.35 
SC	Ø25, parallel key 8×7×28 
SD	Ø25, parallel key 7×7×32 

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

Type		GPH25	GPH32	GPH40	GPH50	GPH80
Displacement, cm³/rev [in³/rev]		25[1.52]	32[1.95]	40[2.44]	49.5[3.02]	79.2[4.83]
Max. Speed,	Cont.	1600	1560	1500	1210	755
RPM	Int.*	1815	1720	1750	1515	945
Max. Torque	Cont.	3,3[290]	4,3[380]	6,2[550]	9,4[835]	15,1[1340]
daNm [lb-in]	Int.*	4,7[415]	6,1[540]	8,2[730]	11,9[1050]	19,5[1725]
	Peak**	6,7[595]	8,6[760]	10,7[950]	14,3[1285]	22,4[1985]
Max. Output	Cont.	4,5[6.0]	5,8[7.8]	8,4[11.5]	10,1[13.5]	10,2[13.7]
kW [HP]	Int.*	6,1[8.2]	7,8[10.5]	11,6[15.5]	12,2[16.1]	12,5[16.8]
Max. Pressure Drop	Cont.	100[1450]	100[1450]	120[1750]	140[2030]	140[2030]
bar [PSI]	Int.*	140[2030]	140[2030]	155[2250]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	40[10.5]	50[13.2]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	45[11.9]	55[14.5]	70[18.5]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	10[145]	10[145]	10[145]	10[145]
Min. Starting Torque	At max. press. drop Cont.	3,0[265]	4,0[355]	5,4[480]	7,8[690]	13,2[1170]
daNm [lb-in]	At max. press. drop Int.*	4,2[370]	5,6[500]	6,8[600]	10[885]	16,8[1490]
Min. Speed***, RPM		20	15	10	10	10
Weight, kg [lb] For	GPH	5,6[12.3]	5,6[12.3]	5,7[12.6]	5,8[12.8]	5,9[13.2]
rear port + 0,450 [992]						

Specifications

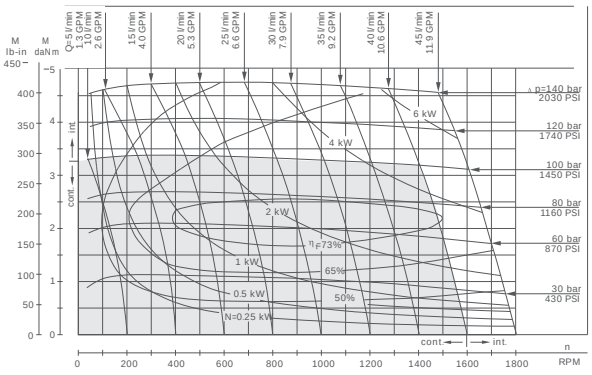
Type		GPH100	GPH125	GPH160	GPH200
Displacement, cm³/rev [in³/rev]		99[6.04]	123,8[7.55]	158,4[9.66]	198[12.1]
Max. Speed,	Cont.	605	486	378	303
RPM	Int.*	755	605	472	378
Max. Torque	Cont.	19,3[1710]	23,7[2100]	31,3[2770]	36,6[3240]
daNm [lb-in]	Int.*	23,7[2100]	29,8[2640]	37,8[3345]	45,6[4035]
	Peak**	27,5[2435]	36,5[3235]	43,8[3880]	55[4870]
Max. Output	Cont.	10,5[14.1]	10,2[13.7]	10,1[13.5]	10[13.5]
kW [HP]	Int.*	12,8[17.1]	12[16.1]	12,1[16.2]	12[16.1]
Max. Pressure Drop	Cont.	140[2030]	140[2030]	140[2030]	140[2030]
bar [PSI]	Int.*	175[2540]	175[2540]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	9[131]	8[116]	7[100]
Min. Starting Torque	At max. press. drop Cont.	16,6[1470]	20,7[1830]	28,2[2500]	33,5[2950]
daNm [lb-in]	At max. press. drop Int.*	21[1860]	26,6[2360]	35,5[3140]	42,6[3770]
Min. Speed***, RPM		10	10	10	10
Weight, kg [lb] For	GPH	6,1[13.5]	6,2[13.7]	6,4[14.1]	6,6[14.6]
rear port + 0,450 [992]					

Specifications

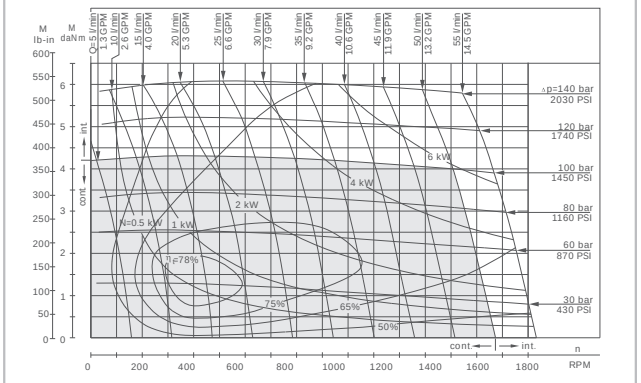
Type		GPH250	GPH315	GPH400	GPH500	GPH630
Displacement, cm³/rev [in³/rev]		247,5[15.1]	316,8[19.3]	396[24.16]	495[30.2]	623,6[38.05]
Max. Speed,	Cont.	242	190	150	120	95
RPM	Int.*	303	236	189	150	120
Max. Torque	Cont.	38[3360]	38[3360]	36[3190]	39[3452]	44[3895]
daNm [lb-in]	Int.*	58,3[5160]	56[4960]	59[5240]	57[5045]	64[5665]
	Peak**	68,5[6060]	85[7505]	85,4[7560]	78[6903]	82[7257]
Max. Output	Cont.	7,5[10]	5,8[7.9]	4,6[6.2]	3,5[4.7]	3,3[4.4]
kW [HP]	Int.*	12[16.1]	9[12.1]	7,8[10.5]	7,2[9.7]	5,6[7.5]
Max. Pressure Drop	Cont.	110[1600]	90[1300]	70[1015]	60[870]	55[800]
bar [PSI]	Int.*	175[2540]	140[2030]	115[1665]	90[1305]	80[1160]
	Peak**	225[3260]	225[3260]	180[2610]	130[1885]	110[1740]
Max. Oil Flow	Cont.	60[15.9]	60[15.9]	60[15.9]	60[15.9]	60[15.9]
lpm [GPM]	Int.*	75[19.8]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	175[2540]	175[2540]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	140[2030]	140[2030]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	175[2540]	175[2540]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		6[87]	5[73]	5[73]	5[73]	5[73]
Min. Starting Torque	At max. press. drop Cont.	33,6[2970]	34,4[3045]	34,5[3050]	36[3180]	41,5[3670]
daNm [lb-in]	At max. press. drop Int.*	54,2[4795]	61,9[5480]	60,8[5390]	54[4780]	62[5480]
Min. Speed***, RPM		10	10	10	10	10
Weight, kg [lb] For	GPH	6,8[15]	7,1[15.6]	7,6[16.8]	8,9[20]	9,5[21.4]
rear port + 0,450 [992]						

Function Diagrams

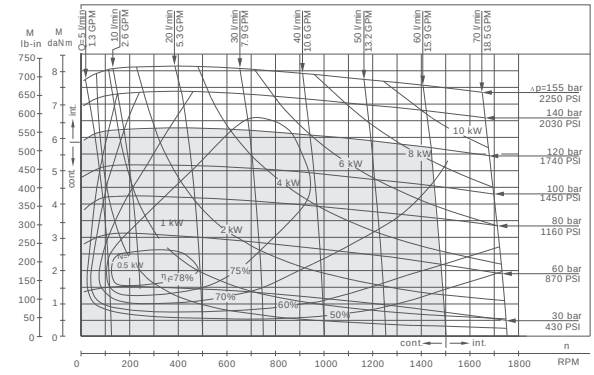
GPH25



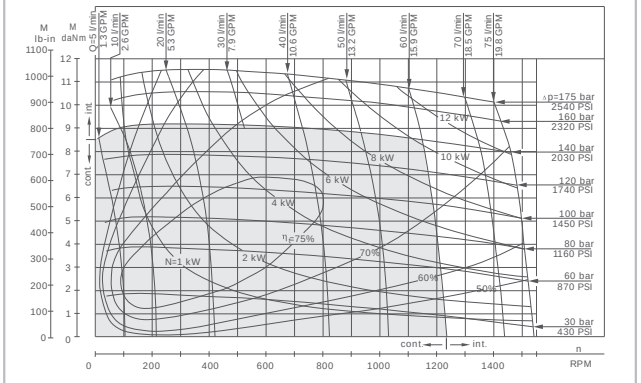
GPH32



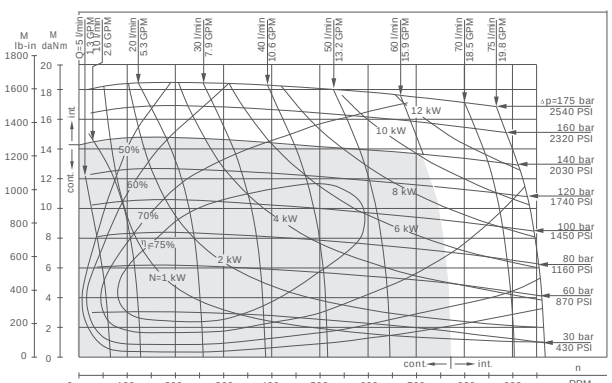
GPH40



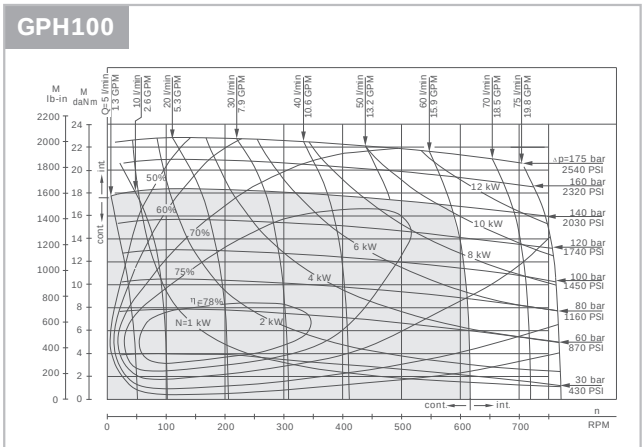
GPH50



GPH80



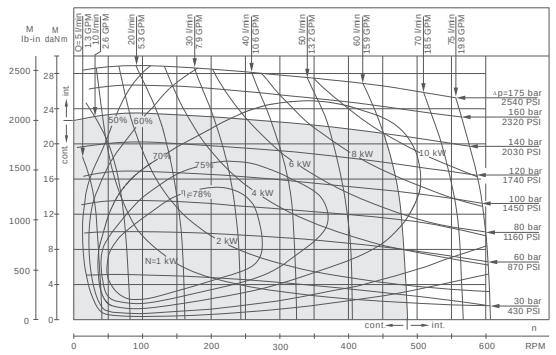
GPH100



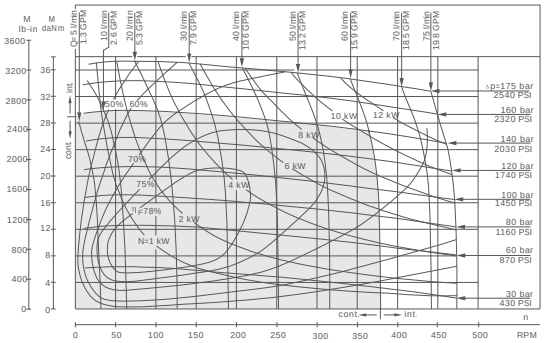
The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

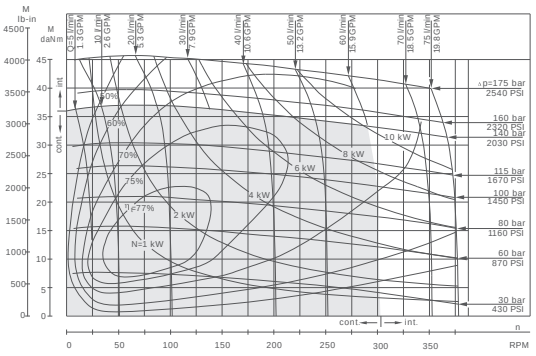
GPH125



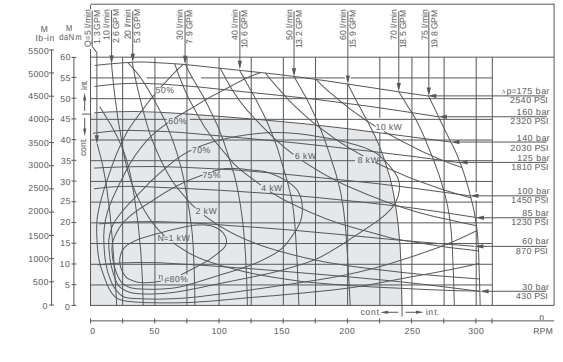
GPH160



GPH200



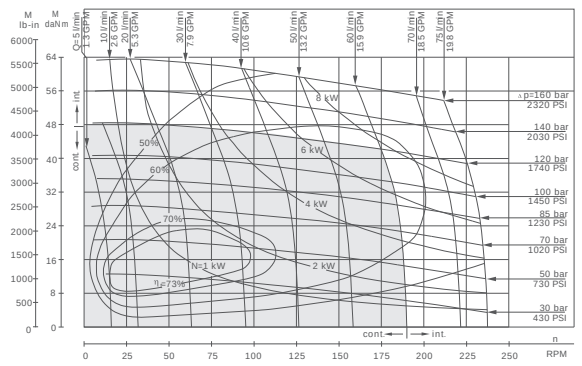
GPH250



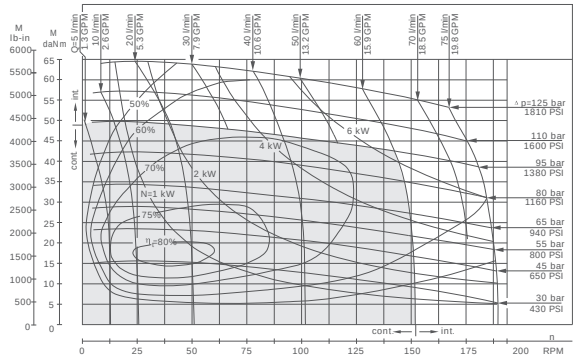
The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

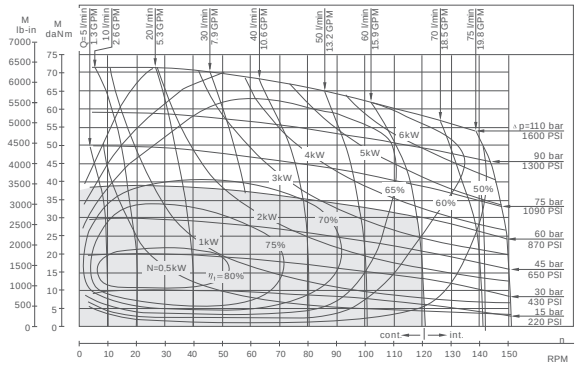
GPH315



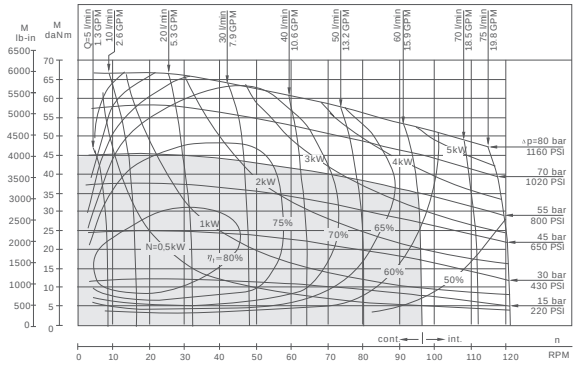
GPH400



GPH500

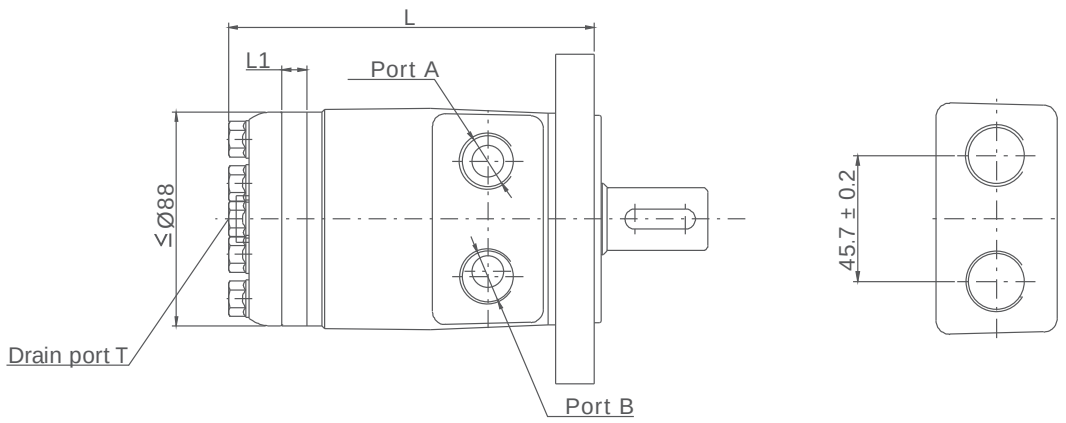


GPH630

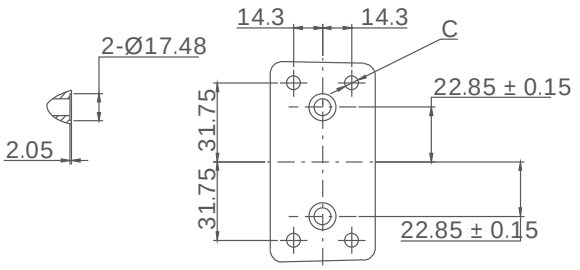


The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GPH Dimensions and Mountings



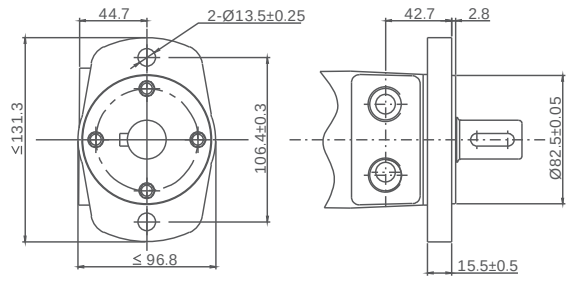
Model	L	L1
GPH40	136	5.5
GPH50	137	7
GPH80	144.5	10.5
GPH100	147	13
GPH125	150	16
GPH160	155	21
GPH200	160	26
GPH250	166	32
GPH315	176	42
GPH400	186	52
GPH500	199	65
GPH630	203	84



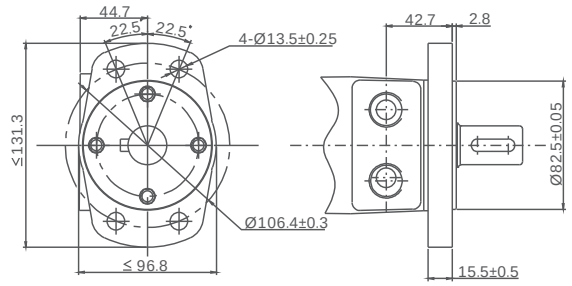
Mounting	G7 (depth)	U9 (depth)	UA (depth)	U3 (depth)	G8 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	3/4-16 O-ring(15)	PT(RC)1/2(15)	Ø10	Ø10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

GPH Flange Covers Dimensions

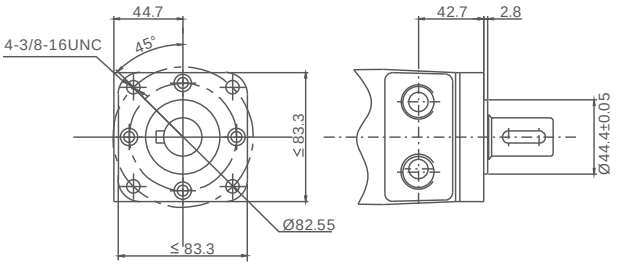
A1



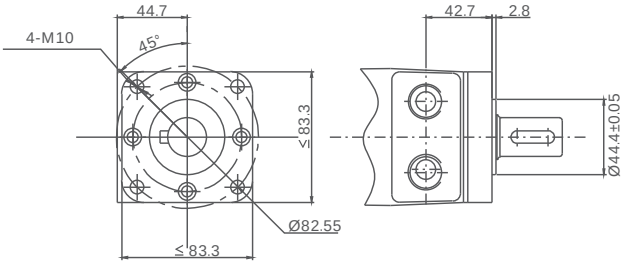
A3



H4

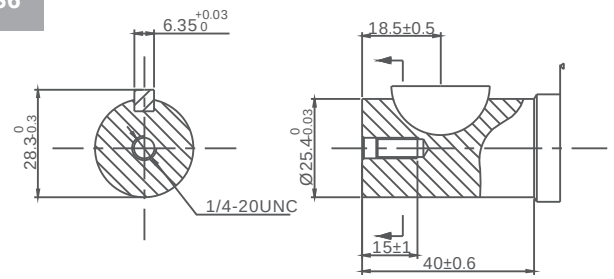


H5



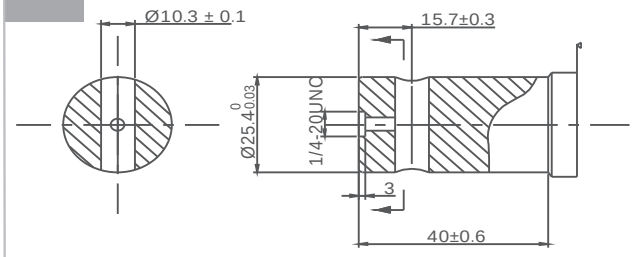
GPH Shafts Dimensions

S6



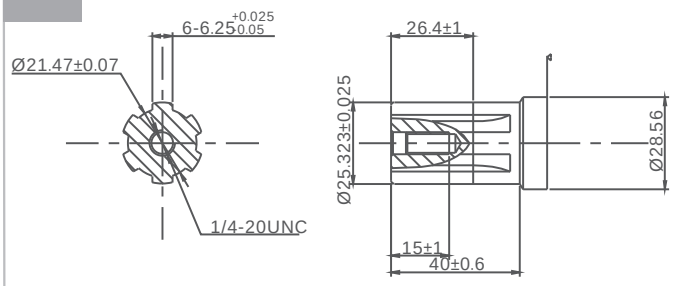
Straight shaft Ø25.4
Woodruff key 25.4 x 6.35

S9



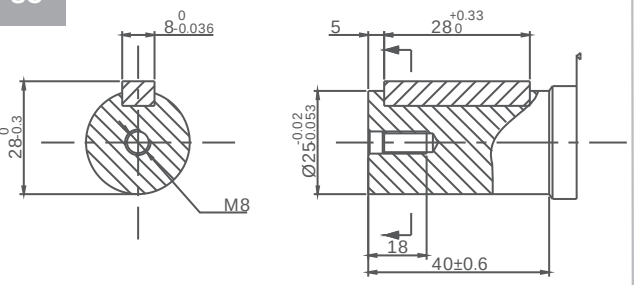
Straight shaft Ø25.4
Pin hole Ø10.3

R4



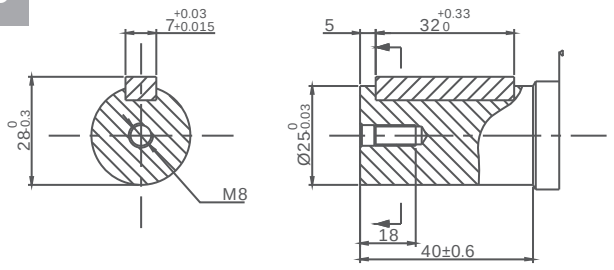
Splined shaft SAE 6B

SC



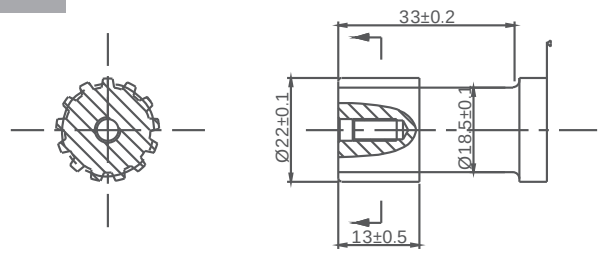
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



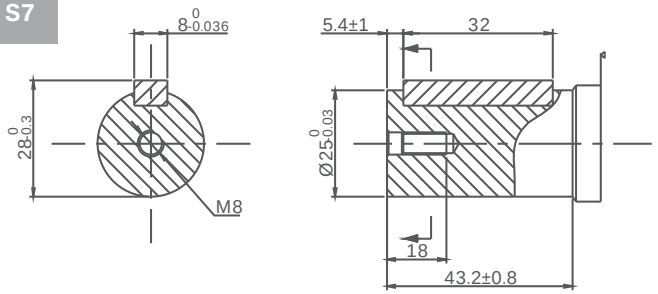
Straight shaft Ø25
Parallel key 7 x 7 x 32

R5



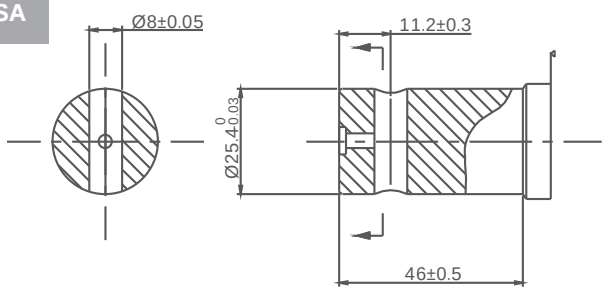
Splined shaft 13-DP 16/32

S7



Straight shaft Ø25
Parallel key 8 x 7 x 32

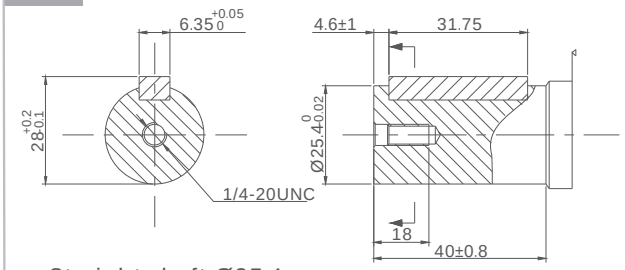
SA



Straight shaft Ø25.4
Pin hole Ø8

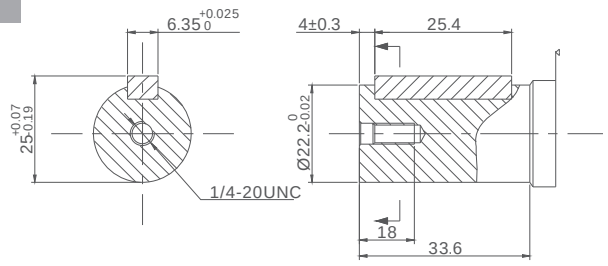
GPH Shafts Dimensions

S8



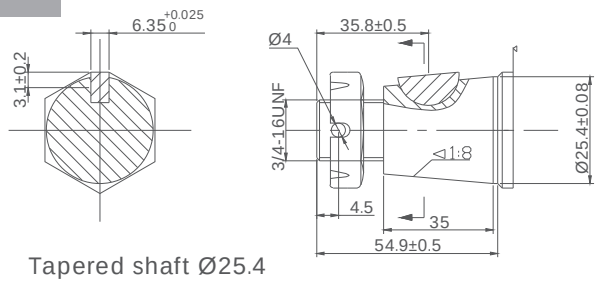
Straight shaft Ø25.4
Paralle key 6.35 x 6.35 x 31.75

SB



Straight shaft Ø25.4
Paralle key 6.35 x 6.35 x 25.4

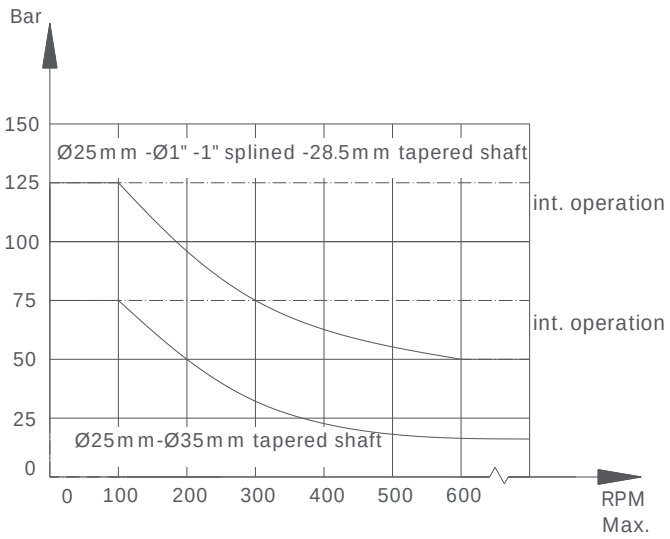
T3

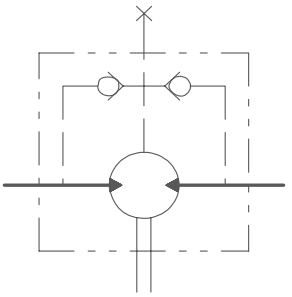


Tapered shaft Ø25.4
Woodruff key 25.4 x 6.35
Tightening torque 200 ± 10 Nm

GPH Series Hydraulic Motors

Permissible shaft seal pressure





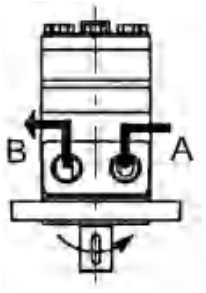
GPH with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GPH with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

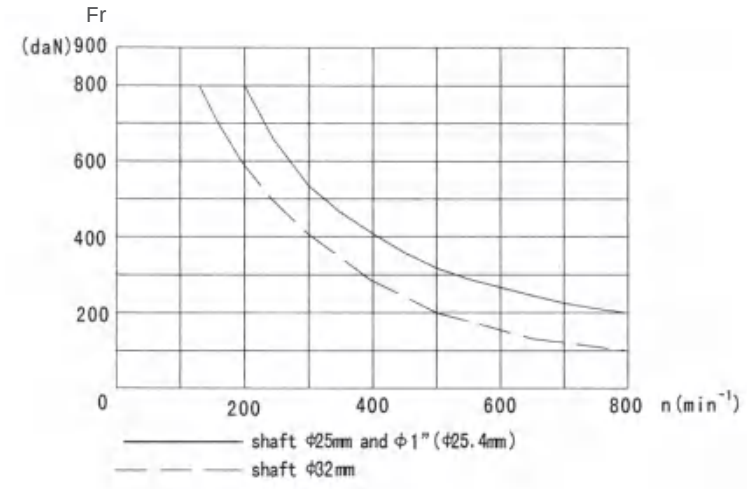
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

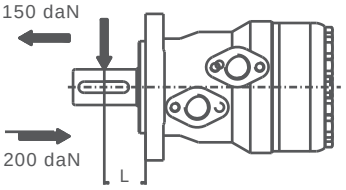
Standard direction of shaft rotation: Standard

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



Output shaft stand radial force





$$Fr = \frac{800}{n} * \frac{25000}{95 + L} \text{ (daN)}$$

Fr = Radial Force (daN)
L = Distance (mm)
n = Speed (rpm)

Rhomb-flange L = 30mm
Square-flange L = 24mm

GR Series Hydraulic Motors



Options

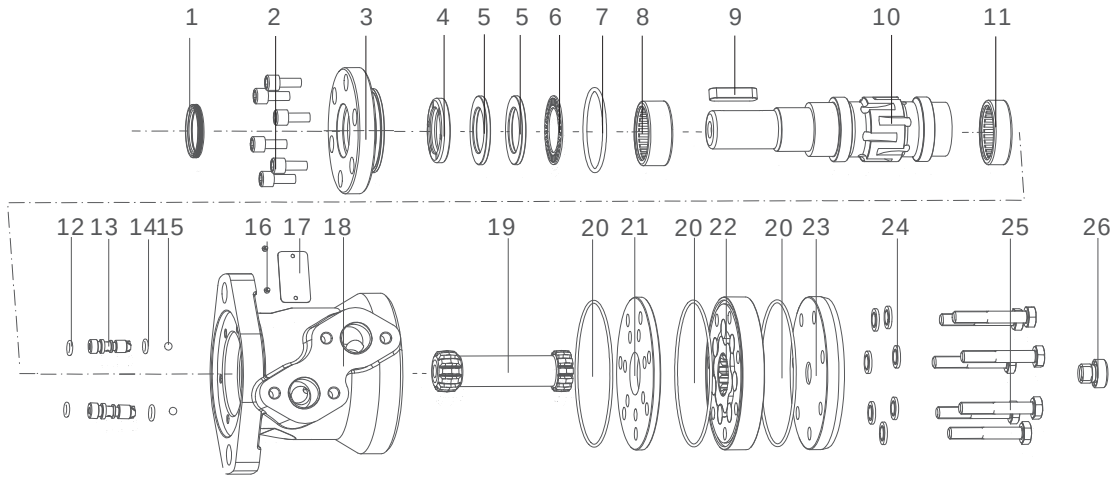
- Flange connection
- Motor with needle bearing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Speed sensing
- Other special features

Applications

- Conveyors
- Feeding medanism ofrobots and manipulators
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Lawn mower

General

Max. Displacement	cm^3/rev [in^3/rev]	397 [24.4]
Max. Speed	RPM	970
Max. Torque	daNm [lb-in]	cont.:61[5400] int.:69 [6100]
Max. Output	kW [HP]	15 [20.1]
Max. Pressure Drop	bar [PSI]	cont.:175 [2540] int.:200 [2900]
Max. Oil Flow	lpm [GPM]	75 [20]
Min. Speed	RPM	10
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)

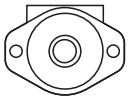
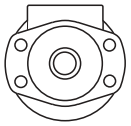
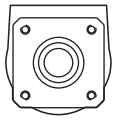
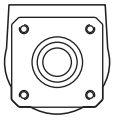


1 Anti-dust ring
2 Bolt
3 Front cover
4 Pressure resistant seal
5 Retainer
6 Needle roller bearing
7 O-ring seal
8 Needle roller bearing
9 Parallel Key
10 Output shaft
11 Needle roller bearing
12 O-ring seal
13 Check valve
14 O-ring seal
15 Steel ball
16 Nameplate rivet
17 Nameplate
18 Housing
19 Transmission shaft
20 O-ring seal
21 Spacer
22 Rotor and stator
23 Rear cover
24 Washer
25 Bolt
26 External drain plug

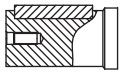
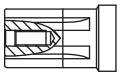
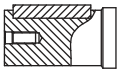
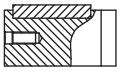
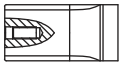
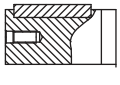
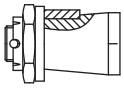
Ordering Code

GR SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
50	51.5cm³/rev [3.14in³/rev]
80	80.3cm³/rev [4.90in³/rev]
100	99.8cm³/rev [6.09in³/rev]
125	125.7cm³/rev [7.67in³/rev]
160	159.6cm³/rev [9.74in³/rev]
200	199.8cm³/rev [12.19in³/rev]
250	250.1cm³/rev [15.26in³/rev]
315	315.7cm³/rev [19.26in³/rev]
400	397cm³/rev [24.4in³/rev]

CODE	FLANGE
A2	2-Ø13.5 SAE A, pilot Ø82.5×2.8 
A4	4-Ø13.5 SAE A, pilot Ø82.5×2.8 
H4	4-3/8-16 square, pilot Ø44.4×2.8 
H5	4-M10 square, pilot Ø44.4×2.8 

CODE	PORTS
G1	G1/2, G1/4 manifold 4×M8
M1	M22×1.5, M14×1.5 manifold 4×M8
U2	7/8-14UNF O-ring, 7/16-20UNF manifold 4×5/16-18UNC
U1	1/2-14NPTF, 7/16-20UNF manifold 4×5/16-18UNC
G2	PT(Rc)1/2, PT(Rc)1/4 manifold 4×M8

CODE	SHAFT
S1	Ø25, parallel key 8×7×32 
S2	Ø25.4, parallel key 6.35×6.35×31.75 
R1	Ø25.4, splined tooth SAE 6B 
S3	Short: Ø25.4, parallel key 6.35×6.35×31.75 
S4	Ø32, parallel key 10×8×45 
R2	Ø31.75, splined tooth 14-DP 12/24 
S5	Ø31.75, parallel key 7.96×7.96×31.75 
T1	Tapered Ø28.56, parallel key B5×5×14 

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

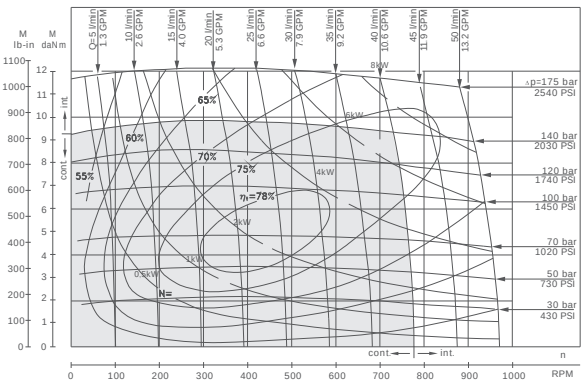
Type		GR50	GR80	GR100	GR125	GR160
Displacement, cm³/rev [in³/rev]		51,5[3.14]	80,3[4.90]	99,8[6.09]	125,7[7.67]	159,6[9.74]
Max. Speed,	Cont.	775	750	600	457	375
RPM	Int.*	970	940	750	600	470
Max. Torque	Cont.	10[900]	20[1770]	24[2125]	30[2655]	39[3450]
daNm [lb-in]	Int.*	13[1150]	22[1947]	28[2480]	34[3010]	43[3805]
	Peak**	17[1505]	27[2390]	32[2832]	37[3275]	46[4070]
Max. Output	Cont.	7[9.5]	12,5[17]	13[17.4]	12,5[16.8]	11,5[15.4]
kW [HP]	Int.*	8,5[11.9]	15[20.1]	15[20.1]	14,5[19.5]	14[18.8]
Max. Pressure Drop	Cont.	140[2030]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	175[2540]	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	40[10.5]	60[15.8]	60[15.8]	60[15.8]	60[15.8]
lpm [GPM]	Int.*	50[13.2]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	10[145]	10[145]	9[130]	7[102]
Min. Starting Torque	At max. press. drop Cont.	8[710]	15[1330]	20[1770]	25[2215]	32[2832]
daNm [lb-in]	At max. press. drop Int.*	10[85]	17[1505]	23[2035]	28[2480]	37[3275]
Min. Speed***, RPM		10	10	10	10	10
Weight, kg [lb] For rear port + 0,650 [1.433]	GR	6,8[15]	6,9[15.2]	7,2[15.9]	7,3[16.1]	7,5[15.2]

Specifications

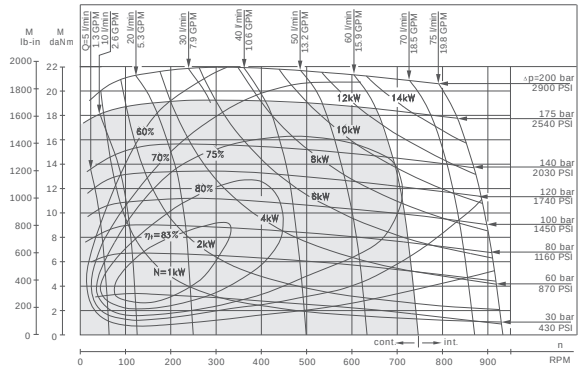
Type		GR200	GR250	GR315	GR400
Displacement, cm³/rev [in³/rev]		199,8[12.19]	250,13[15.26]	315,7[19.26]	397[24.4]
Max. Speed,	Cont.	300	240	194	150
RPM	Int.*	375	300	240	190
Max. Torque	Cont.	45[4000]	54[4780]	55[4870]	61[5400]
daNm [lb-in]	Int.*	50[4425]	61[5400]	69[6110]	69[6110]
	Peak**	56[4960]	71[6280]	84[7435]	87[7770]
Max. Output	Cont.	11[4.8]	10[20.13.4]	9[12]	7,8[10.5]
kW [HP]	Int.*	13[17.4]	12[16.1]	10[13.4]	10,6[14.2]
Max. Pressure Drop	Cont.	175[2540]	175[2540]	135[1960]	110[1600]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Cont.	60[15.8]	60[15.8]	60[15.8]	60[15.8]
lpm [GPM]	Int.*	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Int.*	200[2900]	200[2900]	200[2900]	200[2900]
	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Cont.	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Int.*	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Peak**	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		5[73]	4[58]	3[44]	3[44]
Min. Starting Torque	At max. press. drop Cont.	41[3630]	50[4425]	50[4425]	50[4425]
daNm [lb-in]	At max. press. drop Int.*	46[4070]	55[4870]	66[5840]	61[5400]
Min. Speed***, RPM		10	10	10	10
Weight, kg [lb] For rear port + 0,650 [1.433]	GR	8,1[18.9]	8,5[18.7]	9,2[20.3]	9,9[21.8]

Function Diagrams

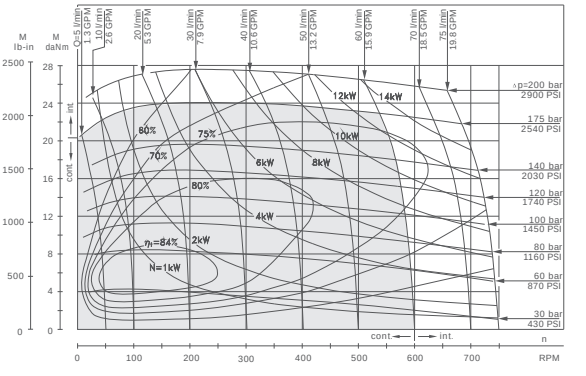
GR50



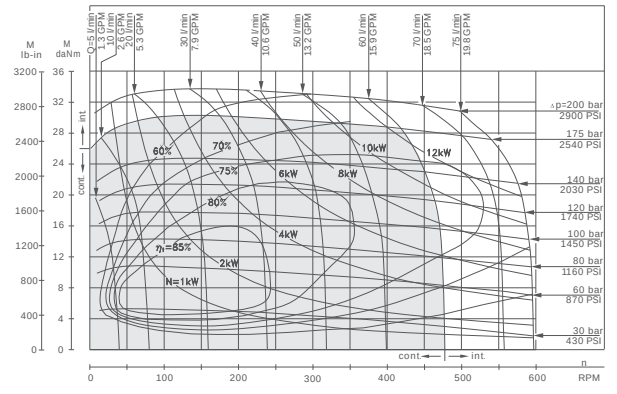
GR80



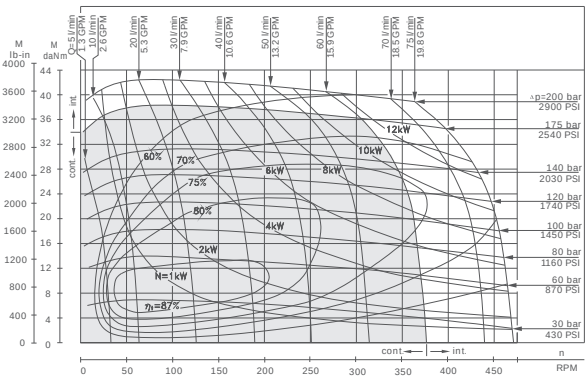
GR100



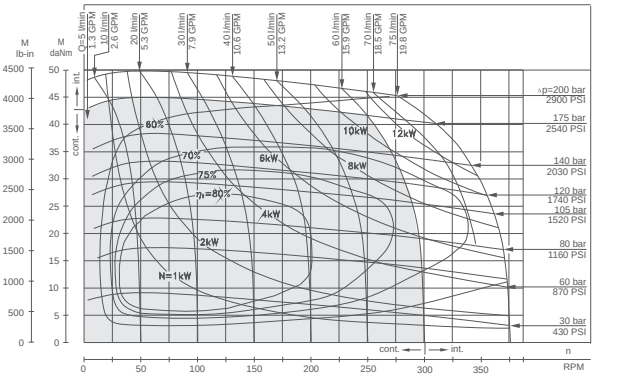
GR125



GR160



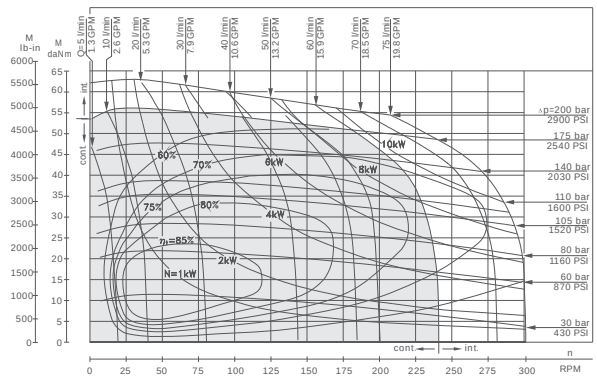
GR200



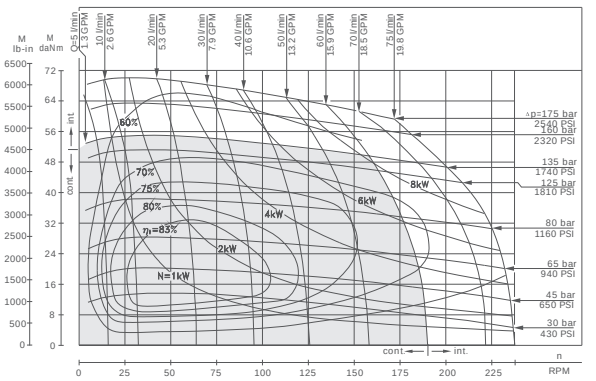
The function diagrams data is for average performance of randomly selected motors at backpressure.
5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

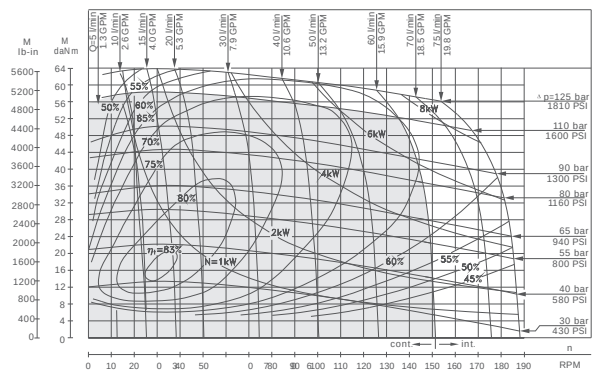
GR250



GR315

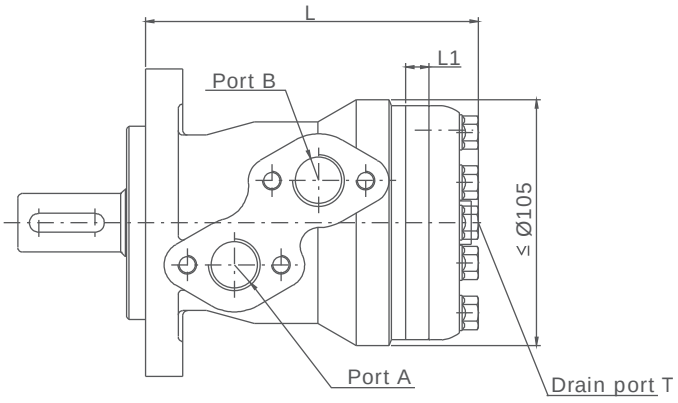


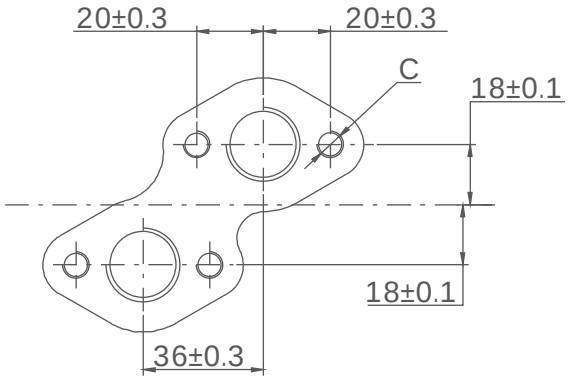
GR400



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].

GR Dimensions and Mountings



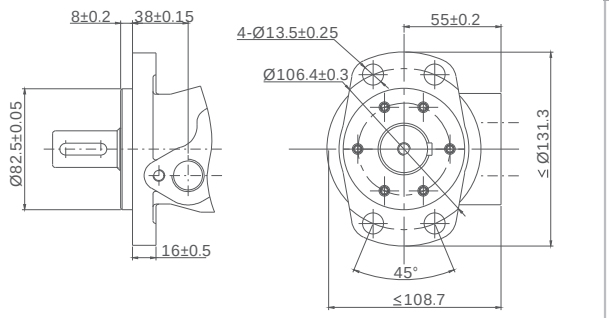


Model	L	L1
GR50	140	10
GR80	146	16
GR100	150	20
GR125	155	25
GR160	161.5	30.5
GR200	170	38.1
GR250	180	50
GR315	192	62
GR400	207	76

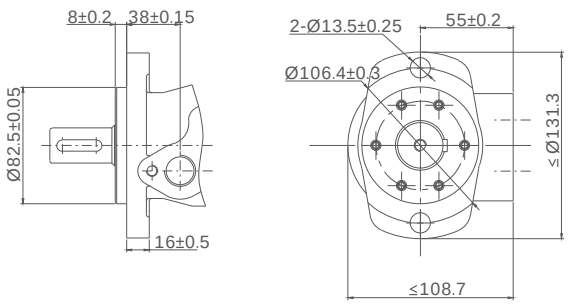
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22x1.5(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)
T	G1/4(12)	M14x1.5(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)
C	4-M8(13)	4-M8(13)	4-5/16-18UNC(13)	4-5/16-18UNC(13)	4-M8(13)

GR Flange Covers Dimensions

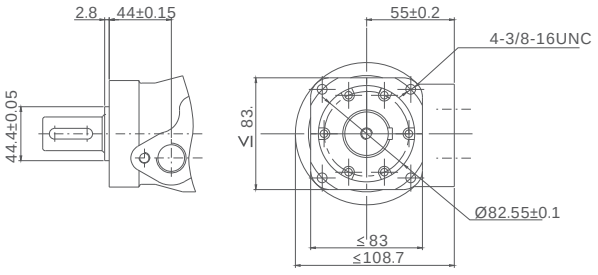
A4



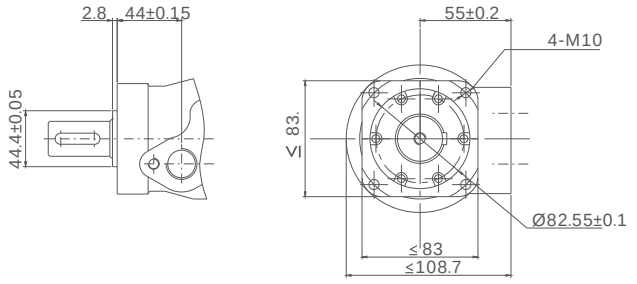
A2



H4

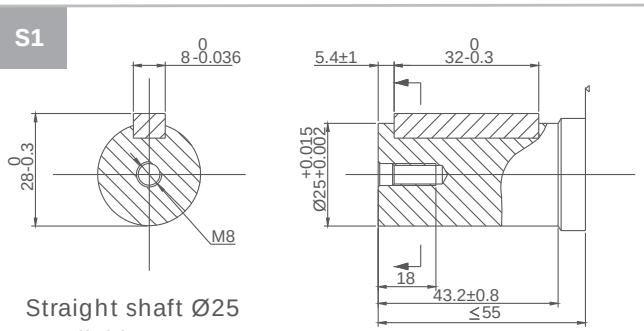


H5



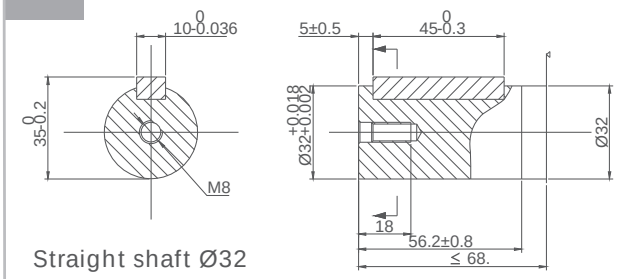
GR Shafts Dimensions

S1



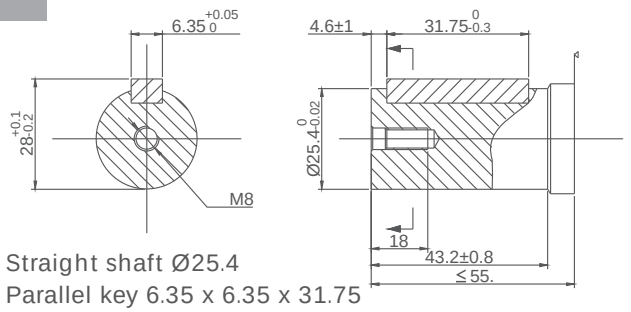
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



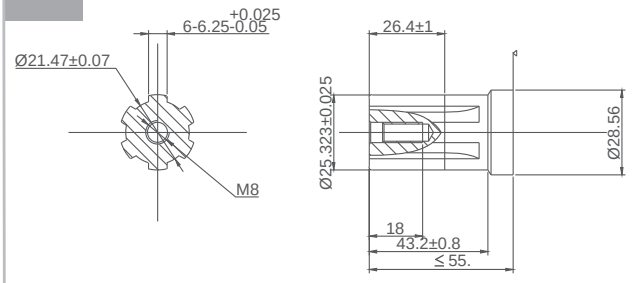
Straight shaft Ø32
Parallel key 10 x 8 x 45

S2



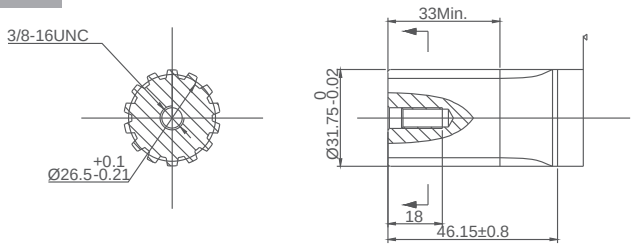
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

R1



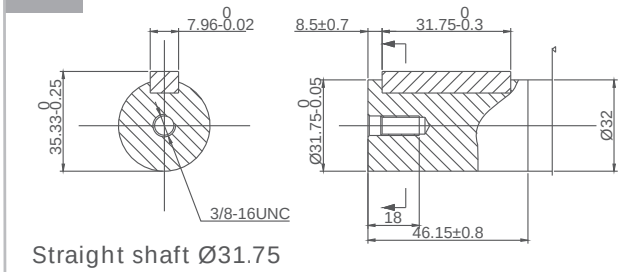
Splined shaft SAE 6B

R2



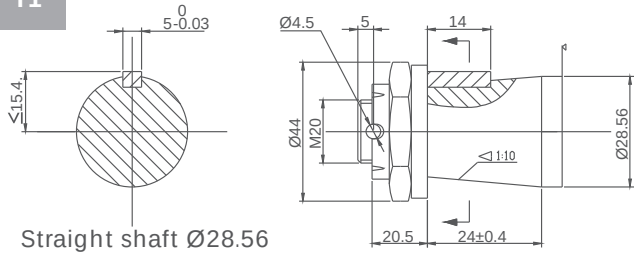
Splined shaft 14-DP 12/24

S5



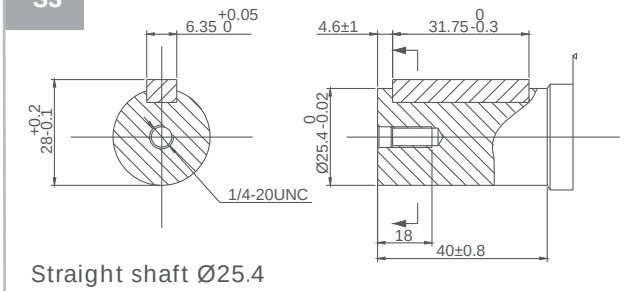
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

T1



Straight shaft Ø28.56
Parallel key B5 x 5 x 14
Tightening torque 100 ± 10Nm

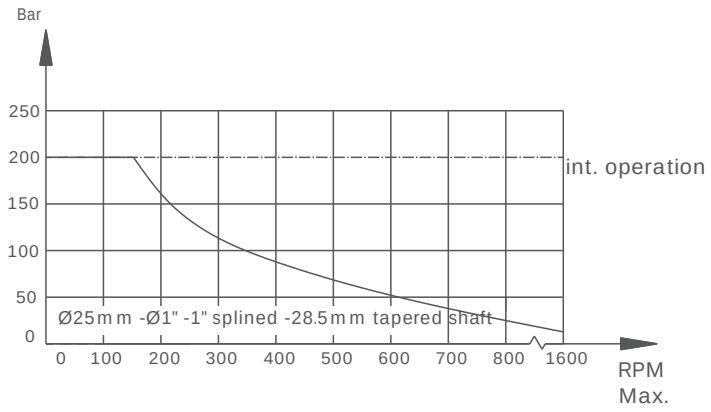
S3

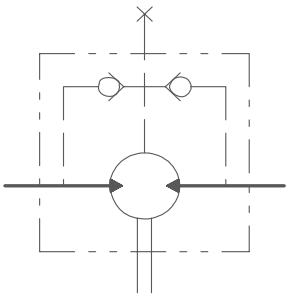


Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

GR Series Hydraulic Motors

Permissible shaft seal pressure





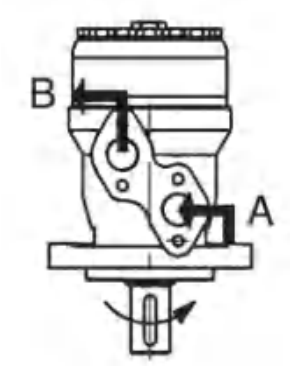
GR with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GR with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

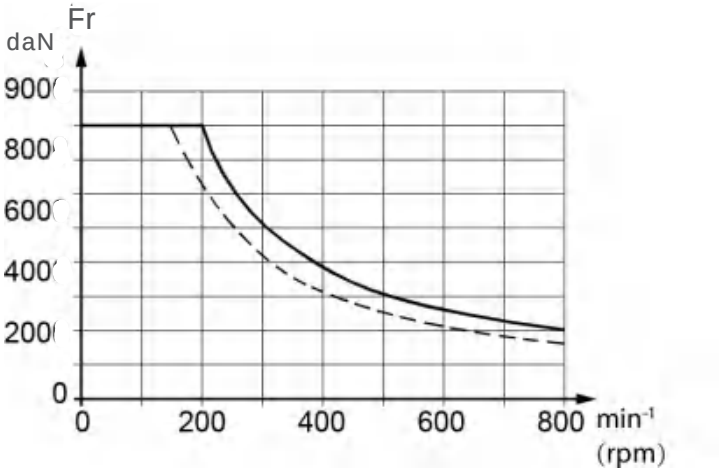
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

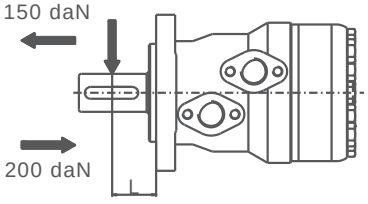
Standard direction of shaft rotation: Standard

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



Output shaft stand radial force





$$Fr = \frac{800}{n} * \frac{25000}{95 + L} \text{ (daN)}$$

Fr = Radial Force (daN)
L = Distance (mm)
n = Speed (rpm)

Rhomb-flange L = 30mm
Square-flange L = 24mm

GRS Series Hydraulic Motors



Options

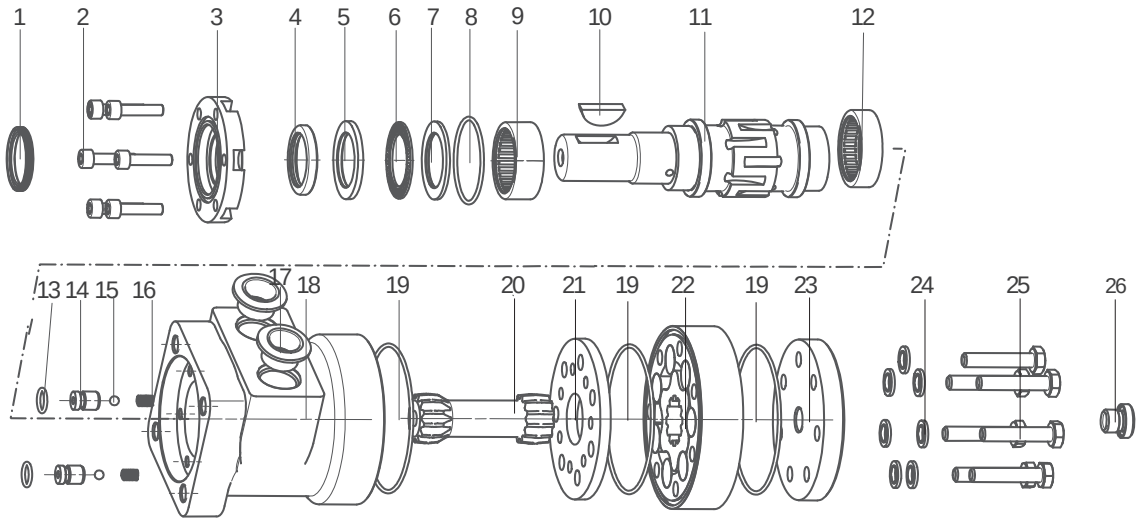
- Flange connection
- Motor with needle bearing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Speed sensing
- Other special features

Applications

- Conveyors
- Feeding medanism ofrobots and manipulators
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Lawn mower

General

Max. Displacement	cm^3/rev [in^3/rev]	397 [24.4]
Max. Speed	RPM	970
Max. Torque	daNm [lb-in]	cont.: 61 [5400] int.: 69 [6100]
Max. Output	kW [HP]	15 [20.1]
Max. Pressure Drop	bar [PSI]	cont.: 175 [2540] int.: 200 [2900]
Max. Oil Flow	lpm [GPM]	75 [20]
Min. Speed	RPM	10
Operating Fuid		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)

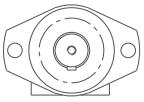
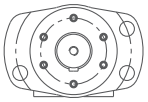
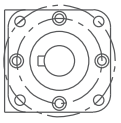
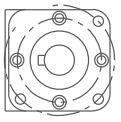


1 Anti-dust ring
2 Bolt
3 Front Cover
4 Shaft seal
5 Retainer
6 Bearing
7 Retainer
8 O-ring seal
9 Needle roller bearing
10 woodruff key
11 Output shaft
12 Needle roller bearing
13 O-ring seal
14 Check valve
15 Steel ball
16 Spring
17 Oil-resistant rubber plug
18 Housing
19 O-ring seal
20 Transmission shaft
21 Spacer
22 Stator assembly
23 Rear cover
24 Washer
25 Bolt
26 External drain plug

Ordering Code

GRS SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
50	51.5cm³/rev [3.14in³/rev]
80	80.3cm³/rev [4.90in³/rev]
100	99.8cm³/rev [6.09in³/rev]
125	125.7cm³/rev [7.67in³/rev]
160	159.6cm³/rev [9.74in³/rev]
200	199.8cm³/rev [12.19in³/rev]
250	250.1cm³/rev [15.26in³/rev]
315	315.7cm³/rev [19.26in³/rev]
400	397cm³/rev [24.4in³/rev]

CODE	FLANGE
A2	2-Hole SAE A, pilot Ø82.5×2.8 
A3	4-Hole SAE A, pilot Ø82.5×2.8 
H4	4-Hole square, pilot Ø44.4×2.8 
H5	4-Hole square, pilot Ø44.4×2.8 

CODE	PORTS
G7	G1/2, G1/4
U9	7/8-14UNF O-ring, 7/16-20UNF
UA	1/2-14NPTF, 7/16-20UNF
G8	PT(Rc) 1/2, PT(Rc) 1/4
D1	Ø10 O-ring,7/16-20UNF manifold 4×5/16-18UNC
D2	Ø10 O-ring, G1/4 manifold 4×M8
M2	M18×1.5, M10×1
M3	M20×1.5, M10×1
M4	M22×1.5, M10×1

CODE	SHAFT
S6	Ø25.4, woodruff key Ø25.4 × 6.35
R4	Ø25.4, splined tooth SAE 6B
S7	Ø25.4, parallel key8×7 ×32
S8	Ø25.4, parallel key 6.35×6.35×31.75
S9	Ø25.4, pin hole Ø10.3
SA	Ø25.4, pin hole Ø8
SB	Ø22.2, parallel key 6.35×6.35×25.4
R5	Ø22.2, splined tooth 13-DP 16/32
T3	Tapered shaft ,Ø25.4 woodruff key Ø25.4×6.35
SC	Ø25, parallel key 8×7×32
SD	Ø25, parallel key 7×7×32

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

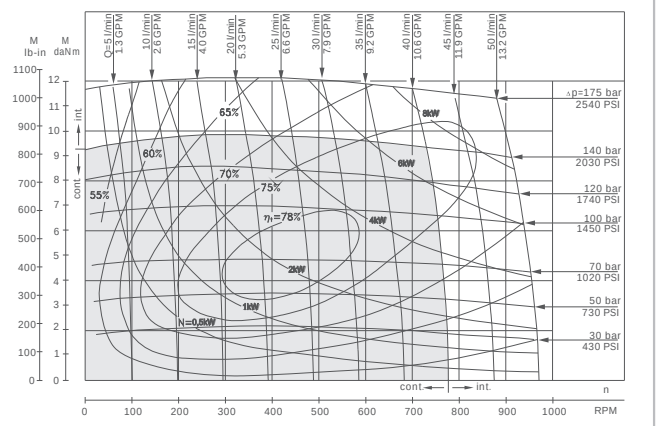
Type		GRS50	GRS80	GRS100	GRS125	GRS160
Displacement, cm³/rev [in³/rev]	Cont.	51,5[3.14]	80,3[4.90]	99,8[6.09]	125,7[7.67]	159.6[9.74]
Max. Speed,	Int.*	775	750	600	457	375
RPM	Cont.	970	940	750	600	470
Max. Torque	Int.*	10[900]	20[1770]	24[2125]	30[2655]	39[3450]
daNm [lb-in]	Peak**	13[1150]	22[1947]	28[2480]	34[3010]	43[3805]
	Cont.	17[1505]	27[2390]	32[2832]	37[3275]	46[4070]
Max. Output	Int.*	7[9.5]	125[17]	13[17.4]	125[16.8]	115[15.4]
kW [HP]	Cont.	85[11.9]	15[20.1]	15[20.1]	145[19.5]	14[18.8]
Max. Pressure Drop	Int.*	140[2030]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	175[2540]	200[2900]	200[2900]	200[2900]	200[2900]
	Cont.	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Int.*	40[10.5]	60[15.8]	60[15.8]	60[15.8]	60[15.8]
lpm [GPM]	Cont.	50[13.2]	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
	Cont.	225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Peak**	200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]		225[3260]	225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[145]	10[145]	10[145]	9[130]	7[102]
Min. Starting Torque	At max. press. drop Cont.	8[710]	15[1330]	20[1770]	25[2215]	32[2832]
daNm [lb-in]	At max. press. drop Int.*	10[885]	17[1505]	23[2035]	28[2480]	37[3275]
Min. Speed***, RPM		10	10	10	10	10
Weight, kg [lb] For rear port + 0,650 [1.433]	GRS	6,9[15.2]	7[15.4]	7,3[16.1]	7,4[16.3]	7,6[15.4]

Specifications

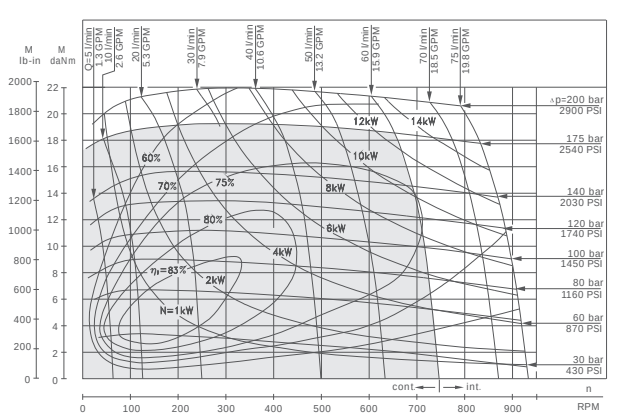
Type		GRS200	GRS250	GRS315	GRS400
Displacement, cm³/rev [in³/rev]	Cont.	199,8[12.19]	250,1[15.26]	315,7[19.26]	397[24.4]
Max. Speed,	Int.*	300	240	190	150
RPM	Cont.	375	300	240	190
Max. Torque	Int.*	45[4000]	54[4780]	55[4870]	61[5400]
daNm [lb-in]	Peak**	50[4425]	61[5400]	69[6110]	69[6110]
	Cont.	56[4960]	71[6280]	84[7435]	87[7700]
Max. Output	Int.*	11[14.8]	10[13.4]	9[12]	78[10.5]
kW [HP]	Cont.	13[17.4]	12[16.1]	10[13.4]	106[14.2]
Max. Pressure Drop	Int.*	175[2540]	175[2540]	135[1960]	110[1600]
bar [PSI]	Peak**	200[2900]	200[2900]	175[2540]	140[2030]
	Cont.	225[3260]	225[3260]	225[3260]	225[3260]
Max. Oil Flow	Int.*	60[15.8]	60[15.8]	60[15.8]	60[15.8]
lpm [GPM]	Cont.	75[19.8]	75[19.8]	75[19.8]	75[19.8]
Max. Inlet Pressure	Int.*	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	200[2900]	200[2900]	200[2900]	200[2900]
	Cont.	225[3260]	225[3260]	225[3260]	225[3260]
Max. Return Pressure	Int.*	175[2540]	175[2540]	175[2540]	175[2540]
without Drain Line	Peak**	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]		225[3260]	225[3260]	225[3260]	225[3260]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		5[73]	4[58]	3[44]	3[44]
Min. Starting Torque	At max. press. drop Cont.	41[3630]	50[4425]	50[4425]	50[4425]
daNm [lb-in]	At max. press. drop Int.*	46[4070]	55[4870]	66[5840]	61[5400]
Min. Speed***, RPM		10	10	10	10
Weight, kg [lb] For rear port + 0,650 [1.433]	GRS	8,1[18.9]	8,5[18.7]	9,2[20.3]	9,9[21.8]

Function Diagrams

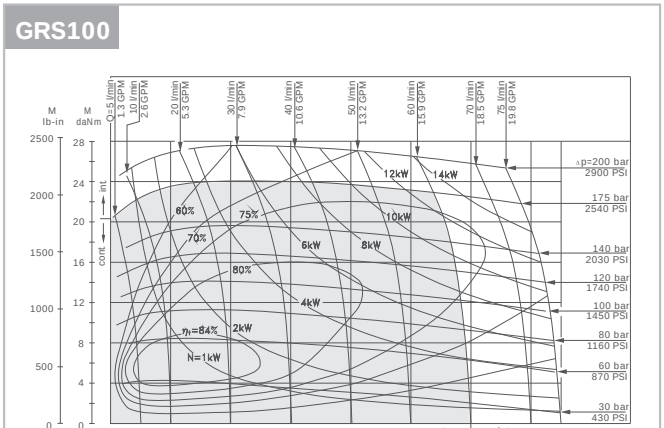
GRS50



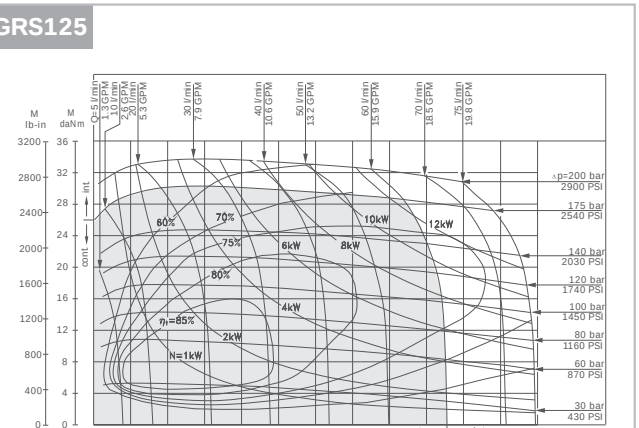
GRS80



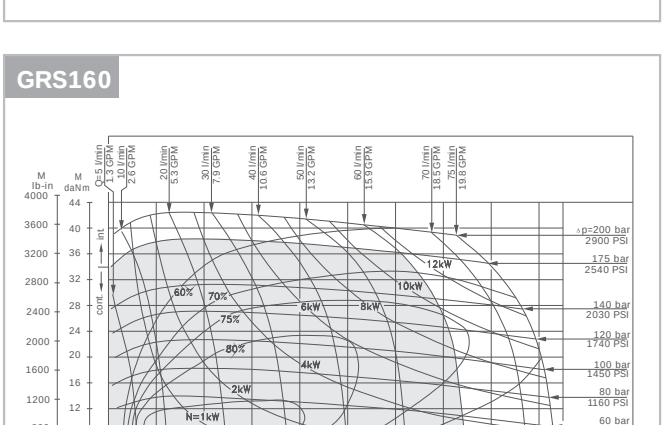
GRS100



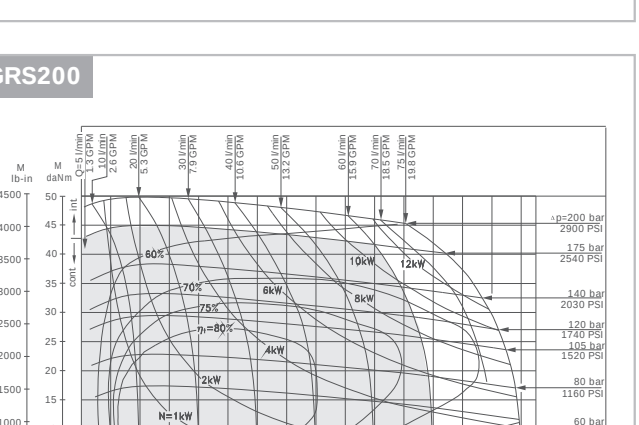
GRS125



GRS160



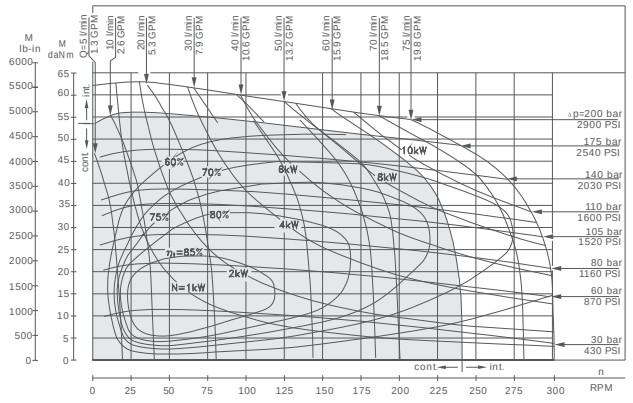
GRS200



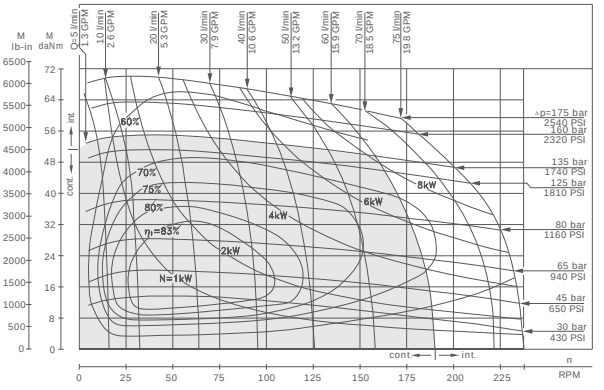
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

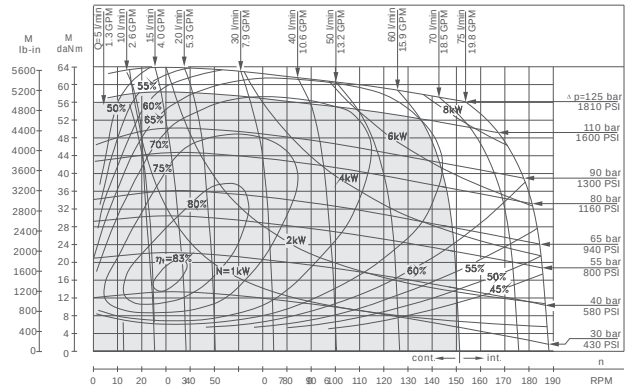
GR250



GRS315

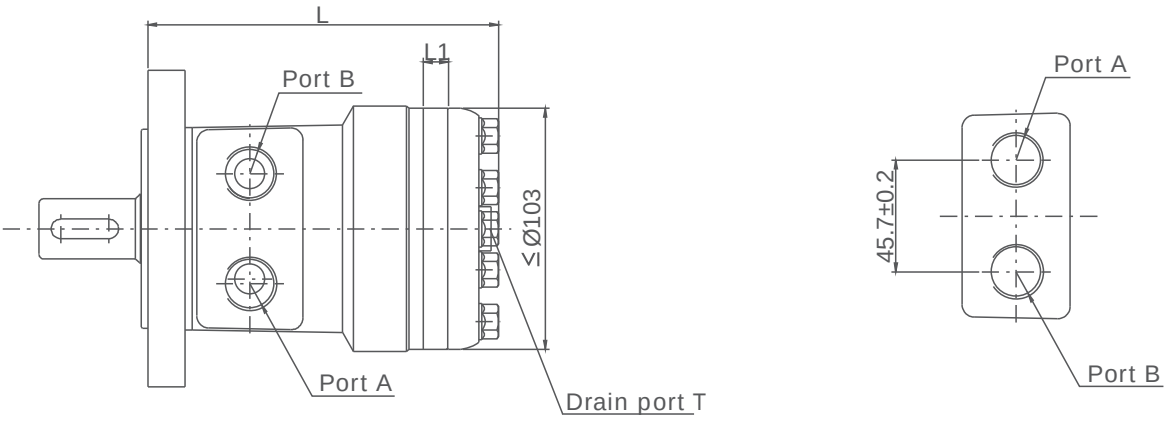


GRS400

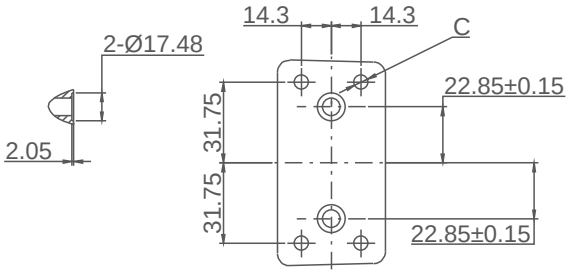


The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GRS Dimensions and Mountings

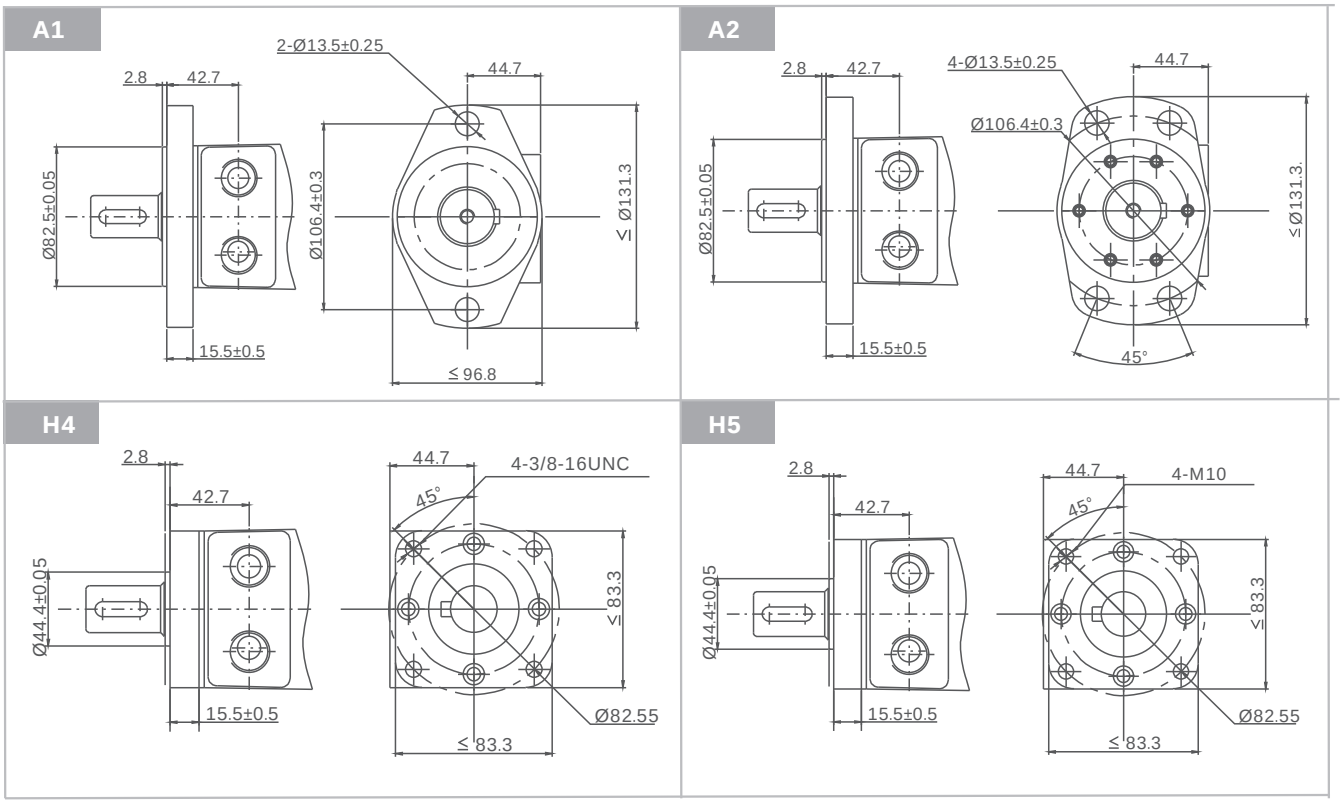


Model	L	L1
GRS50	146	10
GRS80	152	16
GRS100	156	20
GRS125	161	25
GRS160	166.5	30.5
GRS200	174	38.1
GRS250	186	50
GRS315	198	62
GRS400	213	76



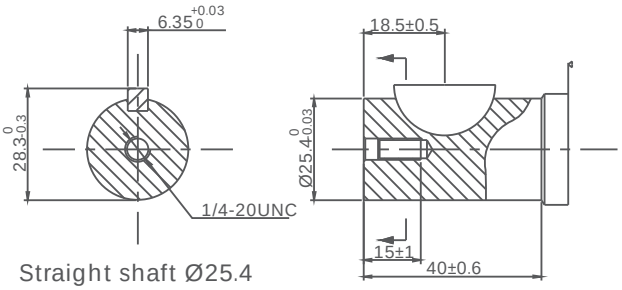
Mounting	G7 (depth)	U9 (depth)	UA (depth)	G8 (depth)	M2 (depth)	M3 (depth)	M4 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	PT(RC)1/2(15)	M18 x 1.5(15)	M20 x 1.5(15)	M22 x 1.5(15)	10	10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	M10 x 1(12)	M10 x 1(12)	M10 x 1(12)	7/16-20UNF(12)	G1/4(12)
C	–	–	–	–	–	–	–	4-5/16-18UNC(13)	4-M8(13)

GRS Flange Covers Dimensions



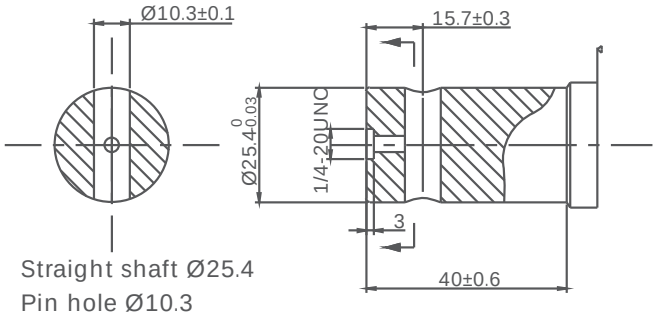
GRS Shafts Dimensions

S6



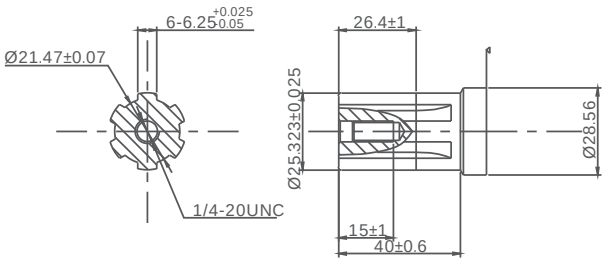
Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

S9



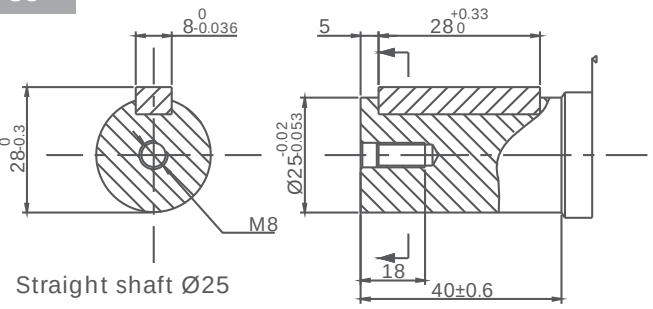
Straight shaft Ø25.4
Pin hole Ø10.3

R4



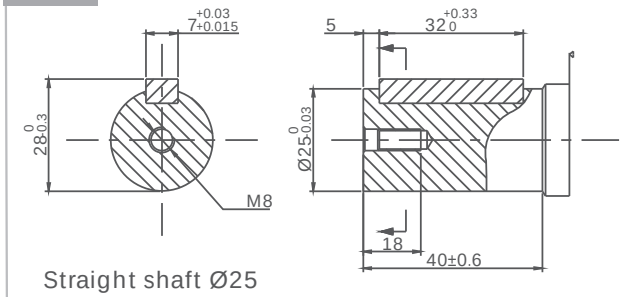
Splined shaft SAE 6B

SC



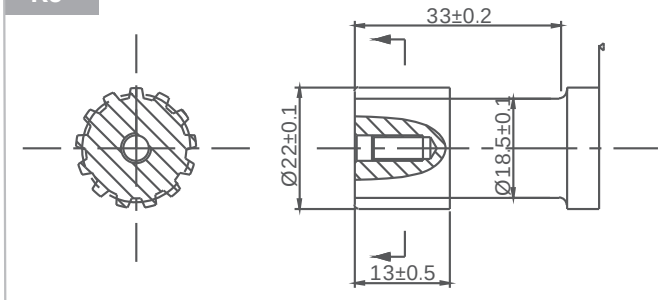
Straight shaft Ø25
Parallel key 8 x 7 x 28

SD



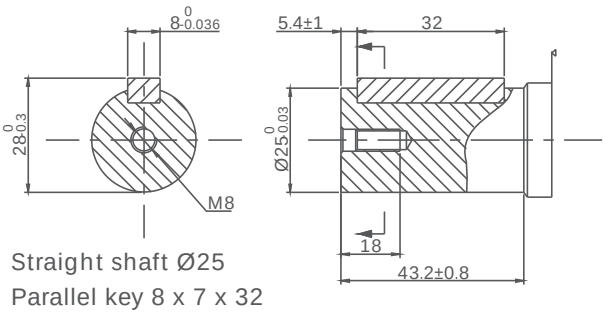
Straight shaft Ø25
Parallel key 7 x 7 x 32

R5



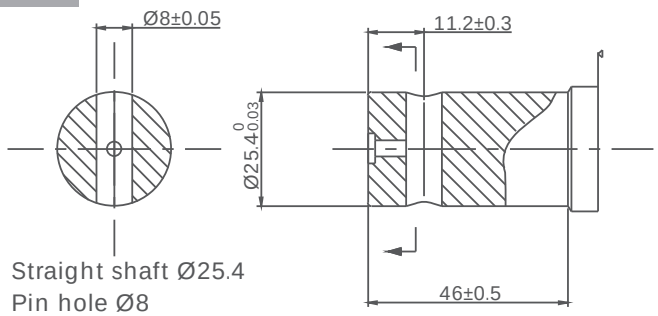
Splined shaft 13-DP 16/32

S7



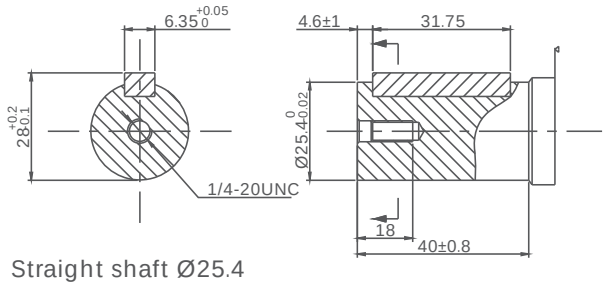
Straight shaft Ø25
Parallel key 8 x 7 x 32

SA



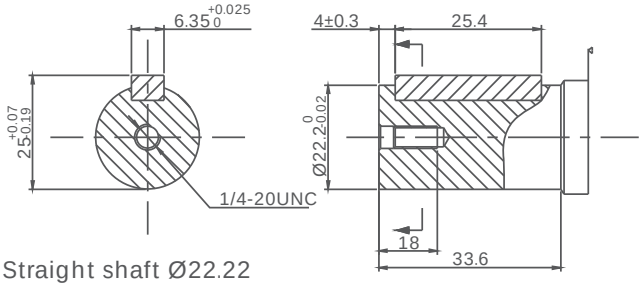
Straight shaft Ø25.4
Pin hole Ø8

S8



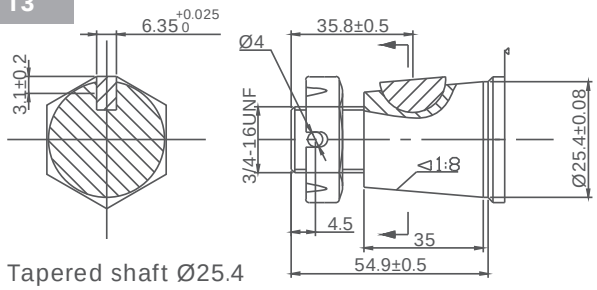
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 31.75

SB



Straight shaft Ø22.22
Parallel key 6.35 x 6.35 x 25.4

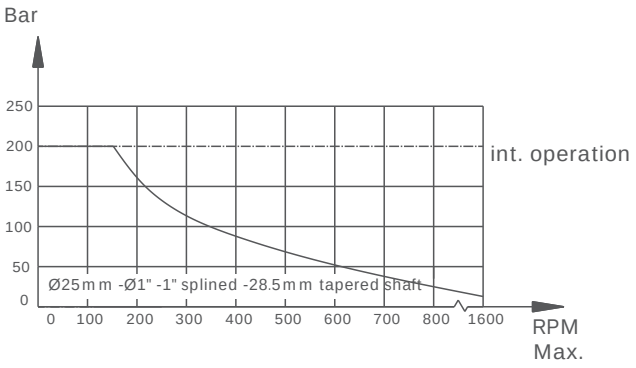
T3



Tapered shaft Ø25.4
Woodruff key Ø25.4 x 6.35
Tightening torque: 200 ± 10Nm

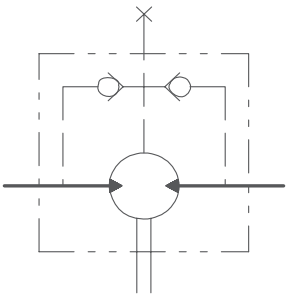
GRS Series Hydraulic Motors

Permissible shaft seal pressure



Drain Port

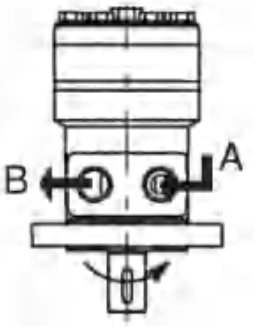
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. When applications use the drain line, the pressure of output shaft seal equals the pressure in drain line.



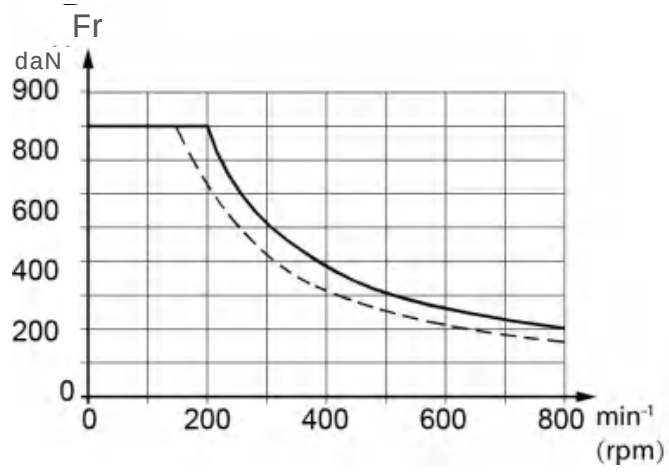
GRS with standard shaft seal, check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GRS with standard shaft seal, check valves and with drain connection:The shaft seal pressure equals the pressure on the drain line.

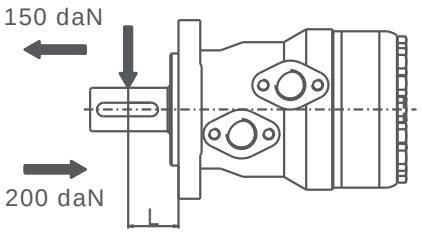
Standard direction of shaft rotation: Standard

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



Output shaft stand radial force





$$Fr = \frac{800}{n} * \frac{25000}{95 + L} \text{ (daN)}$$

Fr = Radial Force (daN)
L = Distance (mm)
n = Speed (rpm)

Rhomb-flange L = 30mm
Square-flange L = 24mm

GH Series Hydraulic Motors



Options

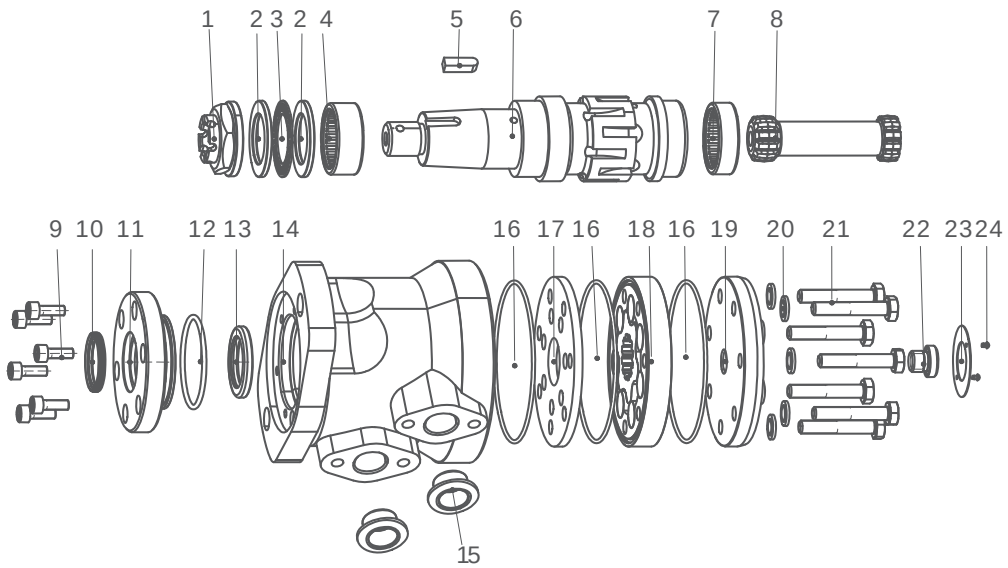
- Flange connection
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

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^3/s [SUS]	20÷75 [98÷347]
Filtration		ISO code: 20/16 (Min. recommended fluid filtration of 25 microns)

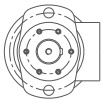


1 Slotted nuts
2 Bearing retainer
3 Thrust needle roller bearing
4 Needle roller bearings
5 Parallel Key
6 Output shaft
7 Thrust needle roller bearing
8 Transmission shaft
9 Screw
10 Skeleton anti-dust ring
11 Front cover
12 O-ring
13 Pressure Resistant Oil Seal
14 Housing
15 Oil port plug cap
16 O-ring
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

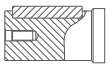
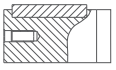
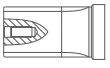
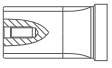
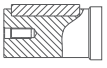
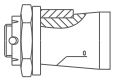
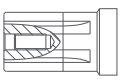
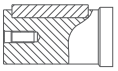
CODE	DISP
200	201.3cm³/rev [12.9in³/rev]
250	252cm³/rev [15.4in³/rev]
315	314.9cm³/rev [19.2in³/rev]
400	396.8cm³/rev [24.2in³/rev]
500	502.4cm³/rev [30.7in³/rev]

CODE	FLANGE
A5	2- Ø13.5 SAE A pilot Ø82.5×6 
A6	4- Ø13.5 SAE A pilot Ø82.5×6 

CODE	PORTS
G1	G1/2, G1/4 Manifold 4×M8
M1	M22×1.5, M14×1.5 Manifold 4×M8
U2	7/8-14UNF O-ring, 7/16-20UNF Manifold 4×5/16-18UNC
U1	1/2-14 NPTF, 7/16-20UNF Manifold 4×5/16-18UNC
G2	PT (Rc) 1/2, PT (Rc) 1/4 Manifold 4×M8

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	ROTATION
A	Standard
R	Opposite

CODE	SHAFT
S4	Ø32 parallel key 10×8×45 
SF	Ø35 parallel key 10×8×45 
R3	Ø31.75 splined tooth 14-DP 12/24 
R6	Long Ø31.75 splined tooth 14-DP 12/24 
SG	Ø31.5 parallel key 7.96×7.96×31.75 
T4	Tapered Ø35 parallel key B6×6×20 
R4	Ø25.4 SAE 6B 
SH	Ø35 parallel key 10×8×45 

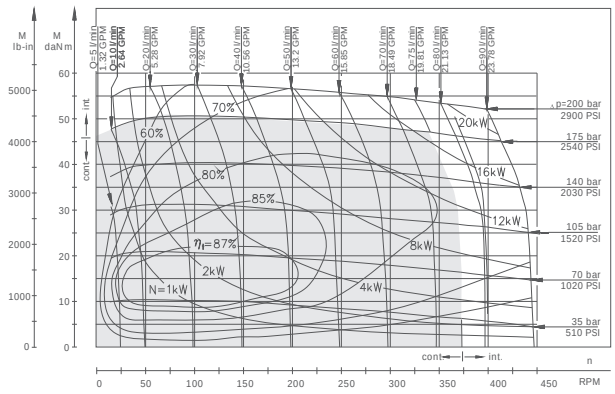
CODE	FUNCTION
A	Standard
N	Big radial force
D	No drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

Specifications

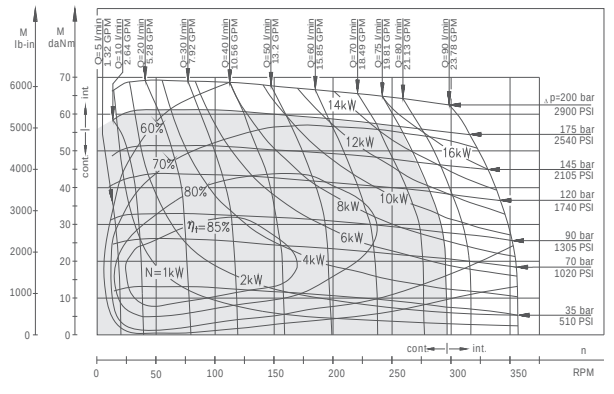
Type		GH200	GH250	GH315	GH400	GH500
Displacement, cm³/rev [in³/rev]		201,3[12.3]	252[15.4]	314,9[19.2]	396,8[24.2]	502,4[30.7]
Max. Speed,	Cont.	370	295	235	185	150
RPM	Int.*	445	350	285	225	180
Max. Torque	Cont.	514510]	61[5398]	74[6548]	84[7434]	82[7257]
daNm [lb-in]	Int.*	58[5130]	70[6195]	82[7257]	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

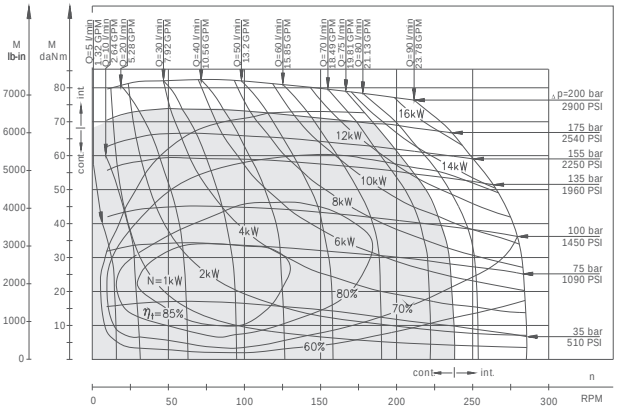
GH200



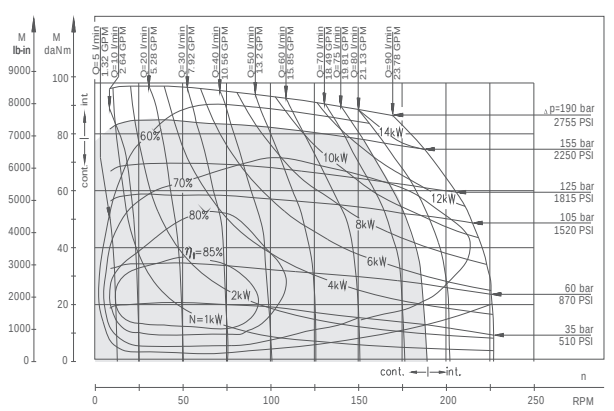
GH250



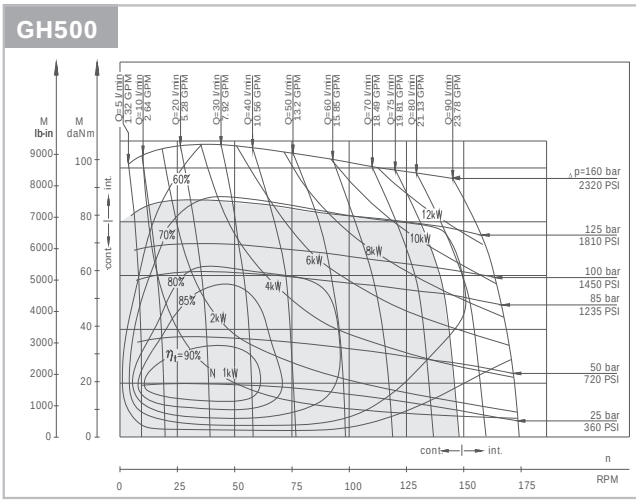
GH315



GH400

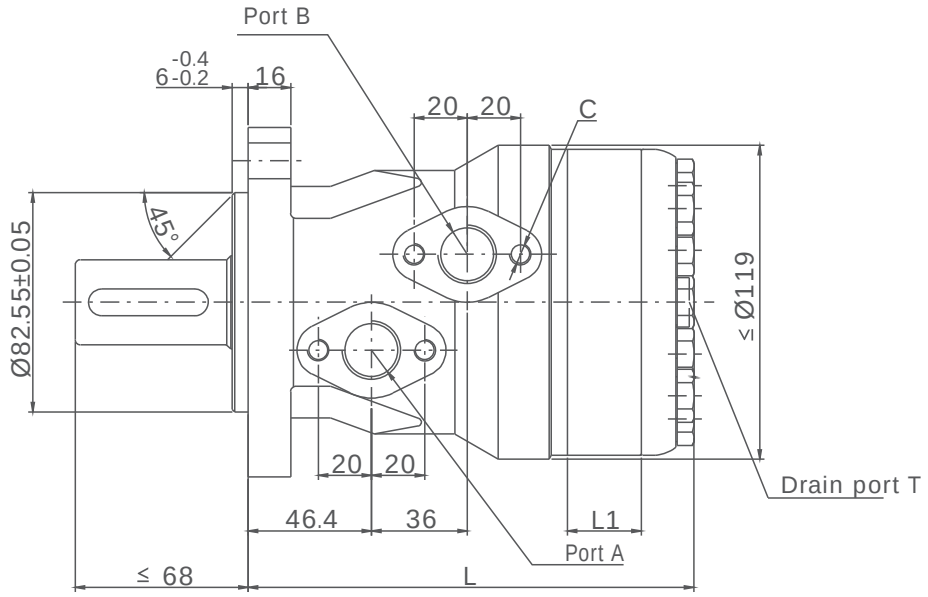


GH500



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

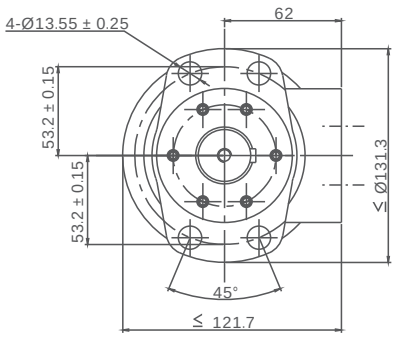


Model	L	L1
GH200	168	27
GH250	175	34
GH315	184	42
GH400	195	54
GH500	206	65

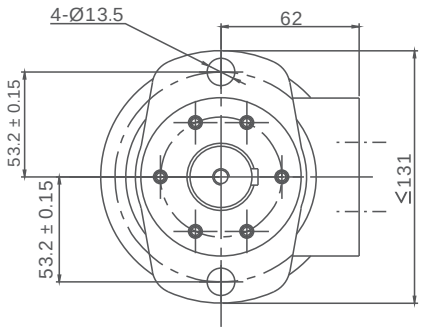
Mounting	G1 (depth)	M1 (depth)	U2 (depth)	U1 (depth)	G2 (depth)
P(A, B)	G1/2(15)	M22 x1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)	PT(RC)1/2(15)
T	4-M8(13)	4-M8(13)	4-5/16-18 UNC(13)	4-5/16-18 UNC(13)	4-M8(13)
C	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)	PT(RC)1/4(9.7)

GH Flange Covers Dimensions

A5

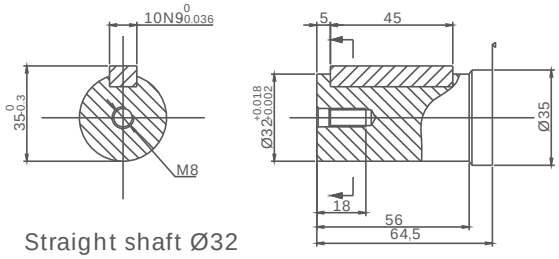


A6



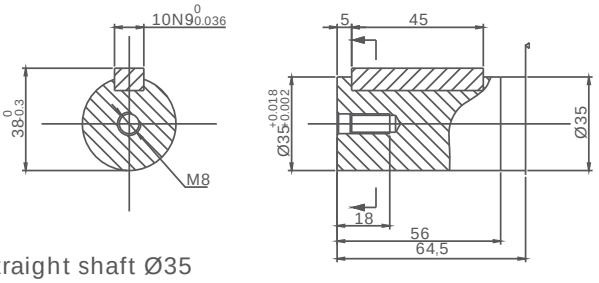
GH Shafts Dimensions

S4



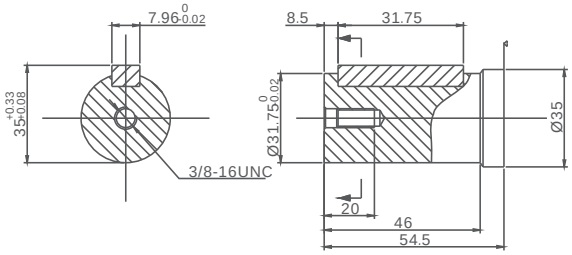
Straight shaft Ø32
Parallel key 10 x 8 x 45

SF



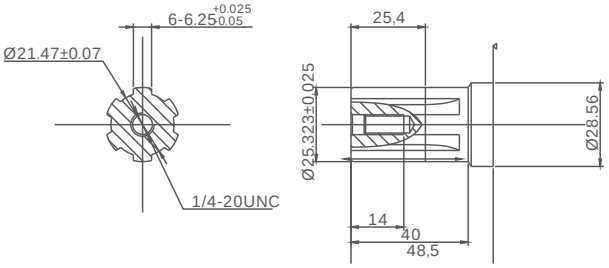
Straight shaft Ø35
Parallel key 10 x 8 x 45

SG



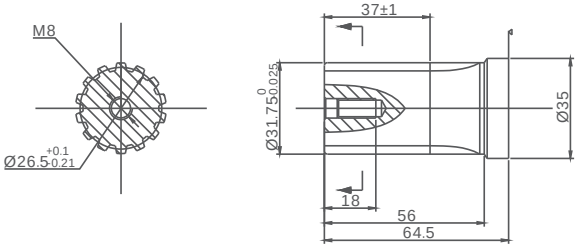
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

R4



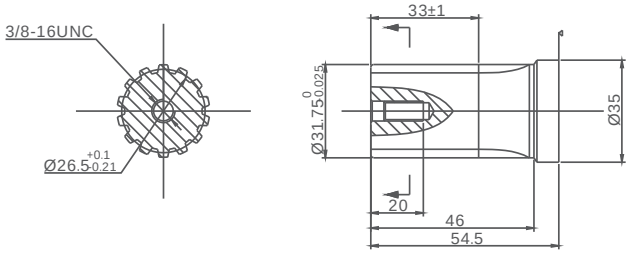
Splined shaft SAE 6B

R3



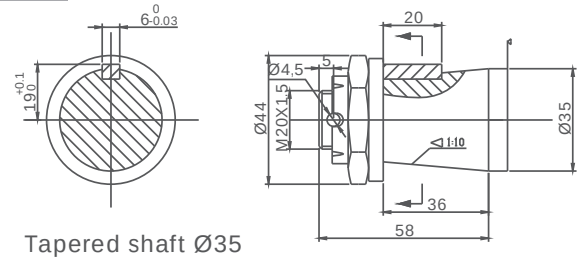
Splined shaft 14-DP 12/24

R6



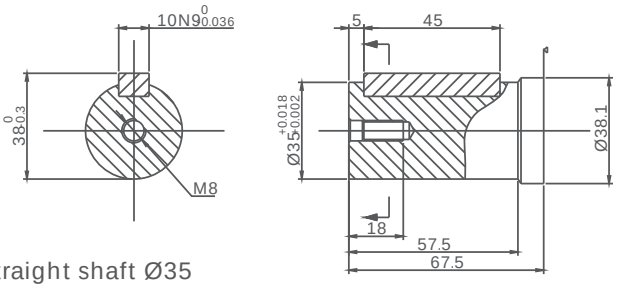
Splined shaft 14-DP 12/24

T4



Tapered shaft Ø35
Parallel key B6 x 6 x 20
Tightening torque: 200 ± 10Nm

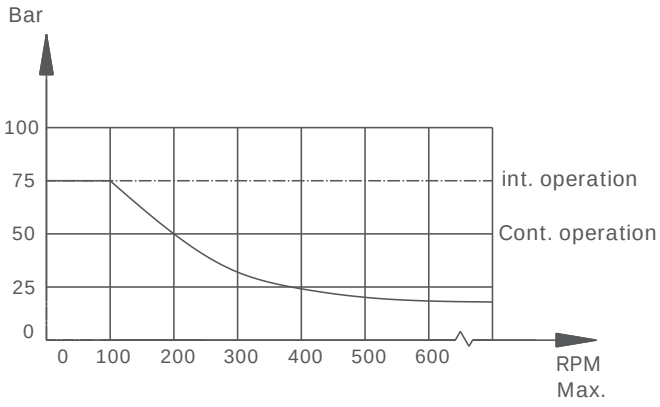
SH

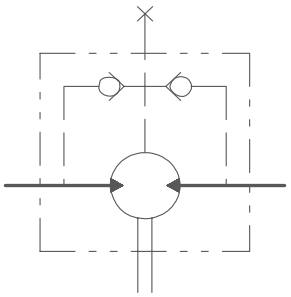


Straight shaft Ø35
Parallel key 10 x 8 x 45

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.

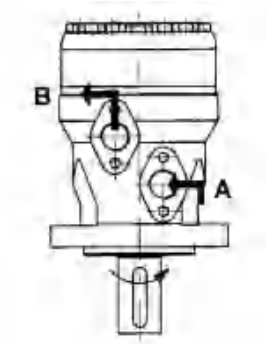
GH with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

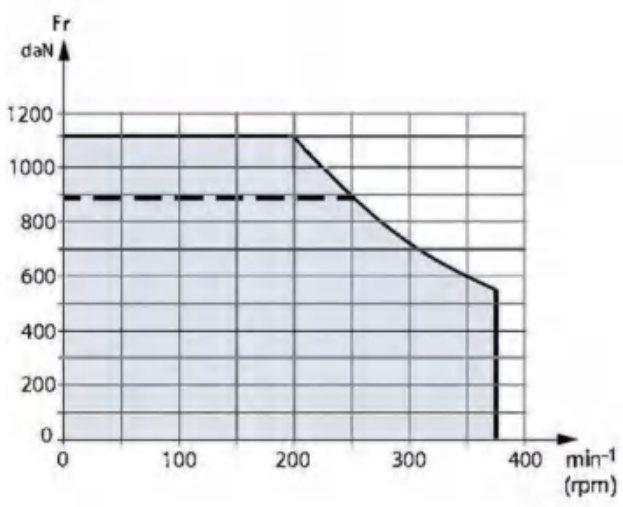
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

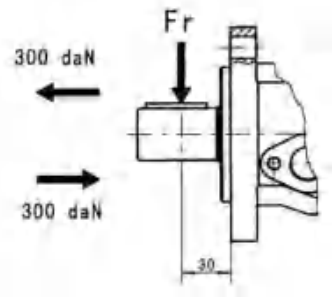
When facing shaft end of motor, shaft to rotate:
Clockwise.When port A is pressurized.
Counter-clockwise port B is pressurized.



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)

GS Series Hydraulic Motors



Options

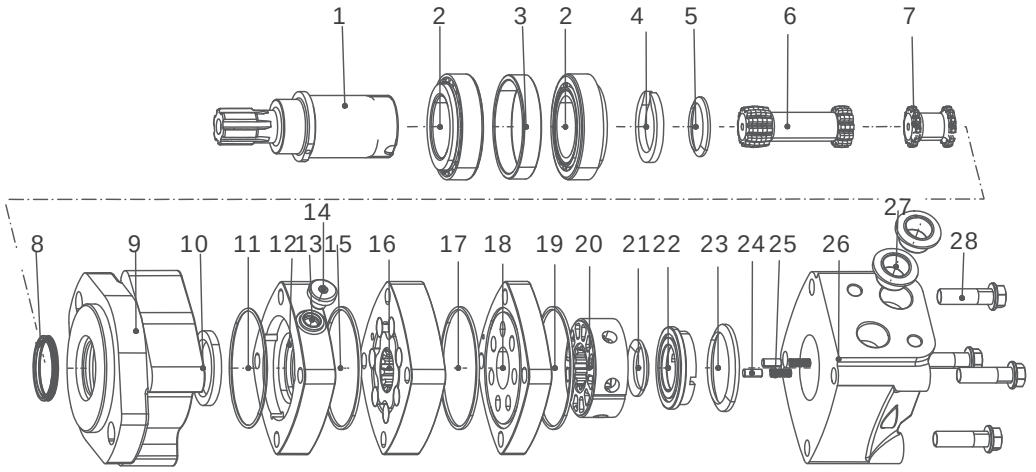
- Flange and wheel mount
- Bearingless motor
- Motor with brake
- Tachometer connection
- Speed sensing
- Side and rear ports
- Straight, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Road building machines
- Metal working machines
- Special vehicles
- Agricultural machines
- Food industries
- Mining machines

General

Max. Displacement	cm^3/rev [in^3/rev]	564.9 [34.47]
Max. Speed	RPM	1000
Max. Torque	daNm [lb-in]	cont.: 85 [7520] int.: 99 [8760]
Max. Output	kW [HP]	23 [30.8]
Max. Pressure Drop	bar [PSI]	cont.: 210 [3050] int.: 275 [3990]
Max. Oil Flow	lpm [GPM]	90 [24]
Min. Speed	RPM	5
Pemissible Shaft Loads	daNm [lbs]	Pa=500 [1125]
Pressure fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm2/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



1 Output shaft
2 Tapered roller bearing
3 Bearing outer retainer
4 Washers
5 Special shape ring
6 Transmission shaft
7 Coupling shaft
8 Anti-dust ring
9 Front cover
10 Shaft seal
11 O-ring
12 Connecting body
13 Sealing gasket
14 Plug
15 O-ring
16 Rotor and stator
17 Special shape ring
18 Balance plate
19 Special shape ring
20 Flow distribution plate
21 Special shape ring
22 Flow pressure plate
23 Special shape ring
24 Positioning pins
25 Spring
26 Rear housing
27 Oil port plug cap
28 Screw

Ordering Code

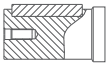
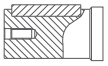
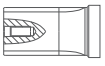
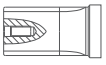
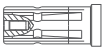
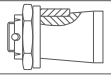
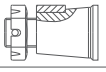
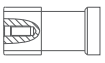
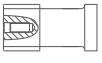
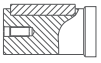
GS SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	TYPE
GS	Orbital motor
GSS	Bearingless motor

CODE	DISP
80	80.5cm³/rev [4.9in³/rev]
100	100cm³/rev [6.1in³/rev]
125	125.7cm³/rev [7.67in³/rev]
160	159.7cm³/rev [9.74in³/rev]
200	200cm³/rev [12.2in³/rev]
250	250cm³/rev [15.3in³/rev]
315	314.9cm³/rev [19.2in³/rev]
400	397cm³/rev [24.2in³/rev]
475	474.6cm³/rev [28.96in³/rev]
525	522.7cm³/rev [31.88in³/rev]
565	564.9cm³/rev [34.47in³/rev]

CODE	FLANGE
A7	2- Ø13.5 rhomb Ø106.4, pilot Ø82.5×6.3 
H3	4- Ø13.5 square Ø106.4, pilot Ø82.5×6.3 
A9	6- Ø13.5 rhomb Ø106.4, pilot Ø82.5×2.6 
W1	4- Ø13.5 wheel Ø160, pilot Ø125×8 
AA	2- Ø14.3 rhomb Ø146.05, pilot Ø101.6×9.4 
H1	4- Ø11.5 square Ø106.4, pilot Ø82.5×6.3 
B1	4- Ø11 circle Ø125, pilot Ø100×6 
H2	4- Ø13.5 square Ø127, pilot Ø101.6×6.3 

CODE	PORTS
G9	G1/2, G1/4 manifoid 2×M10
M8	M22×1.5, M14×1.5 manifoid 2×M10
UB	7/8-14UNF O-ring, 7/16-20UNC manifold 2×3/8-16UNC
UC	1/2-14 NPTF, 7/16-20UNF manifold 2×3/8-16UNC

CODE	SHAFT	
C1	Cardan 12-DP 12/24	
S4	Ø32 parallel key 10×8×45	
S8	Ø25.4 parallel key 6.35×6.35×25.4	
SG	Ø31.75 parallel key 7.96×7.96×31.75	
R2	Ø31.75 splined tooth 14-DP 12/24	
R3	Long Ø31.75 splined tooth 14-DP 12/24	
R7	Ø34.85 splined tooth 6-34.85×28.14×8.64	
T4	Tapered Ø35 parallel key B6×6×20	
T5	Tapered Ø31.75 parallel key 7.96×7.96×31.75	
R8	Ø25.4 splined tooth SAE 6B	
R5	Ø22 splined tooth 13-DP16/32	
S1	Ø25 parallel key 8×7×32	
S6	Ø25.4 parallel key Ø25.4×6.35	
T2	Tapered Ø35 parallel key 7.96×7.96×25.4	

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

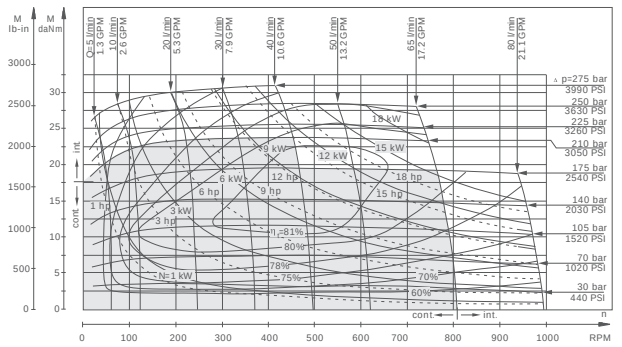
Type		GS80	GS100	GS125	GS160	GS200	GS250
Displacement, cm³/rev [in³/rev]		80,5[4.91]	100[6.1]	125,7[7.67]	159,7[9.74]	200[12.2]	250 [15.3]
Max. Speed	Cont.	810	750	600	470	375	300
RPM	Int.*	1000	900	720	560	450	360
Max. Torque	Cont.	24[2120]	30,5[2700]	37,5[3320]	49[4340]	61[5400]	72[6370]
daNm [lb-in]	Int.*	31[2740]	39[3450]	49[4340]	60[5310]	72[6370]	87[7700]
Max. Output	Cont.	15,5[20.8]	18[24.1]	18[24.1]	16,5[22.1]	16,5[22.1]	14,5[19.4]
kW [HP]	Int.*	19,5[26.2]	22,8[30.2]	22,5[30.2]	23[30.8]	22[29.52]	18[24.1]
Max. Pressure Drop	Cont.	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]	200[2900]
bar [PSI]	Int.*	275[3990]	275[3990]	275[3990]	275[3990]	275[3990]	250[3630]
	Peak**	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]	270[3920]
Max. Oil Flow	Cont.	65[17]	75[20]	75[20]	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	80[21]	90[24]	90[24]	90[24]	90[24]	90[24]
Max. Inlet Pressure	Cont.	230[3340]	230[3340]	230[3340]	230[3340]	230[3340]	230[3340]
bar [PSI]	Int.*	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]
	Peak**	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max. Return Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
with Drain Line	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		12[175]	10[145]	10[145]	8[115]	8[115]	8[115]
Min. Starting Torque	At max. press. drop Cont.	18[1590]	23[2040]	29[2570]	37[3270]	47[4160]	56[4960]
daNm [lb-in]	At max. press. drop Int.*	23,5[2080]	30[2660]	38[3360]	46[4070]	56[4960]	70[6200]
Min. Speed***, RPM		10	10	8	8	6	6
Weight, kg [lb] For	GS	9,9[21.8]	10,1[22.2]	10,4[22.9]	10,8[23.8]	11,2[24.7]	11,7[25.8]
rear port + 0,40 [.88]	GSS	7,9[17.4]	8,1[17.8]	8,4[18.5]	8,8[19.4]	9,2[20.2]	9,7[21.4]

Specifications

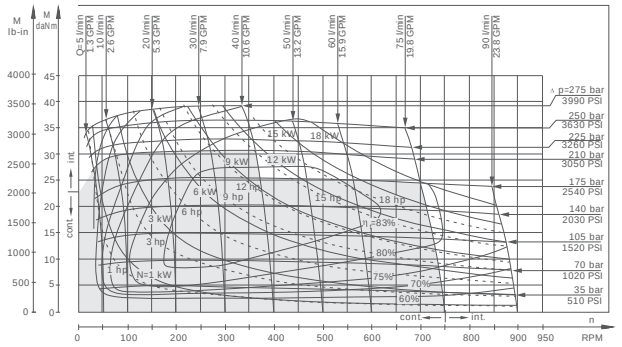
Type		GS315	GS400	GS475	GS525	GS565
Displacement, cm³/rev [in³/rev]		314,9[19.2]	397[24.2]	474,6[28.96]	522,7[31.88]	564,9[34.47]
Max. Speed	Cont.	240	190	160	145	130
RPM	Int.*	290	230	190	175	160
Max. Torque	Cont.	82,5[7300]	86,5 [7660]	85[7520]	85[7520]	85[7520]
daNm [lb-in]	Int.*	100[8850]	99[8760]	99[8760]	99[8760]	99[8760]
Max. Output	Cont.	15[20.1]	11[14.8]	8,4[11]	7,6[10.2]	6,9[9]
kW [HP]	Int.*	17[22.8]	12,5[16.8]	11.3[15]	10,4[13.9]	9,6[13]
Max. Pressure Drop	Cont.	200[2900]	160[2320]	130[1880]	115[1670]	105[1520]
bar [PSI]	Int.*	240[3480]	190[2760]	150[2180]	135[1960]	125[1810]
	Peak**	260[3770]	210[3050]	170[2470]	155[2250]	145[2100]
Max. Oil Flow	Cont.	75[20]	75[20]	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	90[24]	90[24]	90[24]	90[24]	90[24]
Max. Inlet Pressure	Cont.	230[3340]	230[3340]	230[3340]	230[3340]	230[3340]
bar [PSI]	Int.*	295[4280]	295[4280]	295[4280]	295[4280]	295[4280]
	Peak**	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max. Return Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
with Drain Line	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		8[115]	8[115]	8[115]	8[115]	8[115]
Min. Starting Torque	At max. press. drop Cont.	71[6280]	71[6280]	71[6280]	71[6280]	71[6280]
daNm [lb-in]	At max. press. drop Int.*	85[7520]	84[7430]	84[7430]	84[7430]	84[7430]
Min. Speed***, RPM		5	5	5	5	5
Weight, kg [lb] For	GS	12,4[27.3]	13,1[29.3]	14,1[31]	14,6[32.2]	15[33.1]
rear port + 0,40 [.88]	GSS	10,4[22.9]	11,3[24.9]	12.1[26.7]	12,6[27.8]	13[28.6]

Function Diagrams

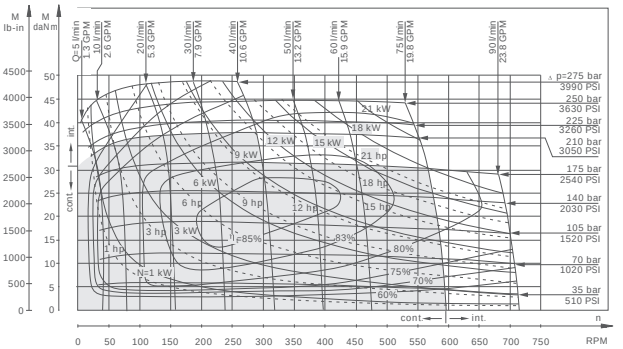
GS80



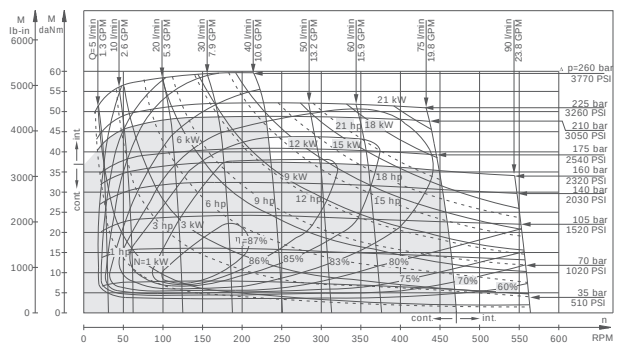
GS100



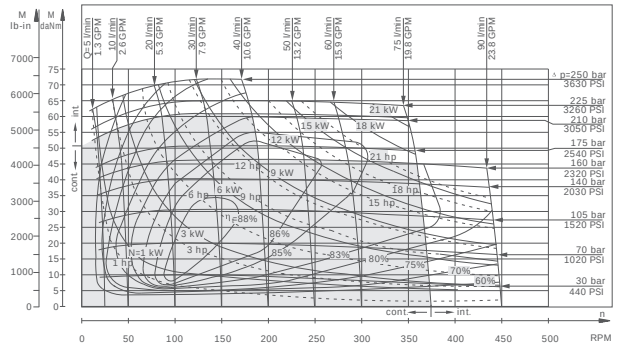
GS125



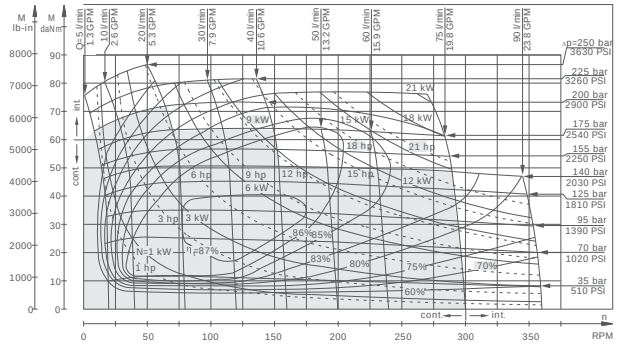
GS160



GS200



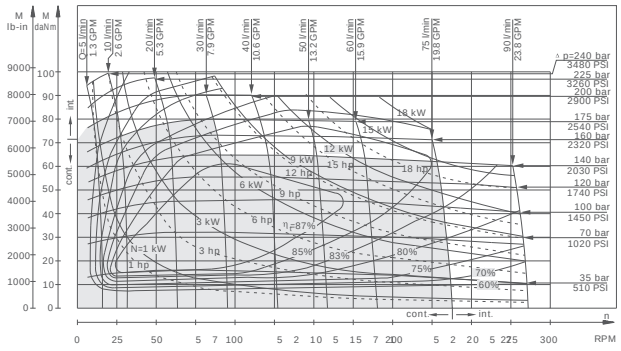
GS250



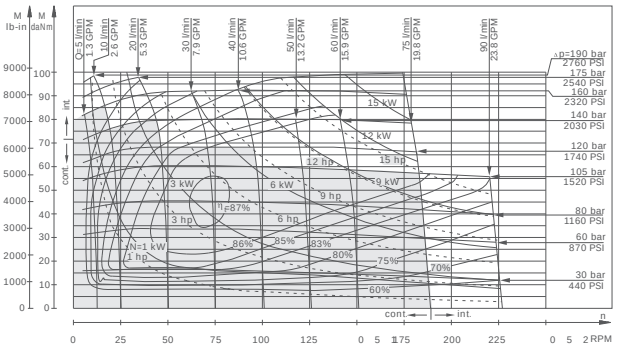
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

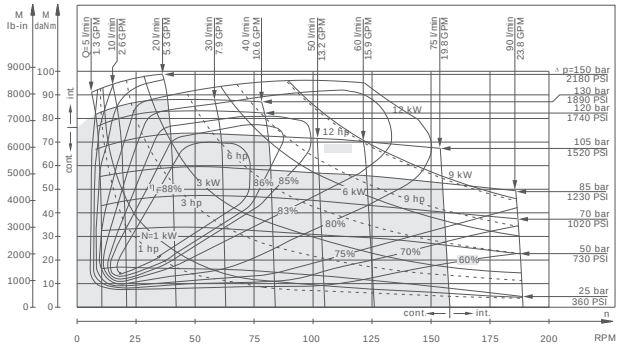
GS315



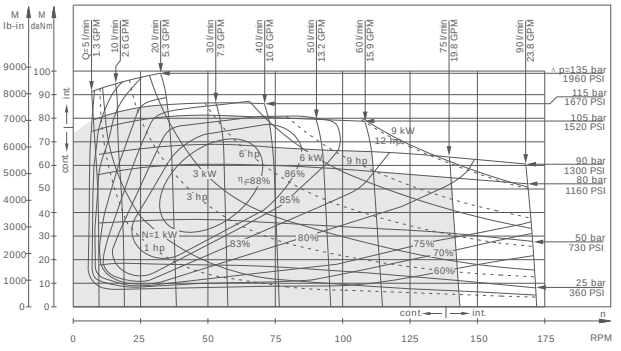
GS400



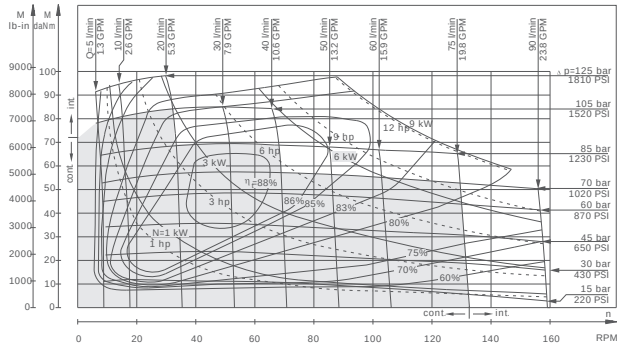
GS475



GS525

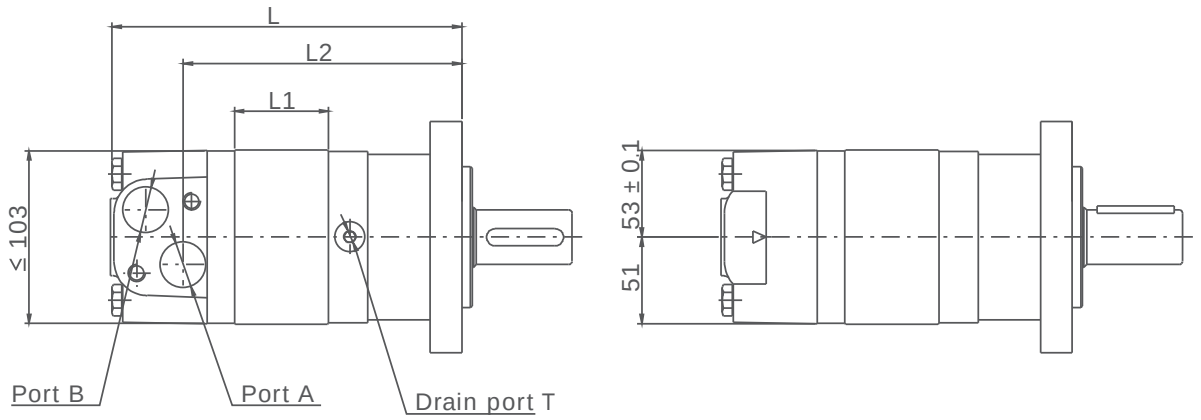


GS565

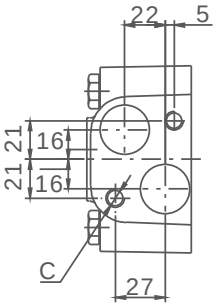


The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GS Dimensions and Mountings



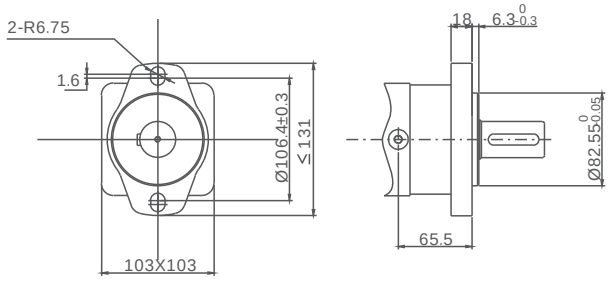
Model	L	L1	L2
GS80	170	16	126.5
GS100	174	20	130.5
GS125	179	25	135.5
GS160	181	27	137.5
GS200	188	34	144.5
GS250	196	42	152.5
GS315	208	54	164.5
GS400	223	69	179.5
GS475	237	83	193.5
GS525	229	75	185
GS565	235	80	191



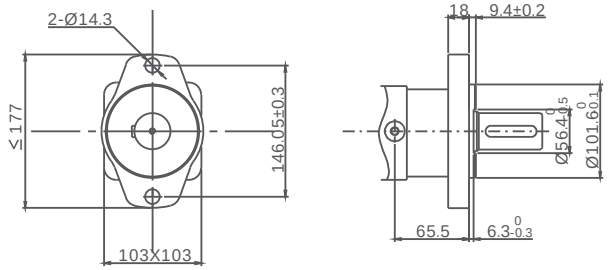
Mounting	G9 (depth)	M8 (depth)	UB (depth)	UC (depth)
P(A,B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)
T	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)
C	2-M10(13)	2-M10(13)	2-3/8-16 UNC(13)	2-3/8-16 UNC(13)

GS Flange Covers Dimensions

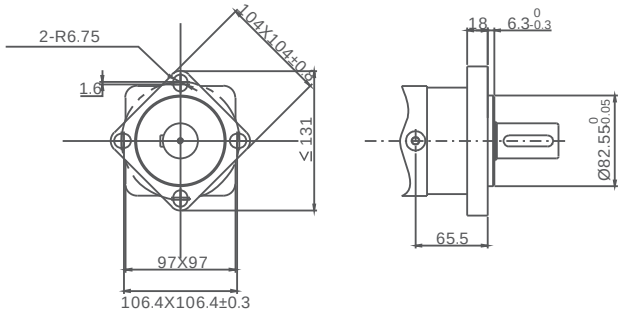
A7



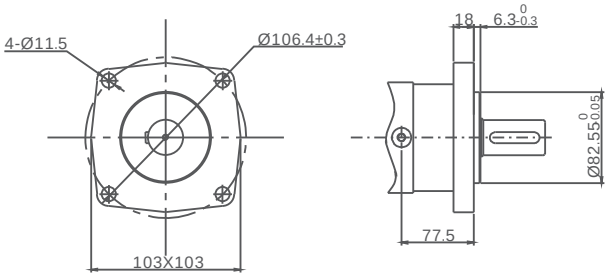
AA



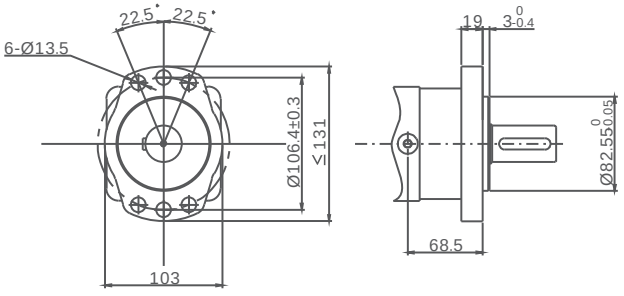
H3



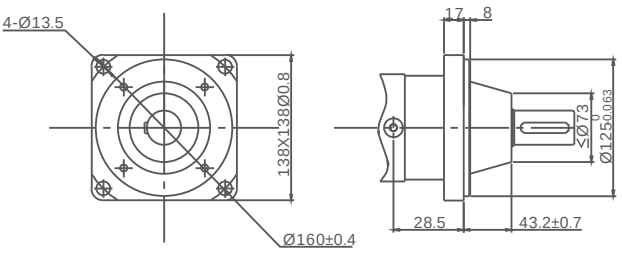
H1



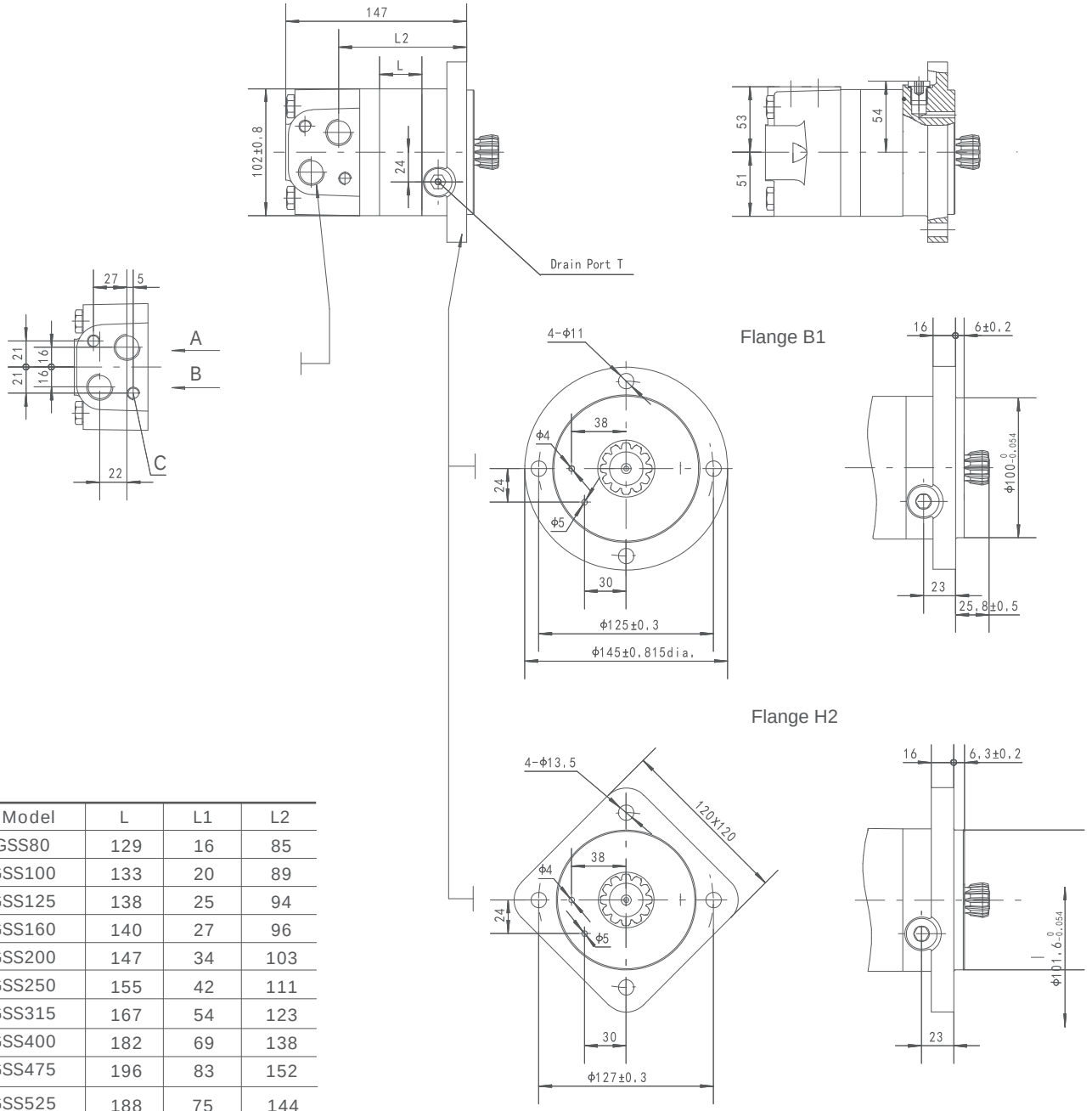
A9



W1



GSS Bearingless Motor Dimensions and Mounting

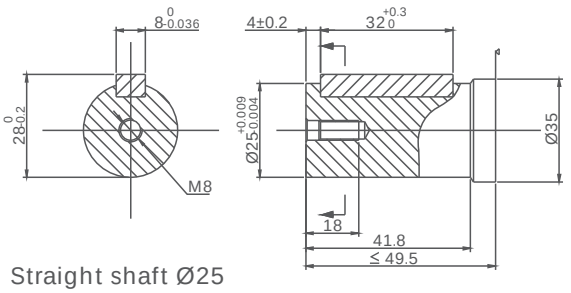


Model	L	L1	L2
GSS80	129	16	85
GSS100	133	20	89
GSS125	138	25	94
GSS160	140	27	96
GSS200	147	34	103
GSS250	155	42	111
GSS315	167	54	123
GSS400	182	69	138
GSS475	196	83	152
GSS525	188	75	144
GSS565	194	80	152

Mounting	G9 (depth)	M8 (depth)	UB (depth)	UC (depth)
P(A, B)	G1/2(15)	M22 x 1.5(15)	7/8-14 O-ring(17)	1/2-14 NPTF(15)
T	G1/4(12)	M14 x 1.5(12)	7/16-20 UNF(12)	7/16-20 UNF(12)
C	2-M10(13)	2-M10(13)	2-3/8-16 UNC(13)	2-3/8-16 UNC(13)

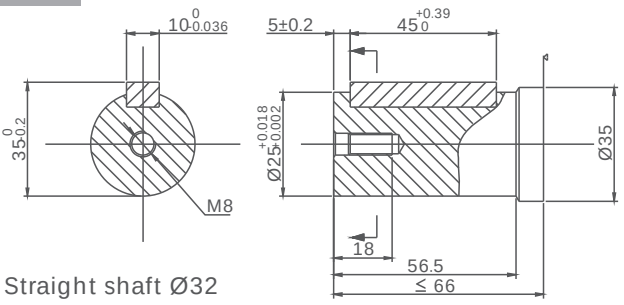
GS Shafts Dimensions

S1



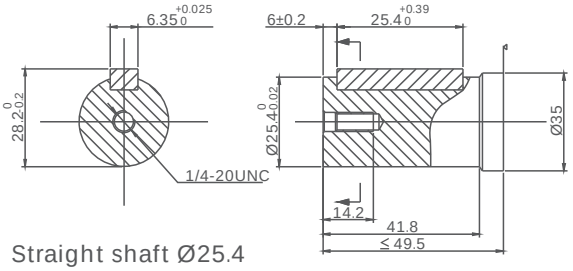
Straight shaft Ø25
Parallel key 8 x 7 x 32

S4



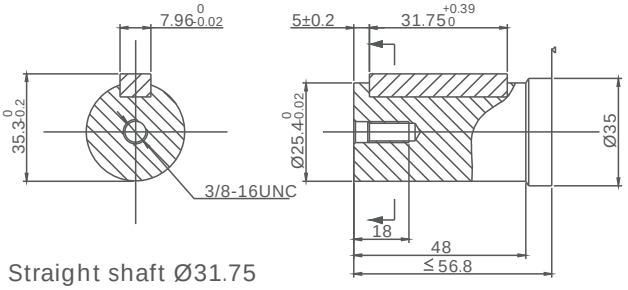
Straight shaft Ø32
Parallel key 10 x 8 x 45

S8



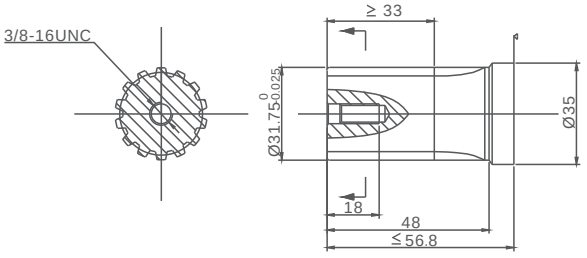
Straight shaft Ø25.4
Parallel key 6.35 x 6.35 x 25.4

SG



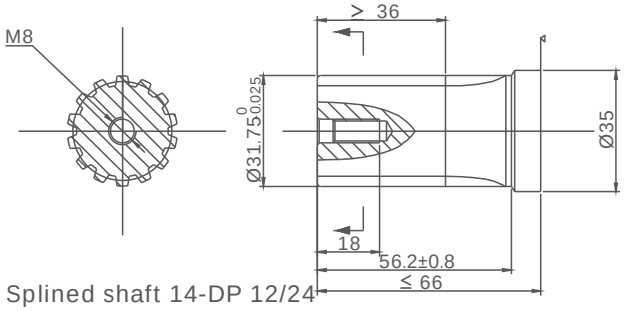
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

R2



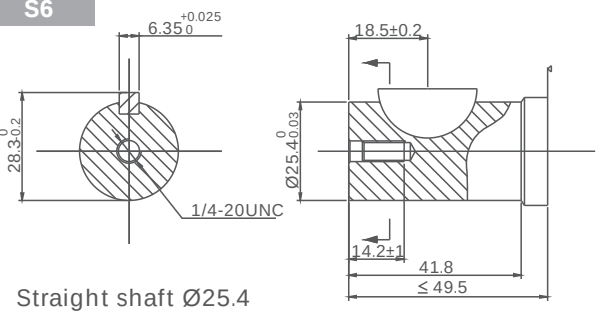
Splined shaft 14-DP 12/24

R3



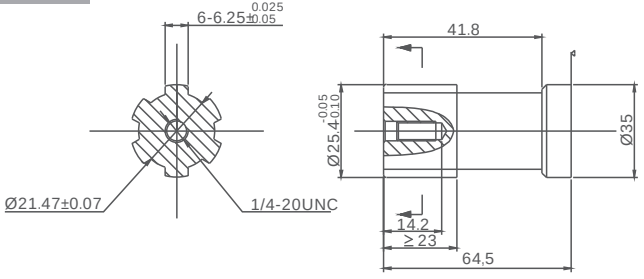
Splined shaft 14-DP 12/24

S6



Straight shaft Ø25.4
Woodruff key Ø25.4 x 6.35

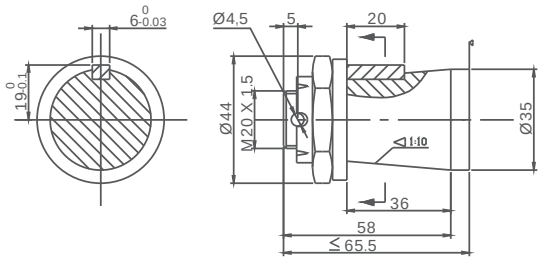
R8



Splined shaft SAE 6B

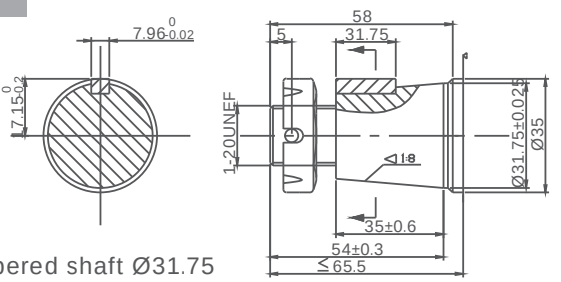
GS Shafts Dimensions

T4



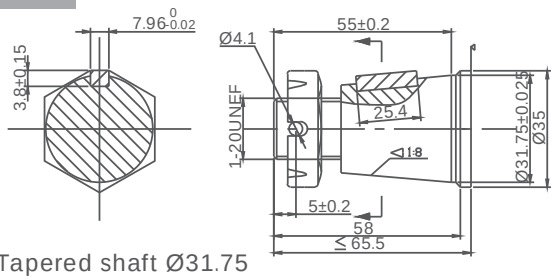
Tapered shaft Ø35
Parallel key B6 x 6 x 20

T5



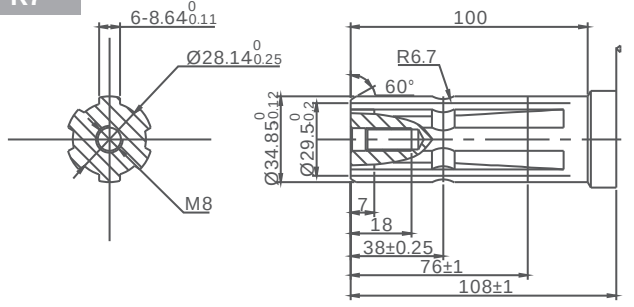
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75
Tightening torque: 200 ± 10Nm

T2



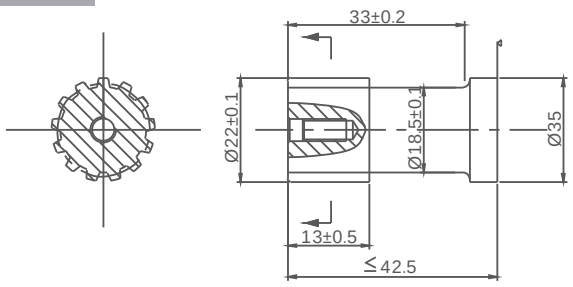
Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4
Tightening torque: 200 ± 10Nm

R7



Splined shaft 6-34.85 x 28.14 x 8.64

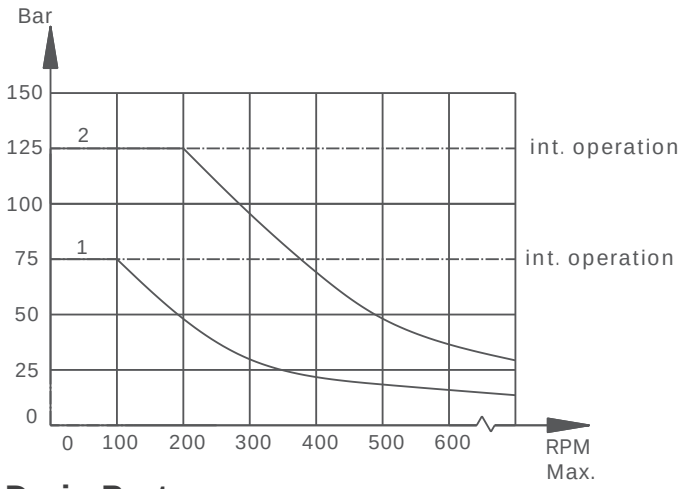
R5

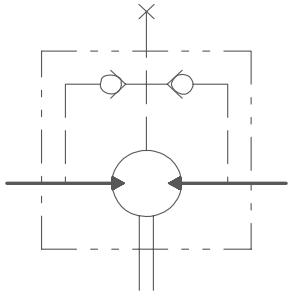


Splined shaft 13-DP 16/32

GS Series Hydraulic Motors

Permissible shaft seal pressure





GS 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.

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

Drain Port

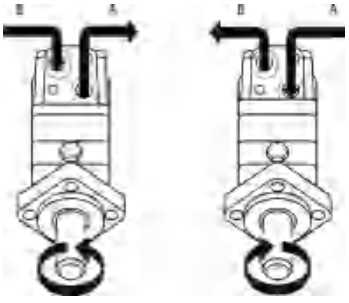
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft ratation: Standard

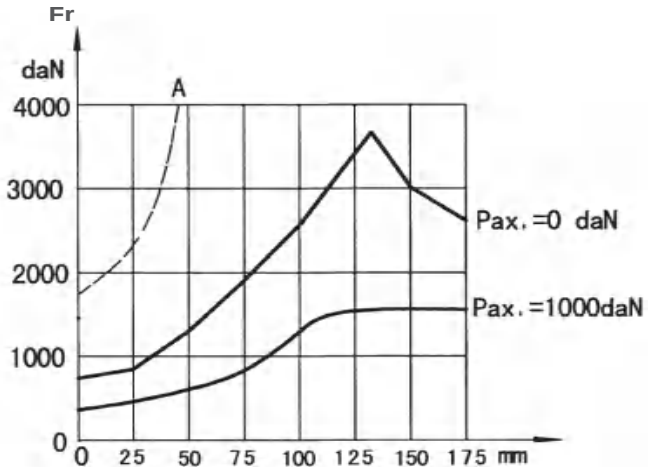
When facing shaft end of motor, shaft to rotate:

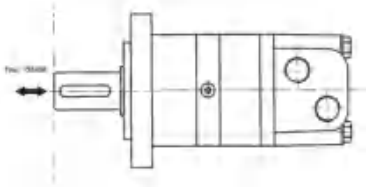
Clockwise. When port A is pressurized.

Counter-clockwise port B is pressurized.



Axial and radial force





The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

GT Series Hydraulic Motors



Options

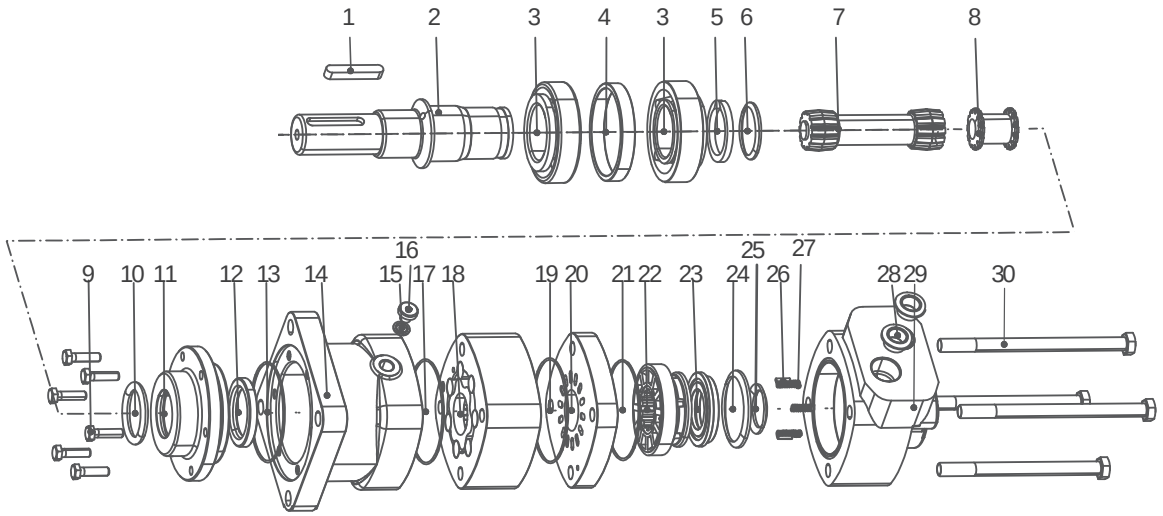
- Flange and wheel mount
- Bearingless motor
- Motor with brake
- Tachometer connection
- Speed sensing
- Side and rear ports
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Metal working machines
- Agricultural machines
- Road building machines
- Mining machines
- Food industries
- Special vehicles
- Injection molding machines
- Conveyors

General

Max. Displacement	cm³/rev [in³/rev]	724,3 [44.2]
Max. Speed	RPM	775
Max. Torque	daNm [lb-in]	cont.: 130 [11500] int.: 148 [13100]
Max. Output	kW [HP]	40 [54]
Max. Pressure Drop	bar [PSI]	cont.: 200 [2900] int.: 240 [3480]
Max. Oil Flow	lpm [GPM]	150 [39.6]
Min. Speed	RPM	5
Pemissible Shaft Loads		Pa=1000 [2250]
Operating Fuid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm²/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



1 Parallel key
2 Output shaft
3 Tapered roller bearing
4 Bearing outer retainer
5 Washers
6 Special shape ring
7 Transmission shaft
8 Coupling shaft
9 Hexagon screws
10 O-ring
11 Front cover
12 Shaft seal
13 O-ring
14 Housing
15 Washer
16 Plug
17 O-ring
18 Rotor and stator
19 O-ring
20 Balance plate
21 O-ring
22 Flow distribution plate
23 Flow pressure plate
24 Large special ring
25 Small special ring
26 Positioning pins
27 Spring
28 Oil port plug cap
29 Rear housing
30 Screw

Ordering Code

GT SERIES

CODE	TYPE
GT	Orbital motor
GTS	Bearingless motor

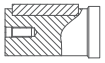
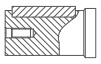
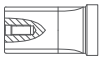
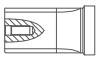
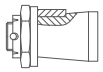
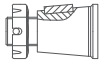
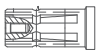
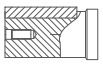
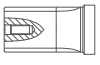
DISP

CODE	DISP
160	1611cm³/rev [9.83in³/rev]
200	201.4cm³/rev [12.29in³/rev]
250	251.8cm³/rev [15.36in³/rev]
315	326.3cm³/rev [19.90in³/rev]
400	410.9cm³/rev [25.06in³/rev]
500	523.6cm³/rev [31.95in³/rev]
630	631.2cm³/rev [38.52in³/rev]
725	724.3cm³/rev [44.2in³/rev]

FLANGE

CODE	FLANGE
H6	4- Ø14square Ø160, pilot Φ125×9 
H7	4- Ø14.5 square Ø162, pilot Ø127×9 
W2	4- Ø18 wheel Ø200, pilot Ø160×7 
B2	4- Ø14 circle Ø160, pilot Ø125×8 
H8	4- Ø14.5 square Ø162, pilot Ø127×10 

SHAFT

CODE	SHAFT	
C2	Cardan 16-DP 12/24	
SK	Ø40 parallel key 12×8×70	
SL	Ø38.1 parallel key 9.53×9.53×57.15	
R9	Ø38.1 splined tooth 17-DP 12/24	
RA	Ø38.1 splined tooth 17-DP 12/24	
T6	Tapered 1:10 Ø45 parallel key B12×8×28	
T7	Tapered 1:8 Ø45 parallel key 11.13×11.13×31.75	
R7	Ø34.85 splined tooth 6-34.85×28.14×8.64	
SM	Ø31.75 parallel key 7.96×7.96×40	
R3	Ø31.75 splined tooth 14-DP 12/24	

PORTS

CODE	PORTS
G3	G3/4, G1/4 manifoid 4×M10
M5	M27×2, M14×1.5 manifoid 4×M10
U4	1-1/16-12UN O-ring, 9/16-18UNF
U5	1-1/16-12UN O-ring, 7/16-20UNF
G4	G3/4, G1/4
M9	M27×2, M14×1.5

ROTATION

CODE	ROTATION
A	Standard
R	Opposite

PAINT

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

FUNCTION

CODE	FUNCTION
A	Standard
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

Specifications

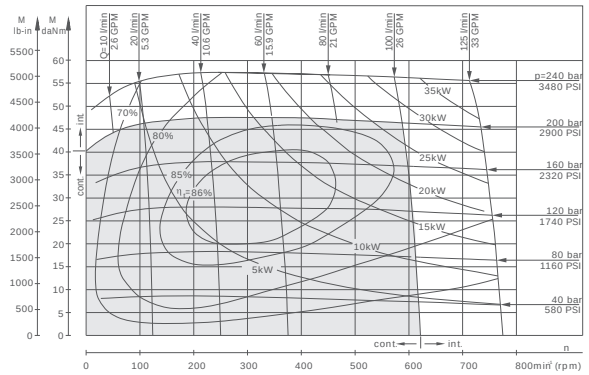
Type		GT160	GT200	GT250	GT315
Displacement, cm³/rev [in³/rev]		161,1[9.83]	201,4[12.29]	251,8[15.36]	326,3[19.90]
Max. Speed,	Cont.	622	620	496	382
RPM	Int.*	775	752	601	461
Max. Torque	Cont.	47[4160]	59[5220]	73[6460]	95[8410]
daNm [lb-in]	Int.*	56[4960]	71[6285]	88[7790]	114[10090]
	Peak**	66[5840]	82[7260]	102[9030]	133[11770]
Max. Output	Cont.	26,5[36]	33,5[45]	33,5[45]	33,5[45]
kW [HP]	Int.*	32[43]	40[54]	40[54]	40[54]
Max. Pressure Drop	Cont.	200[2900]	200[2900]	200[2900]	200[2900]
bar [PSI]	Int.*	240[3480]	240[3480]	240[3480]	240[3480]
	Peak**	280[4050]	280[4050]	280[4050]	280[4050]
Max. Oil Flow	Cont.	100[26]	125[33]	125[33]	125[33]
lpm [GPM]	Int.*	125[33]	150[39.6]	150[39.6]	150[39.6]
Max. Inlet Pressure	Cont.	210[3050]	210[3050]	210[3050]	210[3050]
bar [PSI]	Int.*	250[3600]	250[3600]	250[3600]	250[3600]
	Peak**	300[4350]	300[4350]	300[4350]	300[4350]
Max. Return Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2000]
without Drain Line	Int.*	175[2540]	175[2540]	175[2540]	175[2500]
bar [PSI]	Peak**	210[3050]	210[3050]	210[3050]	210[3000]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		10[150]	10[150]	10[150]	10[150]
Min. Starting Torque daNm [lb-in]	At max. press. drop Cont.	34[3010]	43[3800]	53[4690]	74[6550]
	At max. press. drop Int.*	41[3630]	52[4600]	63[5580]	89[7880]
Min. Speed***, RPM		10	9	8	7
Weight, kg [lb]	GT	20[44.1]	21,5[47.4]	21[46.3]	22[48.5]
For Reare Ports +0,450 [.992]	GTS	15[33.1]	15,5[34.2]	16[35.3]	17[37.5]

Specifications

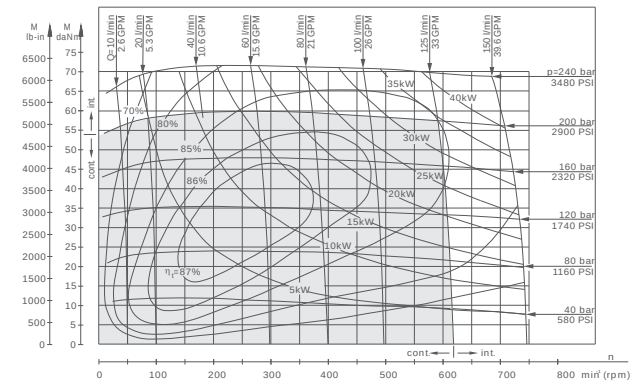
Type		GT400	GT500	GT630	GT725
Displacement, cm³/rev [in³/rev]		410,9[25.06]	523,6[31.95]	631,2[38.52]	724,3[44.2]
Max. Speed	Cont.	304	238	197	172
RPM	Int.*	368	289	234	209
Max. Torque	Cont.	108[9560]	122[10800]	130[11500]	127[11240]
daNm [lb-in]	Int.*	126[11150]	137[12125]	148[13100]	147[13010]
	Peak**	144[12745]	160[14160]	176[15580]	175[15490]
Max. Output	Cont.	30[40]	26,5[36]	24,3[33]	20,2[27]
kW [HP]	Int.*	35[47]	30[40]	27,5[37]	26,8[36]
Max. Pressure Drop	Cont.	180[2610]	160[2320]	140[2010]	120[1740]
bar [PSI]	Int.*	210[3050]	180[2610]	160[2320]	140[2010]
	Peak**	240[3480]	210[3050]	190[2760]	165[2395]
Max. Oil Flow	Cont.	125[33]	125[33]	125[33]	125[33]
lpm [GPM]	Int.*	150[39.6]	150[39.6]	150[39.6]	150[39.6]
Max. Inlet Pressure	Cont.	210[3050]	210[3050]	210[3050]	210[3050]
bar [PSI]	Int.*	250[3600]	250[3600]	250[3600]	250[3600]
	Peak**	300[4350]	300[4350]	300[2000]	300[4350]
Max. Return Pressure	Cont.	140[2000]	140[2000]	140[2500]	140[2000]
without Drain Line	Int.*	175[2500]	175[2500]	175[3000]	175[2500]
bar [PSI]	Peak**	210[3000]	210[3000]	210[3000]	210[3000]
Max. Starting Pressure with	At max. press. drop Cont.	10[150]	10[150]	10[150]	10[150]
Unloaded Shaft, bar [PSI]	At max. press. drop Int.*	84[7435]	95[8410]	95[8410]	95[8410]
Min. Starting Torque daNm [lb-in]		97[8585]	106[9380]	110[9740]	115[10180]
Min. Speed***, RPM		6	5	5	5
Weight, kg [lb]	GT	23[50.7]	24[52.9]	23,5[51.8]	24,5[54.0]
For Reare Ports +0,450 [.992]	GTS	18[39.7]	19[41.9]	18,5[40.8]	19,5[43.0]

Function Diagrams

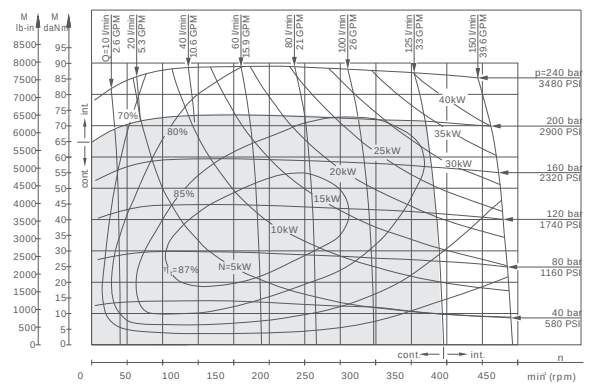
GT160



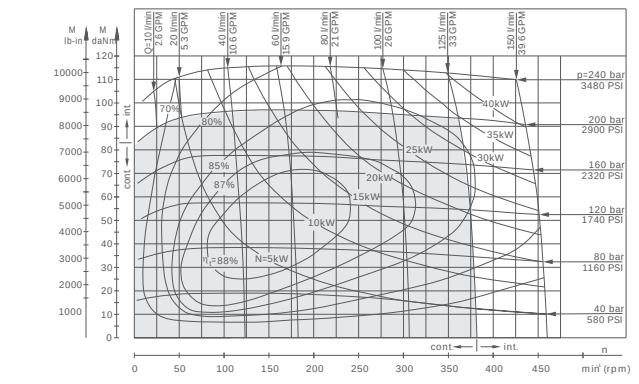
GT200



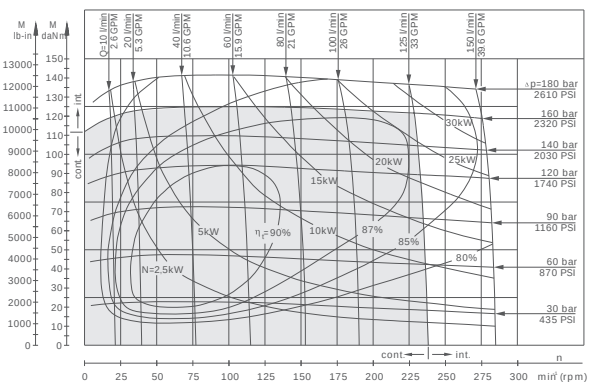
GT250



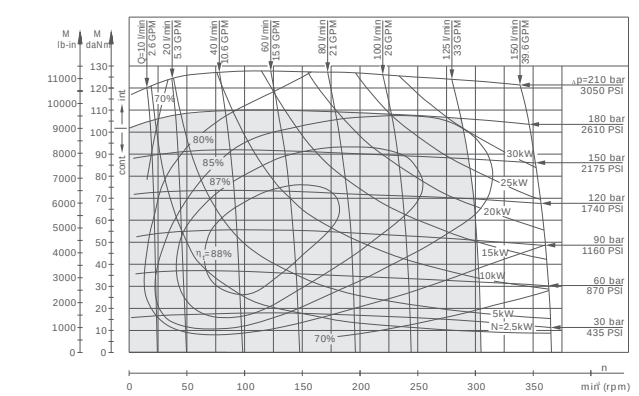
GT315



GT500



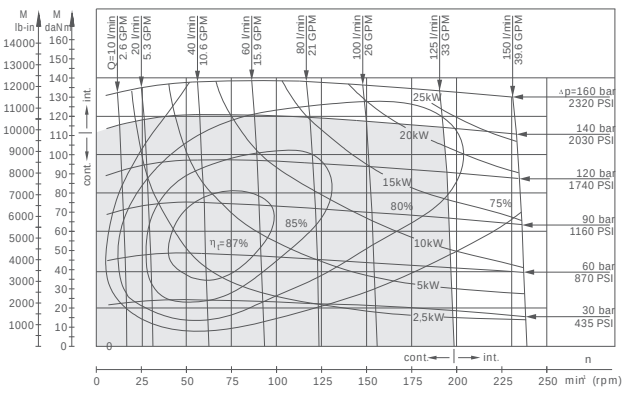
GT400



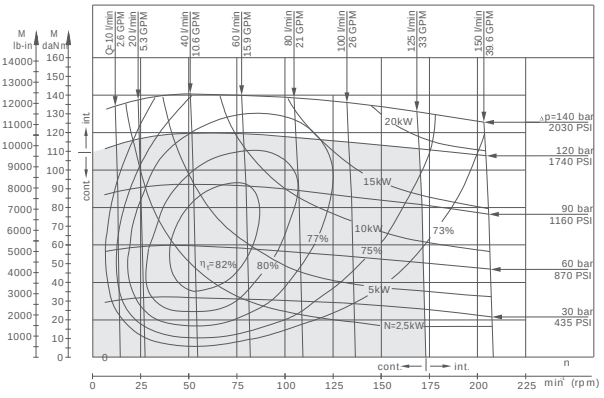
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 m m²/s [150 SUS] at 50°C [122°F].

Function Diagrams

GT630

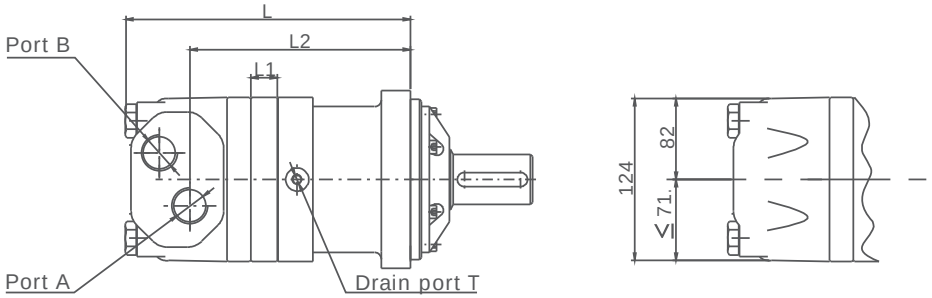


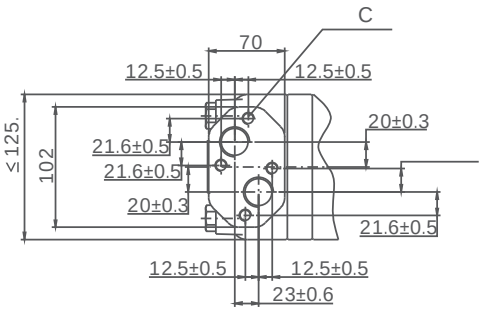
GT725



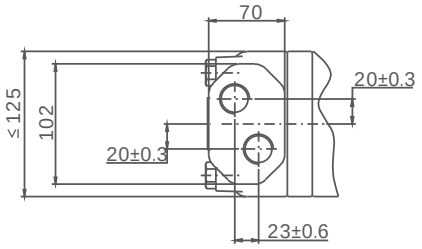
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GT Dimensions and Mountings





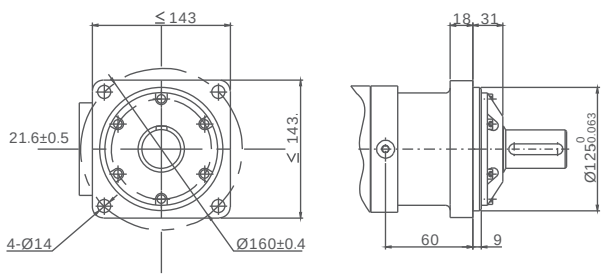
Model	L	L1	L2
GT160	193	17	142.5
GT200	197	21	146.5
GT250	204	14	152.5
GT315	210	20	158.5
GT400	217	27	165.5
GT500	225	35	173.5
GT630	237	47	185.5
GT725	248	58	196.5



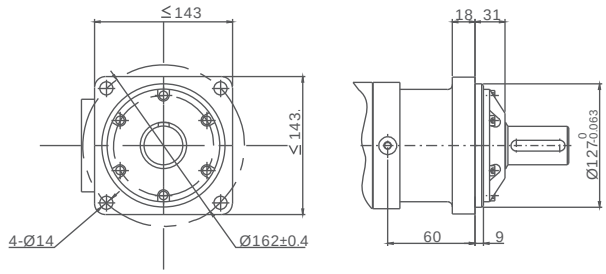
Mounting	G3 (depth)	M5 (depth)	U4 (depth)	M9 (depth)	U5 (depth)
P(A, B)	G3/4(18)	M27 x 2(18)	1-1/16-12 UN(18)	M27 x 2(18)	1-1/16-12 UN(18)
T	G1/4(12)	M14 x 1.5(12)	9/16-18 UNF(12)	M14 x 1.5(12)	7/16-20 UNF(12)
C	4-M10(10)	4-M10(10)	—	—	—

GT Flange Covers Dimensions

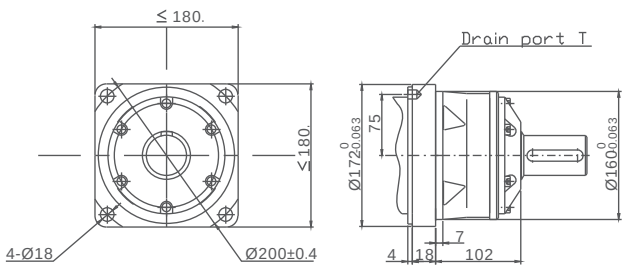
H6



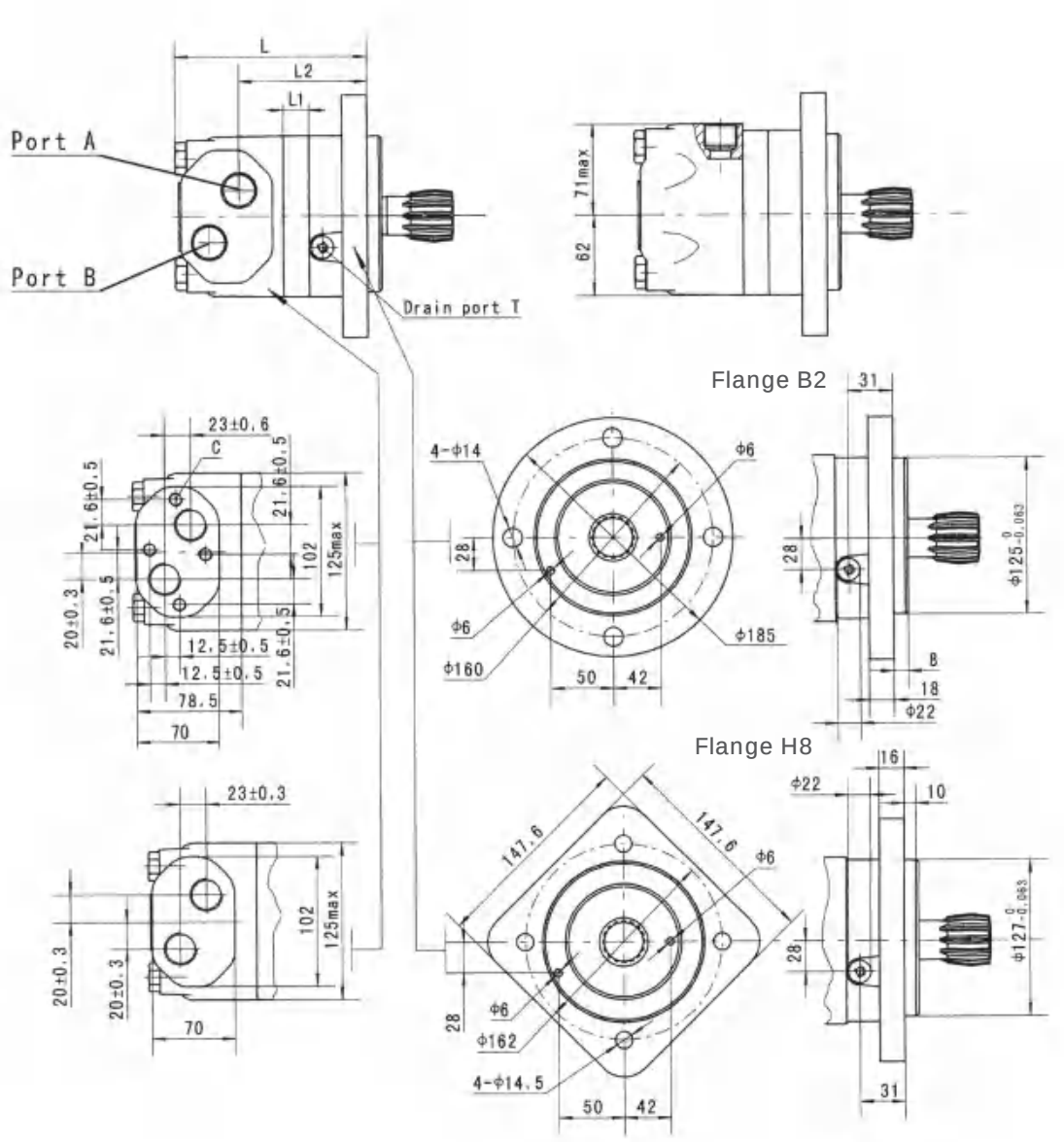
H7



W2



GTS Bearingless Motor Dimensions and Mounting

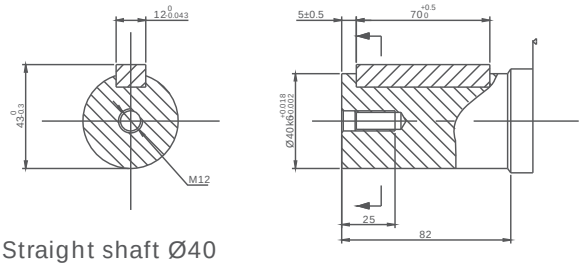


Model	L	L1	L2
GTS160	148	17	96.5
GTS200	152	21	100.5
GTS250	157	14	109
GTS315	163	20	115
GTS400	170	27	122
GTS500	178	35	130
GTS630	190	47	142
GTS725	201	58	153

Mounting	G3 (depth)	M5 (depth)	U4 (depth)	M9 (depth)	U5 (depth)
P(A, B)	G3/4(18)	M27 x 2(18)	1-1/16-12 UN(18)	M27 x 2(18)	1-1/16-12 UN(18)
T	G1/4(12)	M14 x 1.5(12)	9/16-18 UNF(12)	M14 x 1.5(12)	7/16-20 UNF(12)
C	4-M10(10)	4-M10(10)	—	—	—

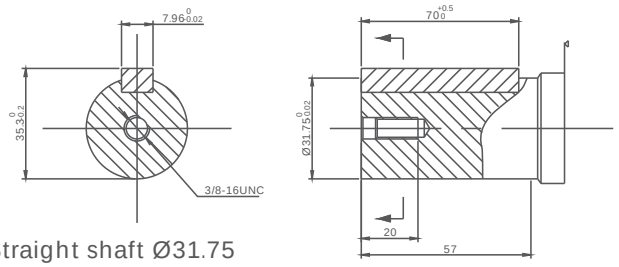
GT Shafts Dimensions

SK



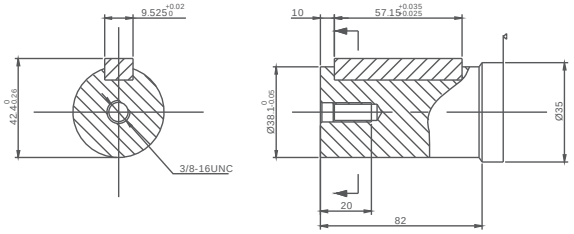
Straight shaft Ø40
Parallel key 12 x 8 x 70

SM



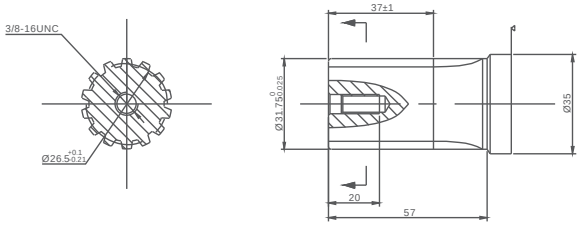
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 40

SL



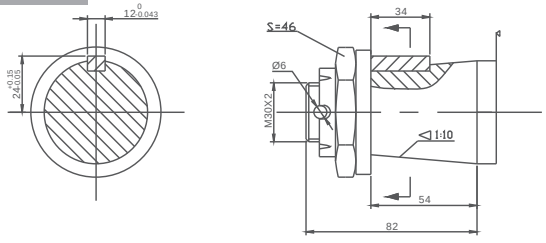
Straight shaft Ø38.1
Parallel key 9.525 x9.525 x 57.15

R3



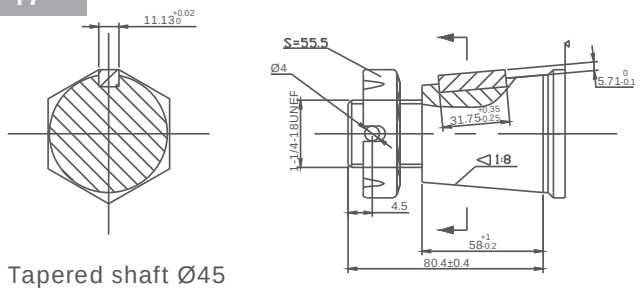
Splined shaft 14-DP 12/24

T6



Tapered shaft Ø45
Parallel key B12 x 8 x 28
Tightening torque: 500 ± 10 Nm

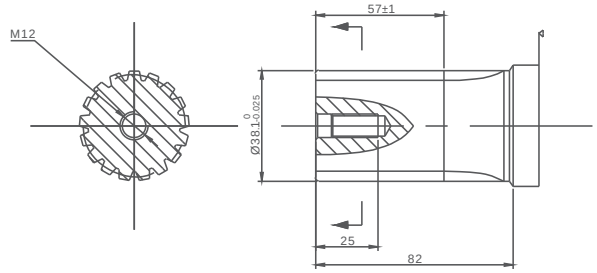
T7



Tapered shaft Ø45
Parallel key 11.13 x 11.13 x 31.75
Tightening torque: 500 ± 10 Nm

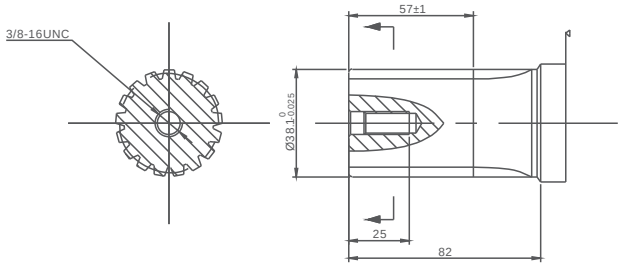
GT Shafts Dimensions

RA



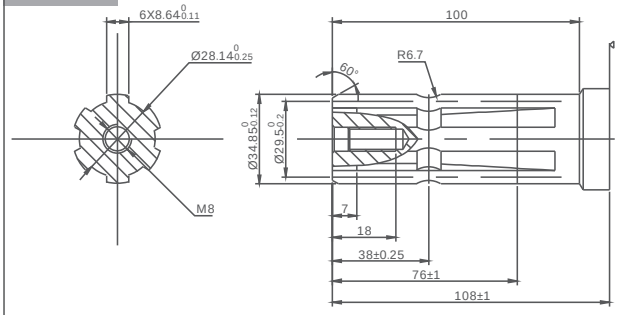
Splined shaft 17-DP 12/24

R9



Splined shaft 17-DP 12/24

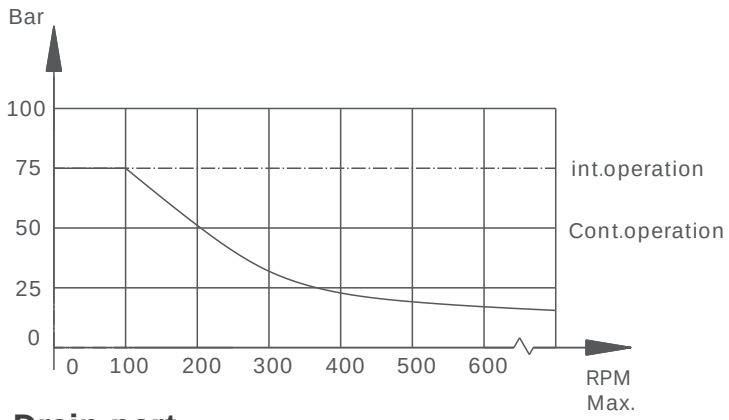
R7

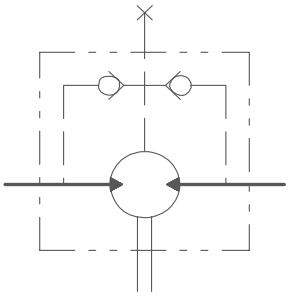


Splined shaft 6-34.85 x 28.14 x 8.64

GT Series Hydraulic Motors

Permissible shaft seal pressure





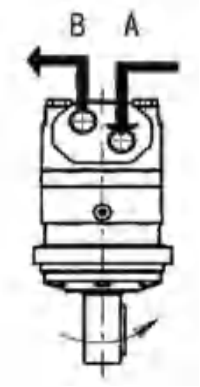
GT with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GT with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain port

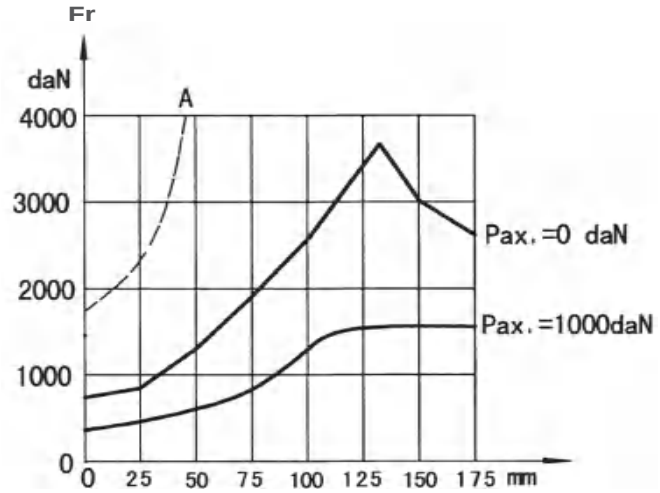
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

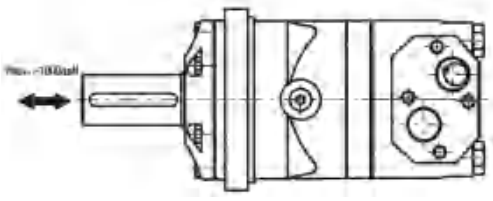
Standard direction of shaft ratation: Standard

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



Axial and radial force





The output shaft runs in tapered bearings that permit high axial and radial forces, Curve "A" shows max radial shaft load, Any shaft loads exceeding the values quoted in the curve will involve a risk of breakage, The two other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

GV Series Hydraulic Motors



Options

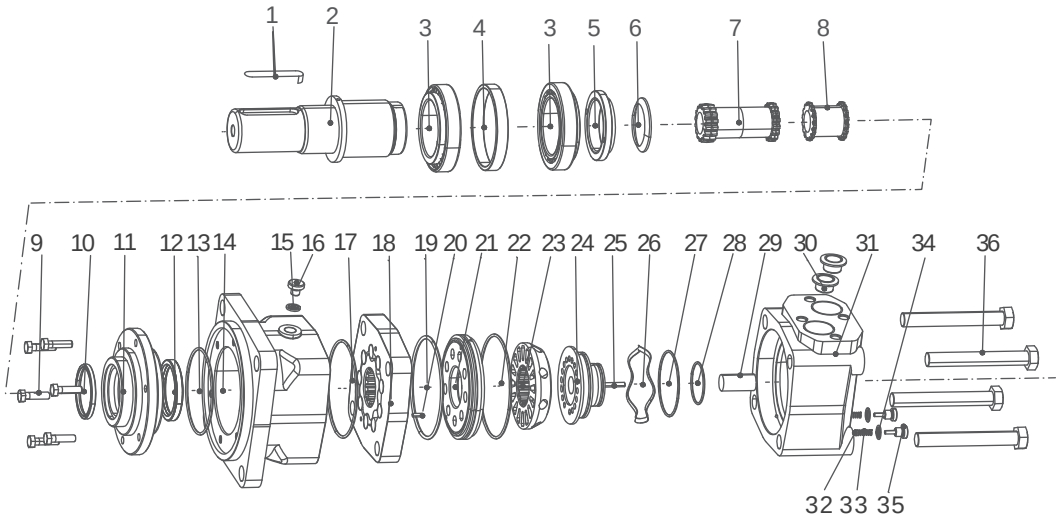
- Flange connection
- Bearingless motor
- Tachometer connection
- Side ports
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Metal working machines
- Agricultural machines
- Road building machines
- Mining machines
- Food industries
- Special vehicles
- Injection molding machines

General

Max. Displacement	cm^3/rev [in^3/rev]	801,8 [48.91]
Max. Speed	RPM	630
Max. Torque	daNm [lb-in]	cont.: 188 [16650] int.: 211 [18650]
Max. Output	kW [HP]	64 [85,8]
Max. Pressure Drop	bar [PSI]	cont.: 200 [2900] int.: 240 [3480]
Max. Oil Flow	lpm [GPM]	240 [63.4]
Min. Speed	RPM	5
Permissible Shaft Loads	daNm [lbs]	Pa=1500 [3300]
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 Parallel Key
2 Output shaft
3 Roller bearing
4 Bearing retainer
5 Lock nut
6 Special shape ring
7 Transmission shaft
8 Coupling shaft
9 Hexagon screws
10 Anti-dust ring
11 Front cover
12 Shaft seal
13 O-ring
14 Housing
15 Washer
16 Plugs
17 O-ring
18 Rotor and stator
19 O-Ring
20 Positioning pins
21 Balance plate
22 O-ring
23 Flow distribution plate
24 Distributor pressure plate
25 Positioning pins
26 Wave spring
27 O-ring
28 O-ring
29 Limit posts
30 Oil port plug cap
31 Rear cover
32 Steel ball
33 Spring
34 Washer
35 Hexagon plugs
36 Screw

Ordering Code

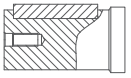
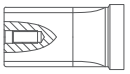
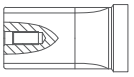
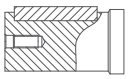
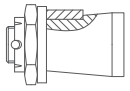
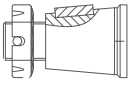
GV SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	TYPE
GV	Orbital motor
GVS	Bearingless motor

CODE	DISP
315	314.5cm³/rev [19.18in³/rev]
400	400.9cm³/rev [24.45in³/rev]
500	499.6cm³/rev [30.48in³/rev]
630	629.1cm³/rev [38.38in³/rev]
800	801.8cm³/rev [48.91in³/rev]

CODE	FLANGE
H9	4- Ø18 square Ø200, pilot Ø160×11 
W3	4- Ø18 wheel Ø224, pilot Ø180×10 
B3	4- Ø14 square Ø180, pilot Ø140×8 
S	4- Ø14 circle Ø180, pilot Ø140×8 

CODE	PORTS
G5	G1, G1/4 manifold 4×M12
M6	M33×2, M14×1.5 manifold 4×M12
U6	1-5/16-12UNF O-ring manifold 9/16-18UNF
G6	G1, G1/4
M7	M33×2, M14×1.5
U7	1-5/16-12UNF O-ring 7/16-20UNF

CODE	SHAFT
C3	Cardan 16-DP 10/20 
SN	Ø50 parallel key 14×9×70 
RB	Ø53.975 splined tooth 16-DP 8/16 
RC	Ø53.975 splined tooth 16-DP 8/16 
SP	Ø57.15 parallel key 12.7×12.7×57.16 
T8	Tapered Ø57.15 parallel key 16×10×32 
T9	Tapered Ø60 parallel key 14.308×14.308×50.8 

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
V	High temp.
S	Low temp.

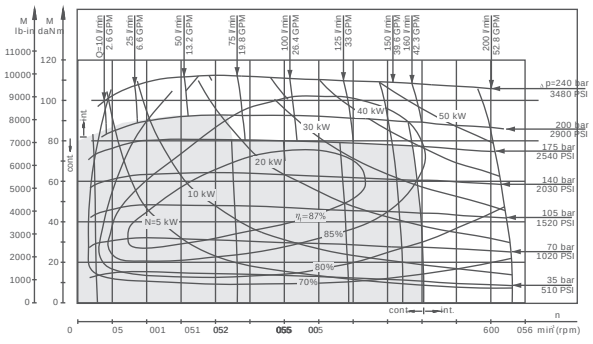
CODE	ROTATION
A	Standard
R	Opposite

Specifications

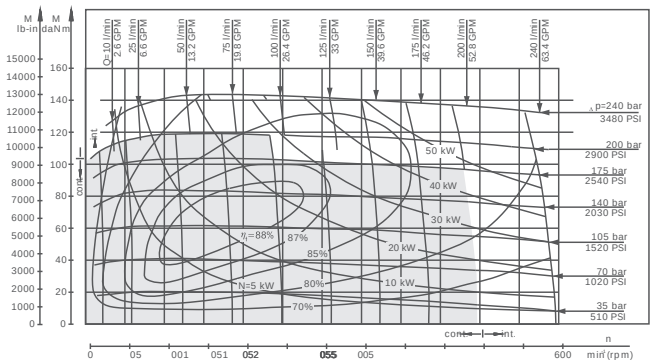
Type		GV315	GV400	GV500	GV630	GV800
Displacement, cm³/rev [in³/rev]		314,5[19.18]	400,9[24.45]	499,6[30.48]	629,1[38.38]	801,8[48.91]
Max. Speed	Cont.	510	500	400	320	250
RPM	Int.*	630	600	480	380	300
Max. Torque	Cont.	92[8150]	118[10450]	146[12950]	166[14700]	188[16650]
daNm [lb-in]	Int.*	111[9800]	141[12500]	176[15550]	194[17150]	211[18650]
	Peak**	129[11400]	164[14500]	205[18150]	221[19550]	247[21850]
Max. Output	Cont.	42,5[57]	53,5[71.7]	53,5[71.7]	48[64.4]	42,5[57]
kW [HP]	Int.*	51[68.4]	64[85.8]	64[85.8]	56[75]	48[64.4]
Max. Pressure Drop	Cont.	200[2900]	200[2900]	200[2900]	180[2610]	160[2320]
bar [PSI]	Int.*	240[3480]	240[3480]	240[3480]	210[3050]	180[2610]
	Peak**	280[4060]	280[4060]	280[4060]	240 [3480]	210[3050]
Max. Oil Flow	Cont.	160[42.3]	200[52.8]	200[52.8]	200[52.8]	200[52.8]
lpm [GPM]	Int.*	200[52.8]	240[63.4]	240[63.4]	240[63.4]	240[63.4]
Max. Inlet Pressure	Cont.	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]
bar [PSI]	Int.*	250[3620]	250[3620]	250[3620]	250[3620]	250[3620]
	Peak**	300[4350]	300[4350]	300[4350]	300[4350]	300[4350]
Max. Return Pressure	Cont.	140[2040]	140[2040]	140[2040]	140[2040]	140[2040]
without Drain Line	Int.*	175[2540]	175[2540]	175[2540]	175[2540]	175[2540]
bar [PSI]	Peak**	210[3050]	210[3050]	210[3050]	210[3050]	210[3050]
Max. Starting Pressure with Unloaded Shaft, bar [PSI]		8[120]	8[120]	8[120]	8[120]	8[120]
Min. Starting Torque	At max. press. drop Cont.	71[6300]	91[8100]	113[10000]	133[11800]	151[13400]
daNm [lb-in]	At max. press. drop Int.*	85[7500]	109[9600]	136[12000]	155[13700]	170[15000]
		10	9	8	6	5
Min. Speed***, RPM	GV	31,8[70.1]	32,6[71.9]	33,5[73.8]	34,9[76.9]	36,5[80.5]
Weight, kg [lb]	GVS	22,7[50]	23,5[51.8]	24,4[53.8]	25,6[56.4]	27,7[61.1]

Function Diagrams

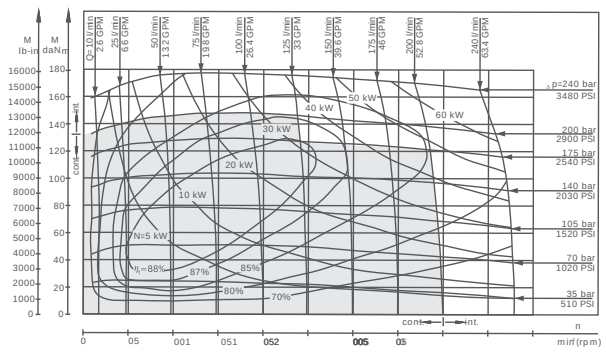
GV315



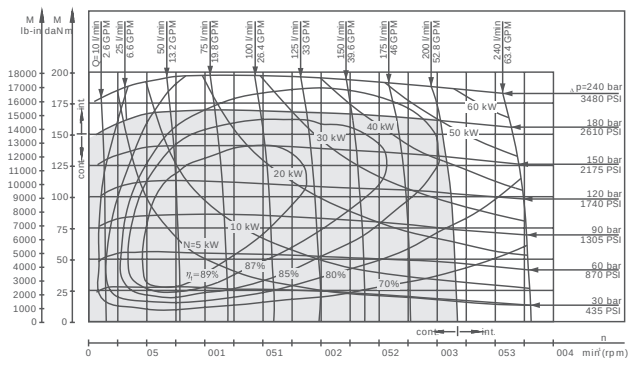
GV400



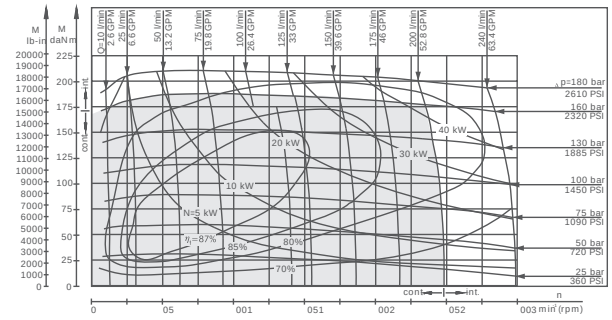
GV500



GV630

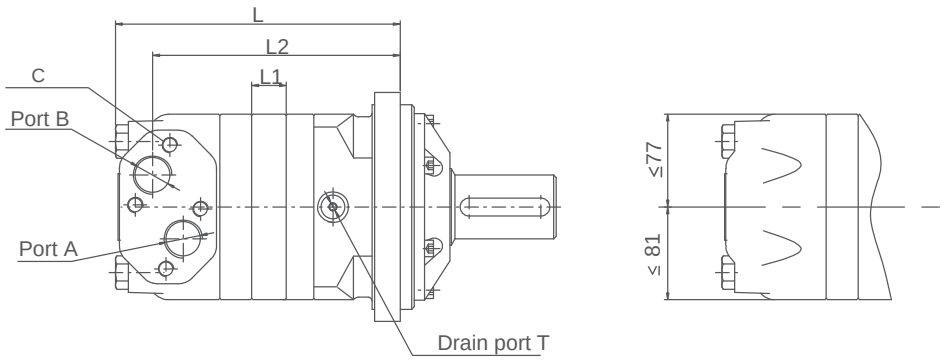


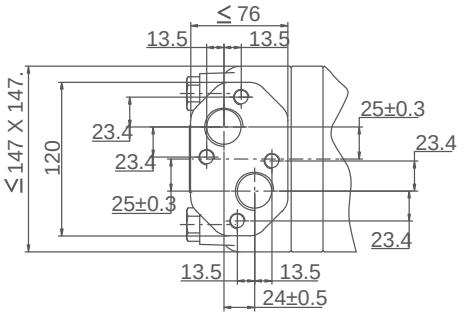
GV800

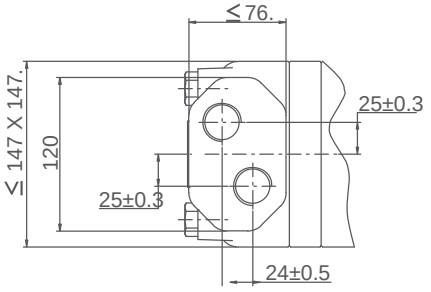


The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

GV Dimensions and Mountings





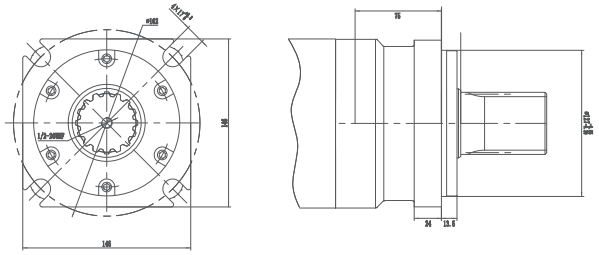


Model	L	L1	L2
GV315	217	20	161.5
GV400	224	27	168.5
GV500	232	35	176.5
GV630	244	47	188.5
GV800	255	58	199.5

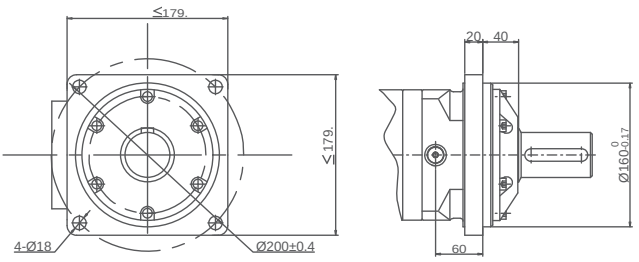
Mounting	G5 (depth)	M6 (depth)	U6 (depth)	G6 (depth)	M7 (depth)	U7 (depth)
P(A, B)	G1(18)	M33 X 12(18)	1-5/16-12UN(18)	G1(18)	M33 X 2(18)	1-5/16-12UN(18)
T	G1/4(12)	M14 X 1.5(12)	9/16-18UNF(12)	G1/4(12)	M14 X 1.5 (12)	7/16-20UNF(12)
C	4-M12(12)	4-M12(12)				

GV Falnge Covers Dimensions

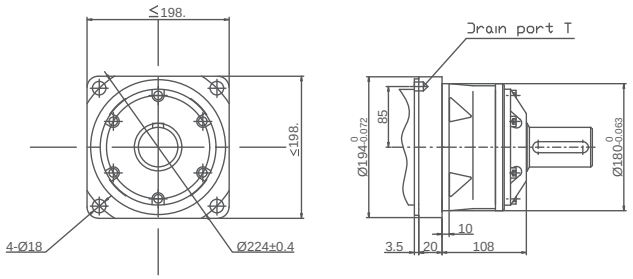
H7



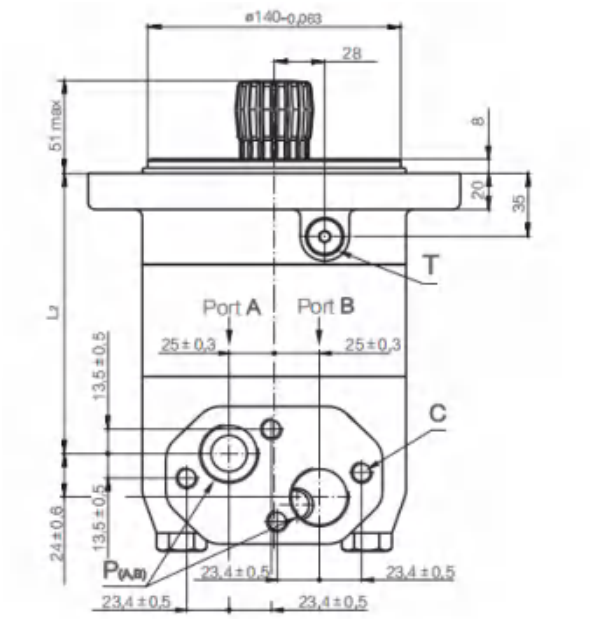
H9



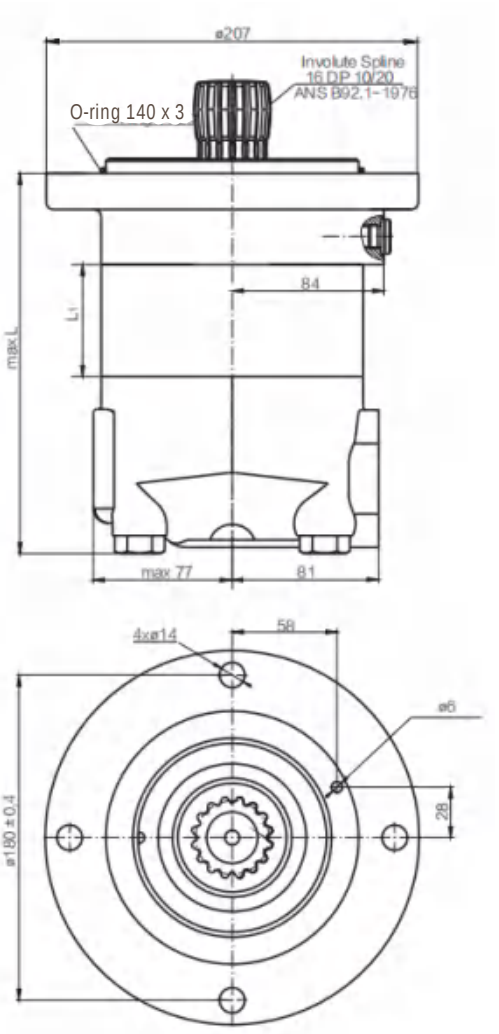
W3



GVS Bearingless Motor Dimensions and Mountings



Flange S

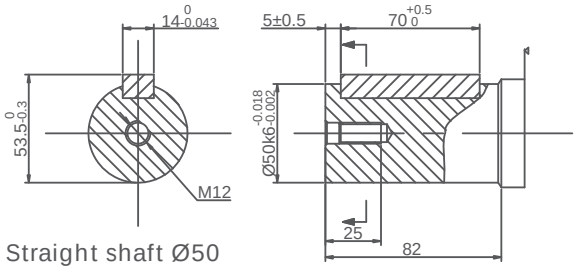


Model	L	L1	L2
GVS315	171	22	117
GVS400	179	29	124
GVS500	186	37	132
GVS630	197	47.5	143
GVS800	211	61.5	157

Mounting	G5 (depth)	M6 (depth)	U6 (depth)	G6 (depth)	M7 (depth)	U7 (depth)
P(A, B)	G1(18)	M33 X 12(18)	1-5/16-12UN(18)	G1(18)	M33 X 2(18)	1-5/16-12UN(18)
T	G1/4(12)	M14 X 1.5(12)	9/16-18UNF(12)	G1/4(12)	M14 X 1.5 (12)	7/16-20UNF(12)
C	4-M12(12)	4-M12(12)				

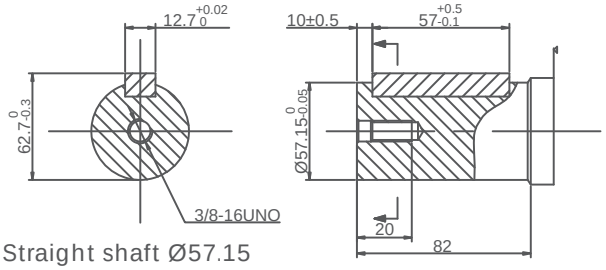
GV Shafts Dimensions

SN



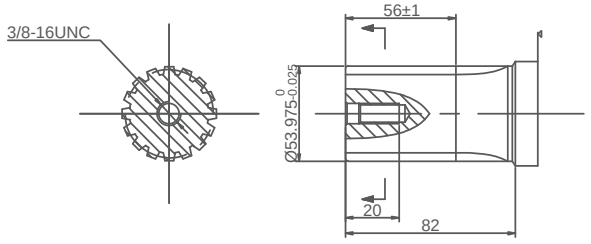
Straight shaft Ø50
Parallel key 14 x 9 x 70

SP



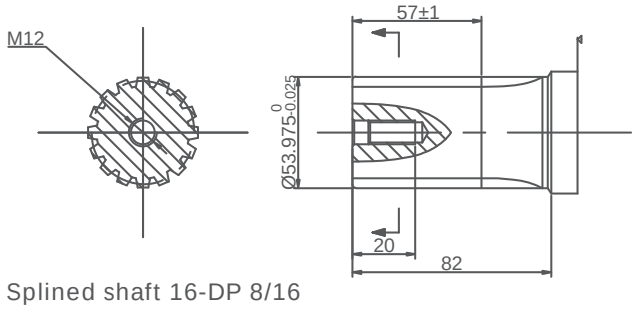
Straight shaft Ø57.15
Parallel key 12.7 x 12.7 x 57.16

RB



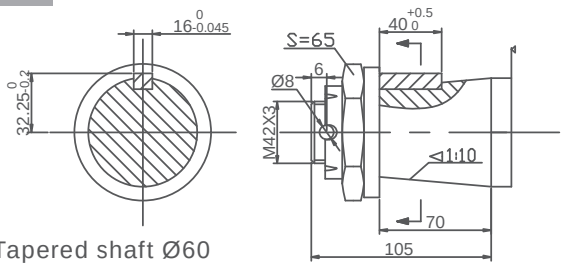
Splined shaft 16-DP 8/16

RC



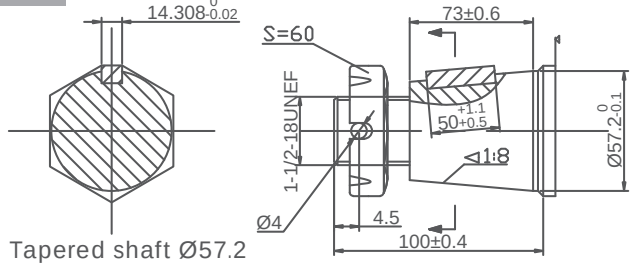
Splined shaft 16-DP 8/16

T8



Tapered shaft Ø60
Parallel key 16 x 10 x 32
Tightening torque: 750 ± 50 Nm

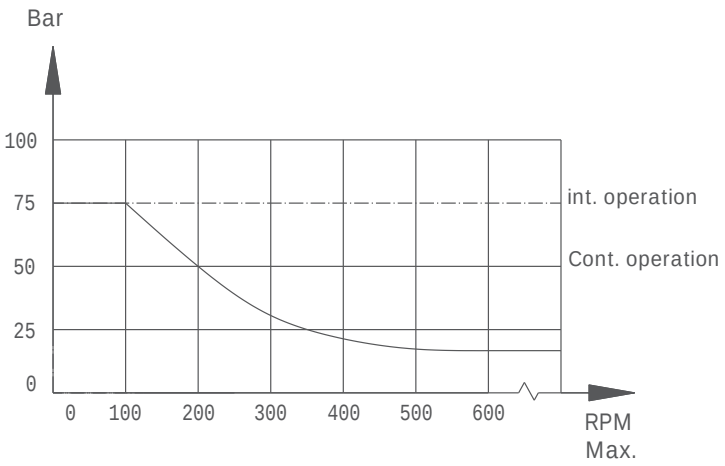
T9

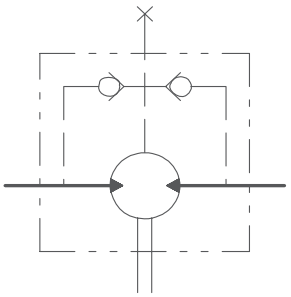


Tapered shaft Ø57.2
Parallel key 14.308 x 14.308 x 50.8
Tightening torque: 750 ± 50 Nm

GV Series Hydraulic Motors

Permissible shaft seal pressure



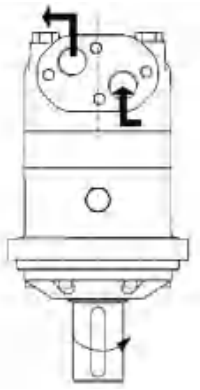


GV with standard shaft seal, check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.

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

Drain Port

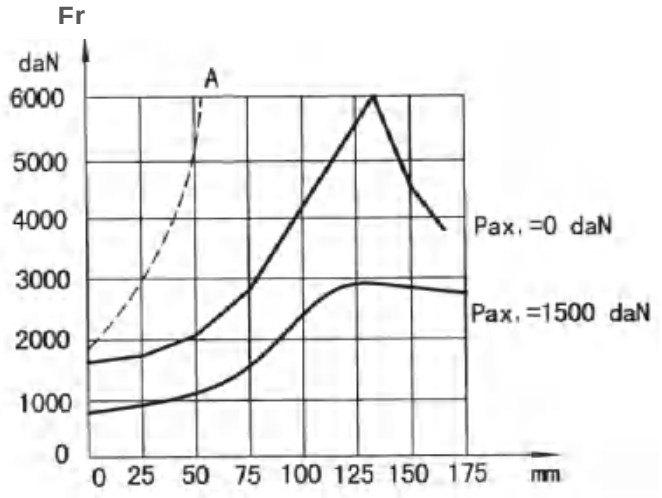
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

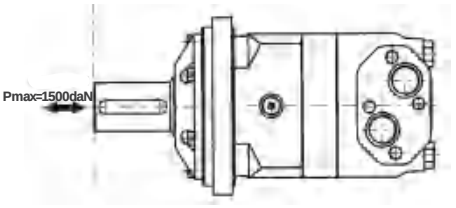


Standard direction of shaft rotation: Standard

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

Output shaft stand radial force





The output shaft runs in tapered bearings that permit high axial and radial forces, Curve “A” shows max radial shaft load, any shaft loads exceeding the values quoted in the curve will involve a risk of breakage , the tow other curves apply to a B10 bearing life of 3000 hours at 200 RPM.

GFA Series Hydraulic Motors



Options

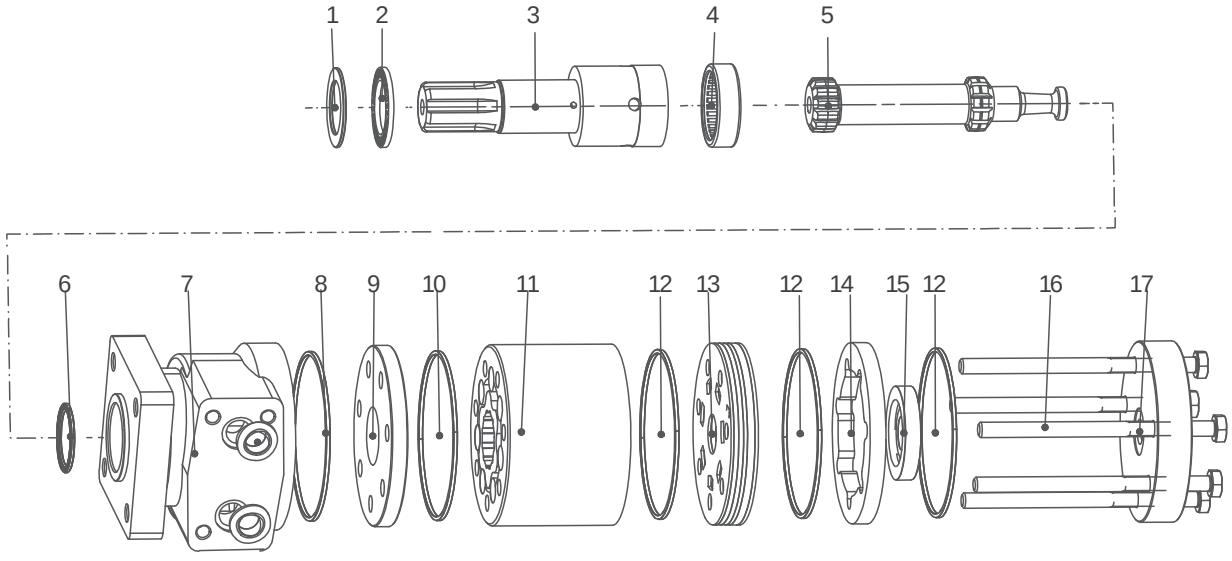
- Flange connection
- Motor with needle roller bearing
- Speed sensing
- Side and rear ports
- Shaft seal for high and low pressure
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Feeding machiners
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Lawn mower

General

Max. Displacement	cm^3/rev [in^3/rev]	392 [24.0]
Max. Speed	RPM	1141
Max. Torque	daNm [lb-in]	cont.:44,5 [3935] int.:62,8 [5562]
Max. Output	kW [HP]	12.5 [16.8]
Max. Pressure Drop	bar [PSI]	cont.: 140 [2030] int.: 190 [2750]
Max. Oil Flow	lpm [GPM]	75 [20.0]
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)

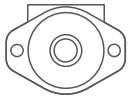
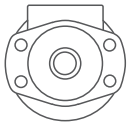
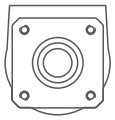
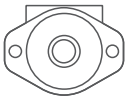
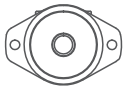


1 Bearing retainer
2 Flat bearing
3 Output shaft
4 Cylindrical needle roller bearing
5 Transmission shaft
6 Anti-dust ring
7 Housing
8 O-ring
9 Spacer
10 O-ring
11 Rotor and stator
12 O-ring
13 Distribution plate
14 Spacer
15 Distribution ring
16 Screw
17 Rear cover

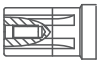
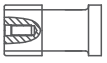
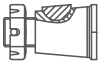
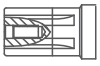
Ordering Code

GFA SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
036	36cm³/rev [2.2in³/rev]
045	41cm³/rev [2.5in³/rev]
050	49cm³/rev [3.0in³/rev]
065	65cm³/rev [4.0in³/rev]
080	82cm³/rev [5.0in³/rev]
100	98cm³/rev [6.0in³/rev]
130	130cm³/rev [10.0in³/rev]
165	163cm³/rev [11.9in³/rev]
195	195cm³/rev [12.1in³/rev]
230	228cm³/rev [13.9in³/rev]
260	260cm³/rev [15.9in³/rev]
290	293cm³/rev [17.9in³/rev]
330	328cm³/rev [20.0in³/rev]
365	370cm³/rev [22.6in³/rev]
390	392cm³/rev [24.0in³/rev]

CODE	FLANGE
A1	2-Hole SAE A pilot Ø82.5×2.55 
A3	4-Hole SAE A pilot Ø82.5×2.79 
H4	4-3/8-16UNC square pilot Ø44.4×2.55 
A5	2-Hole SAE A pilot Ø82.5×7.44 
A7	2-Hole SAE B pilot Ø101.6×6.35 
H6	4-Hole wheel pilot Ø60.32×31.75 

CODE	PORTS
G7	G1/2, G14
U9	7/8-14 UNF O-ring, 7/16-20UNF
UA	1/2-14 NPTF, 7/16-20UNF
U3	3/4-16 O-ring, 7/16-20UNF
G8	PT(Rc) 1/2, PT(Rc) 1/4
D1	Ø10 O-ring,7/16-20UNF manifold 4×5/16-18UNC
D2	Ø10 O-ring, G1/4 manifold 4×M8

CODE	SHAFT
S6	Ø25.4 woodruff key Ø25.4×6.35 
R4	Ø25.4, splined tooth SAE 6B 1/4-20UNC 
S7	Ø25 parallel key 8×7×32 
S8	Ø25.4 parallel key 6.35×6.35×31.75 
S9	Ø25.4, pin hole Ø10.3 
SA	Ø25.4, pin hole Ø8 
SB	Ø22.22 parallel key 6.35×6.35×25.4 
R5	Ø22.22 splined tooth 13-DP 16/32 
T3	Tapered Ø25.4 woodruff key Ø25.4×6.35 
SC	Ø25 parallel key 8×7×28 
SD	Ø25 parallel key 7×7×32 
R1	Ø25.4 splined tooth SAE 6B 

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

GFA Specifications

Type		GFA36	GFA45	GFA50	GFA65	GFA80
Displacement cm³ /rev [in³/rev]		36[2.2]	41[2.5]	49[3.0]	65[4.0]	82[5.0]
Max. Speed RPM	Int.	1141	1024	1020	877	695
Max. Oil Flow	Cont.	34[9]	34[9]	34[9]	45[12]	45[12]
lpm [GPM]	Int.	42[11]	42[11]	50[13]	57[15]	57[15]
Max. Differential Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	140[2030]
bar [PSI]	Int.	190[2750]	190[2750]	190[2750]	190[2750]	190[2750]
Max. Supply Pressure bar [PSI]		200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
Max. Torque	cont.	5,46[483]	7,1[624]	9,0[796]	12,5[1106]	16,0[1416]
daNm [lb-in]	int.	7,11[60]	9,9[876]	12,7[1120]	17,6[1558]	22,0[1947]
Max. Performance kW [HP]		8.5[11.4]	10.4[13.9]	12.8[17.2]	14.7[19.8]	17.3[23.2]
Min. Staring Torque	cont.	4,4[389]	4,4[111]	7,2[637]	10,0[885]	12,8[1133]
daNm[lb-in]	int.	5,2[460]	6,4[565]	9,8[871]	13,7[1211]	17,1[1515]
Weight, kg [lb]		5.93[13.07]	6.03[13.3]	6.12[13.5]	6.26[13.8]	6.35[14.0]

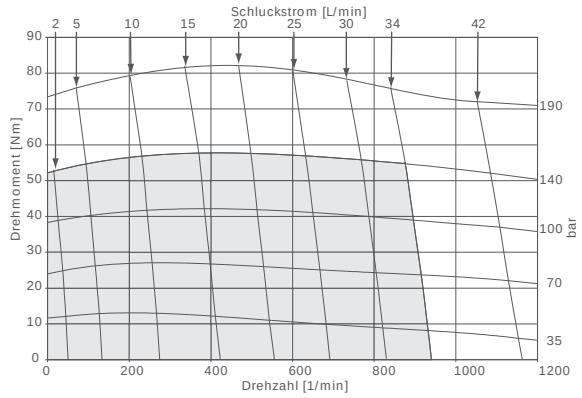
Type		GFA100	GFA0130	GFA165	GFA195	GFA230
Displacement cm³ /rev [in³/rev]		98[6.0]	130[8.0]	163[10.0]	195[11.9]	228[13.9]
Max. Speed RPM	Int.	582	438	348	292	328
Max. Oil Flow	Cont.	45[12]	45[12]	45[12]	45[12]	57[15]
lpm [GPM]	Int.	57[15]	57[15]	57[15]	57[15]	75[20]
Max. Differential Pressure	Cont.	140[2030]	140[2030]	140[2030]	140[2030]	120[1740]
bar [PSI]	Int.	190[2750]	190[2750]	190[2750]	190[2750]	165[2400]
Max. Supply Pressure bar [PSI]		200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
Max. Torque	cont.	19,0[1682]	25,5[2257]	31,0[2744]	39,0[3452]	38,0[3363]
daNm [lb-in]	int.	26,4[2337]	35,2[3116]	43,6[3846]	52,8[4673]	51,4[4554]
Max. Performance kW [HP]		17.4[23.4]	17.3[23.2]	17.0[22.8]	17.4[23.4]	17.7[23.8]
Min. Staring Torque	cont.	15,2[1345]	20,4[1806]	24,8[2195]	31,2[2762]	30,4[2691]
daNm [lb-in]	int.	20,5[1819]	27,4[2423]	33,8[2992]	41,1[3637]	41,1[3637]
Weight, kg [lb]		6.49[14.3]	6.76[14.9]	7.03[15.5]	7.35[16.2]	7.58[16.7]

Specifications

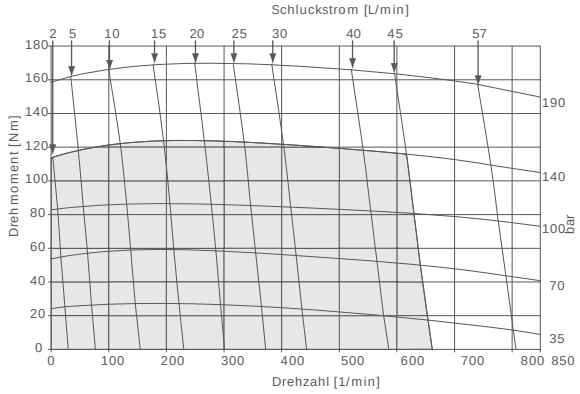
Type		GFA260	GFA295	GFA330	GFA365	GFA390
Displacement cm³/rev [in³/rev]		260[15.9]	293[17.9]	328[20.0]	370[22.6]	392[24.0]
Max. Speed RPM	Int.	287	256	228	203	191
Max. Oil Flow	Cont.	57[15]	57[15]	57[15]	57[15]	57[15]
lpm [GPM]	Int.	75[20]	75[20]	75[20]	75[20]	75[20]
Max. Differential Pressure	Cont.	110[1595]	100[1450]	100[1450]	95[1378]	85[1233]
bar [PSI]	Int.	155[2250]	145[2100]	135[1950]	125[1825]	120[1740]
Max. Supply Pressure bar [PSI]		200[2900]	200[2900]	200[2900]	200[2900]	200[2900]
Max. Torque	Cont.	40,0[3540]	42,8[3784]	44,3[3926]	46,7[4133]	44,5[3935]
daNm [lb-in]	Int.	55,0[4870]	58,2[5180]	60,0[5312]	64,8[5728]	62,8[5562]
Max. Performance kW [HP]		16,7[22.4]	15,7[21.0]	14,8[19.8]	13,6[18.2]	12,5[16.8]
Min. Staring Torque	Cont.	32,0[2832]	32,8[2903]	33,4[3045]	37,3[3301]	34,8[3080]
daNm [lb-in]	Int.	44,9[3977]	44,5[3939]	45,3[4014]	47,7[4223]	46,2[4090]
Weight, kg [lb]		7.80[17.2]	8.07[17.8]	8.35[18.4]	8.66[19.1]	8.80[19.4]

Function Diagrams

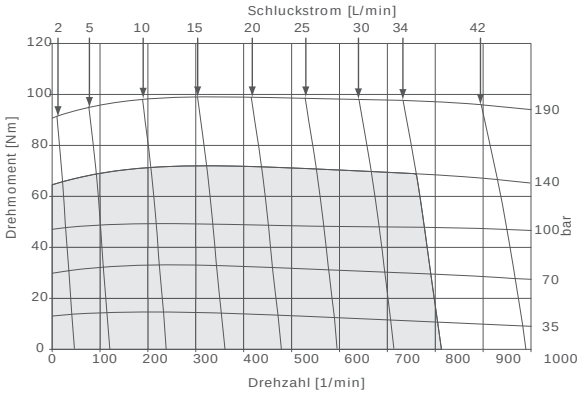
GFA36



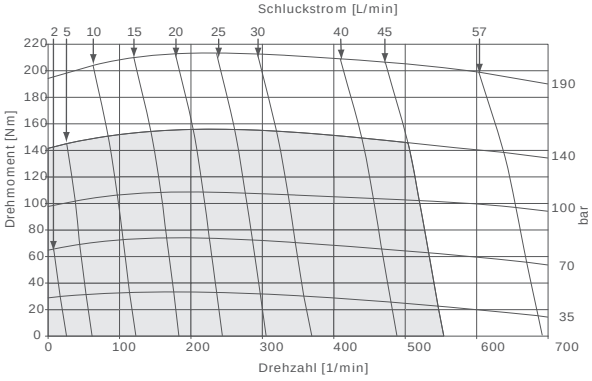
GFA65



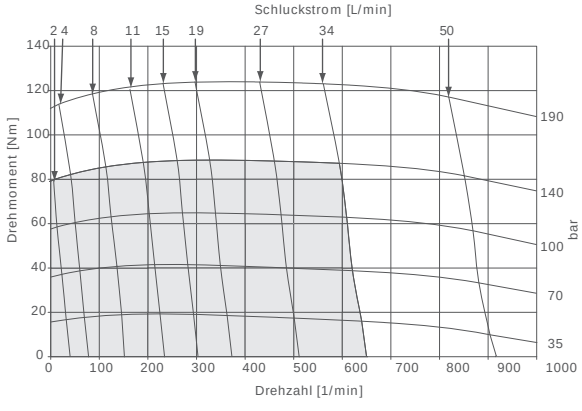
GFA45



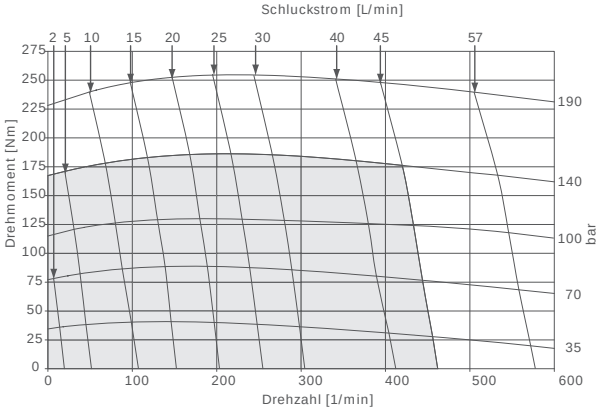
GFA80



GFA50



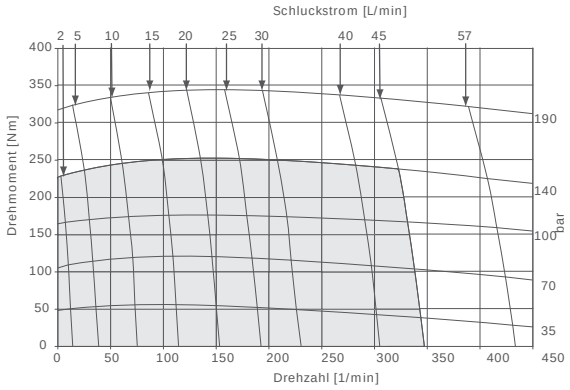
GFA100



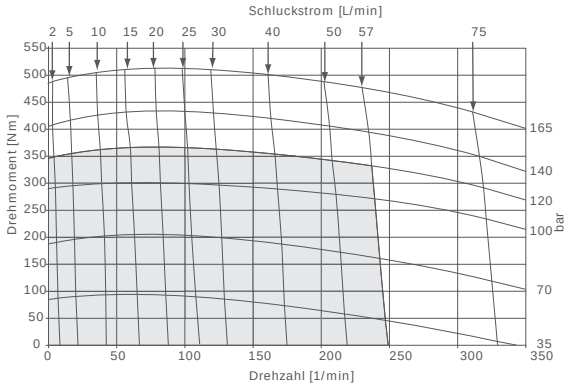
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

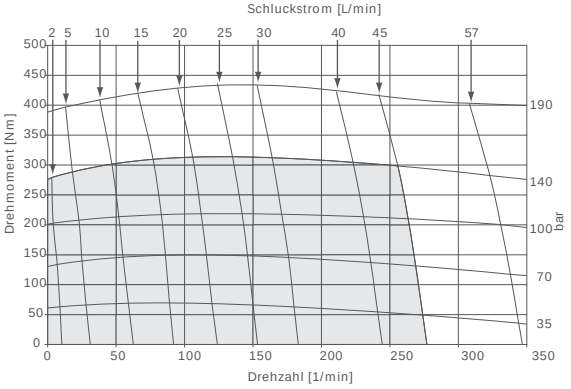
GFA130



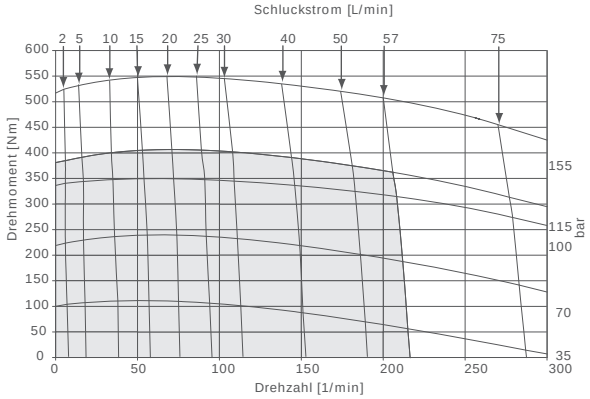
GFA230



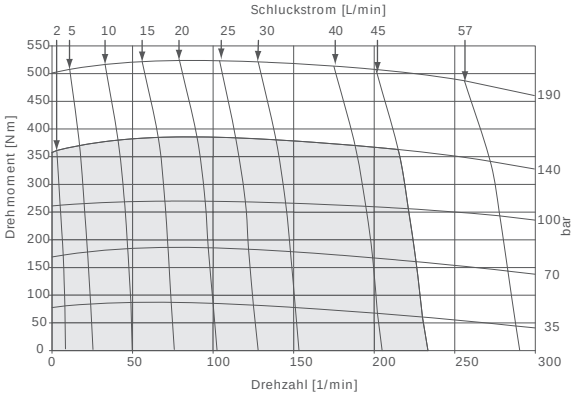
GFA165



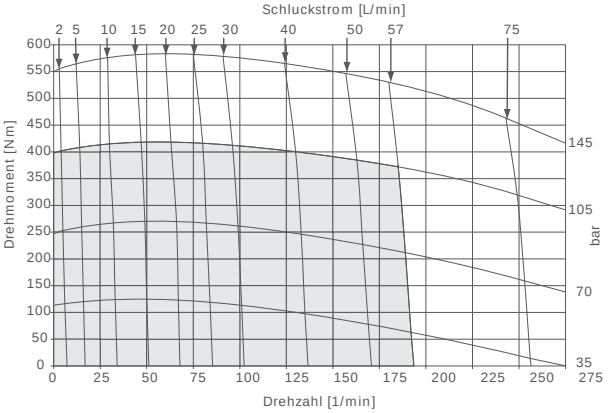
GFA260



GFA195



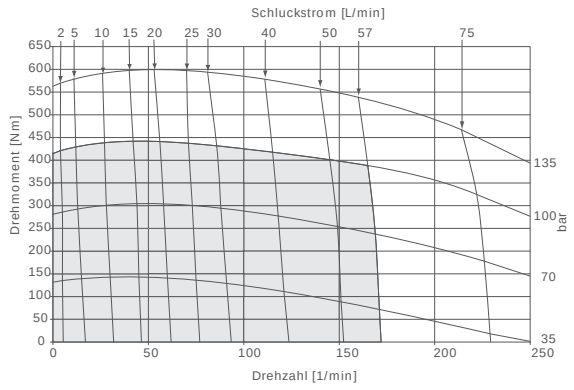
GFA295



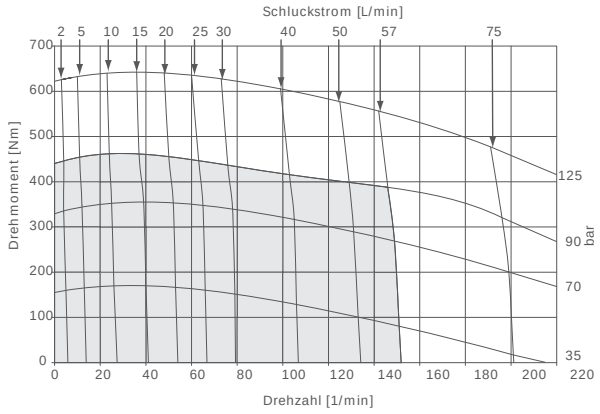
The function diagrams data is for average performance of randomly selected motors at backpressure. 5÷10 bar [72.5÷145 PSI] and oil with viscosity of 32 mm²/s [150 SUS] at 50°C [122°F].

Function Diagrams

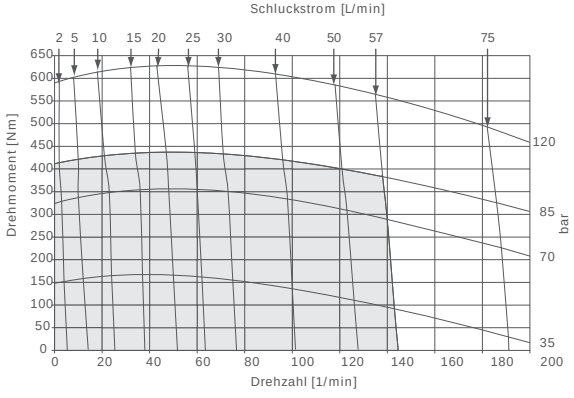
GFA330



GFA365

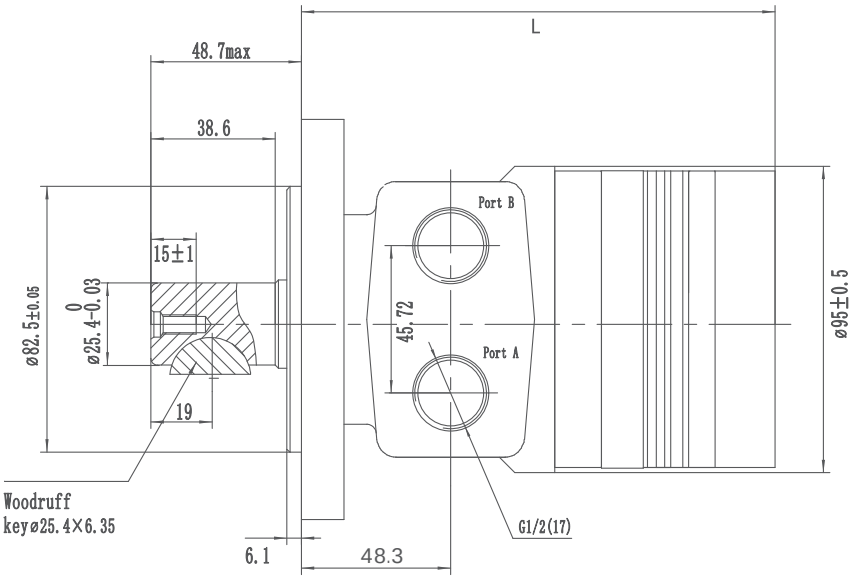


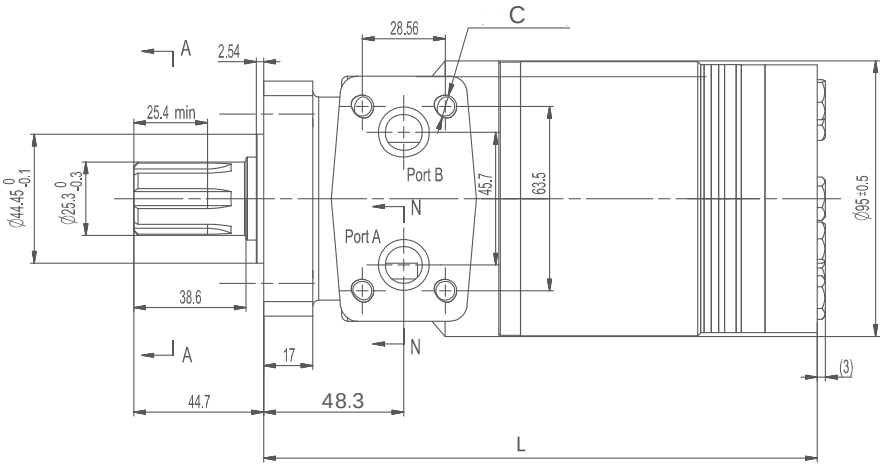
GFA390



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].

GFA Dimensions and Mountings



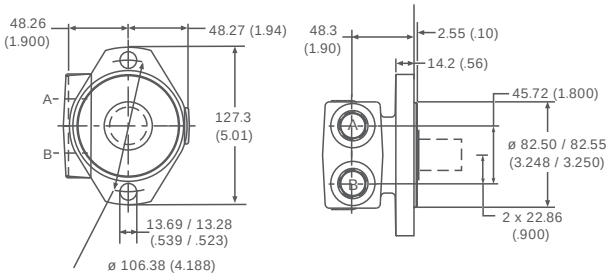


Model	L
GFA36	135
GFA45	136
GFA50	138
GFA65	141
GFA80	144
GFA100	147
GFA130	154
GFA165	160
GFA195	166
GFA230	173
GFA260	179
GFA295	185
GFA330	192
GFA365	200
GFA390	205

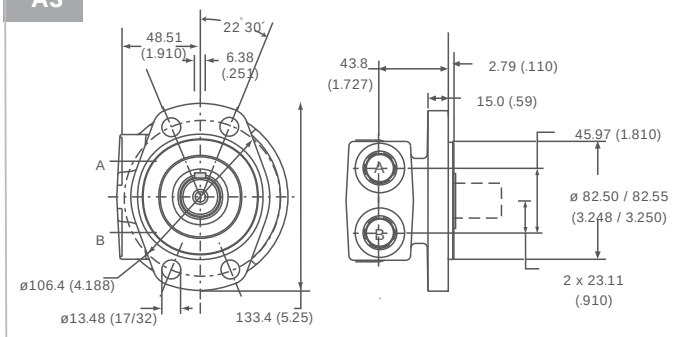
Mounting	G7 (depth)	U9 (depth)	UA (depth)	U3 (depth)	G8 (depth)	D1 (depth)	D2 (depth)
P(A, B)	G1/2(15)	7/8-14 O-ring(17)	1/2-14NPTF(15)	3/4-16 O-ring(15)	PT(RC)1/2(15)	Ø10	Ø10
T	G1/4(12)	7/16-20UNF(12)	7/16-20UNF(12)	7/16-20UNF(12)	PT(RC)1/4(9.7)	7/16-20UNF(12)	G1/4(12)
C	—	—	—	—	—	4-5/16-18UNC(13)	4-M8(13)

GFA Flange Covers Dimensions

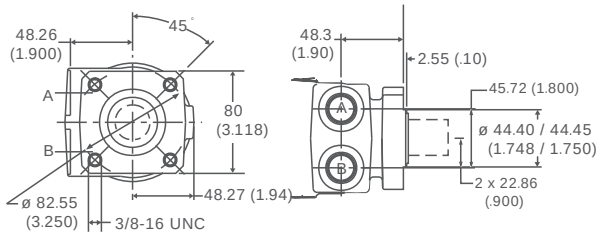
A1



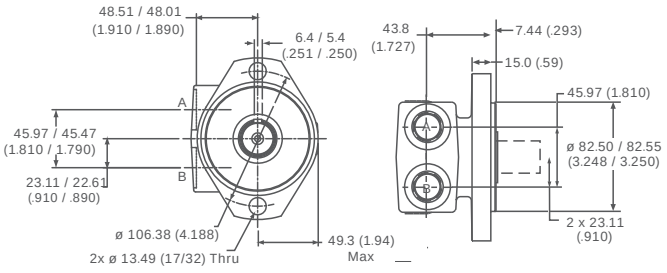
A3



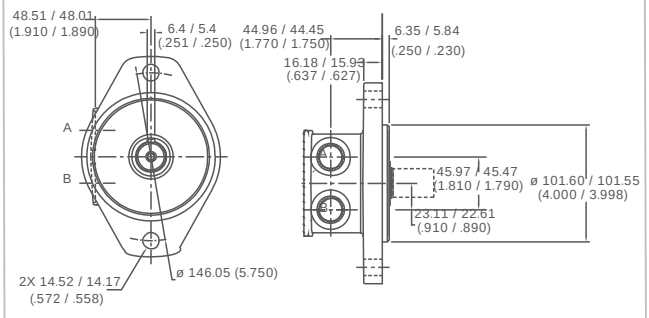
H4



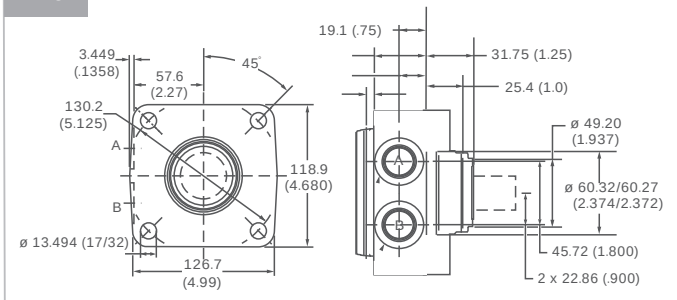
A5



A7

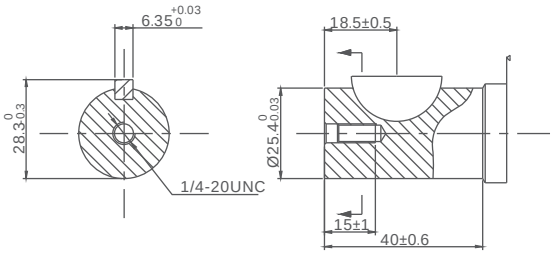


H6



GFA Shafts Dimensions

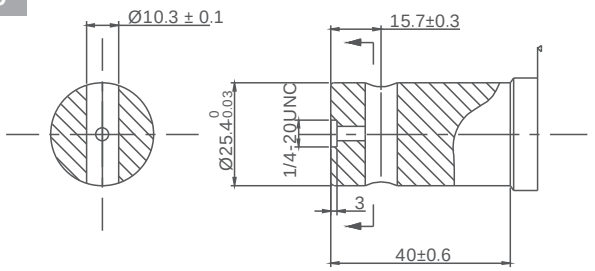
S6



Straight shaft Ø25.4

Woodruff key Ø25.4 x 6.35

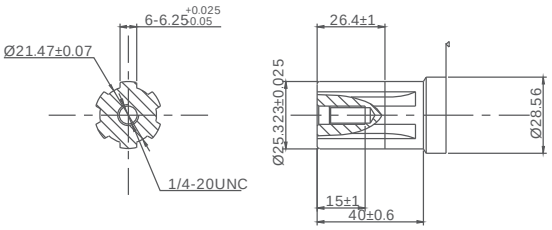
S9



Straight shaft Ø25.4

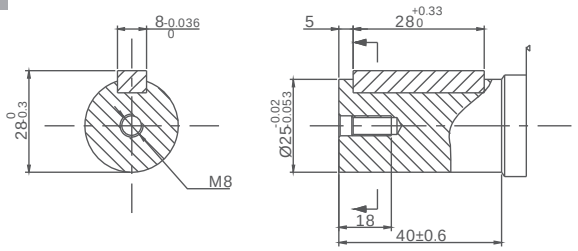
Pin hole Ø10.3

R4



Splined shaft SAE 6B

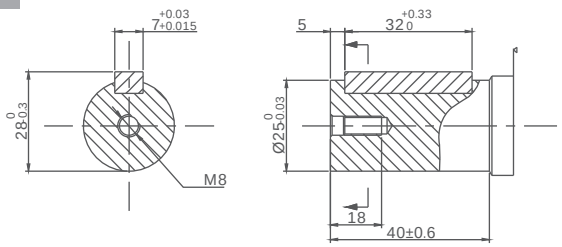
SC



Straight shaft Ø25

Parallel key 8 x 7 x 28

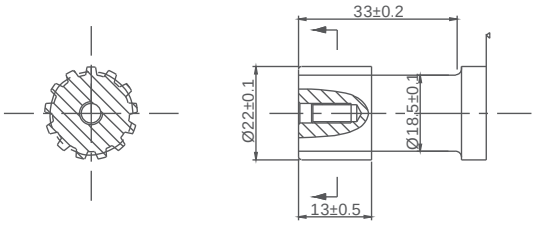
SD



Straight shaft Ø25

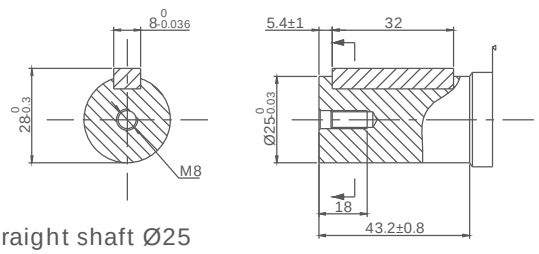
Parallel key 7 x 7 x 32

R5



Splined shaft tooth 13-DP 16/32

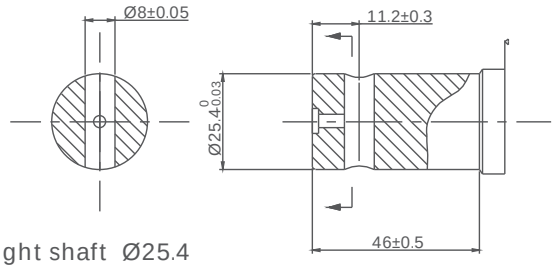
S7



Straight shaft Ø25

Parallel key 8 x 7 x 32

SA

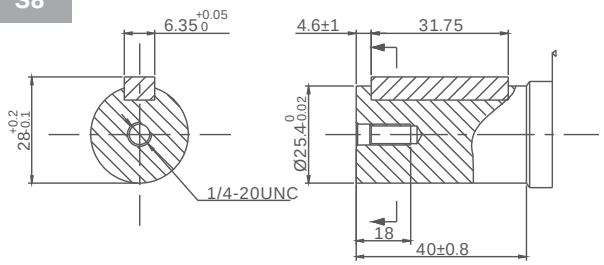


Straight shaft Ø25.4

Pin hole Ø8

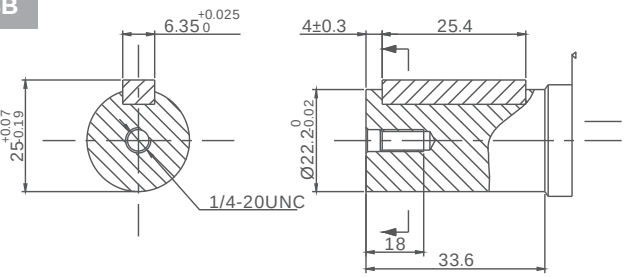
GFA Shafts Dimensions

S8



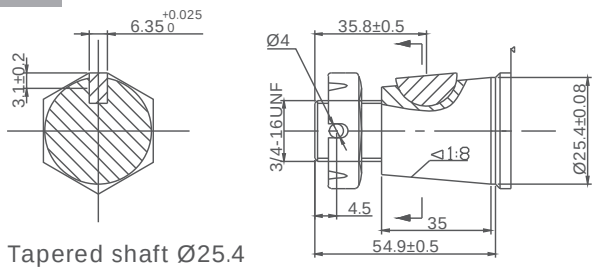
Straight shaft Ø25.4
Parallel key 6.35 x 6.35x 31.75

SB



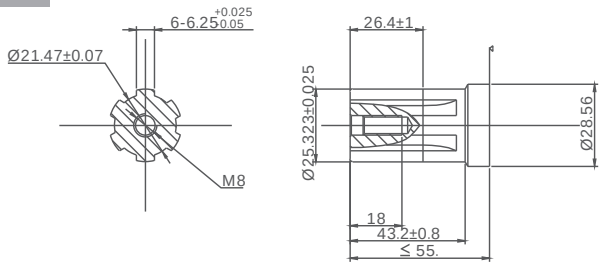
Straight shaft Ø22.22
Parallel key 6.35 x 6.35 x 25.4

T3



Tapered shaft Ø25.4
Woodruff key Ø25.4 x 6.35
Tightening torque: 200 ± 10 Nm

R1



Splined shaft SAE 6B

GGM Series Hydraulic Motors



Options

- Gerotor design
- Side ports, rear ports
- Straight, splined shafts
- SAE ports
- Roller bearings for long life
- High pressure mechanical seals

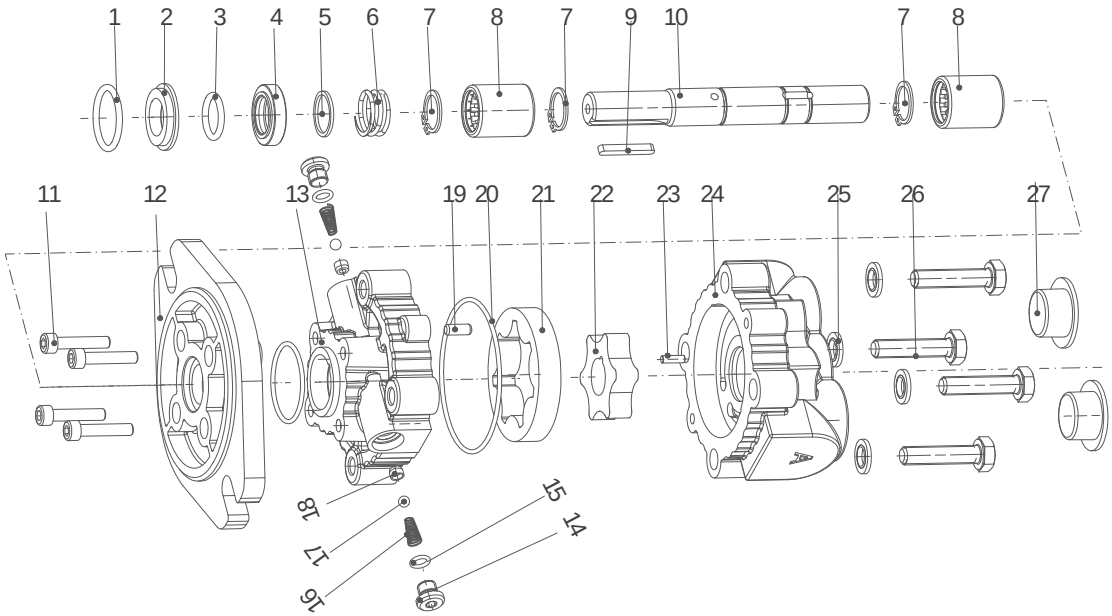
Applications

- Construction machines
- Refuse/dump truck
- Material handling
- Forestry machines
- Agriculture machines
- Industrial machines

General

Max. Displacement	cm^3/rev [in^3/rev]	11.47 [.700]
Max. Speed	RPM	5000
Max. Torque 1000 PSI	in.-lbs [kg-cm]	111 [128]
Max. Output	kW [HP]	64 [85,8]
Max. Pressure Drop	bar [PSI]	cont.: 138 [2000] int.: 172.58 [2500]
Max. Oil Flow	lpm [GPM]	56.7[15]
Max. Shaft Side Loads	lbs. [kg]	170 [77]
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)

When used in series, the back pressure shall not exceed 69bar.

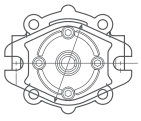
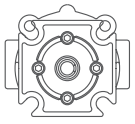
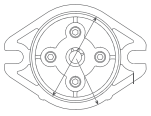


1 O-ring
2 Mechanical static ring
3 O-ring
4 Mechanical dynamic ring
5 Washer
6 Compression spring
7 Non-standard clamp
8 Needle roller bearing
9 Parallel Key
10 Transmission shaft
11 Screw
12 Front cover
13 Intermediate
14 Plug
15 O-ring
16 Spring
17 Steel ball
18 Valve base
19 Positioning pins
20 O-ring
21 Inner rotor
22 Outer rotor
23 Cylindrical pin
24 Rear cover
25 Washer
26 Bolt
27 Oil port plug cap

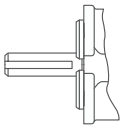
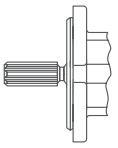
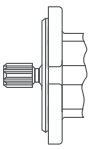
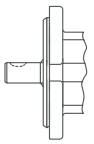
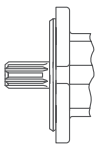
Ordering Code

GGM SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
3.6	3.9cm/rev [.218in³/rev]
6.1	6.2cm³/rev [.372in³/rev]
7.4	7.8cm³/rev [.450in³/rev]
9.5	9.7cm³/rev [.580in³/rev]
11.5	11.6cm³/rev [.700in³/rev]

CODE	FLANGE
AB	2- Ø10.4 rhomb Ø82.55 pilot Ø50.8×3.1 
HA	4- Ø10 square 50.8 × 50.8 pilot Ø45.2×3.1 
AC	2-Ø11.2 rhomb Ø106.4 pilot Ø82.55×3.1 

CODE	PORTS
A	Rear
B	Side

CODE	SHAFT
SQ	9/16 Dia. keyed shaft 
RD	9/16 Dia.8 tooth splined long shaft 
RF	5/8 Dia.9 tooth splined shaft 
SR	7/16 Dia. keyed shaft 
RG	9/16 Dia. 8 tooth splined shaft 

CODE	PAINT
A	No Paint

CODE	FUNCTION
A	Standard seal
B	Standard seal w/dust seal
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

Specifications

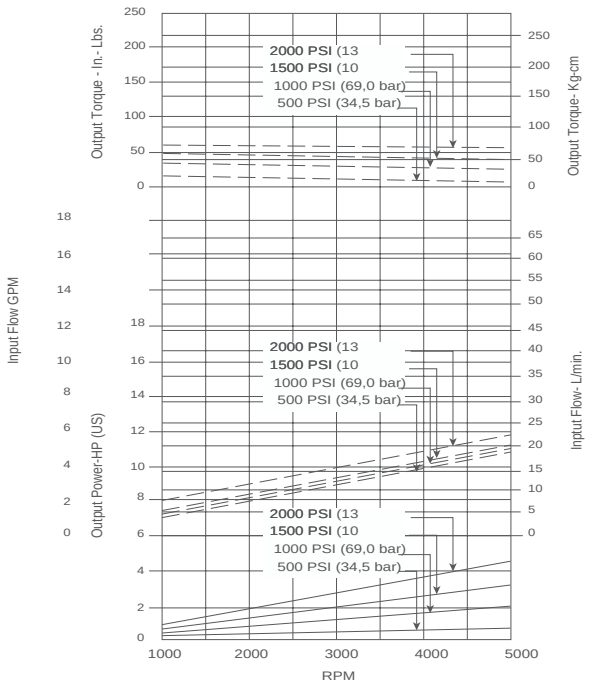
Type	GGM3.6	GGM6.1	GGM7.4
Displacement in³/rev [cm³/rev]	.218(3.57)	.372(6.094)	.450(7.374)
Max. Rated RPM	5000	5000	5000
Rated Flow Per 1000 RPM (Nominal)	.95GPM(3.6 L/min)	1.61GPM(6.1 L/min)	1.95GPM(7.4 L/min)
Max. Continuous Pressure	2000PSI(138.0 bar)	2000PSI(138.0 bar)	2000PSI (138.0 bar)
Max. Intermittent Pressure	2500PSI(172.5 bar)	2500PSI(172.5 bar)	2500PSI (172.5 bar)
Output Torque Per 1000 PSI (69.0 bar)	35 in.-lbs (40 kg-cm)	59 in.-lbs (68 kg-cm)	72 in.-lbs. (83 kg-cm)
Weight	2.8 pounds(1.25 kg)	3.0 pounds(1.36 kg)	3.1 pounds(1.41 kg)
Shaft Side Load**	170 lbs(77.0 kg)	130 lbs.(59.0 kg)	110 lbs.(50.0 kg)

Type	GGM9.5	GGM11.5
Displacement in³/rev [cm³/rev]	.580(9.50)	.700(11.471)
Max. Rated RPM	5000	5000
Rated Flow Per 1000 RPM (Nominal)	2.51GPM(9.5 L/min)	3.03GPM(11.5 L/min)
Max. Continuous Pressure	2000PSI (138.0 bar)	1500PSI (103.5 bar)
Max. Intermittent Pressure	2500PSI (172.5 bar)	2000PSI (138.0 bar)
Output Torque Per 1000 PSI (69.0 bar)	92 in.-lbs. (107 kg-cm)	111 in.-lbs (128 kg-cm)
Weight	3.3 pounds(1.50 kg)	3.5 pounds(1.59 kg)
Shaft Side Load**	70 lbs.(31.7 kg)	30 lbs.(13.5 kg)

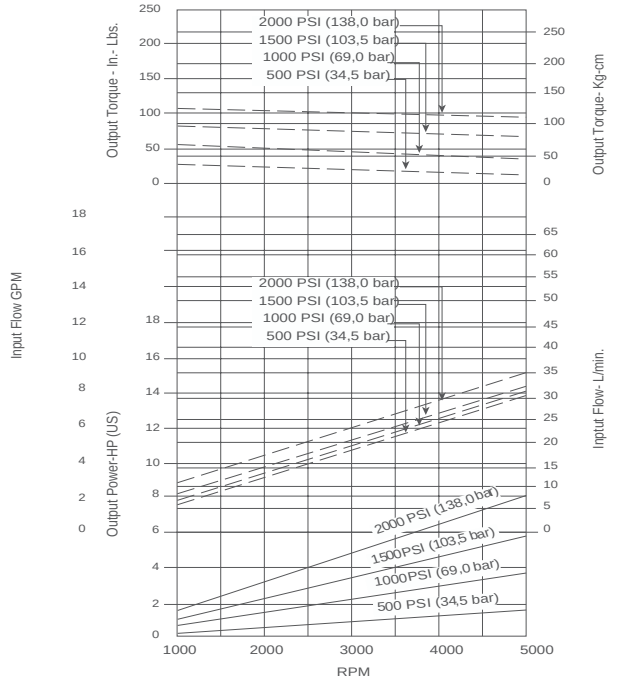
* THEORETICAL
** SIDE LOAD: Maximum Permissible Shaft Side Load at 2500 RPM and 1000 PSI (69.0 bar)
(B-10 Bearing Life of 1000 Hrs.)
OIL TEMPERATURE: Maximum recommended oil temperature 180° F (82.2° C)
OIL VISCOSITY: Recommended viscosity 150 SUS (3.65 engler).
(32 centistokes) Minimum recommended viscosity
60 SUS (2.1 engler) (13 centistokes)
FILTRATION: Minimum recommended filtration 10 Micron.
END THRUST: 80 Lbs. (36.3 kg.) maximum.

Function Diagrams

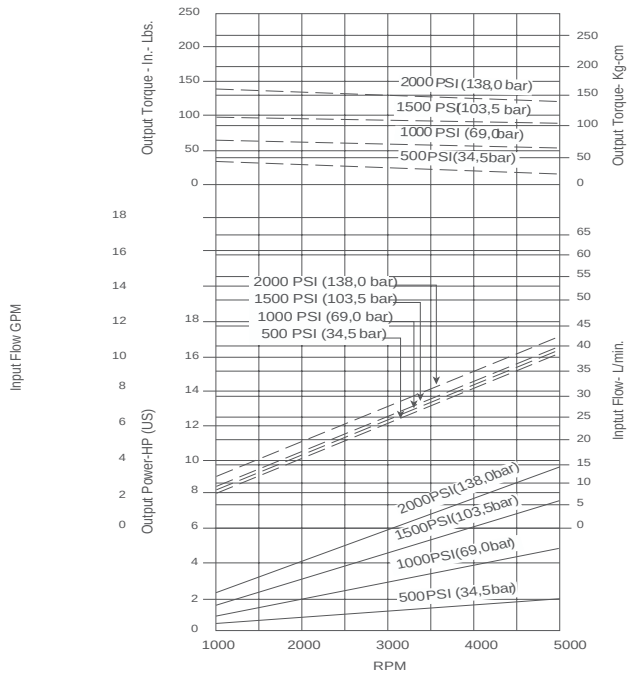
GGM3.6



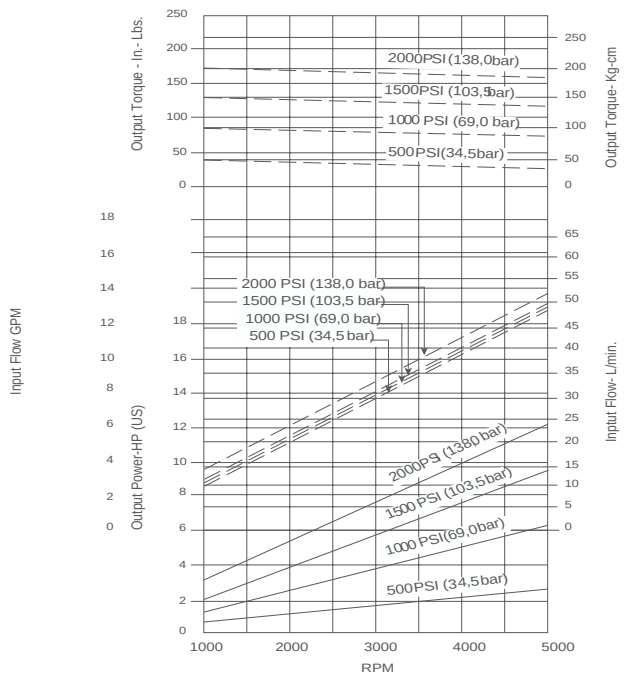
GGM6.1



GGM7.4

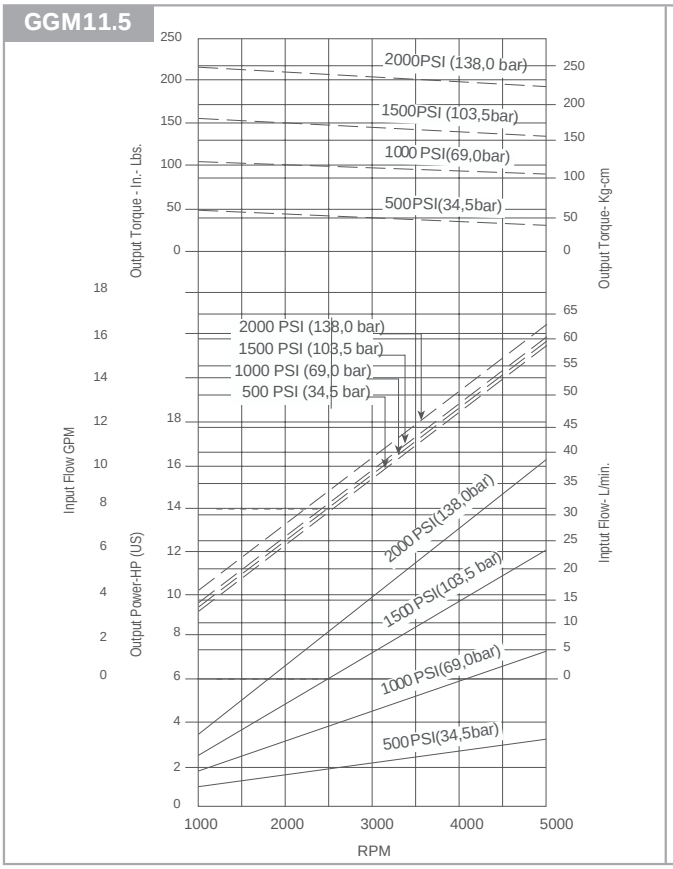


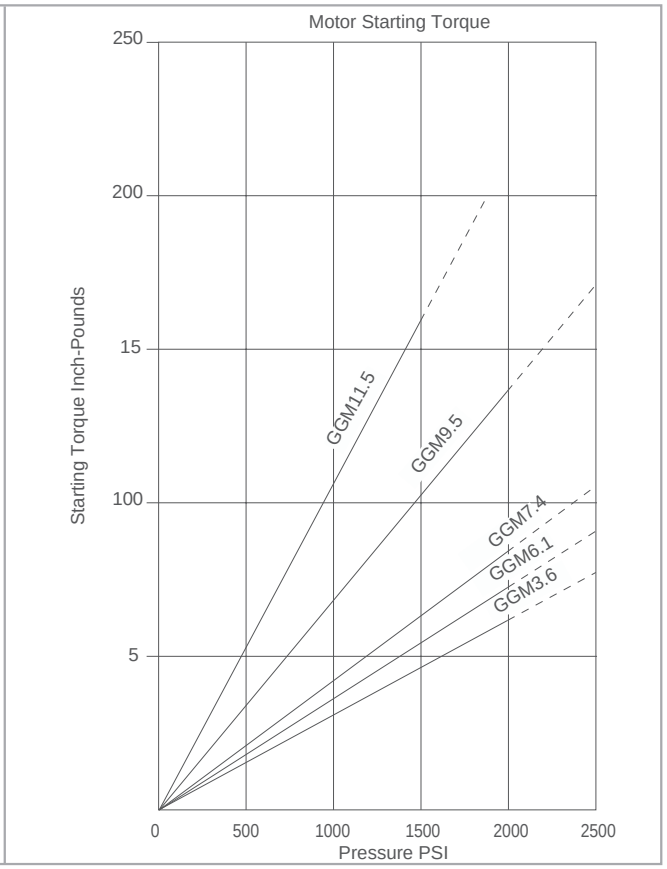
GGM9.5



Function Diagrams

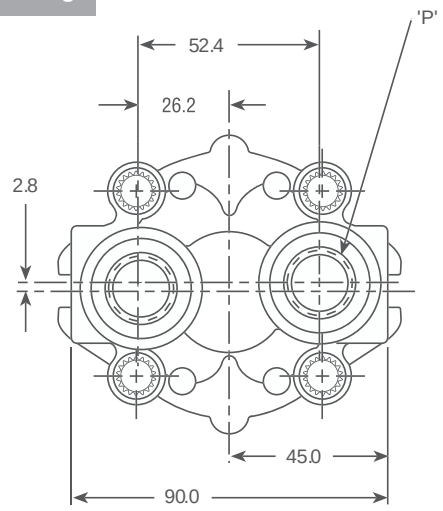
GGM11.5



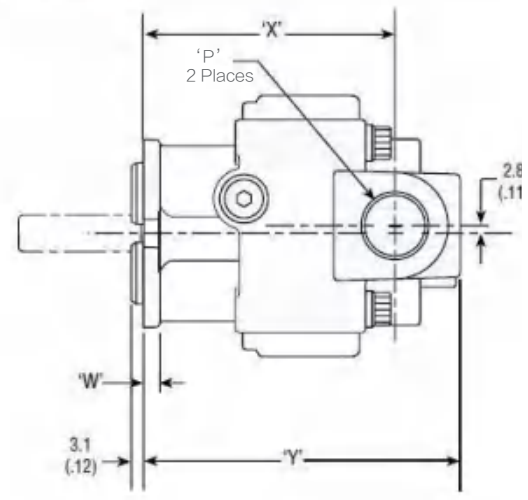


GGM Dimensions and Mountings

A Rear porting



B Side porting



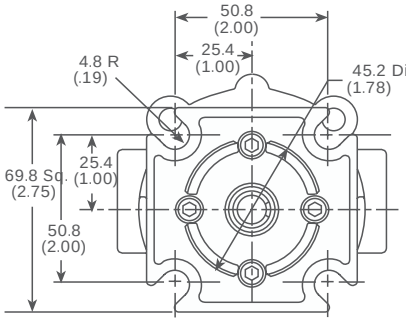
Model	Size	
	"X"	"Y"
GGM3.6	73.1(2.88)	93.1(3.67)
GGM6.1	773(3.04)	97.3(3.83)
GGM74	79.4(3.13)	99.4(3.91)
GGM9.5	83.0(3.27)	103.0(406)
GGM11.5	86.3(3.40)	106.3(4.19)

Flange	"W"
2 holes"A-A"	6.3
4 holes	6.3
2 holes "A"	9.5

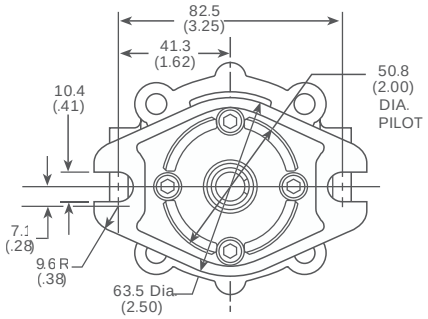
Model	"P" SAE Straight thread oil port, O-ring seal
GGM3.6	SAE 8(3/4-16UNF)
GGM6.1	SAE 8(3/4-16UNF)
GGM7.4	SAE 8(3/4-16UNF)
GGM9.5	SAE 10(7/8-14UNF)
GGM11.5	SAE 10(7/8-14UNF)

GGM Flange Covers Dimensions

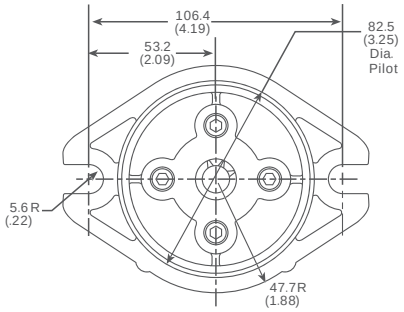
HA 4-Bolt



HB SAE 'AA' 2-Bolt

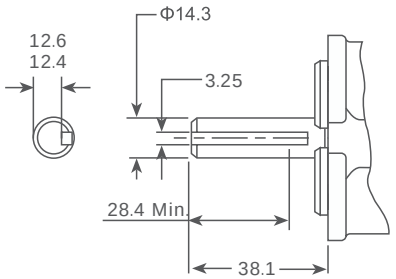


HC SAE 'A' 2-Bolt



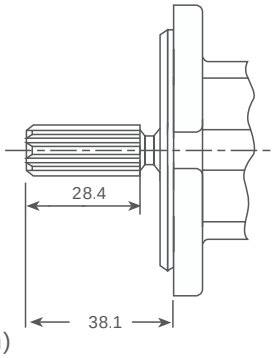
GGM Shafts Dimensions

SQ



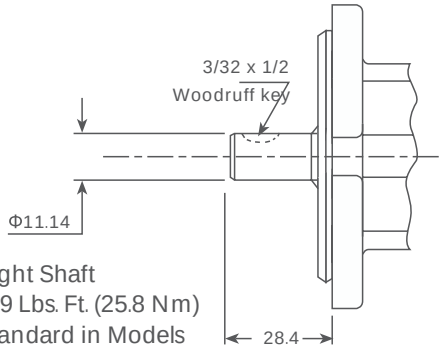
Diameter 9/16, Straight shaft
Maximum bearing torque 52.9 Nm

RD



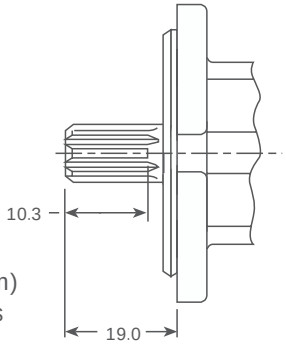
9/16 Dia. 8 Tooth Splined Shaft
Flat Root Side Fit-Class 2 Fit
Torque Limit 39 Lbs. Ft. (52.9 Nm)

SR



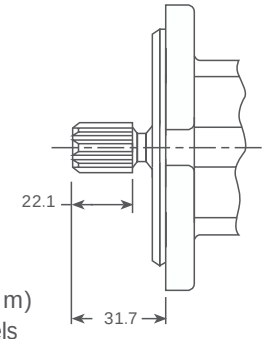
7/16 Dia. Straight Shaft
Torque Limit 19 Lbs. Ft. (25.8 Nm)
Available as Standard in Models

RG



9/16 Dia. 8 Tooth Splined Shaft
Flat-Root Side Fit-Class 2 Fit
Torque Limit 39 Lbs. Ft. (52.9 Nm)
Available as Standard in Models

RF



5/8 Dia. 9 Tooth Splined Shaft
Flat Root Side Fit - Class 1 Fit
Torque Limit 52 Lbs. Ft. (70.5 Nm)
Available as Standard in Models

GKA Series Hydraulic Motors



Options

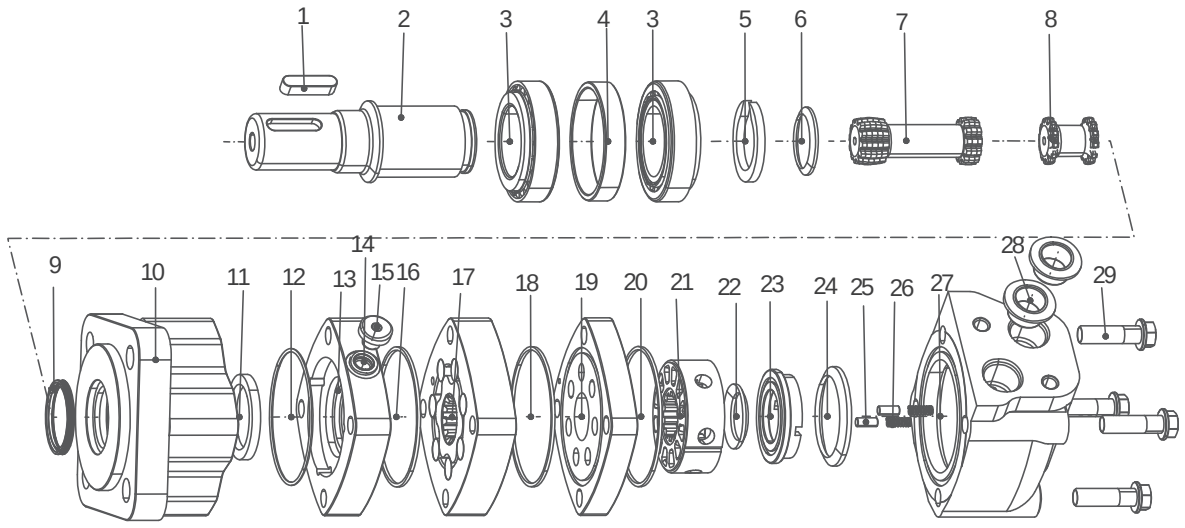
- Flange and circle
- Bearingless motor
- Motor with brake
- Tacho connection
- Speed sensing
- Side and rear ports
- Strainght, splined and tapered shafts
- Shaft seal for high and low pressure
- Metric and BSPP ports
- Other special features

Applications

- Conveyors
- Road building machines
- Metal working machines
- Special vechicles
- Agricultural machines
- Food industries
- Mining machines

General

Max. Displacement	cm³/rev [in³/rev]	490 [29.8]
Max. Speed	RPM	1215
Max. Torque	daNm [lb-in]	cont.: 84,5 [7470] int.: 93,0 [8225]
Max. Pressure Drop	bar [PSI]	cont.: 205 [3000] int.: 310 [4500]
Max. Oil Flow	lpm [GPM]	150 [30]
Pressure Fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm²/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)

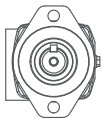
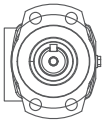


1 Parallel Key
2 Output shaft
3 Tapered roller bearing
4 Bearing retainer ring
5 Washers
6 Special shape ring
7 Transimission shaft
8 Coupling shaft
9 Anti-dust ring
10 Front Cover
11 Shaft seal
12 O-ring
13 Connecting body
14 Sealing gasket
15 Plug
16 O-ring
17 Rotor and stator
18 Special shape ring
19 Balance plate
20 Special shape ring
21 Flow distribution plate
22 Special shape ring
23 Flow pressure plate
24 Special shape ring
25 Positioning pins
26 Spring
27 Rear housing
28 Oil port plug cap
29 Screw

Ordering Code

GKA SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
34	34cm³/rev [2.1in³/rev]
41	41cm³/rev [2.5in³/rev]
66	66cm³/rev [4.0in³/rev]
80	80cm³/rev [4.9in³/rev]
90	90cm³/rev [5.5in³/rev]
100	100cm³/rev [6.2in³/rev]
130	130cm³/rev [8.0in³/rev]
160	160cm³/rev [9.6n³/rev]
195	195cm³/rev [11.9in³/rev]
245	245cm³/rev [14.9in³/rev]

CODE	FLANGE
A7	2-Hole SAE A pilot Ø82.5×6.4 
H3	4- Ø13.5 Hole Square pilot Ø82.5×6.4 
A9	4-Hole SAE A pilot Ø82.5×6.4 
W1	4- Ø13.5 Hole Square pilot Ø107.95×46.5 
W2	4- Ø13 Hole Square pilot Ø100×6.5 

CODE	PORTS
G7	G1/2, G1/4
DU	G1/2, 7/16-20 UNF
U9	7/8-14 O-ring, 7/16-20 UNF
SB	7/8-14, O-ring G1/4
M4	M22x1.5, M14x1.5
MU	Ø12.7, Ø15.8 , 7/16-20 UNF manifold 3x3/8-16 UNC
MM	Ø12.7Ø15.8, G1/4 manifoldM10x1

CODE	SHAFT
R6	Ø31.25 Splined 14-DP 12/24 
S6	Ø25.4 woodruff key Ø25.4×6.35 
R8	Ø25.4 splined SAE 6B 
S1	Ø25 parallel key 8×7×32 
R5	Ø22 Splined 13-DP 16/32 
S4	Ø32 parallel key 10×8×45 
T2	Tapered Ø31.75 parallel key 7.96×7.96×25.4 
SG	Ø31.75 parallel key 7.96×7.96×31.75 
A1	Ø25 parallel key 8×7×2 
N	Ø30 Splined 6-30×25×6 
Z	Ø32 Splined 6-32×26×6 
J	Ø30 Splined 6-30×25×8 

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

CODE	ROTATION
A	Standard
R	Opposite

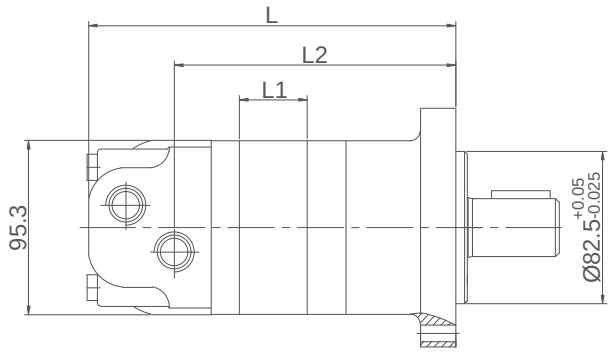
Specifications

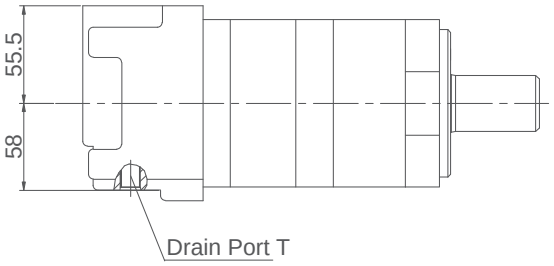
Type		GKA34	GKA41	GKA66	GKA80	GKA90
Displ. cm³/rev [in³/rev]		34[2.1]	41[2.5]	66[4.0]	80[4.9]	90[5.5]
Max. Speed	Cont.	1215	1104	1075	908	836
RPM	Int.*	1215	1216	1214	908	1042
Flow	Cont.	42[11]	45[12]	72[19]	75[20]	75[20]
lpm [GPM]	Int.*	42[11]	53[14]	87[23]	75[20]	95[25]
Torque	Cont.	9,8[864]	11,2[988]	18,6[1643]	23,5[2065]	26,5[2326]
daNm [lb - in]	Int.*	14,2[1261]	16,9[1497]	27,6[2446]	34,5[3035]	39,0[3458]
Pressure	Cont.	205[3000]	205[3000]	205[3000]	205[3000]	205[3000]
bar [PSI]	Int.*	310[4500]	310[4500]	310[4500]	310[4500]	310[4500]
	Peak**	310[4500]	310[4500]	310[4500]	310[4500]	310[4500]
Weight kg [lb]	Standard or Wheel mount	8.8[19.4]	8.8[19.4]	8.8[19.4]	9.3[20.5]	9.3[20.5]
	Bearingless	6.8[15.0]	6.8[15.0]	6.8[15.0]	7.3[16.0]	7.3[16.0]

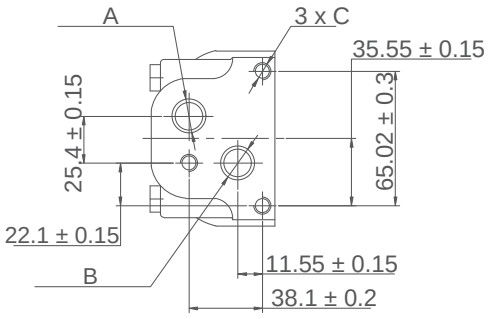
Type		GKA100	GKA130	GKA160	GKA195	GKA245
Displ. cm³/rev [in³/rev]		100[6.2]	130[8.0]	160[9.6]	195[11.9]	245[14.9]
Max. Speed	Cont.	742	576	477	385	308
RPM	Int.*	924	720	713	577	462
Flow	Cont.	75[20]	75[20]	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	95[25]	95[25]	115[30]	115[30]	115[30]
Torque	Cont.	29,5[2630]	38,5[3420]	45,5[4040]	54,0[4780]	66,0[5850]
daNm [lb - in]	Int.*	44,5[3950]	56,0[4970]	57,0[5040]	66,5[5890]	82,0[7250]
Pressure	Cont.	205[3000]	205[3000]	205[3000]	205[3000]	205[3000]
bar [PSI]	Int.*	310[4500]	310[4500]	260[3750]	260[3750]	260[3750]
	Peak**	310[4500]	310[4500]	310[4500]	310[4500]	310[4500]
Weight kg [lb]	Standard or Wheel mount	9.5[21.0]	9.8[21.5]	10.0[22.0]	10.4[23.0]	11.3[25.0]
	Bearingless	7.5[16.5]	7.7[17.0]	7.9[17.5]	8.4[18.5]	9.3[20.5]

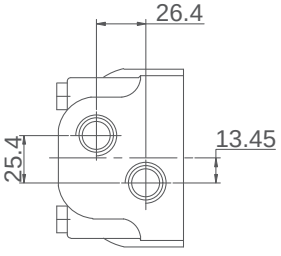
Type		GKA305	GKA395	GKA490
Displ. cm³/rev [in³/rev]		305[18.7]	395[24.0]	490[29.8]
Max. Speed	Cont.	246	191	153
RPM	Int.*	265	335	230
Flow	Cont.	75[20]	75[20]	75[20]
lpm [GPM]	Int.*	115[30]	115[30]	115[30]
Torque	Cont.	76,5[6750]	77,5[6840]	84,5[7470]
daNm [lb - in]	Int.*	88,5[7820]	92,5[2250]	93,6[8225]
Pressure	Cont.	205[3000]	155[2250]	120[1750]
bar [PSI]	Int.*	240[3500]	190[2750]	140[2000]
	Peak**	310[4500]	225[3250]	170[2500]
Weight kg [lb]	Standard or Wheel mount	11.3[25.0]	11.8[26.0]	12.2[27.0]
	Bearingless	9.3[20.5]	9.8[21.5]	10.2[22.5]

GKA Dimensions and Mountings







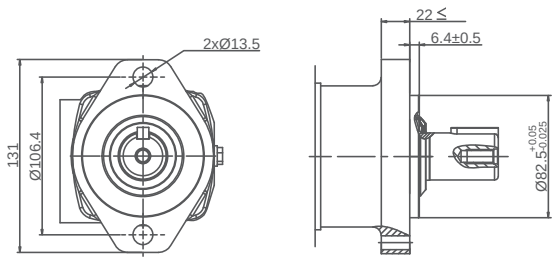


Model	L	L1	L2
GKA34	182	14.5	133.5
GKA41	185	17.8	136.5
GKA66	189.5	22.5	141.5
GKA80	196	28.9	148
GKA90	196	28.9	148
GKA100	202.5	35.6	154.5
GKA130	211.5	44.6	163.5
GKA160	223	56	175
GKA195	235.3	72	188.3
GKA245	256.5	89.3	208.5
GKA305	277.8	107.8	212.5
GKA395	296.5	125.5	237.5
GKA490	313.8	142.3	245

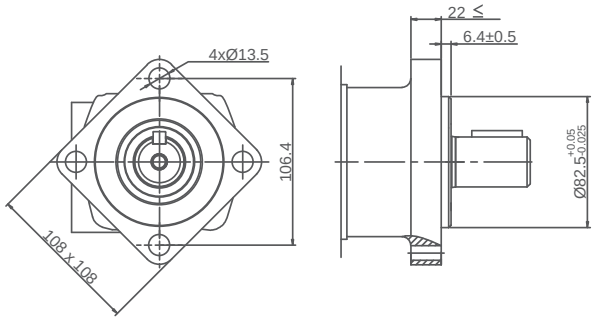
Mounting	G7 (depth)	DU (depth)	U9 (depth)	SB (depth)	M4 (depth)	MU (depth)	MM (depth)
P(A, B)	G1/2 (15)	G1/2 (15)	7/8-14 O-ring (17)	7/8-14 O-ring (17)	M22 x 1.5 (15)	Ø12.7, Ø15.8	Ø12.7, Ø15.8
T	G1/4(12)	7/16-20 UNF (12)	7/16-20 UNF (12)	G1/4 (12)	M14 x 1.5 (12)	7/16-20 UNF (12)	G1/4 (12)
C	—	—	—	—	—	3/8-16 UNC (15)	M10 x 1(15)

GKA Flange Covers Dimensions

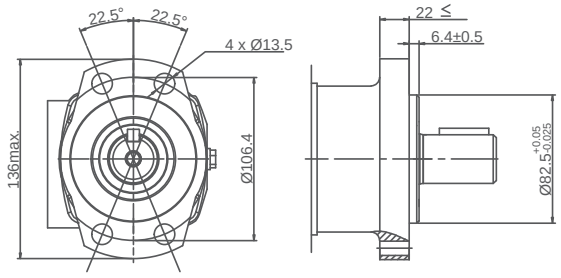
A7



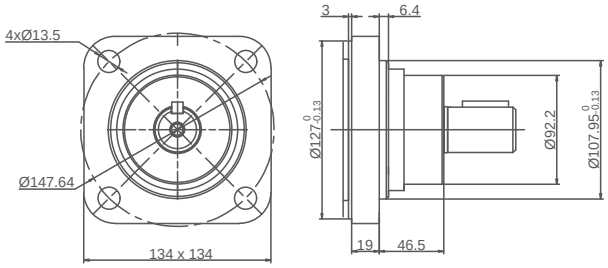
H3



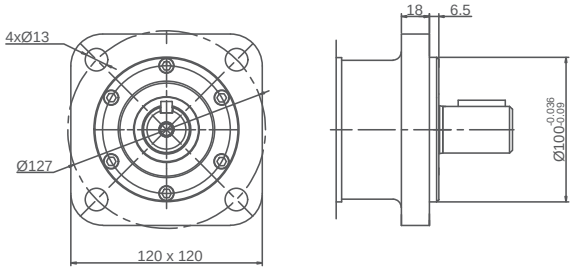
A9



W1

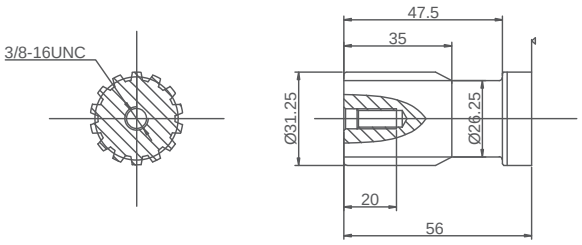


W2



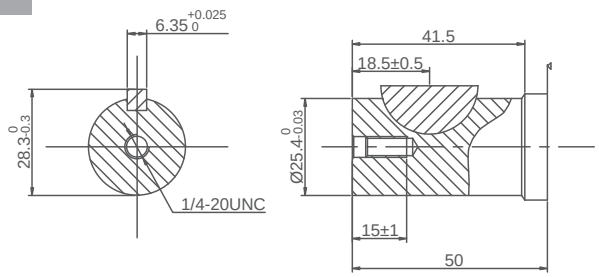
GKA Shafts Dimensions

R6



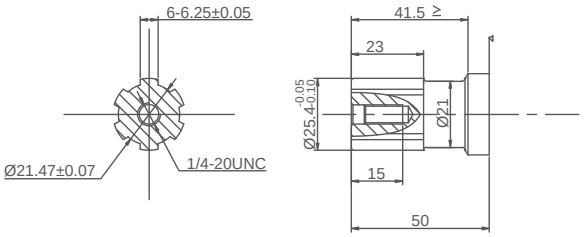
Splined shaft 14-DP 12/24

S6



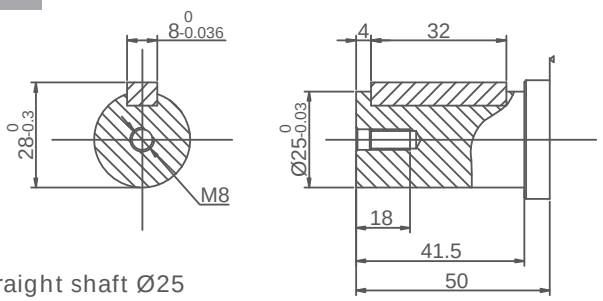
Straight shaft Ø25.4
Woodruff key 25.4 x 6.35

R8



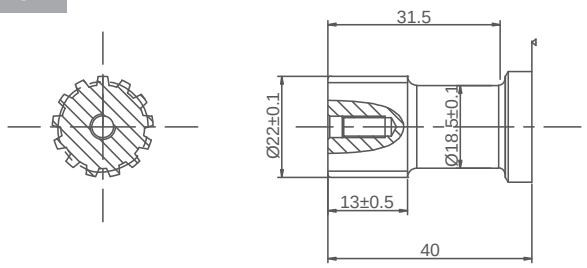
Splined shaft Ø25.4 SAE 6B

S1



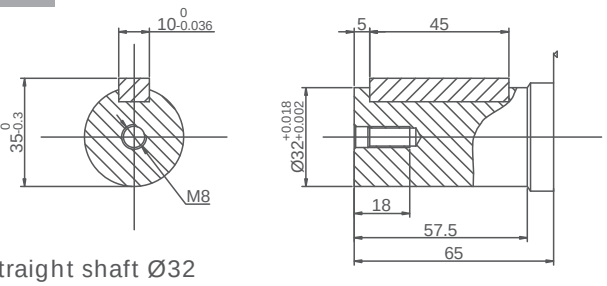
Straight shaft Ø25
Parallel key 8 x 7 x 32

R5



Splined shaft 13-DP 16/32

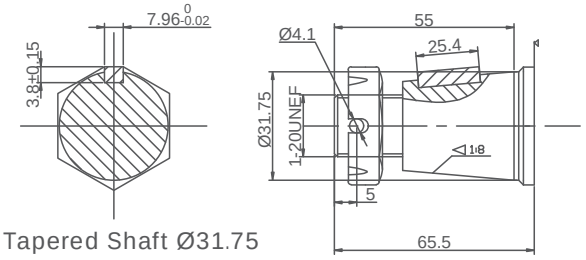
S4



Straight shaft Ø32
Parallel key 10 x 8 x 45

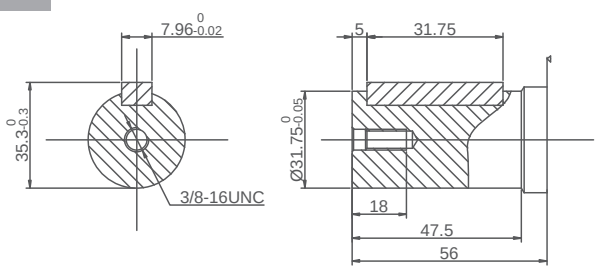
GKA Shafts Dimensions

T2



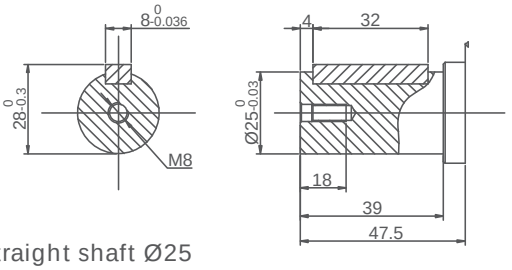
Tapered Shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4
Tightening torque: 200 ± 10 Nm

SG



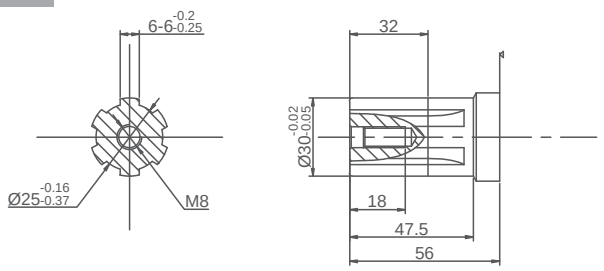
Straight shaft Ø31.75
Parallel key 7.96 x 7.96 x 31.75

A1



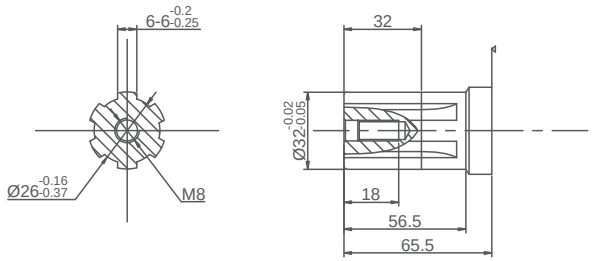
Straight shaft Ø25
Parallel key 8 x 7 x 32

N



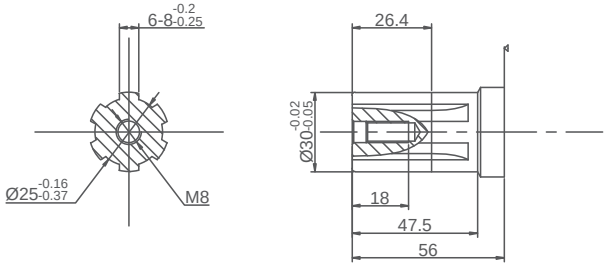
Splined shaft 6 - 32 x 25 x 6

Z



Splined shaft 6 - 32 x 26 x 6

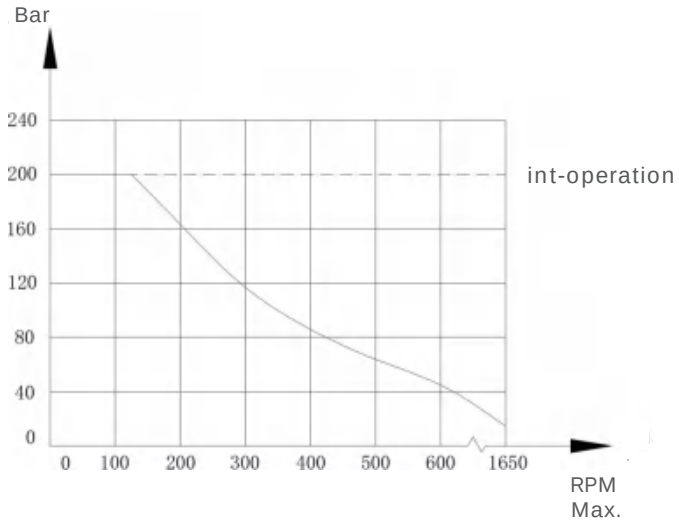
J

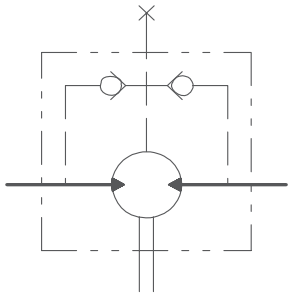


Splined shaft 6 - 32 x 25 x 8

GKA Series Hydraulic Motors

Permissible shaft seal pressure





GKA 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.

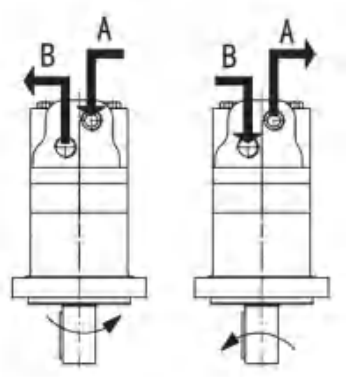
GKA with standard shaft seal, check valves and with drain connection: The shaft seal pressure equals the pressure on the drain line.

Drain Port

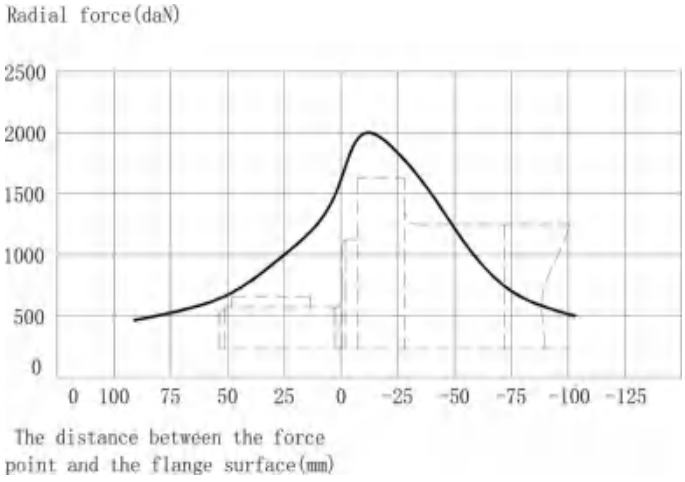
In applications without drain line, output shaft seal exceeds a bit of the pressure in the return line. In applications using the drain line, the pressure of output shaft seal equals the pressure in drain line.

Standard direction of shaft rotation: Standard

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



Output shaft stand radial force



This radial force curve is derived from the permissible bearing life B10 load at rated torque (2,000 hours or 12x10x6 revolutions at 150 rpm) and must be multiplied by a factor for other speeds.

GKB Series Hydraulic Motors



Options

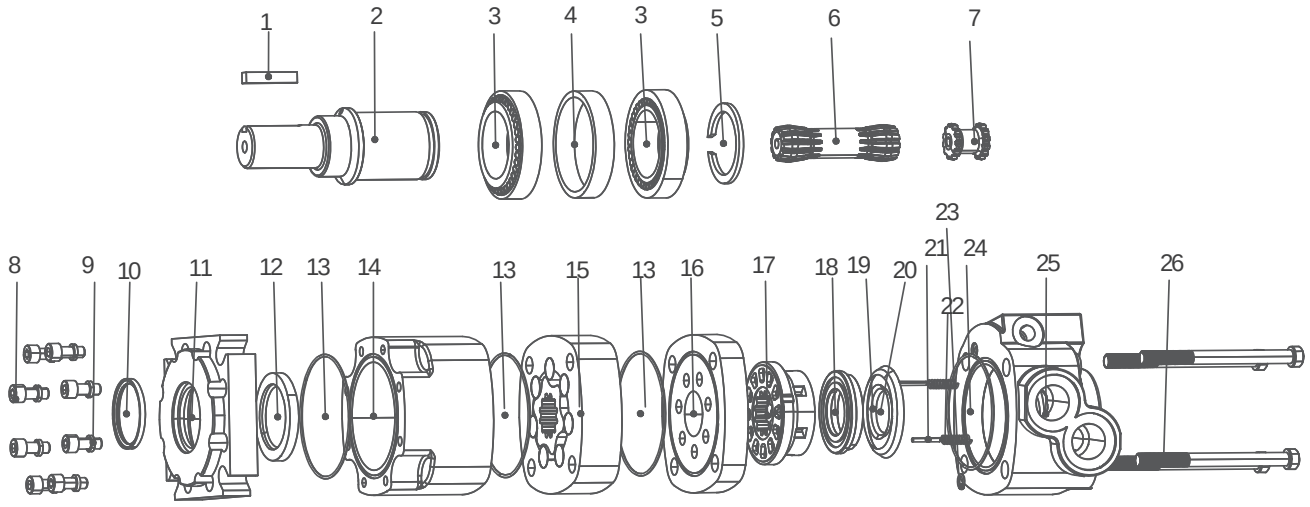
- Flange connection
- Bearingless motor
- Speed sensing
- Straight, splined and tapered shafts
- Metric and BSPP ports
- Other special features

Applications

- Metal working machines
- Agricultural machines
- Road building machines
- Mining machines
- Food industries
- Special vechicles
- Injection molding machines
- Conveyors

General

Max. Displacement	cm³/rev [in³/rev]	625 [38.0]
Max. Speed	RPM	697
Max. Torque	daNm [lb-in]	cont.: 97,2 [8605] int.: 118,1 [10450]
Max. Pressure Drop	bar [PSI]	cont.: 205 [3000] int.: 310 [4500]
Max. Oil Flow	lpm [GPM]	150 [40]
Pressure Fluid		Mineral based- HLP (DIN 51524) or HM (ISO 6743/4)
Temperature Range	°C [°F]	-40÷140 [-40÷284]
Optimal Viscosity range	mm²/s [SUS]	20÷75 [98÷347]
Filtration		ISO code 20/16 (Min. recommended fluid filtration of 25 microns)



1 Flat key
2 Output shaft
3 Tapered roller bearing
4 Bearing outer retainer ring
5 Washers
6 Transmission shaft
7 Coupling shaft
8 Bolt
9 Spring washer
10Anti-dust ring
11 Flange
12 Shaft seal
13 Sealing gasket
14 Rear housing
15 Rotor and stator
16 Balance plate
17 Flow distribution plate
18 Flow pressure plate
19 Inner butterfly ring
20 Outer butterfly ring
21 Positioning pins
22 Spring
23 O-ring
24 O-ring
25 Rear housing
26 Screw

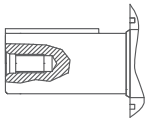
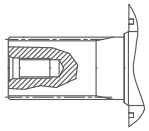
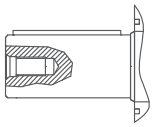
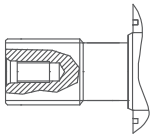
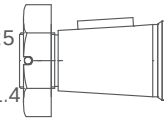
Ordering Code

GKB SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
110	110cm³/rev [6.1in³/rev]
130	130cm³/rev [7.9in³/rev]
160	160cm³/rev [9.9in³/rev]
205	205cm³/rev [12.5in³/rev]
245	245cm³/rev [15.0in³/rev]
310	310cm³/rev [19.0in³/rev]
395	395cm³/rev [24.0in³/rev]
495	495cm³/rev [30.0in³/rev]
625	625cm³/rev [38in³/rev]

CODE	FLANGE
H9	4- Ø15 square pilot Ø101.6×9 
HL	4- Ø14.5 square pilot Ø127×12.3 
W7	4- Ø14.5 wheel pilot Ø139.6 
HM	4- Ø15 bolt (bearingless) pilot Ø127×12.4 

CODE	PORTS
U5	1-1/16-12 O-ring, 7/16-20UNF
UK	7/8-14 O-ring, 9/16-18UNF
MD	M22×1.5, M14×1.5
UL	Ø19.05, 7/16-20UNF manifold 3×3/8-16UNC

CODE	SHAFT
SM	Ø31.75 parallel key 7.96×7.96×41 
RT	Splined 14-DP 12/24 
SA1	Ø40 paralle key 12×8×70 
RV	Splined 17-DP 12/24 
TE	Tapered Ø41.25 parallel key 11.13×11.13×31.4 

CODE	PAINT
A	No Paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High Temp.
S	Low Temp.

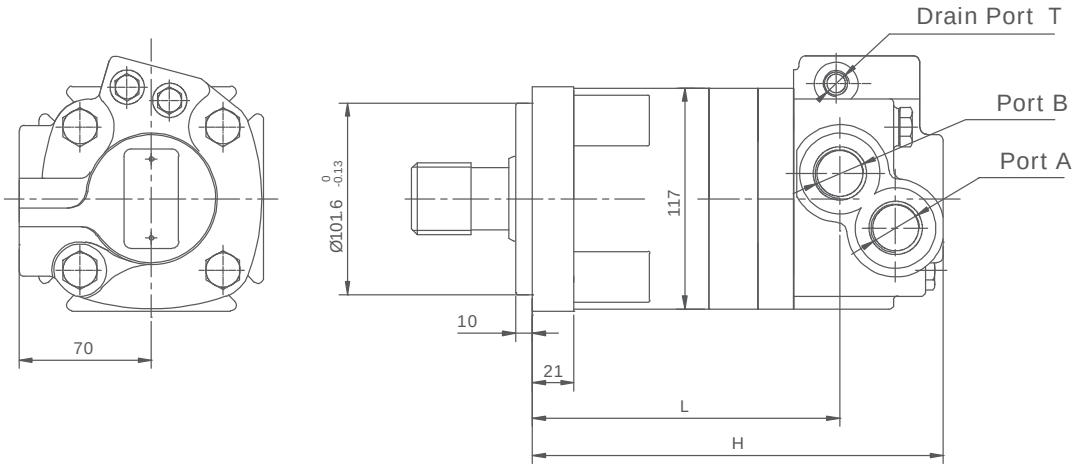
CODE	ROTATION
A	Standard
R	Opposite

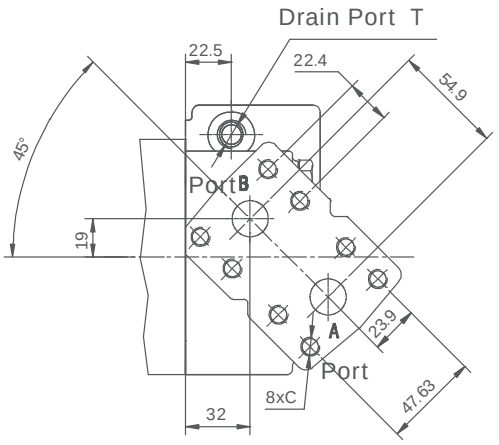
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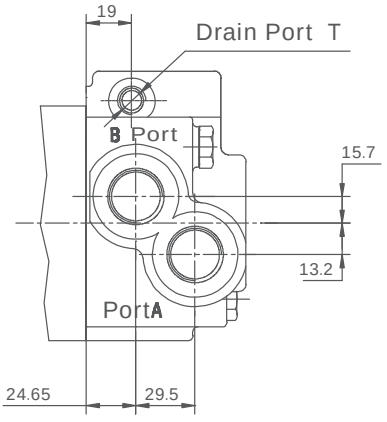
Type		GKB100	GKB130	GKB160	GKB205	GKB245
Displ. cm³/rev [in³/rev]		110[6.7]	130[7.9]	160[9.9]	205[12.5]	245[15.0]
Max. Speed	Cont.	626	722	582	459	383
RPM	Int.*	697	862	693	546	532
Flow	Cont.	75[20]	95[25]	95[25]	95[25]	95[25]
lpm [GPM]	Int.*	95[25]	115[30]	115[30]	115[30]	130[35]
Torque	Cont.	32,2[2850]	37,6[3330]	48,5[4290]	59,9[5300]	70,5[6240]
daN.m [lb - in]	Int.*	47,0[4160]	55,8[4940]	70,5[6240]	80,2[7100]	84,4[7470]
Pressure Δ	Cont.	205[3000]	205[3000]	205[3000]	205[3000]	205[3000]
bar [Δ PSI]	Int.*	310[4500]	310[4500]	310[4500]	310[4500]	260[3750]
	Peak**	310[4500]	310[4500]	310[4500]	310[4500]	310[4500]
Weight kg [lb]	Standard or Wheel mount	17.9[39.5]	18.1[40.0]	18.1[40.0]	18.4[40.5]	18.6[41.0]
	Bearingless	14.1[31.0]	14.1[31.0]	14.3[31.5]	14.5[32.0]	14.7[32.5]

Type		GKB280	GKB310	GKB395	GKB495	GKB625
Displ. cm³/rev [in³/rev]		280[17.1]	310[19.0]	395[24.0]	495[30.0]	625[38.0]
Max. Speed	Cont.	336	303	239	191	151
RPM	Int.*	468	422	376	305	241
Flow	Cont.	95[25]	95[25]	95[25]	95[25]	95[25]
lpm [GPM]	Int.*	130[35]	130[35]	150[40]	150[40]	150[40]
Torque	Cont.	75,3[6666]	85,1[7530]	93,1[8240]	94,6[8375]	97,2[8605]
daNm [lb - in]	Int.*	95,7[8471]	106,4[9420]	118,3[10470]	116,9[10350]	118,1[10450]
Pressure	Cont.	205[3000]	205[3000]	190[2750]	140[2000]	115[1700]
bar [PSI]	Int.*	260[3750]	260[3750]	240[3500]	170[2500]	140[200]
	Peak**	310[4500]	310[4500]	295[4250]	230[3300]	180[2600]
Weight kg [lb]	Standard or Wheel mount	19.1[42.0]	19.5[43.0]	20.4[45]	21.8[48.0]	23.1[51.0]
	Bearingless	15.2[33.5]	15.6[34.5]	16.6[36.5]	17.9[39.5]	19.3[42.5]

GKB Dimensions and Mountings





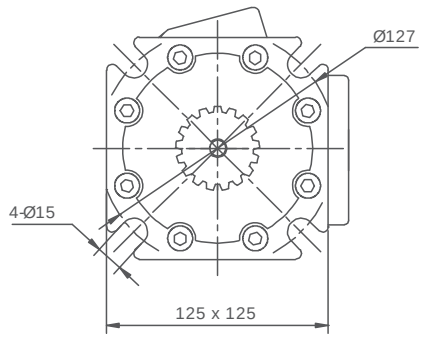


Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	214.4	158.3	246.3	166.7
GKB130	218.4	162.3	250.4	170.8
GKB160	224.7	168.7	256.7	177.1
GKB205	233.2	177.2	265.2	185.6
GKB245	224.7	168.7	256.7	177.1
GKB310	233.2	177.2	265.2	185.6
GKB395	243.9	187.9	275.9	196.3
GKB495	256.8	200.7	288.8	209.2
GKB625	273.9	217.8	305.9	226.2

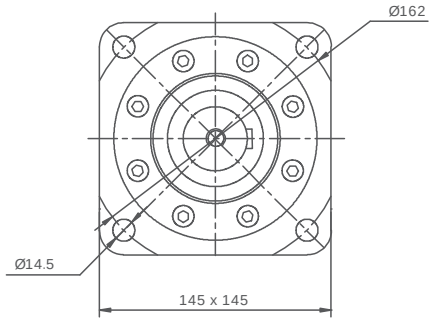
Mounting	U5 (depth)	UK (depth)	MD (depth)	UL (depth)
P(A, B)	1-1/16-12 O-ring	7/8-14 UNF O-ring	M22 x 1.5	2-Φ19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	M10

GKB Flange Covers Dimensions

H9

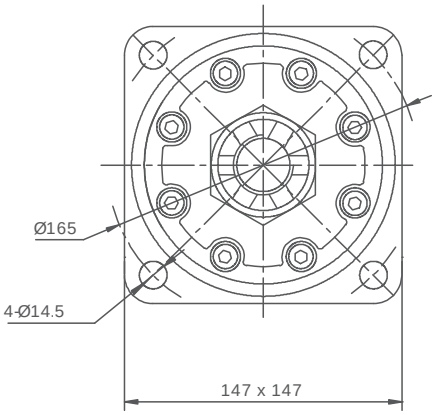


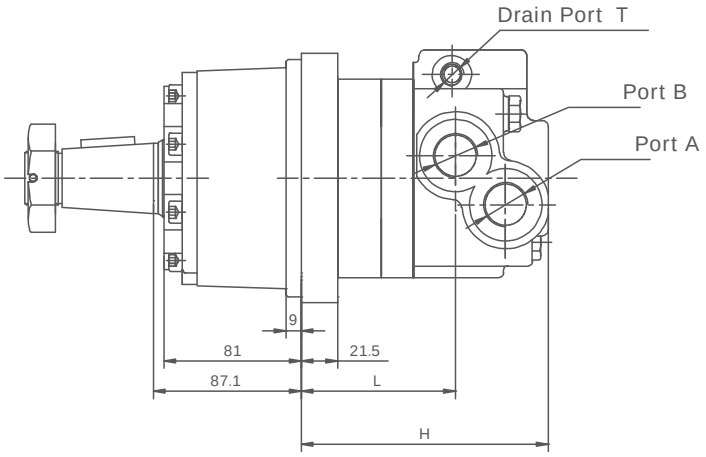
HL



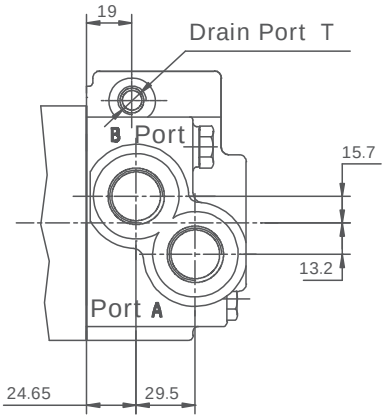
GKB Wheel Motor Dimensions and Mountings

Flange W7





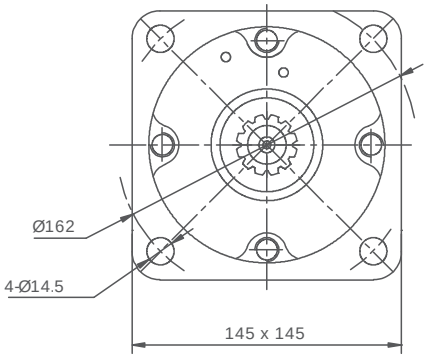
Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	143.3	87.4	174.5	95.1
GKB130	147.3	91.5	178.5	99.1
GKB160	153.6	97.8	184.9	105.5
GKB205	162.2	106.3	193.4	114.0
GKB245	153.6	97.8	184.9	105.5
GKB310	162.2	106.3	193.4	114.0
GKB395	172.8	117.0	204.1	124.7
GKB495	185.8	129.9	217.0	137.6
GKB625	202.8	147.0	234.0	154.6

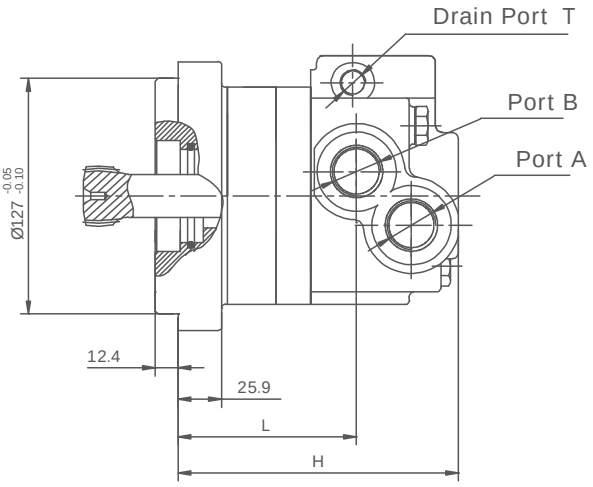


Mounting	U5 (depth)	UK (depth)	MD (depth)	UL (depth)
P(A, B)	1-1/16-12 O-ring	7/8-14 UNF O-ring	M22 x 1.5	2-Φ19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	M10

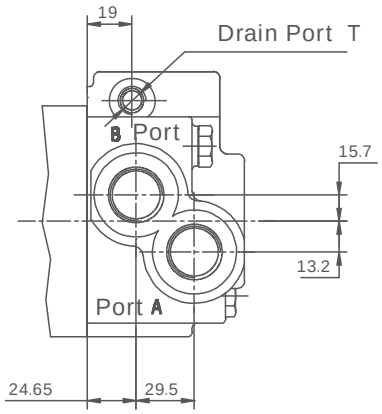
GKB Bearingless Motor Dimensions and Mountings

Flange HM





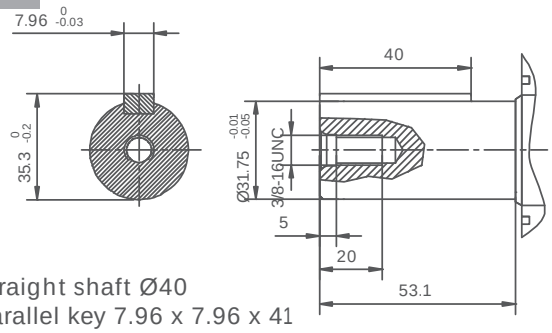
Model	1-1/16-12 or G3/4 Threaded Ports		3/4 Split Flange Oil Ports	
	H	L	H	L
GKB110	146.8	91.0	178.7	99.4
GKB130	150.8	95.1	182.8	103.5
GKB160	157.1	101.4	189.1	109.8
GKB205	165.7	109.9	197.6	118.3
GKB245	157.1	101.4	189.1	109.8
GKB310	165.7	109.9	197.6	118.3
GKB395	176.3	120.6	208.3	129.0
GKB495	189.2	133.5	221.2	141.9
GKB625	206.3	150.5	238.3	159.0



Mounting	U5 (depth)	UK (depth)	MD (depth)	UL (depth)
P(A, B)	1-1/16-12 O-ring	7/8-14 UNF O-ring	M22 x 1.5	2-Ø19.05
T	7/16-20 O-ring	9/16-18 UNF O-ring	M22 x 1.5	7/16-20 UNF
C	—	—	—	3 x 3/8-16UNC

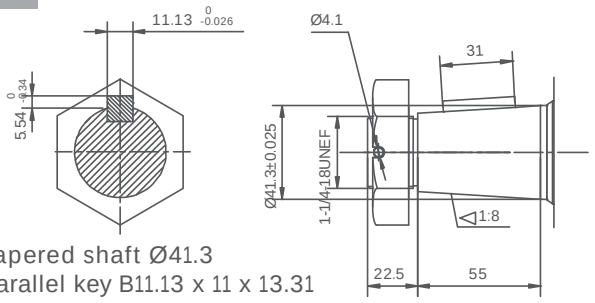
GKB Shafts Dimensions

SM



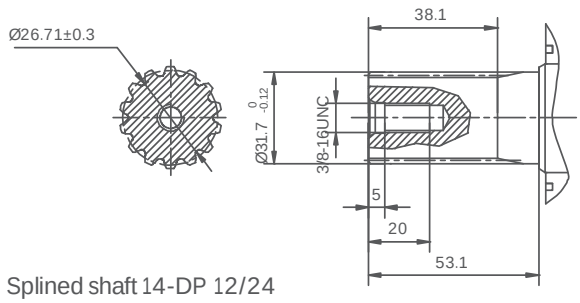
Straight shaft Ø40
Parallel key 7.96 x 7.96 x 41

TE



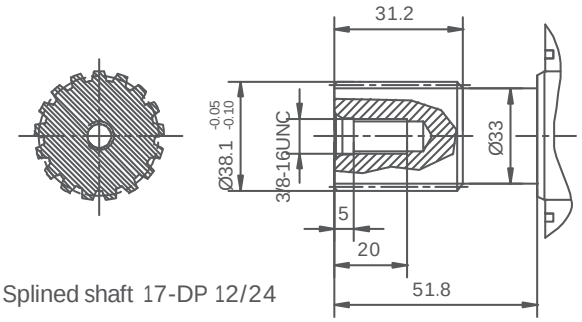
Tapered shaft Ø41.3
Parallel key B11.13 x 11 x 13.31
Tightening torque 500 ± 10 Nm

RT



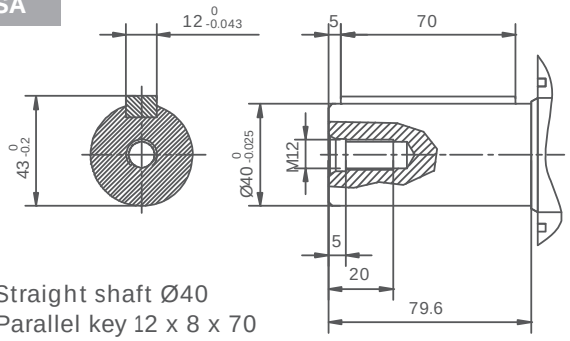
Splined shaft 14-DP 12/24

RV



Splined shaft 17-DP 12/24

SA

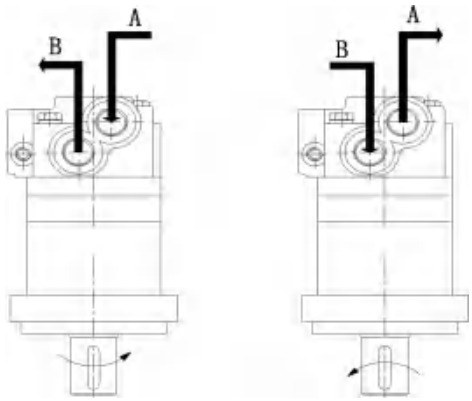


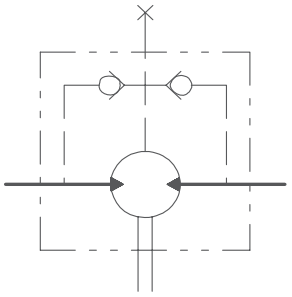
Straight shaft Ø40
Parallel key 12 x 8 x 70

GKB Series Hydraulic Motors

Standard direction of shaft rotation: Standard

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





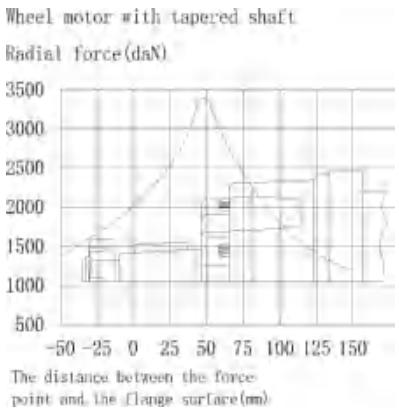
GKB with standard shaft seal check valves and without use of drain connection: The pressure on the shaft seal never exceeds the pressure in the return line.
GKB with standard shaft seal, check valves and with drain connection: The shaft seal

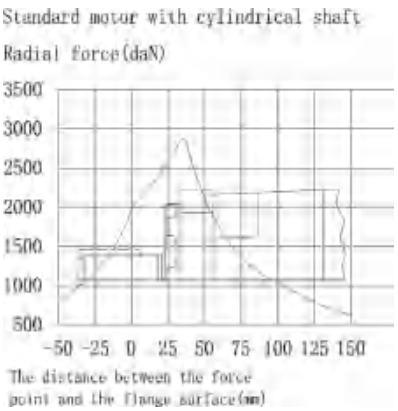
Output shaft stand radial force

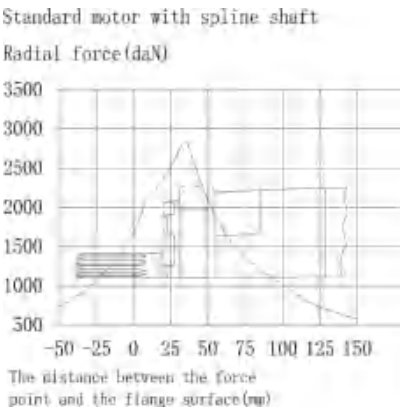
The following curves represent the load capacity at various locations along the radial direction of the motor output shaft. The curves are based on B10 bearing life at rated output torque. (2000 hours or 12,000,000 revolutions at 100RPM). To determine the radial load at speeds other than 100 RPM, multiply the load values on the bearing curves by the factors given in the table below.

RPM	Coe□cients
50	1.23
100	1.00
200	0.81
300	0.72
400	0.66
500	0.62
600	0.58
700	0.56
800	0.54

52% increase in load capacity at 3,000,000 rpm or 500 hours.







GKC Series Hydraulic Motors



OPTIONS

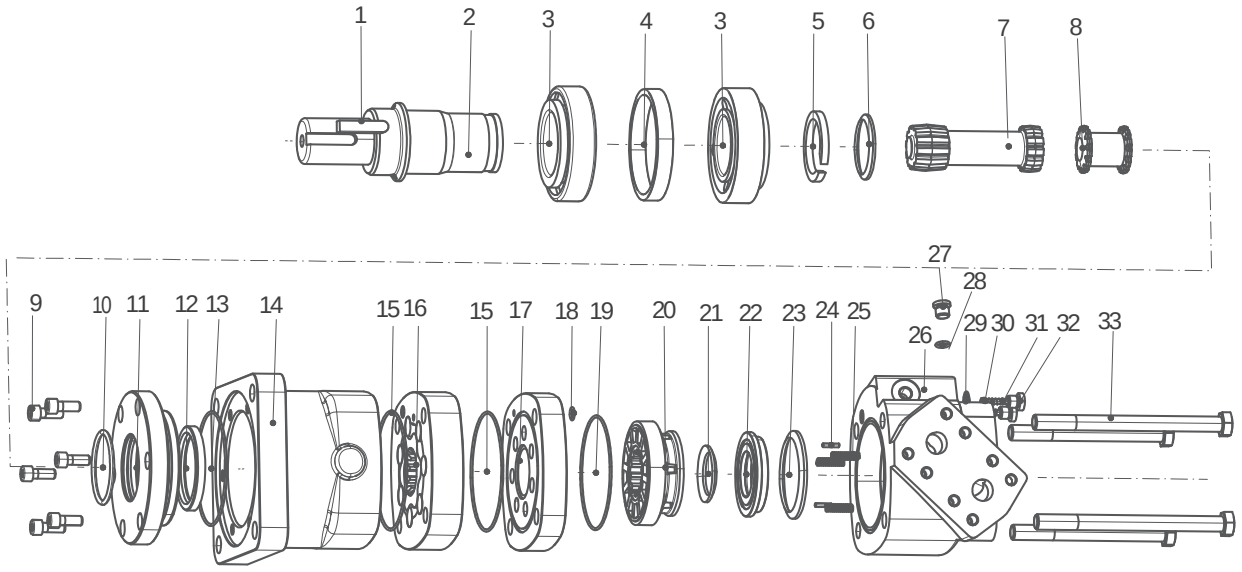
- Flange connection
- Straight, splined and tapered shaft
- Metric and BSPP ports
- Other special features

APPLICATION

- Conveyors
- Feeding machinery
- Metal working machines
- Textile machines
- Agricultural machines
- Food industries
- Mining machines

General

Max. Displacement	cm^3/rev [in^3/rev]	985 [60.0]
Max. Speed	RPM	866
Max. Torque	daNm [lb-in]	cont.:168,5 [14920] int.:187,5 [16580]
Max. Pressure Drop	bar [PSI]	cont.:205 [3000] int.:300 [4500]
Max. Oil Flow	lpm [GPM]	225 [60]
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 Paralled key
2 Output shaft
3 Tapered roller bearing
4 Bearing outer retainer ring
5 Washers
6 Special shape ring
7 Transmission shaft
8 Coupling shaft
9 Screw
10 O-ring
11 Front cover
12 Shaft seal
13 O-ring
14 Housing
15 O-ring
16 Rotor and stator
17 Balance plate
18 O-ring seal
19 O-ring seal
20 Distribution plate
21 Special shape ring
22 Distributor pressure plate
23 Special shape ring
24 Positioning pins
25 Spring
26 Rear housing
27 Plug
28 O-ring
29 Washer
30 Steel Ball
31 Spring
32 Hexagon plugs
33 Screw

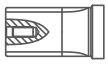
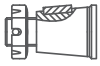
Ordering Code

GKC SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
195	195cm³/rev [11.9in³/rev]
245	245cm³/rev [15.0in³/rev]
310	310cm³/rev [19.0in³/rev]
395	390cm³/rev [23.9in³/rev]
490	490cm³/rev [30.0in³/rev]
625	625cm³/rev [38.0in³/rev]
735	735cm³/rev [45.0in³/rev]
805	805cm³/rev [49.0in³/rev]
985	985cm³/rev [60.0in³/rev]

CODE	FLANGE
A1	4- Ø14.2 square Ø162, pilot Ø127x13.2 

CODE	PORTS
G3	G3/4, G1/4, manifold 4xM10
SF5	1-5/16-12UNF O-ring, 7/16-20UNF
SF7	G1, G1/4

CODE	SHAFT
Y1	Ø35 parallel key 12x12x63 
G2	Ø38.1 parallel key 9.53x9.53x41.9 
FE	Ø38.1 splined tooth 17-DP 12/24 
T1	Tapered 1: 8 Ø45 parallel key 11.13x11.13x31.75 

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
N	Big radial force
D	No case drain
F	Free running
L	Low speed
V	High temp.
S	Low temp.

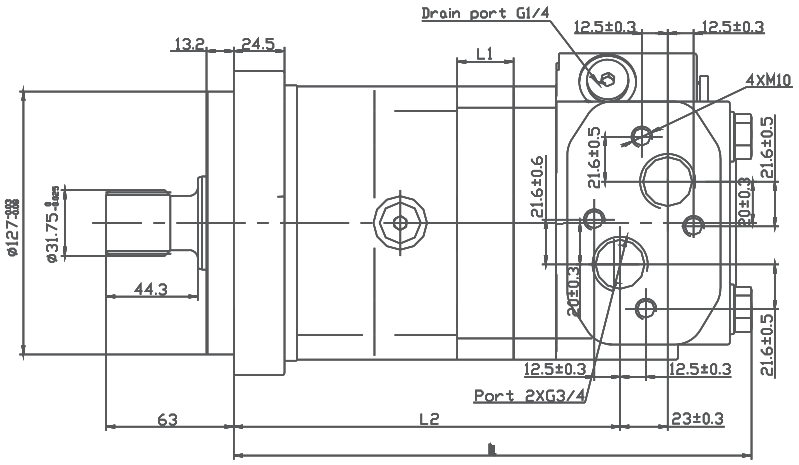
CODE	ROTATION
A	Standard
R	Opposite

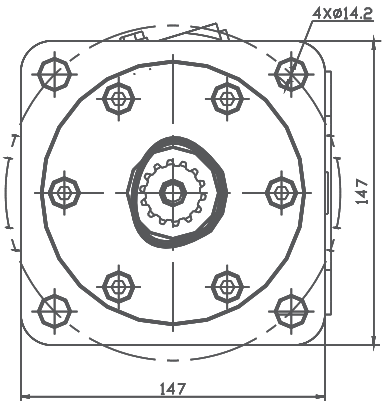
Specifications

Type		GKC195	GKC245	GKC310	GKC390	GKC490
Displacement cm³/rev [in³/rev]		195[11.9]	245[15.0]	310[19.0]	390[23.9]	490[30.0]
Max. Speed	Cont.	775	615	485	387	307
RPM	Int.*	866	834	698	570	454
Max. Oil Flow	Cont.	150[40]	150[40]	150[40]	150[40]	150[40]
lpm [GPM]	Int.*	170[45]	210[55]	225[60]	225[60]	225[60]
Max. Torque	Cont.	57,5[5100]	73,5[6510]	93,0[8230]	115,5[10230]	144,5[12800]
daNm [lb - in]	Int.*	86,0[7620]	110,0[9740]	135,5[11990]	163,5[14490]	188,5[16670]
Max. Inter Pressure	Cont.	205[3000]	205[3000]	205[3000]	205[3000]	205[3000]
bar [PSI]	Int.*	310[4500]	310[4500]	310[4500]	310[4500]	275[4000]
	Peak**	310[4500]	310[4500]	310[4500]	310[4500]	310[4500]
Weight, kg [lb]	Standard or Wheel mount	24.9[55.0]	25.2[55.5]	25.6[56.5]	26.3[58.0]	27.0[59.5]
	Bearingless	20.2[44.5]	20.4[45.0]	20.9[46.0]	21.5[47.5]	22.2[49.0]

Type		GKC625	GKC735	GKC805	GKC985
Displacement cm³/rev [in³/rev]		625[38.0]	735[45.0]	805[49.0]	985[60.0]
Max. Speed	Cont.	241	203	187	153
RPM	Int.*	353	303	280	230
Max. Oil Flow	Cont.	150[40]	150[40]	150[40]	150[40]
lpm [GPM]	Int.*	225[60]	225[60]	225[60]	225[60]
Max. Torque	Cont.	148,0[13100]	1378[12192]	158,2[14004]	168,5[14920]
daNm [lb - in]	Int.*	189,8[16800]	169,9[15040]	185,0[16377]	187,5[16580]
Max. Inter Pressure	Cont.	170[2500]	140[2000]	140[2000]	140[2000]
bar [PSI]	Int.*	221[3200]	170[2500]	170[2500]	140[2000]
	Peak**	240[3500]	205[3000]	170[2500]	170[2500]
Weight, kg [lb]	Standard or Wheel mount	27.9[61.5]	28.6[63.0]	29[64.0]	30.4[67.0]
	Bearingless	23.1[51.0]	23.8[52.5]	24.3[53.5]	25.6[56.5]

GKC Dimensions and Mountings

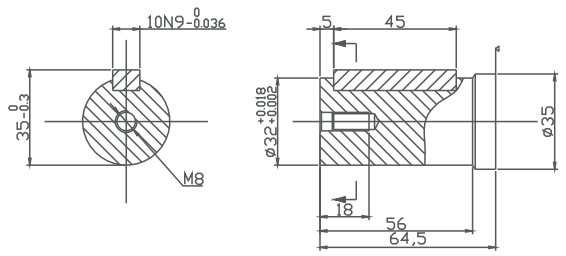




Model	L	L1	L2
GKC195	247	21.7	182
GKC245	252	27.3	187
GKC310	278	34.5	200
GKC395	287	43.4	209.5
GKC490	298	54.4	221
GKC625	313	69.1	235
GKC735	325	79.1	245
GKC805	333	88.9	255
GKC985	353	109	274.6

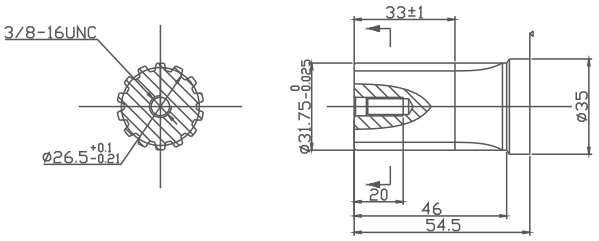
GKC Shafts Dimensions

G2

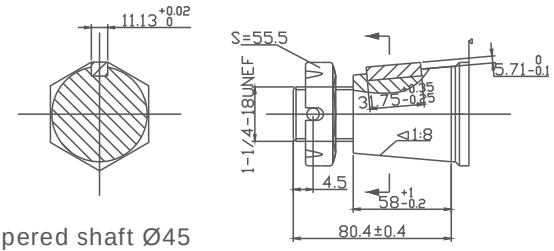


Straight shaft Ø38.1
Parallel key 9.525 x 9.525 x 41.9

FE

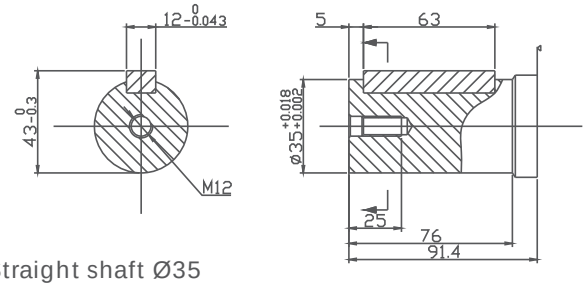


T1



Tapered shaft Ø45
Parallel key 11.13 x 11.13 x 31.75
Tightening torque: 500 ± 10 Nm

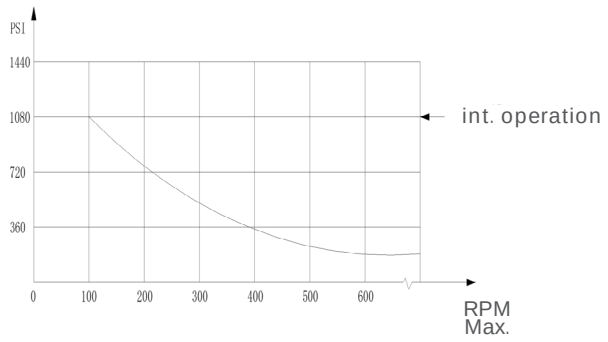
Y1

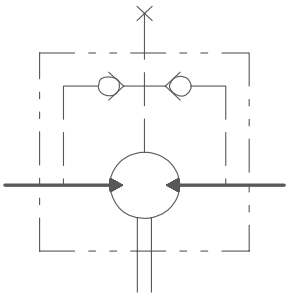


Straight shaft Ø35
Parallel key 12 x 12 x 63

GKC Series Hydraulic Motors

Premissible shaft seal pressure





GKC 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.

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

Drain Port

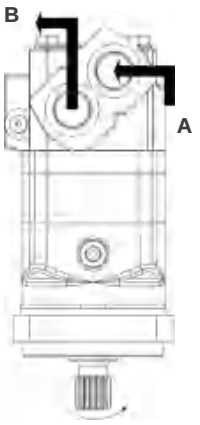
In applications without a motor drain line, the pressure exerted on the shaft seal is marginally in excess of the return line pressure. When the Drain line is used, the pressure exerted on the shaft seal is equal to the return line pressure.

Standard direction of shaft rotation: Standard

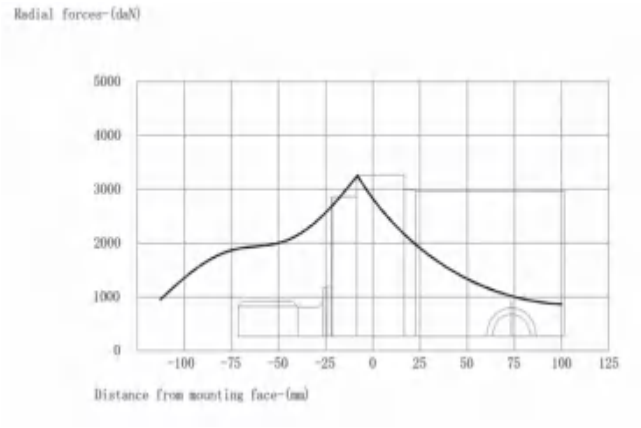
When facing the shaft end of the motor, the shaft rotates:

clockwise when port "A" is pressurized.

When port "B" is pressurized, it rotates counterclockwise.



GKC for CC Mounting Radial forces



The bearing curve represents allowable bearing loads for an B10 bearing life(2000 hours or 12x106 revolutions at 100rpm) at rated output torque. Other speed load multiply a load values.

The maximum load curve is defined by bearing static load capacity.

This curve should not be exceeded at any time including shock loads.

GWD Series Hydraulic Motors



Options

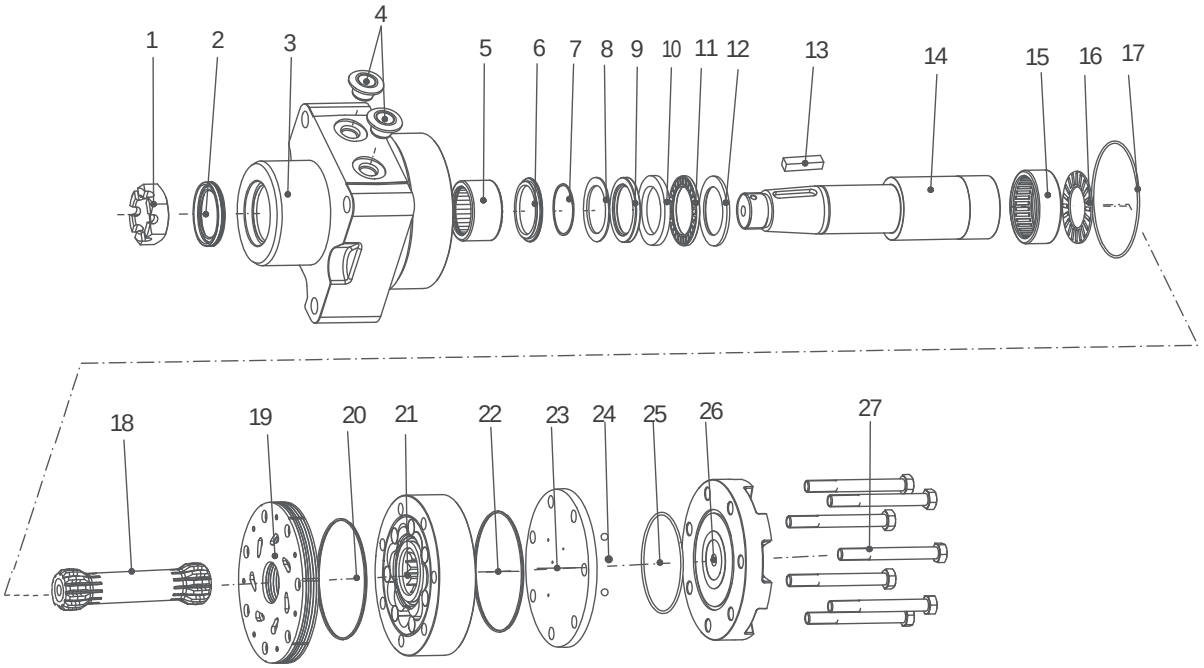
- Rotor flow distribution, geroler type
- Geroler type
- Motor with needle bearing
- Align the ports on the side
- Straight, splined and tapered shafts
- High pressure seal
- Metric, SAE and BSPP ports

Applications

- Aerial work platform
- Material handling and lifting machines
- Agricultural machines
- Marine machines
- Road machines
- Garden machines
- Lawn and turf machines

General

Max. Displacement	cm^3/rev [in^3/rev]	748[45.6]
Max. Speed	RPM	490
Max. Torque	daNm [lb-in]	cont.: 106,2[9400] int.: 123,7[10950]
Max. Pressure Drop	bar [PSI]	cont.: 205 [3000] int.: 300 [4500]
Max. Oil Flow	lpm [GPM]	276[72.9]
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)

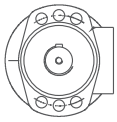
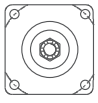


1 Castle nut
2 Shaft seal
3 Housing
4 Oil port plug cap
5 Needle roller bearing
6 Bearing
7 O-ring
8 Washer
9 shaft seal
10 Bearing retainer
11 Flat bearing
12 Bearing retainer
13 Flat key
14 Output shaft
15 Rear needle roller bearing
16 Flat bearing
17 O-ring
18 Transmission shaft
19 Distribution plate
20 Special shape ring
22 Special shape ring
23 Balance plate
24 Steel ball
25 O-ring
26 Rear cover
27 Screw

Ordering Code

GWD SERIES | DISP | FLANGE | SHAFT | PORTS | ROTATION | PAINT | FUNCTION

CODE	DISP
120	121cm³/rev
160	162cm³/rev
200	204cm³/rev
230	232cm³/rev
260	261cm³/rev
300	300cm³/rev
350	348cm³/rev
375	363cm³/rev
470	465cm³/rev
540	536cm³/rev
620	631cm³/rev
750	748cm³/rev

CODE	FLANGE
W4	Wheel Ø147.6 4- Ø13.1 rear pilot Ø128.5×7 
W5	Wheel Ø147.6 4- Ø13.1 Rear pilot Ø127×7 
A9	6- Ø13.5 SAE Ø106.4 pilot Ø82.5×2.8 
W6	Ø147.6 square 4- Ø13.5 pilot Ø82.5×2.8 

CODE	PORTS
UD	9/16-18UNF
UF	7/8-14UNF
GC	G1/2
MC	M22×1.5

CODE	SHAFT
SH	Ø35 parallel key 10×8×45 
SL	Ø38.1 parallel key 9.5×9.5×38.1 
TB	Tapered Ø35 parallel key 7.96×7×31.5 
TA	Tapered Ø38.1 parallel key 7.96×7×36.5 
T2	Tapered Ø31.75 parallel key 7.96×7×25.4 
RQ	Ø25.3 Splined 6-25.3×21×6.2 

CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Standard
F	Free running
V	High temp.
S	Low temp.

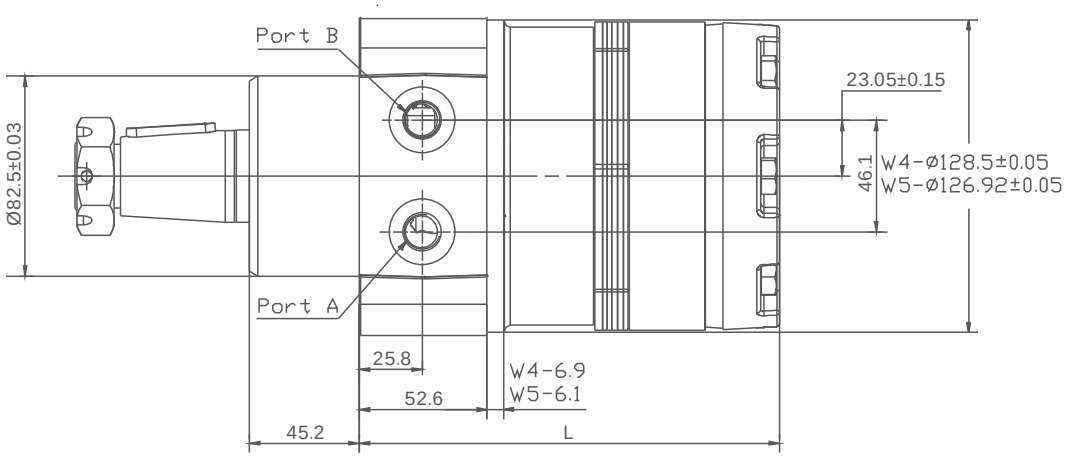
CODE	ROTATION
A	Standard
R	Opposite

Specifications

Type		GWD120	GWD160	GWD200	GWD230	GWD260	GWD260
Disp. cm3 /rev.		121	162	204	232	261	261
Max. Speed RPM	Cont	360	370	300	260	260	260
	Int.	490	470	370	320	350	350
Max. Flow LPM	Cont	45	61	68	68	76	76
	Int.	61	76	83	83	91	91
Max. Torque Nm	Cont	327	475	542	611	712	712
	Int.	383	542	633	712	791	791
Max. Pressure Drop bar	Cont	207	207	207	207	207	207
	Int.	241	241	241	241	241	241
	Peak	276	276	276	276	276	276
Max. No-load Pressure bar		8	10	10	10	10	10
Min Operating Nm Torque At Max. Pres.	Drop Cont	235	342	390	440	513	513
	Drop Int.	280	396	462	520	577	577
Weight kg	GWD	13.3	13.3	13.7	13.8	14.1	14.1

Type		GWD350	GWD375	GWD470	GWD540	GWD620	GWD750
Disp. cm3 /rev.	cm3 /rev.	348	363	465	536	631	748
Max. Speed RPM	Cont	220	200	160	140	120	100
	Int.	270	250	200	170	150	130
Max. Flow LPM	Cont	76	76	76	76	76	76
	Int.	95	91	91	91	91	91
Max. Torque Nm	Cont	921	1006	1096	983	1014	1062
	Int.	1045	1158	1184	1243	1291	1237
Max. Pressure Drop bar	Cont	207	207	172	138	121	103
	Int.	241	241	189	173	155	121
	Peak	276	276	207	207	173	138
Max. No-load Pressure bar		10	10	10	12	12	12
Min Operating Nm Torque At Max. Pres.	Drop Cont	663	724	822	737	761	797
	Drop Int.	763	845	900	945	981	940
Weight kg	GWD	15.5	15	15.5	16.1	16.8	17.5

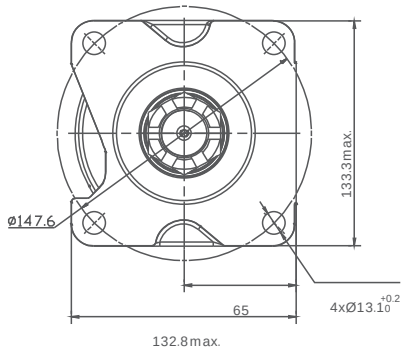
GWD Dimensions and Mountings



Model	L	Weight
	mm[In]	kg[lb]
GWD120	156[6.14]	13.3[29.4]
GWD160	156[6.14]	13.3[29.4]
GWD200	159[6.26]	13.7[30.2]
GWD230	162[6.38]	13.8[30.4]
GWD260	165[6.50]	14.1[31.0]
GWD300	168[6.61]	14.4[31.8]
GWD350	172[7.17]	15.5[29.4]
GWD375	174[6.85]	15.0[33.0]
GWD470	182[7.17]	15.5[34.2]
GWD540	188[7.40]	16.1[35.4]
GWD620	196[7.72]	16.8[36.9]
GWD750	206[8.11]	17.5[38.5]

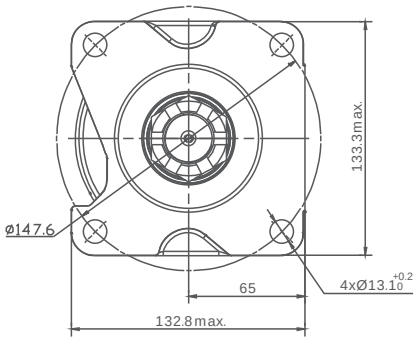
GWD Flange Covers Dimensions

W4



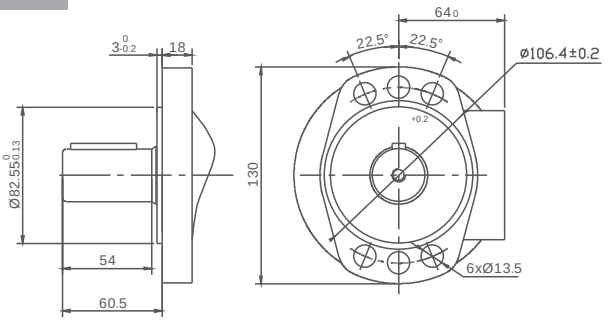
Front pilot Ø82.5 x 45
Back pilot Ø128.5 x 7

W5



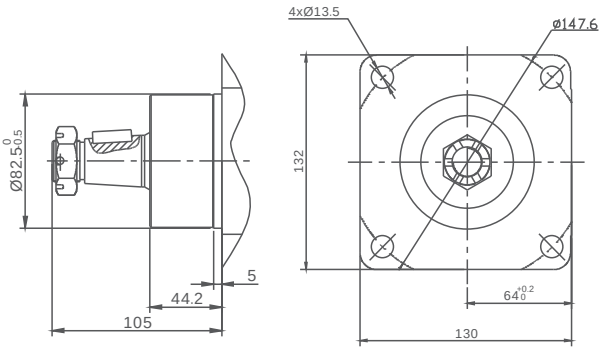
Front pilot Ø82.5 x 45
Back pilot Ø127 x 6

A9



Pilot Φ82.5 X 28

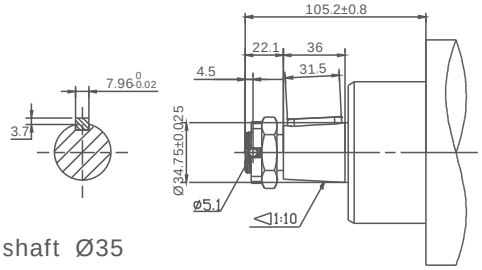
W6



Pilot Φ82.5 X 28

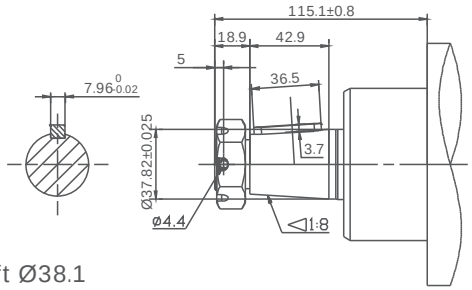
GWD Shafts Dimensions

TB



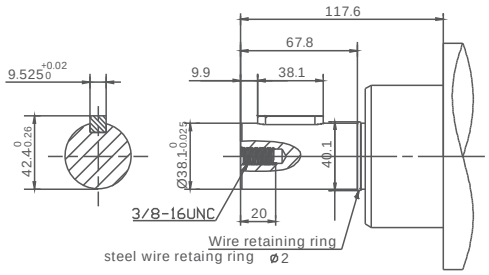
Tapered shaft Ø35
Parallel key 7.96 x 7 x 31.5
Tightening torque: 325 Nm

TA



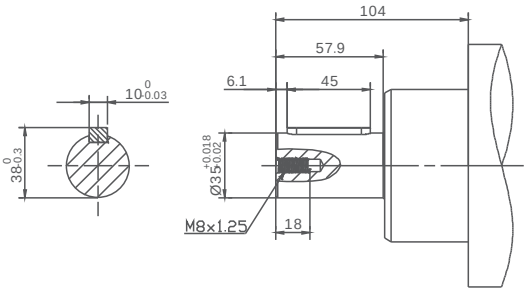
Tapered shaft Ø38.1
Parallel key 7.96 x 7 x 36.5
Tightening torque: 410-540 Nm

SL



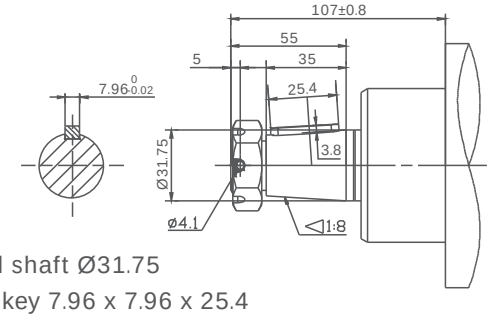
Straight shaft Ø38.1
Parallel key 9.5 x 9.5 x 38.1

SH



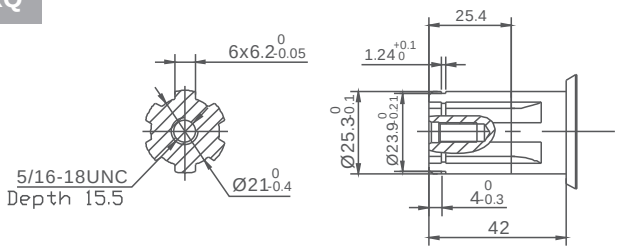
Straight shaft Ø35
Parallel key 10 x 8 x 45

T2



Tapered shaft Ø31.75
Parallel key 7.96 x 7.96 x 25.4
Tightening torque: 200±10 Nm

RQ



Splined shaft 6-25.3 x 21 x 6.2

GWD Series Hydraulic Motors

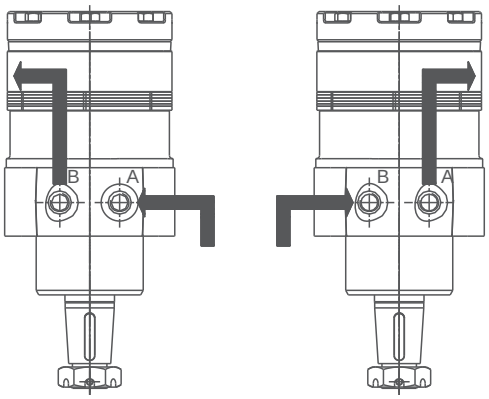
Shaft Rotation Direction: Standard

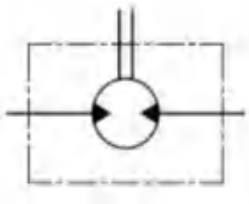
When looking at the shaft end of motor, shaft will rotate:

-Clockwise.

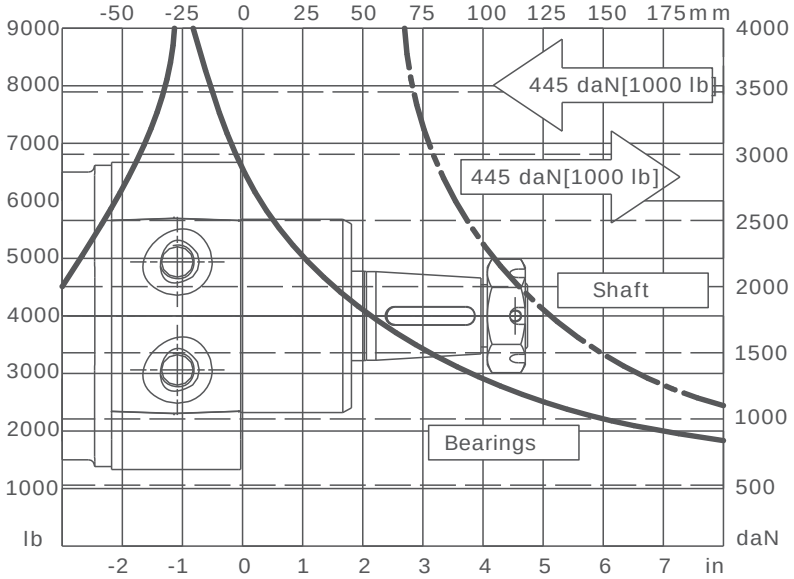
When port B is pressurized.

-Counter-clockwise when port A is pressurized.





W4 & W5 Wheel Mounts



GBD Series Hydraulic Motor Brakes



Options

- Double heavy-duty roller bearings
- Double release ports
- Wet braking, spring loaded
- Smaller axial installation size
- Low noise, long service life

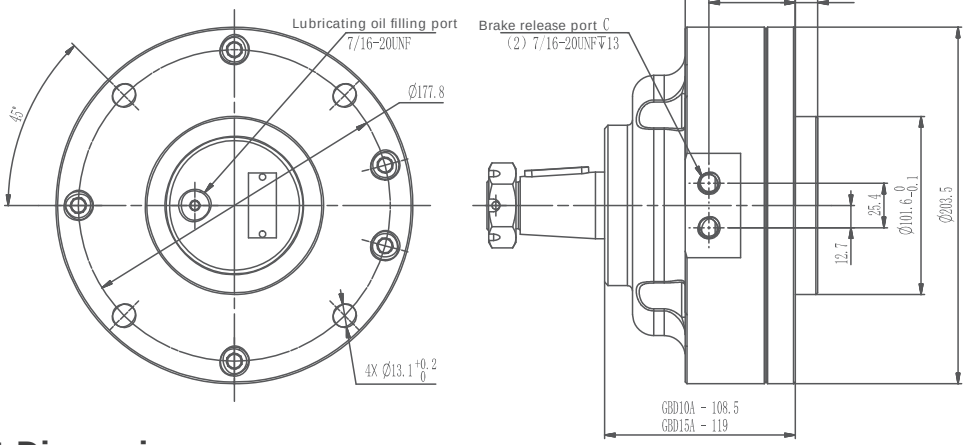
Applications

- Aerial work platform
- Wheel drive
- Swing drive
- Transmission

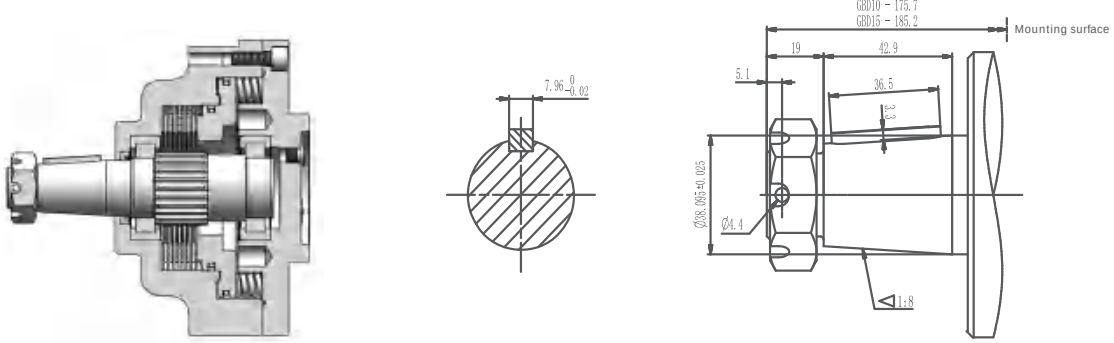
General

Specifications		GBD10	GBD15
Min. static torque	Nm	1150	1500
Brake release pressure	MPa	2.8	2.8
Max. release pressure	MPa	27.6	27.6
Min. oil released by brake	cm^3	11.5	11.5
Max. speed	rpm	250	250
Brake chamber oil volume	cm^3	100-120	100-120
Max. working oil temperature	℃	82	82
Weight	Kg	18	20

GBD Dimensions and Mountings



GBD Shaft Dimension



Ordering Code

GBD SERIES | TORQUE | FLANGE | SHAFT | PORTS | PAINT | FUNCTION

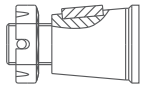
CODE	TOEQUE
10	1150 Nm
15	1500 Nm

CODE	FLANGE
B6	4xØ13.1 circle rear pilot Φ101.6x12.8



CODE	PORTS
UG	7/16-20 UNF

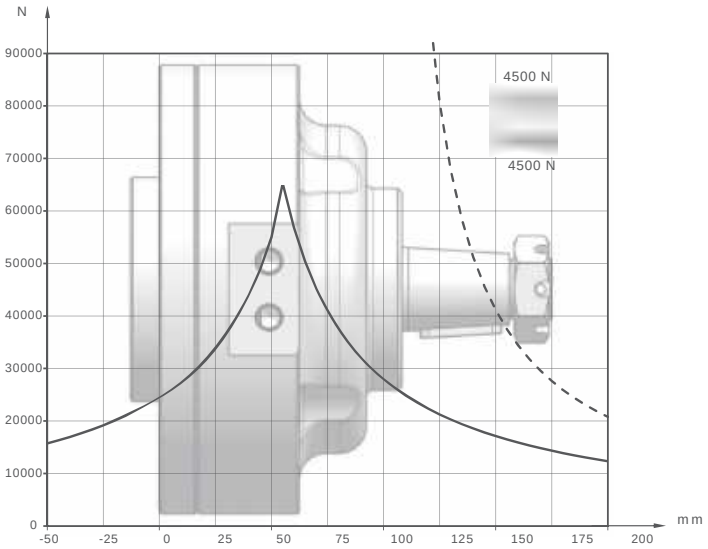
CODE	SHAFT
TA	Tapered Ø38.1 parallel key 7.96x7x36.5



CODE	PAINT
A	No paint
B	Blue
C	Black
S	Silver grey

CODE	FUNCTION
A	Slotted nut
B	Locking nut

GBD Series Hydraulic Motor Brakes



As shown in the figure, when the axial load is 0N, the radial allowable load of the output shaft is related to the distance between the mounting surface of the flange and the point where the load is applied. The solid line shows the allowable bearing radial load.Denotes the use of hydraulic oil containing anti-wear additives,and the curve is established on the basis of continuous output torque cut, motor speed of 100rpm, bearing L10 service life of 2000 hours. The dashed line shows the maximum radial load on the shaft. If the shaft extension load exceeds this value, the motor will be damaged.